CITY OF PHILADELPHIA DEPARTMENT OF PUBLIC HEALTH AIR MANAGEMENT SERVICES (AMS) PROPOSED STATE IMPLEMENTATION PLAN (SIP) REVISION CERTIFYING REASONABLY AVAILABLE CONTROL TECHNOLOGY FOR THE 2008 8-HOUR OZONE NATIONAL AMBIENT AIR QUALITY STANDARD (NAAQS)

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1.0 INTRODUCTION

On March 12, 2008, the United States Environmental Protection Agency (EPA) announced its revisions to the National Ambient Air Quality Standards (NAAQS) for ozone (73 FR 16436). This action revised the primary and secondary standards to a level of 75 parts per billion (ppb) over an 8-hour period. The EPA's March 6, 2015 final rulemaking entitled *Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements* established the requirements for Reasonable Available Control Technology (RACT) State Implementation Plans (SIPs) (80 FR 12264).

1.1 Background and Requirements

Under Section 110 of the federal Clean Air Act (CAA) (42 U.S.C. § 7410), States have the primary responsibility for achieving the NAAQS established by EPA under section 109 of the CAA. The NAAQS for criteria pollutants are established by the EPA as the maximum concentrations in the atmosphere for specific air contaminants to protect public health and welfare. 42 U.S.C. § 7409. The principal mechanism at the state and local level for complying with the CAA is the State Implementation Plan (SIP). A SIP outlines the programs, actions, and commitments a state will carry out to implement its responsibilities under the CAA. Once approved by the EPA, a SIP is a legally binding document under both state and federal law.

1.1.1 Health Effects of Ozone

Ground level ozone, one of the principal components of "smog," is a serious air pollutant that harms human health and the environment. High levels of ozone can damage the respiratory system and cause breathing problems, throat irritation, coughing, chest pains, greater susceptibility to respiratory infection and increased morbidity (73 FR 16439). High levels of ozone also cause serious damage to forests and agricultural crops, resulting in economic losses to logging and farming operations.

Ozone is generally not directly emitted to the atmosphere; rather it is formed in the atmosphere by photochemical reactions between volatile organic compounds (VOC), oxides of nitrogen (NOx), and carbon monoxide (CO) in the presence of sunlight. Consequently, in order to reduce ozone concentrations in the ambient air, sections 172(c)(1), 182 and 184 of the CAA (42 U.S.C. §§ 7502(c)(1), 7511a and 7511c) requires all non-attainment areas to apply controls on sources of VOC and NOx emissions to attain and maintain the NAAQS. Among effective control measures, RACT controls are a major group for reducing VOC and NOx emissions from stationary sources.

1.1.2 Philadelphia's Ozone Designation

In 2004, EPA designated 126 areas of the country as "non-attainment" under the 1997 8-hour ozone NAAQS, effective June 15, 2004. Among those non-attainment areas is the Philadelphia-Wilmington-Atlantic City Moderate Non-Attainment Area (NAA), which includes three counties in Delaware, five counties in eastern Pennsylvania and eight counties in southern New Jersey, as

shown in Figure 1. Since this moderate NAA is centered by Philadelphia, it is often referred to as "Philadelphia NAA." *See* 69 FR 23858, at 23931 (April 30, 2004).^{1,2}

In 2012, EPA designated 46 areas throughout the country as nonattainment for the 2008 ozone NAAQS, effective July 20, 2012, and established classifications for the designated nonattainment areas. *See* 77 FR 30088 (May 21, 2012) and 77 FR 34221 (June 11, 2012). The Philadelphia area was designated as a 2008 8-hour Marginal Non-Attainment Area.



Figure 1. Philadelphia-Wilmington-Atlantic City PA-DE-MD-NJ Marginal Non-Attainment Area

¹ On May 4, 2016, the EPA determined that the Philadelphia Area did not attain the 2008 standard by the July 20, 2015, attainment date, but that it qualified for a 1-year attainment date extension (81 FR 26699).

² On November 2, 2017, the EPA determined that the Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE marginal ozone nonattainment area (the Philadelphia Area) attained the 2008 ozone NAAQS by the July 20, 2016, attainment date (82 FR 50814).

1.1.3 CAA RACT Requirements

RACT is defined by EPA as the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53761 at 53762, September 17, 1979). Section 182 of the CAA (42 U.S.C. § 7511a), sets forth two separate RACT requirements for ozone nonattainment areas. The first requirement, contained in section 182(a)(2)(A) of the CAA (42 U.S.C. § 7511a(a)(2)(A)), and referred to as RACT fix-up, requires the correction of RACT rules for which EPA identified deficiencies before the 1990 CAA Amendments. Philadelphia has no deficiencies to correct under this section 182(a)(2)(A) of the CAA. The second requirement, set forth in section 182(b)(2) of the CAA (42 U.S.C. § 7511c(b)(2)), applies to moderate or worse ozone non-attainment areas as well as to any areas in ozone transport regions (OTRs) established pursuant to section 184 of the CAA (42 U.S.C. § 7511c), and requires states to implement RACT controls in these areas on all major VOC and NOx emission sources and on all sources and source categories covered by a control techniques guideline (CTG) issued by EPA before or after November 15, 1990. In addition, section 184(b)(2) of the CAA (42 U.S.C. § 7511c(b)(2)), establishes that RACT applies to major sources in the OTR as if it was a moderate nonattainment area.

Section 183 of the CAA (42 U.S.C. § 7511b), required EPA to issue several guidance documents for RACT controls by certain timeframes to help states meet the RACT requirements under sections 182(b)(2) and 184 of the CAA (42 U.S.C. §§ 7511a(b)(2) and 7511c(b)). These guidance documents include: (1) CTGs for controls of VOC emissions from stationary sources, and (2) Alternate Control Techniques (ACTs) for all categories of stationary sources of NOx and VOCs, which emit, or have the potential to emit 25 tons per year (TPY) of such air pollutant.

The EPA issued three groups of CTG documents, establishing a "presumptive norm" for RACT for various categories of VOC sources: Group I, issued before January 1978 including 15 CTGs; Group II, issued in 1978 including 9 CTGs; and Group III, issued in the early 1980s with 5 CTGs. Sources not covered by the issued CTGs are referred to as non-CTG sources. The EPA has also issued over a dozen Alternative Control Technique documents (ACTs) for various categories of VOCs and NOx sources, which describe available control technologies and their respective cost effectiveness.

The EPA determined that for 13 VOC product categories in Groups II-IV, issuing CTGs would be as effective as National rules. The CTG documents were issued in 3 Groups: 4 in 2006, 3 in 2007, and 4 in 2008 (one 2006 and one 2008 CTG document includes two categories). All published CTG and ACT documents, along with other documentation, are listed in the References section of this document. In general, states meet the CAA's RACT requirements by imposing controls that meet the control requirements established in final CTG documents and considering the information in ACT documents to relevant VOC and NOx sources in their moderate or worse non-attainment areas.

Non-CTG RACT applies to major sources of NOx and VOC. A "major source" is defined based on the source's potential to emit (PTE) of NOx, VOC, or both pollutants, and the applicable thresholds differ based on the classification of the nonattainment area in which the source is located. *See* sections 182(c)–(f) and 302(j) of the CAA (42 U.S.C. §§ 7511a(c)-(f) and 7602(j)). It should be noted that EPA previously designated Philadelphia as a severe NAA under the 1-hour ozone standard in 1979 (56 FR 56694), which required the establishment of 25 TPY thresholds for major sources of both VOC and NOx under Section 182(d) of the CAA (42 U.S.C. § 7511a(d)). Under the 1997 8-hour ozone NAAQS, Philadelphia was designated as a moderate NAA (69 FR 23858). In addition, the entire Commonwealth of Pennsylvania is considered a "moderate" NAA for being located in the OTR established by Congress under Section 184 of the CAA. Therefore, in the 1997 ozone RACT SIP, the major source threshold was 50 TPY for non-CTG stationary VOC sources and 100 TPY for stationary NOx sources.³

Although designated as a marginal NAA under the 2008 8-hour ozone standard, Philadelphia continues to be treated as a moderate NAA given its location in the OTR. Consequently, according to Section 184(b)(2) of the CAA (42 U.S.C. § 7511c(b)(2)), the major source threshold for 2008 ozone RACT remains to be 50 TPY for non-CTG stationary VOC sources and 100 TPY for stationary NOx sources. Sources with potential emissions between 25-50 TPY of VOC and 25-100 TPY of NOx, remain subject to the RACT requirements that have been previously approved into the Commonwealth's SIP under the 1-hour and 1997 ozone standards, as required by the "anti-backsliding" provisions of the CAA and EPA's ozone implementation rule for the 2008 ozone standard. *See* 40 CFR 51.1105, 51.1112 and 51.1116.

According to the EPA's 2008 ozone NAAQS implementation rule (80 FR 12264), areas classified as moderate nonattainment or higher must submit a demonstration that their current rules fulfill 8-hour ozone RACT requirements for all CTG categories and all major, non-CTG sources as a revision to their SIPs. Such demonstrations can be made with either a new RACT determination or a certification that previously required RACT controls represent RACT for the 8-hour ozone standard. The 2008 ozone NAAQS implementation rule requires that a certification must be accompanied by appropriate supporting information such as consideration of information received during the public comment period and consideration of new data, and that may supplement existing RACT guidance documents that were developed for the 1997 8-hour standard, such that SIPs accurately reflect RACT for the 2008 8-hour ozone NAAQS based on current availability of technically and economically feasible controls (80 FR 12264). The RACT SIP submittal is in addition to the area's 8-hour ozone attainment demonstration plan, which is also a SIP submittal.

1.2 Responsible Agencies

The agency with direct responsibility for developing this proposed SIP revision for Philadelphia is Philadelphia's Department of Public Health, Air Management Services (AMS), under the Agency's Director, Dr. Kassahun Sellassie. The working responsibility for air quality planning falls within Program Services, under Mr. Henry Kim. Philadelphia AMS is a delegated local air pollution control agency under Section 12 of the Air Pollution Control Act (35 P.S. § 4012). The final SIP revision package will be submitted by the Commonwealth of Pennsylvania, Department of Environmental Protection (DEP) on behalf of AMS to EPA.

³ Applicability of RACT requirements for CTG VOC sources is provided in the Pennsylvania's CTG RACT rules which have been approved into the SIP, in accordance with EPA's recommendations in the respective CTGs.

2.0 RACT CERTIFICATION

2.1 Summary of VOC and NOx RACT Regulations

Philadelphia AMS has prepared this RACT analysis to demonstrate that Philadelphia has met its RACT obligations under the CAA relating to the 2008 8-hour ozone NAAQS. The AMS air pollution control program is operated under the approval of the DEP in accordance with the provisions of 25 Pa Code Section 133 (relating to local air pollution control agencies). AMS controls air pollution from air contamination sources by means of visible, mass, and concentration emission standards equal to, or more stringent than, those standards established by the DEP. 25 Pa Code Section 133.4(b)(2). Since the early 1990s, Philadelphia has implemented numerous RACT controls on stationary sources of VOC and NOx to meet the CAA's RACT requirements.

RACT controls for VOC sources in Philadelphia were promulgated in Philadelphia's Air Management Regulation (AMR) V – Control of Emissions of Organic Substances from Stationary Sources and by DEP in 25 Pa Code Section 129. RACT controls for NOx were promulgated in Philadelphia's AMR VII – Control of Emissions of Nitrogen Oxides from Stationary Sources and 25 Pa Code Chapter 129 (relating to standards for sources). AMS implements the provisions of 25 Pa Code Chapter 129 in Philadelphia under AMR I – General Provisions, Section X. Compliance With Regulations of the Environmental Quality Board Of Pennsylvania and AMR V – Control of Emissions of Organic Substances From Stationary Sources, Section X. Compliance With Pennsylvania Standards For Volatile Organic Compounds (VOC).

States located within the OTR under CAA section 184 or that have CAA section 182 nonattainment areas, or both, are required to evaluate RACT for sources each time the EPA promulgates a new or revised ozone NAAQS. Adoption of new RACT regulations shall occur when states have new stationary sources not covered by existing RACT regulations, or when new data or technical information indicates that a previously adopted RACT measure does not represent a newly available RACT control level. As further discussed later, RACT control measures in Philadelphia have been adopted, implemented, and approved into Pennsylvania's SIP through either regulations or case-by-case RACT determinations. Based on the review of current technologies, AMS has found no data indicating that the existing levels of control for the affected sources should not satisfy RACT. Therefore, AMS is proposing to certify that all existing RACT regulations and case-by-case RACT determinations adopted to the present date continue to represent RACT for the 2008 8-hour ozone NAAQS, as they reflect the most current pollution control technologies and economic considerations, with some exceptions. AMS has adopted additional regulations to establish a more stringent RACT level of control for certain NOx and VOC source categories, as discussed below. These regulations include revisions to previously approved case-by-case RACT determinations.

Philadelphia's minor source permitting program requires a detailed administrative and technical review of sources that emit air contaminants far below the "major" threshold" and CTG cutoffs (i.e., permits are required for the emission of 1 ton per year or more of any pollutant, except for sources specifically exempted in Air Management Code). Some small sources may just require a

permanent operating license (registration). This permitting program gives confidence that all major and CTG covered sources are controlled by RACT level or better controls. *See* Philadelphia Code § 3-306 and Air Management Regulation I.

AMS is proposing to certify that it has adopted control requirements based on the current availability of technically and economically feasible controls to meet RACT under the 2008 ozone standard. This certification is supported by the following: (1) a determination that previously adopted RACT regulations in the Pennsylvania SIP that were approved by EPA under the 1997 8-hour ozone NAAQS continue to represent RACT for 2008 75 ppb 8-hour ozone implementation purposes and (2) in cases where previously adopted RACT controls are insufficient to implement RACT under the 2008 ozone NAAQS, the adoption of new or more stringent regulations that represent RACT control levels.

2.1.1 Non-CTG VOC RACT

All major non-CTG VOC sources in Philadelphia are subject to the Pennsylvania RACT II Rule (25 Pa. Code §§ 129.96-129.100) adopted by DEP on April 22, 2016 (46 Pa.B. 2036), with the exception of three source categories: mobile equipment repair and refinishing, manufacture of surface active agents, and ethylene production plants. AMS is proposing to certify that there are no major VOC sources in Philadelphia under mobile equipment repair and refinishing, manufacture of surface active agents, and ethylene production plants source categories. The RACT II Rule, under 25 Pa. Code § 129.99(c), requires the owner or operator of any non-CTG VOC major source not able to meet presumptive RACT to propose source-specific RACT limits.⁴ AMS is certifying that all source-specific RACT requirements adopted under RACT II Rule in Philadelphia are based on technically and economically feasible controls for affected non-CTG major VOC sources, and thus represent RACT for implementation of the 2008 ozone NAAQS.

Section 2.1.3 of this document includes an additional discussion about the requirements established under the RACT II Rule.

2.1.2 MAJOR NOx RACT

All major NOx sources, except glass melting furnaces, are subject to RACT controls under Pennsylvania's RACT II Rule (25 Pa. Code §§ 129.96-129.100), as adopted on April 23, 2016 (46 Pa.B. 2036). However, certain major NOx sources in Philadelphia continue to meet RACT by complying with other regulations previously approved as RACT under 1997 8-hour ozone NAAQS: AMR VII Section II and 25 Pa. Code Sections §§ 129.91-129.95 (81 FR 69687). AMR VII Section II applies to any fuel burning equipment equal to or greater than 250 million BTU per hour heat input installed, reconstructed or modified after July 1, 1972, and establishes NOx limits for any gaseous, liquid, or solid fuel.⁵ The RACT II Rule establishes presumptive NOx RACT emission limits for any combustion unit or process heaters with heat input rating of 50 MMBTU/hr or greater for refinery gas, natural gas, distillate oil, residual oil, and coal, and

⁴ Pursuant to 25 Pa Code § 129.99, approved source-specific limits will be submitted to EPA for approval as SIP revisions.

⁵ AMR Regulation VII Section II particularly excludes any combustion turbines installed prior to July 1, 1984.

additional presumptive NOx emissions limits for combustion units with heat input rating of 250 MMBTU/hr. *See* 25 Pa. Code § 129.97(g). AMR VII Section II continues to represent NOx RACT for fuel burning equipment combusting refinery gas and any other gaseous or liquid fuels not addressed by the RACT II Rule, as Philadelphia's rule continues to establish more stringent NOx control requirements for these sources than the RACT II Rule under 25 Pa. Code § 129.97(g). AMS confirms there are no combustion units in Philadelphia that burn coal that would be subject to the NOx limits in either the RACT II Rule or AMR VII Section II. Section 2.1.3 of this document includes an additional discussion about the requirements established under the RACT II Rule.

AMR VII Section II		25 Pa Code Section	129.97
NOx Limit (MMBTU/hr)	Fuel	NOx Limit (MMBTU/hr)	Fuel
0.20	Gaseous fuel	0.25	Refinery gas
		0.10	Natural gas
0.20	Liquid fuel	0.12	Distillate oil
0.30	Liquid luei	0.20	Residual oil
0.30	Solid fuel	0.12 ⁶ (units with selective catalytic reduction) 0.16 (circulated fluidized bed) 0.35 (tangentially fired) 0.40 (any other firing type)	Coal
		0.25	Any other solid

Major NOx RACT under the 1997 8-hour ozone NAAQS was previously established under Pennsylvania's RACT I Rule (25 Pa. Code § 129.91-129.95) adopted on January 15, 1994 (24 Pa.B. 967). Under the 1997 8-hour ozone NAAQS, NOx presumptive requirements were established under 25 Pa. Code § 129.93, while source-specific RACT determinations were approved following the procedures in 25 Pa. Code §§ 129.91-129.92. The emission limits under Pennsylvania's RACT II Rule supersedes any previously approved requirements under Pennsylvania's RACT I Rule, unless these emission limits are more stringent than the RACT II Rule requirements. The stringency of emissions limits under the RACT II Rule versus the RACT I Rule is determined by AMS when evaluating each individual source during the permit application process. Through this proposed SIP revision, AMS is certifying that the RACT I Rule (25 Pa Code §§ 129.91-129.95) continues to meet RACT for certain NOx sources to the extent

⁶ On August 27,2020, in *Sierra Club v. EPA*, No. 19-2562 (3d. Circuit), the United States Court of Appeals for the Third Circuit vacated and remanded to EPA the SIP approval of presumptive RACT for coal fired combustion units with a selective catalytic reduction system operating with an inlet temperature equal to or greater than 600°F (<u>http://www2.ca3.uscourts.gov/opinarch/192562npa.pdf</u>).

any applicable requirements are more stringent than those established under Pennsylvania's RACT II Rule.

