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AIR QUALITY STANDARDS AND REGULATIONS THAT APPLY

TO

MODEL CU-NI SMELTER FACILITY IN NE MINNESOTA

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Regional Cu-Ni Study

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AIR QUALITY STANDARDS AND REGULATIONS THAT APPLY to MODEL Cu-Ni SMELTER FACILITY IN NE MINNESOTA

Any model copper-nickel smelter facility in northeastern Minnesota must meet the applicable state and federal ambient air quality and source emissions regulations. These regulations are specified by the Federal 1970 Clean Air Act (Title I, Section 127) and amendments pursuant to the Act. Both Federal source emissions standards and Minnesota State ambient air quality and emissions standards would apply to such a facility. The standards are included in Appendix A.

Ambient Air Quality Regulations

Ambient air quality standards state allowable pollution concentrations for specific time periods that protect the public health and prevent all other adverse effects of air pollution. Federal and state ambient air quality standards are summarized in Table 1.

The most important pollutants in the siting of a proposed Cu-Ni smelter facility are particulates and SO_2 because these are emitted in the largest quantities and these are the designated pollutants for the prevention of significant deterioration.

Trace elements and other compounds such as copper, nickel, zinc, cadmium, mercury lead, silica, and asbestos-like fibers may pose potential environmental health risks but the ambient air quality standards at present do not encompass these pollutants.

The ambient air quality standards will affect development of a proposed smelter through the prevention of significant deterioration (PSD) provisions of the 1977 Amendments to the Clean Air Act of 1970 which are designed to protect the ambient air quality of an area.

The basic criteria for determining whether or not an area is designated attainment or non-attainment in meeting the ambient air quality standards are ambient air monitoring data, emissions data and growth data. A proposed major source affecting an attainment area is required to have a prevention of significant deterioration review before construction can commense if it falls within categories listed in the Clean Air Act. New primary copper smelters are required to have PSD review if their emissions will exceed 100 tons per year of any air pollutant regulated by the Clean Air Act. A proposed major source affecting a non-attainment area may be built if an emissions trade-off and lowest achievable emission rate can be demonstrated; once the area reaches attainment, then PSD review is required. The offset policy is applicable until the State Implemation Plan is revised. It may or may not be incorporated into the plan depending on what regulations are deemed necessary to make reasonable progress toward attaining the standards in 1982.

Figure 1 details those areas in the Cu-Ni Study region which have been declared non-attainment for particulates; as of December 20, 1977, the Cu-Ni Study region is an attainment area for SO_2.

The regulations which have been promulgated to prevent significant deterioration are listed in Table 2.

These regulations designate an area as Class I, II, or III based on existing a quality and further prescribe the incremental increases in particulate and sulfur dioxide concentrations that are allowed in each classification. All of Minnesota is designated Class II except for the Boundary Waters Canoe Area and Voyager's National Park, which are designated Class I.

A variance to the PSD amendment to the Clean Air Act may be granted in a Class I area, providing "the emissions from such a facility will have no adverse effect on the air quality related values of such lands." [Sec 165 (d) (2) (C-D)].

Any proposed smelter facility or site may also be affected by redesignation and visibility provision amendments to the Clean Air Act.

The redesignation clause allows Class II areas that have national lands greater than 10,000 acres in size to be redesignated to Class I. In northeastern Minnesota redesignation would potentially apply to the Nett Lake and Fond du Lac Indian Reservation and to the Kawishiwi, St. Louis, and Cloquet rivers.

The amendments to the Clean Air Act also establish a program for protecting visibility in Class I areas which could lead to restrictions on industrialization in the vicinity of the BWCA.

Emissions Regulations

Federal new-source performace standards have been promulgated for primary copper smelters. The State of Minnesota has not promulgated standards for emissions from a primary copper smelter; however, regulations do exist which will apply to a smelter facility. If and when the State promulgates emissions regulations for such a facility, the promulgated regulations would apply to the facility in lieu of existing regulations governing the emission of particulates and SO_2.

Federal Standards

The Federal standards for emissions from primary copper smelters require the equivalent of double adsorption acid plant control of SO_2 for all process gases from roasters, smelting furnaces and converters. Sulfur dioxide discharge into the atmosphere from any roaster, smelting furnace or converter is limited to 0.065 percent SO_2 by volume averaged over a 6 hour period. Particulate discharge from any dryer is limited to 50 mg/dscm (0.022 gr/dscf). After the facility becomes operational, the discharge of visible emissions is limited to 20 percent.

opacity. Emissions monitoring and testing methods and procedures are specified in the Federal Register (promulgated 1/15/76, 41 FR 2332; revised 2/26/76, 41 FR 8346). Compliance with the emissions standards cannot be achieved by dilution with air or other gases. If dilution gases are added following the pollution control system and prior to the point of the emission measurement, the amount of dilution must be calculated and the emission concentration must be corrected to the undiluted basis.

Minnesota State Emissions Standards

Eight Minnesota State emissions standards and regulations at the present time apply to a proposed copper smelter facility. These standards (APC-2, 3, 4, 5, 6, 11, 14 and 21) include permit requirements, standards of performance for particulate and SO_2 restriction of visible emission, emissions source monitoring, performance tests, reports, shutdowns and breakdowns.

APC-5, standards of performance for industrial process equipment may be used to assess the potential impact of a smelter. APC-5 details the standards of performance for industrial process equipment which must be met based on the collection efficiency of the control device, or the process weight rate or the source gas volume rate. The proposed facility would be assessed based on the source gas volume. Assuming a rate of 400,000 scfm the particulate concentration is limited to 0.027 gr/scf. Opacity of the visible emissions is limited to 20 percent. The remaining regulations apply to permitting and operation of the facility.

APC-2 is a definition of terms and support information for the rules and regulations of the Minnesota Pollution Control Agency.

APC-3 details the requirments of the permit procedure.

APC-4 is the standard of performance for fossil fuel-burning equipment used for indirect heating.

APC-6 prevents particulate matter from becoming airborne and covers handling, use, transport and storage of materials which would result in avoidable amounts of particulate matter becoming airborne. This regulation would apply to all construction including roads, mining, transport, tailings basins, and other operations of the proposed facility.

APC-11 is the restriction of visible air contaminants and states the permissible density of smoke emissions or the equivalent opacity levels of plumes from non-combustion processes.

APC-14 pertains to the emission of certain settleable acids and alkaline substances and applies to all emissions from any sources or premises. Compliance with this regulation is determined by fallout sampling devices and the difference in upwind and downwind acidic or alkaline fallout rate.

APC-12 details the requirements for emission source monitoring, performance test reports, shutdowns and breakdowns.

gure 1. Attainment/Non-Attainment Areas for Particulates and SO_2

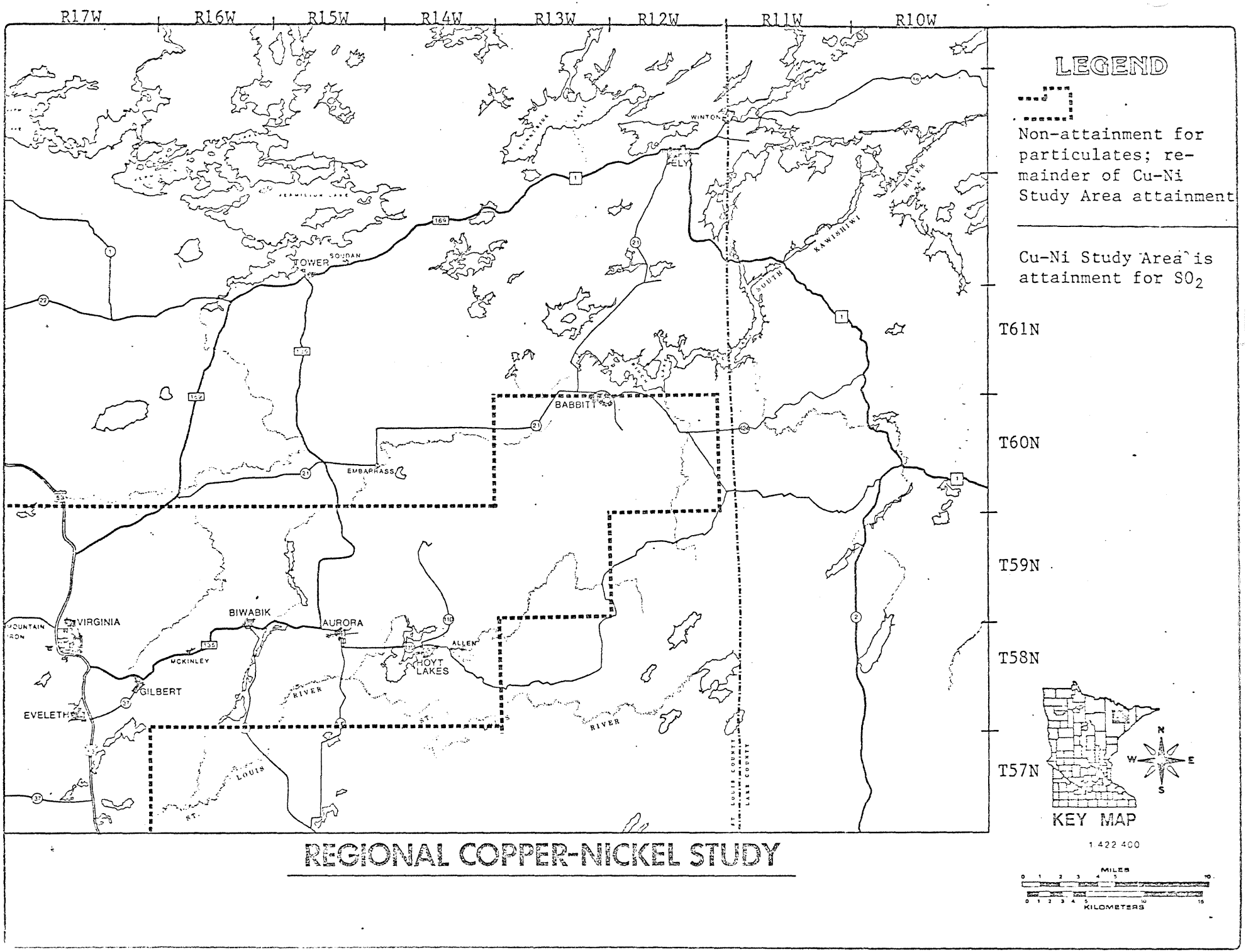

TABLE 1.. COMPARISON BETWEEN NATIONAL AND MINNESOTA AMBIENT AIR QUALITY STANDARDS

POLLUTANT	WORDING OF STANDARD	PRIMARY[a] STANDARD		SECONDARY[b] STANDARD	
		National	State	National	State
SUSPENDED PARTICULATE MATTER	Annual geometric mean conc. Maximum 24-hour concentration Not to be exceeded more than once per year	75 $\mu g/m^3$ 260 $\mu g/m^3$	75 $\mu g/m^3$ 260 $\mu g/m^3$	60 $\mu g/m^3$ 150 $\mu g/m^3$	60 $\mu g/m^3$ 150 $\mu g/m^3$
SULFUR OXIDES	Annual arithmetic avg. conc. Maximum 24-hour concentration Not to be exceeded more than once per year Maximum 3-hour concentration Not to be exceeded more than once per year	.03 ppm .14 ppm	.02 ppm .10 ppm .25 ppm	.50 ppm	.02 ppm .10 ppm .25 ppm
CARBON MONOXIDE	Maximum 8-hour concentration Not to be exceeded more than once per year Maximum 1-hour concentration Not to be exceeded more than once per year	9 ppm 35 ppm	9 ppm 30 ppm	9 ppm 35 ppm	9 ppm 30 ppm
PHOTOCHEMICAL OXIDANTS	Maximum 1-hour concentration Not to be exceeded more than once per year	.08 ppm	.07 ppm	.08 ppm	.07 ppm
HYDROCARBONS	Maximum 3-hour concentration (6-9 a.m.) Not to be exceeded more than once per year	.24 ppm	.24 ppm	.24 ppm	.24 ppm
NITROGEN OXIDES	Annual arithmetic average concentration	.05 ppm	.05 ppm	.05 ppm	.05 ppm

FOOTNOTES: (a) Primary Standard: Protect Public Health
(b) Secondary Standard: Prevent all other adverse affects of air pollutants

Table 2. EPA regulations for allowable air quality increments for prevention of significant deterioration ($\mu g/m^3$)

Pollutant	Standard	Class I	Class II	Class III
total suspended particulates	annual	5	19	37
	24-hour	10	37	75
Sulfur dioxide	annual	2	20	40
	24-hour	5	91	182
	3-hour	25	512	700

Appendix A

Minnesota State Air Quality Standards and Regulations (APC-1, 2, 3, 4, 5, 6, 11, 14 and 21), 1976 Ed.

Federal New Source Performance Standards for primary copper smelters. Federal Register, Vol. 41, No. 10. pp. 2331-2341.

Prevention of Significant Deterioration. Federal Register, Vol. 43, No. 118. pp. 26380-26410.

CHAPTER ONE: APC 1

APC 1 Ambient Air Quality Standards

(a) The "primary" air quality standards are levels of air pollutants above which, on the basis of present knowledge, health hazards or impairment may be produced. Health hazards include not only production, aggravation or possible production of disease, but also interference with function. Health impairment includes sensory irritation and impairment of well being by such phenomena as odor. The "secondary" air quality standards are levels which are desirable to protect the public welfare from any known or anticipated adverse effects, such as injury to agricultural crops and livestock, damage to or deterioration of property, annoyance and nuisance of person, sensory impairment and obstruction, or hazards to air and ground transportation.

(b) No person shall emit any pollutant in such an amount or in such a manner as to exceed any ambient air quality standard herein beyond such person's property line, without respect to whether emission regulations stated in other air pollution control regulations of the Agency are also being violated.

(c) State Ambient Air Quality Standards[a] [b] [c]

Pollutant/Air Contaminant	Concentration	Remarks
(1) Hydrogen Sulfide[d] (primary standards)	0.05 ppm by volume (70.0 micograms per cubic meter)	½ hr. average not to be exceeded over 2 times per yr.
	0.03 ppm by volume (42.0 micrograms per cubic meter)	½ hr. average not to be exceeded over 2 times in any 5 consecutive days
(2) Photochemical[e] Oxidants (primary and secondary standards)	0.07 ppm by volume (130 micrograms per cubic meter)	maximum 1 hr. concentration not to be exceeded more than once per yr.
(3) Carbon Monoxide[f] (primary and secondary standards)	9 ppm by volume (10 milligrams per cubic meter)	maximum 8 hr. concentration not to be exceeded more than once per yr.
	30 ppm by volume (35 milligrams per cubic meter)	maximum 1 hr. concentration not to be exceeded more than once per yr.
(4) Hydrocarbons[g] (primary and secondary standards)	0.24 ppm by volume (160 micrograms per cubic meter)	maximum 3 hr. concentration (6 to 9 a.m.) not to be exceeded more than once per yr., corrected for methane

Pollution/Air Contaminant	Concentration	Remarks
(5) Sulfur Oxides[h] (primary and secondary standards)	0.02 ppm by volume (60 micrograms per cubic meter)	maximum annual arithmetic mean
	0.1 ppm by volume (260 micrograms per cubic meter)	maximum 24 hr. concentration not to be exceeded more than once per yr.
	0.25 ppm by volume (655 micrograms per cubic meter)	maximum 3 hr. concentration not to be exceeded more than once per yr.
(6) Particulate[i] Matter (primary standard)	75 micrograms per cubic meter	maximum annual geometric mean
	260 micrograms per cubic meter	maximum 24 hr. concentration not to be exceeded more than once per yr.
Particulate Matter (secondary standard)	60 micrograms per cubic meter	maximum annual geometric mean
	150 micrograms per cubic meter	maximum 24 hr. concentration not to be exceeded more than once per yr.
(7) Nitrogen Oxides[j] (primary and secondary standards)	0.05 ppm (100 micrograms per cubic meter)	maximum annual arithmetic mean

Footnotes:

(a) All standards apply throughout the State of Minnesota.
(b) All measurements of ambient air quality are corrected to a reference temperature of 25° C. and a reference pressure of 760 mm of mercury.
(c) All measurements and tests shall be conducted by the methodology referenced herein, or other methodology as the Director shall hereafter approve.
(d) By methylene blue, or other method approved by the Director.
(e) Neutral-buffered one percent potassium iodide colorimetric detection technique corrected for SO_2 and NO_2 interference, gas phase chemiluminescence, or other method approved by the Director.
(f) Nondispersive infrared spectrometry (N.D.I.R.), or other method approved by the Director.
(g) Flame ionization, or other method approved by the Director.
(h) By pararosaniline, coulometric, or other method approved by the Director.
(i) High volume method, or other method approved by the Director.
(j) Jacobs-Hochheiser, or other method approved by the Director.

[July 7, 1969; amended June 3, 1970; amended February 18, 1971; amended April 13, 1972]

CHAPTER TWO: APC 2

APC 2 Definitions, Abbreviations, Applicability of Standards, Access to Premises, Variances, Circumvention, Severability

(a) Definitions. As used in the air pollution control regulations the following words shall have the meanings defined herein:

(1) "Agency" means the Minnesota Pollution Control Agency as constituted pursuant to Minn. Stat. § 116.02 subd. 1.

(2) "Alternative method" means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the Agency's satisfaction to, in specific cases, produce results adequate for its determination of compliance.

(3) "Breakdown" means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered breakdowns.

(4) "Construction" means fabrication, erection, or installation of an affected facility or an emission facility of which an affected facility is a part.

(5) "Continuous monitoring system" means the total equipment used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

(6) "Commenced" means that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

(7) "Control equipment" means an "air containment treatment facility" or a "treatment facility" as those terms are defined in Minn. Stat. § 116.06 subd. 6.

(8) "Director" means the Executive Director and Chief Executive Officer of the Agency.

(9) "Emission facility" means any building, facility, installation, structure, work, equipment, machinery, device, apparatus or other means whereby an emission is caused to occur.

(10) "Equivalent method" means any method of sampling and analyzing for an air pollutant which has been demonstrated to the Agency's satisfaction to have under specified conditions a consistent and quantitatively known relationship to the Reference Methods set forth in 40 C.F.R. Part 60, Appendix A.

(11) "Isokinetic sampling" means sampling in which the linear velocity of the gas entering the sampling nozzle is equal to that of the undisturbed gas stream at the sample point.

(12) "Method 1" means the test method for Sample and Velocity Traverses for Stationary Sources, set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(13) "Method 2" means the test method for Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube), set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(14) "Method 3" means the test method for Gas Analysis for Carbon Dioxide, Excess Air, and Dry Molecular Weight, set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(15) "Method 4" means the test method for Determination of Moisture in Stack Gases, set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(16) "Method 5" means the test method for Determination of Particulate Emissions from Stationary Sources, set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(17) "Method 6" means the test method for Determination of Sulfur Dioxide Emissions from Stationary Sources, set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(18) "Method 7" means the test method for Determination of Nitrogen Oxide Emissions from Stationary Sources, set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(19) "Method 8" means the test method for Determination of Sulfuric Acid Mist and Sulfur Dioxide Emisions from Stationary Sources, set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(20) "Method 9" means the test method for Visual Determination of the Opacity of Emissions from Stationary Sources, set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(21) "Method 10" means the test method for Determination of Carbon Monoxide Emissions from Stationary Sources, set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(22) "Method 11" means the test method for Determination of Hydrogen Sulfide Emissions from Stationary Sources, set forth in 40 C.F.R. Part 60, Appendix A — Reference Methods.

(23) "Minneapolis-St. Paul Air Quality Control Region" means the territorial area encompassed by the boundaries of the following counties: Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington. See 40 C.F.R. § 81.27.

(24) "Monitoring device" means the total equipment used to measure and record (if applicable) process parameters.

(25) "New source performance standard" means a standard of performance for a new affected facility.

(26) "Nitrogen oxides" means all oxides of nitrogen except nitrous oxide.

(27) "One-hour period" means any 60 minute period commencing on the hour.

(28) "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

(29) "Owner or operator" means any person who owns, leases, operates, controls, or supervises an affected facility or an emission facility of which an affected facility is a part.

(30) "Particulate matter" means material, except uncombined water, which exists at standard conditions in a finely divided form as a liquid or solid.

(31) "Performance Specification 1" means Performance Specifications and Specification Test Procedures for Transmission Systems for Continuous Measurement of the Opacity of Stack Effluents, set forth in 40 C.F.R. Part 60, Appendix B — Performance Specifications.

(32) "Performance Specification 2" means Performance Specifications and Specification Test Procedures for Monitors of SO_2 and NO_x from Stationary Sources, set forth in 40 C.F.R. Part 60, Appendix B — Performance Specifications.

(33) "Performance Specification 3" means Performance Specifications and Specification Test Procedures for Monitors of CO and 0_2 from Stationary Sources, set forth in 40 C.F.R. Part 60, Appendix B — Performance Specifications.

(34) "Person" means person as defined in Minn. Stat. § 116.06 subd. 8.

(35) "Proportional sampling" means sampling at a rate that produces a constant ratio of sampling rate to stack gas flow rate.

(36) "Shutdown" means the cessation of operation of an emission facility, an affected facility or process equipment for any purpose.

(37) "Six minute period" means any one of the ten equal parts of a one-hour period.

(38) "Smoke" means small gas-borne particles resulting from incomplete combustion, consisting predominantly, but not exclusively of carbon and other combustible material, or ash, that form a visible plume in the air.

(39) "Startup" means the setting in operation of an emission facility, an affected facility or process equipment for any purpose.

(40) "Standard Conditions" means a temperature of 20°C (68°F) and a pressure of 760 mm of Hg (29.92 in. of Hg).

(41) "Standard of Performance" means a restriction on the amount of air pollutants which may be emitted by an affected facility.

(42) "Run" means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

(b) Abbreviations

The abbreviations used in these air pollution control regulations have the following meanings:

(1) avg. — average
(2) A.S.T.M. — American Society for Testing and Materials
(3) Be — Beryllium
(4) Btu — British thermal unit
(5) °C — degree Celsius (centigrade)
(6) cal — calorie
(7) CdS — cadmium sulfide
(8) cfm — cubic feet per minute
(9) CO — carbon monoxide
(10) CO_2 — carbon dioxide
(11) dscm — dry cubic meter(s) at standard conditions
(12) dscf — dry cubic feet at standard conditions
(13) eq — equivalents
(14) °F — degree Fahrenheit
(15) ft^2 — square feet
(16) ft^3 — cubic feet
(17) g — gram(s)
(18) gal — gallon(s)
(19) g eq — gram equivalents
(20) gr — grain(s)
(21) hr — hour(s)
(22) HCl — hydrochloric acid
(23) Hg — mercury
(24) H_2O — water
(25) H_2S — hydrogen sulfide
(26) H_2SO_4 — sulfuric acid
(27) I.D. — inside diameter
(28) in. — inch(es)
(29) in. H_2O — inches of water
(30) in. Hg — inches of mercury
(31) °K — degree Kelvin
(32) k — 1,000
(33) kg — kilogram(s)
(34) l — liter(s)
(35) lpm — liter(s) per minute
(36) lb — pound(s)
(37) M — molar
(38) m — meter(s)
(39) m^3 — cubic meter(s)

(40) meq — milliequivalent(s)
(41) mg — milligram(s)
(42) min — minute(s)
(43) ml — milliliter(s)
(44) mm — millimeter(s)
(45) mol. wt. — molecular weight
(46) mV — millivolt
(47) N — normal
(48) N_2 — nitrogen
(49) nm — nanometer(s) — 10^{-9} meter
(50) NO — nitric oxide
(51) NO_2 — nitrogen dioxide
(52) NO_x — nitrogen oxides
(53) O_2 — oxygen
(54) O.D. — outside diameter
(55) oz — ounce(s)
(56) ppb — parts per billion
(57) ppm — parts per million
(58) psia — pounds per square inch absolute
(59) °R — degree Rankine
(60) s — at standard conditions
(61) sec — second
(62) SO_2 — sulfur dioxide
(63) SO_3 — sulfur trioxide
(64) ug — microgram(s) — 10^{-6} gram
(65) v/v — volume per volume
(66) w.g. — water gauge
(67) yd^2 — square yard(s)

(c) Applicability of Standards of Performance

(1) Affected Facilities. An "affected facility" is any equipment, apparatus, or process to which a standard of performance set forth in these air pollution control regulations is applicable. An affected facility may be an individual unit of process equipment, e.g., the clinker cooler in a portland cement plant, or an entire process, e.g., a nitric acid production unit. An affected facility may be an emission facility for which a permit is required under Minnesota Regulation APC 3.

