



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R14.0026K
Plant ID No.: 003-00006
Applicant: Essroc Cement Corporation
Facility Name: Martinsburg Facility
Location: Berkeley County
NAICS Code: 327310
Application Type: Class II Administrative Update
Received Date: October 14, 2014
Engineer Assigned: Steven R. Pursley, PE
Fee Amount: \$300.00
Date Received: November 5, 2014
Complete Date: November 5, 2014
Due Date: January 2, 2015
Applicant Ad Date: October 15, 2014
Newspaper: *The Journal*
UTM's: Easting: 243.5 km Northing: 4,369.0 km Zone: 18
Description: Installation of a new alternate fuel feeding system

DESCRIPTION OF CHANGE

Essroc is proposing to install a new Alternate Fuel Feeding System to be located directly southwest of the existing conditioning tower at the Plant. A refuse based fuel (RBF) will be trucked into the Plant and the new Alternate Fuel Feeding System will be utilized to feed this RBF to the kiln system. This project will require paving additional areas directly to the south and southwest of the preheater tower. This will allow for the entire path of the trucks transporting the RBF to the Alternate Fuel Feeding System to be on paved roads, which will utilize water spray and sweeping, as needed, for dust suppression. A maximum of 38,581 stons/year (35,000 mtons/year) of RBF will be delivered and fed through the proposed Alternate Fuel Feeding System. The delivery trucks will import approximately 18 mtons per truck of the RBF; however, the exact weight of each delivery will fluctuate depending on the degree to which the RBF is compacted.

Once at the Alternate Fuel Feeding System the delivery trucks will back up to one of two alternate fuel hoppers. The RBF will be dumped (via a "walking floor") in the truck to one of the two alternate fuel hoppers, both of which will be controlled to a new 706 cfm baghouse. From either hopper, the material will be screw conveyed to a pneumatic system that will send the material to a dosing system that will meter the RBF from the hoppers to the kiln system so that it is supplied to the kiln system at a rate of 7,000 tons/hour. The dosing system will be controlled by a new 1,413 cfm baghouse.

The new emission sources being proposed associated with the Alternate Fuel Feeding System are:

- * CD41.04 - Alternate Fuel Feeding System D/C
- * CD41.05 - Alternate Fuel Dosing System D/C
- * EP25.15 - Alternate Fuel Trucks (paved)

However, the two baghouses proposed for the project will not vent directly to the atmosphere. Instead they will be vented directly to the clinker cooler and eventually will vent out the main kiln stack. No increase to emissions is requested for the main kiln stack; CD42.04 will continue to meet the existing emission limits specified in the existing permit. There will also be no change to the main kiln baghouse flowrate or fan speed, their current designs can accommodate the additional dedusting air from the Alternate Fuel Feeding System.

It should be noted that this application addresses ONLY the installation of the alternate fuel feeding system. It does not address actually combusting the RBF in the kiln. Once Essroc is ready to combust said fuel, they must follow the procedures in Condition A.8 of the permit to obtain permission from the Director.

SITE INSPECTION

A site inspection of the facility was not deemed necessary for this permitting action. The writer is familiar with the facility having visited it several times in the past. Additionally, the facility was the subject of a full onsite inspection was conducted by Joe Kreger of DAQ's compliance and enforcement section on July 24, 2014. At the time of the inspection, the facility was found to be in compliance.

To get to the facility from Martinsburg, take I-81 south to exit 12. Then turn left on Apple Harvest Drive (State Route 45). Go approximately 0.9 miles and take the Queen Street exit off State Route 45. At the end of the exit turn right (south) on Queen Street. Go approximately 1/4 mile to the plant entrance.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from this project will only involve particulate emissions from the new paved haul road and the RBF delivery system. Emissions from the haulroads were based on AP-42 Section 13.2.1. A control efficiency of 75% was taken for emissions from the new paved haul roads due to watering and sweeping of the road.

Emissions from the RBF delivery system will be controlled by two new baghouses (one for the feed system and one for the dosing system). However, the new baghouses will not vent to the atmosphere. Instead they will vent to the clinker cooler which in turn vents out the main kiln stack. Essroc maintains that the current permit limit is sufficient to accommodate the additional dust loading and no increase in permitted emission was requested. Therefore, these emissions are not included in this Emission Estimate.

Source	PM		PM ₁₀		PM _{2.5}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Paved Haul Road	0.01	0.16	0.01	0.03	0.01	0.01

REGULATORY APPLICABILITY

The changes addressed by this permitting action are subject to the following state rules:

45CSR7 TO PREVENT & CONTROL PARTICULATE MATTER AIR POLLUTION FROM MANUFACTURING PROCESS & ASSOCIATED OPERATIONS

The haul roads proposed in this application are subject to the fugitive particulate matter provisions of §45-7-5.2. Essroc will meet these requirements by paving, sweeping and watering the haulroads.

45CSR13 PERMITS FOR CONSTRUCTION, MODIFICATION, RELOCATION AND OPERATION OF STATIONARY SOURCES OF AIR POLLUTANTS, NOTIFICATION REQUIREMENTS, ADMINISTRATIVE UPDATES, TEMPORARY PERMITS, GENERAL PERMITS, PERMISSION TO COMMENCE CONSTRUCTION, AND PROCEDURES FOR EVALUATION

The addition of the new alternate fuel feeding system has the potential to increase emissions above what is permitted in R14-0026J. Therefore,

Fact Sheet R14-0026K
Essroc Cement Corporation
Martinsburg Facility

Essroc is required to change their permit under 45CSR13. However, since the increase in emissions will be less than 6 pounds per hour and 10 tons per year, they are eligible for a Class II Administrative Update.