The RACT II Rule exempts one major NOx source category, glass melting furnaces, which would be subject to 25 Pa. Code §§ 129.301-129.310. However, AMS is proposing to certify that at this time there are no glass melting furnaces that are major sources of NOx that would be required to comply with RACT. In addition, AMS is proposing to certify that there are no nitric acid plants in existence in Philadelphia at this time.

2.1.3 RACT II Rule

Major NOx and non-CTG VOC sources in Philadelphia are subject to the Pennsylvania RACT II Rule (25 Pa. Code §§ 129.96-129.100). The RACT II Rule covers any emissions sources at affected major NOx and VOC emitting facilities that have the potential to emit 1 TPY of NOx and/or VOC or more. In accordance with 25 Pa. Code §§ 129.96 (a) and(b), affected major NOx and VOC facilities under the RACT II Rule are those not subject to specific regulations adopted by DEP under 25 Pa. Code §§ 129.51-129.52c, 129.54-129.69, 129.71-73, 129.75, 129.77, 129.101-129.107, and 129.301-129.310. The majority of these exempted regulations pertain to CTG RACT. Other exempted source categories in Philadelphia are mobile equipment repair and refinishing, manufacture of surface active agents, ethylene production plants, and glass melting furnaces.

The RACT II Rule sets forth presumptive emission limitations for NOx and/or VOC emissions sources, which are reasonably achievable using control technologies that both technically and economically feasible. Presumptive RACT NOx limits apply to combustion units, process heaters, combustion turbines, stationary internal combustion engines, cement kilns, and municipal waste combustors. *See* 25 Pa. Code §§ 129.97(g) – 129.97(h). Presumptive RACT VOC limits apply to combustion turbines, stationary internal combustion engines, and municipal solid waste landfills. *See* 25 Pa. Code § 129.97(g). Additional presumptive operational requirements apply to smaller combustion units as RACT.

Affected NOx and/or VOC sources that cannot comply with the applicable presumptive requirements, may choose one of two alternative compliance options to establish RACT for that unit through either a NOx emissions averaging plan, as set forth in 25 Pa. Code § 129.98, or a case-by-case RACT proposal, as set forth in 25 Pa. Code § 129.99.

The RACT II Rule is intended to supersede any previously approved RACT I requirements under 25 Pa. Code §§ 129.91-129.95, to the extent the RACT II Rule requirements are more stringent. See, 25 Pa. Code §§ 129.97(i) and 129.99(k).

Through this proposed SIP revision, AMS is certifying both the RACT I Rule (25 Pa. Code §§ 129.91-129.95) and the RACT II Rule (25 Pa. Code §§ 129.96-129.100) as representing RACT under the 2008 8-hour ozone NAAQS.

2.1.4 RACT Regulations

The identification and certification of major source non-CTG VOC RACT controls are provided in Table 1 below. The identification and certification of major source NOx RACT controls are provided in Table 2 that are applicable to RACT II rulemaking below.

Explanations for each column of Tables 1 and 2 are as follows:

- Column 1: The Source Category for the Identification of NOx and VOC RACT controls.
- Column 2: Identifies the underlying basis for the RACT determination (CTG, ACT, etc.)
- Column 3: Identifies each applicable section of the Philadelphia Air Management Regulation or Pa. Code.
- Column 4: Identifies the date that EPA approved the rule into Pennsylvania's SIP, along with the *Federal Register* citation of that approval.
- Column 5: Explains RACT control applicability and requirements.
- Column 6: Certifies whether or not the current rule represents RACT under the 2008 75 ppb 8-hour ozone NAAQS. Where Philadelphia has certified that a current SIP approved regulation represents RACT under the 2008 75 ppb 8-hour ozone standard, AMS affirms that it is not aware of any significant changes in control technology that would affect the original RACT determination, unless otherwise explained in Column 5. AMS also notes that any discussion on cost effectiveness is relative only to this RACT SIP and is not relevant as to whether or not control of a particular source or source category is cost effective relative to the entire SIP.

VOC Source Category	RACT Basis	Regulation	SIP	RACT Rule	Represents RACT under the
			Revision	Applicability and	2008 8-hour Ozone NAAQS?
			Approved	Requirements	
			by EPA		
Other VOC Sources at Major VOC Emitting Facilities	Non-CTG RACT	STATIONARY SOURCES OF NOX AND VOC 25 Pa. Code §§ 129.91-129.95 Control of major sources of NOx and VOCs	7/20/01, 66 FR 37908 & 3/23/98, 63 FR 13789	This section establishes provisions for case-by- case determinations of RACT for non-CTG major VOC sources.	Yes. Certifying as RACT under the 2008 8-hour ozone NAAQS for sources that have been subject to these requirements and if the applicable requirements are more stringent than any VOC RACT requirements established pursuant to 25 Pa. Code Sections 129.96- 129.100
		STATIONARY SOURCES OF NOX AND VOC 25 Pa. Code §§ 129.96-129.100, Additional RACT requirements for major sources of NOx and VOCs.	5/9/19, 84 FR 20291	The RACT requirements of Sections 129.96 - 129.100 apply statewide to the owner and operator of a major non-CTG VOC emitting facility, with some exceptions.	Yes. These sections fully implement non-CTG VOC controls representing RACT control levels for the major VOC affected sources under the 2008 8-hour ozone NAAQS.

Table 1. Philadelphia Non-CTG VOC RACT Regulations under the 2008 8-Hour Ozone NAAQS

Source Category	Regulation	SIP Revision Approved by EPA	RACT Rule Applicability and Requirements	Represents RACT under the 2008 8-hour Ozone
Fuel Burning Equipment	AMR VII. Section II. Fuel Burning Equipment	1/14/87, 52 FR 1456	This section applies to fuel burning equipment greater than or equal to 250 MMBTU/hr.	NAAQS? Yes. These sections fully implement major source NOx controls representing current RACT control levels for the major NOx affected sources under the 8-hour ozone NAAOS.
Any other major NOx sources	STATIONARY SOURCES OF NOx AND VOC 25 Pa. Code §§ 129.91-129.95 Control of major sources of NOx and VOCs	7/20/01, 66 FR 37908 & 3/23/98, 63 FR 13789	This section establishes presumptive RACT limitations and/or as general provisions for case-by-case determinations of RACT for major NOx sources. In addition, it establishes requirements for case-by-case RACT determinations for certain major NOx sources and establishes presumptive RACT limitations for certain classes of combustion units: coal-fired combustion units rated equal or greater than 100 MMBtu, combustion units rated equal or greater than 20 MMBtu and less than 50 MMBtu.	Yes. Certifying as RACT under the 2008 8-hour ozone NAAQS for sources that have been subject to these requirements and if more stringent than any NOx RACT in Sections 129.96- 129.100. 25 Pa Code §§ 129.91- 129.95 has been superseded by 25 PA Code §§ 129.96-129.100 (the RACT II Rule), except for facilities currently subject to more stringent requirements under 25 Pa Code §§ 129.91-129.95.
	STATIONARY SOURCES OF NOx AND VOC 25 Pa. Code §§ 129.96-129.100, Additional RACT requirements for major sources of NOx and VOCs.	5/9/19, 84 FR 20291	The NOx requirements of Sections 129.96 -129.100 apply statewide to the owner and operator of a NOx emitting facility and the VOC requirements of Sections 129.97– 129.100 apply statewide to the	Yes. These sections fully implement major source NOx controls representing current RACT control

Table 2. Philadelphia Major NOx RACT Regulations under the 2008 8-Hour Ozone NAAQS

	owner and operator of a VOC emitting facility.	levels for the major NOx affected sources under the
		8-hour ozone NAAQS.

3.0 RACT SUMMARY

Tables 3 and 4 list all major sources of NOx and VOC subject to the 2008 8-hour ozone RACT.

On May 9, 2019, EPA published a final rule (84 FR 20274) that, in part, conditionally approved certain provisions of the RACT II Rule. The conditional approval of the RACT II Rule required DEP, via Philadelphia AMS, to forward the following items to EPA by May 9, 2020:

- 1. All facility-wide or system-wide averaging plans approved by AMS under 25 Pa. Code §129.98 for air pollution sources in Philadelphia.
- 2. All source-specific RACT determinations for applicable air pollution sources in Philadelphia, as approved by AMS under 25 Pa Code § 129.99, including any alternative compliance schedules approved under §§ 129.97(k) and 129.99(i).

Facilities requiring source-specific determinations or system-wide averaging plans are identified below. For all other facilities, review memos are attached summarizing their RACT requirements.

On October 24, 2019, EPA approved a SIP revision (84 FR 56946) submitted by DEP, on behalf of Philadelphia AMS, addressing the VOC CTG RACT requirements set forth by the CAA for the 2008 8-hour ozone NAAQS for Philadelphia County.

Facility Name	Previous Source-Specific RACT Determination	Applicable RACT II Rule Requirement		
	(If Yes, specify SIP- approved RACT Permit)	Source-Specific RACT ⁷ (If yes, specify pollutant)	Presumptive RACT	NOx Averaging ⁶
University of Pennsylvania	NO	NO	YES	NO
Philadelphia Prisons	YES PA-51-9519 (02/09/16)	NO	YES	NO
Philadelphia Gas Works – Richmond	YES PA-51-4922 (01/09/15)	NO	YES	NO
Navy Foundry and Propeller Center	NO	NO	NO	NO
Naval Surface Warfare Center - Carderock Division (NSWCCD)	YES PA-51-9724 (02/09/16)	YES for NOx	YES	NO
Exelon Generating Company - Delaware Station	NO	NO	YES	NO
Exelon Generating Company - Richmond Station	YES, PA-51-4903 (02/09/16)	YES for NOx	YES	NO
Exelon Generating Company - Southwark Station	NO	NO	YES	NO
Exelon Generating Company - Schuylkill Station	NO	NO	YES	NO

Table 3. Major NOx Facilities applicable to the 2008 8-hour ozone RACT

⁷ For this SIP Certification, additional SIP Revisions addressing case-by-case RACT and NOx averaging plans will be submitted separately for EPA's approval. The affected facilities are bolded and italicized.

Facility Name	Previous Source-Specific RACT Determination	Applicable RACT II Rule Requirement		
	(If Yes, specify SIP- approved RACT Permit)	Source-Specific RACT ⁷ (If yes, specify pollutant)	Presumptive RACT	NOx Averaging ⁶
Children's Hospital of Philadelphia	NO	NO	YES	NO
Temple University Main Campus	YES, PA-51-8906 (01/09/15)	NO	YES	NO
Temple University- Health Sciences Campus	YES, PA-51-8905 (01/09/15)	NO	YES	NO
Newman & Company	NO	YES	YES	NO
Inolex Chemical Company	NO	NO	YES	NO
AdvanSix Resin (formerly Honeywell)	YES, PA-51-1151 (02/09/16) PA-51-1151 (02/09/16)	YES for NOx VOC	YES	NO
Vicinity Energy – Schuylkill (formerly Veolia Energy – Schuykill)	YES, PA-51-4942 (02/09/16)	NO	YES	YES (Boiler #26)
Grays Ferry CoGen	YES, PA-51-4944 (01/09/15)	NO	NO	YES (combustion turbines and Boiler #25)
Veolia Energy Efficiency	YES, PA-51-10459 (01/09/15)	NO	YES	NO
Veolia Energy – Edison	YES, PA-51-4902 (01/09/15)	NO	YES	NO
Philadelphia Energy Solutions Refining and Marketing	YES, PA-51-01501 and PA-51-01517 (02/09/16)	YES for NOx and VOC	YES	NO

Facility Name	Previous Source- Specific RACT	CTG RACT	Applicable RACT II Rule Requirement	
	Determination (If Yes, specify RACT Permit)		Source-specific RACT ⁸	Presumptive RACT
AdvanSix Resin (formerly Honeywell)	YES, PA-51-1151 (02/09/16)	YES ^{C,D,I,M}	YES, for NOx and VOC	YES
PB Logistics (formerly, Plains Products Terminals, LLC)	NO	YES ^{C,M}	NO	NO
Philly Shipyard (formerly Aker Shipyard)	NO	YES N	YES, for VOC	
Philadelphia Energy Solutions Refining and Marketing	YES, PA-51-01501 and PA-51-01517 (02/09/16)	YES ^{B,C,D,E,H,L}	YES, for NOx and VOC	YES
Philadelphia Energy Solutions Tank Farm	YES, PA-51-01501 and PA-51-01517 (02/09/16)	YES ^{B,C,E}	NO	YES
Cardone Industries Inc.	NO	YES A,H	NO	NO
Kinder Morgan Liquids Terminal	YES, PA-51-5003 (02/09/16)	YES ^{C,D,F,M}	YES, for VOC	NO
MIPC	NO	YES C,D,F,G,K,M	NO	NO
Sunoco Partners Marketing & Terminals L.P Belmont Terminal	NO	YES D,F,G,M	NO	NO

Table 4. Major VOC Facilities applicable to the 2008 8-hour ozone RACT

- ^A 25 Pa Code Section 129.52 (spray booths)
- ^B 25 Pa Code Section 129.55 (refinery wastewater separators)
- ^C 25 Pa Code Section 129.56 (large storage tanks)
- ^D 25 Pa Code Section 129.57 (small storage tanks)
- ^E 25 Pa Code Section 129.59 (gasoline terminal truck loading) ^F 25 Pa Code Section 129.59 (gasoline terminal truck loading)
- ^G 25 Pa Code Section 129.62 (gasoline storage and loading general standards)
- ^H25 Pa Code Section 129.63 (degreasers)
- ¹25 Pa Code Section 129.71 (SOCMI fugitives)
- ^J25 Pa Code Section 129.81 (marine loading)
- ^K AMR V, Section III (oil-water separators)
- ^LAMR V, Section V (truck loading)
- ^MAMR V, Section XIII (fugitives)
- ^N AMR V, Section XV (marine surface coating)
- ^O AMR V. Section XVI (SOCMI

⁸ For this SIP Certification, additional SIP Revisions addressing case-by-case RACT and NOx averaging plans will be submitted separately for EPA's approval. The affected facilities are bolded and italicized.

REFERENCES

U.S. EPA's Control Techniques Guidelines (CTG) documents, Alternative Control Techniques (ACT) documents, and Additional Reference Documents, cited in this SIP and Other Supporting Documents.

Please see link below:

https://www.epa.gov/ozone-pollution/control-techniques-guidelines-and-alternative-control-techniques-documents-reducing

REVIEW MEMOS

InterOffice	Memo
To:	File
From:	Maryjoy Ulatowski
Date:	May 1, 2020
Subject:	2008 8-Hour RACT Analysis for Cardone Industries - Rising Sun, Chew Street, and Whitaker Avenues (PLID # 03887-2287)

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of volatile organic compounds (VOC) and nitrogen oxides (NOx). Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for Cardone Industries, LLC in Philadelphia.

Company Description:

Cardone Industries (Rising Sun and Whitaker) is an automotive parts re-manufacturing company. The company's NOx and VOC air emission sources include 5 spray booths, 60 combustion units, 5 burnout ovens and one emergency generator. The facility had degreasing operations in the past, but there are no longer degreasing operations at the facility. There are 2 vibrators left at the facility, but use non-VOC solvents. The facility performs blasting operations and there are several dust collectors but emissions associated with these sources are particulate matter (PM) and not NOx or VOC.

This memorandum will discuss RACT applicability for VOC and NOx sources at the Cardone locations (Rising Sun and Whitaker Avenues) in Philadelphia. Below is the facility information for the Rising Sun and Whitaker Locations.

1. 5660 Rising Sun Avenue, Philadelphia, PA 19120 (Plants 11-14) – PLID 3887 2. 5501 Whitaker Avenue, Philadelphia, PA 19124 (Plants 90-97) –PLID 2287

Applicability for NOx and VOC RACT:

Cardone Industries (Rising Sun and Whitaker Avenues) is not a major source for NOx since the potential NOx emissions are less than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS.

Cardone Industries (Rising Sun and Whitaker Avenues) under Title V is a major source of VOC having potential emissions greater than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS.

