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ISSUE ANALYSIS

EPA's Pre-NSR Reform Rules: Requirement To Apply An "Actual-To-Actual" Test

Introduction

EPA's new source review (NSR) reforms will, when adopted and implemented by state and local agencies, greatly improve the NSR programs required under the Clean Air Act ("Act"). 67 Fed. Reg. 80,185 (Dec. 31, 2002). Until implementation of the 2002 NSR rule reforms, permitting authorities will continue to implement their pre-existing NSR programs adopted to comply with the 1980 NSR rules (or, for electric utilities, the 1992 WEPCO rule). Thus, the pre-reform rules will continue to be significant to major industrial sources for several years in a number of states.

For much of the past decade, EPA and many states have taken the position that sources must apply the "actual-to-potential" emissions increase methodology in determining whether emissions increases occur under the 1980 NSR rule requirements. Industry representatives, on the other hand, have asserted that EPA's 1980 rules, and in turn state regulations implementing those rules, exclusively authorize federal and state regulators to base NSR applicability for changes to existing emissions units on an "actual-to-actual" test. A body of case law has now developed that makes clear that it is unlawful to apply the "actual-to-potential" test in determining emissions increases from such changes.

This issue analysis will address two related issues: (1) the unlawfulness of requiring that the actual-to-potential test be applied in reviewing proposed changes to

existing emissions units under the 1980 NSR rules and the corollary that an "actual-to-actual" test must be applied under the 1980 rules in reviewing such changes; and (2) the appropriateness of implementing the 2002 rule "actual-to-projected-actual" test under pre-existing state and local NSR regulations.

The preceding Issue Analysis (NSR-27-NSR-38) addresses the 2002 NSR rule reforms and strongly urges that state and local permitting authorities adopt and implement those reforms. There has been widespread agreement for many years that the NSR program was in need of significant reform. EPA's prior regulations were interpreted and applied inconsistently and often in a manner contrary to the language of the regulations and the Act. As a result, many projects were not undertaken that would have produced significant emissions reductions and energy efficiency, and projects that were undertaken frequently were significantly delayed. The reforms will be highly beneficial from both an environmental and economic standpoint.

Executive Summary

The principal points made in this issue analysis are:

- **Requirement to Apply "Actual-to-Actual" Test and Illegality of "Actual-to-Potential" Test for Changes to Existing Emissions Units**

  - Congress incorporated the NSPS definition of "modification" in the NSR programs when they were enacted in 1977. Since the time of its adoption, EPA's NSPS regulatory definition of modification has provided for emissions increases to be determined by comparing pre-change maximum emissions to post-change maximum emissions, or a "potential-to-potential" test.

  - EPA's 1980 NSR rules, preamble statements, and contemporaneous interpretations made clear that the rules provided for an "actual-to-actual" test to determine emissions increases from proposed changes to existing emissions units. They also provided that, in determining NSR applicability, post-project emissions could only be deemed to be equivalent to "potential to emit" where a unit had "not begun normal operations," *i.e.*, a new unit. Courts have

consistently held that the 1980 NSR rules provide for an "actual-to-actual" test, not an "actual-to-potential" test, to be applied in determining emissions increases from proposed changes to existing emissions units. As the court ruled in the *Ohio Edison* case, "any use of the actual to potential to emit test is not legally supportable," where the plant at issue "was operational at the time the activities were proposed."

P Courts interpreting the 1980 NSR rules have differed as to how the "actual-to-actual" test is to be implemented. In the *WEPCO* and *Duke Energy* cases, the courts ruled that a comparison should be made of pre-project actual emissions to post-project emissions, assuming constant hours and conditions of operation. In *Ohio Edison*, the court ruled that an "actual-to-projected-actual" test, taking into account projected future utilization, should be applied. In all three cases, the court rejected use of an "actual-to-potential" test.

O **Appropriateness of Implementing the 2002 Rule "Actual-to-Projected-Actual" Test Under Pre-Existing Regulations**

P The actual-to-projected-actual NSR applicability test in the 2002 rules has three basic elements: (1) determination of a 2-in-10 year actual emissions baseline; (2) comparison of the actual emissions baseline to projected actual emissions for each of the next five years (in most situations, and 10 years in others) to determine whether, and to what extent, there would be an emissions increase; and (3) the exclusion of emissions associated with demand growth in determining whether there would be a significant emissions increase from the project.

