



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

OFFICE OF
AIR AND RADIATION

Leslie G. Lewis
Assistant Secretary
Saudi Refining, Inc.
9009 West Loop South
Houston, TX 77096

Dear Mr. Lewis:

This letter represents U.S. EPA's formal determination of applicability under the Acid Rain Program for boiler 3 and combined cycle units CT1 and CT2 that are part of the Star Repowering Project ("the Project") at the Star Delaware City Power Plant ("Star," ORIS plant code 0592) in Delaware City, Delaware. This formal determination is made in response to your letter and attachments of February 6, 1997, sent to Brian McLean, Director, Acid Rain Division, at U.S. EPA Headquarters, Washington, D.C., 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, Star currently has 4 boilers (1-4) that are owned by Star Enterprise and operated by Delmarva Power and Light Company ("Delmarva"), which produce electricity and steam for the adjoining Delaware City Refinery ("the refinery") and also electricity for sale to Delmarva. Star is a qualifying cogeneration facility, with a self-certification filing date of October 24, 1991 (Federal Energy Regulatory Commission Docket No. QF92-17).

Star Enterprise is planning a repowering project that will commence construction mid-1997 and commence commercial operation in 1999. The Project will include the dismantling of boilers 1 and 2 and the installation of two new 90 MW combined cycle units, CT1 and CT2. Boilers 3 and 4¹ will continue operation. Boiler 3 is currently fueled primarily by petroleum coke, but will burn synthetic gas ("syngas") after the repowering project is completed, as will the 2 new combustion turbines. CT1 and CT2 will generate electricity, and exhaust from CT1 and CT2 will be used to generate steam in heat recovery steam generators (HRSGs), which also have duct burners. The steam will be used to produce syngas from petroleum coke and for the production

¹ The petitioner states that boiler 4 is a qualifying cogeneration facility with a qualifying power purchase commitment as defined in 40 CFR 72.2 that is an unaffected unit under 40 CFR 72.6(b)(5). The applicability of the Acid Rain Program requirements to boiler 4 are therefore not addressed in this determination.

of additional electricity in steam turbine generators ST1 and ST2. Boiler 3 will also produce steam for the production of syngas and of electricity in ST1 and ST2. Exhaust from ST1 and ST2 and from syngas production will be used in the refinery. Although CT1, CT2, and boiler 3 are units as defined under 40 CFR 72.2 (“fossil-fuel fired combustion device”), they are also 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”). Because fuel is combusted in CT1 and CT2 to produce electricity, the exhaust is used to produce steam, the steam (as well as steam from boiler 3) is used to produce electricity, and then the exhaust is used for industrial purposes at the refinery, the use of the energy is “sequential” as that term is applied in the definition of “cogeneration unit.”

Under 40 CFR 72.6(b)(4)(i), a cogeneration unit for which construction commenced before November 15, 1990 for the purpose of supplying less than one-third of its potential electrical output capacity (PEOC) or less than 219,000 MWe-hrs of actual electric output to a utility power distribution system on an annual basis² is not an affected unit under the Acid Rain Program. However, a cogeneration unit for which construction commenced before November 15, 1990 that, after November 15, 1990, supplies an annual average of more than 219,000 MWe-hours of actual electric output and more than one-third of its PEOC to a utility power distribution system on an annual basis is considered a utility unit and therefore an affected unit under the Acid Rain Program.

Boiler 3 was constructed in the late 1950's, and has a PEOC of 60.4 MWe.³ One-third of boiler 3's PEOC is therefore 176,368 MWe-hrs,⁴ below the 219,000 MWe-hr threshold for possibly becoming an affected unit. During 1985-87, the boiler did not produce for sale more than 219,000 MWe-hrs of actual electric output and more than one-third of its PEOC. If the boiler, for any three year calendar period after 1990, provides on an annual basis more than 219,000 MWe-hrs of actual electric output and more than one-third of its PEOC to a utility power distribution system for sale, then it will become an affected unit.

² If the purpose of construction is unknown, the actual operation of the unit from 1985 through 1987 is assessed. If the unit operated such that the above-mentioned limits were not exceeded, it is not an affected unit under the Acid Rain Program.

³ PEOC for boiler 3 was calculated by multiplying the maximum design heat input capacity of 618 x 10⁶ Btu/hr. by 1/3 (the boiler efficiency rate asserted by petitioner), 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” at 12-13 to calculate PEOC.

⁴ This figure is calculated by multiplying the PEOC by 8760 (the number of hours in a year) and then multiplying again by 1/3.

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 more than 219,000 MWe-hours of actual electric output and more than one-third of its PEOC to a utility power distribution system on an annual basis is considered a utility unit and therefore an affected unit under the Acid Rain Program.

Construction is expected to commence on the Project, including CT1 and CT2, mid-1997. Units CT1 and CT2 (including their associated duct burners) each have a PEOC of 141.4 MWe.⁵ One-third of each unit's PEOC is therefore 47,133 MWe-hrs.⁶ If, in the first year of operation, or for any three year calendar period on an annual basis thereafter, a unit provides more than 47,133 MWe-hrs of actual electric output to a utility power distribution system for sale, then it will become an affected unit. If boiler 3, CT1, or CT2 become an affected unit, that unit will have to comply with all applicable requirements under the Acid Rain Program, including requirements to obtain an acid rain permit, hold allowances, and monitor and report emissions under 40 CFR parts 72, 73, and 75, respectively.

