UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

August 30, 2022

Edward "Sonny" Dougherty
Manager, Environmental Compliance
Giant Cement Company
654 Judge St.
Harleyville, South Carolina 29448

Dear Mr. Dougherty:

This is in response to your letter dated July 9, 2021, to the U.S. Environmental Protection Agency requesting two alternative monitoring procedures (AMP) for the Giant Cement Company (Giant) facility located in Harleyville, South Carolina. The facility is subject to Title 40, Code of Federal Regulation (CFR), Part 63, Subpart EEE - National Emission Standards for Hazardous Air Pollutants for Hazardous Waste Combustors (Subpart EEE). On July 6, 2022, Giant submitted a letter to Region 4 withdrawing a request for one of the two proposed AMPs. This letter addresses the proposed AMP and the use of activated carbon with waste derived fuel during raw mill startup and operation. Additional information was requested on February 17, 2022, and received on March 16, 2022, and June 6, 2022. Based on an evaluation of the request, the EPA approves it subject to conditions as described in the latter part of this letter. The details of our determination are explained in the remainder of this letter.

Giant Cement Overview of the Process

Giant owns and operates the Portland cement production facility in Harleyville, South Carolina. Operations at Giant include the handling, storage, and processing of raw materials, intermediates, and fuels. The facility operates one preheater/precalciner kiln with associated ancillary equipment and produces more than 1.4 million tons of Portland cement annually.

Heat energy in the kiln is provided by the combustion of conventional fuels such as pulverized coal, natural gas, and fuel oil. The kiln also combusts hazardous and non-hazardous waste-derived fuels as a substitute for conventional fuels. Because the facility combusts waste-derived fuels (WDF), it is subject to Subpart EEE.

Summary of Giant Cement Incoming Request

When combusting WDF, Giant injects activated carbon during the raw mill off operating scenario to assist with the control of dioxin/furan (D/F) emissions. The activated carbon injection (ACI) unit consists of an activated carbon storage silo, a gravimetric feeder, and a blower to introduce the activated carbon into the kiln exhaust gases. The activated carbon enables the kiln system to meet the D/F emissions standard, as demonstrated during performance testing, when the raw mill is not operational and the kiln system is combusting WDF. Should combustion of hazardous waste occur during an operating scenario temporary transition period (*e.g.*, when the raw mill is transitioning from the raw mill

off to raw mill on operating scenario), the carbon injection system remains on until the main baghouse inlet temperature operating parameter limit (OPL) is achieved for the raw mill on scenario. Once the OPL is achieved, the ACI system stops injecting carbon for the control of emissions since this type of emissions control is unnecessary for the raw mill on operation scenario. Giant has demonstrated compliance with the D/F emissions limits in the raw mill on scenario without ACI.

There are two OPL setpoints: 1) raw mill on operating scenario OPL at 274.7°F and 2) raw mill off operating scenario OPL at 394.8°F. In the event the main baghouse inlet temperature OPL (274.7°F) is exceeded when the raw mill is operating, Giant proposes to temporarily continue injecting activated carbon into the kiln system to control emissions during the operating scenario transition period. Elevated temperatures experienced during this operating scenario transition period will not be considered exceedances of the OPL due to the injection of activated carbon to control emissions. Giant has demonstrated compliance with the D/F emissions standard during the raw mill off operating scenario at a much higher main baghouse inlet temperature OPL (394.8°F). Injection of activated carbon will continue until the main baghouse inlet temperature drops below the raw mill on OPL, at which time the introduction of activated carbon will cease. Alternatively, if the raw mill stops operating, the ACI system will continue operation in accordance with the facility's NOC and the raw mill off scenario.

According to §63.1209, Giant must demonstrate compliance with the emission standards by performing emissions testing and establishing OPLs for each mode of operation. As a result, there are different temperature limits for the raw mill on and raw mill off scenarios. Giant notes that when the raw mill operating scenario changes from the raw mill off scenario to the raw mill on scenario, it takes time for the temperature to drop to the raw mill on OPL. Temperatures recorded during the transition period, raw mill off operating scenario to raw mill on operating scenario, are higher than the raw mill on operating limit, resulting in the monitored average reportable temperature to temporarily exceed the raw mill on OPL. Giant proposes to inject activated carbon to control residual emissions of D/F emissions that may be present during the transition period, given the temperatures observed during this transition period are lower than the temperatures of concern which indicate the formation of D/F.

Conclusion

Under 40 CFR §63.1220(d)(1)(v), in lieu of conducting a performance test to demonstrate compliance with the D/F emission standards for the mode of operation when the raw mill is on-line, owners/operators may specify in the performance test workplan and notification of compliance the same operating parameter limits required under § 63.1209(k) for the mode of operation when the raw mill is on-line as established during performance testing for the mode of operation when the raw mill is off-line.

Therefore, a facility could opt to comply with the raw mill off OPL during the raw mill on scenario. This indicates that activated carbon injection during raw mill on scenarios is deemed acceptable for meeting the emission standards. However, Giant has indicated the cost of using the ACI during both operating scenarios (raw mill off and raw mill on) would be prohibitive. As a result, Giant submitted its request to use an AMP to use ACI “only” when the temperature is above the raw mill on OPL. Giant confirms the ACI system may be programmed to activate instantly when temperature limits are reached. The EPA has determined that Giant’s proposed AMP is acceptable provided that the carbon injection rate used for the raw mill on operating scenario during the operational scenario transition period is the same ACI feed rate established to demonstrate compliance for the raw mill off scenario.

This determination is based on the information provided and any change to the operation of the unit could potentially affect the determination. If you have any questions about this AMP, please contact Seneca Anderson at (404) 562-9050, or by email at anderson.seneca@epa.gov.

Sincerely,

CAROLINE FREEMAN

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Date: 2022.08.30 12:23:11 -04'00'

Caroline Y. Freeman
Director
Air and Radiation Division

cc: Mr. Steve McCaslin, SC DHEC
Ms. Denise Hall, SC DHEC
Lane H. Smith, P.E., Giant