P In light of the differing court interpretations of how the actual-to-actual test is to be carried out under the 1980 NSR rules, state and local permitting authorities could reasonably interpret their pre-existing rules to authorize use of the "actual-to-projected-actual" test in the 2002 rules, and estimate post-project annual emissions in the manner provided in the new rules.

- P The "causal link" requirement in the 1980 NSR rules, under which only increases that result from a proposed physical or operational method change are to be taken into account, is appropriately implemented by the explicit demand growth exclusion in the 2002 rules.

- P Use of the new 2-in-10 year baseline provision would be justifiable under the 1980 NSR rules, because the two years selected under it could be accepted as the "representative" two-year baseline period under the 1980 rules.

- P The reporting and recordkeeping requirements of the 2002 rules, if implemented under the 1980 NSR rules, would result in requirements that go beyond what is included in the 1980 rules.

Requirement to Apply "Actual-to-Actual" Test and Illegality of "Actual-to-Potential" Test for Changes to Existing Emissions Units

Under the Clean Air Act and EPA's regulations, a plant change triggers federal NSR requirements only if it results in "a significant net emissions increase." EPA's regulations provide that, for changes to existing units, the determination of whether, and to what extent, an emissions increase has occurred is to be made by comparing pre-change *actual* emissions to post-change *actual* emissions. Since the mid-to-late 1990's, however, EPA has taken the position that a facility must always compare its pre-change *actual* emissions with its post-change *potential* emissions. A review of the relevant language in the 1980 NSR rules, EPA's interpretations issued contemporaneously with its adoption of the rules, and the full body of case law interpreting the rules shows conclusively that an "actual-to-actual" test must be applied to determine emissions increases from proposed changes to existing emissions units and that requiring use of the actual-to-potential test is unlawful.

Statutory Language and Legislative History

Congress added the NSR requirements in the Clean Air Act Amendments of 1977. Congress provided that only plant changes that constitute "modifications" would be subject to the PSD and non-attainment preconstruction review requirements. For both NSR programs, the term "modification" has the same meaning as under section 111(a)(4) for new source performance standards (NSPSs).

Congress defined "modification" in section 111(a)(4) as follows:

> The term "modification" means any physical change in, or change in the method of operation of, a stationary source *which increases the amount of any air pollutant* emitted by such source or which results in the emission of any air pollutant not previously emitted (emphasis added).

In implementing the NSPS provisions in 1975, EPA established the following regulatory definition of "modification":

> Any physical or operational change to an existing facility *which results in an increase in the emission rate* to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act [with certain specified exclusions that are included in the rule].

40 C.F.R. § 60.14 (emphasis added).

EPA elaborated on the NSPS statutory definition of "modification" by providing that the determination of whether an emissions increase occurs is to be made by reviewing whether maximum emissions after a change would be greater than maximum emissions at full capacity before the change. 67 Fed. Reg. 80,199. In 40 C.F.R. § 60.14, EPA also established rules governing how this "potential-to-potential" determination should be implemented for NSPS purposes. Thus, when Congress enacted the NSR requirements in 1977, it was clear that the

determination of whether a change constitutes a "modification" under section 111(a)(4) was to be made based upon a comparison of maximum emissions before and after the change.

EPA's 1980 NSR Rules

When EPA promulgated its NSR regulations in 1980, it emphasized that the modification provisions would focus on increases in actual emissions, rather than potential emissions. The Agency explained that, although the proposed PSD regulations published in 1979 had defined "modification" in terms of increases in potential emissions (as had EPA's predecessor 1974 PSD regulations), EPA had decided to "shift[] the focus of its regulatory definitions from 'potential to emit' to 'actual emissions.'" 45 Fed. Reg. 52,700. EPA stated that, under its approach in the final rule, a "major modification would occur only if there would be a net increase in 'actual emissions.'" *Id*.

In implementing the NSR requirements, EPA defined "major modification" to mean:

> Any physical or change in the method of operation of a major stationary source that *would result in* a significant net emissions increase of any pollutant subject to regulation under the Act.

40 C.F.R. § 52.21(b)(2)(i) (emphasis added). Accordingly, a key question in determining whether a "major modification" will occur under the 1980 NSR rules is whether there is a direct causal link between a non-exempt change and any subsequent emissions increase. As EPA has stated:

> The NSR regulatory provisions require that the physical or operational change "result in" an increase in actual emissions in order to consider that change to be a modification (*see, e.g.*, 40 C.F.R. 52.21(b)(2)(i)). In other words, NSR will not apply unless EPA finds that there is a causal link between the proposed change and any post-change increase in emissions. . . .

