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[Please note that footnotes occur at end of document]

MEMORANDUM

SUBJECT: Proposed Netting for Modifications at Cyprus
Northshore Mining Corporation, Silver Bay, Minnesota

FROM: John Calcagni, Director
Air Quality Management Division (MD-15)

TO: David Kee, Director
Air and Radiation Division, Region V (5A-26)

This memorandum responds to your July 2, 1992 inquiry regarding the applicability of the prevention of significant deterioration (PSD) program to proposed construction at a taconite ore processing facility owned and operated by Cyprus Northshore Mining Corporation (Cyprus) in Silver Bay, Minnesota. Cyprus proposes to modify its existing source by installing two new rotary hearth furnaces at the facility. To prevent this physical change from resulting in an increase in emissions and thus subjecting the source to PSD as a "major modification," Cyprus seeks to take credit for the shutdown of several, existing straight-grate furnaces which would be replaced as part of the proposed work. Since these furnaces have not operated since 1982, you have asked whether Cyprus may use the 1981 and 1982 actual emissions of these furnaces to establish the netting credit. Subsequent to your memorandum, counsel for Cyprus has written Region V urging the Environmental Protection Agency's (EPA's) approval of a baseline using actual emissions from these furnaces during the period of July 1975 to June 1977. However, after reviewing both the facts as presented to me, as well as the appropriate regulations and statutory provisions, it does not appear that either suggested baseline is appropriate. Indeed, for the reasons set forth in this memorandum, it does not appear that Cyprus can be credited with any emissions reductions stemming from the removal of the existing furnaces at the West Plant.

FACTUAL BACKGROUND

The taconite ore processing facility at issue is a single major stationary source consisting of an East Plant and a West Plant. Reserve Mining (Reserve)--the owner before Cyprus--originally produced oxidized iron ore pellets from both plants. According to Cyprus, which took over the plant in 1989, Reserve operated the plant at near capacity until the mid-1970's when production began to decline due to an economic downturn in the domestic steel industry, labor unrest, and the installation of pollution control equipment. Finally, in 1982, Reserve shut down the West Plant operations due to poor market conditions. Reserve continued to manufacture pellets in the East Plant and maintained the equipment in the West Plant through 1986. At that point the company went bankrupt.

Cyprus purchased the facility in 1989 and resumed operations in the East Plant in 1990. The West Plant operations were never resumed. Indeed, in 1989, the Minnesota Pollution Control Agency issued an air permit to Cyprus that apparently prohibited operation of four of the six furnaces at the West Plant.

Cyprus now proposes to restart manufacturing at the West Plant. To this end, the company wants to install two new rotary hearth furnaces as part of a switch to a direct reduction pellet process. [Cyprus currently has an option for the direct reduction technology which must be exercised before the end of this year.] The new West Plant furnaces will have significant nitrogen oxides (NO_x) and sulfur dioxide (SO₂) emissions. According to Region V and Cyprus, the potential-to-emit for the two new furnaces standing alone greatly exceeds the 40 tons-per-year (tpy) significance level applicable to both SO₂ and NO_x [see 40 CFR 52.21(b)(23)(i)]. Cyprus proposes to avoid PSD review by netting the emissions from the two new rotary hearth furnaces against the emissions associated with the shutdown of three of the existing furnaces that will be removed from the West Plant as part of the proposed renovation.

STATUTORY AND REGULATORY BACKGROUND

The PSD program [Clean Air Act (CAA), sections 160-169] applies in attainment areas [i.e., those areas which have attained the national ambient air quality standards (NAAQS)]. The new source review (NSR) requirements apply to newly-constructed sources and to "major modifications," physical or operational changes occurring at existing sources that result in significant net emissions increases. The PSD definition of modification contemplates a two-step test for determining whether activities at an existing facility constitute a major modification subject to review. In the first step, the reviewing authority determines whether a physical or operation change will occur. If so, the reviewing authority proceeds to determine whether a physical or operational change will result in an emissions increase over baseline levels. Routine changes and certain other changes are excluded by regulation from the definition of physical or operational change (see 57 FR 32314, 32316). In this second step, EPA regulations focus on whether the proposed change will result in a "significant net emissions increase of any pollutant subject to regulation under the CAA" [see 40 CFR 52.21(b)(2)(i)]. A "net emissions increase" is defined as the increase in "actual emissions" from the particular physical or operational change, together with any other "contemporaneous" increases or decreases in actual emissions [see 40 CFR 52.21(b)(3)(i)]. To be "contemporaneous," the emissions increases or decreases must have "occurred" within the 5 years preceding the proposed change [see 40 CFR 52.21(b)(3)(ii)].