Process Descriptions:

Cardone Industries Rising -Whitaker VOC emission sources are as follows:

Source	Source Description	1997 8hr Ozone	CTG RACT
ID	_	RACT CTG	Regulation
		Regulation	
SB05	Touch-Up Spray Booth	25 Pa Code 129.52	25 Pa Code 129.52
SB07	Touch-Up Spray Booth, Used for Powder Coat Only	25 Pa Code 129.52	25 Pa Code 129.52
SB10	Spray Booth (Manual), Surface Coating	25 Pa Code 129.52	25 Pa Code 129.52
SB11	Spray Booth (Manual)	25 Pa Code 129.52	25 Pa Code 129.52

Group 01 - Surface Coating

SB25 Spray Booth	25 Pa Code 129.52	25 Pa Code 129.52
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Group 02 - Combustion Units

Source	Source	Capacity	Fuel/ Material	1997 8hr Ozone	Presumptive
ID	Description			RACT	RACT2
				Presumptive	Regulation
	** 1 1		N. I.G. D	Regulation	120.05(.)(2)
CU-W13	Hydropulse Washer	0.5 MMBTU/hr	Natural Gas, Propane	129.93(c)(1)	129.97(c)(3)
CU-W22	Hot Water Washing Machine	4.65 MMBTU/hr	Natural Gas, Propane	129.93(c)(1)	129.97(c)(3)
CU-W52	Washer for Electronic Parts	8.00 MMBTU/hr	Natural Gas, Liquid Propane Gas (LPG)	129.93(c)(1)	129.97(c)(3)
CU-W53	Washer	400,000 BTU/hr	Natural Gas, LPG	129.93(c)(1)	129.97(c)(3)
CU-W54	Washer	Two burners at 400,000 BTU/hr each	Natural Gas, Liquid Propane Gas (LPG)	129.93(c)(1)	129.97(c)(3)
CU-T13	Acid Dip tank with tumbler	400,000 BTU/hr	Nat. Gas	129.93(c)(1)	129.97(c)(3)
CU-B02	Thermal Liquid Heater	1.2 MMBTU/hr	Natural Gas, Propane	129.93(c)(1)	129.97(c)(3)
CU-B03	Thermal Liquid Heater	1.2 MMBTU/hr	Natural Gas, Propane	129.93(c)(1)	129.97(c)(3)
CU-B04	Backup System	0.84 MMBTU/hr	Propane	129.93(c)(1)	129.97(c)(3)
CU-B05	Backup Propane System Burner	0.84 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B21	HVAC Roof unit	0.270 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B22	HVAC Roof unit	0.270 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B23	HVAC Roof unit	0.270 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B24	HVAC Roof unit	0.270 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B25	HVAC Roof unit	0.270 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B26	HVAC Roof unit	0.270 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B27	HVAC Roof unit	0.270 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B28	HVAC Roof unit	0.270 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B29	HVAC Roof unit	0.255 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B30	HVAC Roof unit	0.255 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B31	HVAC Roof unit	0.255 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B32	HVAC Roof unit	0.4 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B33	HVAC Roof unit	0.4 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B34	HVAC Roof unit	0.582 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B35	HVAC Roof unit	0.582 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B36	HVAC Roof unit	0.582 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B37	HVAC Roof unit	0.582 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B38	HVAC Roof unit	0.582 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B39	HVAC Roof unit	0.582 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B40	HVAC Roof unit	0.582 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B41	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B42	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B43	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B44	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B45	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B46	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)

CU-B47	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B48	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B49	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B50	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B51	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B52	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B53	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B54	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B55	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B56	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B57	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B58	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B59	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B60	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B61	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B62	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B63	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B64	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B65	HVAC Roof unit	0.9 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B66	HVAC Roof unit	1.2 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B67	HVAC Roof unit	1.2 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B68	HVAC Roof unit	1.2 MMBTU/hr	Natural Gas	129.93(c)(1)	129.97(c)(3)
CU-B70	HVAC Roof unit	4.8 MMBTU/hr	Natural Gas,	129.93(c)(1)	129.97(c)(3)
			Propane		

Group 03 - Burnout Ovens w/ Afterburners

Source	Source Description	Capacity	Fuel/	Presumptive	Presumptive
ID			Material	1997 8hr Ozone	RACT2
				RACT	Regulation
				Regulation	
CD-009	Burnout Oven (12 bskt)	3 MMBTU/hr	Natural Gas,	129.93(c)(1)	129.97(c)(3)
	w/ Integral Afterburner		Propane		
CD-011	Burnout Oven (12 bskt)	3 MMBTU/hr	Natural Gas,	129.93(c)(1)	129.97(c)(3)
	w/ Integral Afterburner		Propane		
CD-012	Burnout Oven (8 bskt)	3 MMBTU/hr	Natural Gas,	129.93(c)(1)	129.97(c)(3)
	w/ Integral Afterburner		Propane		
CD-014	Burnout Oven (12 bskt)	3 MMBTU/hr	Natural Gas,	129.93(c)(1)	129.97(c)(3)
	w/ Integral Afterburner		Propane		
CD-022	Burnout Oven with	3 MMBTU/hr		129.93(c)(1)	129.97(c)(3)
	Integral Afterburner				

Group 04 - Emergency Generator

Source	Source Description	Capacity	Fuel/	Presumptive	Presumptive
ID			Material	1997 8hr Ozone	RACT2
				RACT	Regulation
				Regulation	_
EG-01	Emergency Backup	500 KW	Diesel	129.93(c)(5)	129.97(c)(3)
	Generator System				
	(Formerly CU-B06)				

RACT Analysis:

Surface Coating

Each spraybooth at the facility is complying with the RACT requirements of 25 Pa Code §129.52 - Miscellaneous metal parts & products, air-dried coatings.

Combustion Units and Burnoff Ovens.

Each combustion unit and burnoff oven is less than 20 million BTU and burns natural gas or propane. Thus, all combustion units are complying with the presumptive RACT requirements of 25 PA Code 129.97(c)(3) which is the installation, maintenance, and operation of the source in accordance with manufacturer's specification and with good operating practices. This requirement is incorporated in the facility's Title V09-019 Conditions D.2(c)(1) and D.2(d)(5) state that each combustion unit and burnoff shall be installed, maintained, and operated in accordance with manufacturers specifications

Emergency Generator

The emergency generator is complying with 25 PA Code 129.93(c)(8) presumptive RACT requirements to operate less than 500 hours in a consecutive 12-month period per Title V09-019 Condition D.2(e)(2) and AMS Installation Permit No. 01159 dated 3/25/02, the total hours of operation of the emergency generator shall not exceed 500 hours in any 12 month period, rolling average, including any testing and tuning. The emergency generator shall be installed, maintained, and operated in accordance with manufacturer's specification.

RACT Revisions/Modifications:

AMS has determined the following for the 2008 8-hr RACT.

1) For the 2008 8-hour ozone, all existing sources at Whitaker and Rising Sun are complying still with presumptive RACT2 or CTG RACT requirements as mentioned above.

5/1/20

Edward Wiener, Chief of Source Registration

Date

InterOffice Memo			
To:	File		
From:	Nicole Stilwell		
Date:	May 1, 2020		
Subject:	8-Hour RACT Analysis for Children's Hospital of Philadelphia (CHOP) - (PLID # 08069)		

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of VOC and NOx. Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

The Children's Hospital of Philadelphia (CHOP) is a hospital located at 34th and Civic Center Boulevard, Philadelphia, PA 19104.

Applicability for NOx and VOC RACT:

CHOP is a major source of Nitrogen Oxides (NOx) having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS.

CHOP is not a major source of Volatile Organic Compounds (VOC) having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS.

Process Descriptions:

The facility's air emission sources contributing to NOx emissions include the following:

- 4 boilers rated 16.0 MMBtu/Hr or less burning No. 2 oil/ natural gas;
- 9 boilers rated 33.5 MMBtu/Hr burning No. 2 oil/ natural gas;
- 15 emergency generators with 4 diesel oxidation catalysts (DOCs) rated less than or equal to 2,000 kW (2,682 hp) burning diesel fuel;
- 1 fire pump rated 90 kW (120.7 hp) burning diesel fuel;
- 4 peak shaving generators with 4 oxidation catalysts rated 809 kW (1,085 hp) burning natural gas.

Presumptive RACT:

The following sources are covered by presumptive RACT regulations, as is specified in the "Presumptive RACT2 Regulation" column of the table on the next page.

Unit	Heat Input (MMBTU/ hr)	Fuel Burned	Presumptive RACT2 Regulation
U-01	16.0	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (c)(3)
U-02	16.0	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (c)(3)
U-03	16.0	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (c)(3)
U-04	8.00	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (c)(3)
U-05	33.5	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (b)(1)
U-06	33.5	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (b)(1)
U-07	33.5	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (b)(1)
U-08	33.5	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (b)(1)
U-09	33.5	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (b)(1)
U-10	33.5	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (b)(1)
U-11	33.5	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (b)(1)
U-12	33.5	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (b)(1)
U-13	33.5	Natural Gas & No. 2 fuel oil	25 PA Code 129.97 (b)(1)

Boilers U-01 through U-04 at the facility are rated at 16 MMBTU/hr or less and meet the requirements of 25 PA Code Section 129.97(c)(3) which is applicable to boilers or combustion sources with an individual rated gross heat input of less than 20 MMBTU/hr. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(3) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(3) is included under Condition D.2(b)(1) in the facility's current Title V Operating Permit No. V08-002 dated 12/11/2009.

Boilers U-05 through U-13 at the facility are rated at 33.5 MMBTU/hr and meet the requirements of 25 PA Code Section 129.97(b)(1) which is applicable to combustion units with a rated heat input equal to or greater than 20 MMBTU/hr and less than 50 MMBTU/hr. The presumptive RACT requirement of 25 PA Code Section 129.97(b)(1) is the performance of a biennial tune-up conducted in accordance with the procedures in 40 CFR 63.11223. The biennial tune-up must include the following: (1) Inspection and cleaning or replacement of fuel-burning equipment, including the burners and components, as necessary, for proper operation as specified by the manufacturer; (2) Inspection of the flame pattern and adjustment of the burner, as necessary, to optimize the flame pattern to minimize total emissions of NOx and, to the extent possible, emissions of CO; (3) And inspection and adjustment, as necessary, of the air-to-fuel ratio control system to ensure proper calibration and operation as specified by the manufacturer. The presumptive RACT requirement of 25 PA Code Section 129.97(b)(1) is included under Condition D.2(b)(5)(i)-(iii) in the facility's current Title V Operating Permit No. V08-002 dated 12/11/2009.

Unit	Capacity (hp)	Fuel Burned	Presumptive RACT2 Regulation
G-04	536	Diesel	25 PA Code 129.97 (c)(8)
G-05	2168	Diesel	25 PA Code 129.97 (c)(8)
G-06	2168	Diesel	25 PA Code 129.97 (c)(8)
G-08 with DOC	2682	Diesel	25 PA Code 129.97 (c)(8)
G-09 with DOC	2682	Diesel	25 PA Code 129.97 (c)(8)
G-10	804.6	Diesel	25 PA Code 129.97 (c)(8)
G-11 with DOC	2682	Diesel	25 PA Code 129.97 (c)(8)
G-12	2682	Diesel	25 PA Code 129.97 (c)(8)
G-13	2682	Diesel	25 PA Code 129.97 (c)(8)
G-14	2682	Diesel	25 PA Code 129.97 (c)(8)
G-15	1220.3	Diesel	25 PA Code 129.97 (c)(8)
G-01S	1027	Diesel	25 PA Code 129.97 (c)(8)
G-16	2682	Diesel	25 PA Code 129.97 (c)(8)
G-17	2682	Diesel	25 PA Code 129.97 (c)(8)
G-18 with DOC	2682	Diesel	25 PA Code 129.97 (c)(8)
FP-01	120.7	Diesel	25 PA Code 129.97 (c)(8)

All fifteen (15) emergency generators and one (1) fire pump are limited to running less than 500 hours per 12-month period as per the facility's current Title V Operating Permit No. V08-002 dated 12/11/2009, various installation permits, and plan approvals; and meet the requirements of 25 PA Code Section 129.97(c)(8) which is applicable to emergency engines operating less than 500 hours in a 12-month rolling period. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(8) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.

Peak-Shaving Generators

Unit	Capacity (hp)	Fuel Burned	Presumptive RACT2 Regulation
G-01 with DOC	1085	Diesel	25 PA Code 129.97 (g)(3)(i)
G-02 with DOC	1085	Diesel	25 PA Code 129.97 (g)(3)(i)
G-03 with DOC	1085	Diesel	25 PA Code 129.97 (g)(3)(i)
G-07 with DOC	1085	Diesel	25 PA Code 129.97 (g)(3)(i)

All four (4) peak-shaving generators have NOx and VOC emission limits of 2.0 grams per brake horsepower-hour (g/bhp-hr) and 0.75 g/bph-hr respectively as per Conditions D.1(c)(1)(i) and (iv) of the facility's current Title V Operating Permit No. V08-002 dated 12/11/2009. These emission limits are more stringent than the requirements of 25 PA Code Section 129.97(g)(3)(i)(A)-(B) for stationary internal combustion engines. The presumptive RACT requirements of 25 PA Code Section 129.97(g)(3)(i) are the NOx and VOC emission limits of 3.0 g/bhp-hr and 1.0 g/bhp for natural gas or noncommercial gaseous fuel burning stationary internal combustion engines rated equal to or greater than 500 bhp.

RACT2 Summary:

AMS has determined the following for the 2008 8-hr RACT:

- 1. All existing NOx emitting sources at the facility are complying with presumptive RACT requirements as mentioned above.
- 2. Four boilers at the facility are rated 16 MMBTU/hr or less and will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(3) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 3. Nine boilers at the facility are rated at 33.5 MMBTU/hr and will meet the presumptive RACT requirements of 25 PA Code 129.97(b)(1) which is the performance of a biennial tune-up conducted in accordance with the procedures in 40 CFR 63.11223.
- 4. All fifteen emergency generators and one fire pump will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(8) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 5. All four peak-shaving generators each rated at 1085 hp and firing natural gas will meet the presumptive RACT requirements of 25 PA Code Section 129.97(g)(3)(i)(A)-(B) which is the emission limits of 3.0 g NOx/bhp-hr and 1.0 g VOC/bhp respectively.
- 6. All sources at Children's Hospital of Philadelphia will be complying with presumptive RACT requirements as mentioned above.

5/1/20

Edward Wiener, Chief of Source Registration

Date

InterOffice	Memo
To:	File
From:	Nicole Stilwell
Date:	May 1, 2020
Subject:	2008 8-Hour RACT Analysis for Exelon Generating Company - Delaware Station

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of VOC and NOx. Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

Exelon (formerly PECO) - Delaware Station owns and operates an electric utility in Philadelphia, Pennsylvania. Equipment currently used at the facility includes four simple cycle combustion turbines. The facility was owned by PECO Energy Company at the time of the original RACT plan approval, but changed to ownership to Exelon in October 2000.

Applicability for NOx and VOC RACT:

Exelon – Delaware Station is a major source of Nitrogen Oxides (NOx) having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS.

Exelon – Delaware Station is not a major source of Volatile Organic Compounds (VOC) having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS.

Process Descriptions:

The facility's air emission sources contributing to NOx emissions include the following:

- 3 combustion turbines each rated 233 MMBTU/hr burning No. 2 oil and kerosene.
- 1 combustion turbine rated 284 MMBTU/hr burning No. 2 oil and kerosene.

Presumptive RACT:

The following sources are covered by presumptive RACT regulations, as is specified in the "Presumptive RACT2 Regulation" column of the table on the next page.

Unit	Heat Input (MMBTU /hr)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
Combustion Turbine #12	233	No. 2 fuel oil & Kerosene	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
Combustion Turbine #11	233	No. 2 fuel oil & Kerosene	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
Combustion Turbine #10	233	No. 2 fuel oil & Kerosene	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
Combustion Turbine #9	284	No. 2 fuel oil & Kerosene	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)

All four (4) combustion turbines at the facility are rated equal to or less than 284 MMBTU/hr and meet the requirements of 25 PA Code Section 129.97(c)(7) which is applicable to fuel-burning units with an annual capacity factor of less than 5%. As per 25 PA Code Section 129.97(c)(7)(i) for an electric generating unit, the annual capacity factor is the ratio of the unit's actual electric output expressed in MWe/hr to the unit's nameplate capacity multiplied by 8,760 hours during a period of 12 consecutive calendar months. Each combustion turbine accepted a 5% annual capacity factor in the RACT Plan Approval (PA Permit Number 51-4904) dated July 11, 2001 which is included under Condition D.2(a)(1) in the facility's current Title V Operating Permit No. V11-038 dated 11/20/2012.The presumptive RACT requirement of 25 PA Code Section 129.97(c)(7) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(7) is included under Condition D.2(a)(2) in the facility's current Title V Operating Permit No. V11-038 dated 11/20/2012. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(7) is included under Condition D.2(a)(2) in the facility's current Title V Operating Partices. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(7) is included under Condition D.2(a)(2) in the facility's current Title V Operating Permit No. V11-038 dated 11/20/2012.

RACT2 Summary:

AMS has determined the following for the 2008 8-hr RACT:

- 1. All existing NOx emitting sources at the facility are complying with presumptive RACT requirements as mentioned above.
- 2. Four combustion turbines at the facility have accepted the annual capacity factor of less than 5% as per the facility's Title V Operating Permit No. V11-038 dated 11/20/2012 and will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(7) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 3. All sources at Exelon Delaware Station will be complying with presumptive RACT requirements as mentioned above.

5/1/20

Edward Wiener, Chief of Source Registration

Date

InterOffice	Memo
To:	File
From:	Nicole Stilwell
Date:	May 1, 2020
Subject:	2008 8-Hour RACT Analysis for Exelon Generating Company - Schuylkill Station

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of VOC and NOx. Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

Exelon Generation Company - Schuylkill Station owns and operates an electric utility in Philadelphia, Pennsylvania. Equipment used at the facility includes two (2) simple cycle combustion turbines. The facility was owned by PECO Energy Company at the time of the original RACT plan approval, but changed to ownership to Exelon in October 2000.

Applicability for NOx and VOC RACT:

Exelon – Schuylkill Station is a major source of Nitrogen Oxides (NOx) having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS.

Exelon – Schuylkill Station is not a major source of Volatile Organic Compounds (VOC) having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS.

Process Descriptions:

The facility's air emission sources contributing to NOx emissions include the following:

- 1 combustion turbine rated 233 MMBTU/hr burning No. 2 oil and kerosene;
- 1 combustion turbine rated 284 MMBTU/hr burning No. 2 oil and kerosene;

The facility had one boiler in the original RACT plan approval that was rated 1,530 MMBTU/hr and burned No. 6 oil as the primary fuel and No. 2 oil as the ignition fuel. This boiler was shutdown in 2012 and is expected to be permanently retired. The facility had one emergency generator in the original RACT plan approval that was rated 2.75 MW and burned No. 2 oil and kerosene. This emergency generator has since been removed from the facility in 2017.

Presumptive RACT:

The following sources are covered by presumptive RACT regulations, as is specified in the "Presumptive RACT2 Regulation" column of the table on the next page.

Unit	Heat Input (MMBTU /hr)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
Combustion Turbine #10	233	No. 2 fuel oil & Kerosene	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
Combustion Turbine #11	284	No. 2 fuel oil & Kerosene	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)

All two (2) combustion turbines at the facility are rated equal to or less than 284 MMBTU/hr and meet the requirements of 25 PA Code Section 129.97(c)(7) which is applicable to fuel-burning units with an annual capacity factor of less than 5%. As per 25 PA Code Section 129.97(c)(7)(ii) for an electric generating unit, the annual capacity factor is the ratio of the unit's actual electric output expressed in MWe/hr to the unit's nameplate capacity multiplied by 8,760 hours during a period of 12 consecutive calendar months. Each combustion turbine accepted a 5% annual capacity factor in the RACT Plan Approval (PA Permit Number 51-4904) dated July 11, 2001 which is included under Condition D.2(b)(1) in the facility's current Title V Operating Permit No. V12-004 dated 11/20/2012. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(7) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(7) is included under Condition D.2(b)(2) in the facility's current Title V Operating Permit No. V12-004 dated 11/20/2012.