57 Fed. Reg. 32, 326.

EPA defined the term "net emissions increase" as "[a]ny increase in *actual emissions* from a particular physical change or change in method of operation. . . [and other contemporaneous increases and decreases in actual emissions]." 40 C.F.R. § 52.21(b)(3)(i) (emphasis added). Under the regulations, a source's "*actual emissions*" are equal to the source's "*actual rate of emissions*," except that "actual emissions" means the "potential to emit" pollutants in the limited circumstance where an "emissions unit . . . has not begun normal operations." 40 C.F.R. § 52.21(b)(21)(iv).

The regulatory language and the preamble show that the phrase "has not begun normal operations" was intended to apply only where an entirely new unit is being installed or in narrow instances where an existing unit is to be changed to such an extent that there is no relevant operating history on which to base post-change actual emissions. 45 Fed. Reg. 52,699. Where the unit has an operating history, the rules require that the reviewing authority use an "actual-to-actual" approach.

EPA's Contemporaneous Interpretations

Shortly after its adoption of the 1980 NSR rules, EPA issued a number of interpretations of the rules' applicability criteria. Each interpretation confirms that EPA's unequivocal intent was that an "actual-to-actual" test, not an "actual-to-potential" test, would be applied in determining emissions increases from proposed changes to existing emissions units. For example, EPA's October 1980 Prevention of Significant Deterioration Workshop Manual, which was issued only two months after the PSD regulations were promulgated, makes clear that, for physical or operational method changes to an existing unit – as opposed to installation of a new unit – the appropriate methodology is to compare pre-change *actual* emissions to post-change *actual* emissions:

> *Whether a significant emission increase will result from a proposed modification is determined by the net change in actual emissions.* In assessing the net change, certain contemporaneous emission changes are considered with the increase from the modification. *All changes, however, are assessed as actual emissions. . . .*

1980 Manual at I-A-13 and 14 (emphasis added).

Similarly, a 1980 letter from Edward Reich, Chief of EPA's Stationary Source Control Division, in addressing a proposed change, states that, because emission rates would decrease and "[a]ctual emissions could increase only if there is an increase in the production rate or hours of operation," the change would not constitute a major modification. The letter, thus, makes clear that an actual-to-actual test is to be used and not an actual-to-potential test. In an 1983 memorandum from Mr. Reich, he states that "[s]ince this source has been in operation for some time," the provision authorizing consideration of potential emissions after a change "does not apply."

Court Decisions Interpreting EPA's Applicability Requirements

Federal courts have been called upon to interpret EPA's NSR applicability requirements in a number of cases during the past decade and a half. The body of case law that has resulted confirms the following: (1) an "actual-to-actual" test must be applied in determining emissions increases from proposed changes to existing emissions units; and (2) application of an "actual-to-potential" test is only permissible where emissions increases are to be determined from a proposed new unit or a unit that has been changed to such an extent that it is properly treated as a new unit.

In *Wisconsin Elec. Power Co. (WEPCO) v. Reilly*, 893 F.2d 901 (7th Cir. 1990), the Seventh Circuit ruled that applying the "actual-to-potential" test to determine whether there is an emissions increase from an existing unit was "unreasonable" and pointed out that EPA had engaged in "circular reasoning," *i.e.*, the test assumes that the change is a modification in order to "dictate" that conclusion. 893 F.2d at 917. The court concluded that EPA could not disregard a facility's prior operating history through use of the "actual-to-potential" test. *Id*. The court directed EPA to project future actual emissions by considering "present hours and conditions." *Id*. at 918 n.4. Although the case involved what the court referred to as "like-kind replacements," the court's reasoning made clear that the "actual-to-potential" test would properly apply only in situations where there is no relevant operating history and no basis for predicting future actual emissions.

Recent decisions are equally definitive in finding that an actual-to-actual test must be applied and that the "actual-to-potential" test is unlawful when existing emissions units are to be changed. In *U.S. v. Ohio Edison Co.*, 276 F. Supp. 2d 829 (S.D. Ohio 2003), EPA brought an enforcement action arguing that the company's

replacement projects over a number of years should have been permitted under the NSR requirements. Although the judge accepted virtually every factual and legal argument EPA put forward, he nonetheless ruled that, since the plant "was operational at the time the activities were proposed," "any use of the actual to potential to emit test is not legally supportable." *Id.* at 863. The judge stated that an "actual-to-projected-actual" test must be applied.

