



**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR QUALITY PROGRAM
NORTHWEST REGION**

TITLE V OPERATING PERMIT

**ARMSTRONG CEMENT & SUPPLY CORPORATION
PERMIT #10-00028**

Re-Issuance Effective: November 13, 2012

Based upon Pennsylvania's Operating Permit Program
25 Pa. Code Chapter 127
Effective November 25, 1994

COMMONWEALTH OF PENNSYLVANIA

Department of Environmental Protection

November 9, 2012

814/332-6940

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SUBJECT: Re-Issuance of Title V Operating Permit
Armstrong Cement & Supply Corp.
100 Clearfield Road
Winfield Township, Butler County

TO: Title V Operating Permit Number: 10-00028

Auth. ID: 912661

Site ID: 254557

PF ID: 265869

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Introduction-

The subject application is for the Armstrong Cement and Supply Corporation, Winfield Plant, located in Winfield Township, Butler County. This facility manufactures portland cement by the wet type of process. In the wet process, the raw materials are ground with about 30 to 40 percent water, to produce what is called the mill slurry. This slurry is introduced into one of the two rotary kilns where it undergoes drying and calcination reactions. The material leaves the kiln in the form of clinker, which is cooled prior to entering the finish mill where it is ground to its finished size. This facility normally operates 24 hours a day, 7 days a week.

MACT Standard - Subpart LLL – National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry

This facility is subject to the provisions of 40 CFR 63, Subpart LLL – National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry. As an existing affected source, this facility was required to be in compliance with the provisions of this subpart by no later than June 10, 2002.

Armstrong Cement has determined that the HAP emissions from this facility are minimal enough to qualify for area source status. With this classification, there were limited provisions of Subpart LLL that apply to the sources at this facility. The general requirements of 40 CFR 63 are included in Section C of the Title V Permit, and the source specific requirements are included in Section D of the permit.

The requirements of Subpart LLL were revised effective September 9, 2010. The appropriate sections of that subpart are being changed as follows to reflect these recent revisions. The compliance date for the revised requirements is September 9, 2013.

40 CFR §63.1340 – “What parts of my plant does this subpart cover?” has been added to the Additional Requirements area of Section C.

40 CFR §63.1341 – “Definitions” has been added to the Additional Requirements area of Section C.

40 CFR §63.1342 – “Standards: General” has been added to the Additional Requirements area of Section C. The referenced Table 1 of Subpart LLL is included by reference only.

40 CFR §63.1343 – “What standards apply to my kilns, clinker coolers, raw material dryers, and open clinker piles?” has been revised and applied as follows. The revised regulations contain emissions standards that have a compliance date of September 9, 2013. The following emission standards from Table 1 contain a note that states “The compliance date for the following emissions standards is September 9, 2013.”

For the Kilns (Source IDs: 101 and 121), the emission limits from Table 1, Rows 1 and 3 are applicable and contain the following limits.

1. If your source is an existing kiln and the operating mode is normal operation and if it is located at a major or area source, your emissions limits are:

PM- 0.04 lb/ton of clinker

D/F- 0.20 ng per dscm (8.7 x 10⁻¹¹ gr per dscf) (TEQ) [With an oxygen correction factor of 7 percent.]; or

0.40 ng per dscm (1.7 x 10⁻¹⁰ gr per dscf) (TEQ) [With an oxygen correction factor of 7 percent.] If the average temperature at the inlet to the first particulate matter control device (fabric filter or electrostatic precipitator) during the D/F performance test is 400 °F or less.

Mercury- 55 lb/MM tons clinker

THC- 24 ppmvd [With an oxygen correction factor of 7 percent.] [Measured as propane] [Any source subject to the 24 ppmvd THC limit may elect to meet an alternative limit of 9 ppmvd for total organic HAP. If the source demonstrates compliance with the total organic HAP under the requirements of § 63.1349 then the source’s THC limit will be adjusted to equal the average THC emissions measured during the organic HAP compliance test.]

3. If your source is an existing kiln and the operating mode is startup and shutdown and is located at a major or area source, your emissions limits are:

PM- 0.004 gr/dscf

D/F- 0.20 ng per dscm (8.7 x 10⁻¹¹ gr per dscf) (TEQ) [With an oxygen correction factor of 7 percent.]; or

0.40 ng per dscm (1.7 x 10⁻¹⁰ gr per dscf) (TEQ) [With an oxygen correction factor of 7 percent.] If the average temperature at the inlet to the first particulate matter

control device (fabric filter or electrostatic precipitator) during the D/F performance test is 400 °F or less.