Applicability of the PSD provisions must be determined in advance of construction and on a pollutant-by-pollutant basis. Specifically, to determine whether a proposed change at an existing source will result in an increase in actual emissions, the source must first determine a baseline level of actual emissions. The applicable regulation defines actual emissions on a particular date as "average rate, in tpy, at which the unit actually emitted the pollutant during a 2-year period which precedes the particular date and which is representative of normal source operation" [see 40 CFR 52.21(b)(21)(ii)]. The Administrator shall allow use of a different time period "upon a determination that it is more representative of normal source operation." [Ibid.] The EPA has "typically used the 2 years immediately preceding the physical or operational change to establish the baseline" (see 57 FR 32317).

Because the applicability determination must be made in advance of construction, EPA's PSD regulations provide that when

an emissions unit "has not begun normal source operations," actual emissions equal the "potential-to-emit" of the unit [see 40 CFR 52.21(b)(21)(iv)]. In other words, to determine if there is an emissions increase, the regulations require EPA to compare the source's actual emissions before the change and its potential emissions after the change. This is the so-called "actual-to-potential" test. This test, in effect, presumes that following the change the source will operate at 100 percent of its physical capacity. The source owner may overcome this presumption by agreeing to federally-enforceable restrictions that would prevent the plant from significantly exceeding its pre-modification emissions baseline.

The determination of whether the physical or operational change would result in an increase in actual emissions is but one factor in determining whether the change will increase emissions. As mentioned, if the change will, standing alone, result in an increase in emissions, the source must next identify and quantify any other prior increases and decreases in "actual emissions" that are "contemporaneous" with the particular change and which are otherwise creditable [see 40 CFR 52.21(b)(3)(i) and (b)(21)]. Reductions are not creditable if the Administrator "has relied on it in issuing a permit" and that permit remains in effect at the time of the proposed change [see *Id.* at 52.21(b)(3)(iii)]. Also, reductions must have "approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change" [see *Id.* at 52.21(b)(3)(vi)(c)].

It should be noted that the initial inquiry as to whether the change, standing alone, will result in an increase in actual emissions is calculated by determining the emissions increase at the particular emissions units to be changed or added [see 40 CFR 52.21(b)(21); NSR Workshop Manual, p. A.46 (Draft October 1990)]. The subsequent netting calculation includes all increases and decreases--anywhere at the source--that are contemporaneous and creditable [see 40 CFR 52.21(b)(3)(i); Workshop Manual at A.46-47].

DISCUSSION

A. General Applicability of PSD

As discussed, the first question is whether the work proposed constitutes a physical or operational change. This must

be answered in the affirmative. The source proposes to add two new rotary furnaces and make all necessary changes to the West Plant to operate these new additions. This is not a case where the source is reactivating a shut-down facility and making only "routine" changes to bring it back on line. For this reason, there is no dispute that this new construction constitutes a physical change.

The second step is to determine whether this physical change will result in an increase in actual emissions at the emissions units affected. Here again, the answer is yes. Based on the description of the project we have, it appears that the work at issue is the installation of a direct reduction pellet process, including two new emissions units--two new rotary hearth furnaces. Since these emissions units are new, their baseline level of actual emissions is zero. As discussed, their potential emissions are over the significance levels, so the proposed work will trigger PSD, unless there are contemporaneous increases and decreases at the source that can be used to net out of review.

B. Using the Shutdown of the West Plant as a Contemporaneous Decrease

Since the project, standing alone, will result in a significant increase in emissions, Cyprus must identify sufficient contemporaneous decreases to avoid PSD. The company urges EPA to credit the reductions associated with the removal of several existing furnaces at the West Plant. However, as discussed below, these reductions are neither contemporaneous nor otherwise creditable. Moreover, even if these reductions were eligible to be considered for netting, they would have no value since the baseline for the West Plant furnaces is zero.

1. Netting Reductions Cannot "Occur" Outside the Contemporaneous Period

The EPA's regulations limit netting to those emissions reductions that occur within the 5-year period that precedes the proposed change:

An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs between:

- a) The date 5 years before construction on the particular change commences; and b) the

date that the increase from the particular change occurs.

