

COMMONWEALTH OF PENNSYLVANIA

Department of Environmental Protection


March 7, 2014


814/332-6940


Fax: 814/332-6117

SUBJECT: Re-Issuance of Title V Permit
Mercer Lime Company, Branchton Plant
560 Branchton Road
Slippery Rock Township, Butler County

TO: TV-10-00023 Auth. ID: 991840 Site ID: 256461 PF ID: 269698

FROM: Jeffrey D. Fuller 
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Introduction-

The subject application is for the re-issuance of a Title V Permit for the Mercer Lime Company, Branchton Plant located in Slippery Rock Township, Butler County. This facility produces lime products in the form of quicklime (CaO) and chemical hydrated lime (Ca[OH]₂). Some of the applications of these products are flue gas desulfurization, water softening, pH control, sewage sludge stabilization, steel making, and masonry lime. This facility normally operates 24 hours a day, 7 days a week, and usually produces between 500 and 550 tons of lime per day.

HAP emissions from this facility continue to be well below the major source threshold so this facility remains exempt from the requirements of 40 CFR 63, Subpart AAAAA – National Emission Standards for Hazardous Air Pollutants for Lime Manufacturing Plants.

Changes Being Made During Re-Issuance-

- The name of this facility has been changed from Mercer Lime & Stone Company to Mercer Lime Company.
- On February 14, 2011, Mercer Lime Company submitted a letter requesting a change in the frequency of Particulate Matter testing for Source ID: 111 – Rotary Kiln. The provisions of the Title V Operation Permit allow the frequency to be altered if, after three (3) consecutive annual tests, the emission data consistently shows compliance with the emission limitations. The Department approved this request via a letter dated February 22, 2011. Because the permit language allowed for modification of the testing interval with approval from the Department, the language in the Title V Permit was not be changed at that time. The testing

interval listed in the Title V Operating Permit has now been changed to once every five (5) years.

- Mercer Lime Company has requested a change to the range of a monitored parameter for a pair of control devices associated with Source ID: 111 – Rotary Kiln. The AAF Scrubbers (C03 and C06) are part of the parallel control systems used to control particulate matter from the Rotary Kiln. The CAM Plan for this source prescribes that the pressure differential across the AAF Scrubber Systems (C03 and C06) shall be maintained between 15-30 inches of water column. The requested change increases the upper limit of that range from 30 to 35 inches of water column. The permittee has indicated that this increased pressure differential is still within the design capability of the system. An increase of pressure differential across a venture scrubber system will typically lead to enhanced inertial impaction which should result in greater control efficiency. Because it should have only a positive effect on the control efficiency of the devices, the requested change has been incorporated into the Title V Operating Permit.

40 CFR 63 – Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Source ID: 140 – Emergency Kiln Drive Diesel Engine is subject to 40 CFR 63 – Subpart ZZZZ. This source uses a 22 horsepower engine to turn the kiln in the event of a power outage. In order to prevent thermal damage, a heated kiln must continue to rotate. As an existing compression ignition engine which is used only for emergency power and periodic operational checks, there are limited requirements from Subpart ZZZZ that apply. This section explains how these standards were applied to the source.

The language from 40 CFR 63.6580 – “What is the purpose of subpart ZZZZ” applies to this engine and has been listed under “Additional Requirements” for the source.

The language from 40 CFR 63.6585 – “Am I subject to this subpart” applies to this engine and has been listed under “Additional Requirements” for the source.

The language from 40 CFR 63.6590 – “What parts of my plant does this subpart cover” applies to this engine and has been listed under “Additional Requirements” for the source.

The language from 40 CFR 63.6595 – “When do I have to comply with this subpart” applies to this engine and has been listed under “Additional Requirements” for the source.

40 CFR 63.6600 applies only to engines with a Horsepower rating greater than 500 HP. Since this source uses an engine that is rated at 22 HP, this section does not apply.

40 CFR 63.6601 applies only to new and reconstructed 4SLB stationary RICE sources. Because this source uses an existing compression ignition engine, this section does not apply.

40 CFR 63.6602 is applicable to existing RICE sources located at major sources of HAP emissions. Since this facility is not a major source of HAP emissions this subsection does not apply.

40 CFR 63.6603 – “What emission limitations and operating limitations must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions”, is applicable since this facility is an area source. Paragraph (a) specifies that this source must comply with the requirements of Table 2d to this subpart that apply to you.

Based on Paragraph (4) of Table 2d, in Subpart ZZZZ, this compression ignition (CI) engine must be maintained according to the following.

Oil and filter changes every 500 hours of operation or annually, whichever comes first, unless the permittee elects to utilize an oil analysis program in order to extend the specified oil change requirements. The air cleaner is to be inspected every 1000 hours of operation or annually, whichever comes first. All hoses and belts are required to be inspected and replaced as necessary every 500 hours of operation or annually whichever comes first. These maintenance requirements have been attached to Source ID: 111 under "Work Practice Requirements".

