D-3

3/6/79

SANDERSON

EC-6-1998-41

MEMORANDUM

SUBJECT: NSPS Determination - Subpart D

FROM: Director
Division of Stationary Source Enforcement

TO: Enforcement Division Directors, Regions I-X

Air and Hazardous Materials Division Directors
Regions I-X

Surveillance and Analysis Division Directors
Regions I-X

This is a clarification of DSSE's June 29, 1977, memo on including the effect of non-continuous, non-automatic soot blowing when performance testing steam generators that are subject to NSPS.

Units which do not blow soot continuously may have the effect of soot blowing included by performance testing in the normal manner, provided that the following precautions are taken: 1) soot blowing is permitted only during one of the test runs,* and 2) the soot blowing performance test run should include as much of the soot blowing cycle as possible.

When a short duration soot blowing period limits the number of points which will be sampled during the portion of the test run that the soot blowers are on, then all of the sampling points lying on at least one stack or duct diameter should be sampled while the soot blowers are on, if possible. Single point sampling should always be avoided but may be necessitated at sources with very short duration soot blowing periods. Ideally, a point of representative velocity should be selected when single point sampling is required, if possible.

The representative average pounds of particulate emissions per million BTU (E) must be calculated by the following

*If it is expected that >50% of particulate emissions occur during soot blowing periods, then soot blowing should be required during 2 test runs.

generalized equation rather than by simple averaging as outlined in 40 CFR 60.8(f). This equation insures proper weighting of a soot blowing performance test run regardless of whether the soot blowing lasts the entire time of the test run, and also regardless of the number and duration of the non-soot blowing test runs made while performance testing a steam generator.

$$E = E_{SBR}\frac{(A+B)\ S}{AR} + E_{NOSB}\left(\frac{R-S}{R} - \frac{BS}{AR}\right)$$

where:

E = pounds of particulate emissions per million BTU heat input (lb/MM BTU or ng/J)

$\bar{E}$ = average E for daily operating time

E_{SBR} = average E of sample(s) containing soot blowing

E_{NOSB} = average E of sample(s) with no soot blowing

A = hours soot blowing during sample(s)

B = hours not soot blowing during sample(s) containing soot blowing

R = average hours of operation per 24 hours

S = average hours of soot blowing per 24 hours

For almost all steam generators with intermittent soot blowing practices, the quantity of excess air is not expected to vary significantly between periods of normal operation and periods of soot blowing. However, if a significant variation in the quantity of excess air is expected, then an additional method 3 analysis should be conducted, as outlined in 40 CFR 60. 46(f)(ii) with soot blowers on in order to determine the $\%O_2$ while soot blowing. The $\%O_2$ of the soot blowing run can be determined from the following equation:

$$\%O_{2_{SBR}} = \frac{(\%O_{2_{NOSB}})B + (\%O_{2_{SB}})A}{B+A}$$

where:

$\%O_{2_{SBR}}$ = the $\%O_2$ of the sample(s) containing soot blowing

$\%O_{2_{NOSB}}$ = the $\%O_2$ while not blowing soot

$\%O_{2_{SB}}$ = the $\%O_2$ while blowing soot

A = hours soot blowing during sample(s)

B = hours not soot blowing during sample(s) containing soot blowing

Then the $\%O_{2_{SBR}}$ should be used to calculate E_{SBR} as outlined in 40 CFR 60.46(f)

If you should have any further questions on this determination, please contact Craig Cobert (FTS 755-0103) of my staff.

/s/ ER

Edward E. Reich