RACT2 Summary:

AMS has determined the following for the 2008 8-hr RACT:

- 1. All existing NOx emitting sources at the facility are complying with presumptive RACT requirements as mentioned above.
- 2. Two combustion turbines at the facility have accepted the annual capacity factor of less than 5% as per the facility's Title V Operating Permit No. V12-004 dated 11/20/2012 and will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(7) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 3. All sources at Exelon Schuylkill Station will be complying with presumptive RACT requirements as mentioned above.

5/1/20

Edward Wiener, Chief of Source Registration

Date

InterOffice	e Memo
To:	File
From:	Nicole Stilwell
Date:	May 1, 2020
Subject:	2008 8-Hour RACT Analysis for Exelon Generating Company - Southwark Station

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of VOC and NOx. Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

Exelon (formerly PECO) - Southwark Station owns and operates an electric utility in Philadelphia, Pennsylvania. Equipment currently used at the facility includes four simple cycle combustion turbines. The facility was owned by PECO Energy Company at the time of the 1-hour RACT plan approval, but changed to ownership to Exelon in October 2000.

Applicability for NOx and VOC RACT:

Exelon – Southwark Station is a major source of Nitrogen Oxides (NOx) having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS.

Exelon – Southwark Station is not a major source of Volatile Organic Compounds (VOC) having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS.

Process Descriptions:

The facility's air emission sources contributing to NOx emissions include the following:

• 4 combustion turbines each rated 233 MMBTU/hr burning No. 2 oil, kerosene, and methane.

Presumptive RACT:

The following sources are covered by presumptive RACT regulations, as is specified in the "Presumptive RACT2 Regulation" column of the table on the next page.

Combustion Turbines

Unit	Heat Input (MMBTU /hr)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
Combustion Turbine #6	233	No. 2 fuel oil, Kerosene, & Methane	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
Combustion Turbine #5	233	No. 2 fuel oil, Kerosene, & Methane	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)

Combustion Turbine #4	233	No. 2 fuel oil, Kerosene, & Methane	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
Combustion Turbine #3	233	No. 2 fuel oil, Kerosene, & Methane	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)

All four (4) combustion turbines at the facility are rated at 233 MMBTU/hr and meet the requirements of 25 PA Code Section 129.97(c)(7) which is applicable to fuel-burning units with an annual capacity factor of less than 5%. As per 25 PA Code Section 129.97(c)(7)(i) for an electric generating unit, the annual capacity factor is the ratio of the unit's actual electric output expressed in MWe/hr to the unit's nameplate capacity multiplied by 8,760 hours during a period of 12 consecutive calendar months. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(7) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices. Each combustion turbine accepted a 5% annual capacity factor in the 1-hour RACT determination dated July 11, 2001 and is covered under the presumptive RACT requirement of 25 PA Code Section 129.97(c)(7). The presumptive RACT requirement of 25 PA Code Section 129.97(c)(7) is also included under Condition D.2(a)(1) in the facility's current Title V Operating Permit No. V15-002 dated 9/29/2017.

RACT2 Summary:

AMS has determined the following for the 2008 8-hr RACT:

- 1. All existing NOx emitting sources at the facility are complying with presumptive RACT requirements as mentioned above.
- 2. Four combustion turnbines at the facility are each rated 233 MMBTU/hr and will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(7) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 3. All sources at Exelon Southwark Station will be complying with presumptive RACT requirements as mentioned above.

5/1/20

Edward Wiener, Chief of Source Registration

Date

InterOffice MemoTo:FileFrom:Rahel GebrekidanDate:May 1, 2020Subject:8-Hour RACT Analysis for Inolex Chemical Company

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS.

Company Description:

Inolex Chemical Company is located at Jackson and Swanson St., Philadelphia, PA 19148. The facility is a chemical manufacturing facility.

Applicability for NOx and VOC RACT:

Inolex Chemical Company is not a major source of NOx having potential emissions less than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS.

Inolex Chemical Company is not a major source of VOC having potential emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS.

Process Descriptions:

The facility's air emissions sources include the following:

- One (1) 52 MMBtu/Hr but limited to 49 MMBTU/hr boiler burning No. 2 oil and natural gas and is equipped with low NOx burners
 - Unit ID: "Boiler #2";
- One (1) 49 MMBtu/Hr. boiler burning No. 2 oil and natural gas and is equipped with low NOx burners
 - Unit ID: "Boiler #1";
- One (1) 20 MMBtu/hr. boiler burning No. 2 oil and natural gas
 - Unit ID: "Boiler #3"
- One (1) 6.5 MMBtu/Hr. boiler burning No. 2 oil/natural gas

 Unit ID: "Hot Oil Boiler"
- Seven (7) Reactor and Vent Condenser
- One (1) Reactor Tank
- One (1) Distillation Column and Vent Condenser
- One (1) Deodorizer Tank and Vent Condenser

- One (1) DMAPA Scrubber
- One (1) Emergency Generator 150 HP

2008 8-hour RACT

Inolex Chemical were a major source of NOx for 1997 8-hour RACT but are now a minor source Since Inolex Chemical Company is not a major source of NOx or VOC, the facility is not applicable to RACT for the 2008 8-hour ozone NAAQS. However, each boiler must still comply with the following Presumptive RACT requirements from 1997 8-hour ozone RACT.

- For Boiler #2 and Boiler #3, the presumptive RACT requirements are the performance of annual adjustments or tune-ups of the boilers, and keeping corresponding records.
- For Hot Oil Boiler, the presumptive RACT requirements are the installation, operation, and maintenance of the boiler as per the manufacturer's specifications.

Conclusions and Recommendations:

Inolex is now a minor source of NOx and VOC emissions and is not applicable to RACT for the 2008 8-hour ozone NAAQS.

5/1/20

Edward Wiener, Chief of Source Registration

Date

InterOffice Memo					
To:	File				
From:	Maryjoy Ulatowski				
Date:	May 1, 2020				
Subject:	RACT Analysis for MIPC LLC - Philadelphia Terminal (PLID # 05004)				

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

The Monroe Interstate Pipeline Company (MIPC), Limited Liability Corporation (LLC) - Philadelphia Terminal (formerly ConocoPhillips and Tosco Corporation) is a gasoline terminal located at G Street and Hunting Park Avenue, Philadelphia, PA 19124. The facility's air emission sources include the following:

- One petroleum product truck loading rack. The truck loading rack is controlled by a vapor recovery unit (VRU);
- Five (5) Light Petroleum products storage tanks (each greater than 40,000 gallons and each stores materials with vapor pressures > 1.5 pounds per square inch (psi));
- One (1) Storage Tank (formerly transmix tank- 39,900 gallons, stores materials with Reid Vapor Pressure (RVP) of less than 4);
- Two (2) oil-water separators;
- Light Liquid/Vapor Components Fugitives;
- Three (3) Additive Tanks (each less than 40,000 gallons and each storing materials with vapor pressures less than or equal to 1.5 psi.)

The facility's Title V Operating Permit inventory lists a Transmix Storage Tank (1330). The transmix refers to the interface mixture between two separate products as they are shipped though pipelines. A conservative assumption is that transmix has identical chemical and physical properties to that of gasoline. 25 Pa Code defines gasoline as a petroleum distillate having a RVP of 4 pounds per square or greater and which is a liquid at a standard temperature and pressure. No transmix loading to the transmix loading tank has occurred at the facility since the 2012 change of ownership from Conoco Phillips to MIPC, LLC. The Transmix Storage Tank is not used as a transmix tank at the present. The transmix tank is now used as a surge tank which is used as a safety device in order to protect the pipeline at the facility in an event of overpressure in the system. The storage/surge tank(1330) must comply with 25 PA Code 129.57 when storing VOCs with vapor pressure greater than 1.5 psi. The tank is equipped with pressure relief valve and 25 PA Code 129.57 requires the valve to be maintained in good operating condition and are set to release at no less than 0.7 psig of pressure or 0.3 psig of vacuum or the highest possible pressure and vacuum in accordance with state or local fire codes or the National Fire Prevention Association guidelines or other national consensus standard acceptable to the Department.

The facility's Title V Operating Permit inventory also lists a transmix loading spot. No transmix loading at the transmix loading spot has occurred at the facility since the 2012 change of ownership from Conoco Phillips to MIPC, LLC. The transmix loading spot is considered deactivate source and will require an installation permit or Plan Approval if the facility decides to load transmix again in the future.
Applicability for NOx and VOC RACT:

MIPC, LLC is not a major source of Nitrogen Oxides (NOx). The potential NOx emission from the facility is limited by the issued AMS permits to less than 100 tons per year the major source threshold in Philadelphia County that is not applicable to NOx RACT.

MIPC, LLC is a major source of Volatile Organic Compound (VOC) emissions having potential VOC emissions of greater than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT 2008 8-hour ozone NAAQS.

Process Descriptions:

The VOC emissions units at MIPC LLC include the following:

Group	Source	Source Description	1997 8hr Ozone	2008 8hr Ozone
	ID		RACT CTG	RACT CTG Regulation
			Regulation	
01	P03	One Truck Loading Rack vented	25 Pa Code 129.59	25 Pa Code 129.59 and
		to theVRU	and 129.62	129.62
01	P020	Transmix Loading Spot	25 Pa Code 129.57	25 Pa Code 129.56
02	04	Storage Tank 1303	25 Pa Code 129.56	25 Pa Code 129.56
02	05	Storage Tank 1322	25 Pa Code 129.56	25 Pa Code 129.56
02	06	Storage Tank 1311	25 Pa Code 129.56	25 Pa Code 129.56
02	07	Storage Tank 1314	25 Pa Code 129.56	25 Pa Code 129.56
	019	Storage Tank 1330 (Formerly the	25 Pa Code 129.57	25 Pa Code 129.57
		transmix tank)		
04	017 and	Two (2) Oil/Water Separators:	AMR V Sec III.	AMR V Sec III.
	018	1 - 4000 gals & 1-10,000 gals		
	P07	Light Liquid/Vapor Components	AMR V, Section XIII	AMR V, Section XIII
		Fugitives.		

The following are insignificant sources of VOCs with a potential to emit less than 1tpy:

Source	Source Description	1997 8hr Ozone	2008 8hr Ozone
ID		RACT Regulation	RACT Regulation
	3 Additive Tanks	De minimus Source	25 Pa Code 129.96(c)
	#1300- Approx 2000 gallons,		
	#1350 - Approx 10,000 gallons, &		
	#1351 - Approx 19,900 gallons		

RACT 2 Analysis:

In accordance with 25 PA Code 129.96 (a)-(b), the RACT 2 requirements of 129.97-100 do not apply to emission sources for which the requirement or emissions limitation, or noth, has been established in 20 Pa code 129.51-52(c), 129.54-69, 129,71-73, 129.75, 129.77, 129.101-107, and 129.301-310. The Truck Loading Rack is equipped with Vapor Recovery Unit and complies with the presumptive RACT requirements of 25 PA Code 129.59 and 129.62.

The Light Petroleum Storage Tanks will comply with the presumptive RACT requirement of 25 PA Code 129.56.

When storing materials with vapor pressures greater than 1.5 psi, the former Transmix Tank will comply with the presumptive RACT requirement of 25 PA Code129.57.

The two Oil/Water Separators complies with CTG (EPA-450/2-77-025) by complying with AMR V Sec III .

The facility must comply with the CTG regulation AMR V, Section XIII for process equipment leaks. AMR V, Section XIII is in the SIP; therefore, it is considered presumptive/CTG RACT. Process equipment components cannot have VOC leaks that result in VOC concentrations of 10,000 ppmv or greater or are in a liquid state.

Three Additive Storage Tanks have a potential to emit less than one ton per year of VOC and are exempt from RACT 2 requirements of 25 PA Code 129.97-129.100.

RACT Recommendations/Conclusions:

For the 2008 8-hr RACT, all the sources at the facility are covered by presumptive or CTG RACT requirements or are insignificant sources.

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5/1/20

Edward Wiener, Chief of Source Registration

InterOfficeMemoTo:FileFrom:Nicole StilwellDate:May 1, 2020Subject:2008 8-Hour RACT Analysis for The Navy Foundry and Propeller Center (PLID # 09702)

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of VOC and NOx. Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

The Naval Foundry and Propeller Center (NFPC) is located at 1701 Kitty Hawk Ave, Philadelphia, PA 19112. The NFPC is a Navy facility for the manufacturing of propellers with cement mixing, metal melting, metal stress relieving, and metal grit blasting facility as per foundry operations and a machining, degreasing, painting and blasting of metal parts facility as per the machine shop.

Applicability for NOx and VOC RACT:

The NFPC is not a major source for Nitrogen Oxides (NOx) having potential NOx emissions less than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS. This facility was a major source of NOx having potential emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 1997 8-hour ozone NAAQS. The facility became a Synthetic Minor for NOx in December of 2016 and have accepted the facility wide emission limit less than of 25 tons of NOx on a rolling 12-month period as per Condition D.1(a)(1) of Synthetic Minor Operating Permit No. S16-001 dated 12/5/2016. Therefore the facility is not applicable to NOx RACT requirements.

The NFPC is not a major source of Volatile Organic Compounds (VOC) having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS. This facility was also not a major source of VOC having potential emissions of less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 1997 8-hour ozone NAAQS. The VOC sources at the facility have not changed since the 1997 8-hour RACT Analysis and still include a propeller cold cleaning degreaser, two paint spray booths, and film developing.

Conclusions and Recommendations:

Since the potential for NOx and VOC sources are below the applicable RACT threshold limits, the facility is not applicable to RACT under the 2008 8-hour ozone standard.

5/1/20

Edward Wiener, Chief of Source Registration

InterOffice MemoTo:FileFrom:Maryjoy UlatowskiDate:May 1, 2020Subject:2008 8-Hour RACT Analysis for PBF Logistics Products Terminal, LLC (Formerly Plains Products Terminals LLC)

I. Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 1997 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

II. Company Description:

PBF Logistics Products Terminal, LLC was formerly known as Plains Products Terminals under the 1997 8hr RACT. The facility changed ownership in 2016,. The facility includes a North and South Terminal which are adjacent. During the 1997 - 1hr RACT, the North Terminal was formerly known as Maritank and the South Terminal was known as Exxon Mobil.

III. Applicability for NOx and VOC RACT:

PBF Logistics Products Terminal, LLC is not a major source for NOx since the potential NOx emissions are less than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS.

PBF Logistics Products Terminal, LLC is a major source of VOC having potential VOC emissions greater than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS the major source threshold in Philadelphia County that is applicable to VOC RACT for the 1997 8-hour ozone NAAQS. Permit # PA-51-5013 effective on 2/9/ 2016 approved by EPA into the Pennsylvania State Implementation Plan (SIP) on October 7, 2016 (Federal Registrar Vol. 81, No.195).

IV. Process Description

The facility's air emissions sources contributing to VOC emissions include the following:

North Terminal:

- One (1) 26.2 MMBTU/hr Thermal Fluid Heater with Low NOx burners firing No. 2 fuel oil or natural gas;
- One (1) 4.72 MMBTU/hr boiler firing No. 2 oil or natural gas;
- Truck loading operations at the rack, controlled and uncontrolled (P-2);
- One vapor incinerator (CD-01);
- Marine loading operations or petroleum/organic products with a Reid Vapor Pressure of less than 4.0 psi (non-gasoline) (P-1);
- Tank maintenance and cleaning operations (insignificant under facility's TVOP);
- Fugitive emissions from pumps, valves, and flanges; (P-5) and
- Insignificant sources:
 - o Three (3) fuel tank or boiler feed tank (T-14, T-15, T-16) and two (5) recovery tanks (T-18 thru T-22), each with a capacity less than 40,000 gallons and each storing petroleum/ organic products with vapor pressures (v.p.) ≤1.5 psi. Each tank fall under presumptive RACT.
 - o Ten (10) storage tanks, each storing petroleum or organic materials with a v.p. ≤ 1.5 psia (T-1, T-2, T-3, T4, T-5, T9, T-10, T-11, T-13, and T-14). T-1, T-2, T-3, T-4, and T-5 were not listed in the previous RACT memo but were sources listed as insignificant in the facility's Title V Operating Permit No. V10-025.
 - Lubricity Additive System (P110)

South Terminal:

- Six (6) space heaters each 0.25 MMBTU/hr or less and each burning natural gas (insignificant under the facility's TVOP);
- Ten (10) storage tanks (P7, P8, P60, P65, P68, P69, P70, P71, P72, and P73) each with a capacity greater than or equal to 400,000 gallons and each storing petroleum/ organic products with vapor pressures (v.p.) ≤11.1 psi.
- Truck loading operations at the rack, controlled and uncontrolled (P-2);
- One (1) Carbon Absorption Vapor Recovery Unit equipped with two (2) carbon beds (CD-04);
- Tank maintenance and cleaning operations;
- Fugitive emissions from pumps, valves, and flanges; (P-5)
- Parts Cleaners
- Insignificant sources:
 - 26 storage tanks, each storing each storing petroleum or organic materials with a v.p. less < 1.5 psia (P5, P10, P13, P14, P16, P103, P104 {included 15 small tanks less than 500 gallons each}, P105, P106, P107, P108, and P109)
 - Lubricity Additive System (P111)

Since the 8hr 1997 RACT, the following sources have been shut down:

- 20 MMBTU./hr boiler (Replaced by the 26.2 MMBTU/hr Boiler)
- T-23 and T-24 (Recovery Over FlowTanks)
- TBN4 and TBN5

V. RACT Analysis:

A: Combustion Sources; All Presumptive Sources

Source	Location	Source	Capacity	Fuel/ Material	1997 8hr	2008 8hr
ID		Description			Ozone RACT	Ozone
CU-2	North	Boiler	4.74	No. 2 and Natural	25 Pa Code	25 Pa Code
	Terminal		MMBTU/hr	Gas	129.93(c)(1)	129.97(c)(3)
CU-3	North	Thermal Fluid	26.2	No. 2 and	N/A	25 Pa Code
	Terminal	Boiler with Low	MMBTU/hr	Natural Gas		129.97(c)(3)
		NOx Burner.				
P103 IN	South	Space Heating	Six (6) 0.25	Natural Gas	129.93(c)(1)	25 Pa Code
	Terminal	units	MMBTU/hr			129.97(c)(3)

Table V.A - Combustion Sources, All Presumptive Sources

RACT Analysis-Combustion Sources

Each combustion unit is complying with the presumptive RACT requirements of 25 PA Code 129.97(c). The presumptive RACT requirements of 25 Pa Code 129.97(c)(3) is the installation, maintenance, and operation of the source in accordance with manufacturer's specification and with good operating practices.