(2) Existing Facilities. An affected facility is an existing facility if:

(aa) It was in operation on the effective date of the applicable new source performance standard; or

(bb) The owner or operator of the affected facility commenced construction or modification of the affected facility prior to the effective date of the applicable new source performance standard for the affected facility.

(3) New Facilities. An affected facility which is not an existing facility is a new facility.

(4) Effective Date. The effective date for new source performance standards for affected facilities shall be as follows:

(aa) Fossil Fuel-Fired Steam Generators (APC 4)—August 17, 1971.
(bb) Incinerators (APC 7) — August 17, 1971.
(cc) Storage Vessels for Petroleum Liquids (APC 13) — June 11, 1973.
(dd) Sulfuric Acid Plants (APC 15) — August 17, 1971
(ee) Nitric Acid Plants (APC 16) — August 17, 1971
(ff) Portland Cement Plants (APC 22) — August 17, 1971
(gg) Asphalt Concrete Plants (APC 23) — June 11, 1973
(hh) Petroleum Refineries (APC 24) — June 11, 1973
(ii) Secondary Lead Smelters (APC 25) — June 11, 1973
(jj) Secondary Brass and Bronze Ingot Production Plants (APC 26) — June 11, 1973
(kk) Iron and Steel Plants (APC 27) — June 11, 1973
(ll) Sewage Sludge Incinerators (APC 28) — June 11, 1973
(mm) All others — the date the applicable new source performance standard became law.

(5) Modifications

(aa) A modification to an existing affected facility is any physical change in, or change in the method of operation of, an affected facility which increases the amount of emissions into the atmosphere of any air pollutant

to wh[illegible] new source performance standard applies or which results in the emissi[illegible]f any air pollutant not previously emitted, to which a new source performance standard applies.

(bb) Any owner or operator who modifies an existing affected facility after the effective date of an applicable new source performance standard shall comply with the new source performance standard for the affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.

(cc) Emission rate shall be expressed as kg/hr of any pollutant discharged into the atmosphere for which a standard is applicable. The Agency shall use the following to determine emission rate:

(i) Emission factors as specified in the latest issue of "Compilation of Air Pollutant Emission Factors," EPA Publication No. AP-42, or other emission factors determined by the Agency to be superior to AP-42 emission factors, in cases where utilization of emission factors demonstrate that the emission level resulting from the physical or operational change will either clearly increase or clearly not increase.

(ii) Material balances, continuous monitor data, or manual emission tests in cases where utilization of emission factors as referenced in paragraph (i) does not demonstrate to the Agency's satisfaction whether the emission level resulting from the physical or operational change will either clearly increase or clearly not increase, or where an owner or operator demonstrates to the Agency's satisfaction that there are reasonable grounds to dispute the result obtained by the Agency utilizing emission factors as referenced in paragraph (i). When the emission rate is based on results from manual emission tests or continuous monitoring systems, the procedures specified in Appendix C — Determination of Emission Rate Change, set forth in 40 C.F.R. Part 60, shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted under such conditions as the Agency shall specify to the owner or operator based on representative performance of the facility. At least three valid test runs must be conducted before and at least three after the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for all test runs.

(dd) The requirements of subsection (5)(bb) shall not apply if the owner or operator who modifies an existing affected facility can demonstrate to the Agency that modification of the affected facility will not result in an increase in total emissions from all existing emission sources in the process. The required reduction may be accomplished through the installation or improvement of a control system or through physical or operational changes to facilities including reducing the production of a facility or closing a facility. The Director may require the submission of such information as the Director deems necessary to a determination whether there will be an increase in total emissions.

(ee) The owner or operator of an existing affected facility may undertake any of the following modifications without being required to comply with the new source performance standard for the affected facility:

(i) Maintenance, repair, and replacement which the Agency determines to be routine.

(ii) An increase in production rate, if that increase can be accomplished without a major capital expenditure. "Capital expenditure" means an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable "annual asset guideline repair allowance percentage" specified in Internal Revenue Service Publication 534 and the

existing facility's basis, as defined by section 1012 of the Internal [illegible]enue Code.

(iii) An increase in the hours of production.

(iv) Use of an alternative fuel or raw material if, prior to the effective date of the applicable new source performance standard, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if provisions for that use were included in the final construction specifications.

(v) Conversion to coal required by state or federal law for energy considerations.

(vi) The addition or use of any control equipm[illegible]t, except when control equipment is replaced with other control equip[illegible]ent which the Agency determines to be less environmentally beneficial.

(vii) The relocation or change in ownership of an existing facility.

(ff) The modification of an affected facility or the addition of a new affected facility shall not by itself require the owner or operator to comply with the new source performance standards for other existing facilities.

(gg) Any owner or operator who modifies a new affected facility shall comply with the new source performance standard.

(hh) Nothing in this subsection (c) shall affect the requirement of Minnesota Regulation APC 3(e) that a permit be obtained from the Agency to undertake certain alterations and modifications to emission facilities and control equipment.

(6) Reconstruction

(aa) The owner or operator of an existing affected facility who reconstructs the facility shall comply with the applicable new source performance standard for the reconstructed affected facility.

(bb) "Reconstruction" means the replacement of components of an existing facility to such an extent that:

(i) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and

(ii) It is technologically and economically feasible to meet the applicable standards set forth in this part.

(iii) "Fixed capital cost" means the capital needed to provide all the depreciable components.

(iv) If an owner or operator of an existing facility proposes to replace components, and the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, he shall notify the Agency of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

1. Name and address of the owner or operator.

2. The location of the existing facility.

3. A brief description of the existing facility and the components which are to be replaced.

4. A description of the existing air pollution control equipment and the proposed air pollution control equipment.

5. An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new facility.

6. The estimated life of the existing facility after the replacements.

7. A discussion of any economic or technical limitations the facility may have in complying with the applicable standards of performance after the proposed replacements.

(cc) The Agency shall consider the following in determining whether an existing facility has been reconstructed:

(i) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new facility;

(ii) The estimated life of the facility after the replacements compared to the life of a comparable entirely new facility;

(iii) The extent to which the components being replaced cause or contribute to the emissions from the facility; and

(iv) Any economic or technical limitations on compliance with applicable standards of performance which are inherent in the proposed replacements.

(d) Access to Premises and Information

(1) The owner or operator of an emission facility shall allow the Agency, or any authorized employee or agent of the Agency, upon presentation of proper credentials, to examine and copy any books, papers, records or memoranda pertaining to the operation of the emission facility.

(2) The owner or operator of an emission facility shall allow the Agency, or any authorized employee or agent of the Agency, upon presentation of proper credentials, to enter upon the property of the owner or operator for the purpose of obtaining information or examining records or conducting surveys or investigations, whenever such entrance is necessary for the purpose of these regulations.

(e) Variances. Whereupon written application of the responsible person or persons the Agency finds that by reason of exceptional circumstances strict conformity with any provisions of the emission standards contained herein would cause undue hardship, would be unreasonable, impractical or not feasible under the circumstances, the Agency may permit a variance from these emission standards upon such conditions and within such time limitations as it may prescribe for prevention, control or abatement of air pollution in harmony with the intent of the State and any applicable Federal laws.

(f) Circumvention. No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminants emitted, conceals or dilutes an emission of air contaminant which would otherwise violate an air pollution control regulation.

(g) Severability. If any provision of any regulation or the application thereof to any person or circumstances is held to be invalid, such invalidity shall not affect other provisions or application of any other part of such regulation or any other regulation which can be given effect without the invalid provision or application, and to this end the provisions of all regulations and the various applications thereof are declared to be severable.

[July 7, 1969; amended June 5, 1970; amended June 28, 1974; amended May 7, 1976]

CHAPTER THREE: APC 3

APC 3 Permits

(a) Installation Permits

(1) Permit Required. No person shall install or construct any emission facility or control equipment without an installation permit therefor from the Agency.

(2) Permit Application. Any person who is required to obtain an installation permit under this regulation shall submit to the Director plans and specifications of the emission facility or control equipment containing the following information:

(aa) Expected composition of the effluent stream, both before and after the installation of an air cleaning device, including emission rate, concentration, volume and temperature;

(bb) Expected physical characteristics of particulates;

(cc) Type of cleaning device, if any;

(dd) Location and elevation of the emission point and other factors relating to dispersion and diffusion of the contaminant in the outer air, and the relation of the emission point to nearby structures, window openings, and other information necessary to appraise the possible effects of the effluent;

(ee) Any other reasonable and pertinent information that may be required by the Director.

(3) Decision. The Agency shall not grant an installation permit unless the Agency determines that the emission facility or control equipment will comply with the requirements of applicable pollution control statutes and regulations.

(b) Operating Permits

(1) Permit Required. No person shall operate any emission facility or control equipment without an operating permit therefor from the Agency. Any person operating an emission facility or control equipment for which an installation permit has been obtained shall be permitted to operate without an operating permit for a period of ninety (90) days following commencement of operation of the emission facility or control equipment. The Agency may extend this time for good cause.

(2) Permit Application. Any person who is required to obtain an operating permit under this regulation shall submit to the Director plans and specifications of the emission facility or control equipment containing the following information:

(aa) Composition of the effluent stream, both before and after the installation of an air cleaning device, including emission rate, concentration, volume and temperature;

(bb) Physical characteristics of particulates;

(cc) Type of cleaning device, if any;

) Location and elevation of the emission point and other factors relating to dispersion and diffusion of the contaminant in the outer air, and the relation of the emission point to nearby structures, window openings, and other information necessary to appraise the possible effects of the effluent;

(ee) Any other reasonable and pertinent information that may be required by the Director.

(3) Agency Decision. The Agency shall not grant an operating permit unless the Agency determines that operation of the emission facility or control equipment will comply with the requirements of applicable pollution control statutes and regulations.

(c) Delegation of Permit Authority. The Agency may delegate to any city, county, or other political subdivision of the State of Minnesota, the authority to issue installation and operating permits required under this regulation.

(d) Exemptions

(1) Installation and Operating Permits. The following emission facilities are exempt from the requirements of paragraphs (a) and (b) of this regulation:

(aa) All fuel-burning installations of less than 1,000,000 BTU per hour input;

(bb) All fuel-burning installations of less than 10,000,000 BTU per hour input burning only natural gas, liquified petroleum gas, or No. 1 or No. 2 fuel oil;

(cc) Comfort air conditioning or comfort ventilating systems not designed to remove air contaminants generated by or released from specific units or equipment;

(dd) Incinerators of less than 100 pounds per hour burning capacity.

(e) Permits for Alterations and Modifications. The requirements of subparagraphs (a) and (b) of this regulation shall apply to any change in, addition to, or extension of any emission facility or control equipment that would materially alter the method or effect of treating or disposing of any air contaminant.

(f) Anti-degradation. Notwithstanding any other provisions of these rules and regulations, an installation permit or an operating permit shall not be issued if the planned construction, installation, reconstruction, alteration or operation would result in emissions of air contaminants causing the violation of the ambient air quality standards established in APC 1.

(g) Permit Conditions

(1) The following conditions apply to all permits issued under this regulation:

(aa) A permit shall not release the Permittee from any liability, penalty, or duty imposed by Minnesota or federal statutes or regulations or local ordinances except the obligation to obtain the permit;

(bb) A permit shall not prevent the future adoption by the Agency of any pollution control regulations, standards, or orders more stringent than those now in existence or prevent the enforcement of such regulations, standards or orders against the Permittee;

(cc) The Permittee shall install and operate the emission facility or control equipment covered by the permit in accordance with plans and specifications submitted to the Agency and referenced in the permit;

(dd) The Permittee shall not knowingly make any false statement, representation or certification in any record, report, plan, or other document required to be submitted to the Agency under this permit. The Permittee shall immediately upon discovery report to the Agency any errors in such records, reports, plans, or other documents;

(ee) The Permittee shall allow the Agency, or any authorized employee or agent of the Agency, when authorized by law and upon the presentation of proper credentials, to examine and copy any books, papers, records or memoranda pertaining to the installation or operation of the emission facility or control equipment covered by the permit;

(ff) The Permittee shall allow the Agency, or any authorized employee or agent of the Agency, when authorized by law and upon presentation of proper credentials, to enter upon the property of the permittee for the purpose of obtaining information or examining records or conducting surveys or investigations pertaining to the installation or operation of the emission facility or control equipment covered by the permit.

(2) The following conditions apply to all Installation Permits issued under this regulation:

(aa) The Permittee shall submit periodic progress reports to the Agency reciting progress and problems occurring in the installation of the emission facility or control equipment covered by the permit. A time schedule for submission of these reports shall be included in the permit;

(bb) The Permittee shall advise the Agency immediately upon completion of installation of the emission facility or control equipment;

(cc) Installation permits shall expire ninety (90) days after installation of the emission facility or control equipment is completed or twelve (12) months after the day it is issued if installation has not begun. Installation shall be deemed to have begun if a continuous program of construction has been undertaken. Interruptions resulting from matters beyond the control of the Permittee shall be considered by the Agency in determining whether installation has begun;

(dd) Such other conditions as the Agency may prescribe for the prevention of pollution.

(3) The following conditions apply to all Operating Permits issued under this regulation:

(aa) The Permittee shall, when requested by the Agency, submit such information and reports which are relevant to control of pollution regarding the operation of the emission facility or control equipment covered by the permit;

(bb) The Permittee shall notify the Agency immediately of a breakdown of more than one hour duration of the control equipment covered by the permit and, if the breakdown causes an increase in the emission of air contaminants, of the breakdown of any process equipment included in the emission facility covered by the permit;

(cc) The Permittee shall notify the Agency at least 24 hours in advance of a shutdown of any control equipment covered by the permit and, if the shutdown would cause an increase in the emission of air contaminants, of a shutdown of any process equipment included in the emission facility covered by the permit;

(dd) Operating Permits shall have a fixed term which shall not exceed five (5) years;

(ee) Such other conditions as the Agency may prescribe for the prevention of pollution.

(h) Permit Procedure. The Agency shall follow the procedure set out below on all permit applications for an installation permit for an emission facility or modification which emits a single air contaminant or air pollutant in excess of one thousand (1000) tons per year.

(1) Within thirty (30) days after receipt of a completed permit application, the Agency shall:

(aa) Make a preliminary evaluation of the effect of the emission facility or modification on the air quality;

(bb) Make available for public inspection in at least one location in the air quality control region in which the emission facility is located, a copy of all materials submitted by the permit applicant and a copy of the Agency's preliminary evaluation of the effect on air quality;

(cc) Give notice by prominent advertisement in a newspaper in the air quality control region affected of the location where the information required in subparagraph (bb) is available and of the opportunity to submit written comment on the permit application for a period of thirty (30) days;

(dd) Provide a thirty (30) day time period for submittal of written public comment;

(ee) Send a copy of the notice specified in subparagraph (cc) to the Region V office of the United States Environmental Protection Agency, to State and local air pollution control agencies having jurisdiction in the air quality control region affected, to city and county officials in the region affected, to the appropriate regional development commissions, to the State Planning Agency, to the applicant, and to all other persons deemed by the Director to have an interest in the permit application.

(2) Public comments submitted in writing within the thirty (30) day comment period shall be considered by the Agency in making its final decision on the permit application. All comments shall be made available for public inspection in at least one location in the region affected.

(3) The Agency shall take final action on the permit application within forty-five (45) days after the close of the public comment period. Notice of the final decision shall be made available for public inspection in at least one location in the region affected.

(4) The Agency may extend each of the time periods specified in paragraph (h) of this regulation for a period not to exceed thirty (30) days or such other period as agreed to by the applicant. Nothing herein, however, shall preclude the Agency from extending any of these time periods for an appropriate length of time if it decides to hold a public hearing or public meeting on any permit application, of if an environmental impact statement on the emission facility or modification is prepared.

(5) Nothing in paragraph (h) of this regulation shall preclude the Agency from following this procedure on any installation permit application for an emission facility or modification not described herein, or for an installation permit for control equipment, or for any operating permit.

(i) Reissuance of Operating Permits

(1) No sooner than 180 days nor later than 90 days prior to the expiration of an operating permit issued pursuant to paragraph (b) of this regulation, a Permittee who wishes to continue operating his emission facility or control equipment shall submit a written request to the Director for reissuance of the operating permit.

(2) After receipt of a written request for reissuance of an operating permit, the Agency shall review the request to determine whether the permittee has complied with all conditions of his existing permit and with all other applicable pollution control statutes and regulations. The Agency or the Director may request the Permittee to submit such information as is deemed necessary to determine compliance. Unless the Agency determines that the Permittee has not complied with all permit conditions and other applicable pollution control statutes and regulations, the Agency shall reissue the operating permit subject to such conditions as the Agency may impose. If the Agency denies the request for reissuance of the permit, the Permittee may reapply pursuant to paragraph (b) of this regulation.

(3) The Agency shall act on a request for reissuance of an operating permit within ninety (90) days after the request is submitted.

[July 7, 1969; amended June 5, 1970; amended April 13, 1972; amended July, 1972; amended June 28, 1974; amended June 4, 1976]

CHAPTER FOUR: APC 4

APC 4 Emissions Limitations from Fuel-Burning Equipment Used for Indirect Heating

(a) General Provisions

(1) This regulation applies to fuel-burning installation utilized for the primary purpose of producing steam, hot water, hot air or other indirect heating of liquids, gases, or solids where the products of combustion do not have direct contact with process materials. Fuel includes coal, coke, lignite, coke breeze, fuel oil, and wood, but does not include refuse. When any products or by-products or a manufacturing process are burned for the same purpose or in conjunction with any fuel, the same maximum emission limitations shall apply.

(2) Heat content of coal shall be determined according to American Society for Testing and Materials method D-271-64 Laboratory Sampling and Analysis of Coal and Coke or method D-2015-62T Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, which publications are incorporated herein by reference, or such other testing method as the Director may approve.

(3) As used herein "heat input" shall be the aggregate heat content of all fuels whose combustion products pass through a stack or stacks. The heat input value used shall be the equipment manufacturer's or designer's guaranteed maximum input, whichever is greater. The total heat input of all fuel-burning units at an installation or on a premise shall determine the maximum allowable amount of particulate matter emission.

(4) Particulate matter emission shall be measured according to the American Society of Mechanical Engineers Power Test Code — PTC — 27 dated 1957 and entitled "Determining Dust Concentration in a Gas Stream," which publication is incorporated herein by reference, or other approved method conducted in accordance with good professional practice, or such other testing method as the Director may approve.

(b) Air Contaminants

(1) Sulfur Oxides Emissions

(aa) No person in the Minneapolis-St. Paul AQCR shall burn in any fuel-burning installation a fuel or blend of fuels whose sulfur content by weight exceeds the limitations of Schedule A.

Schedule A:

Fossil fuel other than oil

(i) after June 1, 1972, 2.5% sulfur by weight

(ii) after June 1, 1974, 2.0% sulfur by weight

Oil

(i) after June 1, 1974, 2.0% sulfur by weight

(bb) No person within the Minneapolis-St. Paul AQCR shall burn in any installations of greater than 250 million BTU/hour a fuel or blend of fuels of greater sulfur content by weight than given in Schedule B.

Schedule B:

Fossil fuel other than oil

(i) after June 1, 1972, 2.0% sulfur by weight

(ii) after June 1, 1973, 1.5% sulfur by weight

Oil

(i) after June 1, 1974, 1.5% sulfur by weight

(cc) No fuel-burning installation of greater than 250 million BTU which is located outside the Minneapolis-St. Paul AQCR shall burn a fuel or blend of fuels whose sulfur content is greater than the limitations of Schedule A.

(dd) Any person who supplies fuels containing more than 0.5% sulfur by weight directly to a user for burning, shall keep records as prescribed by the Director of the percent sulfur by weight contained in such fuel by date delivered, quantity, and to whom sold. These records shall be available for review by the Agency.

(ee) Exceptions. The provision of Schedules A and B shall not apply under the following conditions:

(i) A variance has been granted by the Agency.

(ii) A person meets the limitation in Schedule C.

Schedule C:

(i) after June 1, 1973, 2.00 lb. SO_x per million BTU actual heat input

(ii) after June 1, 1974, 1.75 lb. SO_x per million BTU actual heat input

(2) Particulate Emissions

(aa) Provision for New Installations and Installations within the Minneapolis-St. Paul AQCR and the City of Duluth.

(i) Regardless of stack number or height, the maximum allowable emission for any stack, plant or installation shall be 0.4 pound of particulates per million BTU input.

(bb) Provision for Existing Installations and Installations Outside the Minneapolis-St. Paul Air Quality Control Regions and the City of Duluth.

(i) Regardless of stack number or height, the maximum allowable emission for any stack, plant or installation shall be 0.6 pound of particulates per million BTU input.

(cc) Emissions of Particulate matter from the combustion of fuel for indirect heating shall be limited by the provisions of the American Society of Mechanical Engineers Standard No. APS-1 dated June 15, 1966, "Recommended Guide for the Control of Dust Emission-Combustion for Indirect Heat Exchangers." Figure 2 in such standard as amended shall be used to estimate allowable emissions as amended therein from a plant with a single stack. The appropriate correction factor shall be applied to multiple stack plants or installations.

(3) Nitrogen Oxides Emissions

(aa) Limitation of Nitrogen Oxide Emissions shall be Restricted to Air Quality Control Regions having a Priority I status.

(bb) No person shall cause or permit emissions of nitrogen oxides in excess of 0.2 pound per million BTU input per hour for new installations or in excess of 0.3 pound per million BTU input per hour for existing installation from any gas fired boiler having a capacity of 250 million BTU/hour or more.

(cc) No person shall cause or permit emissions of nitrogen oxides in excess of 0.3 pound per million BTU input per hour for new installations or in excess of 0.4 pound per million BTU input per hour for existing installations from any oil fired boiler having a capacity of 250 million BTU/hour or more.

(dd) Nitrogen oxide testing shall be carried out by the method described in the Federal Register, Vol. 36, No. 159, dated August 17, 1971, and entitled "Standards of Performance for New Stationary Sources," 466.6S, Method 7; or other test methodology approved by the Director.

(c) Smoke Indicators. It is recommended plants or installations burning solid fuel or liquid fuels of Grades 5 or 6 (PS No. 300 or PS No. 400) and having more than 1,000,000 BTU input capacity be equipped with smoke indicators, mirrors, or similar approved devices to enable the fireman to observe the breaching or the top of the stack or stacks from the boiler room at all times, unless the top of the stack is readily visible to the fireman from the boiler room without the use of such devices. In plants where a fireman is not in constant attendance in the boiler, and when the boilers fired at one time aggregate more than 1,000 square feet of heating surface the smoke indicators should be capable of sounding an alarm or flashing a signal to attract the attention of the fireman. Any existing plant or installation which emits smoke of a density greater than permitted by appropriate regulation shall install such indicating devices.