Mercury- 10 ug/dscm

THC- 24 ppmvd [With an oxygen correction factor of 7 percent.] [Measured as propane] [Any source subject to the 24 ppmvd THC limit may elect to meet an alternative limit of 9 ppmvd for total organic HAP. If the source demonstrates compliance with the total organic HAP under the requirements of § 63.1349 then the source's THC limit will be adjusted to equal the average THC emissions measured during the organic HAP compliance test.]

For the Clinker Coolers (Source IDs: 105 and 122) the emission limits from Table 1, Rows 9 and 10 are applicable and contain the following limits.

9. If your source is an existing clinker cooler and the operating mode is normal operation and if it is located at a major or area source, your emissions limits are:

PM- 0.04 lb/ton of clinker

10. If your source is an existing kiln and the operating mode is startup and shutdown and is located at a major or area source, your emissions limits are:

PM- 0.004 gr/dscf

For the Raw Mills (3) (Source ID: 125) and Finish Mill (Source ID: 103) there are no new applicable emission limits from this subpart.

Table 2 of 63 §63.1343 specifies emissions limits in effect prior to September 9, 2010, that must continue to be met until September 9, 2013. Of the emissions standards listed in Table 2, only Row 3, dealing with an existing kiln at an area source, is applicable. The following Dioxins and Furans (D/F) limits were previously included in the operating permit.

(e) Emissions limits in effect prior to September 9, 2010. Any source defined as an existing source in §63.1351, and that was subject to a PM, mercury, THC, D/F, or opacity emissions limit prior to September 9, 2010, must continue to meet the limits shown in Table 2 to this section until September 9, 2013.

This note has been attached to these emissions limits. "The following emissions limits remain in effect until September 9, 2013, at which time the expanded emissions limits listed in this permit will take effect."

Dioxins and Furans (D/F) emissions from the kilns shall not exceed the following limits:

0.2 ng per dscm (8.7 x 10⁻¹¹ gr per dscf) (TEQ) [With an oxygen correction factor of 7 percent.]; or

0.40 ng per dscm (1.7 x 10⁻¹⁰ gr per dscf) (TEQ) [With an oxygen correction factor of 7 percent.] If the average temperature at the inlet to the first particulate matter control device (fabric filter or electrostatic precipitator) during the D/F performance test is 400 °F or less

The requirements on 40 CFR §63.1344 – “Affirmative defense for exceedance of emission limit during malfunction.” have been added to Section C of the operating permit.

40 CFR §63.1345 – “Emissions limits for affected sources other than kilns; in-line kiln/raw mills; clinker coolers; new and reconstructed raw material dryers; and raw and finish mills, and open clinker piles” applies only to sources located at a major facility. Since Armstrong Cement and Supply is an area source of HAP emissions, this subsection is not applicable and has been omitted from the operating permit.

40 CFR §63.1346 – “Operating Limits for Kilns” is applicable to Source IDs: 101 and 121 – No.1 and No.2 Kilns. All paragraphs of this subsection, dealing with multiple control options, have been included in the operating permit. Once the methods of emissions control have been established, the non-applicable paragraphs can be deleted from the operating permit.

40 CFR §63.1347 – “Operation and maintenance plan requirements” is applicable to the affected sources and has been included in Section C under “Additional Requirements”.

40 CFR §63.1348 – “Compliance Requirements” is applicable to the affected sources and has been included in Section C under “Additional Requirements”. All paragraphs from this subsection have been included. After the methods of emissions control have been determined and the appropriate compliance requirements are known, some paragraphs may not be applicable and may be deleted.

40 CFR §63.1349 – “Performance Testing Requirements” is applicable to the affected sources and has been included in Section C under “Additional Requirements”. All paragraphs from this subsection have been included. After the methods of emissions control have been determined and the appropriate performance testing requirements are known, some paragraphs may not be applicable and may be deleted.

40 CFR §63.1350 – “Monitoring Requirements” is applicable to the affected sources and has been included in Section C under “Additional Requirements”. All paragraphs from this subsection have been included. After the methods of emissions control have been determined and the appropriate monitoring requirements are known, some paragraphs may not be applicable and may be deleted.