According to the petitioner, Star Enterprise will initiate the creation of a "special purpose entity" solely to obtain more favorable financing for the Project. Star Enterprise will bear all the costs of forming the special purpose entity. For purposes of this applicability determination and, in particular, of determining the amount of electricity provided to a utility power distribution system for sale, U.S. EPA assumes the following facts concerning the respective roles of Star Enterprise, the special purpose entity, and the participants in the special purpose entity:

1. The special purpose entity will be a grantor trust, the trustee of which will be a trust company (State Street Bank and Trust Company) and the beneficiary of which will be a financial institution (an affiliate of the Bank of Tokyo-Mitsubishi) that will finance the Project. The special purpose entity will have legal title to the Project and, under a "net" lease agreement, will transfer operation and control of the Project to Star Enterprise. Under the lease, Star Enterprise will pay rent for the Project. This rent will be totally unrelated to the amount of electricity or steam produced at the Project and will be applied exclusively to service the debt used to finance the Project. The covenants in the lease will require that Star Enterprise: maintain the leased property in the same condition as delivered (except ordinary wear and tear) and make necessary repairs and replacements; operate in compliance with applicable legal requirements; pay all taxes and similar charges against the leased property; maintain and comply with relevant insurance policies; comply with relevant contracts; and allow trustee inspection of the Project. Thus, the special purpose entity, the trustee, and the beneficiary will have no voice in or

⁵ PEOC for each unit was calculated by adding the maximum design heat input capacities of 835×10^6 Btu/hr. for the combustion turbine & 130×10^6 Btu/hr. for the duct burner (965×10^6 Btu/hr total), multiplying by 50% (the efficiency rate of the units as asserted by petitioner), dividing by 3413 and again by 1000 to arrive at figure above in MWe.

⁶ See footnote number 3.

dominion over the Project, and their only role in the Project will be as passive investor (or trustee for a passive investor) in the Project. The special purpose entity, the trustee, and the beneficiary will have no role in connection with refinery.

2. Star Enterprise has an exclusive option to acquire legal title to the Project upon expiration of the lease. Star Enterprise will operate the Project, pay the labor force running the Project, and own the electricity and steam produced by the Project, as well as all raw materials associated with their production (including the syngas and petroleum coke). Star Enterprise also owns and operates the refinery.

Assuming, based on the above, that Star Enterprise (and not the special purpose entity, the trustee, and the beneficiary) operates and controls both the refinery and the Project and owns the electricity from the Project,⁷ any electricity generated at the Project and consumed at the refinery will not be considered electricity provided to a utility power distribution system for sale. Such electricity will therefore not be counted against the aforementioned MWe-hr thresholds of 219,000 MWe-hrs for boiler #3 and 412,596 MWe-hrs each for CT1 and CT2. However, U.S. EPA notes that if, under any circumstances (e.g., a default by Star Enterprise in lease obligations), the special purpose entity, the trustee, or the beneficiary acts in a manner such that its role is no longer limited to that of a passive investor or such that it has any voice in or dominion over operation of the refinery or the Project, the determination that these MWe-hr thresholds do not apply to such electricity will no longer be applicable.

It is also noted that the petitioner requested in the February 6, 1997 letter that PEOC and electricity provided for sale be considered “. . . on a project-wide basis,” rather than on a boiler by boiler basis. Although the petitioner maintains that such an approach is consistent with U.S. EPA "guidance"⁸ in assessing whether boilers sharing a steam header are affected, nothing in U.S. EPA applicability guidance⁹ or 40 CFR 72.6 supports any approach other than that of evaluating each individual boiler to determine whether or not such a unit is an affected unit, even if such a boiler shares a steam header with other boilers. Indeed, the applicability criteria set forth in 40

⁷ See Pacific Power & Light Co., 3 FERC para. 61,119 at 61,337 (1978); Baltimore Refuse Energy Systems Co., 40 FERC para. 61,366 at 62,118-19 (1987); City of Vidalia, Louisiana and Catalyst Old River Hydroelectric L.P., 52 FERC para. 61,199 at 61,728 (1990), modified, 61 FERC para. 61,255 (1992) (holding that the trustee and the beneficiaries participating in analogous grantor trusts do not “own or operate” the electric generation facilities involved and are not, as a result of their participation, “public utilities”).

⁸ Petitioner indicated that it is referring to an informal applicability determination issued in April 1994 concerning a different facility. The determination was, on its face, not final or binding and, as discussed herein, is inconsistent with U.S. EPA applicability guidance and 40 CFR 72.6.

⁹ See, e.g., “Do the Acid Rain SO₂ Regulations Apply to You?” at pg. 13 (discussing apportionment of PEOC among multi-headered boilers).

CFR 72.6, on their face, are applied to individual units.¹⁰ As noted above, CT1, CT2, and boiler 3 must not exceed the above-mentioned individual ceilings in actual electrical sales to remain unaffected units.

This determination is based in part on the representations made in your letters of February 6, April 24, May 15, May 29, August 5, and August 6, 1997, and phone conversations with Jeffrey N. Hurwitz of Morgan, Lewis, & Bockius LLP and Phillip A. May of Radian International LLC. This determination 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 Star boiler 3, CT1, and CT2 (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/ (August 14, 1997)

Brian J. McLean, Director
Acid Rain Division

cc: Joe Shockley, State of Delaware
Linda Miller, U.S. EPA Region 3

¹⁰ Although 40 CFR 72.6(a)(3)(iv) and (b)(4) use the term “cogeneration facility,” it is clear from the context that this term refers to a single unit, not a group of units. In particular, 40 CFR 72.6(b)(4) categorizes a “cogeneration facility” as either “a unit that commenced construction on or prior to November 15, 1990” or “which commenced construction after November 15, 1990.” See also 40 CFR 72.2 (defining “cogeneration unit”); and 58 FR 15634, 15636 (1993) (explaining the criteria in 40 CFR 72.6(b)(4) for exempting “cogeneration units”).