In *U.S. v. Duke Energy Corp.*, 278 F. Supp. 2d 619 (M.D.N.C. 2003), the judge ruled that, under the 1980 NSR rules, an "actual-to-actual" test should be applied under which a comparison would be made of pre-project actual emissions to post-project emissions, assuming constant hours and conditions of operation. *Id*. at 640. EPA had argued that an "actual-to-projected-actual" test should be applied, after abandoning the argument in its brief that an "actual-to-potential" test should be applied. *Id*. at 640, n.17. The judge held,

> based on the PSD rules, the contemporaneous interpretations of the PSD rules, and the statutory language incorporating the NSPS concept of modification into PSD, post-project emissions must be calculated on an annual basis, measuring emissions in tons per year, and in calculating post-project emissions levels the hours and conditions of operation must be held constant. *Accordingly, a net emissions increase can result only from an increase in the hourly rate of emissions*.

Id. at 640 (emphasis added).

Courts have upheld EPA's application of the "actual-to-potential" test in two cases, but only where the emissions unit involved was a new unit or a unit that was changed so significantly that it could be treated as a new unit. In *Puerto Rican Cement Co. v. EPA*, 889 F.2d 292 (1st Cir. 1989), the court ruled that the substantial changes to a cement plant, converting it from a wet process unit to a more efficient dry process, resulted in a new unit, *i.e.*, one that had "not begun normal operations." *Id*. at 298. Similarly, in *U.S. v. Murphy Oil USA, Inc.*, 143 F. Supp. 2d 1054 (W.D. Wisc. 2001), the judge ruled that changes to the facility's sulfur recovery unit, including a significant increase in capacity, were "significant enough

to make the post-construction unit effectively a new unit that had not begun normal operations at the start of construction." *Id*. at 1105.

Unlawfulness of "Actual-to-Potential" Test Under the Clean Air Act

Not only is it impermissible to apply an "actual-to-potential" test under EPA's 1980 NSR rules, it also would be unlawful to adopt an "actual-to-potential" test to determine emissions increases from proposed changes to existing emissions units. As pointed out above, the Clean Air Act only authorizes emissions increases that result from a change to be taken into account in determining whether a physical or operational method change will constitute a "modification." The pre-project potential emissions of most facilities are greater than their pre-project actual emissions. As a result, virtually every change at a facility with unused capacity would be deemed to result in a significant emissions increase under an actual-to-potential test – even though, as is typically true, the changes will cause no increase in actual emissions and, in many instances, will reduce actual emissions. Thus, adoption of the "actual-to-potential" test to determine emissions increases from proposed changes to existing emissions units would conflict with the Clean Air Act's requirement that only "modifications," *i.e.*, changes that result in an emissions increase, may trigger NSR applicability.

Appropriateness of Implementing the 2002 Rule "Actual-to-Projected-Actual" Test Under Pre-existing Regulations

As the foregoing indicates, an extensive body of case law, as well as contemporaneous legislative and regulatory history, confirms the longstanding position of industry that the 1980 NSR rules require that regulators apply an "actual-to-actual" test in determining emissions increases from changes to existing emissions units, rather than the "actual-to-potential" test required in recent years by EPA and many states. EPA's 2002 NSR reform rules establish an "actual-to-projected-actual" emissions increase test and the ground rules under which that test is to be implemented. As will be shown below, as an interim measure, EPA and state and local permitting authorities can properly implement the 1980 NSR rule requirements by applying the "actual-to-projected-actual" applicability test in the 2002 rules.

While it is clear under relevant case law and EPA's early interpretations of the 1980 NSR rules that an "actual-to-actual" test must be applied, the court decisions

interpreting the rules have reached different conclusions as to how regulators should apply the actual-to-actual test. Until a definitive ruling is issued, EPA's 2002 rule actual-to-projected-actual test is a reasonable approach for making determinations of whether there is, and the extent of, any annual increase in actual emissions. In contrast, court rulings make clear that applying the actual-to-potential test is not reasonable.