[Amended April 13, 1972]

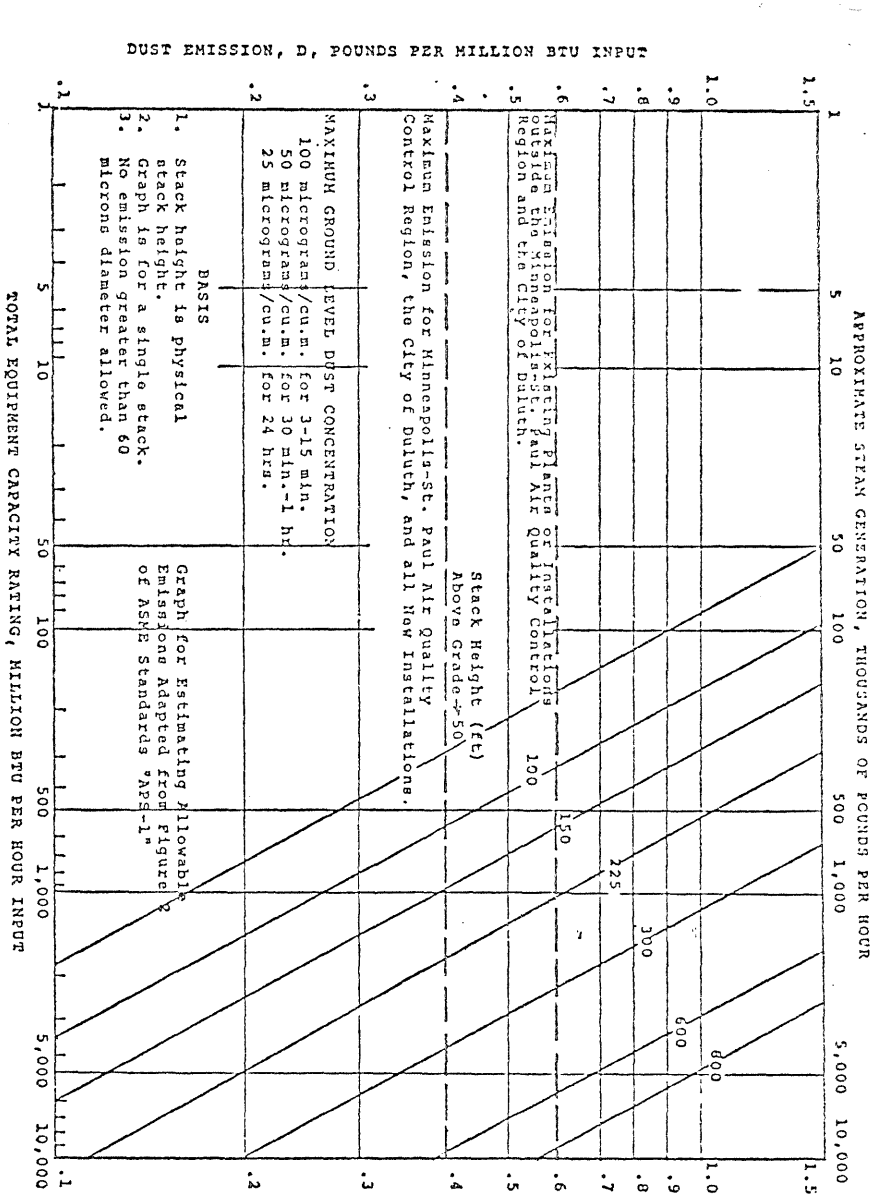

Figure 2

CHAPTER FIVE: APC 5

APC 5 Standards of Performance for Industrial Process Equipment

(a) Definitions. As used in this regulation, the following words shall have the meanings defined herein:

(1) "Collection efficiency" means the percent of the total amount of particulate matter entering the control equipment which is removed from the exhaust stream by the control equipment and is calculated by the following equation:

$$\text{collection efficiency} = \frac{100(A-B)}{A}$$

Where

A = the amount (grams or pounds) or the concentration (gr/SCF) of particulate matter entering the collection equipment

B = the amount (grams or pounds) or the concentration (gr/SCF) of particulate matter leaving the control equipment

(2) "Industrial process equipment" means any equipment, apparatus, or device embracing chemical, industrial, or manufacturing facilities such as ovens, mixing kettles, heating and reheating furnaces, kilns, stills, dryers, roasters, and equipment used in connection therewith, and all other methods or forms of manufacturing or processing that may emit any air contaminant such as smoke, odor, particulate matter, or gaseous matter. Industrial process equipment is an "affected facility." An emission facility may consist of more than one unit of industrial process equipment.

(3) "Process weight" means the total weight in a given time period of all materials introduced into any industrial process equipment that may cause any emission of particulate matter. Solid fuels charged are considered as part of the process weight, but liquid and gaseous fuels and combustion air are not. For a cyclical or batch operation, the process weight per hour is derived by dividing the total process weight by the number of hours in one complete operation from the beginning of any given process to the completion thereof, excluding any time during which the equipment is idle. For a continuous operation, the process weight per hour is derived by dividing the process weight for a typical period of time.

(b) Applicability. This regulation shall apply to industrial process equipment for which a standard of performance has not been promulgated in a specific regulation.

(c) Standards of Performance for Pre 1969 Industrial Process Equipment

(1) No owner or operator of any industrial process equipment which was in operation before July 9, 1969, shall cause to be discharged into the atmosphere from the industrial process equipment any gases which:

(aa) In any one hour contain particulate matter in excess of the amount permitted in Table 1 for the allocated process weight; provided that the owner or operator shall not be required to reduce the particulate matter emission below the concentration permitted in Table 2 for the appropriate source gas volume; provided further that regardless of the mass emission permitted by Table 1, the owner or operator shall not be permitted to emit particulate matter in a concentration in excess of 0.30 grains per standard cubic foot of exhaust gas; or

(bb) Exhibit greater than 20 percent opacity, except that a maximum of 60 percent opacity shall be permissible for 4 minutes in any 60 minute period and a maximum of 40 percent opacity shall be permissible for 4 additional minutes in any 60 minute period.

(2) The owner or operator of any industrial process equipment which was in operation before July 9, 1969, which has control equipment with a collection efficiency of not less than 99 percent by weight shall be considered in compliance with the requirements of subsection (c)(1)(aa) of this regulation.

(3) The owner or operator of any industrial process equipment which was in operation before July 9, 1969, which is located outside the Minneapolis-St. Paul Air Quality Control Region and the City of Duluth, which is located not less than one-fourth mile from any residence or public roadway, and which has control equipment with a collection efficiency of not less than 85 percent by weight, and the operation of the entire emission facility does not cause a violation of the ambient air quality standards, shall be considered in compliance with the requirements of subsection (c)(1)(aa) of this regulation.

(d) Standards of Performance for Post 1969 Industrial Process Equipment

(1) No owner or operator of any industrial process equipment which was not in operation before July 9, 1969, shall cause to be discharged into the atmosphere from the industrial process equipment any gases which:

(aa) In any one hour contain particulate matter in excess of the amount permitted in Table 1 for the allocated process weight; provided that the owner or operator shall not be required to reduce the particulate matter emission below the concentration permitted in Table 2 for the appropriate source gas volume; provided that regardless of the mass emission permitted by Table 1, the owner or operator shall not be permitted to emit particulate matter in a concentration in excess of 0.30 grains per standard cubic foot of exhaust gas; or

(bb) Exhibit greater than 20 percent opacity.

(2) The owner or operator of any industrial process equipment which was not in operation before July 9, 1969, which has control equipment with a collection efficiency of not less than 99.7 percent by weight shall be considered in compliance with the requirements of subsection (d)(1)(aa) of this regulation.

(3) The owner or operator of any industrial process equipment which was in operation after July 9, 1969, which is located outside the Minneapolis-St. Paul Air Quality Control Region and the City of Duluth, which is located not less than one-fourth mile from any residence or public roadway, and which has control equipment with a collection efficiency of not less than 85 percent by weight, and the operation of the entire emission facility does not cause a violation of the ambient air quality standards, shall be considered in compliance with the requirements of subsection (d)(1)(aa) of this regulation.

(e) Performance Test Methods. Unless another method is approved by the Agency, any owner or operator required to submit performance tests for any industrial process equipment shall utilize the following test methods:

(1) Method 1 for sample and velocity traverses,

(2) Method 2 for velocity and volumetric flow rate,

(3) Method 3 for gas analysis,

(4) Method 5 for the concentration of particulate matter and associated moisture content,

(5) Method 9 for visual determination of the opacity of emissions from stationary sources.

(f) Performance Test Procedures. In the event that emissions from any industrial process equipment contain organic vapors which condense at standard conditions of temperature and pressure, the following changes in Method 5 for determining particulate emissions shall be made:

(1) Paragraph 4.2 (Sample Recovery) in Method 5 is amended to read as follows:

4.2 Sample Recovery. Exercise care in moving the collection train from the test site to the sample recovery area so as to minimize the loss of collected sample or the gain of extraneous particulate matter. Set aside a portion of the acetone and water used in the sample recovery as a blank for analysis. Place the samples in containers as follows:

Container #1. Remove the filter from its holder, place in this container, and seal.

Container #2. Place loose particulate matter and water and acetone washings from all sample-exposed surfaces preceding the filter paper in this container and seal. The probe and nozzle should be scrubbed with a stiff brush and distilled water, followed by an acetone rinse. If these solvents do not do a good cleaning job, an adequate solvent must be found and used. Use a razor blade or rubber policeman to loosen adhering particles if necessary.

Container #3. Measure the volume of water from the first three impingers and place the water in this container. Place water rinsings of all sample-exposed surfaces between the filter and fourth impinger in this container prior to sealing.

Container #4. Transfer the silica gel from the fourth impinger to the original container and seal. Use a rubber policeman as an aid in removing silica gel from the impinger.

Container #5. Thoroughly rinse all sample-exposed surfaces between the filter paper and fourth impinger with acetone, place the washings in this container and seal.

(2) Paragraph 4.3 (Analysis) in Method 5 is amended to read as follows:

4.3 Analysis. Record the data required on the example sheet shown in figure 5-3. Handle each sample container as follows:

Container #1. Transfer the filter and any loose particulate matter from the sample container to a tared glass weighing dish, desiccate, and dry to a constant weight. Report results to the nearest 0.5 mg.

Container #2. Transfer the washings to a tared beaker and evaporate to dryness at ambient temperature and pressure. Desiccate and dry to a constant weight. Weigh to the nearest 0.5 mg.

Container #3. Extract organic particulate from the impinger solution with three 25 ml portions of chloroform. Complete the extraction with three 25 ml portions of ethyl ether. Combine the ether and chloroform extracts, transfer to a tared beaker and evaporate at 70°F until no solvent remains. Desiccate, dry to a constant weight, and report the results to the nearest 0.5 mg.

Container #4. Weigh the spent silica gel and report to the nearest gram.

Container #5. Transfer the acetone washings to a tared beaker and evaporate to dryness at ambient temperature and pressure. Desiccate, dry to a constant weight, and report the results to the nearest 0.5 mg.

TABLE 1

Process Weight Rate (lbs./hr.)	Emission Rate (lbs./hr.)
50	0.08
100	0.55
500	1.53
1,000	2.25
5,000	6.34
10,000	9.73
20,000	14.99
60,000	29.60
80,000	31.19
120,000	33.28
160,000	34.85
200,000	36.11
400,000	40.35
1,000,000	46.72

Interpolation of the data in Table 1 for the process weight rates up to 60,000 lbs./hr. shall be accomplished by the use of the equation:

$$E = 3.59P^{0.62} \quad P < 30 \text{ tons/hr.}$$

and interpolation and extrapolation of the data for process weight rates in excess of 60,000 lbs/hr shall be accomplished by use of the equation:

$$E = 17.31P^{0.16} \quad P > 30 \text{ tons/hr.}$$

Where E = Emissions in pounds per hour
P = Process weight rate in tons per hour

TABLE 2

(8)

Source Gas Volume, SCFM[a]	Concentration GR/SCF[b]	Source Gas Volume, SCFM[a]	Concentration GR/SCF[b]
7,000 or less	0.100	140,000	0.038
8,000	0.096	160,000	0.036
9,000	0.092	180,000	0.035
10,000	0.089	200,000	0.034
20,000	0.071	300,000	0.030
30,000	0.062	400,000	0.027
40,000	0.057	500,000	0.025
50,000	0.053	600,000	0.024
60,000	0.050	800,000	0.021
80,000	0.045	1,000,000 or more	0.020
100,000	0.042		
120,000	0.040		

[a] Standard cubic feet per minute
[b] Grains per standard cubic foot.

[July 7, 1969; amended June 4, 1976]

CHAPTER SIX: APC 6

APC 6 Preventing Particulate Matter from Becoming Air-Borne

(a) No person shall cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become air-borne.

(b) No person shall cause or permit a building or its appurtenances or a road, or a driveway, or an open area to be constructed, used, repaired or demolished without applying all such reasonable measures as may be required to prevent particulate matter from becoming air-borne. The Director may require such reasonable measures as may be necessary to prevent particulate matter from becoming air-borne including, but not limited to, paving or frequent clearing of roads, driveways and parking lots; application of dust-free surfaces; application of water; and the planting and maintenance of vegetative ground cover.

[July 7, 1969]

CHAPTER ELEVEN: APC 11

APC 11 Restriction of Emission of Visible Air Contaminants

(a) Smoke restrictions applicable to existing installations including boats and ships except existing incineration. No person shall cause or permit the emission of smoke or any other air contaminant which has a shade or density:

(1) Darker than No. 3 on the Ringelmann Smoke Chart or of such opacity as to obscure an observer's view to a degree equal to or greater than smoke of No. 3 Ringelmann density.

(2) Darker than No. 2 on the Ringelmann Smoke Chart but less than No. 3 on said chart, if such emission continues for longer than 4 minutes in the aggregate in any 60-minute period, or of such opacity as to obscure an observer's view to a degree equal to or greater than smoke of No. 2, but less than No. 3 Ringelmann density during such period.

(3) Darker than No. 1 on the Ringelmann Smoke Chart but less than No. 2 on said chart, if said emission continues for longer than 4 minutes in the aggregate in any 30-minute period, or of such opacity to obscure an observer's view to a degree equal to or greater than smoke of No. 1, but less than No. 2 Ringelmann density during such period.

The density of smoke or other air contaminant shall be measured at the point of its emission, except, when the point of emission cannot be readily observed, measurement shall be made at the nearest observable point on the plume from the point of emission origin.

(b) Smoke restrictions applicable to new installations and all incinerators. No person shall discharge into the atmosphere from any single source of emission whatsoever any air contaminant which has a shade or density:

(1) Darker than that designated as No. 1 on the Ringelmann Smoke Chart; or

(2) Of such opacity as to obscure an observer's view to a degree greater than smoke described in subsection (b) (1) of this regulation.

(c) Exceptions.

(1) A person may discharge into the atmosphere from any single source of emission for a period or periods aggregating not more than 4 minutes in any 60 minutes air contaminants of a shade or density:

(aa) Not darker than No. 2 on the Ringelmann Smoke Chart; or

(bb) Of such opacity as to obscure an observer's view to a degree not greater than does smoke described in subsection (c) (1) (aa) of this regulation.

Where the presence of uncombined water is the only reason for failure of an emission to meet the requirements of section (a) or (b) of this regulation, such sections shall not apply. The provisions of this regulation shall not apply to:

(i) Transfer of molten metals;

(ii) Emissions from transfer ladles;

(iii) Coke ovens when pushing coke from oven;

(iv) Water quenching of coke on discharge from ovens;

(v) Existing grey iron jobbing cupolas as defined in Regul APC 5; and

(vi) Blast furnaces during slips.

(2) A temporary operational breakdown of any equipment, installation or facility may be permitted by the Agency to be an exception to the provisions of Regulation APC 11 provided the owner or operator immediately advises the Director of the circumstances and outlines an acceptable corrective program. A temporary breakdown of less than 15 minutes duration is an exception to the provisions of Regulation APC 11 and need not be reported. No equipment, installation or facility shall be operated which has an unreasonable breakdown frequency as determined by the Director. In any event, no operation that may cause an immediate public health hazard shall be deemed an exception from this regulation.

(d) Ringelmann Smoke Chart. The Ringelmann Smoke Chart shall mean and include any of the following:

(1) The Ringelmann Smoke Chart with instructions for use (Information Circular 8333, May, 1967, Rev. of IC 7718) as published by the U. S. Bureau of Mines;

(2) The Ringelmann Smoke Chart, photographically reduced to 1/19th in size and known as Power's Microringelmann Chart, copyright 1954 by McGraw-Hill Publishing Company; and

(3) Such other method or apparatus for determining smoke density or opacity as the Agency may approve.

[July 7, 1969; amended September 14, 1971; amended April 13, 1972]

CHAPTER FOURTEEN: APC 14

APC 14 Emission of Certain Settleable Acids and Alkaline Substances Restricted

(a) General Provisions. This regulation shall apply to all emissions from any sources or premises.

(b) Method of Measurement

(1) In determining compliance with this regulation, fallout sampling devices shall consist of circular glass dishes 15 centimeters in diameter which shall be supported on a nearly horizontal surface not larger than the dish. The dish bottom shall be at least three feet above the earth or other surface on which its support is resting and the dish shall be coated with a solution of thymol blue, ammonia water solution and gelatin dried to a yellow color in a vacuum oven at room temperature: prepared dishes shall be stored in a desiccator at 40 percent relative humidity, or in plastic bags.

(2) Fallout sampling devices shall be placed at one or more locations beyond the premises on which a source or sources are located, up-wind and down-wind of such premises. The sampling devices shall be exposed to substances settling out of the ambient air for a period of one hour. The presence of red-colored spots on the gelatin indicates that acidic substances have settled out of the air while the presence of blue-colored spots on the gelatin indicates that alkaline substances have settled out of the air. The number of spots visible on samplers exposed up-wind of premises to be subtracted from the number of spots visible on samplers exposed down-wind of the same premises. The difference in the number of spots, if any, shall be construed to be attributable to emissions occurring on the premises under investigation.

(3) In lieu of the test methods specified in (b) (1) and (2), any other method approved by the Director may be used.

(c) Emissions Restricted. No person shall cause or permit the emission from any source or premises of substances having acidic or alkaline properties in such amounts that the down-wind fallout rate of acidic or alkaline substances at any place where an adverse effect could occur, exceeds the up-wind fallout rate by five or more spots per hour, measured in the manner prescribed in Section (b) of this regulation.

[July 7, 1969]

CHAPTER TWENTY-ONE: APC 21

APC 21 Emission Source Monitoring, Performance Tests, Reports, Shutdowns and Breakdowns

(a) Continuous Monitoring

(1) Monitoring Requirement. The owner or operator of any emission facility, whether or not continuous monitoring is required by another regulation, may be required to establish a continuous monitoring system, upon order of the Director, when in his judgment other methods of measurement or calculation do not provide adequate information on the level or variation of emissions to assure compliance with applicable regulations.

(2) Monitoring System Qualifications. Any owner or operator of an emission facility who is required by applicable regulation or by order of the Director to install a continuous monitoring system shall install a system which meets the following performance evaluations:

(aa) Continuous monitoring systems for measuring opacity of emissions shall comply with Performance Specification 1.

(bb) Continuous monitoring systems for measuring nitrogen oxides emissions shall comply with Performance Specification 2.

(cc) Continuous monitoring systems for measuring sulfur dioxide emissions shall comply with Performance Specification 2.

(dd) Continuous monitoring systems for measuring the oxygen content or carbon dioxide content of effluent gases shall comply with Performance Specification 3.

(3) Performance Evaluation. The Agency or the Director may order any owner or operator who has installed a continuous monitoring system to conduct performance evaluations of the system. The performance evaluations shall be conducted under such conditions as the Agency or the Director may impose.

(4) Old Monitoring Systems. Any owner or operator of an emission facility who installed or entered into a binding contract to purchase a specific continuous monitoring system prior to September 11, 1974, may be exempt from meeting the performance evaluations set forth in paragraph (2) provided the following requirements are met:

(aa) Continuous monitoring systems for measuring opacity of emissions shall be capable of measuring emission levels within ±20 percent of the correct value with a confidence level of 95 percent. The Calibration Error Test and associated calculation procedures set forth in Performance Specification 1 shall be used for demonstrating compliance with this specification.

(bb) Continuous monitoring systems for measurement of nitrogen oxides or sulfur dioxide shall be capable of measuring emission levels within ±20 percent of the correct value with a confidence level of 95 percent. The Calibration Error Test, the Field Test for Accuracy (Relative), and associated operating and calculation procedures set forth in Performance Specification 2 shall be used for demonstrating compliance with this specification.

All continuous monitoring systems installed under this paragraph shall be upgraded or replaced with new continuous monitoring systems which comply

with the performance evaluations set forth in paragraph (2) by September 1, 1979.

(5) Zero and Span Drift. Owners or operators who are required to install continuous monitoring systems shall check the zero and span drift at least once daily in accordance with the method prescribed by the manufacturer of such systems unless the manufacturer recommends adjustments at shorter intervals, in which case such recommendations shall be followed. The zero and span shall, as a minimum, be adjusted whenever the 24-hour zero drift or 24-hour calibration drift limits of the performance specifications in Performance Specification 1, 2, or 3, whichever is applicable, are exceeded. For continuous monitoring systems measuring opacity of emissions, the optical surfaces exposed to the effluent gases shall be cleaned prior to performing the zero or span drift adjustments except that for systems using automatic zero adjustments, the optical surfaces shall be cleaned when the cumulative automatic zero compensation exceeds four percent opacity. Unless otherwise approved by the Agency, the following procedures, as applicable, shall be followed:

(aa) For extractive continuous monitoring systems measuring gases, minimum procedures shall include introducing applicable zero and span gas mixtures into the measurement system as near the probe as is practical. Span and zero gases certified by their manufacturer to be traceable to National Bureau of Standards reference gases shall be used whenever these reference gases are available. The span and zero gas mixtures shall be the same composition as specified in Performance Specification 1, 2, or 3, whichever is applicable. Every six months from date of manufacture, span and zero gases shall be reanalyzed by conducting triplicate analyses with Reference Method 6 for SO_2, Reference Method 7 for NO_x, and Reference Method 3 for O_2 and CO_2, respectively. The gases may be analyzed at less frequent intervals if longer shelf lives are guaranteed by the manufacturer.

(bb) For non-extractive continuous monitoring systems measuring gases, minimum procedures shall include upscale check(s) using a certified calibration gas cell or test cell which is functionally equivalent to a known gas concentration. The zero check may be performed by computing the zero value from upscale measurements or by mechanically producing a zero condition.

(cc) For continuous monitoring systems measuring opacity of emissions, minimum procedures shall include a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.

(6) Operation Requirements. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments, all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(aa) Opacity. All continuous monitoring systems for measuring opacity of emissions shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 10-second period.

(bb) Other pollutants.

(i) All continuous monitoring systems, except those old systems installed under paragraph (4), for measuring oxides of nitrogen, sulfur dioxide, carbon dioxide, or oxygen shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(ii) All old continuous monitoring systems installed under paragraph (4) for measuring oxides of nitrogen, sulfur dioxide, carbon dioxide, or oxygen shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive one-hour period.

(7) Location of System. All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable Performance Specifications shall be used.

(8) Number of Sources of Emissions. When the effluents from a single affected facility or two or more affected facilities subject to the same emission standards are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emission standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install applicable continuous monitoring systems on each separate effluent unless the installation of fewer systems is approved by the Agency.

(9) Monitoring Data. Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to one-minute averages and for systems other than opacity to one-hour averages respectively. One-minute opacity averages shall be calculated from 4 or more data points equally spaced over each one-minute period. For systems other than opacity, one-hour averages shall be computed from four or more data points equally spaced over each one-hour period. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph. An arithmetic or integrated average of all data may be used. The data output of all continuous monitoring systems may be recorded in reduced or non-reduced form (e.g. ppm pollutant and percent O_2 or lb/million Btu of pollutant). All excess emissions shall be converted into units of the standard using the conversion procedures specified in the applicable regulation. After conversion into units of the standard, the data may be rounded to the same number of significant digits used in the regulation to specify the applicable standard (e.g. rounded to the nearest one percent opacity).

(10) Exceptions. Upon written application by an owner or operator, the Director may approve alternatives to any monitoring procedures or requirements including, but not limited to, the following:

(aa) Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances with the effluent gases.

(bb) Alternative monitoring requirements when the affected facility is infrequently operated.

(cc) Alternative monitoring requirements to accommodate continuous monitoring systems that require additional measurements to correct for stack moisture conditions.

(dd) Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.

(ee) Alternative methods of converting pollutant concentration measurements to units of the standards.

(ff) Alternative procedures for performing daily check of zero and span drift that do not involve use of span gases or test cells.

(gg) Alternatives to the A.S.T.M. test methods or sampling procedures specified by any regulation.

(hh) Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1 but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The Director may require that such demonstration be performed for each affected facility.

(ii) Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two or more affected facilities are released to the atmosphere through more than one point.

(b) Performance Tests

(1) Testing Requirements. The Agency or the Director may order the owner or operator of an emission facility to conduct or have conducted performance tests to determine the characteristics and amount of emissions of air contaminants from any affected facility.

(2) Test Method. Unless another method is specified in an applicable regulation, any owner or operator required to conduct performance tests shall utilize the following methods:

(aa) Method 1 for sample and velocity traverses.

(bb) Method 2 for stack gas velocity and volumetric flow rate.

(cc) Method 3 for gas analysis for carbon dioxide, excess air, and dry molecular weight.

(dd) Method 4 for moisture in stack gases.

(ee) Method 5 for concentration of particulate matter and associated moisture content.

(ff) Method 6 for concentration of sulfur dioxide.

(gg) Method 7 for concentration of nitrogen oxides.

(hh) Method 8 for concentration of sulfuric acid mist and sulfur dioxide.

(ii) Method 9 for opacity.

(jj) Method 10 for concentration of carbon monoxide.

(kk) Method 11 for concentration of hydrogen sulfide.

(ll) Method 101-Reference Method for Determination of Particulate and Gaseous Mercury Emissions from Stationary Sources (Air Streams), Method 102-Reference Method for Determination of Particulate and Gaseous Mercury Emissions from Stationary Sources (Hydrogen Streams), or Reference Method 105-Method for Determination of Mercury in Wastewater Treatment Sewage Sludges, set forth in 40 C.F.R. Part 61, Appendix B, whichever is applicable, for mercury emissions.

(mm) Method 103-Beryllium Screening Method or Method 104-Reference Method for Determination of Beryllium Emissions from Stationary Sources, set forth in 40 C.F.R. Part 61, Appendix B, whichever is applicable.

