

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

**InterOffice Memo**

**To:** File  
**From:** Noelle Helmstetter and Maryjoy Ulatowski  
**Date:** July 27, 2015  
**Subject:** 1997 8-Hour RACT Analysis for University of Pennsylvania

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**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 1997 8-hour ozone NAAQS. This document presents the findings of a RACT evaluation for the 1997 8-hour ozone standard for this facility.

**Company Description:**

The University of Pennsylvania is located at 3160 Chestnut Street, Philadelphia, PA 19104. The facility's air emission sources include nine (9) heaters and furnaces rated less than 10 MMBTU/hr, 56 emergency generators and two fire pumps. In the past, the facility operated a 2000kW diesel peak shaving generator with a Selective Catalytic Reduction Device, but has been out of service and removed from the facility a few years ago.

**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 1997 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 1997 8-hour ozone NAAQS.

**Process Descriptions:**

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

- Nine (9) heaters and furnaces rated less than 10 MMBTU/hr each burn natural gas;
- 15 emergency generators with capacities ranging between 75 kW - 750 kW that each burn natural gas;
- 41 emergency generators with capacities ranging between 150 kW – 1,750 kW that each burn diesel;
- Two (2) fire pumps with capacities ranging between 150 hp – 187 hp each burn diesel;

**Presumptive RACT:**

The following sources are covered by presumptive RACT 25 Pa Code 129.93 (c)(1) (heaters & furnaces) or 25 Pa Code 129.93 (c)(5) (fire pumps & emergency generators). For each of the following sources, the presumptive RACT emission limitation is the installation, maintenance, and operation of each source in accordance with manufacturers' specifications.

*Heaters & Furnaces*

Unit	Heat Input (BTU/hr)	Fuel Burned	Presumptive RACT Regulation
Greenfield Center	686,000	Natural Gas	25 Pa Code 129.93(C )(1)
Munger 1 Heater	750,000	Natural Gas	25 Pa Code 129.93(C )(1)
Heater, Psychology Office	780,000	Natural Gas	25 Pa Code 129.93(C )(1)
Penn Safety Building Heater	1,500,000	Natural Gas	25 Pa Code 129.93(C )(1)
Heater, WXPB	623,000	Natural Gas	25 Pa Code 129.93(C )(1)
Heater, 3401 Walnut St.	2,049,000	Natural Gas	25 Pa Code 129.93(C )(1)
Munger 2 Heater	750,000	Natural Gas	25 Pa Code 129.93(C )(1)
4015 Walnut Heater	1,500,000	Natural Gas	25 Pa Code 129.93(C )(1)
133 S. 36th St.	4,704,000	Natural Gas	25 Pa Code 129.93(C )(1)

*Fire Pumps*

Unit	Capacity (HP)	Fuel Burned	Presumptive RACT Regulation
Steinberg Conference Center Fire Pump	187	Diesel	25 Pa Code 129.93(C )(5)
Fagin Hall Fire Pump	150	Diesel	25 Pa Code 129.93(C )(5)

*Emergency Generators (Natural Gas)*

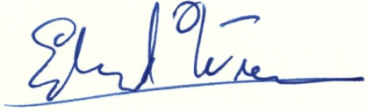
Unit	KW Rate Capacity (KW)	Fuel Burned	Presumptive RACT Regulation
Emergency Generator, 1920 Commons	75	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Nursing Education (Fagin Hall)	100	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, 3401 Walnut St.	115	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Blockley Hall	120	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Williams Hall	120	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Nichols House (Sansom Place E)	140	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Vance Hall	750	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Hi Rise South (Harrison House)	225	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Annenberg #2	150	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, High Rise East (Hamell)	150	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Module VI#1	120	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Module VI#2	120	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Sansom Commons West	100	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Maloney (HUP)	215	Natural Gas	25 Pa Code 129.93(C )(5)
Emergency Generator, Alumni Hall (HUP)	150	Natural Gas	25 Pa Code 129.93(C )(5)

*Emergency Generators (Diesel)*

Unit	KW Rate Capacity (KW)	Fuel Burned	Presumptive RACT Regulation
Emergency Generator, Johnson Pavilion	500	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, CRB #2	100	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, CRB #1	1000	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Richards	500	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, John Morgan	350	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, High Rise North (Rodin House)	235	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Steinberg Conf. Ctr.	350	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Stemmler Hall	565	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Law Library (Tanenbaum)	600	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Stellar Chance	1000	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, VHUP (ryan)	1025	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Silverstein #1	565	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Founders #1	650	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Founders #9	650	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Founders #10	1000	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Rhoads	800	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Penn Safety Building	150	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Tandem Building	150	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Huntsman Hall	600	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Levine Hall	120	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Vagelos	800	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Module VII	250	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Pottruck	250	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Schattner	600	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, 40th Street Garage	200	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, BRBII/III #1	1275	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, BRBII/III #2	1275	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Dulles (HUP)	1000	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, ISC Nap (Sansom East)	150	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Skirkanich	750	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Life Science Building (Lynch)	750	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, New Vet Building (Hill)	1250	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Ravdin White	800	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Silverstein #2	600	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Fisher-Bennett Hall	150	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Annenberg Public Policy (APPC) and Steinburg Conference Center	250	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Translation Research Center (TRC) and Fagin Hall	1500	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Translation Research Center (TRC)	1500	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Stemmler Hall	900	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Perelman Center for Adv. Med.	1750	Diesel	25 Pa Code 129.93(C )(5)
Emergency Generator, Penn Tower	500	Diesel	25 Pa Code 129.93(C )(5)

**Conclusions and Recommendations:**

All sources at facility are covered by presumptive RACT.  
No RACT determinations are submitted for SIP Approval.

A handwritten signature in blue ink, appearing to read "Edward Wiener", is centered within a light yellow rectangular box. Below the box is a solid black horizontal line.

**Edward Wiener, Chief of Source Registration**

**6/27/15**

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**Date**