ASH GROVE CEMENT COMPANY

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JULY 26, 2010

VIA ELECTRONIC MAIL

Mr. Peter Tsirigotis
Director, Sector Policies and Programs Division
U.S. EPA, Emission Standards Division
Mail Code: D205-01
Research Triangle Park, NC 27711

Re: Regulation of Portland Cement Kiln Mercury Emissions Under 40 CFR 63, Subpart LLL (Portland Cement MACT)

Dear Mr. Tsirigotis:

This letter is to update the Environmental Protection Agency (EPA) regarding Ash Grove's efforts to lead the nation in the control of mercury from cement kilns. As you know, over much of 2006 and 2007, Ash Grove worked with a large group of stakeholders, including EPA, the Oregon Department of Environmental Quality, various tribes, medical professionals, engineers and environmental groups to gain consensus around the installation of new mercury controls for Ash Grove's Durkee, Oregon plant. These stakeholders concurred that the new system envisioned for Durkee would set a new standard for mercury control. However, because nothing like it had even been permanently installed on a cement kiln, there was concern as to whether the control could live up to expectations. Since the group reached its conclusions, Ash Grove has spent two years and approximately $20 million to bring this design to reality. This state of the art mercury control system recently commenced operation and Ash Grove is submitting this letter to provide you with actual performance data from the first weeks of operation. As you will see, the system is exceeding the upper range of expectations and provides new data supporting the establishment of a subcategory for kilns, such as the Durkee kiln, that employ such advanced control technology.

Background

Ash Grove Cement Company (Ash Grove) is an American owned business headquartered in Overland Park, Kansas. Ash Grove is the fifth largest cement manufacturer in the United States with cement plants in nine states across the country. A pioneer of the

limestone and cement industries, the Company was incorporated in Missouri in 1882 and has been majority owned and controlled by the Sunderland family since 1913. The eight cement plants operating in the Ash Grove system are some of the most efficient and best maintained in the country and have an annual production capacity of more than 8.0 million tons of cement. The quality portland and masonry cements produced at these plants are used in the construction of highways, bridges, commercial and industrial complexes, residential homes, and a myriad of other structures.

One of Ash Grove's cement plants is located in Durkee, Oregon. The Durkee plant utilizes limestone and other materials quarried on site to make portland cement. The plant typically employs 116 persons including persons represented by 6 trade unions. With an annual payroll of $9 million and an operating budget in excess of $40 million, the Ash Grove Durkee plant is an important part of the economy in an economically depressed part of the state of Oregon. The unemployment rate in Baker County is currently 11.7% (May 2010 value). Unemployment in the counties immediately surrounding the plant is as high as 21.8% (Adams County, ID).

Ash Grove's Durkee plant, like most cement plants, relies on limestone quarried from a collocated quarry. The limestone from this quarry has elevated levels of naturally occurring mercury. Given the magnitude of the amount of raw material used, it is technically and economically infeasible to import raw materials from an off-site quarry. In late 2006 Ash Grove voluntarily performed extensive testing to better understand the nature and magnitude of its mercury emissions. This constituted some of the most advanced and comprehensive mercury stack and raw material testing ever performed at a cement plant. Ash Grove engaged national experts to perform multiple different types of tests using a variety of test methods so as to increase the company's understanding of the quantity and type of mercury emitted from the plant. The stack testing indicated that the vast majority of the mercury was either oxidized mercury or elemental mercury, with elemental mercury making up as much as 70 percent of the total.

With the emissions testing data in hand, Ash Grove performed a human health risk assessment to ensure that its uncontrolled emissions do not pose an unacceptable risk to the community. Relying on a nationally recognized mercury risk assessor, the company commissioned a complex risk analysis consistent with the requirements under the Hazardous Waste Combustor NESHAP. This risk assessment demonstrated that the plant's uncontrolled mercury emissions do not pose an unacceptable health risk to the surrounding community.

Although the risk assessment did not indicate that an issue existed, Ash Grove voluntarily decided to develop mercury emission controls for its Durkee plant. Ash Grove knew that no cement plant in the country had installed controls for the purpose of reducing mercury emissions. Five kilns in the country have wet scrubbers to control sulfur dioxide emissions and these controls are believed to provide a moderate level of mercury control. However, scrubbers (which consume millions of gallons of water per year) are not a

practical control technology in the arid western U.S, where water is scarce. Ash Grove also learned that wet scrubbers only control oxidized mercury as elemental mercury is not water soluble. This was particularly important where Ash Grove's data indicate that a substantial percentage of the mercury in its exhaust is elemental mercury and so not amenable to control by a wet scrubber. Therefore, Ash Grove realized that it was going to have to develop a means of controlling mercury that was previously unknown in the industry.

