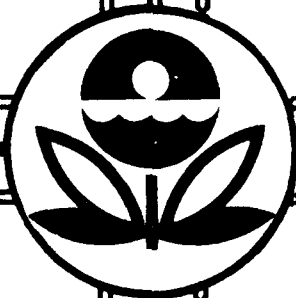


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GUIDELINE SERIES

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LEGAL INTERPRETATION AND GUIDELINE TO
IMPLEMENTATION OF RECENT COURT DECISIONS
ON THE SUBJECT OF STACK HEIGHT INCREASE
AS A MEANS OF MEETING FEDERAL AMBIENT
AIR QUALITY STANDARDS



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LEGAL INTERPRETATION AND GUIDELINE TO IMPLEMENTATION OF RECENT
COURT DECISIONS ON THE SUBJECT OF STACK HEIGHT INCREASE AS
A MEANS OF MEETING FEDERAL AMBIENT AIR QUALITY STANDARDS

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I. Introduction

Section 110(a)(2)(B) of the Clean Air Act requires that emission limitations must be used in State implementation plans although "other measures as necessary" may be used to supplement emission limitations in order to attain the national standards. This section directs the Administrator to approve a State implementation plan if:

it includes emission limitations, schedules, and timetables for compliance with such limitations, and such other measures as may be necessary to insure attainment and maintenance of such primary and secondary standard, including but not limited to, land use and transportation controls.

While at one time, the meaning of the above language may have been subject to doubt, the decisions of the courts (as discussed below) now make it unmistakably clear that, in legislating §110(a)(2)(B), Congress intended that State plans would have to rely on emission limitations to the extent possible, and that strategies which merely redistributed pollution, e.g., SCS and stack height increases, were to be used only as a supplement to emission limitations. Specifically, as construed by the courts, it is clear that Congress did not intend increased stack height and SCS to be used as a means of attaining national ambient air quality standards where

constant emission reduction controls were available. Thus, it is only when constant controls are not available that "other measures as may be necessary" may be turned to in order to insure the attainment and maintenance of the national standards.

So that State environmental protection agencies and polluters subject to State implementation plans (SIPs) may conduct their activities with certainty, EPA deems it desirable to publish an interpretative guideline setting forth (i) the Agency's understanding of the Courts' decisions, and (ii) the manner in which the Agency intends to implement the decisions. In sum, the sections which follow indicate when, if ever, techniques which merely redistribute or disperse pollution may be used as a means of achieving Federal ambient air quality standards.

II. Judicial Decisions

The first decision to interpret section 110(a)(2)(B) was that of the Fifth Circuit Court of Appeals, on February 8, 1974. In that case, NRDC et al. v. EPA (489 F.2d 390), one question before the Court involved the use of tall stacks as a control strategy technique in the State of Georgia. In addressing this issue, the Court held that a tall stack strategy, i.e., one which establishes emission control requirements as a function of stack height, or otherwise permits dispersion of pollutants through increased stack height as a means of attaining or

maintaining ambient air quality standards, could only be employed under two circumstances: (1) where the constant emission control requirements of the control strategy are, of themselves, sufficient to attain the standards; or (2) where the constant control requirements of the control strategy (as expressed in either emission limitations or fuel specifications) reflect the "maximum degree of emission limitation achievable" and that, notwithstanding such requirements, other measures -- such as SCS or tall stacks -- are necessary if the national standards are to be attained.

The decision of the Fifth Circuit was recently followed by the Sixth Circuit in Big Rivers et al. v. EPA, 523 F.2d 16, (CA6, 1975), and by the Ninth Circuit in Kennecott Copper Corp. v. EPA, decided on November 28, 1975. In the latter case, EPA invoked the teaching of the Fifth Circuit and argued that the use of SCS as a permanent means of meeting ambient air quality standards was impermissible under the Clear Air Act. However, in making this argument, the Agency acknowledged that, in some instances, there might be situations in which the installation of best available control technology (hereinafter BACT) would be economically unreasonable or ill-advised for engineering or siting reasons. Under such circumstances, it was asserted that a fair interpretation of §110(a)(2)(B)

would permit the following regulatory scheme: First, the source in question would be required to install reasonably available (as opposed to "best available" or "maximum achievable") constant controls. Second, if the installation of reasonably available control technology (hereinafter RACT) was insufficient to achieve ambient air quality standards, tall stacks and/or SCS would be permissible as an interim means of achieving the standards. Finally, the source in question would be required to conduct research for the purpose of developing (and, ultimately, installing) new forms of constant control techniques sufficient to achieve ambient standards at a cost more reasonable than that of presently available BACT.