Based on 40 CFR 63.6645(a)(5), since there are no numeric emissions standards for this engine, the notification requirements listed in 63.6645(a) do not apply and the paragraph preceding 63.6603(a) was likewise not included in the permit.

In order to maintain the classification as an emergency stationary RICE, the following requirements from 40 CFR 63.6640(f) have been attached to this source.

(f) Requirements for emergency stationary RICE.

(1) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 HP located at an area source of HAP emissions, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1)(i) through (iii) of this section. Any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1)(i) through (iii) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1)(i) through (iii) of this section, the engine will not be considered an emergency engine under this subpart and will need to meet all requirements for non-emergency engines.

(i) There is no time limit on the use of emergency stationary RICE in emergency situations.

(ii) You may operate your emergency stationary RICE for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency RICE beyond 100 hours per year.

(iii) You may operate your emergency stationary RICE up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity; except that owners and operators may operate the emergency engine for a maximum of 15 hours per year as part of a demand response program if the regional transmission organization or equivalent balancing authority and transmission operator has determined there are emergency

conditions that could lead to a potential electrical blackout, such as unusually low frequency, equipment overload, capacity or energy deficiency, or unacceptable voltage level. The engine may not be operated for more than 30 minutes prior to the time when the emergency condition is expected to occur, and the engine operation must be terminated immediately after the facility is notified that the emergency condition is no longer imminent. The 15 hours per year of demand response operation are counted as part of the 50 hours of operation per year provided for non-emergency situations. The supply of emergency power to another entity or entities pursuant to financial arrangement is not limited by this paragraph (f)(1)(iii), as long as the power provided by the financial arrangement is limited to emergency power.

The requirements of 40 CFR 63.6604 relate to existing non-emergency CI (compression ignition) engines with a site rating of more than 300 HP. Since this engine is for emergency use and is rated at less than 300 HP, this subsection does not apply.

40 CFR 63.6605 addresses general requirements for complying with Subpart ZZZZ. These general requirements have been attached to the "Work Practice Requirements" for this source.

40 CFR 63.6610 applies only to RICE sources with a site rating of more than 500 HP. Since this engine is rated at below 500 HP, this subsection does not apply.

40 CFR 63.6611 relate to 4SLB spark ignition engines located at major sources of HAP emissions. Since this engine uses compression ignition, this subsection does not apply.

40 CFR 63.6612 addresses by what date the initial performance tests or other initial compliance demonstrations must be met. Because there are no actual emission limits, this section does not apply to this source.

40 CFR 63.6615 references Table 3 of Subpart ZZZZ and stipulates when subsequent performance tests must be performed. This section does not apply since there are no testing requirements for this source.

40 CFR 63.6620 spells out what performance tests and other procedures must be used. This section does not apply since there are no testing requirements for this source.

40 CFR 63.6625 deals with the monitoring system requirements and has been broken down as follows.

Paragraph (a) lists the requirements for continuous emissions monitoring systems (CEMS). Since this engine does not require this type of monitoring system, this section does not apply.

Paragraph (b) gives the requirements for a continuous parameter monitoring system (CPMS). Since this engine does not require this type of monitoring system, this section does not apply.

Paragraph (c) has been omitted since it only applies to engines that are fueled by landfill gas or digester gas.

Paragraph (d) only applies to 4SLB engines and has been excluded.

Paragraph (e) deals with operation and maintenance plans for select engines. This source falls under the listed types of engines subject to this section. The requirements of paragraph (e) have been included in the operating permit.

Paragraph (f) requires the installation of a non-resettable hour meter on each emergency RICE if one is not already installed. This requirement applies to this source.

Paragraph (g) deals with existing non-emergency compression ignition (CI) engines only and has been omitted.

Paragraph (h) stipulates the time limits for engine startups. This restriction applies to this RICE source.

Paragraph (i) deals with compression ignition (CI) engines that are subject to the work, operation or management practices in items 1 or 2 of Table 2c of Subpart ZZZZ. This subsection provides for the option to utilize an engine oil analysis program in order to extend the frequency specified for changing the oil. This language has been included the "Monitoring Requirements" for this source.

Paragraph (j) allows for an engine oil analysis as an alternative to the oil change requirements for spark ignition engines and has been excluded.

40 CFR 63.6630 deals with demonstrating initial compliance with the emission limitations and operating limitations. Since this source has no numerical emission limitations from Subpart ZZZZ, paragraphs (a) and (b) are not applicable. Paragraph (c) deals with the Notification of Compliance Status report but based on an exclusion listed in 40 CFR 63.6645(a)(5), this section does not apply to this source.

40 CFR 63.6635 deals with data collection for monitoring systems. This section does not apply to this source.

40 CFR 63.6640 deals with demonstrating continuous compliance with emission limitations and operating limitations. These requirements have been applied to this RICE sources as follows.

Paragraph (a) specifies the methods used to demonstrate compliance with emission limitations and operating limitations by referring to Table 6 of Subpart ZZZZ.

