From: Dr. Max Lee
To: McWade, Tammy
Subject: 187-14-10 - Argos CCoolers ESP to baghouse
Date: Friday, September 05, 2014 1:49:16 PM

Hi Tammy,
Here are some additional details on the proposed baghouses.

To meet the upcoming emissions limit of 0.07 lb/ton clinker, the pulse jet baghouse is being designed to have an air to cloth ratio at or below 3.3 (ft3/min / ft2). The design flowrates on the two cooler systems are expect to be similar and near 135,000 acfm. Therefore the cloth area will be 41,000 ft2 (assuming a typical bag having 30 ft2 of surface area, then about 1,400 bags would be used throughout multi-compartments in the baghouse).

Given the emission limit of 0.07 lb//ton clinker, the maximum design hourly production rates (cooler 1 at 115 ton/hr, and cooler 2 at 125 ton/hr) then the effective emission rate will be 8.05 and 8.75 lb/hr. Given the design flowrate is expected at a rate of 135,000 acfm, the effective PM concentration at the will be 0.0070 gr/acf (0.011 gr/dscf at 345 deg F at 5% moisture)for cooler 1 and 0.0076 gr/acf (0.012 gr/dscf at 345 deg F at 5% moisture) for cooler 2.

The bags will be of special materials. A good example are the GE thermopleat bags or GORE™ membrane technology.

Please keep in mind and clarify the technical that all of these numbers are only in the preliminary stage and subject to change. However, the design is for the purpose of meeting the new emissions limit with a margin of safety (we are shooting for 0.04 lb/ton clinker). Once a vendor has been selected more accurate information will be available.

Max