40 CFR §63.1351 – “Compliance Dates” is applicable and has been included in Section C under “Additional Requirements”. This facility is currently subject to the requirements of Subpart LLL with the exception of the requirements that became effective on November 8, 2010, which have a compliance date of September 9, 2013.

40 CFR §63.1352 – “Additional test methods” specifies the test methods that can be used in applicability determinations under §63.1340. This subsection has been added to the testing requirements for the two kilns (Source IDs: 101 and 121).

40 CFR §63.1353 – “Notification Requirements” is applicable to this facility and has been included in in Section C under “Reporting Requirements”.

40 CFR §63.1354 – “Reporting Requirements” is applicable to this facility and has been included in in Section C under “Reporting Requirements”.

40 CFR §63.1355 – “Recordkeeping Requirements” is applicable to this facility and has been included in in Section C under “Recordkeeping Requirements”.

40 CFR §63.1356 – “Source with multiple emission limits of monitoring requirements” is applicable and has been included in Section C under “Additional Requirements”.

40 CFR §63.1357 – “Temporary, conditioned exemption from particulate matter and opacity standards” is applicable and has been included in Section C under “Additional Requirements”.

40 CFR §63.1358 – “Implementation and enforcement” is applicable and has been included in Section C under “Additional Requirements”.

MACT Standard - Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines-

Source ID: 140 – 100 KW-Emergency Power Generator is subject to the newly promulgated NESHAP requirements of Subpart ZZZZ. This compression ignition engine uses diesel as a fuel source, is existing, and is less than 300 brake HP. This section explains how these standards were applied to the sources and how the regulations are arranged in the operating permit.

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

The language from **40 CFR 63.6595 – “When do I have to comply with this subpart”** applies to all of the engines and has been placed in “Section C” of the operating permit under “Additional Requirements”. Because the engines at this facility are all existing, use compression ignition, and are located at an area source of HAP emissions, the compliance date for Subpart ZZZZ will be May 3, 2013.

40 CFR 63.6600, 63.6601, and 63.6602 all relate to engines located at major sources of HAP emissions. Since this facility is an area source of HAP emissions, these subsections do 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”, applies to the engine as follows.

This engine must meet the maintenance requirements outlined in Table 2d (paragraph 4) of Subpart ZZZZ. This includes 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 every 500 hours of operation or annually whichever comes first and replaced as necessary. These maintenance requirements have been attached under "Work Practice Standards".

Based on 40 CFR 63.6645(a)(5), since there are no numeric emissions standards for these engines, the notification requirements listed in 63.6645(a) do not apply.

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

(f) Requirements for emergency stationary RICE.

(1) If you own or operate an existing emergency stationary RICE 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 CI (compression ignition) engines with a site rating of more than 300 brake HP. Since this engine is rated at less than 300 brake 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 the RICE source.

40 CFR 63.6610 and 63.6611 relate to engines located at major sources of HAP emissions. Since this facility is an area source of HAP emissions, these subsections do not apply.

40 CFR 63.6612 addresses by what date the initial performance tests or other initial compliance demonstrations must be met. Because this RICE source does not have an actual emission limit from this subpart, this section does not apply to any of the sources.

40 CFR 63.6615 references Table 3 of Subpart *ZZZZ* and stipulates when subsequent performance tests must be performed. Since no stack testing is required for the RICE sources, this section does not apply.

40 CFR 63.6620 spells out what performance tests and other procedures must be used. These requirements do not apply to the RICE source at this facility.

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 engines located at a major source of HAP emissions.

Paragraph (e) deals with operation and maintenance plans for select engines. The RICE source at this facility falls under the listed types of engines subject to this section.

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 Source ID: 140.

Paragraph (g) deals with compression ignition (CI) engines rated at greater than 300 brake HP only and has been omitted.

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

Paragraph (i) allows for an engine oil analysis as an alternative to the oil change requirements contained in Table 2c. This option applies to the RICE source and has been included in the "Monitoring Requirements" for this source.

Paragraph (j) applies only to spark ignition engines and has been omitted.

40 CFR 63.6630 deals with demonstrating initial compliance with the emission limitations and operating limitations.

Paragraph (a) refers to the emission and operating limitations contained in Table 5 of Subpart ZZZZ. Since the RICE sources at this facility do not have any of the requirements listed in Table 5, this section does not apply.