Application of Actual-to-Projected-Actual Test

The justification for implementing the 2002 rule "actual-to-projected-actual" applicability test as an interim measure until permitting authorities formally adopt that test is straightforward. Since, as discussed above, the 1980 NSR rules require an "actual-to-actual" test to be implemented for changes to existing emissions units, the issue arises as to how such actual-to-actual test is to be carried out. Industry representatives believe that the methodology set forth in the *Duke Energy* case, which is described below and in the prior section, is the proper interpretation of the 1980 NSR rules. The application of that test (endorsed by two courts) would, in almost every circumstance, result in fewer changes triggering NSR than the test in the 2002 rules. Until further definitive clarification is provided by federal court decisions, permitting authorities could reasonably implement the actual-to-projected-actual test in the 2002 rule.

A review of the actual-to-projected-actual test EPA promulgated helps to show why implementation of that test as an interim measure under the 1980 NSR rules would be reasonable. The 2002 rule test has three basic elements: (1) determination of a 2-in-10 year emissions baseline; (2) comparison of the actual emissions baseline to projected actual emissions for each of the next five years (in most situations, and 10 years in others) to determine whether there would be an annual increase in actual emissions; and (3) exclusion of emissions associated with demand growth in determining whether there would be a significant emissions increase from a project. The second and third elements, *i.e.*, comparison of pre-change actual emissions to post-change actual emissions and exclusion of demand growth emissions, are clearly contemplated under the 1980 NSR rules. The 2-in-10 year baseline provisions of the 2002 NSR rules are not mandated under the 1980 rules, but could permissibly be implemented by state and local permitting authorities.

Projection of Post-Project Emissions

As the analysis above about court decisions interpreting EPA's applicability requirements shows, courts have reached different conclusions as to how to project post-project emissions in implementing an actual-to-actual test. In the *WEPCO* and *Duke Energy* decisions, the courts indicated that the projection should be made by holding hours of operation and production rate constant, with the result that an emissions increase would only be projected if the proposed change to the emissions unit would increase the unit's hourly emissions rate. On the other hand, the judge in *Ohio Edison* considered projections of actual emissions developed by EPA and industry experts before making a judgment as to what projections of post-project emissions he considered reasonable.

In light of the differing methods for projecting post-project emissions under court cases, use of the methodology for making projections under the 2002 rules as an interim measure in implementing the pre-existing NSR rules seems reasonable. A major value of projecting post-project actual emissions based upon the 2002 rules is that they provide a clear methodology for doing so.

Demand Growth Exclusion

The second component of the 2002 rule applicability test that is consistent with, and indeed compelled by, the 1980 NSR rules is the exclusion for emissions attributable to demand growth. As the analysis under I. above indicates, EPA has consistently taken the position that there must be a causal link between a proposed change and any future emissions increase that might occur. Application of the "actual-to-potential" test has eviscerated this requirement under the 1980 NSR rules. EPA's 1992 WEPCO rule incorporated the demand growth exclusion to establish the methodology for excluding emissions increases associated with demand growth. That approach has now been carried over to the new rules. Applying the exclusion incorporated in the 2002 rules would comport with the causation requirement under the 1980 rules.

2-in-10 Baseline Provision

Implementing the new 2-in-10 year actual emissions baseline provision under the 1980 NSR rules would be permissible, but is not required. Under the new baseline provision, the source can choose any consecutive 24-month period during the prior 10 years for which there is adequate information. Under the prior rule,

the source was required to select a "representative" 2-year period or another period that is "more representative of normal operations." State and local permitting authorities could now authorize use of the new 2-in-10 year baseline provision by making the judgment that the two years selected under the new rules would constitute a "representative" 2-year period. The new authorization has safeguards built into it to assure that the baseline will be reasonable and "representative" by requiring that the source must have "adequate information" for the two years selected and must reduce emissions in the period selected to take account of later-adopted emissions limitations. Thus, the permitting authority would have assurances that an appropriate baseline reflective of actual emissions during a period of normal operations would be established.

Recordkeeping and Reporting

Implementation of the 2002 rule actual-to-projected-actual applicability test as an interim measure under the 1980 NSR rules would incorporate recordkeeping and reporting requirements that go beyond what is included in the 1980 rules. As discussed in CAIP's NSR Issue Paper No. 1, the 1980 NSR rules did not require that sources inform permitting authorities of every proposed physical or operational method change, or to notify them of determinations of non-applicability. The final 2002 rules require that records be kept even if the source concludes that the proposed project will not cause a significant emissions increase so long as there is a "reasonable possibility" that it might. Also, sources must report subsequent emissions increases if they are significant and differ from the source's projections. *See, e.g.*, 40 C.F.R. § 52.21(r)(6)(v); 67 Fed. Reg. 80,279.