[see 40 CFR 52.21(b)(3)(ii)(emphasis added)]. Thus, if the reduction occurred more than 5 years before the commencement of construction of the proposed change, it is not contemporaneous. Here, the reduction undeniably took place in 1982 when the emissions from the West Plant fell to zero. This is outside the 5-year window. However, Cyprus contends that a reduction does not occur "until such time as the source determines not to resume operation of the equipment in question, or the source is, in some other way, precluded from operation of the equipment." In other words, a credible reduction does not "occur" when emissions decrease. It occurs when the source elects to take credit for it.

In *Alabama Power Co. v. Costle*, 636 F.2d 323, (D.C. Cir. 1979), the court recognized that EPA has substantial discretion in applying the plantwide bubble concept so as to reconcile the statutory goals of preserving clean air and providing for economic growth [see *Id.* at 400-03]. In particular, the court noted that EPA should enable emissions increases from the addition of a new unit to be set off by decreases resulting from the abandonment of an old unit [*Id.* at 401]. However, the court also emphasized that offset reductions claimed by industry to net out of review must be "substantially contemporaneous" (*Id.* at 402) (emphasis added). The EPA's regulations implemented this standard by setting 5 years, plus time for construction, as the period of contemporaneity. The EPA selected 5 years (despite proposing a 3-year period) on the basis that 5 years would be long enough to accommodate "corporate expansion planning" and would "minimize any incentive for keeping old or obsolete equipment in operation beyond its usefulness" (see 45 FR 52701). On the other hand, EPA declined to expand the contemporaneous period to any prior reduction that had occurred at the plant:

[Industry commenters] urged EPA to treat any emissions decrease which occurs before a proposed increase as being "contemporaneous" with that increase. The EPA, however, has rejected those urgings. To credit any decrease that occurs before a proposed increase would violate any common sense notion of what is "contemporaneous," since a period of contemporaneity must have some definite boundaries.

[Ibid. (emphasis in original)]. Cyprus' interpretation of this provision violates this common sense understanding of a limited contemporaneous period. Under Cyprus' interpretation, sources could bring in any prior reduction, no matter how old or obscure, so long as the source retained the legal right to return to that emissions level.

Cyprus' proposed interpretation of EPA's regulations conflicts with the plain meaning of the contemporaneity requirement. Moreover, allowing credit for very old emissions reductions undermines the purpose of the contemporaneity requirement by enabling new construction activity to burden the environment with levels of air pollution higher than they have been for many years. The EPA has already given sources a generous 5-year window to aggregate any decreases to net out of review. Since the reduction in actual emissions at the West Plant occurred before the 5-year period, it cannot be used to net out of review.

2. The Baseline for the West Plant Furnaces

Even if the reductions at the West Plant could be deemed to have occurred in 1989, Cyprus still must establish the value of the reductions. In general, this requires a comparison of the emissions levels before and after the reduction. The problem for Cyprus is, of course, the baseline for the West Plant reductions. The EPA policy presumes a calculation based on the 2 years that immediately preceded the change [see 45 FR 52676, 52705, 52718 (1980)]. If EPA uses the 1989 date as the point when the reduction occurred, since the units did not operate during that period, the presumptive baseline is zero and there is no credible reduction. To avoid this result, Cyprus seeks to use a time period well outside the contemporaneous period (July 1975 to June 1977).

As discussed, the Administrator's power to use a different baseline period is limited to those circumstances where the source demonstrates that some time period other than the 2 years that precede the change is more representative of normal source operation. In general, EPA has indicated that this provision is to apply to catastrophic occurrences such as strikes and major industrial accidents (see NSR Workshop Manual, p. A.39). For example, in the WEPCO applicability determination, EPA found the fourth and fifth years prior to the proposed renovation project more representative, since the utility's capacity was greatly

reduced after that period due to a cracked steam drum and other severe physical problems (see 57 FR 32323).