In addition to the above requirement, the 26.2 MMBT/hr Thermal Fluid Heater, the will also be complying with the presumptive RACT requirements of 129.97(b)(1) which is a biennial tune-ups in accordance with 40 CFR 63.11223.

B. Storage Tanks - Petroleum/organic products storage tanks, each with a capacity greater than or equal to 40,000 gallons and containing VOCs (vapor pressure > 1.5psia)

Source ID	Location	Source Descript ion	Tank Type	Capacity, Gallons (barrels)	Fuel/ Material	1997 8hr Ozone	2008 8hr Ozone
T-07	North Terminal	Tank #15006	Internal Floating Roof (IFR)	4,725,000 (150,000 barrels)	Stores Petroleum/ Organic Products (> 1.5 psia v.p. ≤11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
T-08	North Terminal	Tank #4007	IFR	1,260,000 (40,000 barrels)	Stores Petroleum/ Organic Products (> 1.5 psia v.p. \leq 11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
T-12	North Terminal	Tank #4511	Vertical Floating Roof (VFR)	1,1417,500	Stores Petroleum/ Organic Products (> 1.5 psia v.p. ≤11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
P7	South Terminal	Tank #5407	IFR	2,253,132	Stores Petroleum/ Organic Products (> 1.5 psia v.p. ≤11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
P8	South Terminal	Tank #5408	IFR	2,256,224	Stores Petroleum/ Organic Products (> 1.5 psia v.p. ≤11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
P60 (S)	South Terminal	Tank #5460	IFR	2,279,802	Stores Petroleum/ Organic Products (> 1.5 psia v.p. ≤11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
P65(S)	South Terminal	Tank #1965	IFR	817,572	Stores Petroleum/ Organic Products (> 1.5 psia v.p. ≤11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
P68(S)	South Terminal	Tank #6768	Domed Floating Roof	2,752,218	Stores Petroleum/ Organic Products (> 1.5 psia v.p. \leq 11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
P69(S)	South Terminal	Tank #4069	Domed Floating Roof	1,664,082	Stores Petroleum/ Organic Products (> 1.5 psia v.p. \leq 11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
P70(S)	South Terminal	Tank #6070	Domed Floating Roof	2,482,788	Stores Petroleum/ Organic Products (> 1.5 psia v.p. <11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
P71(S)	South Terminal	Tank #9771	Domed Floating Roof	3,975,132	Stores Petroleum/ Organic Products (> 1.5 psia v.p. ≤ 11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
P72(S)	South Terminal	Tank #6073	IFR	2,588,334	Stores Petroleum/ Organic Products (> 1.5 psia v.p. ≤11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
P73(S)	South Terminal	Tank #6072	Domed Floating Roof	2,516,724	Stores Petroleum/ Organic Products (> 1.5 psia v.p. ≤11.1 psi)	25 Pa Code 129.56	25 Pa Code 129.56
T-1	North	Storage Tank 5001	VFR	54,000 barrels	Petroleum/Organic Products (v.p <=1.5 psia)		25 Pa Code 129.56
T-2	North	Storage Tank 15001	VFR	150,000 barrels	Petroleum/Organic Products (v.p <=1.5 psia)		25 Pa Code 129.56
T-4	North	Storage Tank	VFR	150,000 barrels	Petroleum/Organic Products (v.p <=1.5 psia)		25 Pa Code 129.56

<u>Table V.B - Storage Tanks</u>, each with a capacity greater than or equal to 40,000 gallons and containing VOCs (vapor pressure > 1.5psia, All CTG Sources

		15003				
T-5	North	Storage Tank 8004	VFR	81,250 barrels	Petroleum/Organic Products (v.p <=1.5 psia)	25 Pa Code 129.56

RACT Analysis-Storage Tanks Greater than 40,000 gallons and containing VOCs (1.5 psia< v.p<=11.1)

The storage tanks above are covered by regulations approved in the SIP to address RACT consistent with EPA's Control Technique Guidelines (CTGs), or CTG RACT regulations. For the fourteen (14) storage tanks with capacities greater than 40,000 gallons, since each unit stores petroleum/organic products with a vapor pressure ≤ 11 psi, the RACT requirement is the installation of an external or an internal floating roof, in accordance with 25 PA Code 129.56(a)(1), or vapor recovery system. Per table above, each tank is either an Internal Floating roof (IFR), Vertical Fixed Roof (VFR), or Domed Roof and controlled by the vapor incinerator when loading gasoline.

C. Storage Tanks - Petroleum/organic products storage tanks materials with vapor pressures > 1.5psia.

RACT Analysis-Storage Tanks Containing materials with v.p >= 1.5 psia

The following tanks contain petroleum products or organic materials with vapor pressures less than or equal to 1.5 psia. Each tank from AMS IP18000-355 dated 10/12/2018 has a VOC emission limit of less than 2.7 tons per 12 month rolling period. Each tank is complying with the complying with the presumptive RACT requirements of 129.97(c)(2). The presumptive RACT requirement for a source that is less than 2.7 tons per year of VOC is to install, maintain, and operate the source in accordance with the manufacturer's specifications and with good operating practices.

TVOP V10-025	Location	Storage Tank (ST) No. / Description	Size / Capacity	Type of Tank	Material / Fuel	1997 8hr Ozone	2008 8hr Ozone
ID		I	1 5				
P5(S)	South	Storage Tank	1,995,586	Fixed	Petroleum/Organic	De Minimis	25 Pa Code
		# 5	gallons	Roof	Products (v.p <=1.5 psia)	Sources	129.97(c)
P10(S)	South	Storage Tank	10,038	Fixed	Additive/	De Minimis	25 Pa Code
		# 10	gallons	Roof	Petroleum/Organic	Sources	129.97(c)
					Products (v.p <=1.5 psia)		
P13(S)	South	Storage Tank	10,038	Fixed	Additive/	De Minimis	25 Pa Code
		# 13	gallons	Roof	Petroleum/Organic	Sources	129.97(c)
					Products (v.p <=1.5 psia)		
P14(S)	South	Storage Tank	9,500	Fixed	Additive/	De Minimis	25 Pa Code
		# 14	gallons	Roof	Petroleum/Organic	Sources	129.97(c)
					Products (v.p <=1.5 psia)		
P15(S)	South	Storage Tank	9,500	Fixed	Additive/	De Minimis	25 Pa Code
		# 15	gallons	Roof	Petroleum/Organic	Sources	129.97(c)
					Products (v.p <=1.5 psia)		
P16(S)	South	Storage Tank	3,000	Fixed	Additive/	De Minimis	25 Pa Code
		# 16	gallons	Roof	Petroleum/Organic	Sources	129.97(c)
					Products (v.p <=1.5 psia)		
T-13	North	Therminol Tank 1		Fixed	Petroleum/Organic	De Minimis	25 Pa Code
				Roof	Products (v.p <=1.5 psia)	Sources	129.97(c)
T-14	North	Therminol Tank 2		Fixed	Petroleum/Organic	De Minimis	25 Pa Code
				Roof	Products (v.p <=1.5 psia)	Sources	129.97(c)
T-15	North	Fuel Tank	4000	Fixed	No. 2 Oil, Diesel	De Minimis	25 Pa Code
			gallons	Roof		Sources	129.97(c)
T-16	North	Boiler Feed Tank		Fixed	No. 2 Oil, No. 4 Oil, and	De Minimis	25 Pa Code

Table V.C - Storage Tank storing organic products storage tanks materials with vapor pressures < 1.5psia., All <u>Presumptive Sources</u>

		1		Roof	No. 6 Oil	Sources	129.97(c)
T-17	North	Boiler Feed Tank		Fixed	No. 2 Oil, No. 4 Oil, and	De Minimis	25 Pa Code
		2		Roof	No. 6 Oil	Sources	129.97(c)
T-18	North	Recovery Tank 1	8,814	Fixed	Petroleum/Organic	De Minimis	25 Pa Code
			gallons	Roof	Products	Sources	129.97(c)
T-19	North	Recovery Tank 2	8,814	Fixed	Petroleum/Organic	De Minimis	25 Pa Code
			gallons	Roof	Products	Sources	129.97(c)
T-20	North	Recovery Tank 3	8,814	Fixed	Petroleum/Organic	De Minimis	25 Pa Code
			gallons	Roof	Products	Sources	129.97(c)
T-21	North	Recovery Tank 4	8,814	Fixed	Petroleum/Organic	De Minimis	25 Pa Code
			gallons	Roof	Products	Sources	129.97(c)
T-22	North	Recovery Tank 5	8,814	Fixed	Petroleum/Organic	De Minimis	25 Pa Code
			gallons	Roof	Products	Sources	129.97(c)

D. Tank Degassing and Cleaning Operations

Table V. D. Tank Cleaning	g and Cleaning	Operations: Presumptive

Source ID	Location	Source Description	Capacity	Fuel/ Material	1997 8hr Ozone RACT	2008 8hr Ozone RACT
P103	North and South	Tank cleaning and			Case-by-	Presumptive,
IN	Terminals	Degassing			Case	CTG

RACT Analysis - Tank Cleaning and Degassing Operations

The tank degassing and cleaning operations are listed in the Title V No. V10-025 dated5/24/2011 as insignificant, but it is not insignificant as the potential VOC is well above 1 tons per year in some tanks. Tanks are degassed and cleaned when the tank is taken out for API inspections or for unforeseen reasons.

IP18-000335 dated 10/17/2018 established a less than 2.7 ton VOC emission limit per 12 month period rolling for each tank cleaning event from the tanks in Table V.B - Storage Tanks, each with a capacity greater than or equal to 40,000 gallons and containing VOCs (vapor pressure > 1.5psia). These tanks will meet the requirements of 25 Pa Code 129.56 by either having an internal floating roof or are controlled by a vapor recovery system.

IP18-000335 dated 10/17/2018 established a less than 2.7 ton VOC emission limit per 12 month period rolling for each tank the Table V.C. The 2.7 tpy VOC emission limit for each tank includes loading losses as well as tank cleaning and degassing losses.

For tanks in Tables V.B and V.C and for tank degassing and cleaning operations, the facility is complying with the presumptive RACT requirements of 129.97(c)(2). The presumptive RACT requirement for a source that is less than 2.7 tons per year of VOC is to install, maintain, and operate the source in accordance with the manufacturer's specifications and with good operating practices.

Source ID	Location	Source Description	Capacity	Fuel/ Material	1997 8hr Ozone RACT	2008 8 hr Ozone RACT
P-2	South Terminal	Controlled Truck Loading Operations at the South Rack.		Gasoline	Not addressed.	Complying with a CTG RACT. 25 Pa Code 129.59
	North Terminal	Uncontrolled Truck Loading Operations at the North Rack.		Distillates / Residual Oil	De Minimis Sources	Complying with Presumptive RACT, IP18-000355 dated 10/17/2018 established a less than 2.7 ton per 12 month rolling permit limit for VOCs. 25 Pa Code 129.97(c)(2) 25 Pa Code 29.97(c)(3)
CD-01	North Terminal	One (1) Vapor Incinerator	Burner < 20 MMBTU/hr 252,000 gallons/hr			
CD-04	South Terminal	One (1) Carbon Absorption Vapor Recovery Unit equipped with two (2) carbon beds				

E.. Truck Loading Operations and Control Devices

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RACT Analysis - Controlled Truck Loading at the Rack

Loading of VOC materials with a RVP greater than or equal to 4.0 psi continues to be subject to the CTG RACT regulation 25 PA Code 129.59(a). Controlled tank car loading occurs at the South Facility.

RACT Analysis - Uncontrolled Truck Loading at the Rack

Uncontrolled truck loading operations shall comply with the presumptive RACT requirements of 25 PA Code 129.97(c) and (25 PA Code 129.97(c) (2). IP18-000335 dated October 17, 2018 limits uncontrolled loading at the facility to less than 2.7 tons per 12 month rolling period. The presumptive RACT requirements of 25 Pa Code 29.97(c)(2) is the installation, maintenance, and operation of the source in accordance with manufacturer's specification and with good operating practices.

F. Marine Loading Operations - Presumptive

Source	Location	Source	Capacity	Fuel/ Material	1997 8hr	2008 8hr Ozone RACT
ID		Descriptio			Ozone KAC I	
D 1	NT (1			D (1 / '	0 1	
P-1	North	Marine		Petroleum/organi	Case-by-	Presumptive
	Terminal	Loading		c products with a	Case.	RACT
		Operations		Reid Vapor		
				Pressure (RVP)	6.6 VOC	25 Pa Code 129.97(c)(2)
				of less than 4.0	Tpy Limit	
				psi (non-	for Marine	IP16-000231 dated
				gasoline).	Loading	12/1/2016established an
						enforceable limit of
						Less than 2.7 VOC Tpy
						Limit for Marine Loading.

RACT Analysis - Marine Loading Operations

In the 1997 1-hr RACT, marine loading operations were limited loading organic material having a Reid vapor pressure of less than 4.0. In the 8hr 1997 Ozone RACT, marine loading operations at the North Terminal was case by case and was limited to 6.6 tons of VOC per 12 month rolling period. In 2016, Permit No. IP16-000231 was issued on December 1. 2016 and the permit limits VOC emissions for uncontrolled marine loading operations to less than 2.7 tons per year. The limit is more stringent than the previous case-by-case limit. For marine loading operations, the facility is complying with the presumptive RACT requirements of 129.97(c)(2). The presumptive RACT requirement for a source that is less than 2.7 tons per year of VOC is to install, maintain, and operate the source in accordance with the manufacturer's specifications and with good operating practices. The facility will continue to load only VOC materials with a vapor pressure of less than 4.0 psi.

G. Fugitive Emissions: CTG

Source ID	Location	Source Description	Capacity	Fuel/ Material	1997 8hr Ozone RACT	2008 8hr Ozone RACT
P-5	North and South Terminals	Fugitive emissions from light liquids and gasoline from pumps, valves, & flanges			AMR V, Section XIII	AMR V, Section XIII

RACT Analysis - Fugitive Emissions

Fugitive process emission leaks are covered by the regulation, AMR V, Section XIII. As per AMR V Section XIII(1), no person shall cause, suffer, allow or permit volatile organic compounds (VOC) to be emitted from leaking flanges, gaskets, seals, connections, joints, fittings or other process equipment components not involving moving parts, nor shall any person cause, suffer, allow or permit VOC to be emitted from leaking valves, pumps, compressors, safety pressure relief devices or other process equipment components involving moving parts such that:

• The VOC emission from any leaking process equipment component results in a VOC in air concentration of 10,000 parts per million by volume (ppmv), or greater, when measured by test methods approved by the Department.

Per the previous RACT permit, the facility continue to comply with AMR V Section XIII.

H. Parts Cleaner: CTG

Source ID	Location	Source Description	Capacity	Fuel/ Material	1997 8hr Ozone RACT	2008 8hr Ozone RACT
P-109	South Terminal	Parts Cleaner			Not addressed	25 Pa Code 129.93

RACT Analysis - Parts Cleaner

The parts cleaner in the previous RACT memo was considered insignificant and not addressed. The parts degreaser is a cold cleaning machine and is complying with the CTG RACT Requirements of 25 Pa Code 129.63. IP18-000355 dated XXXX also established a less than 2.7 VOC limit ton per 12 month rolling period enforceable limit for cold cleaning operations to also fall under presumptive RACT. The presumptive RACT requirements of 25 Pa Code 29.97(c)(2) is the installation, maintenance, and operation of the source in accordance with manufacturer's specification and with good operating practices.

7. Insignificant Sources - Lubricity Additive System North Terminal Rack and Lubricity Additive System South Terminal Rack

Source ID	Location	Source Description	Capacity, Gallons	Fuel/ Material	1997 8hr Ozone RACT Presumptive Regulation	2008 8hr Ozone RACT
P110, P111	North and South Terminals	Lubricity Additive Systems			Insignificant	Insignificant

The lubricity additive systems each have a PTE less than 1.0 tpy of VOC. Based on AMS permitting and engineering knowledge, AMS determines that installing any control technology on such small sources is both technically and economically unreasonable.

RACT Conclusions and Recommendations:

All sources at the facility is complying with a CTG RACT, presumptive RACT, or is insignificant.

AMS is keeping the previous Case-Case-RACT (PA-05013 RACT requirement had a 6.6 tpy limit for tank degassing and cleaning operations for the facility. In addition to this facility limit for tank degassing and cleaning operations, IP18-000335 dated 10/17/2018 established a less than 2.7 ton VOC emission limit per 12 month period rolling for each tank the Table V.C. The 2.7 tpy VOC emission limit for each tank includes loading losses as well as tank cleaning and degassing losses. Storage Tanks in Table V.B are complying with a presumptive RACT limit as well as a 2.7 tpy limit for tank degassing and cleaning operations.

5/1/20

Edward Wiener, Chief of Source Registration

InterOffice MemoTo:FileFrom:Nicole StilwellDate:May 1, 2020Subject:2008 8-Hour RACT Analysis for Philadelphia Gas Works- Richmond (PLID # 04922)

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of VOC and NOx. Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

Philadelphia Gas Works (PGW) - Richmond Plant owns and operates a natural gas utility located at 3100 East Venango Street in Philadelphia, Pennsylvania.

Applicability for NOx and VOC RACT:

PGW – Richmond Plant is a major source of Nitrogen Oxides (NOx) having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS.

PGW – Richmond Plant is not a major source of Volatile Organic Compounds (VOC) having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS.

The facility had two solar gas turbine electric generators in the 1997 8-hour RACT analysis that were rated 13.7 MMBTU/hr each and burned natural gas. These two solar gas turbine electric generators have been replaced by two Caterpillar diesel emergency generators as per the facility's 10/20/2016 RACT submission and AMS Installation Permit Nos. 13325 and 14003.

Process Descriptions:

The facility's air emission sources contributing to NOx emissions include the following:

- Six (6) Liquefied Natural Gas (LNG) vaporizer heaters rated between 91.5 and 96.6 MMBTU/hr firing natural gas;
- Five (5) boilers/hot water heaters rated 9.1 MMBTU/hr or less firing natural gas;
- Two (2) simple cycle combustion turbines rated 12.5 MMBTU/hr or less firing natural gas;
- Two (2) emergency generators rated 170 hp each and firing natural gas;
- Three (3) fire pumps rated 295 hp each and firing natural gas.