(3) Alternative Test Methods. In lieu of the test method described in paragraph (2), the Director may:

(aa) Specify or approve minor changes in the Reference Method set forth in paragraph (2) or the applicable regulation; or

(bb) Approve the use of an equivalent method; or

(cc) Approve the use of an alternative method the results of which he has determined to be adequate for indicating whether an affected facility is in compliance.

(4) Testing Conditions. Performance tests shall be conducted under such conditions as the Director shall specify. The owner or operator shall make available to the Director such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions of performance tests unless otherwise specified in an applicable regulation.

(5) Test Runs. Each performance test shall consist of three separate runs using the applicable test method. However, the Director reserves the right to require more than three runs under unusual circumstances. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the two other runs.

(6) Notification. The owner or operator shall notify the Director not less than 30 days prior to conducting any performance tests, unless a shorter time is accepted by the Director.

(7) Opacity.

(aa) Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Reference Method 9. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity standards. The results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were

made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the owner or operator shall meet the burden of proving that the instrument used meets (at the time of the alleged violation) Performance Specification 1, has been properly maintained and (at the time of the alleged violation) calibrated, and that the resulting data have not been tampered with in any way.

(bb) The opacity standards set forth in a regulation shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.

(8) Agency Tests. Upon order of the Agency or the Director, the owner or operator of an emission facility shall allow the Agency, or any authorized employee or agent of the Agency, to enter upon the premises of the owner or operator for purposes of conducting performance tests. The owner or operator shall provide performance testing facilities which will enable the Agency or its agents or employees to conduct performance tests. Such performance testing facilities shall include:

(aa) Sampling ports adequate for test methods applicable to such facility.

(bb) Safe sampling platform(s).

(cc) Safe access to sampling platform(s).

(dd) Utilities for sampling and testing equipment.

(9) Additional Requirements. The owner or operator shall meet any other requirements imposed by the Agency or the Director in ordering the running of the performance tests.

(c) Reports

(1) Excess Emissions. Any owner or operator of an affected facility who is required to install a continuous monitoring system shall submit a written report of excess emissions for every calendar quarter.

(aa) The report shall be submitted to the Director of the Division of Air Quality of the Agency.

(bb) The report shall be submitted in accordance with the following requirements:

(i) The report shall be postmarked by the 30th day following the end of each calendar quarter; and

(ii) The report shall contain the following information:

1. The magnitude of excess emissions, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions.

2. Specific identification of each period of excess emissions that occurred during startups, shutdowns, and malfunctions of the affected facility, the nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(2) Other Data. The owner or operator of any affected facility shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by any regulation and shall keep that file in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records.

(3) Breakdowns. The owner or operator of an affected facility shall maintain records of the occurrence and duration of any startup, shutdown, breakdown, or malfunction in operation of the facility or any air pollution control equipment. The owner or operator shall maintain records of any periods of time in which a continuous monitoring system or monitoring device is inoperative. These records shall be retained for at least two years following the date of such shutdown, startup, breakdown, malfunction, or inoperation. These records shall be submitted to the Agency at such times as the Director may require.

(4) Emission Inventory. All owners or operators of emission facilities which emit more than 25 tons per year of particulate matter, sulfur oxides, nitrogen oxides, carbon monoxide, or hydrocarbons shall submit on or before April 1st of each year an emission inventory report covering the previous calendar year

(d) Shutdowns and Breakdowns

(1) Shutdown. The owner or operator of an emission facility shall notify the Director at least 24 hours in advance of shutdown of any control equipment and, if the shutdown would cause an increase in the emission of air contaminants, of a shutdown of any process equipment. At the time of notification, the owner or operator shall also notify the Director of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Director when the shutdown is over.

(2) Breakdown. The owner or operator of an emission facility shall notify the Director immediately of a breakdown of more than one hour duration of any control equipment and, if the breakdown causes an increase in the emission of air contaminants, of a breakdown of any process equipment. At the time of notification or as soon thereafter as possible, the owner or operator shall also notify the Director of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Director when the breakdown is over.

(3) Operation Changes. In any shutdown or breakdown covered by subparagraph (1) or (2) above, the owner or operator shall immediately take all practical steps to modify operations to reduce the emission of air contaminants. The Director may require feasible and practical modifications in the operation to reduce emissions of air contaminants. No affected facility which has an unreasonable breakdown frequency of control equipment shall be permitted to operate. Nothing in this regulation shall permit the operation of an affected facility which may cause an immediate public health hazard.

(4) Monitoring Equipment. The owner or operator of a continuous monitoring system or monitoring device shall notify the Director of breakdown or malfunction of such system or device.

[May 7, 1976]

THURSDAY, JANUARY 15, 1976

FEDERAL REGISTER

PART II:

ENVIRONMENTAL PROTECTION AGENCY

STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Primary Copper, Zinc and Lead Smelters

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER C—AIR PROGRAMS

[FRL 452-3]

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Primary Copper, Zinc, and Lead Smelters

On October 16, 1974 (39 FR 37040), pursuant to section 111 of the Clean Air Act, as amended, the Administrator proposed standards of performance for new and modified sources within three categories of stationary sources: (1) primary copper smelters, (2) primary zinc smelters, and (3) primary lead smelters. The Administrator also proposed amendments to Appendix A, Reference Methods, of 40 CFR Part 60.

Interested persons representing industry, trade associations, environmental groups, and Federal and State governments participated in the rulemaking by sending comments to the Agency. Commentators submitted 14 letters containing eighty-five comments. Each of these comments has been carefully considered and where determined by the Administrator to be appropriate, changes have been made to the proposed regulations which are promulgated herein.

The comment letters received, a summary of the comments contained in these letters, and the Agency's responses to these comments are available for public inspection at the Freedom of Information Center, Room 202 West Tower, 401 M Street, S.W., Washington, D.C. Copies of the comment summary and the Agency's responses may be obtained by writing to the EPA Public Information Center (PM-215), 401 M Street, S.W., Washington, D.C. 20460, and requesting the Public Comment Summary—Primary Copper, Zinc and Lead Smelters.

The bases for the proposed standards are presented in "Background Information for New Source Performance Standards: Primary Copper, Zinc and Lead Smelters, Volume 1, Proposed Standards" (EPA-450/2-74-002a) and "Economic Impact of New Source Performance Standards on the Primary Copper Industry: An Assessment" (EPA Contract No. 68-02-1349—Task 2). Copies of these documents are available on request from the Emission Standards and Engineering Division, Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention: Mr. Don R. Goodwin.

SUMMARY OF REGULATIONS

The promulgated standards of performance for new and modified primary copper smelters limit emissions of particulate matter contained in the gases discharged into the atmosphere from dryers to 50 mg/dscm (0.022 gr/dscf). In addition, the opacity of these gases is limited to 20 percent.

Emissions of sulfur dioxide contained in the gases discharged into the atmosphere from roasters, smelting furnaces and copper converters are limited to 0.065 percent by volume (650 parts per million) averaged over a six-hour period. Reverberatory smelting furnaces at primary copper smelters which process an average smelter charge containing a high level of volatile impurities, however, are exempt from this standard during those periods when such a charge is processed. A high level of volatile impurities is defined to be more than 0.2 weight percent arsenic, 0.1 weight percent antimony, 4.5 weight percent lead or 5.5 weight percent zinc. In addition, where a sulfuric acid plant is used to comply with this standard, the opacity of the gases discharged into the atmosphere is limited to 20 percent.

The regulations also require any primary copper smelter that makes use of the exemption provided for reverberatory smelting furnaces processing a charge of high volatile impurity content to keep a monthly record of the weight percent of arsenic, antimony, lead and zinc contained in this charge. In addition, the regulations require continuous monitoring systems to monitor and record the opacity of emissions discharged into the atmosphere from any dryer subject to the standards and the concentration of sulfur dioxide in the gases discharged into the atmosphere from any roaster, smelting furnace, or copper converter subject to the standard. While these regulations pertain primarily to sulfur dioxide emissions, the Agency recognizes the potential problems posed by arsenic emissions and is conducting studies to assess these problems. Appropriate action will be taken at the conclusion of these studies.

The promulgated standards of performance for new and modified primary zinc smelters limit emissions of particulate matter contained in the gases discharged into the atmosphere from sintering machines to 50 mg/dscm (0.022 gr/dscf). The opacity of these gases is limited to 20 percent.

Emissions of sulfur dioxide contained in the gases discharged into the atmosphere from roasters and from any sintering machine which eliminates more than 10 percent of the sulfur initially contained in the zinc sulfide concentrates processed are limited to 0.065 percent by volume (650 parts per million) averaged over a two-hour period. In addition, where a sulfuric acid plant is used to comply with this standard, the opacity of the gases discharged into the atmosphere is limited to 20 percent.

The regulations also require continuous monitoring systems to monitor and record the opacity of emissions discharged into the atmosphere from any sintering machine subject to the standards, and the concentration of sulfur dioxide in the gases discharged into the atmosphere from any roasters or sintering machine subject to the standard limiting emissions of sulfur dioxide.

The promulgated standards of performance for new and modified primary lead smelters limit emissions of particulate matter contained in the gases discharged into the atmosphere from blast furnaces, dross reverberatory furnaces and sintering machine discharge ends to 50 mg/dscm (0.022 gr/dscf). The opacity of these gases is limited to 20 percent.

Emissions of sulfur dioxide contained in the gases discharged into the atmosphere from sintering machines, electric smelting furnaces and converters are limited to 0.065 percent by volume (650 parts per million) averaged over a two-hour period. Where a sulfuric acid plant is used to comply with this standard, the opacity of the gases discharged into the atmosphere is limited to 20 percent.

The regulations also require continuous monitoring systems to monitor and record the opacity of emissions discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end subject to the standards, and the concentration of sulfur dioxide in the gases discharged into the atmosphere from any sintering machine, electric furnace or converter subject to the standards.

MAJOR COMMENTS AND CHANGES MADE TO THE PROPOSED STANDARDS

PRIMARY COPPER SMELTERS

Most of the comments submitted to the Agency concerned the proposed standards of performance for primary copper smelters. As noted in the preamble to the proposed standards, the domestic copper smelting industry expressed strong objections to these standards during their development. Most of the comments submitted by the industry following proposal of these standards reiterated these objections. In addition, a number of comments were submitted by State agencies, environmental organizations and private individuals, also expressing objections to various aspects of the proposed standards. Consequently, it is appropriate to review the basis of the proposed standards before discussing the comments received, the responses to these comments and the changes made to the standards for promulgation.

The proposed standards would have limited the concentration of sulfur dioxide contained in gases discharged into the atmosphere from all new and modified roasters; reverberatory, flash and electric smelting furnaces; and copper converters at primary copper smelters to 650 parts per million. Uncontrolled roasters, flash and electric smelting furnaces, and copper converters discharge gas streams containing more than 3½ percent sulfur dioxide. The cost of controlling these gas streams with sulfuric acid plants was considered reasonable. Reverberatory smelting furnaces, however, normally discharge gas streams containing less than 3½ percent sulfur dioxide, and the cost of controlling these gas streams through the use of various sulfur dioxide scrubbing systems currently available was considered unreasonable in most cases. It was the Administrator's conclusion, however, that flash and electric smelting considered together were applicable to essentially the full range of domestic primary copper smelting operations. Consequently, standards were proposed which applied equally to new

flash, electric and reverberatory smelting furnaces. The result was standards which favored construction of new flash and electric smelting furnaces over new reverberatory smelting furnaces.

Most of the increase in copper production over the next few years will probably result from expansion of existing copper smelters. Of the sixteen domestic primary copper smelters, only one employs flash smelting and only two employ electric smelting. The remaining thirteen employ reverberatory smelting, although one of these thirteen has initiated construction to convert to electric smelting and another has initiated construction to convert to a new smelting process referred to as Noranda smelting. (The Noranda smelting process discharges a gas stream of high sulfur dioxide concentration which is easily controlled at reasonable costs. By virtue of the definition of a smelting furnace, the promulgated standards also apply to Noranda furnaces.)

In view of the Administrator's judgment that the cost of controlling sulfur dioxide emissions from reverberatory furnaces was unreasonable, the Administrator concluded that an exemption from the standards was necessary for existing reverberatory smelting furnaces, to permit expansion of existing smelters at reasonable costs. Consequently, the proposed standards stated that any physical changes or changes in the method of operation of existing reverberatory smelting furnaces, which resulted in an increase in sulfur dioxide emissions from these furnaces, would not cause these furnaces to be considered "modified" affected facilities subject to the standards. This exemption, however, applied only where total emissions of sulfur dioxide from the primary copper smelter in question did not increase.

Prior to the proposal of these standards, the Administrator commissioned the Arthur D. Little Co., Inc., to undertake an independent assessment of both the technical basis for the standards and the potential impact of the standards on the domestic primary copper smelting industry. The results of this study have been considered together with the comments submitted during the public review and comment period in determining whether the proposed standards should be revised for promulgation.

Briefly, the Arthur D. Little study reached the following conclusions:

(1) The proposed standards should have no adverse impact on new primary copper smelters processing materials containing low levels of volatile impurities.

(2) The proposed standards could reduce the capability of new primary copper smelters located in the southwest U.S. to process materials of high impurity content. This impact was foreseen since the capability of flash smelting to process materials of high impurity levels was unknown. Although electric smelting was considered technically capable of processing these materials, the higher costs associated with electric smelting, due to the high cost of electrical power in the southwest, were considered sufficient to preclude its use in most cases.

This conclusion was subject, however, to qualification. It applied only to the southwest (Arizona, New Mexico and west Texas) and not to other areas of the United States (Montana, Nevada, Utah and Washington) where primary copper smelters currently operate; and it was not viewed as applicable to large new ore deposits of high impurity content which were capable of providing the entire charge to a new smelter. The study also concluded it was impossible to estimate the magnitude of this potential impact since it was not possible to predict impurity levels likely to be produced from new ore reserves.

Although considerable doubt existed as to the need for a new smelter in the southwest to process materials of high impurity levels in the future (essentially all the information and data examined indicated such a need is not likely to arise), the Arthur D. Little study concluded it would be prudent to assume new smelters in the southwest should have the flexibility to process these materials. To assume otherwise according to the study might place constraints on possible future plans of the American Smelting and Refining Company.

(3) The proposed standards should have little or no impact on the ability of existing primary copper smelters to expand copper production. This conclusion was also subject to qualification. It was noted that other means of expanding smelter capacity might exist than the approaches studied and that the proposed standards might or might not influence the viability of these other means of expanding capacity. It was also noted that the study assumed existing single absorption sulfuric acid plants could be converted to double absorption, but that individual smelters were not visited and this conversion might not be possible at some smelters.

Each of the comment letters received by EPA contained multiple comments. The most significant comments, the Agency's responses to these comments and the various changes made to the proposed regulations for promulgation in response to these comments are discussed below.

(1) *Legal authority under section 111.* Four commentators indicated that the Agency would exceed its statutory authority under section 111 of the Act by promulgating a standard of performance that could not be met by copper reverberatory smelting furnaces, which are extensively used at existing domestic smelters. The commentators believe that the "best system of emission reduction" cited in section 111 refers to control techniques that reduce emissions, and not to processes that emit more easily controlled effluent gas streams. The commentators contend, therefore, that a producer may choose the process that is most appropriate in his view, and new source performance standards must be based on the application of the best demonstrated techniques of emission reduction to that process.

The legislative history of the 1970 Amendments to the Act is cited by these commentators as supporting this interpretation of section 111. Specifically pointed out is the fact that the House-Senate Conference Committee, which reconciled competing House and Senate versions of the bill, deleted language from the Senate bill that would have granted the Agency explicit authority to regulate processes. This action, according to these commentators, clearly indicates a Congressional intent not to grant the Agency such authority.

The conference bill, however, merely replaced the phrase in the Senate bill "latest available control technology, processes, operating method or other alternatives" with "best system of emission reduction which (taking into account the cost of achieving such reduction) the Administrator determines has been adequately demonstrated." The use of the phrase "best system of emission reduction" appears to be inclusive of the terms in the Senate bill. The absence of discussion in the conference report on this issue further suggests that no substantive change was intended by the substitution of the phrase "best system of emission reduction" for the phrase "latest available control technology, processes, operating method or other alternatives" in the Senate bill.

For some classes of sources, the different processes used in the production activity significantly affect the emission levels of the source and/or the technology that can be applied to control the source. For this reason, the Agency believes that the "best system of emission reduction" includes the processes utilized and does not refer only to emission control hardware. It is clear that adherence to existing process utilization could serve to undermine the purpose of section 111 to require maximum feasible control of new sources. In general, therefore, the Agency believes that section 111 authorizes the promulgation of one standard applicable to all processes used by a class of sources, in order that the standard may reflect the maximum feasible control for that class. When the application of a standard to a given process would effectively ban the process, however, a separate standard must be prescribed for it unless some other process(es) is available to perform the function at reasonable cost.

In determining whether the use of different processes would necessitate the setting of different standards, the Agency first determines whether or not the processes are functionally interchangeable. Factors such as whether the least polluting process can be used in various locations or with various raw materials or under other conditions are considered. The second important consideration of the Agency involves the costs of achieving the reduction called for by a standard applicable to all processes used in a source category. Where a single standard would effectively preclude using a process which is much less expensive than the permitted process, the economic impact of the single standard must be determined to be reasonable or separate standards are set. This does not mean, however, that the cost of the alternatives to the potentially prohibited process can

be no grater than those which would be associated with controlling the process under a less stringent standard.

The Administrator has determined that the flash copper smelting process is available and will perform the function of the reverberatory copper smelting process at reasonable cost, except that flash smelting has not yet been commercially demonstrated for the processing of feed materials with a high level of volatile impurities. The standards promulgated herein, which do not apply to copper reverberatory smelting furnaces when the smelter charge contains a high level of volatile impurities, are therefore authorized under section 111 of the Act.

(2) *Control of reverberatory smelting furnaces.* Two commentators representing environmental groups and one commentator representing a State pollution control agency questioned the Administrator's judgment that the use of various sulfur dioxide scrubbing systems to control sulfur dioxide emissions from reverberatory smelting furnaces was unreasonable, especially in view of his conclusion that the use of these systems on large steam generators was reasonable. These commentators also pointed out that this conclusion was based only on an examination of the use of sulfur dioxide scrubbing systems and that alternative means of control, such as the use of oxygen enrichment of reverberatory furnace combustion air, or the mixing of the gases from the reverberatory furnace with the gases from roasters and copper converters to produce a mixed gas stream suitable for control, were not examined.

This comment was submitted in response to the exemption included in the proposed standards for existing reverberatory smelting furnaces. As discussed below, the amendments recently promulgated by the Agency to 40 CFR Part 60 clarifying the meaning of "modification" make this exemption unnecessary. The comment is still appropriate, however, since the promulgated standards now include an exemption for new reverberatory smelting furnaces at smelters processing materials containing high levels of volatile impurities.

Section 111 of the Clean Air Act dictates that standards of performance be based on "* * * the best system of emission reduction which (taking into account the cost of achieving such reduction) the Administrator determines has been adequately demonstrated." Thus, not only must various systems of emission control be investigated to ensure these systems are technically proven and the levels to which emissions could be reduced through the use of these systems identified, the costs of these systems must be considered to ensure that standards of performance will not impose an unreasonable economic burden on each source category for which standards are developed.

The control of gas streams containing low concentrations of sulfur dioxide through the use of various scrubbing systems which are currently available is considered by the Administrator to be technically proven and well demonstrated. The use of these systems on large steam generators is considered reasonable since electric utilities are regulated monopolies and the costs incurred to control sulfur dioxide emissions can be passed forward to the consumer. Primary copper smelters, however, do not enjoy a monopolistic position and face direct competition from both foreign smelters and other domestic smelters. The costs associated with the use of these scrubbing systems on reverberatory smelting furnaces at primary copper smelters are so large, in the Administrator's judgment, that they could not be either absorbed by a copper smelter without resulting in a significant decrease in profitability, passed forward to the consumer without leading to a significant loss in sales, or passed back to the mining operations without resulting in a closing of some mines and a decrease in mining activity. Consequently, the Administrator considers the use of these systems to control reverberatory smelting furnaces unreasonable.

Although little discussion is included in the background document supporting the proposed standards concerning the use of oxygen enrichment of reverberatory furnace combustion air, or the mixing of the gases from reverberatory furnaces with the gases from roasters and copper converters, these approaches for controlling sulfur dioxide emissions from reverberatory smelting furnaces were examined. These investigations, however, were not of an in-depth nature and were not pursued to completion.

A preliminary analysis of oxygen enrichment of reverberatory furnace combustion air to produce a strong gas stream from the reverberatory furnace appeared to indicate that the costs associated with this approach were unreasonable. A similar analysis of the mixing of the gases from a reverberatory furnace with the gases discharged from a fluid-bed roaster and copper converters appeared to indicate that although the costs associated with this approach were reasonable, it was not possible to use fluid-bed roasters in all cases. Multi-hearth roasters would be required where materials of high volatile impurity levels were processed. Although multi-hearth roasters discharge strong gas streams (4–5 percent sulfur dioxide), fluid bed roasters discharge much stronger gas streams (10–12 percent sulfur dioxide). To determine the effect of this lower concentration of sulfur dioxide in the gases discharged by multi-hearth roasters on the ability to mix the gases discharged by reverberatory smelting furnaces with those discharged by roasters and copper converters to produce a mixed gas stream suitable for control at reasonable costs would have required further investigation and study.

Unfortunately, limited resources prevented all avenues of investigation from being pursued and in view of the promising indications from the preliminary investigations into flash and electric smelting, the Agency concentrated its efforts in this area. As discussed below, however, the use of these approaches to control sulfur dioxide emissions from reverberatory smelting furnaces are under investigation as a means by which the promulgated standards of performance could be extended to cover reverberatory smelting furnaces which process materials containing high levels of impurities.

(3) *Materials of high impurity levels.* One commentator expressed his belief that the proposed standards would prevent new primary copper smelters from processing materials containing high levels of impurities, such as arsenic, antimony, lead and zinc. This commentator does not feel flash smelting can be considered demonstrated for smelting materials containing these impurities. The commentator also feels the domestic smelting industry will not be able to employ electric smelting to process materials of this nature in the future, since electric power will not be available, or only available at a price which will prevent its use by the industry.

At the time of proposal of the standards for primary copper smelters, the Administrator was aware that considerable doubt existed concerning the capability of flash smelting to process materials of high impurity levels. No doubt existed, however, with regard to the capability of electric smelting to process these materials. Consequently, the standards were proposed on the basis that where flash smelting could not be employed to process these materials, electric smelting could.

As outlined above, the Arthur D. Little study concluded that at no flash smelter in the world has the average composition of the total charge processed on a routine basis exceeded 0.2 weight percent arsenic, 0.1 weight percent antimony, 4.5 weight percent lead and 5.5 weight percent zinc. Thus, the capability of flash smelting to process a charge containing higher levels of impurities than these has not been adequately demonstrated. At this time, therefore, only electric smelting preceded by multi-hearth roasting (in addition to reverberatory smelting preceded by multi-hearth roasting) can be considered adequately demonstrated (excluding costs) for processing these materials.

The Arthur D. Little study also examined the projected availability and pricing of various forms of energy through 1980 for those areas of the United States where primary copper smelters now operate. Although the energy consumed by electric smelting is approximately equal to that consumed by reverberatory smelting (taking into account the energy inefficiency associated with electric power generation), the study concluded that a cost penalty of 1 to 2 cents per pound of copper is associated with electric smelting in the southwest U.S. due to the high cost of electric power in this region. This cost penalty was considered sufficient in the Arthur D. Little study to make the use

of electric smelting at new primary copper smelters located in the southwest potentially unattractive in most cases.

Since the basis for the proposed standards considered electric smelting as a viable alternative should flash smelting prove unable to process materials of high impurity levels, the Administrator has concluded the proposed standards should be revised for promulgation. Consequently, the standards promulgated herein exempt new reverberatory smelting furnaces at primary copper smelters which process a total charge containing more than 0.2 weight percent arsenic, 0.1 weight percent antimony, 4.5 weight percent lead or 5.5 weight percent zinc. This will permit new primary copper smelters to be constructed to process materials of high impurity levels without employing electric smelting. The promulgated standards of performance will, however, apply to new roasters and copper converters at these smelters, since the Administrator has concluded these facilities can be operated to produce gas streams containing greater than 3½ percent sulfur dioxide and that the costs associated with controlling these gas streams are reasonable.

Although the Administrator considers it prudent to promulgate the standards with this exemption for new reverberatory smelting furnaces, the Administrator believes this exemption may not be necessary. As pointed out in the comments submitted by various environmental organizations and private citizens, neither the use of oxygen enrichment of reverberatory furnace combustion air, nor the mixing of the gases from reverberatory furnaces with those from multihearth roasters and copper converters were investigated in depth by the Agency in developing the proposed standards. Either of these approaches could prove to be reasonable for controlling sulfur dioxide emissions from reverberatory smelting furnaces.