Section 9 of Table 6 applies to existing emergency stationary engines located at an area source. The following language from section 9 of Table 6 has been added to the "Work Practice Requirements" section of this source.

9. Existing emergency and black start stationary RICE located at an area source of HAP, complying with work or Management practices, must demonstrate continuous compliance by performing the following.

i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions;
or

ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

The first part of paragraph (b) from 40 CFR 63.6640 specifies the reporting requirements for deviations from emission limitations or operating limitations contained in Table 2d. These requirements apply to this RICE source and have been added to the reporting requirements for the source.

The second part of paragraph (b) from 40 CFR 63.6640 deals with re-establishing the operating parameters for a control device if the catalyst is changed. This requirement does not apply to this source.

Paragraph (c) applies only to engines that are greater than 500 Hp and is not applicable.

Paragraph (d) deals with new, reconstructed, and rebuilt stationary RICE sources and has been excluded from this permit since this is an existing engine.

Paragraph (e) states that "You must also report each instance in which you did not meet the requirements in Table 8 of this subpart that apply to you". The paragraph goes on to exclude several RICE sources, including this compression ignition engine, from the requirements in Table 8 of this subpart. For this reason, paragraph (e) is not applicable.

Paragraph (f) lists the operating limitations for an emergency stationary RICE. These limits have been attached to the "Restrictions" section for this source.

40 CFR 63.6645 identifies what notifications must be submitted and when. The following is an explanation of how this subsection was applied to this RICE source.

Paragraph (a) refers to the testing and CEM notifications contained in 40 CFR 63.7, 40 CFR 63.8, and 40 CFR 63.9(b) through (e), and (g) and (h). Because this RICE source is not required to use a CEM to demonstrate compliance, the notices from 40 CFR 63.8 do not apply. Since there are no stack testing requirements, the notification requirements from 40 CFR 63.7 have been omitted. The requirements of 40 CFR 63.9(b) deal with Initial Notifications and are applicable to this source.

Paragraphs (b) and (c) apply to RICE sources with a site rating of greater than 500 HP located at a major source of HAP emissions. Since this engine is 22 HP, these paragraphs are not applicable.

Paragraph (d) requires submission of an Initial Notification if you start up your stationary RICE source with a site rating of less than 500 brake HP located at a major source of HAP emissions before the effective date of Subpart ZZZZ. This requirement has not been included in the operating permit.

Paragraph (e) applies to new and reconstructed stationary RICE sources and has been excluded.

Paragraph (f) is not applicable.

Paragraph (g) identifies when a Notification of Intent to conduct a performance test must be submitted. This requirement is not applicable.

Paragraph (h) refers to 40 CFR 63.9(h)(2)(ii) which deals with the Notification of Compliance Status report. This requirement is only applicable to RICE sources that must demonstrate

compliance as specified in Tables 4 and 5 of Subpart ZZZZ. Since this source is not subject to this type of compliance demonstration, this paragraph has been omitted.

Paragraph (i) is applicable only to non-emergency RICE sources and has been omitted.

40 CFR 63.6650 identifies what reports must be submitted and when. This section refers to Table 7 of Subpart ZZZZ for applicability. Table 7 excludes this type of source from these reporting requirements.

40 CFR 63.6655 identifies what records must be kept. The following is an explanation of how this subsection was applied to the RICE sources at this facility.

Paragraph (a) applies to sources that are subject to emission or operating limitations. These requirements do not apply since this source has no applicable emission limitations from this subpart.

Paragraph (b) applies to sources required to install a CEMS or CPMS. These requirements do not apply since this source has no CEMS or CPMS requirements.

Paragraph (c) is only applicable to RICE sources that combust landfill gas or digester gas and has been omitted.

Paragraph (d) identifies records in Table 6 that must be kept to demonstrate continuous compliance with each emission of operating limitation. These recordkeeping requirements do not apply to this source.

Paragraph (e) identifies the maintenance records that must be maintained for each RICE source. This paragraph applies since there are requirements to perform periodic maintenance on the engine.

Paragraph (f) requires records of the hours of operation and purpose of operation for an emergency stationary RICE. This paragraph applies to this source.

40 CFR 63.6660 specifies in what form and for how long records must be kept. This section has been added to this RICE source.

40 CFR 63.6665 identifies what parts of the general provisions apply to the RICE sources. Table 8 shows which parts of the General Provisions in 40 CFR 63.1 through 63.15 apply and are included by reference only.

40 CFR 63.6670 specifies who implements and enforces Subpart ZZZZ. This section has been added to the source under "Additional Requirements".

40 CFR 63.6675 provides definitions that apply to Subpart ZZZZ. This section has been added to the source under "Additional Requirements".

Conclusion-

A site visit was conducted on March 6, 2014, by Jeffrey D. Fuller and Kyle Lewarchik. The proposed permit was discussed and a full compliance inspection was conducted. No compliance issues were noted. Re-issuance of this permit is recommended.