Presumptive RACT:

The following sources are covered by presumptive RACT regulations, as is specified in the "Presumptive RACT2 Regulation" column of the table on the next page.

LNG Vaporizer Heaters

Unit	Heat Input (MMBTU /hr)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
LNG Vaporizer Heater 12A	94.1	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
LNG Vaporizer Heater 12B	91.5	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
LNG Vaporizer Heater 12C	94.1	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
LNG Vaporizer Heater 12D	91.5	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
LNG Vaporizer Heater 12E	96.6	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)
LNG Vaporizer Heater 12F	91.5	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(7)

All six (6) LNG Vaporizer Heaters at the facility are rated between 91.5 and 96.6 MMBTU/hr and meet the requirements of 25 PA Code Section 129.97(c)(7) which is applicable to fuel-burning units with an annual capacity factor of less than 5%. As per 25 PA Code Section 129.97(c)(7)(i) for a combustion unit, the annual capacity factor is the ratio of the unit's heat input expressed in MMBTU to the unit's maximum rated hourly heat input rate in MMBTU/hr multiplied by 8,760 hours during a period of 12 consecutive calendar months. Each combustion turbine accepted a 5% annual capacity factor and total combined annual natural gas usage limit of 257 MMcf/yr as part of the SIP-approved 1-hour RACT which is included under Conditions D.2(a)(5)-(6) in the facility's current Title V Operating Permit No. V11-034 dated 4/10/2013 and Plan Approval No. IP17-000025 dated 5/22/2017. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(7) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(7) is included under Condition D.2(a)(1) in the facility's current Title V Operating Permit No. V11-034 dated 4/10/2013.

Unit	Heat Input (MMBTU /hr)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
H-2 LNG Boiloff Heater	4.5	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
H-3 Regen Gas Heater	11.0	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
Uniflux/Exotherm	9.1	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
GasMaster Boiler 19A-1	1.5	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
GasMaster Boiler 19B-1	1.5	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)

Boilers/Hot Water Heaters

All five (5) boilers/hot water heaters at the facility are rated equal to or less than 11.0 MMBTU/hr and meet the requirements of 25 PA Code Section 129.97(c)(3) which is applicable to boilers or combustion sources with an individual rated gross heat input of less than 20 MMBTU/hr. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(3) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices. The presumptive RACT requirement of 25 PA

Code Section 129.97(c)(3) is included under Conditions D.2(a)(2) and D.2(d)(1) in the facility's current Title V Operating Permit No. V11-034 dated 4/10/2013.

Combustion Turbines

Unit	Heat Input (MMBTU/hr)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
Solar Gas Turbine Compressor 22	11.5	Natural Gas	25 PA Code 129.93 (c)(2)	25 PA Code 129.97 (c)(4)
Solar Gas Turbine Compressor 27	12.5	Natural Gas	25 PA Code 129.93 (c)(2)	25 PA Code 129.97 (c)(4)

All two (2) combustion turbines at the facility are rated equal to or less than 12.5 MMBTU/hr (373.4 bhp) and meet the requirements of 25 PA Code Section 129.97(c)(4) which is applicable combustion turbines with a rated output of less than 1,000 bhp. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(4) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(4) is included under Condition D.2(b)(1) in the facility's current Title V Operating Permit No. V11-034 dated 4/10/2013.

Emergency Generators and Fire Pumps

Unit	Capacity (hp)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
Kohler LNG Control Generator 24	170	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
Kohler LNG Control Generator 25	170	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
Caterpillar Fire Pump 20-A	295	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
Caterpillar Fire Pump 20-B	295	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
Caterpillar Fire Pump 20-C	295	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)

All two (2) emergency generators and three (3) fire pumps are limited to running less than 500 hours per 12-month period as per Conditions D.2(c)(2) and D.2(f)(2) of the facility's current Title V Operating Permit No. V11-034 dated 4/10/2013 and meet the requirements of 25 PA Code Section 129.97(c)(8) which is applicable to emergency engines operating less than 500 hours in a 12-month rolling period. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(8) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.

RACT2 Summary:

AMS has determined the following for the 2008 8-hr RACT:

- 1. All existing NOx emitting sources at the facility are complying with presumptive RACT requirements as mentioned above.
- 2. All six (6) LNG Vaporizer Heaters at the facility have accepted the annual capacity factor of less than 5% as per the facility's Title V Operating Permit No. V11-034 dated 4/10/2013 and will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(7) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 3. All five boilers/hot water heaters at the facility are rated equal to or less than 11.0 MMBTU/hr and will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(3) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 4. All two combustion turbines at the facility are rated equal to or less than 12.5 MMBTU/hr (373.4 bhp) and will meet the requirements of 25 PA Code Section 129.97(c)(4) which is the installation, maintenance, and

operation of the source in accordance with the manufacturer's specifications and with good operating practices.

- 5. All two emergency generators and three fire pumps will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(8) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 6. All sources at PGW Richmond Plant will be complying with presumptive RACT requirements as mentioned above.

5/1/20

Edward Wiener, Chief of Source Registration

InterOffice MemoTo:FileFrom:Nicole StilwellDate:May 1, 2020Subject:8-Hour RACT Analysis for Philadelphia Prison System

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of VOC and NOx. Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

Philadelphia Prison System is a correctional institution which houses inmates. The facility is located at 8001 State Road, Philadelphia, PA 19136.

Applicability for NOx and VOC RACT:

The Philadelphia Prison System is a major source of Nitrogen Oxides (NOx) having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS.

The Philadelphia Prison System is not a major source of Volatile Organic Compounds (VOC) having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS.

Process Descriptions:

The facility's air emission sources contributing to NOx emissions include the following:

- 58 boilers rated less than 15 MMBtu/Hr burning No. 2 oil/ natural gas;
- 10 emergency generators less than or equal to 2,200 hp burning diesel;
- One (1) 365 hp chiller burning natural gas
 - Unit ID: CURCF6.

Presumptive RACT:

The following sources are covered by presumptive RACT regulations, as is specified in the "Presumptive RACT2 Regulation" column of the table on the next page.

Unit	Heat Input (MMBT U/hr)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
CUMAINT1	2.00	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUMAINT2	2.00	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUMAINT3	5.00	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUMAINT4	5.00	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC1	8.00	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC2	8.00	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC3	8.00	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC18	0.25	No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC19	0.27	No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC20	0.80	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC21	0.80	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC22	0.80	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUDC10	7.22	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUDC11	7.22	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUDC12	7.22	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUDC14	2.80	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUDC16	2.40	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUDC17	2.40	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUPICC8	8.76	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUPICC9	5.10	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUPICC10	8.27	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUPHSW4	1.25	No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUPHSW5	1.25	No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF1	2.22	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF2	2.22	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF3	2.22	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF4	14.70	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF5	14.70	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)

CUCFCF6	14.70	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF7	14.70	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF8	14.70	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CURCF1	7.00	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CURCF2	7.00	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CURCF8	1.04	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CURCF9	1.04	Natural Gas & No. 2 fuel oil	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC16	2.05	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC23	2.05	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC24	2.40	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHOC25	2.40	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUDC16	0.52	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF24	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF25	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF26	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF27	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF28	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF29	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF30	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF31	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF32	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF18	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF33	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUCFCF34	1.90	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHBF1	2.25	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHBF2	1.71	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHBF3	0.74	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHBF4	0.91	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHBF5	1.07	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)
CUHBF6	0.56	Natural Gas	25 PA Code 129.93 (c)	25 PA Code 129.97 (c)(3)

All fifty-eight (58) boilers at the facility are rated less than 15 MMBtu/Hr and meet the requirements of 25 PA Code Section 129.97(c)(3) which is applicable to boilers or combustion sources with an individual rated gross heat input of less than 20 MMBTU/hr. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(3) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.

Unit	Capacity (hp)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
CUPHSW3	355	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CUHOC11	550	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CUHOC12	211	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CUPICC4	740	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CUPICC5	740	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CUCFCF21	2,200	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CUCFCF22	2,200	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CUCFCF23	2,200	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CURCF7	2,681	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CUHBF6	355	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)

Emergency Generators

All ten (10) emergency generators are limited to running less than 500 hours per 12-month period as per the facility's current Title V Operating Permit No. V11-035 dated 5/4/2012 and meet the requirements of 25 PA Code Section 129.97(c)(8) which is applicable to emergency engines operating less than 500 hours in a 12-month rolling period. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(8) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.

Chiller

Unit	Capacity	Fuel Burned	Case-by-Case RACT1 Regulation	Presumptive RACT2 Regulation
CURCF 6 RCF Chiller #1 (with non- selective catalytic reduction device)	365 bhp	Natural Gas	Philadelphia Prison System Plan Approval, PLID 09519 dated February 9, 2016	25 PA Code 129.97 (c)(5)

For the 365 bhp Chiller, AMS determined that a 2.0 g/bhp-hr emission limit and installation of an NSCR shall be NOx RACT for the 1997 8-hour ozone standard as per RACT Plan Approval dated 2/9/2016 for 1997 8-hour RACT. NSCR was the existing NOx control for the chiller and the 2.0 g/bhp-hr limit is the most reasonably achievable limit that the generator can meet with the existing NSCR technology at the time of the analysis. Additionally the chiller is required to conduct a performance test for the chiller within 5 years of the previous performance test to meet the

NOx emission limit of 2.0 g/bhp-hr as part of the facility's RACT Plan Approval dated 2/9/2016 for 1997 8-hour RACT.

The one (1) 365 bhp Chiller meets the requirements of 25 PA Code Section 129.97(c)(5) which is applicable to stationary internal combustion engines rated at less than 500 bhp. The presumptive RACT requirement of 25 PA Code Section 129.93(c)(5) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices. From the facility's RACT Plan Approval dated 2/9/2016 for 1997 8-hour RACT, the chiller will continue to meet the 2.0 grams per brake horsepower hour emission limit and operate in accordance with the manufacturer's specifications and with good operating practices.

RACT2 Summary:

AMS has determined the following for the 2008 8-hr RACT:

- 1. All existing NOx emitting sources at the facility are complying with presumptive RACT requirements as mentioned above.
- 2. All 58 boilers at the facility are rated less than 15 MMBtu/hr and will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(3) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 3. All 10 emergency generators will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(8) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 4. The 1 chiller will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(5) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices. Additionally the chiller has a NOx emission limit of 2.0 g/bhp-hr as part of the facility's RACT Plan Approval dated 2/9/2016 for 1997 8-hour RACT and is required to conduct a performance test for the chiller within 5 years of the previous performance test to demonstrate compliance with the emission limit.
- 5. All sources at Philadelphia Prison System will be complying with presumptive RACT requirements as mentioned above.

5/1/20

Edward Wiener, Chief of Source Registration

InterOffice Memo

To:	File
From:	Edward Wiener
Date:	May 1, 2020
Subject:	RACT Analysis for Sunoco Partners Marketing & Terminals L.P - Belmont Terminal (PLID # 01507)

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 1997 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

The Sunoco Partners Marketing & Terminals L.P - Belmont Terminal (Sunoco - Belmont Terminal) is located at 2700 Passyunk Avenue, Philadelphia, PA 19145. The facility's air emission sources include a Gasoline Truck Loading with Vapor Control Units products loading racks, Distillate Truck Loading, a Emergency Generator, and nine (9) Storage Tanks (with vapor pressure > 1.5 psia).

Applicability for NOx and VOC RACT:

Sunoco - Belmont Terminal is not a major source of Nitrogen Oxides (NOx). The potential NOx emission as limited by the issued AMS permits is less than 100 tons per year, the major source threshold in Philadelphia County that is not applicable to NOx RACT.

Sunoco - Belmont Terminal is a major source of Volatile Organic Compound (VOC) emissions having potential VOC emissions of greater than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT 1997 8-hour ozone NAAQS.

Process Descriptions:

The emissions units at Sunoco Belmont Terminal include the following:

Gasoline Truck Loading with Vapor Control Units products loading racks, Distillate Truck Loading, Emergency Generator, and 13 Additive and Diesel Storage Tanks (each less than 40,000 gal with vapor pressure < 1.5 psia.

RACT Analysis:

In accordance, with 25 PA Code 129.96(b), all sources at the facility will comply with RACT requirements as follows:

The Gasoline Truck Loading Rack with Vapor Recovery Unit and Distillate Truck Loading will comply with the requirements of 25 PA Code 129.59, 25 PA Code 129.59and AMR V Section V (CTG: Control of Hydrocarbons form Tank Trucks Gasoline Loading Terminals) EPA 450/2-77-026). This is the same as 1997 8-hour RACT. The

unit must comply with a VOC emission limit of 0.0668 pounds per 100 gallons of gasoline loaded from 25 PA Code 129.59 and certain work practice standards from 25 PA Code 129.62..

The Storage Tanks each have potential VOC emissions less than 1 ton per year of VOC and are not applicable to the requirements of 25 PA Code Sections 129.96-100, as per 25 PA Code Section 129.96(c). For 1997 8-hour RACT, some of these tanks were incorrectly listed as storing materials with a vapor pressure above 1.5 psia and were listed as applicable to the presumptive AT requirements of 25 PA Code Section 129.57.

The emergency generator will comply with the presumptive RACT 25 PA Code 129.93(c)(5) by operating less than 500 hours in consecutive 12-month period and will maintain & operate in accordance with manufacturer's specifications.

5/1/20

Edward Wiener, Chief of Source Registration

InterOffice MemoTo:FileFrom:Rahel GebrekidanDate:May 1, 2020Subject:RACT Modification Summary for Temple University – Health Sciences
Campus

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8 hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

Temple University – Health Sciences Campus is located at 3401 North Broad Street, Philadelphia, PA 19140. The facility's air emission sources include three 76.4 MMBTU/hr boilers, two <2 MMBTU/hr boilers, and 20 emergency generators and fire pumps.

Applicability for NOx and VOC RACT:

Temple University – Health Sciences Campus is a major source of NOx due to having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT. This facility is not a major source of VOC having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS. The facility is subject to RACT under the 8-hour ozone standard.

1997 8-hour RACT Determination:

AMS determined RACT under the 1997 8-hour ozone standard for this facility in 2015. The Facility was issued a RACT Plan Approval (Permit ID. 8906) for the 8-hour ozone standard in December, 2015, based on the facility's RACT proposal. AMS' RACT determination and resulting RACT plan approval were approved as part of the PA SIP by EPA on 12/15/00 (65 FR 78418).

Under the 8-hour ozone standard Boilers #1, #2, #3, two each less than 2 MMBTU/hr boilers, and 20 emergency generators and fire pumps were subject to NOx RACT. The three Central Steam Plant (CSP) Boilers (Boilers 1, 2, and 3) were originally installed in 1967 and are Keeler CP units with rated heat input of 76.4 MMBTU/hr; all three boilers share a common stack and were allowed to combust both natural gas and #6

fuel oil. As a result of the 997 8-hour RACT determination, the following requirements were approved as RACT:

- 1. Nitrogen Oxides (NOx) emissions from each boiler shall not exceed the following
 - (a) 0.067 lbs/MMBTU while burning natural gas.
 - (b) 0.40 lbs/MMBTU while burning No.6 fuel oil.
 - (c) Nitrogen Oxides (NO_x) emissions from Boilers #1, #2, and #3 combined shall not exceed 56.3 lbs/hr.
- 2. The combined heat input for Boiler #1, #2, and #3 shall not exceed 673,894 MMBTU per rolling 12-month period.
- 3. CCA burner modifications shall be performed on each boiler, including each of the following:
 - (a) Installation of staged flame stabilizers (a.k.a. swirlers).
 - (b) Redesign and replacement of the atomizers.
 - (c) Replacement of the center-fired gas injection rings with gas manifolds having center-fired and poker gas injection.
 - (d) Installation of a NO_x tempering system (water injection).
- 4. During the ozone season (April 1 October 31), each boiler shall burn natural gas as the primary fuel. Each boiler may only burn No. 6 fuel oil during periods of gas curtailment or gas supply interruption.

Modification of RACT Sources

After the 1997 8-hour RACT PA issued Temple proposed to include No.2 fuel oil usage in addition to natural gas and No.6 fuel oil for Central steam Plant Boilers (CSP-B-01, CSP-B-01, CSP-B-01) each with heat input of 76.4 MMBTU/hr. AMS approved an Installation permit number 15090 dated June 1, 2015 allowing Temple Health to burn No.2 fuel oil. However; Temple submitted installation permit No. IP16-000305 to incorporate the following changes;

- Incorporate emission limitation of 0.12 lb NOx/MMBTU for Central Steam Plant (CSP) B-01 (Boiler #1), CSP B-02 (Boiler #2), and CSP B-03 (Boiler #3) to comply with the presumptive RACT II requirement.
- Restrict each boiler to only burn natural gas and No.2 fuel oil.
- Each boiler can no longer burn No. 6 oil and remove all conditions and requirement related to No.6 fuel oil.

AMS approved the installation permit on January 1, 2017.

2008 8-hour RACT Determination

On April 23, 2016 the Pennsylvania Department of Environmental Protection (PADEP) published additional RACT requirement known as RACT II rule in 25 PA. Code 129.96-129.100. The RACT II regulation includes three compliance options: (1) Compliance with presumptive RACT requirements and/or emission limitations; (2) Facility-wide or system-wide averaging for compliance with presumptive NO_x emission limitations; and (3) RACT requirements determined on a case-by-case basis for sources that either do not have an applicable presumptive requirement or emission limitation or cannot comply with the applicable presumptive RACT requirement.

As discussed above Temple Health owns and operates boilers and engines that are applicable to NOx RACT II rules. AMS has performed analysis of RACT II rules that are applicable to the Temple Health boilers and generators.

Table 1-1 and Table 1-2 is a comparison of RACT II rules and Temple Health's boilers and engines emission limits that demonstrates the current SIP approved emission limit has satisfied all RACT II requirements for each units.