Under the promulgated standards with the exemptions provided for new reverberatory smelting furnaces, new primary copper smelters could remain among the largest point sources of sulfur dioxide emissions within the U.S. Consequently, the Agency's program to develop standards of performance to limit sulfur dioxide emissions from primary copper smelters will continue. This program will focus on the use of oxygen enrichment of reverberatory furnace combustion air and the mixing of the gases from reverberatory smelting furnaces with those from multi-hearth roasters and copper converters. If the Administrator concludes either or both of these approaches can be employed to control sulfur dioxide emissions from reverberatory smelting furnaces at reasonable costs, the Administrator will propose that this exemption be deleted.

(4) *Copper smelter modifications.* One of the major issues associated with the proposed regulations on modification, notification and reconstruction (39 FR 30946) involved the "bubble concept." The "bubble concept" refers to the trading off of emission increases from one existing facility undergoing a physical or operational change at a source with emission reductions from another existing facility at the same source. If there is no net increase in the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by the source as a whole, the facility which experienced an emissions increase is not considered modified. Although the "bubble concept" may be applied to existing facilities which undergo a physical or operational change, it may not be applied to cover construction of new facilities.

In commenting on the proposed standards of performance for primary copper smelters, two commentators suggested that the bubble concept be extended to include construction of new facilities at existing copper smelters. These commentators indicated that this could result in a substantial reduction in the costs, while at the same time leading to a substantial reduction in emissions from the smelter.

To support their claims, these commentators presented two hypothetical examples of expansions at a copper smelter that could occur through construction of new facilities. Where new facilities were controlled to meet standards of performance, emissions from the smelter as a whole increased. Where some new facilities were not controlled to meet standards of performance, emissions from the smelter as a whole decreased substantially.

These results, however, depend on special manipulation of emissions from the existing facilities at the smelter. In the case where new facilities are controlled to meet standards of performance, emissions from existing facilities are not reduced. Thus, with construction of new facilities, emissions from the smelter as a whole increase. In the case where some new facilities are not controlled to meet standards of performance, emissions from existing facilities are reduced through additional emission control or production cut-back. Since emissions from the existing facilities were assumed to be very large initially, a reduction in these emissions results in a net reduction in emissions from the smelter as a whole.

These hypothetical examples, however, appear to represent contrived situations. In many cases, compliance with State implementation plans to meet the National Ambient Air Quality Standards will require existing copper smelters to control emissions to such a degree that the situations portrayed in the examples presented by these commentators are not likely to arise. Furthermore, a smelter operator may petition the Administrator for reconsideration of the promulgated standards if he believes they would be infeasible when applied to his smelter.

Another commentator asked whether conversion of an existing reverberatory smelting furnace from firing natural gas to firing coal would constitute a modification. This commentator pointed out that although the conversion to firing coal would increase sulfur dioxide emissions from the smelter by 2 to 3 percent, the costs of controlling the furnace to meet the standards of performance would be prohibitive.

The primary objective of the promulgated standards is to control emissions of sulfur dioxide from the copper smelting process. The data and information supporting the standards consider essentially only those emissions arising from the basic smelting process, not those arising from fuel combustion. It is not the direct intent of these standards, therefore, to control emissions from fuel combustion per se. Consequently, since emissions from fuel combustion are negligible in comparison with those from the basic smelting process, and a conversion of reverberatory smelting furnaces to firing coal rather than natural gas will aid in efforts to conserve natural gas resources, the standards promulgated herein include a provision exempting fuel switching in reverberatory smelting furnaces from consideration as a modification.

(5) *Expansion of existing smelters.* Two commentators expressed their concern that the proposed standards would prevent the expansion of existing primary copper smelters, since the standards apply to modified facilities as well as new facilities. These commentators reasoned that the costs associated with controlling emissions from each roaster, smelting furnace or copper converter modified during expansion would in many cases make these expansions economically unattractive.

As noted above, the Agency has proposed amendments to the general provisions of 40 CFR Part 60 covering modified and reconstructed sources. Under these provisions, standards of performance apply only where an existing facility at a source is reconstructed; where a change in an existing facility results in an increase in the total emissions at a source; and where a new facility is constructed at a source. Thus, unless total emissions from a primary copper smelter increase, most alterations to existing roasters, smelting furnaces or copper converters which increase their emissions will not cause these facilities to be considered modified and subject to standards of performance.

The Administrator does not believe the standards promulgated herein will deter expansion of existing primary copper smelters. As discussed earlier, the Administrator concluded at proposal that the cost of controlling reverberatory smelting furnaces was unreasonable (through the use of various sulfur dioxide scrubbing systems currently available), and for this reason included an exemption in the proposed standards for existing reverberatory smelting furnaces. The prime objective of this exemption was to ensure that existing primary copper smelters could expand copper production at reasonable costs.

Also, as discussed earlier, the Arthur D. Little study examined this aspect of the proposed standards and concluded the standards would have little or no impact on the ability of existing primary copper smelters to expand production.

This conclusion was subject to two qualifications: other means of expanding smelter capacity might exist than those examined and the impact of the proposed standards on these means of expanding capacity is unknown; and it was assumed that existing single absorption sulfuric acid plants could be converted to double absorption, but at some smelters this might not be possible.

The Administrator does not feel these qualifications seriously detract from the essential conclusion that the standards are likely to have little impact on the expansion capabilities of existing copper smelters. The various means of expanding smelter capacity examined in the Arthur D. Little study represent commonly employed techniques for increasing copper production from as little as 10 to 20 percent, to as much as 50 percent at existing smelters. Consequently, the Administrator considers the approaches examined in the study as broadly representative of various means of expanding existing primary copper smelters and as a reasonable basis from which conclusions regarding the potential impact of the standards on the expansion capabilities of the domestic primary copper smelting industry can be drawn.

The Administrator views the assumption in the Arthur D. Little report that existing single absorption sulfuric acid plants can be converted to double absorption as a good assumption. Although at some existing primary copper smelters the physical plant layout might complicate a conversion from single absorption to double absorption, the remote isolated location of most smelters provides ample space for the construction of additional plant facilities. Thus, while the costs for conversion may vary from smelter to smelter, it is unlikely that at any smelter a conversion could not be made.

As proposed, provisions were included in the regulations specifically stating that physical and operating changes to existing reverberatory smelting furnaces which resulted in an increase in sulfur dioxide emissions would not be considered modifications, provided total emissions of sulfur dioxide from the copper smelter did not increase above levels specified in State implementation plans.

Since proposal of the standards, amendments to 40 CFR Part 60 to clarify the meaning of modification under section 111 have been proposed. These amendments permit changes to existing facilities within a source which increase emissions from these facilities without requiring compliance with standards of performance, provided total emissions from the source do not increase. Since this was the objective of the provisions included in the proposed regulations for primary copper smelters with regard to changes to existing reverberatory smelting furnaces, these provisions are no longer necessary and have been deleted from the promulgated regulations.

(6) *Increased energy consumption.* Two commentators indicated that the Agency's estimate of the impact of the standards of performance for primary copper, zinc and lead smelters on energy consumption was much too low. Since the number of smelters which will be affected by the standards is relatively small, the Agency has developed a scenario on a smelter-by-smelter basis, by which the domestic industry could increase copper production by 400,000 tons by 1980. This increase in copper production represents a growth rate of about 3.5 percent per year and is consistent with historical industry growth rates of 3 to 4 percent per year.

On this new basis, the energy required to control all new primary copper, zinc and lead smelters constructed by 1980 to comply with both the proposed standards and the standards promulgated herein is the same and is estimated to be 320 million kilowatt-hours per year. This is equivalent to about 520,000 barrels of number 6 fuel oil per year. Relative to typical State implementation plan requirements for primary copper, zinc and lead smelters, the incremental energy required by these standards is 50 million kilowatt-hours per year, which is equivalent to about 80,000 barrels of number 6 fuel oil per year.

The energy required to comply with the promulgated standards at these new smelters by 1980 represents no more than approximately 3.5 percent of the process energy which would be required to operate these smelters in the absence of any control of sulfur dioxide emissions. The incremental amount of energy required to meet these standards is somewhat less than 0.5 percent of the total energy (process plus air pollution) which would be required to operate these new smelters and meet typical State implementation plan emission control requirements.

One commentator stated the Agency's initial estimate of the increased energy requirements associated with the proposed standards was low because the Agency did not take into account a 3 million Btu per ton of copper concentrate energy debit, attributed by the commentator to electric smelting compared to reverberatory smelting. The new basis used by the Agency to estimate the impact of the standards on energy consumption anticipates no new electric smelting by 1980. Consequently, any difference in the energy consumed by electric smelting compared to reverberatory smelting will have no impact on the amount of energy required to comply with the standards.

The Agency's estimates of the energy requirements associated with electric smelting and reverberatory smelting, which are included in the background information for the proposed standards, are based on a review of the technical literature and contacts with individual smelter operators. These estimates agree quite favorably with those developed in the Arthur D. Little study, which verified the Agency's conclusion that the overall energy requirements associated with reverberatory and electric smelting are essentially the same. It remains, the Administrator's conclusion, therefore, that there is no energy debit associated with electric smelting compared to reverberatory smelting.

Another commentator feels the Agency's original estimates fail to take into account the fuel necessary to maintain proper operating temperatures in sulfuric acid plants. This commentator estimates that about 82,000 barrels of fuel oil per year are required to heat the gases in a double absorption sulfuric acid plant. The commentator then assumes the domestic non-ferrous smelting industry will expand production by 50 percent in the immediate future, citing the Arthur D. Little study for support. Since about 30 metallurgical sulfuric acid plants are currently in use within the domestic smelting industry, the commentator assumes this means 15 new metallurgical sulfuric acid plants will be constructed in the future. This leads to an estimated energy impact associated with the standards of performance of about 1¼ million barrels of fuel oil per year.

It should be noted, however, that the growth projections developed in the Arthur D. Little study are only for the domestic copper smelting industry, and cannot be assumed to apply to the domestic zinc and lead smelting industries. Over half the domestic zinc smelters, for example, have shut down since 1968 and zinc production has fallen sharply, although recently plans have been announced for two new zinc smelters. In addition, the domestic lead industry is widely viewed as a static industry with little prospect for growth in the near future.

Furthermore, the Arthur D. Little study does not project a 50 percent expansion of the domestic copper smelting industry in the immediate future. By 1980, the study estimates domestic copper production will have increased by 15 percent over 1974 and by 1985, domestic copper production will have increased by 35 percent.

The Agency's growth projections for the domestic copper smelting industry are somewhat higher than those of the Arthur D. Little study and forecast a 19 percent increase in copper production by 1980 over 1974. The commentator's estimate of a 50 percent expansion of the domestic non-ferrous smelting industry in the immediate future, therefore, appears much too high. Where the commentator estimates that the standards of performance will affect the construction of 15 new metallurgical sulfuric acid plants, the Agency estimates the standards will affect the construction of 7 new acid plants (6 in the copper industry, 1 in the zinc industry and none in the lead industry). In addition, the Agency estimates the standards will require the conversion of 6 existing single absorption acid plants to double absorption (5 in the copper industry, 1 in the zinc industry and none in the lead industry).

As noted above, the commentator's calculations also assume that these 15 new metallurgical acid plants do not operate autothermally (i.e., fuel firing is necessary to maintain proper operating temperatures). The commentator's estimate that a double absorption sulfuric acid plant requires 82,000 barrels of fuel oil per year is based on operation of an acid plant designed to operate autothermally at 4½ percent sulfur dioxide, but which operates on gases con-

taining only 3½ percent sulfur dioxide 40 percent of the time.

Using this same basis, the Agency calculates that a sulfuric acid plant should require less than 5,000 barrels of oil per year. A review of these calculations with two acid plant vendors and a private consultant has disclosed no errors. The Administrator must assume, therefore, that the commentator's calculations are in error, or assume an unrealistically low degree of heat recovery in the acid plant to preheat the incoming gases, or are based on a poorly designed or poorly operated sulfuric acid plant which fails to achieve the degree of heat recovery normally expected in a properly designed and operated sulfuric acid plant.

Regardless of these calculations, however, the Administrator feels that with good design, operation and maintenance of the roasters, smelting furnaces, concerters, sulfuric acid plant and the flue gas collection system and ductwork, the concentration of sulfur dioxide in the gases processed by a sulfuric acid plant can be maintained above 3½ to 4 percent sulfur dioxide. This level is typically the autothermal point at which no fuel need be fired to maintain proper operating temperatures in a well designed metallurgical sulfuric acid plant. Except for occasional start-ups, therefore, a well designed and properly operated metallurgical sulfuric acid plant should operate autothermally and not require fuel for maintaining proper operating temperatures. Thus, it remains the Administrator's conclusion that the impact of the standards on increased energy consumption, resulting from increased fuel consumption to operate sulfuric acid plants, is negligible.

(7) *Emission control technology.* As three commentators correctly noted, the proposed standards essentially require the use of one emission control technology—double absorption sulfuric acid plants. These commentators feel, however, that this prevents the use of alternative emission control technologies such as single absorption sulfuric acid plants and elemental sulfur plants, and that these are equally effective and, in the case of elemental sulfur plants, place less stress on the environment.

Although these commentators acknowledge that double absorption sulfuric acid plants operate at a higher efficiency than single absorption acid plants (99.5 percent vs. 97 percent), they feel the availability of double absorption plants is lower than that of single absorption plants (90 percent vs. 92 percent). These commentators also point out that double absorption acid plants require more energy to operate than single absorption plants. When the effect of these factors on overall sulfur dioxide emissions is considered, these commentators feel there is no essential difference between double and single absorption acid plants.

The difference in availability between single and double absorption sulfuric acid plants cited by these commentators was estimated from data gathered solely on single absorption acid plants, and is due essentially to only one item—that of the acid coolers for the sulfuric acid produced in the absorption towers. The data used by these commentators, however, reflects "old technology" in this respect. If the data are adjusted to reflect new acid cooler technology, the availability of single and double absorption acid plants is estimated to be 94 and 93.5 percent, respectively.

Taking into account these differences in efficiency and availability, the installation of a 1000-ton-per-day double absorption acid plant rather than a single absorption acid plant results in an annual reduction in sulfur dioxide emissions of about 4,500 tons. The difference in annual availability between single and double absorption acid plants, however, does not influence short-term emissions. Over short time periods the difference in emissions between single and double absorption acid plants is a reflection only of their difference in operating efficiency. Over a 24-hour period, for example, a 1000-ton-per-day single absorption acid plant will emit about 20 tons of sulfur dioxide compared to about 3.5 tons from a double absorption acid plant. Consequently, the difference in emission control obtained through the use of double absorption rather than single absorption acid plants is significant.

The increased sulfur dioxide emissions released to the atmosphere to provide the greater energy requirements of double absorption over single absorption acid plants is also minimal. For a nominal 1000-ton-per-day sulfuric acid plant, the difference in sulfur dioxide emissions between a single absorption plant and a double absorption plant is about 16.5 tons per day as mentioned above. The sulfur dioxide emissions from the combustion of a 1.0 percent sulfur fuel oil to provide the difference in energy required, however, is of the order of magnitude of only 200 pounds per day.

As mentioned above, these commentators also feel that elemental sulfur plants are as effective as double absorption sulfuric acid plants and place less stress on the environment. Elemental sulfur plants normally achieve emission reduction efficiencies of only about 90 percent, which is significantly lower than the 99+ percent normally achieved in double absorption sulfuric acid plants. Consequently, the Administrator does not consider elemental sulfur plants nearly as effective as double absorption sulfuric acid plants.

Although elemental sulfur presents no potential water pollution problems and can be easily stored, thus remaining a possible future resource, the Administrator does not agree that production of elemental sulfur places less stress on the environment than production of sulfuric acid. At every smelter now producing sulfuric acid, an outlet for this acid has been found, either in copper leaching operations to recover copper from oxide ores, or in the traditional acid markets, such as the production of fertilizer. Thus, sulfuric acid, unlike elemental sulfur, has found use as a current resource and not required storage for use as a possible future resource.

The Administrator believes that this situation will also generally prevail in the future. If sulfuric acid must be neutralized at a specific smelter, however, this can be accomplished with proper precautions without leading to water pollution problems, as discussed in the background information supporting the proposed standards.

A major drawback associated with the production of elemental sulfur, however, is the large amount of fuel required as a reductant in the process. When compared to sulfuric acid production in double absorption sulfuric acid plants, elemental sulfur production requires from 4 to 6 times as much energy. Consequently, the Administrator is not convinced that elemental sulfur production, which releases about 20 times more sulfur dioxide into the atmosphere, yet consumes 4 to 6 times as much energy, could be considered less stressful on the environment than sulfuric acid production.

PRIMARY ZINC SMELTERS

Only one major comment was submitted to the Agency concerning the proposed standards of performance for primary zinc smelters. This comment questioned whether it would be possible in all cases to eliminate 90 percent or more of the sulfur originally present in the zinc concentrates during roasting.

Most primary zinc smelters employ either the electrolytic smelting process or the roast/sinter smelting process, both of which require a roasting operation. The roast/sinter process, however, requires a sintering operation following roasting. Sulfur not removed from the concentrates during roasting is removed during sintering. Since the amount of sulfur removed by sintering is small, the gases discharged from this operation contain a low concentration of sulfur dioxide. As discussed in the preamble to the proposed standards, the cost of controlling these emissions was judged by the Administrator to be unreasonable.

The amount of sulfur dioxide emitted from the sintering machine, however, depends on the sulfur removal achieved in the preceding roaster. To ensure a high degree of sulfur removal during roasting which will minimize sulfur dioxide emissions from the sintering machine, the sulfur dioxide standard applies to any sintering machine which eliminates more than 10 percent of the sulfur originally present in the zinc concentrates. This requires 90 percent or more of the sulfur to be eliminated during roasting, which is consistent with good operation of roasters as presently practiced at the two zinc smelters in the United States which employ the roast/sinter process.

One commentator pointed out that calcium and magnesium which are present as impurities in some zinc concentrates could combine with sulfur during roasting to form calcium and magnesium sulfates. These materials would remain in the calcine (roasted concentrate). If these sulfates were reduced in the sintering operation, this could lead to more than 10 percent of the sulfur originally present in the zinc concentrates being

emitted from the sintering machine. Under these conditions the sintering machine would be required to comply with the sulfur dioxide standard.

Although it is possible that this situation could arise, as acknowledged by the commentator himself it does not seem likely. Only a few zinc concentrates contain enough calcium and magnesium to carry as much as 10 percent of the sulfur in the concentrate over into the sintering operation, even assuming all the calcium and magnesium present combined with sulfur during the roasting operation.

In addition, a number of smelter operators contacted by the Agency indicated that it is quite possible that not all the calcium and magnesium present would combine with sulfur to form sulfates during roasting. It is equally possible, according to these operators, that not all the calcium and magnesium sulfates formed would be reduced in the sintering machine. Thus, even with those few concentrates which do contain a high level of calcium and magnesium, the extent to which calcium and magnesium might contribute to high sulfur emissions from the sintering operation is questionable.

Furthermore, these smelter operators indicated that at most zinc smelters a number of different zinc concentrates are normally blended to provide a homogeneous charge to the roasting operation. As pointed out by these operators, this effectively permits a smelter operator to reduce the amount of calcium and magnesium present in the charge by blending off the high levels of calcium and magnesium present in one zinc concentrate against the low levels present in another concentrate.

The Agency also discussed this potential problem with a number of mill operators. These operators indicated that additional milling could be employed to reduce calcium and magnesium levels in zinc concentrates. Although additional milling would entail some additional cost and probably result in a somewhat higher loss of zinc to the tailings, calcium and magnesium levels could be reduced well below the point where formation of calcium and magnesium sulfate during roasting would be of no concern.

While one may speculate that calcium and magnesium might lead to the formation of sulfates during roasting, which might in turn be reduced during sintering, the extent to which this would occur is unknown. Consequently, whether this would prevent a primary zinc smelter employing the roast/sinter process from limiting emissions from sintering to no more than 10 percent of the sulfur originally present in the zinc concentrates is questionable. The fact remains, however, that at the two primary zinc smelters currently operating in the United States which employ the roast/sinter process this has not been a problem. Furthermore, it appears that if calcium and magnesium were to present a problem in the future, a number of appropriate measures, such as additional blending of zinc concentrates or additional milling of those concentrates containing high calcium and magnesium levels, could be employed to deal with the situation. As a result, the standards of performance promulgated herein for primary zinc smelters require a sintering machine emitting more than 10 percent of the sulfur originally present in the zinc concentrates to comply with the sulfur dioxide standard for roasters.

PRIMARY LEAD SMELTERS

No major comments were submitted to the Agency concerning the proposed standards of performance for primary lead smelters. The proposed standards, therefore, are promulgated herein with only minor changes.

VISIBLE EMISSIONS

The opacity levels contained in the proposed standards to limit visible emissions have been reexamined to ensure they are consistent with the provisions promulgated by the Agency since proposal of these standards for determining compliance with visible emissions standards (39 FR 39872). These provisions specify, in part, that the opacity of visible emissions will be determined as a 6-minute average value of 24 consecutive readings taken at 15 second intervals. Reevaluation of the visible emission data on which the opacity levels in the proposed standards were based, in terms of 6-minute averages, indicates no need to change the opacity levels initially proposed. Consequently, the standards of performance are promulgated with the same opacity limits on visible emissions.

TEST METHODS

The proposed standards of performance for primary copper smelters, primary zinc smelters and primary lead smelters were accompanied by amendments to Appendix A—Reference Methods of 40 CFR Part 60. The purpose of these amendments was to add to Appendix A a new test method (Method 12) for use in determining compliance with the proposed standards of performance. Method 12 contained performance specifications for the sulfur dioxide monitors required in the proposed standards and prescribed the procedures to follow in demonstrating that a monitor met these performance specifications.

Since proposal of these standards of performance, the Administrator has proposed amendments to Subpart A—General Provisions of 40 CFR Part 60, establishing a consistent set of definitions and monitoring requirements applicable to all standards of performance. These amendments include a new appendix (Appendix B—Performance Specifications) which contains performance specifications and procedures to follow when demonstrating that a continuous monitor meets these performance specifications. A continuous monitoring system for measuring sulfur dioxide concentrations that is evaluated in accordance with the procedures contained in this appendix will be satisfactory for determining compliance with the standards promulgated herein for sulfur dioxide.

The proposed Method 12 is therefore withdrawn to prevent an unnecessary repetition of information in 40 CFR Part 60.

EFFECTIVE DATE

In accordance with section 111 of the Act, these regulations prescribing standards of performance for primary copper smelters, primary zinc smelters and primary lead smelters are effective on (date of publication) 1975 and apply to all affected facilities at these sources on which construction or modification commenced after October 16, 1974.

Dated: December 30, 1975.

JOHN QUARLES,
Acting Administrator.

Part 60 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

1. The table of sections is amended by adding subparts P, Q and R as follows:

* * * * *

Subpart P—Standards of Performance for Primary Copper Smelters

Subpart Q—Standards of Performance for Primary Zinc Smelters

Subpart R—Standards of Performance for Primary Lead Smelters

AUTHORITY: (Secs. 111, 114 and 301 of the Clean Air Act as amended (42 U.S.C. 1857c-6, 1857c-9, 1857g).)

* * * * *

2. Part 60 is amended by adding subparts P, Q and R as follows:

Subpart P—Standards of Performance for Primary Copper Smelters

§ 60.160 Applicability and designation of affected facility.

The provisions of this subpart are applicable to the following affected facilities in primary copper smelters: Dryer, roaster, smelting furnace, and copper converter.

§ 60.161 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) "Primary copper smelter" means any installation or any intermediate process engaged in the production of copper from copper sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) "Dryer" means any facility in which a copper sulfide ore concentrate charge is heated in the presence of air to eliminate a portion of the moisture from the charge, provided less than 5 percent of the sulfur contained in the charge is eliminated in the facility.

(c) "Roaster" means any facility in which a copper sulfide ore concentrate charge is heated in the presence of air to eliminate a significant portion (5 percent or more) of the sulfur contained in the charge.

(d) "Calcine" means the solid materials produced by a roaster.

(e) "Smelting" means processing techniques for the melting of a copper sulfide ore concentrate or calcine charge leading to the formation of separate layers of molten slag, molten copper, and/or copper matte.

(f) "Smelting furnace" means any vessel in which the smelting of copper sulfide ore concentrates or calcines is performed and in which the heat necessary for smelting is provided by an electric current, rapid oxidation of a portion of the sulfur contained in the concentrate as it passes through an oxidizing atmosphere, or the combustion of a fossil fuel.

(g) "Copper converter" means any vessel to which copper matte is charged and oxidized to copper.