On the other hand, EPA has declined to consider a stop in operations, in and of itself, to constitute grounds to change the baseline years. For instance, in the WEPCO rulemaking, EPA adopted a presumption for utilities that considers any 2 years within the 5 years that precede the change to be representative of normal source operations. However, EPA rejected comments seeking to allow further accommodations for units that had been out of operation (see 57 FR 32325):

The EPA disagrees with comments seeking to allow the use of any 2 consecutive years within the last 5 years of a unit's "operation" rather than within the 5 years directly preceding the proposed change. A shifting of the 5-year period would be difficult to harmonize with definitions of contemporaneous contained in the regulations. This type of open-ended provision would even credit a unit which has been inoperative for 20 or 30 years or longer with a high level of emissions.

Based on these policies, EPA cannot approve either a 1981-1982 baseline or the earlier period put forward by Cyprus. Cyprus has not demonstrated that catastrophic occurrences or other extraordinary circumstances disrupted the West Plant for the entire period between the proposed change and the years Cyprus claims are representative of "normal source operations." Indeed, it is admitted that in the last 10 years the source has been idle due to general economic conditions, and the zero baseline appropriately reflects source utilization under these longstanding market conditions. On the other hand, the very fact that Cyprus seeks to throw out the most recent 13 years suggests that the years Cyprus puts forward are not representative of normal operations in any realistic sense. For these reasons, the baseline for the West Plant furnaces should be zero.

3. Health and Welfare Effects of the Proposed Netting

The PSD regulations restrict the creditability of some decreases in emissions for the purpose of emissions netting. In particular, one provision allows credit for a reduction only to the extent that it has approximately the same qualitative significance for public health and welfare as the increase from

the proposed change [see 52.21(b)(3)(vi)(c)]. Where there is reason to believe that the reduction in ambient concentrations from the decrease will not be sufficient to prevent the proposed emissions increase from causing or contributing to a violation of any NAAQS or PSD increment, this provision requires an applicant to demonstrate that the proposed netting transaction (despite the absence of a significant net increase in emissions) will not cause or contribute to such a violation (see 54 FR 27298). Even if EPA found the proffered reductions otherwise quantitatively acceptable in this case--where the existing emissions units have not contributed to ambient concentrations for the last 10 years--Cyprus would have to perform sufficient air quality modeling to demonstrate that the emissions increase from the new units would not violate the applicable NAAQS and PSD increments before the reductions could be credited (see 54 FR 27298).

CONCLUSION

In conclusion, based on the information submitted to date, the proposed 1975 to 1977 baseline period is unacceptable. We are, however, acutely aware of Cyprus' need and concern that their project proceed in a timely manner. To this end, we are willing to work with the Region, the State, and Cyprus to facilitate the resolution of any outstanding permit issues and to assist in the expedited processing of a PSD permit.

Footnotes

1. This statement of the facts is based on your memorandum to me dated July 2, 1992 and the July 27, 1992 letter Region V received from Denise W. Kennedy and Robert T. Connery, counsel for Cyprus. The Office of Air Quality Planning and Standards has made no independent effort to verify this factual information.
2. Prior to the bankruptcy, the union representing the workers at the West Plant filed a grievance against Reserve seeking severance pay on the grounds that the West Plant had been permanently shut down. However, in February 1986, the Iron Ore Industry Board of Arbitration ruled that Reserve did not at that time intend to permanently shut down the West Plant.
3. In *Puerto Rican Cement Co. v. EPA*, 889 F.2d 292 (1st Cir. 1989), the court of appeals upheld EPA's application of the actual-to-potential test in a case involving modernization of

cement kilns. However, in *Wisconsin Elec. Power Co. (WEPCO) v. Reilly*, 893 F.2d 901 (7th Cir. 1990), a different appeals court struck down EPA's actual-to-potential test as it applied to "like-kind" modifications at utilities. In a subsequent rulemaking, EPA adopted an "actual-to-future-actual" test for utility modifications to existing sources. Under that test, EPA compares the pre-change actual emissions baseline to a projection of future emissions that is based on the unit's past operating history and other factors (see 57 FR 32314). Even ignoring the fact that this rule is limited to electric steam generating units, the actual-to-future-actual test would be inapplicable here since Cyprus is essentially proposing to add a new furnace rather than merely making changes to the existing furnaces at the West Plant. Because it is impossible to reliably project future levels of capacity utilization and, hence, actual emissions at a new unit that has no past operating history, EPA's recent rulemaking retains the actual-to-potential test when the change at issue is the addition of a new emissions unit (see *id.*, at 32323).

4. Cyprus does not contest that the work at issue involves the installation of new units rather than the rehabilitation of the existing emissions units.

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