	DACT II requirements rule in	Tomple Moin's
Affected source	25 PA Code 129.96-129.100 for Boilers	numeric RACT II limit for Boilers (>50
		MMBTU/hr)
Central steam Plant Boilers (CSP-B-01, CSP-B-01, CSP-B- 01) Rated at 76.4 MMBtu/hr each Firing Natural gas or No.2 oil	 a) The numeric RACT 2 limit of 25 PA Code §129.97(g)(1)(i) for fired combustion and §129.97(g)(1)(ii) distillate oil- fired combustion unit or process heaters with a rated heat input of greater than or equal to 50MMBtu/hr are as follows; (i) 0.10 lb/MMBtu for natural gas fired combustion units; and (ii) 0.12 lb/MMBTU for distillate oil-fired combustion unit 	 a) NOx Emissions from each Central steam Plant Boilers shall not exceed the following: (i) 0.067 lbs/MMBTU while burning natural gas. (ii) 0. 12 lbs/MMBTU while burning No.2 fuel oil

As shown in the above table, the case-by-case RACT approved for the 1997 8-hour ozone standard and the emission limits taken for burning No.2 fuel oil for the Central steam Plant boilers meets or exceeds the presumptive RACT requirement of RACT II and shall be considered to represent NOx RACT for the 2008 8-hour ozone standard for each BMCEP boilers and incompliance with the anti-backsliding requirements of CAA Section 110(1). Temple Health demonstrates compliance with RACT II requirements by conducting stack testing for the three Central Steam Plant Boilers on both Natural Gas and No.2 fuel oil in November 2016 that includes NOx emission rate evaluations against the presumptive RACT II emission limitations.

Conclusion

AMS has determined each Central Steam Plant Boilers shall still comply with the following 1997 8-hour ozone RACT determination as applicable, dated January 9, 2015 and SIP-approved by EPA on November 7, 2016 to prevent potential backsliding and including the changes made thru the approval of installation number IP16-000305.

Temple Health shall comply with following emission limits, control technology; monitoring and recordkeeping requirements for each Central Steam Plant Boilers;

1. NOx emissions from each boiler shall not exceed the following: [1997 8-hour ozone standard and Presumptive RACT, 25 Pa. Code 129.97(g)(3)]

- (a) 0.067 lbs/MMBTU while burning natural gas. Compliance shall be determined based on stack test and shall be the average of three one hour separate test runs for each boiler.
- (b) 0.12 lbs/MMBTU while burning No. 2 fuel oil. Compliance shall be determined based on stack test and shall be the average of three one hour separate test runs for each boiler.
- (c) The Combined Nitrogen Oxides (NO_x) emissions from Boilers #1, #2, and #3 shall not exceed 27.5 lbs/hr.
- 2. The following CCA burner shall be operated and maintained on each boiler, [Case-bycase RACT, 25 Pa Code §§129.91-129.95, AMS Plan Approval dated January 9, 2015]
 - (a) Installation of staged flame stabilizers (a.k.a. swirlers);
 - (b) Redesign and replacement of the atomizers;
 - (c) Replacement of the center-fired gas injection rings with gas manifolds having center-fired and poker gas injection; and
 - (d) Installation of a NO_x tempering system (water injection).
- 3. The combined heat input for Boilers #1, #2, and #3 shall not exceed 673,894 MMBTU per rolling 12-month period. [Case-by-case RACT, 25 Pa Code §§129.91-129.95, AMS Plan Approval dated January 9, 2015]
- 4. Each boiler shall only burn natural gas or No. 2 fuel oil. During the ozone season (April 1 – October 31), each boiler shall only burn natural gas as the primary fuel. Each boiler may only burn No. 2 fuel oil during periods of gas curtailment and natural gas interruption during the ozone season. [Case-by-case RACT, 25 Pa Code §§129.91-129.95]
- 5. Temple shall keep records of the reasoning of burning fuel oil during the ozone season (April 1 October 31),
- 6. Temple shall monitor and record the combined heat input of the boilers per rolling 12month period.
- 7. Temple shall monitor and record the No. 2 fuel oil usage of each boiler per rolling 12month period.
- 8. Temple shall monitor and record the monthly natural gas usage for each boiler.
- 9. The Permittee shall maintain records that document the time periods when No. 2 is fired and the reasons No. 2 is fired.

Presumptive RACT Sources:

Small Boilers (heat input capacity <2 MMBTU/hr)

Table 1-4 lists sources that meet the presumptive RACT requirements specified in 25 Pa Code 129.97(c) [operation and maintenance of boilers per manufacturer specifications and maximum heat input ratings <20 MMBTU/Hr]:

Table 5 Small Boilers

Source Description	Capacity	Fuel/Material	Construction Date
3525 Germantown Boiler #1	1.01 MMBTU/hr	No.2 Oil	After 1970
3511 N. 13th Street Boiler	0.947 MMBTU/hr	Natural Gas	After 1970

Emergency generators and fire pumps

Table 1-3 lists sources that meet the presumptive RACT II requirements specified in 25 Pa Code 129.97(c)(8) [operation and maintenance of engines per manufacturer specifications and use limited to 500 hours per year or less, per the facility's Title V Permit, Section D.2, Conditions (c)(6), (c)(7), each engines are limited to 500 hours per rolling twelve month period].

Source Description	Capacity	Fuel/Material	Construction Date
Pharmacy Allied Health Emergency Generator	340 kW	Natural Gas	1974
Pharmacy School Emergency Generator Fire Pump	100 kw	No. 2 Oil	1997
Dental School Emergency Generator	155 kW	No. 2 Oil	1990
GSB Emergency Generator	5 kW	Natural Gas	1978
Jones Hall Generator Fire Pump	250 kW	No. 2 Oil	1995
Old Medical School Emergency Generator	28 kW	No. 2 Oil	1950
Old Medical School Emergency Generator	300 kW	No. 2 Oil	1999
Faculty Student Union Emergency Generator	150 kW	Natural Gas	1975
Medical Office Building Emergency Generator (Outside)	125 kW	No. 2 Oil	2008
Hospital Emergency Generator A	1000 kW	No. 2 Oil	1997
Hospital Emergency Generator B	1000 kW	No. 2 Oil	1998
Hospital Emergency Generator C	450 kW	No. 2 Oil	1998
TUH-FP Fire Pump	187 bhp	No. 2 Oil	1984
Ambulatory Care Center Emergency Generator	1000 kW (1480 bhp)	No. 2 Oil	2005
Kresge West Emergency Generator	<400 kW	No. 2 Oil	1999
Kresge Science Hall Emergency Generator	250 kW (314 bhp)	No. 2 Oil	1997
Kresge Science Hall	250 kW	No. 2 Oil	1997
Emergency Generator	(314 bhp)		
Medical Research Building Emergency Generator	350 bhp	No. 2 Oil	1999
Boyer (Formerly TUCMC) Emergency Generator	1250 kW	No. 2 Oil	1998
Boyer (Formerly TUCMC)	300 kW	No. 2 Oil	1998
New Medical School Emergency Generator	1000 kW	No. 2 fuel oil	2008

Table 6 Emergency generators and Fire pumps

New Medical School Fire Pump (Inside, lower floor)	175 bhp	No. 2 fuel oil	2008
HSC Steam Plant	350 kW	No. 2 Oil	1998
Emergency Generator			

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5/1/20

Edward Wiener, Chief of Source Registration

InterOffice Memo			
To:	File		
From:	Rahel Gebrekidan		
Date:	May 1, 2020		
Subject:	2008 8-hour ozone RACT Analysis for Temple University-Main Campus		

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone National Ambient Air Quality Standard (NAAQS). This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

Temple University – Main Campus (Temple MC) is a multi-building educational institution in the City of Philadelphia. In order to provide needed utilities for maintaining heat, power (both backup and supplemental), and providing hot water, Temple MC operates a number of steam boilers, hot water boilers, and internal combustion engines to produce electricity. The facility's air emissions sources include 16 Boilers and hot water heaters <20 MMBTU/hr, 5 Boilers >= 20 MMBTU/Hr and <50 MMBTU/Hr, 3 boilers > 50MMBTU/hr boilers, 10 Standby Electric Generating units each 2250 HP, and 59 emergency generators and fire pumps. Each standby generator is controlled by two oxidation catalysts (20 oxidation catalysts total).

Applicability for NOx and VOC RACT:

Temple Main is a major source of NOx due to having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT. This facility is not a major source of VOC having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS.

1997 8-Hour Case-by-Case RACT Summary

AMS determined a case-by-case RACT analysis for the 1997 8-hour ozone standard on January 9, 2015. As a result, AMS issued a RACT plan approval (PA-51-1566) on January 9, 2015, which was approved by EPA as a SIP revision on 11/7/2016 (81 FR 69687). NOx RACT was determined for *Broad Street Main Campus Expansion Project Boilers and Standby Electric Generating Facility* (SEGF). The three BMCEP boilers are each Victory Energy Models VS-4-68, with a natural gas heat input rating of 91.3 MMBTU/Hr and a #2 fuel oil heat input rating of

86.8 MMBTU/Hr. Each unit is an "O-type" watertube boiler and is currently equipped with Low NOx burners (LNB) and flue gas recirculation (FGR). These boilers are primarily used for heat during cold months and operate well below their annual capacity. The Standby Electric Generating Facility is a collection of 10 Caterpillar 3516 engines. Each engine pair is rated at 2,250 brake-horsepower (bhp) and burns natural gas. Each engine pair is attached to a generator that can provide up to 1,600 kilowatts. These units were installed in October 1992. Two oxidation catalysts were installed on each standby generator in 2013 in order to comply with 40 CFR 63 Subpart ZZZZ generator has two oxidation catalysts installed. As a result AMS determined the following control methods, emission limits, work practices standards, testing, and monitoring and recordkeeping requirements as NOx RACT for 1997 8-hour ozone for BMCEP boilers and SEGF generators.

- 1. NOx Emissions from each BMCEP boiler shall not exceed the following:
 - a) Nitrogen Oxides (NO_x) emissions from the three boilers combined shall not exceed 15.5 tons per rolling 12-month period.
 - b) Emissions from each boiler shall not exceed the following:
 - i) NOx: 0.036 lbs/MMBTU while burning natural gas and
 - ii) 0.110 lbs/MMBTU while burning No.2 fuel oil
- 2. Each boiler shall be equipped with Low NOx burners (LNB) and flue gas recirculation (FGR).

To comply with the above emission limits, Temple Main is operating the LNB and FGR on each boiler and performed initial stack test to show compliance with the 0.036 lbs/MMBTU and 0.110lbs/MMBTU NOx emission limit.

NOx emissions from the standby electric generator are limited to the following;

- a) NOx emission from each standby electric generator shall be less than or equal to 2.00 g/bhp-hr;
- b) Each Standby Electric Generator shall operate at a maximum of 500 hours per rolling 12month period
- c) The Combined NOx hourly emission rate of less than or equal to 99 lb/hr.

To show compliance with the 2.00g/bhp-hr emission limits, Temple Main performed initial stack test on the engines.

2008 8-hour RACT Determination

On April 23, 2016 the Pennsylvania Department of Environmental Protection (PADEP) published additional RACT requirement known as RACT II rule in 25 PA.Code 129.96-129.100. The RACT II regulation includes three compliance options: (1) Compliance with presumptive RACT requirements and/or emission limitations; (2) Facility-wide or system-wide averaging for compliance with presumptive NO_x emission limitations; and (3) RACT requirements determined on a case-by-case basis for sources that either do not have an applicable presumptive requirement or emission limitation or cannot comply with the applicable presumptive RACT requirement.

As discussed above Temple Main owns and operates boilers and engines that are applicable to NOx RACT II rules. AMS has performed analysis of RACT II rules that are applicable to the

Temple Main boilers and generators and finds that the 1997 8-hour SIP approved emission limits, work practice standard monitoring, and reporting requirement are more stringent than the current rule and requirements of RACT II.

Table 1-1 and Table 1-2 is a comparison of RACT II rules and Temple Main's boilers and engines emission limits that demonstrates the current SIP approved emission limit has satisfied all RACT II requirements for each units.

	c,	
	RACT II requirements rule in	Temple Main's numeric
	25 PA Code 129.96-129.100 for Boilers	RACT I limit for Boilers
Affected source		(>50 MMBTU/hr)
Affected source Broad Street Main Campus Expansion Project (BMCEP) Boiler # 1-3 Rated at 91.3 MMBtu/hr each Firing Natural gas or No.2 oil	 a) The numeric RACT 2 limit of 25 PA Code §129.97(g)(1)(i) for fired combustion and §129.97(g)(1)(ii) distillate oil-fired combustion unit or process heaters with a rated heat input of greater than or equal to 50MMBtu/hr are as follows; a. 0.10 lb/MMBtu for natural gas fired combustion units; and 	 (>50 MMBTU/hr) a) NOx Emissions from each BMCEP boiler shall not exceed the following: 0.036 lbs/MMBTU while burning natural gas and 0.110
	b. 0.12 lb/MMBTU for distillate oil-fired	lbs/MMBTU while burning
	combustion unit	No.2 fuel oil

Table 1-1: Boilers >50 MMBTU/Hr Heat Input Rating Meeting 129.97(g)(1)(i) and (ii)

As shown in the above table, the case-by-case RACT approved for the 1997 8-hour ozone standard for the BMCEP boilers meets or exceeds the presumptive RACT requirement of RACT II and still be considered to represent NOx RACT for the 2008 8-hour ozone standard for each BMCEP boilers and incompliance with the anti-backsliding requirements of CAA Section 110(I). Temple Main demonstrates compliance with RACT II requirements by conducting stack testing for the three BMCEP boilers on both Natural Gas and #2 fuel oil in November 2016 that includes NOx emission rate evaluations against the presumptive RACT II emission limitations.

Table 1-2: Stationary Internal Combustion Engines Meeting 129.97(g)(3)(1)(A)			
Source Description	Capacity	RACT II requirements	Temple Main's
		under 25 Pa. Code	numeric RACT I
		129.97(g)(3)(i)(A)	limit for each
			engines
Standby Generator #1-10	2250 bhp firing	For a lean burn stationary	
	natural gas	internal combustion	
	(4-stroke, lean	engine with a rating equal to	a) 2.00 grams
	burn)	or greater than 500 bhp	NOx/bhp-hr.
		fired with:	
		(A) Natural gas or a	

Stationary Internal Combustion Engine >500 bhp Table 1-2: Stationary Internal Combustion Engines Meeting 129.97(g)(3)(i)(A)

noncommercial gaseous	
fuel, 3.0 grams NOx/bhp-hr.	

As shown in Table 1-2, the case-by-case RACT approved for the 1997 8-hour ozone standard for each engines meets or exceeds the presumptive RACT requirement of RACT II and still be considered to represent NOx RACT for the 2008 8-hour ozone standard for each engines and incompliance with the anti-backsliding requirements of CAA Section 110(1).

Emergency generators and fire pumps

Table 1-3 lists sources that meet the presumptive RACT II requirements specified in 25 Pa Code 129.97(c)(8) [operation and maintenance of engines per manufacturer specifications and use limited to 500 hours per year or less, per the facility's Title V Permit, Section D.2, Conditions (d)(1), (d)(4)(II), (d)(5) and (d)(6) each engines are limited to 500 hours per rolling twelve month period].

Source Description	Capacity	Fuel/Materi	Constructio
		al	n Date
Alter Hall	350 kW	No. 2 Oil	2008
Emergency Generator			
#1			
Anderson Hall	125 kW	Natural Gas	1974
Emergency Generator			
#1			
Anderson Hall	175 kW	No. 2 Oil	1998
Emergency Generator			
#2			
Annenberg (Tele)	100 kW	No. 2 Oil	1985
Emergency Generator			
Barrack Building	100 kW	Natural Gas	2002
Emergency Generator			
Bell Building	1040 kW	No. 2 Oil	1986
Emergency Generator			
#1			
Bell Building	125 kW	No. 2 Oil	1986
Emergency Generator			
#2			
Bio Life	1,100 kW	No. 2 Oil	1985
Emergency Generator			
CEA Building	170 kW	Natural Gas	1976
Emergency Generator			
#1			
CEA Building	125 kW	No. 2 Oil	1998
Emergency Generator			
#2			
Central Heat Plant	<50 kW	Natural Gas	
Emergency Generator			
Wachman Hall	140 kW	Natural Gas	1977

Table 1-3

Emergency Generator			
Conwell (Bldg)	150 kW	No. 2 Oil	
Emergency Generator			
Conwell(Tele)	250 kW	No. 2 Oil	1985
Emergency Generator			
Conwell/Carnell Hall	130 kW	No. 2 Oil	1998
Emergency Generator			
ECEC Building	125 kW	No. 2 Oil	2004
Emergency Generator			
Gladfelter (Tele)	100 kW	No. 2 Oil	1985
Emergency Generator			
Gladfelter (Bldg)	150 kW	Natural Gas	1973
Emergency Generator			
Gladfelter Hall	175 kW	No. 2 Oil	
Emergency Generator			
Johnson/Hardwick	100kW	2 oil	2005
Hall Emergency			
Generator #2			
Klein Hall	100 kW	Natural Gas	1973
Emergency Generator			
#1			
Klein Hall	103 kW	No. 2 Oil	1998
Emergency Generator			
#2			
Liacouras Center	1000 kW	No. 2 Oil	1997
Emergency Generator			
Liacouras Garage	125 kW	No. 2 Oil	1997
Emergency Generator			
Paley	100 kW	No. 2 Oil	1998
Emergency Generator			
#2			
Peabody	125 kW	No. 2 Oil	1998
Emergency Generator			
Pearson (Bldg)	100 kW	Natural Gas	
Emergency Generator			
Ritter Annex (Bldg)	100 kW	Natural Gas	1973
Emergency Generator			
Ritter Annex (Tele)	100 kW	No. 2 Oil	1985
Emergency Generator			
SAC	150 kW	Natural Gas	2002
Emergency Generator			
Student Pavillion	30 kW	natural gas	1999
Center Emergency			
Generator			
Temple Towers Fire	110 HP	Diesel	2009

Pump			
1300 C.B. Moore	150 KW	No. 2 Oil	2001
Generator			
1800 Liacouras Walk	80 kW	No. 2 Oil	2005
Emergency Generator			
1940 Liacouras Walk	80 kW	No. 2 Oil	1999
Emergency Generator			

Boiler <50 MMBTU/Hr Heat Input Rating

Table 1-4 lists sources that meet the presumptive RACT requirements specified in 25 Pa Code 129.97(c)(3) [operation and maintenance of boilers per manufacturer specifications and maximum heat input ratings <20 MMBTU/Hr]: the presumptive RACT II requirements under 25 Pa. Code 129.97(b)(1), which requires a biennial tune-up using the procedures specified in 40 CFR 63.11223, regardless of the federal standard's applicability to the units: and annual combustion adjustment for maximum heat input ratings >=20 MMBTU/Hr but less than 50 MMBTU/Hr.

