



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

Philip L. Frederickson
Vice-President, Business Development
Conoco Global Inc.
North Dairy Ashford
Houston, TX 77079

Dear Mr. Frederickson:

This letter represents U.S. EPA's formal determination of applicability under 40 CFR 72.6(c) of the Acid Rain Program for Conoco Global Inc.'s ("Conoco") proposed energy conservation project ("project") at the Venco Lake Charles Calcining Plant ("Venco plant") petroleum coke calciner in Calcasieu Parish, Louisiana. This formal determination is made in response to your letter of August 12, 1998 requesting that a formal determination be made by U.S. EPA under 40 CFR 72.6(c).

According to the description in your letter and supporting information, Conoco and Calco, Inc. jointly own, and Conoco operates, the Venco Lake Charles Calcining Plant, at which carbon products are made for use in the aluminum and titanium dioxide pigment industries. Conoco and Calco, Inc. each have a 50% ownership share in the Venco plant. The production process at the Venco plant involves the use of two rotary kilns in which petroleum coke is partially combusted to remove impurities; heat from the kilns is currently released into the atmosphere. Conoco is considering a project in which the waste heat generated by the kilns will be converted by a heat recovery steam generator (HRSG) into steam. The steam will in turn be used to produce electricity at a 40 MW steam turbine for use in the Venco plant and for sale to an electric utility grid. Exhaust from the turbine will be recycled back to the HRSG. Conoco will be the sole owner of both the project and the electricity it will produce.

Conoco asserts that, under the project, cogeneration will not take place since the project will not "produce two separate products" or "involve the 'sequential use of energy.'" The petitioner also maintains that, under 40 CFR 72.6(b)(8) (stating that non-utility units are not affected units), the project should not become subject to the Acid Rain Program because the new equipment required for the project will not include a "unit" as defined in 40 CFR 72.2.

U.S. EPA rejects these assertions. First, since the kilns are combusting petroleum coke and natural gas in the production of carbon products, the kilns are units as defined under 40 CFR 72.2 ("fossil-fuel fired combustion device"). The fact that the kilns have operated without generating electricity does not change the fact that, under the project, the kilns will produce heat that will be used for the production of electricity, as well as the production of carbon products.

Further, the use of the energy will be “sequential,” as that term is applied in the definition of “cogeneration unit,” because the heat used to produce carbon products will then be used to produce steam, which in turn will be used to produce electricity. Therefore, the kilns (along with the HRSG and steam turbine) will be considered cogeneration units since they “produce electric energy and forms of useful thermal energy (such as heat or steam) for industrial, commercial, heating or cooling purposes, through the sequential use of energy.” 40 CFR 72.2 (“cogeneration unit”).

Conoco argues that the project does not involve “sequential use of energy” and therefore is not a cogeneration facility. Conoco claims to rely on the definition of “sequential use of energy” adopted by the Federal Energy Regulatory Commission (FERC). Conoco quotes a statement in the preamble of a FERC proposed rule that there would not be a sequential use of energy where “a condensing unit takes steam directly from fuel-fired boilers, uses it to generate power, then condenses it, with none of the steam being used for any thermal energy application.” 53 FR 31021, 31036 (1968).

However, the language quoted from the FERC preamble is not applicable to this case. The example discussed by the FERC involves a fuel-fired boiler producing only steam that is subsequently used to generate power. In the example, the thermal energy produced in the boiler is not used in any thermal application or process. In the instant case, the combustion devices (i.e., the kilns) first produce thermal energy used to remove impurities from petroleum coke and thereby make carbon products, which are sold. Then the heat recovery steam generator uses some of the thermal energy to produce steam that is in turn used to produce electricity. Thus, there is sequential use of energy. In fact, this sequence of energy use is covered by one of the types of sequential energy use identified by the FERC: “a ‘bottoming cycle’ cogeneration facility”, where “energy input to the system is first applied to a useful heating process, and the residual heat emerging from the process is then used for power production.” 53 FR 31035.¹ See also 18 CFR 292.202(e) (definition of “bottoming cycle cogeneration facility”) and California Portland Cement Co., 20 FERC ¶61,217 (1982) and U.S. West Financial Services, 55 FERC ¶61,377 (1991), reh’g denied, 56 FERC ¶61,217 (1991) (finding that cement kilns and steam turbine generators using waste heat from the kilns are cogeneration facilities). In short, EPA’s determination that the project in this case involves sequential use of energy and so is a cogeneration facility is consistent with the FERC definition of “sequential use of energy.”