(h) "Sulfuric acid plant" means any facility producing sulfuric acid by the contact process.

(i) "Fossil fuel" means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

(j) "Reverberatory smelting furnace" means any vessel in which the smelting of copper sulfide ore concentrates or calcines is performed and in which the heat necessary for smelting is provided primarily by combustion of a fossil fuel.

(k) "Total smelter charge" means the weight (dry basis) of all copper sulfides ore concentrates processed at a primary copper smelter, plus the weight of all other solid materials introduced into the roasters and smelting furnaces at a primary copper smelter, except calcine, over a one-month period.

(l) "High level of volatile impurities" means a total smelter charge containing more than 0.2 weight percent arsenic, 0.1 weight percent antimony, 4.5 weight percent lead or 5.5 weight percent zinc, on a dry basis.

§ 60.162 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any dryer any gases which contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

§ 60.163 Standard for sulfur dioxide.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any roaster, smelting furnace, or copper converter any gases which contain sulfur dioxide in excess of 0.065 percent by volume, except as provided in paragraphs (b) and (c) of this section.

(b) Reverberatory smelting furnaces shall be exempted from paragraph (a) of this section during periods when the total smelter charge at the primary copper smelter contains a high level of volatile impurities.

(c) A change in the fuel combusted in a reverberatory furnace shall not be considered a modification under this part.

§ 60.164 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any dryer any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid to comply with the standard set forth in § 60.163, any visible emissions which exhibit greater than 20 percent opacity.

§ 60.165 Monitoring of operations.

(a) The owner or operator of any primary copper smelter subject to § 60.163 (b) shall keep a monthly record of the total smelter charge and the weight percent (dry basis) of arsenic, antimony, lead and zinc contained in this charge. The analytical methods and procedures employed to determine the weight of the monthly smelter charge and the weight percent of arsenic, antimony, lead and zinc shall be approved by the Administrator and shall be accurate to within plus or minus ten percent.

(b) The owner or operator of any primary copper smelter subject to the provisions of this subpart shall install and operate:

(1) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any dryer. The span of this system shall be set at 80 to 100 percent opacity.

(2) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any roaster, smelting furnace or copper converter subject to § 60.163 (a). The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(i) The continuous monitoring system performance evaluation required under § 60.13(c) shall be completed prior to the initial performance test required under § 60.8. During the performance evaluation, the span of the continuous monitoring system may be set at a sulfur dioxide concentration of 0.15 percent by volume if necessary to maintain the system output between 20 percent and 90 percent of full scale. Upon completion of the continuous monitoring system performance evaluation, the span of the continuous monitoring system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(ii) For the purpose of the continuous monitoring system performance evaluation required under § 60.13(c) the reference method referred to under the Field Test for Accuracy (Relative) in Performance Specification 2 of Appendix B to this part shall be Reference Method 6. For the performance evaluation, each concentration measurement shall be of one hour duration. The pollutant gas used to prepare the calibration gas mixtures required under paragraph 2.1, Performance Specification 2 of Appendix B, and for calibration checks under § 60.13 (d), shall be sulfur dioxide.

(c) Six-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the four consecutive 6-hour periods of each operating day. Each six-hour average shall be determined as the arithmetic mean of the appropriate six contiguous one-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under paragraph (b) of this section.

(d) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) Opacity. Any six-minute period during which the average opacity, as measured by the continuous monitoring system installed under paragraph (b) of this section, exceeds the standard under § 60.164(a).

(2) Sulfur dioxide. Any six-hour period, as described in paragraph (c) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (b) of this section, exceeds the standard under § 60.163.

§ 60.166 Test methods and procedures.

(a) The reference methods in Appendix A to this part, except as provided for in § 60.8(b), shall be used to determine compliance with the standards prescribed in §§ 60.162, 60.163 and 60.164 as follows:

(1) Method 5 for the concentration of particulate matter and the associated moisture content.

(2) Sulfur dioxide concentrations shall be determined using the continuous monitoring system installed in accordance with § 60.165(b). One 6-hour average period shall constitute one run. The monitoring system drift during any run shall not exceed 2 percent of span.

(b) For Method 5, Method 1 shall be used for selecting the sampling site and the number of traverse points, Method 2 for determining velocity and volumetric flow rate and Method 3 for determining the gas analysis. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller times or volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

Subpart Q—Standards of Performance for Primary Zinc Smelters

§ 60.170 Applicability and designation of affected facility.

The provisions of this subpart are applicable to the following affected facilities in primary zinc smelters: roaster and sintering machine.

§ 60.171 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) "Primary zinc smelter" means any installation engaged in the production, or any intermediate process in the production, of zinc or zinc oxide from zinc sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) "Roaster" means any facility in which a zinc sulfide ore concentrate charge is heated in the presence of air to eliminate a significant portion (more than 10 percent) of the sulfur contained in the charge.

(c) "Sintering machine" means any furnace in which calcines are heated in the presence of air to agglomerate the calcines into a hard porous mass called "sinter."

(d) "Sulfuric acid plant" means any facility producing sulfuric acid by the contact process.

§ 60.172 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any sintering machine any gases which contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

§ 60.173 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any roaster any gases which contain sulfur dioxide in excess of 0.065 percent by volume.

(b) Any sintering machine which eliminates more than 10 percent of the sulfur initially contained in the zinc sulfide ore concentrates will be considered as a roaster under paragraph (a) of this section.

§ 60.174 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any sintering machine any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in § 60.173, any visible emissions which exhibit greater than 20 percent opacity.

§ 60.175 Monitoring of operations.

(a) The owner or operator of any primary zinc smelter subject to the provisions of this subpart shall install and operate:

(1) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any sintering machine. The span of this system shall be set at 80 to 100 percent opacity.

(2) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any roaster subject to § 60.173. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(i) The continuous monitoring system performance evaluation required under § 60.13(c) shall be completed prior to the initial performance test required under § 60.8. During the performance evaluation, the span of the continuous monitoring system may be set at a sulfur dioxide concentration of 0.15 percent by volume if necessary to maintain the system output between 20 percent and 90 percent of full scale. Upon completion of the continuous monitoring system performance evaluation, the span of the continuous monitoring system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(ii) For the purpose of the continuous monitoring system performance evaluation required under § 60.13(c), the reference method referred to under the Field Test for Accuracy (Relative) in Performance Specification 2 of Appendix B to this part shall be Reference Method 6. For the performance evaluation, each concentration measurement shall be of one hour duration. The pollutant gas used to prepare the calibration gas mixtures required under paragraph 2.1, Performance Specification 2 of Appendix B, and for calibration checks under § 60.13 (d), shall be sulfur dioxide.

(b) Two-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the twelve consecutive 2-hour periods of each operating day. Each two-hour average shall be determined as the arithmetic mean of the appropriate two contiguous one-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under paragraph (a) of this section.

(c) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) Opacity. Any six-minute period during which the average opacity, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.174(a).

(2) Sulfur dioxide. Any two-hour period, as described in paragraph (b) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.173.

§ 60.176 Test methods and procedures.

(a) The reference methods in Appendix A to this part, except as provided for in § 60.8(b), shall be used to determine compliance with the standards prescribed in §§ 60.172, 60.173 and 60.174 as follows:

(1) Method 5 for the concentration of particulate matter and the associated moisture content.

(2) Sulfur dioxide concentrations shall be determined using the continuous monitoring system installed in accordance with § 60.175(a). One 2-hour average period shall constitute one run.

(b) For Method 5, Method 1 shall be used for selecting the sampling site and the number of traverse points, Method 2 for determining velocity and volumetric flow rate and Method 3 for determining the gas analysis. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller times or volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

Subpart R—Standards of Performance for Primary Lead Smelters

§ 60.180 Applicability and designation of affected facility.

The provisions of this subpart are applicable to the following affected facilities in primary lead smelters: sintering machine, sintering machine discharge end, blast furnace, dross reverberatory furnace, electric smelting furnace, and converter.

§ 60.181 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) "Primary lead smelter" means any installation or any intermediate process engaged in the production of lead from lead sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) "Sintering machine" means any furnace in which a lead sulfide ore concentrate charge is heated in the presence of air to eliminate sulfur contained in the charge and to agglomerate the charge into a hard porous mass called "sinter."

(c) "Sinter bed" means the lead sulfide ore concentrate charge within a sintering machine.

(d) "Sintering machine discharge end" means any apparatus which receives sinter as it is discharged from the conveying grate of a sintering machine.

(e) "Blast furnace" means any reduction furnace to which sinter is charged and which forms separate layers of molten slag and lead bullion.

(f) "Dross reverberatory furnace" means any furnace used for the removal or refining of impurities from lead bullion.

(g) "Electric smelting furnace" means any furnace in which the heat necessary for smelting of the lead sulfide ore con-

centrate charge is generated by passing an electric current through a portion of the molten mass in the furnace.

(h) "Converter" means any vessel to which lead concentrate or bullion is charged and refined.

(i) "Sulfuric acid plant" means any facility producing sulfuric acid by the contact process.

§ 60.182 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end any gases which contain particulate matter in excess of 59 mg/dscm (0.022 gr/dscf).

§ 60.183 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any sintering machine, electric smelting furnace, or converter gases which contain sulfur dioxide in excess of 0.065 percent by volume.

§ 60.184 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in § 60.183, any visible emissions which exhibit greater than 20 percent opacity.

§ 60.185 Monitoring of operations.

(a) The owner or operator of any primary lead smelter subject to the provisions of this subpart shall install and operate:

(1) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end. The span of this system shall be set at 80 to 100 percent opacity.

(2) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any sintering machine, electric furnace or converter subject to § 60.183. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(i) The continuous monitoring system performance evaluation required under § 60.13(c) shall be completed prior to the initial performance test required under § 60.8. During the performance evaluation, the span of the continuous monitoring system may be set at a sulfur dioxide concentration of 0.15 percent by volume if necessary to maintain the system output between 20 percent and 90 percent of full scale. Upon completion of the continuous monitoring system performance evaluation, the span of the continuous monitoring system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(ii) For the purpose of the continuous monitoring system performance evaluation required under § 60.13(c), the reference method referred to under the Field Test for Accuracy (Relative) in Performance Specification 2 of Appendix B to this part shall be Reference Method 6. For the performance evaluation, each concentration measurement shall be of one hour duration. The pollutant gases used to prepare the calibration gas mixtures required under paragraph 2.1, Performance Specification 2 of Appendix B, and for calibration checks under § 60.13 (d), shall be sulfur dioxide.

(b) Two-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the twelve consecutive two-hour periods of each operating day. Each two-hour average shall be determined as the arithmetic mean of the appropriate two contiguous one-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under paragraph (a) of this section.

(c) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) Opacity. Any six-minute period during which the average opacity, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.184(a).

(2) Sulfur dioxide. Any two-hour period, as described in paragraph (b) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.183.

§ 60.186 Test methods and procedures.

(a) The reference methods in Appendix A to this part, except as provided for in § 60.8(b), shall be used to determine compliance with the standards prescribed in §§ 60.182, 60.183 and 60.184 as follows:

(1) Method 5 for the concentration of particulate matter and the associated moisture content.

(2) Sulfur dioxide concentrations shall be determined using the continuous monitoring system installed in accordance with § 60.185(a). One 2-hour average period shall constitute one run.

(b) For Method 5, Method 1 shall be used for selecting the sampling site and the number of traverse points, Method 2 for determining velocity and volumetric flow rate and Method 3 for determining the gas analysis. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller times or volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

[FR Doc.76-733 Filed 1-14-76;8:45 am]

[6560-01]

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

Subchapter C—Air Programs

[FRL 904-3]

PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS

Prevention of Significant Air Quality Deterioration

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The Clean Air Act Amendments of 1977 (Pub. L. 95-95) include comprehensive new requirements for the prevention of significant air quality deterioration (PSD). EPA is today publishing final guidance to assist States in preparing State implementation plan (SIP) revisions meeting the new requirements. Each State is to submit such a revision to EPA for approval within nine months of today.

DATES: State implementation plan revisions due within nine months after this publication date (March 19, 1979).

FOR FURTHER INFORMATION CONTACT:

Darryl Tyler, Chief, Standards Implementation Branch (MD-15), Office of Air Quality Planning and Standards, Research Triangle Part, N.C 27711, 919-541-5425.

SUPPLEMENTARY INFORMATION:

PRE-1977 AMENDMENTS

On December 5, 1974, EPA published regulations under the 1970 version of the Clean Air Act (Pub. L. 91-604) for the prevention of significant air quality deterioration (PSD). These regulations, codified at 40 CFR 52.21, established a program for protecting areas with air quality cleaner than the national ambient air quality standards (NAAQS).

Under EPA's regulatory program, clean areas of the Nation could be designated under any of three "Classes." Specified numerical "increments" of air pollution were permitted under each class up to a level considered to be "significant" for that area. Class I increments permitted only minor air quality deterioration; class II increments, moderate deterioration; class III increments, deterioration up to the secondary NAAQS.

EPA initially designated all clean areas of the Nation as class II. States, Indian Governing Bodies, and officials having control over Federal lands (Federal land managers) were given authority to redesignate their lands under specified procedures. The area classification system was administered and enforced through a preconstruction permit program for nineteen specified types of stationary air pollution sources. This preconstruction review in addition to limiting future air quality deterioration required that any source subject to the requirements would apply best available control technology (BACT).

1977 AMENDMENTS

On August 7, 1977, the Clean Air Act Amendments of 1977 became law. The 1977 amendments changed the 1970 act and EPA's regulations in many respects, particularly with regard to PSD. (See Clean Air Act sections 160-169, 42 U.S.C. 7470-79 (Clean Air Act Amendments of 1977, Pub. L. 95-95, 127(a), 91 Stat. 731), as amended, Pub. L. 95-190, section 14(a) (40)-(54), 91 Stat. 1401-02 (November 16, 1977) (technical and conforming amendments).) In addition to mandating certain immediately effective changes to EPA's PSD regulations, the new Clean Air Act, in sections 160-169, contains comprehensive new PSD requirements. These new requirements are to be incorporated by States into their implementation plans (under section 110 of the act). By virtue of section 406(d) of the amendments, such State implementation plan revisions are due nine months after EPA issues these regulations published today which provide the States with guidance on submitting approvable plan provisions. In the interim, implementation of the PSD program under 40 CFR 52.21 will continue but as amended today.

In a rulemaking action appearing elsewhere in today's FEDERAL REGISTER, EPA amends its own PSD regulations (40 CFR 52.21) to incorporate all of the new requirements of sections 160-169. The two rulemaking actions promulgated today are essentially identical, with the difference in reviewing agency, EPA as opposed to a State, being the major distinction. The issues discussed below as supplementary information to this rulemaking focus on concerns inherent to State PSD implementation. Other topics of concern to States choosing to develop their own PSD programs are discussed in the rulemaking affecting EPA's current implementation of the PSD program (40 CFR 52.21). Thus, the two rules should be read together.

PROTECTION OF INCREMENTS

New section 163(b) of the act sets forth immediately effective ambient air increments for particulate matter and sulfur dioxide in class I, class II, and class III areas. EPA specifically solicited public comments as to whether the PSD "increments" were to be protected only through the preconstruction review process of section 165 of the act. Section 161 of the act requires that each implementation plan "contain emission limits and such other measures as may be necessary * * * to prevent significant deterioration * * *." Section 163 requires plans to "contain measures assuring protection of ambient increments and ceilings."

State agencies and major industries that addressed the question uniformly felt that preconstruction review alone was the mechanism considered by Congress to protect increment consumption. Environmental groups felt that the increments should be treated in basically the same regulatory manner as the ambient air quality standards established under Section 109. A careful review of the legislative history indicates that the latter approach is the approach intended by Congress. The legislative history is particularly clear in the conference report on the bill that was finally adopted by Congress and signed into law. (H.R. Rep. No. 95-564, at 149 (1977).) The conference report describes the approach taken in the House bill regarding increment protection: "If increments are exceeded, the State must revise the State implementation plan to insure that the increment is not exceeded. Sources receiving new emission limitations would be eligible for compliance date extensions under the compliance date extension section of the bill." (Id.) This approach differs considerably from the approach in the Senate bill which was specifically limited to the review of major sources. Since Congress had a clear choice to make and as the language in the final act is that of the House bill, States are required to secure appropriate emissions reductions where the increment has been exceeded.

Any SIP relaxations submitted after today that would affect a PSD area must include a demonstration that the applicable increment will not be exceeded. Increment consumption due to a plan relaxation would be typically determined through modeling the difference between the allowable emissions resulting from the new relaxed SIP limit and the emissions of the applicable sources which would be included in the baseline. SIP relaxations received by EPA after August 7, 1977, but before today's FEDERAL REGISTER will consume increment. However, EPA believes that such revisions require special consideration due to the uncertainty of how the new Act would apply to such SIP relaxations. To review these proposed revisions as to the degree of anticipated increment consumption without advance notice would have caused considerable delay and economic disruption. Therefore,

the Administrator feels that these SIP relaxations need not be individually assessed to determine the precise amount of consumed increment before such relaxations may be approved. The periodic assessment requirement to verify that the applicable increments have not been exceeded is thought to be sufficient protection.

The State must include a program to assess periodically whether emissions from exempted or unreviewed sources are endangering an applicable increment. Such periodic reviews must be subject to the opportunity for public hearing. If a periodic review or the ambient impact review of a major source shows an area to be in violation of an increment, then the plan must be revised within 60 days or such time as determined by the Administrator. The SIP revision should be designed to roll back emissions to a level such that the increment is no longer exceeded. This may induce the use of economic incentives such as emissions charges or the development of offset markets. SIP revisions are more thoroughly discussed in the supplementary information to EPA's PSD regulation published elsewhere in today's FEDERAL REGISTER.

The comments raised a number of other issues related to consumption of increments. The Administrator wishes to clarify first that States can expand the available PSD increment(s) by requiring emission reductions from existing sources. Similarly, the procurement of acceptable emission offsets (i.e., additional control of existing sources) may be used by a source, if a State so permits, in order to allow its construction where the increment would not otherwise allow approval. For further discussion of increment consumption, see the preamble to EPA's PSD regulations published elsewhere in today's FEDERAL REGISTER.

State implementation plan revisions to implement the new PSD requirements are required to specify the measures both to protect the increments and allocate their use. States under today's 40 CFR part 51 regulations are encouraged to examine alternative approaches to the allocation of available increments in order to provide for their individual growth objectives and planning concerns. To support this effort, the Agency is initiating studies to assess the merits and feasibility of various allocation programs. The Agency will evaluate approaches in which economic incentives serve as a supplement to, or a replacement for, an administrative permitting procedure and variations on first-come, first-served permitting. The economic incentive based approaches to be considered include marketable permits, emissions fees, and emissions density zoning.

A marketable permit program would allow, among other things, a permitted source to sell portions of its permit to other sources. An ordinary permit specifies certain conditions on the maximum emissions from the source but provides no incentive to reduce emissions below the level specified in the permit. A marketable permit allows the source to sell a portion of its permit proportional to the degree to which it reduces emissions below the level specified in the original permit through the application of improved control technology. Thus, a source would have an incentive to reduce emissions since it could sell the emission reduction to another source. A source would purchase this offsetting reduction if it were cheaper than its own cost of reduction. Thus, a marketable permit program could lead to the same emission reduction as a standard permit program but at a lower total cost. Sources with higher marginal costs of compliance would control less and sources with lower marginal costs would control more.

Under another approach, emission fees would be charged to a source according to the quantity of pollutants it emits. These would serve as an incentive to minimize pollution since reducing pollution will lower costs to the source. Emissions fees might be used as a supplement to or replacement for ordinary permits.

Emission density zoning classifies each land area according to the quantity of pollutants that could be emitted into the air over that land. This might be based on some allowable ambient pollutant concentration. Thus, each acre of land translates to a fixed quantity of emissions allowed. Sources would then purchase the "air rights" to enough land to cover their emissions. If these rights are expensive, sources will control more than if these air rights were cheap. In general, these air rights will be more expensive in areas where there is high demand from many sources than in areas where there are fewer sources of comparable size. More expensive air rights would lead to higher levels of control, since more costly equipment would be justified in order to buy the remaining air rights.

EPA in the past has implemented the PSD program on a first-come, first-served basis. However, it does not appear that this approach alone may be adequate to achieve the purposes of the act on a long-term basis. While EPA is administering the PSD permit program, the Administrator will solicit and give careful consideration during the permit review process to the views of State and local officials regarding the impact of proposed permit decisions on an area's potential for economic development. For further discussion, see the preamble to EPA's PSD regulations published elsewhere in today's FEDERAL REGISTER.

PERMIT REVIEW PROCESS

Virtually every comment spoke to the issue of subjecting sources to PSD review on the basis of their uncontrolled emissions as EPA proposed. Many State and local agencies expressed a deep concern that to make sources subject to the full PSD requirements on this basis would result in an unmanageable number of detailed and resource intensive reviews. The rulemaking allows States generally to exempt from air quality reviews those sources with minimal emissions. Only those sources which would have allowable emissions equal to or greater than 50 tons per year, 1,000 pounds per day, or 100 pounds per hour (50/1,000/100), or would impact a class I area or an area where the increment is known to be violated, must receive an ambient review. In addition only these sources must undergo case-by-case review for BACT and then only as to those pollutants regulated under the act for which the source would be major.

The rulemaking also allows States to exempt sources with allowable emissions of less than 50 tons per year from a case-by-case BACT review where the State feels such an exemption is appropriate. It should be noted that this approach is based on analysis which indicates that, on a national basis, such sources are a very small part of emissions growth. In some States such sources may be a more significant portion of the emissions inventory and thus BACT review of smaller sources may be appropriate. States should examine this issue carefully in preparing their implementation plan. EPA will also consider this issue in evaluating plan revisions submitted by States.

State implementation plans must include procedures for expeditiously informing a PSD permit applicant of the completeness of the application. The permitting authority must specify a time period within which the completeness of a permit application would be determined. For example, EPA specifies 30 days when implementing the PSD program under 40 CFR 52.21.

BACT

The November 3, 1977, proposal solicited comment on the use of a de minimis level of 100 tons per year potential emissions for each pollutant for triggering the BACT requirement. The Agency stated the issue:

> For example, if a source is subject to PSD review either because it is one of the named sources or because it has potential emissions of 250 tons per year of a given pollutant, BACT would be required only for those pollutants whose potential emissions exceed 100 tons per year.

Comments received indicated that if a source is subject to PSD on the basis

of the 250 tons per year criterion, then a BACT de minimis level should be the consistent for such sources (i.e., BACT should be required only for those pollutants for which the potential emissions exceed 250 tons). The Administrator agrees with this argument and appropriate changes are made in the regulations set forth below.

MONITORING AND MODELING

Extensive public comment was received on the proposed requirements for monitoring and modeling. These issues are extensively discussed in the Part 52 rulemaking published elsewhere in today's FEDERAL REGISTER. As noted, EPA intends that monitoring should generally focus on obtaining data necessary for required review against NAAQS. Although the increment consumption must of necessity be tracked through the use of modeling, EPA does not intend that there be no "real world" checks on the accuracy of modeling. If a source or other party believes that the recommended models have either overpredicted or underpredicted the air quality impact of a source, the State may accept the submission of data which will more precisely define the impact of the source.

REDESIGNATION

In response to comments, a number of changes have been made regarding redesignations of areas. The analysis and public hearing requirement have been modified to conform to the language in the 1977 Amendments. The requirement for public availability of information relating to sources which may be permitted only if an area is redesignated has been limited to sources for which an ambient impact analysis must be done. Finally, this rulemaking removes the provision requiring that final action on a permit be delayed if the source would impact upon an area where a proposed redesignation to a more stringent class was pending. The original intent of this provision was to protect potential class I areas during startup of the new PSD program. All areas were then class II. Now Congress has specifically designated Federal class I areas and States have had considerable opportunity to designate any others. States may establish such a requirement at their own discretion.

Several other issues are discussed in the "Supplementary Information" to the part 52 PSD rulemaking also published today. That discussion should be considered in conjunction with this one.

FINAL ACTION

The following regulatory amendments are nationally applicable, and is action is based upon determinations of nationwide scope and effect. Therefore, under section 307(b)(1) of the Act, judicial review may be sought only in the U.S. Court of Appeals for the District of Columbia. Petitions for judicial review must be filed on or before August 18, 1978.

(Secs. 101(b)(1), 110, 114, 123, 125(c), 160–169, 301(a) of the Clean Air Act, as amended (42 U.S.C. 7401(b)(1), 7410, 7414, 7423, 7425(c), 7470-7479, 7601(a)).)

Dated: June 9, 1978.

DOUGLAS M. COSTLE,
Administrator.

Title 40, Part 51 of the Code of Federal Regulations is amended by adding § 51.24 as follows:

§ 51.24 Prevention of significant deterioration of air quality.