The regulation that was the subject of the Ninth Circuit litigation followed the pattern described above. In upholding the regulation, the Court indicated its agreement with the result reached by the Fifth Circuit in the NRDC case and with the Fifth Circuit's analysis of the pertinent legislative history. The Ninth Circuit also stated that, similar to the conclusion reached by the Sixth Circuit in the Big Rivers case, it (the Ninth Circuit) believed that a recent decision of the United States Supreme Court involving section 110 of the Clean Air Act (Train v. NRDC et al, 421 U.S. 60, 7 ERC 1735 (1975)) added "significant support" to "EPA's interpretation of 1857c-5(a)(2)(B) [i.e., §110(a)(2)(B)] as expressing a preference for emission limitations." (Kennecott Copper Corporation v. EPA, Slip opinion at page 6).

Although the Train case did not specifically address the dispersion technology vs. constant control technology question, the court did provide substantial insight into this question in its overall discussion of §110. Describing what an acceptable implementation plan must consist of, the Court, at one point in the decision, drew a distinction between ambient standards the achievement of which is the goal of all implementation plans, and emission limitations, "the rule to which operators of pollution sources are subject, and which, if enforced should result in ambient air which meets national standards." (7 ERC at 1741). Significantly, in making this distinction the Court defined emission limitations as "regulations [governing] the composition of substances emitted into the ambient air from such sources as power plants, service stations and the like." (7 ERC at 1741). The clear meaning to be drawn from the above definition is that techniques which depend upon meteorological dispersion, such as SCS and increased stack height, do not control the composition of substances emitted into the air and consequently cannot be regarded as "emission limitations" for purposes of section 110 of the Clean Air Act. This was, in fact, the meaning which the Sixth Circuit (in Big Rivers) and the Ninth Circuit (in Kennecott) ascribed to the Supreme Court's discussion of emission limitations.

III. Implementation of the Judicial Decisions

A. Overview

The guideline which follows reflects EPA's understanding of the Court decisions discussed in section II of this notice, as well as the manner in which the decisions will be implemented by the Agency. The elements of the guideline will be applied to every State implementation plan. The guideline discusses when stack height increases, including stack height increases used in conjunction with supplementary control systems (SCS), will be accepted by EPA as a means of meeting ambient air quality standards.

The general philosophy expressed in the guideline is that, consistent with the decisions of the courts, stack height increases and/or SCS are acceptable control strategy measures only after the application of available control measures and are never permitted as a means of allowing the increase of emissions at any source.

Finally, although none of the decisions specifically addressed the question of how the Clean Air Act's preference for constant controls would be applied to new sources (for purposes of (i) State new source review, and (ii) control strategy demonstrations associated with later SIP revisions), the guideline does specifically address this question in a manner which EPA believes is consistent with the decisions of the Courts.

B. Sources in Existence Prior to January 31, 1972
(the latest date by which SIPs were to be submitted
to EPA)

Scope: This section addresses the manner in which stack height will be considered with respect to sources in existence on January 31, 1972. In other words, it applies only to sources which are considered (either explicitly or implicitly) in current SIP control strategies; it does not necessarily apply to sources being subjected to new source review.

The section sets forth not only the basis for approval of SIPs, but also provides guidance with respect to revisions of SIPs.

Implementation: In determining the control required of an existing source for attainment and maintenance of the national standards, a State may not take into account the dispersive effects of an increased stack height for which construction commenced after January 31, 1972 except in the following circumstances:

- 1) If the source initiated construction of the stack height increase by grading and pouring of concrete prior to February 8, 1974, (the date of the Fifth Circuit Court's decision regarding the use of increased stack heights),

with the approval of the State (or authorized governmental subdivision), permanent credit in the SIP control strategy demonstration may be taken for any increase up to 2 1/2 times the height of the facility serviced by the stack.

(2) If the source applies best available control technology (BACT), an unlimited stack height increase may be credited in a control strategy demonstration for attaining and maintaining ambient air quality standards.

(3) If the source cannot apply BACT, but applies reasonably available control technology (RACT), an unlimited stack height increase may be credited in a control strategy demonstration as a temporary measure for attaining and maintaining ambient air quality standards.

C. New Sources, i.e., Sources Receiving Construction Permits After February 8, 1974.

Scope: This section addresses the manner in which stack height is considered for sources which received construction permits after February 8, 1974, the date of the Fifth Circuit's decision in NRDC et al v. EPA. As such, it applies to sources which have already been or will be subjected to new source review, and also applies to future control strategy

demonstrations which consider those sources. The general philosophy of the guideline is that, with the arrival of the Fifth Circuit NRDC decision on February 8, 1974, both persons seeking to build new sources and State new source review boards were on notice that any attempt to meet new source review requirements through the use of tall stacks might well conflict with §§110(a)(2)(B) and (D) of the Clean Air Act.¹ Accordingly, while the guideline which follows does not attempt to overturn or vitiate already-issued, post-NRDC v. EPA construction permits that were predicated upon tall stacks, the guideline does limit the amount of stack height credit that may be assigned to such sources for purposes of later control strategy demonstrations.