Paragraph (b) refers to Tables 1b and 2b of Subpart ZZZZ. These tables deal with operating limitations for engines that are required to have catalytic emission control devices. The RICE source at this facility is not subject to this section.

40 CFR 63.6635 deals with data collection for monitoring systems. Since the engine does not require this type of monitoring system, this section does not apply.

40 CFR 63.6640 deals with demonstrating continuous compliance with emission limitations and operating limitations. These requirements have been applied to the RICE source 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 for the RICE 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. This paragraph refers to §40 CFR 63.6650 which then refers to Table 7 of Subpart *ZZZZ*. Because Table 7 excludes emergency generators, these requirements do not apply to the RICE source and have not been added to the operating permit.

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. Since the engine does not require this type of monitoring system, this section does not apply.

Paragraph (c) is [Reserved]

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

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". Table 8 lists the "Applicability of General Provisions to Subpart *ZZZZ*". This condition has been added to the "Reporting Requirements" for the RICE source.

Paragraph (f) lists the operating limitations for an emergency stationary RICE. These limits have been attached to the "Restrictions" section for Source ID: 140.

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

Paragraph (a) refers to the testing and CEM notifications contained in 40 CFR 63.7 and 40 CFR 63.8. Because the RICE source is not required to use stack testing or a CEM system to demonstrate compliance, the notices from 40 CFR 63.7 and 63.8 do not apply to this source.

Paragraphs (b) through (f) apply to RICE sources at a major source of HAP emissions. Since this facility is an area source, none of these paragraphs are applicable.

Paragraph (g) identifies when a Notification of Intent to conduct a performance test must be submitted. Because the RICE source is not required to use stack testing to demonstrate compliance, this requirement does not apply.

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 RICE source subject to the emissions restrictions contained in those tables, this section does not apply.

40 CFR 63.6650 identifies what reports must be submitted and when. This section refers to Table 7 of Subpart ZZZZ for applicability. This RICE source is not subject to the reporting requirements from Table 7.

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 apply to the RICE source at this facility.

Paragraph (b) applies to sources required to install a CEMS or CPMS. These requirements do not apply to the RICE source at this facility.

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 requirements apply to the RICE source at this facility.

Paragraph (e) identifies the maintenance records that must be maintained for each RICE source. This paragraph applies to the RICE source at this facility since it is required 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 only to Source ID: 140.

40 CFR 63.6660 specifies in what form and for how long records must be kept. This section has been added to the 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 is 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. These definitions are included by reference.

Other Permit Changes-

The following additional changes have been made in order to make the permit more accurate and complete.

- The requirements contained in 25 Pa. Code Chapter 145, Subchapter C – Emissions of NOx Emissions from Cement Manufacturing, were amended in April 2008, and again in June 2010. Chapter 145 now stipulates the CEM system requirements and the recordkeeping and reporting procedures necessary to demonstrate compliance. These sections have been added to the permit for each of the kilns.
- At the request of the permittee, the submission dates for the Annual Compliance Certification Reports and the 6-month Deviation Reports have been adjusted in order to place the reporting periods on a calendar year schedule. The Annual Compliance Certification will cover the period from January 1st until December 31st and the report is required to be submitted within 30-days of December 31st. The 6-month Deviation Report will cover the period from January 1st until June 30th and the report is required to be submitted before July 30th each year.

SOx Emissions Limit for Cement Kilns-

There have been discussions in recent years about what is the appropriate averaging period for demonstrating compliance with the 500 ppm SOx emissions limit from 25 Pa. Code 123.21. Armstrong Cement operates a CEM system to track SOx emissions. The data collected is compiled into a rolling 3-hour block average that is used to demonstrate compliance with the 500 ppm SOx emissions limit. The logic for the 3-hour block average was that compliance was originally determined by stack testing that

involved three one-hour stack tests. The results of the three one-hour stack tests were then averaged to establish the value to be compared with the emission limit.

With the CEM system, emissions can accurately be determined on an hourly basis. While it would be desirable to have compliance demonstrated on an hourly rather than a rolling 3-hour block average, the Department has no regulatory authority to impose the more stringent limit at this time.

Conclusion-

A site visit and partial inspection was conducted at this facility on October 17, 2012. No violations or problems were noted during the inspection. Re-issuance of this permit is recommended.