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CAPITOL CEMENT

September 21, 1993

Mr. Ronald E. Myers
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U.S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

Dear Mr. Myers:

We appreciate the opportunity to comment on the 8/93 draft revision of AP-42, Portland Cement Manufacturing, section 8.6. Please see additional comment, attached.

First, the Process Description, 8.6.1 is very well written and the most comprehensive write-up we have seen to date from the E.P.A.. We have the following comments on this section:

1.) 8.6-1 para 4. Word "anhydride" here and on 8.6-5, para 6 is more commonly seen as "anhydrite".

2.) 8.6-1 Process flow diagram. Suggest addition of a new block titled "Clinker Storage", immediately after existing block titled "Clinker Cooler".

3.) 8.6-4, first full para, last line, suggest replacing word "chipped" with word "scrap", which would then include the use of whole tires as well as chipped tires.

4.) 8.6-5 para 2, ln 2. word "rotary" can be omitted.

5.) 8.6-8 final para: Suggest caveat to read as follows:

"An emission factor relates the quantity (weight) of pollutants emitted by a unit of activity of the source. The uses for the emission factors reported in AP-42 include:

1. Estimates of area wide emissions.
2. Estimates of emissions for a specific facility when measured data is not available.
3. Evaluation of emissions relative to ambient air quality.

The data in tables represent averages of limited test results and may not characterize emissions industry wide. It is from compliance test data, and therefore for a very limited period of time and should be very cautiously used for continuous operations".

Additional Comment

We note that for those preheater/precalciner systems with alkali bypass, only the total emissions are shown. Where available, it would be helpful in analyzing the data to break out the bypass emissions.

With reference to Mr. Ron Myer's letter to Mr. Crolius, dated August 11, 1993, we note that EPA as well has some reservations about the available data, upon which the emission factors are based. We are asked for our comments on specifics mentioned in Mr. Myer's letter:

Pg 2, para 2. There is little reason to believe that SO_2 emissions sampled at any one time, even in the same kiln should be the same as that sampled at another time. Differing conditions can have a decided effect on SO_2 emissions: sulfur in the fuel (most of which seems to escape the kiln and CKD); reducing vs. oxidi zing atmosphere in the kiln, i.e. more SO_2 escaping up the stack in a reducing condition. Certainly, there is no reason to expect "representative" SO_2 emissions between kilns, for the same reason above, in addition to differing sulfur and sulfur forms (pyrite) in the raw materials.

Pg 2, para 3. The CO_2 emissions question strikes at the very heart of the cement industry's bafflement in paying dearly for an emission almost totally beyond control. For regardless of how well the combustion is controlled, the CO_2 released from the limestone is so large by comparison that the efficiency of combustion is inconsequential.

Pg 3, para 3. Conversion of raw base to clinker is not a function of process, but rather of the raw materials themselves. Some raw materials containing lime are not in carbonate form, i.e. blast furnace slag, gangue and other precalcined materials.

Pg 3, para 4. Emissions in general are more likely to be related to fuels and raw materials than by type of kiln system.

Pg 4, para 1. The effect of differing fuels on emissions is more a matter of specifics than fuel type. One example: solid fuel used in a precalciner may carry over with feed to the kiln, likely still ignited and creating a reduced atmosphere, and conducive to sulfate volatilization. If there is a by-pass, a considerable amount of SO_2 will escape from the system. True, coal and coke are more generally used in the U.S. than natural gas, but the relative difference in flame

temperature and thermal profile will profoundly affect both SO_2 and NOx emissions.

Probably waste fuels show no significant effect on emissions because their use is limited to certain pre-set kiln conditions - ideal conditions.

Again, thank you for this opportunity to comment on AP-42 matters.

Sincerely,

John Wheeler

copy:
Mr. James H. Southerland Chief
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