As required under §45-13-8.3 ("Notice Level A"), Essroc placed a Class I legal advertisement in a "newspaper of general circulation in the area where the source is . . . located." The ad ran on October 15, 2014 in the *Journal*. and the affidavit of publication for this legal advertisement was submitted on October 31, 2014.

45CSR14

PERMITS FOR CONSTRUCTION AND MAJOR MODIFICATION OF MAJOR STATIONARY SOURCES OF AIR POLLUTION FOR THE PREVENTION OF SIGNIFICANT DETERIORATION

The Martinsburg facility is an existing major source as defined in 45CSR14. However, a "major modification" is defined under section 2.40 of 45CSR14 as a:

. . . physical change in or change in the method of operation of a major stationary source which results in: a significant emissions increase (as defined in subsection 2.75) of any regulated NSR pollutant (as defined in subsection 2.66); and a significant net emissions increase (as defined in subsections 2.46) of that pollutant from the major stationary source. [. . .]

Section 3.4 of 45CSR14 provides guidance on the process of determining if proposed changes are a major modification. §45-14-3.4(a) states that:

. . . consistent with the definition of major modification contained in subsection 2.40, a project is a major modification for a regulated NSR pollutant if it causes two types of emissions increases -- a significant emissions increase (as defined in subsection 2.75), and a significant net emissions increase (as defined in subsections 2.46 and 2.74). The proposed project is not a major modification if it does not cause a significant emissions increase. [. . .]

Therefore, for the proposed changes to meet the definition of a major modification, the changes themselves must result in a significant emissions increase. The methodology for calculating the emissions increase under the first step is given under Sections 3.4(b), 3.4(c), 3.4(d) and 3.4(f). The substantive language of each is given below:

Fact Sheet R14-0026K
Essroc Cement Corporation
Martinsburg Facility

[§45-14-3.4(b)]

The procedure for calculating (before beginning actual construction) whether a significant emissions increase (i.e., the first step of the process) will occur depends upon the type of emissions units being modified, according to subdivisions 3.4.c through 3.4.f.

[§45-14-3.4(c)]

Actual-to-projected-actual applicability test for projects that only involve existing emissions units. -- A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions (as defined in subsection 2.63) and the baseline actual emissions (as defined in subdivisions 2.8.a and 2.8.b), for each existing emissions unit, equals or exceeds the significant amount for that pollutant (as defined in subsection 2.74).

[§45-14-3.4(d)]

Actual-to-potential test for projects that only involve construction of a new emissions unit(s). -- A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the potential to emit (as defined in subsection 2.58) from each new emissions unit following completion of the project and the baseline actual emissions (as defined in subdivision 2.8.c) of these units before the project equals or exceeds the significant amount for that pollutant (as defined in subsection 2.74).

[§45-14-3.4(f)]

Hybrid test for projects that involve multiple types of emissions units. -- A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the emissions increases for each emissions unit, using the method specified in subdivisions 3.4.c through 3.4.d as applicable with respect to each emissions unit, for each type of emissions unit equals or exceeds the significant amount for that pollutant (as defined in subsection 2.74).

It is important to note that when any emissions decrease is claimed, the second step of the test is triggered - a determination if the project results in a "significant net emissions increase." This determination is defined under the definition of "net emissions increase" [§45-14-2.46] and must include "any other increases and decreases in actual emissions at the major source that are contemporaneous with the particular change and are otherwise creditable." A change is contemporaneous if it "occurs not more than five (5) years prior to the date on which construction on the particular change commences nor

later than the date on which the increase from the particular change occurs.”

However, since no decreases are claimed with this proposed project, the determination of a significant net emissions increase” is not needed.

Pollutant	Emission Increase (tpy)	Significance Threshold (tpy)	Significant ?
PM	0.16	25	No
PM ₁₀	0.03	15	No
PM _{2.5}	0.01	10	No

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

No non-criteria regulated pollutants are addressed in this permitting action.

AIR QUALITY IMPACT ANALYSIS

Since this is not a major modification (see Regulatory Applicability section) to an existing major stationary source, no modeling was performed.

MONITORING OF OPERATIONS

In addition to the monitoring already required by R14-026J, the permittee shall monitor and record the following:

- * The amount of RDF delivered to the facility.

CHANGES TO PERMIT R14-0026K

- * Condition A.2 was changed to reflect the new facility wide emissions.
- * Condition A.16 was changed to add the dust collectors for the alternate fuel feeding system and dosing system.

Fact Sheet R14-0026K
Essroc Cement Corporation
Martinsburg Facility

- * Condition A. 30 was changed to add the new haulroad. Additionally, the combined emission limit for the Group 8 fugitive sources was increased to reflect the new haul road emissions.
- * Several citations of 40 CFR 63 Subpart LLL were updated to include the most recent version.

RECOMMENDATION TO DIRECTOR

Information supplied in the application indicates that compliance with all applicable regulations will be achieved. Therefore it is the recommendation of the writer that permit R14-0026K for the addition of an alternative fuel feeding system to a portland cement manufacturing facility in Martinsburg, Berkely County, be granted to Essroc Cement Corporation.



Steven R. Pursley, PE
Engineer



December 16, 2014

Fact Sheet R14-0026K
Essroc Cement Corporation
Martinsburg Facility