Ash Grove engaged the experts at EERC, a research center associated with the University of North Dakota that had extensive experience developing mercury control and monitoring techniques in the electrical generation sector. Armed with the stack test data, the EERC researchers proposed the use of an activated carbon injection ("ACI") system to control mercury emissions. Ash Grove invested over $1 million to have EERC temporarily install a pilot ACI system at the Durkee plant. EERC was at the plant installing and operating the pilot system for over six weeks. Based on this *in situ* study EERC predicted that if the performance of a full scale system matched that of the pilot system, Ash Grove could reduce mercury emissions by approximately 75 percent on an annual average basis.

Although Ash Grove believed that the EERC study had developed the optimum system design, the company conducted a peer review of EERC's work with a broad array of stakeholders. Through a partnership with residents, environmental groups, Tribes, medical professionals, engineers and the state environmental and health agencies, Ash Grove went through a long and public process to determine the best means of addressing mercury emissions. What ultimately was approved by this diverse team was the installation of an activated carbon injection system with a recirculation loop and mercury recovery. These controls were anticipated to remove at least 75 percent of the mercury in the Durkee plant exhaust. However, Ash Grove committed to strive to get as close as possible to removing 85 percent of the mercury in its emissions. This level of mercury control had previously been considered unattainable for a cement kiln. We are submitting this letter to inform you that the initial results from operating the mercury control system indicate that we are capable of achieving at least the 85 percent mercury removal that the state and the stakeholders asked us to strive to achieve.

Emissions Control Success

The Durkee mercury controls have only been completed a short time and are still in the initial stages of shakedown. As a result, Ash Grove does not yet know the maximum long term control efficiency that can be achieved by operating the system. However, we have had two approximately one week runs of the control system. During each of those two periods, activated carbon was added to the control system at the start of the run period. Mercury levels in the exhaust gas entering the control system and mercury in the exhaust gas leaving the control system was sampled and measured for the entire time period. During the first run period, the activated carbon was added to the system partway

through the first day and removed from the system partway through the eighth day. No recycling of carbon was attempted thus providing good information regarding the carrying capacity of the carbon. The average removal efficiency during those intervening 6 days was 92.8 percent. During the second run period, the activated carbon was added to the system late in the first day and removed from the system partway through the twelfth day. The amount of carbon used in the second run (980 pounds) was approximately half the amount of carbon used in the first run (2,000 pounds). In the second run, the average mercury removal efficiency during the first 6 full days of operation was 82.6 percent. Starting on the seventh day the control efficiency dropped by approximately half indicating that the carbon was becoming saturated. By the eleventh day, the carbon was adsorbing very little mercury. The raw data for these time periods is included as an attachment to this letter. The kiln is currently down for scheduled maintenance and so additional control data cannot be generated until the kiln starts back up.

Based on these preliminary results, Ash Grove believes that the Durkee mercury control system has the clear potential to meet the upper end of the control effectiveness range identified for the plant, i.e., removal of 85 percent of the mercury in its emissions. We wanted to share these data with you so that you could take them into account in the finalization of the rule. Although we have not had the opportunity to run the control system for months and develop a full understanding of the variability across operating conditions and seasons, we believe that it is safe to say that we have demonstrated in practice that between 75 percent and 85 percent control of mercury can be achieved. We also believe that once we complete the installation of equipment to allow for the removal of some main baghouse dust for use in our cement mills ("dust shuttling") that we can ultimately reach a goal of 90% control.

Subcategorization of Outlier Kilns

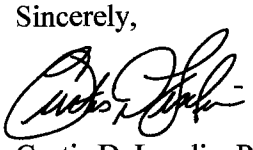
We believe that this new evidence is of great importance as you finalize the Portland Cement NESHAP. With these data in hand there is now a reasonable basis under the Clean Air Act to establish a separate subcategory for those sources with high levels of mercury in their on-site raw materials. Similarly, there is now a basis for a beyond the floor determination that will result in previously inconceivable levels of mercury control. Therefore, we are providing these data to you so as to support a decision to subcategorize based on the type of facility (i.e., a cement plant collocated with a quarry containing materials with high levels of naturally occurring mercury) and to support your determination to go beyond the floor and require that sources in this subcategory employ the now proven control technology in operation at the Durkee kiln. Absent such an outcome from the regulatory process, Ash Grove will likely be forced to close the Durkee plant and dismantle the controls currently in place at the plant. It would be a perverse outcome if the best controlled plant in the country was shut down by EPA's standards, thereby putting over 100 people out of work and decimating an already economically challenged part of the country.

Conclusions

Ash Grove's Durkee plant is an area source that voluntarily installed mercury controls that have redefined the state of the art for cement kilns. These controls are operational three years in advance of anticipated EPA requirements and the initial data demonstrate that they are capable of removing at least 75 percent of the mercury from the kiln emissions and likely will be able to meet or exceed the upper end goal of 85 percent removal. Notwithstanding an initial investment of approximately $20 million in the controls and substantial annual operating expense, the Durkee plant will not be able to comply with a PC MACT emission standard equal to the average emission rate of the 12 percent of the cement plants utilizing limestone with the lowest mercury content. If EPA does not subcategorize in order to recognize the unique attributes of plants such as the Durkee plant, then the Durkee plant will likely have to shut down and the controls go unused. This outcome is contrary to both the Clean Air Act and the statement in the D.C. Circuit's *Brick MACT* decision that "one legitimate basis for creating additional subcategories must be the interest in keeping the relation between 'achieved' and 'achievable' in accord with common sense and the reasonable meaning of the statute." EPA can keep the relation between "achieved" and "achievable" in accord with common sense and the reasonable meaning of the statute by establishing a subcategory for the high mercury limestone sources and requiring that they employ the now proven state of the art controls in use at the Durkee plant.