(a) (1) *Plan requirements.* In accordance with the policy of section 101(b)(1) of the act and the purposes of section 160 of the Act, each applicable State implementation plan shall contain emission limitations and such other measures as may be necessary to prevent significant deterioration of air quality.

(2) *Plan revisions.* If a State implementation plan revision would result in increased air quality deterioration over any baseline concentration, the plan revision shall include a demonstration that it will not cause or contribute to a violation of the applicable increment.

(3) *Required plan revision.* If the State or the Administrator determines that a plan is substantially inadequate to prevent significant deterioration or that an applicable increment is being violated, the plan shall be revised to correct the inadequacy or the violation. The plan shall be revised within 60 days of such a finding by a State or within 60 days following notification by the Administrator, or by such later date as prescribed by the Administrator after consultation with the State.

(4) *Plan assessment.* The State shall review the adequacy of a plan on a periodic basis and within 60 days of such time as information becomes available that an applicable increment is being violated.

(5) *Public participation.* Any State action taken under this paragraph shall be subject to the opportunity for public hearing in accordance with procedures equivalent to those established in § 51.4.

(b) *Definitions.* For the purposes of this section:

(1) "Major stationary source" means:

(i) Any of the following stationary sources of air pollutants which emit, or have the potential to emit, 100 tons per year or more of any air pollutant regulated under the Clean Air Act (the "Act"): Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants; and

(ii) Notwithstanding the source sizes specified in paragraph (b)(1)(i) of this section, any source which emits, or has the potential to emit, 250 tons per year or more of any air pollutant regulated under the Act.

(2) "Major modification" means any physical change in, change in the method of operation of, or addition to a stationary source which increases the potential emission rate of any air pollutant regulated under the Act (including any not previously emitted and taking into account all accumulated increases in potential emissions occurring at the source since regulations were approved under this section, or since the time of the last construction approval issued for the source pursuant to such regulations approved under this section, whichever time is more recent, regardless of any emission reductions achieved elsewhere in the source) by either 100 tons per year or more for any source category identified in paragraph (b)(1)(i) of this section, or by 250 tons per year or more for any stationary source.

(i) A physical change shall not include routine maintenance, repair and replacement.

(ii) A change in the method of operation, unless previously limited by enforceable permit conditions, shall not include:

(*a*) An increase in the production rate, if such increase does not exceed the operating design capacity of the source;

(*b*) An increase in the hours of operation;

(*c*) Use of an alternative fuel or raw material by reason of an order in effect under sections 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation), or by reason of a natural gas curtailment plan in effect pursuant to the Federal Power Act;

(d) Use of an alternative fuel or raw material, if prior to January 6, 1975, the source was capable of accommodating such fuel or material; or

(e) Use of an alternative fuel by reason of an order or rule under section 125 of the Act.

(f) Change in ownership of the source.

(3) "Potential to emit" means the capability at maximum capacity to emit a pollutant in the absence of air pollution control equipment. "Air pollution control equipment" includes control equipment which is not, aside from air pollution control laws and regulations, vital to production of the normal product of the source or to its normal operation. Annual potential shall be based on the maximum annual rated capacity of the source, unless the source is subject to enforceable permit conditions which limit the annual hours of operation. Enforceable permit conditions on the type or amount of materials combusted or processed may be used in determining the potential emission rate of a source.

(4) "Source" means any structure, building, facility, equipment, installation or operation (or combination thereof) which is located on one or more contiguous or adjacent properties and which is owned or operated by the same person (or by persons under common control).

(5) "Facility" means an identifiable piece of process equipment. A stationary source is composed of one or more pollutant-emitting facilities.

(6) "Fugitive dust" means particulate matter composed of soil which is uncontaminated by pollutants resulting from industrial activity. Fugitive dust may include emissions from haul roads, wind erosion of exposed soil surfaces and soil storage piles, and other activities in which soil is either removed, stored, transported, or redistributed.

(7) "Construction" means fabrication, erection, installation, or modification of a source.

(8) "Commence" as applied to construction of a major stationary source or major modification means that the owner or operator has all necessary preconstruction approvals and either has:

(i) Begun, or caused to begin, a continuous program of physical on-site construction of the source to be completed within a reasonable time; or

(ii) Entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction of the source to be completed within a reasonable time.

(9) "Necessary preconstruction approvals or permits" means those permits or approvals required under Federal air quality control laws and regulations and those air quality control laws and regulations which are part of the applicable State implementation plan.

(10) "Best available control technology" means an emission limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the act which would be emitted from any proposed major stationary source or major modification which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of the best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Part 60 and Part 61. If the reviewing agency determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of an emission standard infeasible, it may instead prescribe a design, equipment, work practice or operational standard, or combination thereof, to require the application of best available control technology. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

(11) "Baseline concentration" means that ambient concentration level reflecting actual air quality as of August 7, 1977, minus any contribution from major stationary sources and major modifications on which construction commenced on or after January 6, 1975. The baseline concentration shall include contributions from:

(i) The actual emissions of other sources in existence on August 7, 1977, except that contributions from facilities within such existing sources for which a plan revision proposing less restrictive requirements was submitted on or before August 7, 1977, and was pending action by the Administrator on that date shall be determined from the allowable emissions of such facilities under the plan as revised; and

(ii) The allowable emissions of major stationary sources and major modifications which commenced construction before January 6, 1975, but were not in operation by August 7, 1977.

(12) "Federal Land Manager" means, with respect to any lands in the United States, the Secretary of the department with authority over such lands.

(13) "High terrain" means any area having an elevation of 900 feet or more above the base of the stack of a facility.

(14) "Low terrain" means any area other than high terrain.

(15) "Indian Reservation" means any federally-recognized reservation established by treaty, agreement, Executive order, or act of Congress.

(16) "Indian Governing Body" means the governing body of any tribe, band, or group of Indians subject to the jurisdiction of the United States and recognized by the United States as possessing power of self-government.

(17) "Allowable emissions" means the emission rate calculated using the maximum rated capacity of the source (unless the source is subject to enforceable permit conditions which limit the operating rate or hours of operation, or both) and the most stringent of the following:

(i) Applicable standards as set forth in 40 CFR Part 60 and Part 61,

(ii) The applicable State implementation plan emission limitation, or

(iii) The emission rate specified as a permit condition.

(18) "Reconstruction" will be presumed to have taken place where the fixed capital cost of the new components exceed 50 percent of the fixed capital cost of a comparable entirely new facility or source. However, any final decision as to whether reconstruction has occurred shall be made in accordance with the provisions of 40 CFR 60.15(f)(1)-(3). A reconstructed source will be treated as a new source for purposes of this section, except that use of an alternative fuel or raw material by reason of an order in effect under Sections 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation), by reason of a natural gas curtailment plan in effect pursuant to the Federal Power Act, or by reason of an order or rule under Section 125 of the Act, shall not be considered reconstruction. In determining best available control technology for a reconstructed source, the provisions of 40 CFR 60.15(f)(4) shall be taken into account in assessing whether a standard of performance under 40 CFR Part 60 is applicable to such source.

(19) "Fixed capital cost" means the capital needed to provide all the depreciable components.

(c) *Ambient air increments.* The plan shall contain emission limitations and such other measures as may be necessary to assure that in areas designated as Class I, II, or III, increases in pollutant concentration over the baseline concentration shall be limited to the following:

Pollutant	Maximum allowable increase (micrograms per cubic meter)
Class I	
Particulate matter:	
Annual geometric mean	5
24-hr maximum	10
Sulfur dioxide:	
Annual arithmetic mean	2
24-hr maximum	5
3-hr maximum	25
Class II	
Particulate matter:	
Annual geometric mean	19
24-hr maximum	37
Sulfur dioxide:	
Annual arithmetic mean	20
24-hr maximum	91
3-hr maximum	512
Class III	
Particulate matter:	
Annual geometric mean	37
24-hr maximum	75
Sulfur dioxide:	
Annual arithmetic mean	40
24-hr maximum	182
3-hr maximum	700

For any period other than an annual period, the applicable maximum allowable increase may be exceeded during one such period per year at any one location.

(d) *Ambient air ceilings.* The plan shall provide that no concentration of a pollutant shall exceed:

(1) The concentration permitted under the national secondary ambient air quality standard, or

(2) The concentration permitted under the national primary ambient air quality standard, whichever concentration is lowest for the pollutant for a period of exposure.

(e) *Restrictions on area classifications.* The plan shall provide that—

(1) All of the following areas which were in existence on August 7, 1977, shall be Class I areas and may not be redesignated:

(i) International parks,

(ii) National wilderness areas which exceed 5,000 acres in size,

(iii) National memorial parks which exceed 5,000 acres in size, and

(iv) National parks which exceed 6,000 acres in size.

(2) Areas which were redesignated as Class I under regulations promulgated before August 7, 1977, shall remain Class I, but may be redesignated as provided in this section.

(3) Any other area, unless otherwise specified in the legislation creating such an area, is initially designated Class II, but may be redesignated as provided in this section.

(4) The following areas may be redesignated only as Class I or II:

(i) An area which as of August 7, 1977, exceeded 10,000 acres in size and was a national monument, a national primitive area, a national preserve, a national recreational area, a national wild and scenic river, a national wildlife refuge, a national lakeshore or seashore; and

(ii) A national park or national wilderness area established after August 7, 1977, which exceeds 10,000 acres in size.

(f) *Exclusions from increment consumption.* (1) The plan may provide that the following concentrations shall be excluded in determining compliance with a maximum allowable increase:

(i) Concentrations attributable to the increase in emissions from stationary sources which have converted from the use of petroleum products, natural gas, or both by reason of an order in effect under Sections 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) over the emissions from such sources before the effective date of such an order;

(ii) Concentrations attributable to the increase in emissions from sources which have converted from using natural gas by reason of a natural gas curtailment plan in effect pursuant to the Federal Power Act over the emissions from such sources before the effective date of such plan;

(iii) Concentrations of particulate matter attributable to the increase in emissions from construction or other temporary emission-related activities; and

(iv) The increase in concentrations attributable to new sources outside the United States over the concentrations attributable to existing sources which are included in the baseline concentration.

(2) If the plan provides that the concentrations to which paragraph (f)(1) refers shall be excluded, it shall also provide that—

(i) No exclusion of such concentrations shall apply more than five years after the effective date of the order to which paragraph (f)(1)(i) refers or the plan to which paragraph (f)(1)(ii) refers, whichever is applicable.

(ii) If both such order and plan are applicable, no such exclusion shall apply more than five years after the later of such effective dates.

(g) *Redesignation.* (1) The plan shall provide that all areas of the State (except as otherwise provided under paragraph (e) of this section) shall be designated either Class I, Class II, or Class III. Any designation other than Class II shall be subject to the redesignation procedures of this paragraph. Redesignation (except as otherwise precluded by paragraph (e) of this section) may be proposed by the respective States or Indian Governing Bodies, as provided below, subject to approval by the Administrator as a revision to the applicable State implementation plan.

(2) The plan may provide that the State may submit to the Administrator a proposal to redesignate areas of the State Class I or Class II: *Provided,* That:

(i) At least one public hearing has been held in accordance with procedures established in § 51.4.

(ii) Other States, Indian Governing Bodies, and Federal Land Managers whose lands may be affected by the proposed redesignation were notified at least 30 days prior to the public hearing;

(iii) A discussion of the reasons for the proposed redesignation, including a satisfactory description and analysis of the health, environmental, economic, social, and energy effects of the proposed redesignation, was prepared and made available for public inspection at least 30 days prior to the hearing and the notice announcing the hearing contained appropriate notification of the availability of such discussion;

(iv) Prior to the issuance of notice respecting the redesignation of an area that includes any Federal lands, the State has provided written notice to the appropriate Federal Land Manager and afforded adequate opportunity (not in excess of 60 days) to confer with the State respecting the redesignation and to submit written comments and recommendations. In redesignating any area with respect to which any Federal Land Manager had submitted written comments and recommendations, the State shall have published a list of any inconsistency between such redesignation and such comments and recommendations (together with the reasons for making such redesignation against the recommendation of the Federal Land Manager); and

(v) The State has proposed the redesignation after consultation with the elected leadership of local and other substate general purpose governments in the area covered by the proposed redesignation.

(3) The plan may provide that any area other than an area to which paragraph (e) of this section refers may be redesignated as Class III if—

(i) The redesignation would meet the requirements of provisions established in accordance with paragraph (g)(2) of this section;

(ii) The redesignation, except any established by an Indian Governing Body, has been specifically approved by the Governor of the State, after consultation with the appropriate committees of the legislature, if it is in session, or with the leadership of the legislature, if it is not in session (unless State law provides that such redesignation must be specifically approved by State legislation) and if general purpose units of local government representing a majority of the residents of the area to be redesignated enact legislation (including resolutions where appropriate) concurring in the redesignation;

(iii) The redesignation would not cause, or contribute to, a concentration of any air pollutant which would exceed any maximum allowable increase permitted under the classification of any other area or any national ambient air quality standard; and

(iv) Any permit application for any major stationary source or major modification subject to provisions established in accordance with paragraph (l) of this section which could receive a permit only if the area in question were redesignated as Class III, and any material submitted as part of that application, were available, insofar as was practicable, for public inspection prior to any public hearing on redesignation of any area as Class III.

(4) The plan shall provide that lands within the exterior boundaries of Indian Reservations may be redesignated only by the appropriate Indian Governing Body. The appropriate Indian Governing Body may submit to the Administrator a proposal to redesignate areas Class I, Class II, or Class III: *Provided*, That:

(i) The Indian Governing Body has followed procedures equivalent to those required of a State under paragraphs (g)(2), (g)(3)(iii), and (g)(3)(iv) of this section; and

(ii) Such redesignation is proposed after consultation with the State(s) in which the Indian Reservation is located and which border the Indian Reservation.

(5) The Administrator shall disapprove, within 90 days of submission, a proposed redesignation of any area only if he finds, after notice and opportunity for public hearing, that such redesignation does not meet the procedural requirements of this section or is inconsistent with paragraph (e) of this section. If any such disapproval occurs, the classification of the area shall be that which was in effect prior to the redesignation which was disapproved.

(6) If the Administrator disapproves any proposed area designation, the State or Indian Governing Body, as appropriate, may resubmit the proposal after correcting the deficiencies noted by the Administrator.

(h) *Stack heights.* The plan shall provide, as a minimum, that the degree of emission limitation required for control of any air pollutant under the plan shall not be affected in any manner by—

(1) So much of a stack height, in existence before December 31, 1970, as exceeds good engineering practice, or

(2) Any other dispersion technique implemented before then.

(i) *Review of major stationary sources and major modifications—source applicability and general exemptions.* (1) The plan shall provide that no major stationary source or major modification shall be constructed unless, as a minimum, requirements equivalent to those contained in the subparagraphs of paragraphs (j), (l), (n), (p), and (r) of this section, have been met. The plan may provide that such requirements shall apply to a proposed source or modification only with respect to those pollutants for which the proposed construction would be a major stationary source or major modification.

(2) The plan may provide, as a minimum, that requirements equivalent to those contained in the subparagraphs of paragraphs (j), (l), (n), and (p) of this section shall not apply to a major stationary source or major modification with respect to a particular pollutant if the owner or operator demonstrates that—

(i) As to that pollutant, the source or modification is subject to the emission offset ruling (41 FR 55524) as it may be amended or to regulations approved or promulgated pursuant to Section 173 of the Act, and

(ii) The source or modification would impact no area attaining the national ambient air quality standards (either internal or external to areas designated as nonattainment under Section 107 of the Act).

(3) The plan may provide that requirements equivalent to those contained in the subparagraphs of paragraphs (j), (l), (n), (p), and (r) shall not apply to nonprofit health or education institutions.

(4) The plan may provide that a portable facility which has received construction approval under requirements equivalent to those contained in the subparagraphs of paragraphs (j), (l), (n), (p), (q), and (r) may relocate without being subject to such requirements if—

(i) Emissions from the facility would not exceed allowable emissions; and

(ii) Such relocation would impact no Class I area and no area where an applicable increment is known to be violated; and

(iii) Notice is given to the reviewing authority at least 30 days prior to such relocation identifying the proposed new location and the probable duration of operation at such location.

(j) *Control technology review.* The plan shall provide that—

(1) A major stationary source or major modification shall meet all applicable emission limitations under the State implementation plan and all applicable emission standards and standards of performance under 40 CFR Part 60 and Part 61.

(2) A major stationary source or major modification shall apply best available control technology for each applicable pollutant, unless the increase in allowable emissions of that pollutant from the source would be less than 50 tons per year, 1,000 pounds per day, or 100 pounds per hour, whichever is most restrictive.

(i) The preceding hourly or daily rates shall apply only with respect to a pollutant for which an increment, or national ambient air quality standards, for a period less than 24 hours or a period of 24 hours, as appropriate, has been established.

(ii) In determining whether and to what extent a modification would increase allowable emissions, there shall be taken into account no emission reductions achieved elsewhere at the source at which the modification would occur.

(3) In the case of a modification, the requirement for best available control technology shall apply only to each new or modified facility which would increase the allowable emissions of an applicable pollutant.

(4) Where a facility within a source would be modified but not reconstructed, the requirement for best available control technology, notwithstanding paragraph (j)(2) of this section, shall not apply if no net increase in emissions of an applicable pollutant would occur at the source, taking into account all emission increases and decreases at the source which would accompany the modification, and no adverse air quality impact would occur.

(5) For phased construction projects the determination of best available control technology shall be reviewed, and modified as appropriate, at the latest reasonable time prior to commencement of construction of each independent phase of the proposed source or modification.

(6) In the case of a major stationary source or major modification which the owner or operator proposes to construct in a Class III area, emissions from which would cause or contribute to air quality exceeding the maximum allowable increase that would be applicable if the area were a Class II area and where no standard under 40 CFR Part 60 has been promulgated for the source category, the Administrator shall approve the determination of best available control technology.

(k) *Exemptions from impact analysis.* (1) The plan may provide that with respect to a particular pollutant the requirements of provisions established in accordance with paragraphs (l), (n), and (p) of this section shall not apply to a proposed major stationary source or major modification, if—

(i) The increase in allowable emissions of that pollutant from the source or modification would impact no Class I area and no area where an applicable increment is known to be violated; and

(ii) The increase in allowable emissions of that pollutant from the source or modification would be less than 50 tons per year, 1,000 pounds per day, or 100 pounds per hour, whichever is most restrictive; or

(iii) The emissions of the pollutant are of a temporary nature including not limited to those from a pilot t, a portable facility, construction, or exploration; or

(iv) A source is modified, but no increase in the net amount of emissions for any pollutant subject to a national ambient air quality standard and no adverse air quality impact would occur.

(2) The hourly or daily rates set in paragraph (k)(1)(ii) of this section shall apply only with respect to a pollutant for which an increment, or national ambient air quality standard, for a period of less than 24 hours or for a period of 24 hours, as appropriate, has been established.

(3) The plan shall provide that, in determining for the purpose of provisions established in accordance with paragraph (k)(1)(ii) of this section whether and to what extent a modification would increase allowable emissions, there shall be taken into account no emission reductions achieved elsewhere at the source at which the modification would occur.

(4) The plan shall provide that, in determining for the purpose of provisions established in accordance with paragraph (k)(1)(iv) of this section whether and to what extent there would be an increase in the net amount of emissions of any pollutant subject to a national ambient air quality standard from the source which is modified, there shall be taken into account all emission increases and decreases occurring at the source since August 7, 1977.

(5) The plan may provide that the requirements of provisions established in accordance with paragraphs (l), (n), and (p) of this section shall not apply to a major stationary source or major modification with respect to emissions from it which the owner or operator has shown to be fugitive dust.

(l) *Air quality review.* (1) The plan shall provide that the owner or operator of the proposed source or modification must demonstrate that allowable emissions increases from the source or modification, in conjunction with all other applicable emissions increases or reductions, will not cause or contribute to air pollution in violation of—

(i) Any national ambient air quality standard in any air quality control region; or

(ii) Any applicable maximum allowable increase over the baseline concentration in any area.

(m) *Air quality models.* (1) The plan shall provide for procedures which specify that—

(i) All estimates of ambient concentrations required under paragraph (l) shall be based on the applicable air quality models, data bases, and other requirements specified in the *Guidelines on Air Quality Models* (OAQPS 1.2-080, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, April 1978).

(ii) Where an air quality impact model specified in the *Guideline on Air Quality Models* is inappropriate, the model may be modified or another model substituted.

(iii) A substitution or modification of a model shall be subject to public comment procedures developed in accordance with paragraph (r) of this section.

(iv) Written approval of the Administrator must be obtained for any modification or substitution.

(v) Methods like those outlined in the *Workbook for the Comparison of Air Quality Models* (U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, April 1977) should be used to determine the comparability of air quality models.

(2) The *Guideline on Air Quality Models* is incorporated by reference. On April 27, 1978, the Office of the Federal Register approved this document for incorporation by reference. A copy of the guideline is on file in the Federal Register library.

(3) The documents referenced in this paragraph are available for public inspection at EPA's Public Information Reference Unit, Room 2922, 401 M Street SW., Washington, D.C. 20460, and at the libraries of each of the ten EPA Regional Offices. Copies are available as supplies permit from the Library Service Office (MD-35), U.S. Environmental Protection Agency, Research Triangle Park, N.C. 27711. Also, copies may be purchased from the National Technical Information Service, 5285 Port Royal Road, Springfield, Va. 22161.

(n) *Monitoring.* The plan shall provide that—

(1) The owner or operator of a proposed source or modification shall, after construction of the source or modification, conduct such ambient air quality monitoring as the reviewing authority determines may be necessary to establish the effect which emissions from the source or modification of a pollutant for which a national ambient air quality standard exists (other than non-methane hydrocarbons) may have, or is having, on air quality in any area which such emissions would affect.

(2) As necessary to determine whether emissions from the proposed source or modification would cause or contribute to a violation of a national ambient air quality standard, any permit application submitted after August 7, 1978, shall include an analysis of continuous air quality monitoring data for any pollutant emitted by the source or modification for which a national ambient air quality standard exists, except non-methane hydrocarbons. Such data shall relate to, and shall have been gathered over, the year preceding receipt of the complete application, unless the owner or operator demonstrates to the Administrator's satisfaction that such data gathered over a portion or portions of that year or another representative year would be adequate to determine that the source or modification would not cause or contribute to a violation of a national ambient air quality standard.

(o) *Source information.* (1) The plan shall provide that the owner or operator of a proposed source or modification shall submit all information necessary to perform any analysis or make any determination required under procedures established in accordance with this section.

(2) The plan may provide that such information shall include:

(i) A description of the nature, location, design capacity, and typical operating schedule of the source or modification, including specifications and drawings showing its design and plant layout;

(ii) A detailed schedule for construction of the source or modification;

(iii) A detailed description as to what system of continuous emission reduction is planned by the source or modification, emission estimates, and any other information as necessary to determine that best available control technology as applicable would be applied;

(3) The plan shall provide that upon request of the State, the owner or operator shall also provide information on:

(i) The air quality impact of the source or modification, including meteorological and topographical data necessary to estimate such impact; and

(ii) The air quality impacts and the nature and extent of any or all general commercial, residential, industrial, and other growth which has occurred since August 7, 1977, in the area the source or modification would affect.

(p) *Additional impact analyses.* The plan shall provide that—

(1) The owner or operator shall provide an analysis of the impairment to visibility, soils, and vegetation that would occur as a result of the source or modification and general commercial, residential, industrial, and other growth associated with the source or modification. The owner or operator need not provide an analysis of the impact on vegetation having no significant commercial or recreational value.

(2) The owner or operator shall provide an analysis of the air quality impact projected for the area as a result of general commercial, residential, industrial, and other growth associated with the source or modification.

(q) *Sources impacting Federal Class I areas—additional requirements—*

(1) *Notice to EPA.* The plan shall provide that the reviewing authority shall transmit to the Administrator a copy of each permit application relating to a major stationary source or major modification and provide notice to the Administrator of every action related to the consideration of such permit.

(2) *Federal Land Manager.* The Federal Land Manager and the Federal official charged with direct responsibility for management of Class I lands have an affirmative responsibility to protect the air quality related values (including visibility) of any such lands and to consider, in consultation with the Administrator, whether a proposed source or modification would have an adverse impact on such values.

(3) *Denial—impact on air quality related values.* The plan shall provide a mechanism whereby a Federal Land Manager of any such lands may present to the State, after the reviewing authority's preliminary determination required under procedures developed in accordance with paragraph (r) of this section, a demonstration that the emissions from the proposed source or modification would have an adverse impact on the air quality-related values (including visibility) of any Federal mandatory Class I lands, notwithstanding that the change in air quality resulting from emissions from such source or modification would not cause or contribute to concentrations which would exceed the maximum allowable increases for a Class I area. If the State concurs with such demonstration, the reviewing authority shall not issue the permit.

