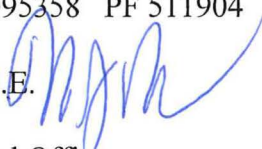
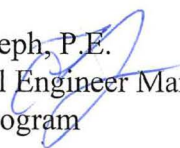



**SOUTHWEST REGIONAL OFFICE**

**MEMO**

**TO:** AQ File #OP-56-00199  
Shade-Central City School District  
Shade-Central City High School  
Shade Township, Somerset County  
APS 883698 AUTH 1095358 PF 511904

**FROM:** Nicholas J. Waryanka, P.E.   
Air Quality Engineer  
Air Quality, SW Regional Office

**THROUGH:** Thomas J. Joseph, P.E.   
Environmental Engineer Manager  
Air Quality Program

Mark R. Gorog, P.E.   
Regional Manager  
Air Quality Program

**DATE:** November 30, 2016

**RE:** Comments and Response Document for Renewal of OP #56-00199

Public notice regarding the proposed issuance of the above renewal synthetic minor operating permit was published in the PA Bulletin on Saturday, October 15, 2016. The 30 day public comment period ended on November 15, 2016. The Department did not receive any comments regarding the renewal of this operating permit. The permit was issued on November 30, 2016 with an expiration date of November 30, 2021.

**COMMONWEALTH OF PENNSYLVANIA**  
Department of Environmental Protection  
Southwest Regional Office

**MEMO**

**TO:** Air Quality Case File OP-56-00199

**FROM:** Nicholas J. Waryanka, P.E.  
Air Quality Engineer  
Air Quality Program



**THROUGH:** Thomas J. Joseph, P.E.  
Environmental Engineer Manager  
Air Quality Program



Mark R. Gorog, P.E.  
Regional Manager  
Air Quality Program



**DATE:** September 29, 2016

**RE:** SOOP Renewal Application OP-56-00199  
Shade-Central City School District  
Shade-Central City High School  
Shade Township, Somerset County  
APS 883698 AUTH 1095358 PF 511904

**BACKGROUND**

On October 20, 2015, the Department received a renewal synthetic minor operating permit application from the Shade-Central City School District (SCC) for their secondary school in Shade Township, Somerset County. The school is located on Route 160 west of Central City, PA. The SIC and NAICS Codes for secondary schools are 8211 and 611110, respectively.

The Shade-Central City School District operates two steam boilers at the high school. The primary boiler, Source 031, is a CNB Model #T-185 L.5 tri-fuel unit rated at 6.4 mmbtu/hr equipped with a Breslove separator to reduce particulate matter emissions. It operates primarily on coal but can use #2 fuel oil and natural gas as well. The second boiler, Source 032, is a Burnham Model #3L-200.50.OWEB unit with a heat capacity of 8.37 mmbtu/hr which burns No. 2 fuel oil and functions as a backup unit. Other emission sources at the site include two small propane-fired electric generators manufactured by Ford Power Products, Model #C5PG005A50-3L/LS6-4231-60050-F. The generators are rated at approximately 30 kW and are grouped together in the permit as Source 101.

SCC's previous permit expired on August 17, 2016. A renewal application was due no later than February 17, 2016 pursuant to 25 Pa. Code §127.446(e). This regulation requires a renewal

application be submitted no earlier than eighteen months but at least six months prior to permit expiration. The renewal was received on October 20, 2015 and was subsequently deemed administratively complete on January 22, 2016.

**EMISSION INFORMATION**

Without taking an elective restriction on coal usage, the facility has the potential to emit enough SOx to be defined as a major facility per 25 PA Code Title 121.1. The current permit contains an elective restriction that the tri-fuel boiler will not combust more than 1,900 tons of coal having a maximum sulfur content of 2.4% in any consecutive 12-month period. Since the school district only uses about 500 tons of coal per year, it does not have any difficulties complying with this restriction. In addition to the sulfur and throughput restrictions the permit limits the ash content of the coal to no more than 10%.

The Synthetic Minor permit for the facility will include the two boilers as separate sources and the emergency generators grouped together as a third source. The tri-fuel boiler is equipped with a Breslove separator for particulate control. The generators have an operating restriction of 500 hours per consecutive 12-month period apiece. There is also a small natural gas-fired hot water heater which will be listed in the permit as a trivial activity and have no additional applicable requirements.

The primary pollutant of concern is sulfur dioxide from coal combustion. Based on 500 tons of coal usage per year, the tri-fuel boiler would emit 18.6 tons of SO<sub>2</sub>. The throughput restriction will ensure that the school district remains a Synthetic Minor for SO<sub>2</sub> even with inclusion of SO<sub>2</sub> emissions from the other sources.