By contrast, construction permits issued after the release of this guideline may not be based upon stack height except as indicated below. Nor, except as indicated below, may stack height credit be assigned to such sources for purposes of later control strategy demonstrations.

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Such knowledge can not be imputed to sources not part of the original SIP control strategy and receiving construction permits prior to February 8, 1974. Accordingly, such sources (for all purposes) will be credited with whatever stack height was committed to at the time of State new source review.

Implementation:

1. Sources Receiving Construction Permits after February 8, 1974, (the date of the Fifth Circuit decision) and prior to the release of this guideline.

For purposes of EPA evaluation of state-issued construction and/or operating permits, the source will be credited with whatever stack height it committed to at the time it submitted its construction permit application (as approved) to the State.

For purposes of EPA review of control strategy demonstrations accompanying later Plan revisions:

(1) If the source applied the best available control technology (BACT), there is no restriction on stack height. BACT is as defined in Paragraph III(D) of this guideline.

(2) If the source did not apply BACT, it may be given credit only for a stack height which does not exceed two and one-half times the height of the facility it serves.

(3) If the source cannot apply BACT, but applies reasonably available control technology (RACT), an unlimited stack height increase may be credited in a control strategy demonstration as a temporary measure for attaining and maintaining air quality standards.

2. Sources Receiving Construction Permits after the release of this notice.

For purposes of (i) EPA evaluation of State-issued construction and/or operating permits, as well as (ii) EPA review of control strategy demonstrations accompanying later Plan revisions:

(1) If a source applies the best available control technology (BACT), there is no restriction on stack height. BACT is as defined in paragraph III(D) of this guideline.

(2) If a source does not apply BACT, it may be given credit only for a stack height which does not exceed two and one-half times the height of the facility it serves.

D. Determination of Best Available Control Technology (BACT)

For purposes of this guideline, BACT is as defined in 40 CFR 52.01. For source categories subject to New Source Performance Standards (NSPS) as set forth in 40 CFR Part 60, BACT is generally defined to be the same as NSPS. For those

sources not subject to NSPS, BACT must be determined on a case-by-case basis and the following must be taken into consideration:

- (1) The process, fuels, and raw materials available and to be employed in the facility involved,
- (2) The engineering aspects of the application of various types of control techniques which have been adequately demonstrated,
- (3) Process and fuel changes,
- (4) The respective costs of the application of all such control techniques, process changes, alternative fuels, etc.,
- (5) Any applicable State and local emission limitations, and
- (6) Locational and siting considerations.

E. Rationale for Use of Reasonably Available Control Technology (RACT) as a Temporary Measure

In given instances, the technology envisioned by the BACT concept may be available in a state-of-the-art sense; however, its retrofit onto a specific existing source may be extremely onerous for economic reasons or ill-advised for engineering or siting reasons. It is expected that such instances will occur only in the case of a few smelters and some power plants. Nevertheless, where they do occur,

particularly where a source is threatened with shutdown, the Agency believes that administrative relief is appropriate. Furthermore, it is the view of the Agency that, if handled responsibly and if restricted to only the most compelling circumstances, a willingness to deal fairly with in-being, unavoidable problems, tends to strengthen, rather than weaken, legal principles such as those expressed by the cases cited above. This is especially true where, as here, the long term goal of the relief measures employed is geared to realization of the principles laid down by the cases.

Accordingly, where a source demonstrates to the State (and the State thereafter demonstrates to EPA) that, as applied to the source, BACT is economically unreasonable or technologically unsound, EPA will approve a control strategy demonstration which, for that source, is based upon reasonably available (as opposed to best available) control technology coupled with unlimited stack height. However, such a control strategy will only be approved as a temporary measure for attaining and maintaining ambient air quality standards and, where appropriate, will be conditioned on the source undertaking a research program to develop new and more economical forms of BACT-caliber technology. As noted in section II, this approach was specifically approved by the Ninth Circuit in Kenecott Copper Corporation v. EPA.

F. Determination of Reasonably Available Control Technology

For the purposes of this guideline, RACT is not necessarily equivalent to the 40 CFR 51, Appendix B definition. RACT becomes a factor only after it has been determined, on a case-by-case basis, that retrofit of BACT on the existing source would be unreasonable. This requires that RACT be determined by considering the processes, fuels, and raw materials to be employed; the engineering aspects of the application of various types of control techniques, process and fuel changes; the cost of employing the available techniques; and the cost of certain control techniques due to plant location, configuration, basic process design and expected remaining life. It is expected that only some smelters and a limited number of coal fired power plants will be able to justify application of RACT in lieu of BACT.