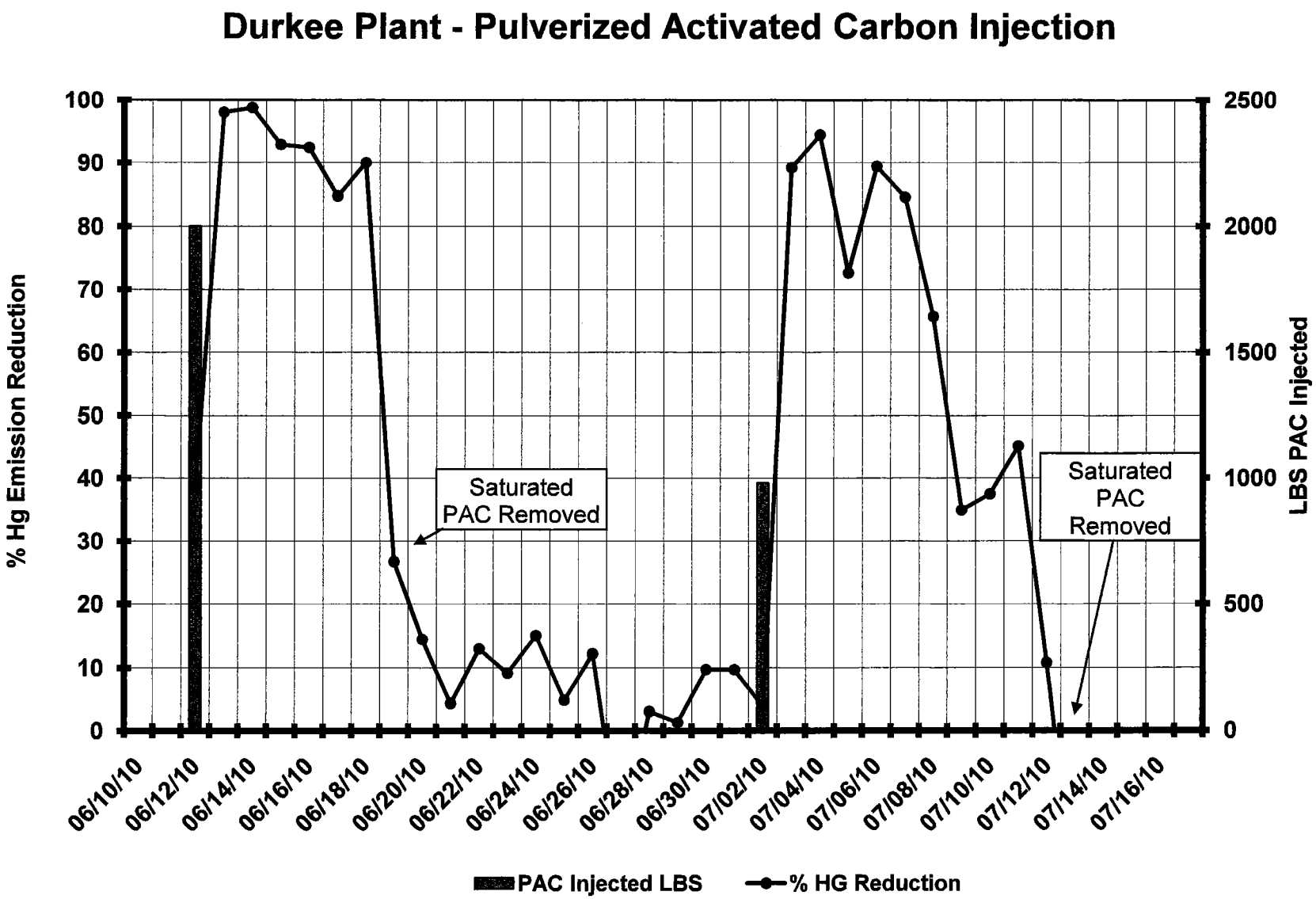
Thank you for your consideration of this information.

Sincerely,



Curtis D. Lesslie, P.E.
Vice President, Environmental Affairs
Ash Grove Cement Company

cc: Steve Silverman
Keith Barnett


Durkee Plant - Pulverized Activated Carbon Injection
% Hg Emission Reduction
LBS PAC Injected
100
90
80
70
60
50
40
30
20
10
0
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1500
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500
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07/16/10
PAC Injected LBS
% HG Reduction

Durkee Plant - Pulverized Activated Carbon Injection