The 1,900 tons limit corresponds to the following potential to emit (PTE) estimates for the Tri-Fuel Boiler based on US EPA AP-42 emission factors:

**Table 1 – Tri-Fuel PTE After Limitation of 1,900 tpy Coal**

<b>Pollutant</b>	<b>PTE in tpy based on 1,900 tpy coal</b>
NO <sub>x</sub>	9.0
CO	10.5
VOC	1.2
SO <sub>2</sub>	70.7
PM*	4.3

\* Based on a 70% control efficiency for the Breslove separator

PTE emission estimates for the backup fuel oil boiler based on AP-42 are as follows:

**Table 2 – 8.37 MMbtu/Hr Fuel Oil Boiler PTE Based on 8,760 hrs/yr**

<b>Pollutant</b>	<b>PTE in tpy</b>
NO <sub>x</sub>	5.3
CO	1.3
VOC	0.1
SO <sub>2</sub>	18.7
PM*	0.5

The small propane emergency generators are limited to 500 hrs per consecutive 12-month period and thus emissions from these units are essentially negligible. Total facility wide potential to emit is therefore estimated as presented in Table 3:

**Table 3 – Total Facility-Wide PTE**

<b>Pollutant</b>	<b>PTE in tpy</b>
NO <sub>x</sub>	14.3
CO	11.8
VOC	1.3
SO <sub>2</sub>	89.4
PM*	4.8

**REGULATORY ANALYSIS**

There are several relatively recent federal regulatory requirements which could potentially apply to this facility. National Emission Standards for Hazardous Air Pollutants (NESHAPs), 40 CFR Part 63, Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines (SRICE) applies to both major and area sources of hazardous air pollutants (HAPs) such as Source 101. However, 40 CFR §63.6590(b)(3)(vii) exempts existing institutional emergency SRICE located at area sources of HAP emissions from having to meet the requirements of Subpart ZZZZ.

40 CFR 63, Subpart JJJJJ, NESHAPs for Industrial, Commercial, and Institutional Boilers Area Sources applies to almost any area source boiler that is not defined in this subpart as a “gas-fired boiler” in accordance with 40 CFR §63.11195(e). “Gas-fired boiler” is defined in 40 CFR §63.11237 as including “any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.” Since the tri-fuel boiler (Source 031) generally burns coal

exclusively, the unit is subject to Subpart JJJJJ. Likewise, the backup unit (Source 032) burns No. 2 fuel oil and is also subject to Subpart JJJJJ.

Notification of Subpart JJJJJ applicability was due to the US EPA as well as the Department on January 20, 2014. Source 031 falls under the category of “coal-fired” boilers with a heat input capacity of less than 10 mmbtu/hr. Source 032 falls under the category of “oil-fired” units but also could be classified as a “seasonal” boiler if SCC chooses to operate it in accordance with the definition found in 40 CFR §63.11237.

The primary requirement for affected units of this type under Subpart JJJJJ is the performance of an initial tune-up by March 21, 2014, in accordance with 40 CFR §63.11223(b) and then subsequent tune-ups thereafter as detailed in Table 2 to Subpart JJJJJ. §63.11205 requires that the sources be operated and maintained in a manner consistent with safety and good air pollution control practices for minimizing emissions. §63.11225(a) requires initial notification of Subpart JJJJJ applicability as well as submission of a Notification of Compliance Status. §63.11225(b) requires submission upon request of a periodic compliance certification verifying that tune-ups were conducted as required and reporting of any deviations from applicable requirements, the time they occurred, and the corrective actions taken. §63.11225(c) requires recordkeeping of notifications, reports, and all conducted tune-ups, malfunctions, inspections, monitoring, and maintenance.

There are no applicable New Source Performance Standards. 40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units applies to combustion units with maximum design heat input capacities greater than 10 mmbtu/hr that commenced construction after June 9, 1989. The units at SCC are rated below the 10 mmbtu/hr threshold.

### **PA Requirements**

Title 25 Pa. Code §123.11(a) prohibits particulate matter emissions from combustion units in excess of 0.4 pound per million Btu of heat input. 25 Pa. Code §123.13(c) limits particulate matter emissions from processes to 0.04 grains per dry standard cubic foot (gr/dscf). 25 Pa. Code §123.21 limits SO<sub>2</sub> emissions from sources other than combustion units to 500 ppmv, dry basis. 25 Pa. Code §123.22 limits SO<sub>2</sub> emissions from combustion units in nonair basin areas to the rate of 4.0 pounds per million Btu of heat input over a 1-hour period.

25 Pa. Code §123.41 limits visible emissions not to equal or exceed 20 percent opacity for a period or periods aggregating more than 3 minutes in any 1 hour and never to equal or exceed 60 percent at any time. The permittee is required to do monthly monitoring while either boiler is operating (during the heating season) for fugitive, visible, and malodor emissions and to keep records of the observations. Annual fuel usage and coal analysis records are required to be kept.

### **OPERATING PERMIT REVISIONS/RFDs**

There were no plan approvals, RFDs, or de minimis emission increases processed for the facility since issuance of the last permit. There are no additional trivial or insignificant emission sources to be added to the permit. The only noteworthy change to the operating permit from the previous version is the addition of Subpart JJJJJ requirements for Sources 031 and 032.

### **MUNICIPAL AND PUBLIC NOTIFICATIONS**

Municipal and county notifications regarding the renewal permit application were made on January 11, 2016. Notification of issuance of a proposed renewal operating permit for the facility will be published in the PA Bulletin. The applicant and the Air Quality District Supervisor for the area will also be provided a copy of the proposed renewal permit for comment.

### **CONCLUSIONS AND RECOMMENDATIONS**

I have completed my review of the operating permit application for Shade-Central City School District. SCC has met the regulatory requirements associated with this application submittal. The attached draft permit includes the applicable regulatory requirements for this facility and includes terms and conditions based on the permit application and plant inspections. It is my recommendation to issue a Synthetic Minor State Only operating permit for this facility containing the elective restrictions on coal usage and operating hours for the emergency generators. I recommend that the proposed operating permit be issued for a five (5) year permit term.