Source Description Fuel/Materi Capacity Constructio n Date al Central Steam Plant 41.24 No. 6 oil 1962 Boiler #1 MMBtu/hr Natural gas **Central Steam Plant** 41.24 No. 6 oil 1962 Boiler #2 MMBtu/hr Natural gas Central Steam Plant 41.24 No. 6 oil 1962 Boiler #3 MMBtu/hr Natural gas Central Steam Plant No. 6 oil 43.84 1969 Boiler #4 Natural gas MMBtu/hr Liacouras Center Natural Gas October 1999 20.92 Boiler #4 MMBtu/hr

Table 1-4 Boilers >= 20 and <50 MMBTU/Hr Heat Input Rating

Table 1-5 Boilers <20 MMBTU/Hr Heat I	nput Rating Meeting
129.97(c)(3)	

White Hall Residence	1.9	Natural gas	After 1970
Boiler #1	MMBTU/hr	_	
White Hall Residence	1.9	Natural gas	After 1970
Boiler #2	MMBTU/hr		
White Hall Residence	1.9	Natural gas	After 1970
Boiler #3	MMBTU/hr		
Liacouras Center	9.996	No. 2 Oil	1996
Boiler #1	MMBTU/hr	Natural gas	
Liacouras Center	9.996	No. 2 Oil	1996
Boiler #2	MMBTU/hr	Natural gas	
Liacouras Center	9.996	No. 2 Oil	1996
Boiler #3	MMBTU/hr	Natural gas	

Edberg-Olsen	2.396	No. 2 Oil	September
Boiler	MMBtu/hr	Natural Gas	2000
Edberg-Olsen	0.60	Natural Gas	September
Water Heater #1	MMBtu/hr		2000
Edberg-Olsen	0.60	Natural Gas	September
Water Heater #2	MMBtu/hr		2000
Edberg-Olsen	0.60	Natural Gas	September
Water Heater #3	MMBtu/hr		2000
Student Pavillion	2.887	No. 2 Oil	September
Boiler	MMBtu/hr	Natural Gas	2002
Temple Towers	0.85	Natural Gas	
Pool Heater	MMBtu/hr		

CONCLUSION

All Temple Main emission sources are covered by presumptive RAT requirements in 129.97.Temple Main has shown that the NOx air contamination sources will meet or exceeds each of the presumptive RACT II limitations listed under 25 Pa. Code 129.97. Thus, AMS determined the 1997 8-hour ozone RACT plan approval (PA-51-1566) issued on January 9, 2015, which was approved by EPA as a SIP revision on 11/7/2016 (81 FR 69687) for NOx RACT still be considered to represent NOx RACT for the 2008 8-hour ozone standard for the three BMCEP boilers and Stationary Internal Combustion Engine.

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5/1/20

Edward Wiener, Chief of Source Registration

InterOffice MemoTo:FileFrom:Nicole StilwellDate:May 1, 2020Subject:2008 8-Hour RACT Analysis for University of Pennsylvania

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of VOC and NOx. Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 2008 8-hour ozone standard for this facility.

Company Description:

The University of Pennsylvania is a university located at 3451 Walnut Street, Philadelphia, PA 19104. The facility's air emission sources include nine (9) heaters and furnaces rated less than 10 MMBTU/hr, sixty-two (62) emergency generators, and two (2) fire pumps.

Applicability for NOx and VOC RACT:

The University of Pennsylvania is a major source of Nitrogen Oxides (NOx) having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS.

The University of Pennsylvania is not a major source of Volatile Organic Compounds (VOC) having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to VOC RACT for the 2008 8-hour ozone NAAQS.

Process Descriptions:

The facility's air emission sources contributing to NOx emissions include the following:

- Nine (9) heaters and furnaces each rated equal to or less than 5 MMBTU/hr firing natural gas;
- Fourteen (14) emergency generators with capacities ranging between 75 kW 750 kW each firing natural gas;
- Forty-eight (48) emergency generators with capacities ranging between 120 kW 1,750 kW each firing diesel fuel;
- Two (2) fire pumps with capacities ranging between 150 hp 187 hp each firing diesel fuel.

Presumptive RACT:

The following sources are covered by presumptive RACT regulations, as is specified in the "Presumptive RACT2 Regulation" column of the table on the next page.
Heaters & Furnaces

Unit	Heat Input (MMBTU/hr)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
CU-66	0.686	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
CU-68	0.750	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
CU-69	0.780	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
CU-73	1.500	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
CU-75	0.623	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
CU-77	2.049	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
CU-83	0.750	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
CU-85	1.500	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)
CU-86	5.000	Natural Gas	25 PA Code 129.93 (c)(1)	25 PA Code 129.97 (c)(3)

All nine (9) heaters and furnaces at the facility are rated equal to or less than 5 MMBtu/hr and meet the requirements of 25 PA Code Section 129.97(c)(3) which is applicable to boilers or combustion sources with an individual rated gross heat input of less than 20 MMBTU/hr. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(3) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(3) is included under Condition D.2(c)(1) in the facility's current Title V Operating Permit No. OP16-000005 dated 12/22/2016.

Emergency Generators and Fire Pumps

Unit	Capacity (kW)	Fuel Burned	Presumptive RACT1 Regulation	Presumptive RACT2 Regulation
CU-13	500	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-18	75	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-20	100	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-21	1,000	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-23	100	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-24	115	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-25	120	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-27	120	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-28	140	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-30	750	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-31	500	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-33	350	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-35	235	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-37	225	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-39	350	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-44	600	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-46	1,000	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-48	1,025	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-52	650	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-53	650	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-54	1,000	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)

CU-55	800	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-88	150	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-90	150	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-91	600	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-92	120	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-93	800	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-94	250	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-95	250	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-96	600	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-97	200	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-98	150	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-99#1	1,275	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-99#2	1,275	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-100	150	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-102#1	120	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-102#2	120	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-106	100	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-109	1,000	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-110	150	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-111	750	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-112	750	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-113	1,250	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-114	800	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-117	600	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-118	150	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-119	150	Natural Gas	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-120	250	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-121	1,500	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-122	1,500	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-123	900	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-124	1,750	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-129	650	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-130	600	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-131	600	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-132	125	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-134	1,000	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-135	1,500	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-136	1,500	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-137	300	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-138	500	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-142	250	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-128 (Fire Pump)	139.4	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)
CU-129 (Fire Pump)	111.8	Diesel	25 PA Code 129.93 (c)(5)	25 PA Code 129.97 (c)(8)

All sixty-two (62) emergency generators and two (2) fire pumps are limited to running less than 500 hours per 12month period as per Conditions D.2(b)(2)-(3)(i) of the facility's current Title V Operating Permit No. OP16-000005 dated 12/22/2016 and meet the requirements of 25 PA Code Section 129.97(c)(8) which is applicable to emergency engines operating less than 500 hours in a 12-month rolling period. The presumptive RACT requirement of 25 PA Code Section 129.97(c)(8) is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.

RACT2 Summary:

AMS has determined the following for the 2008 8-hr RACT:

- 1. All existing NOx emitting sources at the facility are complying with presumptive RACT requirements as mentioned above.
- 2. All nine heaters and furnaces at the facility are rated 5.0 MMBTU/hr or less and will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(3) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 3. All sixty-two emergency generators and two fire pumps will meet the presumptive RACT requirements of 25 PA Code Section 129.97(c)(8) which is the installation, maintenance, and operation of the source in accordance with the manufacturer's specifications and with good operating practices.
- 4. All sources at the University of Pennsylvania will be complying with presumptive RACT requirements as mentioned above.

5/1/20

Edward Wiener, Chief of Source Registration

Date

CITY OF PHILADELPHIA Department of Public Health Environmental Protection Division Air Management Services

Inter Office Memo				
To:	File			
From:	Maryjoy Ulatowski			
Date:	May 1, 2020			
Subject:	2008 8-Hour RACT Analysis for Veolia-Edison			

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of the reevaluation of NOx RACT for the 2008 8-hour ozone standard for this facility

Company Description:

Veolia Edison owns and operates a steam generating facility located at 908 Samson Street, Philadelphia, PA 19107. The facility has the following emission sources:

- Two (2) 283 MMBTU/hr boilers (Boiler 1 and Boiler 2), each firing No. 6 oil as the primary and firing No. 2 oil for ignition only.
- Two (2) 335 MMBTU/hr boilers (Boiler 3 and Boiler 4), each firing No. 6 oil as the primary and firing propane for ignition only. During the 1997 8-hr ozone RACT, the two boilers burned No. 2 for ignition only. Installation Permit Nos. 15075-76 dated 11/5/2015 allowed each boiler to burn propane during ignition.
- One (1) a 350-kilowatt diesel emergency generator;
- One (1) parts degreaser.
- One (1) cooling tower.

The boilers and emergency generator will be discussed in this memo. The degreaser and cooling tower are not sources of NOx.

Applicability for NOx and VOC RACT:

Veolia Edison is a major source of NOx due to having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone NAAQS. Veolia Edison is not a major source of VOC, due to having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 2008 8-hour ozone.

Process Description: Veolia Edison's NOx and VOC emissions sources include the following:

Group 01 - Boilers

ID	Source Name,	Constructio	1997 8hr Ozone	2008 8hr Ozone
	Description,	n Date /	RACT	RACT
	Fuel/ Material	Permits		
CU01	Boiler #1:	1957	Boiler 1 and 2 each	Each boiler (Boilers 1, 2,3,
	283 MMBTU/		case-by- case with the	and 4) will comply with the
	Hr.		following NOx limits:	presumptive RACT
				requirements of 25 Pa Code
	#6 Oil Primary,		0.39 lb/MMBTU or	129.97(c) and
	#2 Oil Ignition		110.37 lbs/hr; and	129.97(c)(7)(i).
	Boiler #2:	1957		
CU02	283 MMBTU/		145.02 tons per 12	Each boiler shall be installed,
	Hr		month rolling period.	maintained, and operated in
				accordance with the
	#6 Oil Primary,		Annual adjustment to	manufacturer's specifications
	#2 Oil Ignition		be performed on each	and with good engineering
			of Boiler 1 and 2.	practices.
				[25 Pa Code
			Annual Performance	129.97(c)]
			Test on each Boiler 3	
			and 4.	Each boiler's
CU03	Boiler #3:	1970	Boiler 3 and 4 each	annual capacity factor shall be
	335 MMBTU/	Modified in	Case-by- Case with	less than 5%.
	Hr	Nov 2015 to	the following NOx	[25 Pa Code
		replace the	limits:	129.97(c)(7)(i)
	#6 Oil Primary,	ignition from		
	Propane	No. 2 to fire	0.38 lb/MMBTU or	Each boiler will continue to
ATTO 4	Ignition	propane.	127.3 lbs/hr; and	meet the NOx emission limits
CU04	Boiler #4:	1969	1.67.00	and annual tune-up
	335 MMBTU/	Modified in	167.28 tons per 12	requirements per previous
	Hr	Nov 2015 to	month rolling period.	RACI Plan Approval.
		replace the	A	The energy literation and environment
	#6 Oil Primary,	ignition from	Annual adjustment to	for NOv for each bailer shall
	Propane	No. 2 to fire	of Deiler 1 and 2	he changed to every five years
	ignition	propane.	of Boller 1 and 2.	be changed to every live years.
			Annual Derformance	
			Test on each Roiler ?	
			and 4.	

r	eroup of Emergency Concrutor					
ID	Source Name, Capacity Fuel/ Material	Constructi on Date / Permits	1997 8hr Ozone RACT	2008 8hr Ozone RACT		
CU05	Emergency Diesel Generator 350 kW Diesel	14354 dated 10/2015	Not Applicable, not installed until 2015.	New RACT source. Presumptive RACT: The emergency generator shall be installed, maintained, and operated in accordance with the manufacturer's specifications and with good engineering practices. The emergency generator is limited to 500 hours per 12 month rolling period [25 Pa Code 129.97(c)(8)]		

Group 02 – Emergency Generator

RACT II Evaluation:

Boilers

The 1997 8hr RACT Plan Approval dated 1/9/2015 (PA-4902) required each boiler to meet the NOx emission limits as listed in the above table. Each boiler will continue to meet the NOx emission limits and annual tune-up requirements per the previous RACT Plan Approval. Starting 1/1/2017, each boiler will comply with the presumptive RACT II requirements of 25 Pa Code 129.97(c) and 25 Pa Code 129.97(c)(7)(i). In accordance with 25 Pa Code 129.97(c), each boiler shall be installed, maintained, and operated in accordance with the manufacturer's specifications and with good engineering practices. In accordance with 25 Pa Code 129.97(c)(7)(i), each boiler's annual capacity factor shall be less than 5%. For a combustion unit, the annual capacity factor is the ratio of the unit's heat input (in million BTU or equivalent units of measure) to the unit's maximum rated hourly heat input rate (in million BTU/hr or equivalent units of measure) multiplied by 8760 hours during a period of 12 consecutive calendar month.

Emergency Generator

The emergency generator is meeting the presumptive RACT requirements of 25 Pa Code 129.97(c) and 129.9c(8). In accordance with 25 Pa Code 129.97(c), the emergency generator shall be installed, maintained, and operated in accordance with the manufacturer's specifications and with good engineering practices. In accordance with 25 Pa Code 129.97(c)(8), the emergency generator is limited to 500 hours per 12 months rolling 12 month period per Condition 9 of AMS Permit No. 14354 dated 10/2015. Per Condition D.2(c) of TVOP No 17-000076 dated 7/26/2018, the emergency generator shall be installed, maintained, and operate in accordance with good operating practices.

Conclusions and Recommendations:

AMS has determined the following for the 2008 8hr -hr RACT.

1) For each boiler, Veolia Edison is complying with the presumptive RACT requirements of 25 PA Code 129.97(c) and 129.97(c)(7)(i).

2) For the emergency generator, Veolia Edison is complying with the presumptive RACT requirements of 25 PA Code 129.97(c) and 129.97(c)(8).

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5/1/20

Edward Wiener, Chief of Source Registration

Date

CITY OF PHILADELPHIA Department of Public Health Environmental Protection Division Air Management Services

InterOffice	Memo
To:	File
From:	Maryjoy Ulatowski
Date:	May 1, 2020
Subject:	2008 8-Hour RACT Analysis for Veolia-Energy Efficiency (PA) LLC (Veolia EE)

Introduction:

The Clean Air Act (CAA) requires that moderate (or worse) ozone nonattainment areas implement reasonably available control technology (RACT) controls on all major sources of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx). Philadelphia County is part of the Philadelphia-Wilmington-Atlantic City moderate ozone nonattainment area for the 2008 8-hour ozone NAAQS. This document presents the findings of the reevaluation of NOx RACT for the 2008 8-hour ozone standard for this facility

Company Description:

Veolia Energy Efficiency (Veolia EE), PA LLC which owns and operates a steam generating facility at 2600 Christian Street, Philadelphia, PA 19146. The facility has two (2) new 297.91 MMBTU/hr boilers burning natural gas and No.2 fuel oil that were installed in 2013. Each boiler has ultra low NOx burners.

Applicability for NOx and VOC RACT:

Veolia Schuylkill Station (Veolia Schuylkill), Grays Ferry Cogeneration Partnership (GFCP) and Veolia Energy Efficiency (Veolia EE) are adjacent and have common ownership and therefore are considered one facility for RACT applicability. Each facility have separate TVOPs and have separate RACT plan approvals and technical review memos.

The three facilities are a major source of NOx due to having potential NOx emissions greater than 100 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 1997 8-hour ozone NAAQS. The three facilities are not a major source of VOC, due to having potential VOC emissions less than 50 tons per year, the major source threshold in Philadelphia County that is applicable to NOx RACT for the 1997 8-hour ozone.

The review memo is for Veolia EE only. The RACT for Veolia Schuylkill and GFCP has been evaluated in separate memos.

Process Description:

Veolia EE NOx emissions sources include the following:

Source	Source	Capacity	Fuel/	1997 8hr Ozone	2008 8hr Ozone
ID	Description		Materia	RACT	RACT
	_		1		
RSB1	Rapid Start	297.91	Natural	Each boiler was	Previous Case-by-Case
	Boiler 1	MMBT	Gas (NG)	Case-by- Case with the	RACT permit is meeting the
		U/hr	and/or	following limits:	following presumptive
			No. 2 oil.		RACT limits of
				Natural Gas NOx	129.97(g)(1)(i)-(ii) using a
				<u>Limit:</u>	30-day rolling average:
				0.01 lb/MMBTU heat	
				input 30-day rolling	0.10 lb/MMBtu for natural
			Natural	average (9 ppm @ 3%	gas fired combustion units;
RSB2	Rapid Start	297.91	Gas (NG)	O ₂)	and
	Boiler 2	MMBT	and/or		
		U/hr	No. 2 oil.	No. 2 fuel oil NOx	0.12 lb/MMBTU for
				<u>Limit:</u>	distillate oil-fired
				0.08 lb/MMBTU heat	combustion unit
				input 30-day rolling	
				average (62 ppm @	
				3% O ₂)	

RACT II Evaluation:

The 1997 8hr RACT permit and Plan Approval No. 10277A required each boiler, on a rolling 30-day average, to meet 0.01 lbs NOx/MMBTU while burning gas and 0.08 lbs NOx /MMBTU while burning oil. The boilers have a combined NOx emission limit of 52.31 tons per rolling 12-month period, also from Plan Approval No. 10277A. As shown in the above table, the case-by-case RACT approved for the 1997 8-hour ozone standard and the NOx emission limits taken for natural gas and burning No.2 fuel oil for the boilers meets or exceeds the presumptive RACT requirement of RACT II. Since each boiler is installed with ultra low NOx burners, the RACT I permit conditions shall be considered to represent NOx RACT for the 2008 8-hour ozone standard for each boiler and in compliance with the anti-backsliding requirements of CAA Section 110(1).

Conclusions and Recommendations:

AMS has determined the following for the 2008 8hr -hr RACT.

- 1) Veolia EE is complying with the presumptive RACT requirements of 129.97 for 2008 RACT.
- 2) The facility will continue to comply with their existing RACT Plan Approval.

5/1/20

Edward Wiener, Chief of Source Registration

Date