A review of costs of installing flue gas desulfurization (FGD) at existing coal-fired power plants revealed that the remaining life and capacity are major factors determining the reasonableness of an FGD installation. For existing power plants, the following should be considered in determining reasonableness:

- (1) If a plant has ten to fifteen years remaining life or less, and is projected to operate^{at} an annual average of no more than 25% capacity, FGD installation might be considered unreasonable.

In such instances, the source owner should provide the anticipated shutdown date, and that date must be included in the compliance schedule.

(2) FGD may be unreasonable due to space limitations.

In the event that it is determined on a case-by-case basis that FGD is not reasonable for a specific power plant, alternate control measures must still be considered. The use of low sulfur coal and coal washing, either separately or in combination, might be appropriate options and acceptable in meeting RACT criteria. The capital as well as operating costs of applying these control techniques are to be taken into account in making the case-by-case determination and, when the cost of using low sulfur coal is not significantly less than the cost of FGD, coal washing alone might be considered RACT. Only after application of whatever measures are determined to be RACT, would the source be able to take any credit for stack height increase.

In the case of existing smelters, BACT will, in most cases, be economically unreasonable and could, in some cases, result in shutdown. Under such circumstances, RACT will usually equate to control of all strong gas streams through properly operated and maintained double contact acid plants (or single contact acid

plants where single contact acid plants are already on line). Where increased acid plant capacity is required to treat presently untreated strong gas streams, RACT for such gas streams must be double contact acid plants.

Since RACT involves a decision that is based principally upon economic and engineering considerations, the definition of RACT should be subject to future re-evaluation to determine if more effective control measures would be applicable due to technological advancements or changes in economic conditions. Where the use of RACT has been approved by the State (and EPA), credit for stack height increases associated with RACT would only be permitted as a temporary measure.

G. Relationship to SCS

As recognized by all three circuit court decisions discussed above, supplementary control systems, like tall stacks, utilize the dispersive characteristics of the atmosphere to reduce ground level pollutant concentrations. Moreover, since the use of SCS as a means of meeting ambient standards was the specific issue addressed by two of the courts (the Sixth Circuit in Big Rivers and the Ninth Circuit in Kennecott), the Agency deems it important to include in this notice a guideline specifying when, and the degree to which, SCS may be used as a means of meeting federal ambient standards.

Because of the difficulties associated with enforcement of an SCS program, before granting a source the right to use

SCS, the source must agree to assume liability for violations of the national standards in the vicinity of the source. Consequently, SCS will be generally effective only for isolated sources. Moreover, while the implementation of SCS is different from conventional control measures or the use of taller stacks after the application of RACT, it is clear that a stack height increase can be a desirable addition to an approved, temporary SCS especially where the frequency of curtailments could be decreased by use of a taller stack.

There are generally three situations--limited to SO₂ emissions--which permit the application of SCS:

(1) Oil to coal conversions ordered by FEA under the Energy Supply and Environmental Coordination Act - Power plants required to convert to coal are given up to 1979 to install control equipment and/or use fuel which would comply with the SIP. In the interim, ESECA requires that the primary standards be met and an enforceable and reliable SCS can be used to achieve that purpose.

(2) Enforcement Orders - When EPA issues an enforcement order to a source to come into compliance with the SIP, it may be necessary to require the source to apply an SCS for the interim period in order to protect the ambient standards. There would be no precondition that RACT be applied. However, in this case, the source is not relieved from liability under section 304 of the Act, (i.e., would gain no immunity from citizen suit), even if there are no violations of the national standards.

(3) SIP Revision -- Under this mechanism, a source can not operate an approved SCS unless a number of conditions are met including installation of RACT.²

The stack height provisions in this guideline closely parallel the circumstances in which SCS may be permissible as an SIP revision. Both require, as a minimum, the application of RACT and neither can be used to allow emission increases at a source (except where oil to coal conversion is ordered under ESECA). Each has distinct advantages which would make one or the other, or some combination, the preferred measure in specific situations. The main advantage of employing SCS is that this system forces the source owner to assume liability for any ambient standard violations in a given area surrounding the source. However, for the legal reasons stated above, SCS would always be a temporary solution for existing sources and will not be allowed for new sources.

The restrictions on stack height apply solely to the credit which can be given in assessing the impact of a source on ambient standards. So long as stack height is not used in lieu of emission reduction, the Agency encourages tall stacks as a means of further minimizing the effects of emissions on ground level concentrations.

2

An example of the conditions to be met may be found in the regulations promulgated for a smelter in Nevada (the smelter that was the subject of the Ninth Circuit's decision in the Kennecott case). See 40 FR 5508, February 6, 1975.