Under 40 CFR 72.6(b)(4)(ii), a cogeneration unit for which construction commenced after November 15, 1990 that supplies an annual average of no more than 219,000 MWe-hours of actual electric output or no more than one-third of its potential electrical output capacity to a utility power distribution system on an annual basis is not considered a utility unit. Such a cogeneration unit is therefore not an affected unit under the Acid Rain Program.

¹ The other type of sequential energy use identified by the FERC is “a ‘topping-cycle’ cogeneration facility,” where “the energy input to the facility is first used to produce power, and the reject heat from power production is then used to produce useful heat.” Id.

Construction is expected to commence on the project in the third quarter of 1999. The unit will have a potential electrical output capacity (PEOC) of 46.2 MWe.² Since one-third of the unit's PEOC (134,904 MWe-hrs)³ is less than 219,000 MWe-hrs, under 40 CFR 72.6(b)(4)(ii) the unit may provide up to 219,000 MWe-hrs of electrical output capacity for sale to a utility power distribution system on an annual basis and not be considered an affected unit under the Acid Rain Program. Conversely, if, in the first year of operation, or for any three year calendar period on an annual basis thereafter, the unit provides more than 219,000 MWe-hrs of actual electrical output to a utility power distribution system for sale, then it will become an affected unit. Only electrical sales are counted against the 219,000 MWe-hr ceiling for the unit. Since Conoco will own the project and owns 50% of the Venco plant, 50% of any electricity generated by the units and used at the Venco plant will be considered self-generation, will not be considered electrical sales, and will not count against the 219,000 MWe-hr ceiling. U.S. EPA notes, however, that different or changed ownership of either the project or the Venco plant may also affect the number of megawatt hours that will be counted against the 219,000 MWe-hr ceiling. If the 219,000 MWe-hr ceiling is exceeded, then the kilns will become affected units and will have to comply with all applicable requirements under the Acid Rain Program. This includes the requirements to apply for and receive an Acid Rain permit (under 40 CFR part 72) and to monitor and report emissions (under 40 CFR part 75).

This determination is based in part on the representations made in your letter of August 12, 1998 and on conversations with Dave Williams (Consultant-Environmental at Conoco), is made in reliance on the accuracy and completeness of those representations, and is appealable under 40 CFR part 78. The applicable regulations require you to send copies of this letter to each owner or operator of the project (40 CFR 72.6(c)(1)). If you have further questions regarding the Acid Rain Program, please contact Robert Miller at (202) 233-9077.

Sincerely,

/s/ (February 26, 1999)

Brian J. McLean, Director
Acid Rain Division

cc: Cathy Lu, State of Louisiana
Joe Winkler, U.S. EPA Region 6

² PEOC for the combined cycle unit was calculated by adding the maximum design heat input capacities of 415×10^6 Btu/hr. for the steam turbine, multiplying by 38% (the efficiency of the unit as asserted by Conoco), dividing by 3413 and again by 1000 to arrive at figure above in MWe. See 40 CFR part 72 appendix D and February 1994 U.S. EPA guidance "Do the Acid Rain SO₂ Regulations Apply to You" for explanation of how to calculate PEOC.

³ This figure is calculated by multiplying the PEOC by 8760, the number of hours in a year, and then dividing by 3. See 40 CFR 72.6(b)(4)(ii).