(4) *Class I Variances.* The plan may provide that the owner or operator of a proposed source or modification may demonstrate to the Federal Land Manager that the emissions from such source would have no adverse impact on the air quality related values of such lands (including visibility), notwithstanding that the change in air quality resulting from emissions from such source or modification would cause or contribute to concentrations which would exceed the maximum allowable increases for a Class I area. If the Federal Land Manager concurs with such demonstration and so certifies to the State, the reviewing authority may: *Provided*, That applicable requirements are otherwise met, issue the permit with such emission limitations as may be necessary to assure that emissions of sulfur dioxide and particulate matter would not exceed the following maximum allowable increases over baseline concentration for such pollutants:

	Maximum allowable increase (micrograms per cubic meter)
Particulate matter:	
Annual geometric mean	19
24-hr. maximum	37
Sulfur dioxide:	
Annual arithmetic mean	20
24-hr. maximum	91
3-hr. maximum	325

(5) *Sulfur Dioxide Variance by Governor with Federal Land Manager's Concurrence.* The plan may provide that—

(i) The owner or operator of a proposed source or modification which cannot be approved under procedures developed pursuant to paragraph (q)(4) of this section may demonstrate to the Governor that the source or modification cannot be constructed by reason of any maximum allowable increase for sulfur dioxide for periods of twenty-four hours or less applicable to any Class I area and, in the case of Federal mandatory Class I areas, that a variance under this clause would not adversely affect the air quality related values of the area (including visibility);

(ii) The Governor, after consideration of the Federal Land Manager's recommendation (if any) and subject to his concurrence, may grant, after notice and an opportunity for a public hearing, a variance from such maximum allowable increase; and

(iii) If such variance is granted, the reviewing authority may issue a permit to such source or modification in accordance with provisions developed pursuant to paragraph (q)(7) of this section: *Provided*, That the applicable requirements of the plan are otherwise met.

(6) *Variance by the Governor with the President's concurrence.* The plan may provide that—

(i) The recommendations of the Governor and the Federal Land Manager shall be transferred to the President in any case where the Governor recommends a variance in which the Federal Land Manager does not concur;

(ii) The President may approve the Governor's recommendation if he finds that such variance is in the national interest; and

(iii) If such a variance is approved, the reviewing authority may issue a permit in accordance with provisions developed pursuant to the requirements of paragraph (q)(7) of this section: *Provided*, That the applicable requirements of the plan are otherwise met.

(7) *Emission Limitations for Presidential or Gubernatorial Variance.* The plan shall provide that in the case of a permit issued under procedures developed pursuant to paragraph (q)(5) or (6) of this section, the source or modification shall comply with emission limitations as may be necessary to assure that emissions of sulfur dioxide from the source or modification would not (during any day on which the otherwise applicable maximum allowable increases are exceeded) cause or contribute to concentrations which would exceed the following maximum allowable increases over the baseline concentration and to assure that such emissions would not cause or contribute to concentrations which exceed the otherwise applicable maximum allowable increases for periods of exposure of 24 hours or less for more than 18 days, not necessarily consecutive, during any annual period:

Maximum Allowable Increase

[Micrograms per cubic meter]

Period of exposure	Terrain areas	
	Low	High
24-hr maximum	36	62
3-hr maximum	130	221

(r) *Public participation.* The plan shall provide that—

(1) The reviewing authority shall notify all applicants within a specified time period as to the completeness of the application or any deficiency in the application or information submitted. In the event of such a deficiency, the date of receipt of the application shall be the date on which the reviewing authority received all required information.

(2) Within one year after receipt of a complete application, the reviewing authority shall:

(i) Make a preliminary determination whether construction should be approved, approved with conditions, or disapproved.

(ii) Make available in at least one location in each region in which the proposed source would be constructed a copy of all materials the applicant submitted, a copy of the preliminary determination, and a copy or summary of other materials, if any, considered in making the preliminary determination.

(iii) Notify the public, by advertisement in a newspaper of general circulation in each region in which the proposed source would be constructed, of the application, the preliminary determination, the degree of increment consumption that is expected from the source or modification, and of the opportunity for comment at a public hearing as well as written public comment.

(iv) Send a copy of the notice of public comment to the applicant, the Administrator and to officials and agencies having cognizance over the location where the proposed construc-

tion would occur as follows: any other State or local air pollution control agencies, the chief executives of the city and county where the source would be located; any comprehensive regional land use planning agency, and any State, Federal Land Manager, or Indian Governing body whose lands may be affected by emissions from the source or modification.

(v) Provide opportunity for a public hearing for interested persons to appear and submit written or oral comments on the air quality impact of the source, alternatives to it, the control technology required, and other appropriate considerations.

(vi) Consider all written comments submitted within a time specified in the notice of public comment and all comments received at any public hearing(s) in making a final decision on the approvability of the application. The reviewing authority shall make all comments available for public inspection in the same locations where the reviewing authority made available preconstruction information relating to the proposed source or modification.

(vii) Make a final determination whether construction should be approved, approved with conditions, or disapproved.

(viii) Notify the applicant in writing of the final determination and make such notification available for public inspection at the same location where the reviewing authority made available preconstruction information and public comments relating to the source.

(s) *Source obligation.* The plan shall include legally enforceable procedures to provide that approval to construct shall not relieve any owner or operator of the responsibility to comply fully with applicable provisions of the plan and any other requirements under local, State or Federal law.

NOTE.—Incorporation by reference provisions approved by the Director of the Federal Register April 27, 1978.

[FR Doc. 78-16889 Filed 6-14-78; 4:15 pm]

[6560-01]

[FRL 904-3A]

PART 52—APPROVAL AND PROMULGATION OF STATE IMPLEMENTATION PLANS

1977 Clean Air Act Amendments to Prevent Significant Deterioration

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: By these final regulations, EPA amends its regulations relating to prevention of significant air quality deterioration (PSD) in order to implement the new PSD requirements of the Clean Air Act Amendments of 1977 (Pub. L. 95-95). As amended, the PSD regulations are now more comprehensive and stringent than they were. States may substitute comparable requirements through implementation plan revisions pursuant to regulations also being published today.

DATES: See §52.21(l) of the regulations.

FOR FURTHER INFORMATION CONTACT:

Darryl Tyler, Chief, Standards Implementation Branch, Control Programs Development Division, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711.

SUPPLEMENTARY INFORMATION:

INTRODUCTION

In 1974, EPA promulgated regulations under Section 101(b)(1) of the Clean Air Act (Act) to prevent emissions of sulfur dioxide (SO_2) and particulate matter (PM) from significantly deteriorating air quality in areas where concentrations of those pollutants were lower than the applicable national ambient air quality standards (NAAQS). 39 FR 42510 (codified at 40 CFR 52.21). EPA incorporated those regulations into the implementation plan (SIP) of each State. The regulations, as amended before August 7, 1977, prohibited construction of any stationary source in any of nineteen specified categories, unless EPA or a delegate State had issued a permit evidencing that the source would apply "best available control technology" (BACT) for SO_2 and PM and that emissions of those pollutants from the source would not cause significant deterioration of air quality in any area. For determining what levels of deterioration were significant, the regulations set out an area classification system. Under it, clean air areas could be classified as Class I, II, or III. In Class I areas, small increases of SO_2 and PM would be significant; in Class II areas, moderate increases; and in Class III areas, increases up to a NAAQS. The regulations classified all clean areas as Class II, but gave States, Indian Governing Bodies and Federal Land Managers the opportunity to reclassify their lands under specified requirements.

On August 7, 1977, the President signed into law new PSD requirements as part of the Clean Air Act Amendments of 1977 (1977 Amendments). These requirements follow the outline of the pre-existing regulations, but are in general more comprehensive and stringent. The permit requirements and classification system remain; but, among other things, many more sources are covered, Class II increments are different and sometimes more restrictive, Class III increments are now specifically defined, ambient ceiling requirements apply, BACT applies to all pollutants regulated under the Act, certain lands are permanently Class I, the procedures for reclassifying to Class III are more rigorous, the scope of the ambient impact analysis is much broader, and the opportunity for public comment on a proposed permit must include an opportunity for a public hearing. See Clean Air Act Sections 160-169 42 U.S.C. §§7470-79 (Clean Air Act Amendments of 1977, Pub. L. 95-95, §127(a), 91 Stat. 731), as amended, Pub. L. 95-190, Sections 14(a)(40)-(54), 91 Stat. 1401-02 (November 16, 1977) (technical and conforming amendments).

On November 3, 1977, EPA announced in the FEDERAL REGISTER several specific actions. The first was a final decision not to implement the new PSD requirements of Section 165 of the Act as of August 7, 1977, 42 FR 57459. The second, which embodied the first, was the promulgation of amendments to the pre-existing PSD regulations conforming them, not to Section 165, but primarily to Sections 162(a), 163(b) and 164(a) of the Act in accordance with Section 168(b). Id. Section 162(a) sets forth the new mandatory Class I areas; Section 163(b) identifies the new Class II and Class III increments and the ambient ceilings requirement; and Section 164(a) lists those areas which may not be reclassified as Class III and outlines the new Class III reclassification procedures. The third action EPA announced was the proposal of regulations giving guidance for the preparation of SIP revisions which would meet the new PSD requirements. Id. at 57471. The fourth action was the proposal of further, comprehensive amendments to the pre-existing PSD regulations. Id. at 57479. In announcing the proposals, EPA said that it intended to promulgate final regulations no later than March 1, 1978. Id. at 57459, 57471, 57479. Because Section 406(d)(2) of the 1977 Amendments directs the States to submit required SIP revisions within nine months of the promulgation of regulations giving guidance for their preparation, EPA also said that SIP revisions incorporating the new PSD requirements would be due no later than December 1, 1978. Id. at 57471, 57479.

On December 8, 1977, EPA published a supplement to the November 3 proposals. In the supplement, EPA clarified what sources the proposed amendments would exempt from the new PSD requirements, solicited comments on two additional issues, notified the public that technical and conforming amendments to the 1977 Amendments had been enacted on No-

vember 16, 1977, and stated that it would hold public hearings on January 9, 1978. 42 FR 52020.

On December 23, 1978, EPA extended, from January 3, 1978, to January 31, 1978, the d[illegible]e for submitting written comments on the November 3 proposals and on the Air Quality Modeling Conference held on December 14-15, 1978. 42 FR 64378. The conference was announced at 42 FR 58542 and 58561 (November 10, 1977). EPA noted in the December 23, 1977 notice that it might not be able to promulgate the new PSD regulations by March 1, 1978, and that it nevertheless intended to maintain "the previously-announced 'permit deadline' of March 1, 1978, for determining whether sources will be subject to the new PSD rules * * *."

On January 9, 1978, public hearings on the proposals took place in Washington, Chicago and Denver and are included as part of the written record. Transcripts have been made of the oral comments. On January 31, the comment period ended. EPA received more than 250 written comments on the proposals. EPA has considered in preparing the final regulations not only the oral and written comments on the proposals, but also the comments submitted in connection with the modeling conference. EPA has also had occasion to measure the proposals against concrete problems arising during and after the comment period.

The discussion which follows focuses on the important issues raised by the proposed amendments to the pre-existing regulation, summarizes the comments relating to each issue, and presents EPA's resolution. Elsewhere in today's FEDERAL REGISTER, EPA is announcing the promulgation of the necessary requirements for the preparation, adoption and submittal of State PSD programs. Since those regulations parallel these, both preambles should be read together. States should submit their SIP revisions no later than nine months from today.

HIGHLIGHTS

The regulations made final today apply to any source in any of 28 categories with a potential emissions increase of 100 tons per year or more of any pollutant regulated under the Act and to any source with a potential emissions increase of 250 tons per year or more of any pollutant regulated under the Act, including a source which would have been in one of the 28 categories if it were not under the applicable size cutoff. Potential emissions mean uncontrolled emissions.

Not all covered sources will receive full PSD review. Only those which would have allowable emissions equal to or greater than 50 tons per year, [illegible]00 pounds per day, or 100 pounds hour, or would impact a Class I area or an area where the increment is known to be violated, will receive such review. However, the combined impact of sources not receiving full review will be determined periodically.

In general, only those sources with allowable emissions of 50 tons per year, 1,000 pounds per day, or 100 pounds per hour or more will undergo case-by-case review for BACT, and then only as to those pollutants regulated under the Act for which the source would be major.

To avoid duplicating State new source review, EPA will in general review a source which has allowable emissions under an enforceable SIP permit of less than 50 tons per year, 1,000 pounds per day or 100 pounds per hour, and which would impact no Class I area or area where an increment is known to be violated, only to the extent of ensuring that it would meet any applicable emission limitation and has undergone adequate public scrutiny.

Where PSD and nonattainment reviews both apply, the State must act first before EPA can issue final construction approval under PSD.

PSD applies irrespective of where a source would locate, except that it does not apply to any source which with respect to a particular pollutant is subject to the nonattainment requirements and would impact no clean air area.

The PSD increments must be protected through both preconstruction review and the SIP review process. If an increment is exceeded, the applicable plan must be revised. SIP relaxations submitted after today that would cause significant deterioration cannot be approved.

A Governor can upon written request exempt certain emission increases from consuming an applicable increment while EPA implements the PSD program. The State must submit an approvable PSD SIP revision incorporating the exemption within 9 months to retain the exemption.

Additional guidance is provided on what constitutes commencement of construction, particularly for sources constructing in several distinct phases.

PSD sources submitting applications after August 7, 1978, may have to provide extensive air quality monitoring data.

SOURCE APPLICABILITY

A. TRANSITION

In passing the 1977 Amendments, Congress left standing contradictory indications as to when it intended the new PSD requirements to be effective. On the one hand, Section 168 of the Act provides that the pre-existing PSD regulations, with amendments conforming them only to Section 162(a), 163(b) and 164(a), are to remain in effect as to a particular area until the applicable SIP is revised to include the rest of the new requirements. Section 406(b) of the 1977 Amendments reinforces Section 168. It provides in pertinent part:

> All * * * regulations * * * duly issued * * * pursuant to the Clean Air Act as in effect immediately prior to the date of enactment of this Act * * * shall continue in full force and effect after the date of enactment of this Act until modified or rescinded in accordance with the Clean Air Act as amended by this Act.

See also 1977 Amendments section 406(c). In effect, Section 168, and Section 406(b), say that, until EPA or the States revise the SIP's to include the new requirements, construction may commence after August 7, 1977, so long as it meets the requirements of the pre-existing regulations, as amended.

On the other hand, Section 165(a) can be read as prohibiting, until its requirements were met, most of the post-enactment construction that Section 168 would permit. It provides in pertinent part that "[n]o major emitting facility on which construction is commenced after the date of the enactment of this part, may be constructed in any area to which this part applies, unless" all of the new permit requirements are met. Also, Section 165(a) would have imposed a lengthy moratorium on new construction, since Sections 165(a)(2) and (c) require an analysis in accordance with regulations that as of August 7, 1977, had not even been proposed. Section 168 would not have imposed such a moratorium.

Because of the contradiction between Section 165 and 168, EPA had no choice but to fashion a reasonable program for the transition from the old to the new requirements. Accordingly, on November 3, 1977, it announced its final decision not to implement the requirements of Section 165 as of August 7, 1977, and its promulgation of the Section 168 amendments to the pre-existing regulations. Then, in the subsequent November 3 proposal and the December 8 supplement, it proposed to apply the requirements of Section 165 as of March 1, 1978. Under the proposal, the requirements would apply to construction of a major stationary source or major modification occuring on or after March 1, 1978, unless the source or modification had received certain permits before March 1 and construction commenced before December 1, 1978. The permit that a source subject to the pre-existing regulations would have to get was a permit under those regulations. A source not subject to the pre-existing regulations would have to get the permit or permits required under the applicable SIP.

In their comments on this proposal, industries asserted that EPA was with-

out legal justification to implement any regulations prior to the submittal of SIP revisions. At the other extreme, some environmental groups contended that EPA was acting improperly in not making Section 165 effective as of August 7, 1977. State agencies generally indicated approval of the proposal.

Today, EPA is announcing that it has promulgated the proposed program with only a minor change. For the December 1, 1978 date, it has substituted a date nine months from today.

Three major considerations have shaped this transition program. One is that the rate of consumption of the increments should be minimized. A paramount goal of both the House and the Senate was to give the States a full opportunity to revise and implement their own PSD programs. The value and significance of this opportunity diminishes as the increments are consumed during the period from August 7, 1977, to the time EPA has approved any PSD revisions to the SIP. Hence, during that period, the rate of consumption of the increments should be minimized. The other two major considerations are that economic disruption should be minimized and that orderly administration of the new requirements should be maximized.

The first of the relevant considerations pulls sharply in the direction of implementing the new requirements as of August 7, 1977. The more sources that must apply BACT, the slower the rate of consumption of the increments. The new PSD requirements might subject up to twenty-four times[1] as many sources to a more restrictive control technology review as did the old requirements. In doing so, the new requirements will capture approximately 230,000 tons of PM, and 570,000 tons of SO_2, per year, beyond what the old requirements would have captured.[2] While such capture is clearly significant to increment consumption on a national basis, it could be even more significant to individual localities where more than one of the affected sources might construct and consume a large portion of the available increment. Hence, the sooner EPA implements the new requirements, the slower will be the rate of increment consumption. Other less compelling considerations pull in that direction, too. Until the new requirements are implemented, mandatory Class I areas will not have the protection Section 165(d) affords nor will variances to the Class I increments be available. In addition, until then, Federal Land Managers will continue to have the power to reclassify Federal lands, and EPA will continue to be able to disapprove reclassifications on other than procedural grounds.

The other two major considerations, however, suggest the opposite conclusion. Immediate implementation of the new requirements would have resulted in severe economic disruption. As stated above, Section 165(a) would have imposed, because of Sections 165(a)(2) and (e), a moratorium on new construction equal to the length of time required to promulgate the necessary regulations.[3] Even if Sections 165(a)(2) and (e) were ignored, undue economic disruption would have resulted from sudden imposition of the new requirements. Applicants had designed major construction projects to meet the old PSD requirements and the State new source review requirements as applicable. Many of them had not commenced construction by August 7, 1977, but had either obtained a permit or were about to obtain one. Reevaluation under the new requirements would have meant that construction could not have commenced until long after the time originally planned. The applicant would often have had to repropose control technology and provide analyses of the direct and indirect total environmental effects of the source. EPA would then have had to redetermine the necessary control equipment and open any redeterminations to public comment, including a public hearing.

Immediate implementation also would have promoted disorderly administration, since it would have precluded normal notice and comment and the attending opportunity to better understand the statute, anticipate its effects and establish generic ground rules. Each issue would have been refought with each new application. In the absence of generic rules, inconsistency and confusion in the treatment of applications throughout the country might well have occurred.

The transition program promulgated today is reasonable. It has equitably accommodated these competing considerations. It has allowed informed development of generic rules and minimized economic disruption by avoiding entirely a lengthy moratorium on new growth and amply forewarning the public of the time when the new requirements would have to be met. At the same time, the program has minimized the period of time during which the new requirements were not working to slow consumption of the increments. It has also minimized the time during which mandatory Class I areas lacked the protection of Section 165(d), Class I increment variances were unavailable, Federal Land Managers were able to reclassify Federal lands, and EPA was able to disapprove reclassifications on other than procedural grounds.

Four aspects of the program require further explanation. First, why is EPA implementing the new requirements as of March 1, 1978, rather than the date of promulgation? In effect, EPA has suspended the issuance of PSD permits from March 1 to the date of promulgation. The consequence of implementing them as of promulgation would have been that sources would have consumed the increments to a much greater extent than they have. In addition, the public has received early and ample warning of the March 1 deadline and therefore an adequate opportunity to plan for this short-term impact on construction schedules. Finally, in accordance with a directive dated February 22, 1978, from the Assistant Administrator for Air and Waste Management and the Assistant Administrator for Enforcement, EPA has upon request reviewed certain applications as to their approvability under the proposed regulations.

Second, why exempt from the new requirements those sources which have received a PSD permit before March 1, 1978, even though construction on the source may not have commenced by then? Arguably, to exempt only those sources on which construction had commenced before this date would have paralleled the approach in Section 165, better served the policy of slowing increment consumption and not disserved the policy of ensuring an adequate opportunity for public comment. It would not, however, have minimized economic disruption. In October of 1977, many sources for which PSD applications had been completed and were pending could not have both received a permit and commenced construction before March 1, 1978. Their potential consumption of the increment beyond what they would have consumed under the new requirements was not so great as to warrant denying

[1] The pre-existing regulations applied to sources belonging to any of nineteen specified categories, or approximately 165 per year. The new requirements apply to any source in any of 28 specified categories which has the potential to emit 100 tons per year or more of any pollutant regulated under the Act and to any other source which has the potential to emit 250 tons per year or more of any such pollutant. Defining "potential to emit" as maximum capacity in the absence of control equipment, as do these regulations, the annual number of covered sources is estimated to be about 4,000 with approximately 1,600 sources being subject to a detailed BACT and ambient air quality review.

[2] Under the old requirements, annual emissions from all new and modified sources, whether covered or not, totalled approximately 770,000 tons of PM and 1,220,000 tons of SO_2. EPA estimates that for these same sources under the new requirements annual emissions will be reduced to 540,000 tons for PM and 650,000 tons for SO_2.

[3] The legislative history contains strong indications that Congress intended not to impose a moratorium on development. See H.R. Rep. No. 95-294, at 171 (1977); Congressional Record—House, August 4, 1977.

them an opportunity for exemption. Hence, EPA proposed, and has decided, to exempt sources for which a PSD permit had been obtained before March 1, 1978, so long as construction commences by the time SIP revisions are due.

Third, EPA as previously proposed has also decided to exempt sources not subject to the pre-existing regulations if they have received before March 1, 1978, all permits required under the applicable SIP, even though construction may not have commenced by then. Not to exempt these sources, arguably, would have better served the policy of slowing increment consumption. Nevertheless, there were many such sources in circumstances not significantly different from those of sources with PSD permits pending in October of 1977. Hence, out of fairness, EPA has decided to exempt such sources, so long as construction commences by the time SIP revisions are due.

Finally, in establishing a deadline for commencement of construction, why is EPA using a date nine months from today, instead of December 1, 1978, as proposed? EPA originally set the deadline nine months from March 1, not because March 1 was the date of implementation, but rather because it was the anticipated date of promulgation. EPA selected the nine month period after promulgation because it provided ample opportunity to commence construction and it is the period within which Section 406(d) in effect requires States to submit their SIP revisions. Consequently, the Administration has revised the December 1, 1978, date to coincide with a date nine months from promulgation of these regulations.

B. EDF V. COSTLE

On February 17, 1978, the Environmental Defense Fund, Inc. (EDF) brought an action in the District Court for the District of Columbia challenging EPA's November 3, 1977 decision not to implement the new PSD requirements as of August 7, 1977. On February 24, 1978, the Court issued an order which governed the further processing of pending applications to EPA for PSD permits under the pre-existing regulations and will affect the application of the March 1, 1978, and commence construction deadlines. The order expired on March 28, 1978. It provided in pertinent part:

2. EPA shall process all applications for PSD permits that do not comply with the requirements of Section 165 according to its existing procedures *except that*, in the case of any permit which EPA concludes it would issue (but for the existence of this order), EPA shall, on the date on which EPA so concluded, mark every such permit:

This permit would issue this date (date), but for the order entered in *Environmental Defense Fund* v. *Douglas M. Costle*, No. 78-261 (D.D.C.) (Entered on February 24, 1978).

EPA shall give prompt notice of the above action to the permittee and all appropriate State and local authorities. The above action shall not constitute permission to commence construction, nor shall it constitute final action for purposes of judicial review.

3. If and when any permit marked as described in paragraph 2 is issued, such permit shall be effective and considered to have been issued as of the date on which it was so marked and shall be subject to the relevant regulations applicable on such date.

4. In addition, any deadline which determines the applicability of EPA regulations under the Clean Air Act to any facilities receiving such permits shall be extended by a period of time equal to the number of days between the time EPA marks the permit as described in Paragraph 2 and the date when EPA releases the permit as described in Paragraph 7.

In accordance with paragraph 3 of the order, EPA will treat any permit marked pursuant to paragraph 2 and released after the order expired as having been issued as of the date it was marked for the purpose of determining whether the source is exempt from the new PSD requirements under the March 1, 1978, program. Also, in accordance with paragraph 4, construction on a source which has received or will receive a marked permit need commence, not within nine months from today, but rather within a period equal to nine months from today plus the number of days between the time the permit was marked and the time it was released.

C. SPECIAL EXEMPTIONS

In the March 8, 1978, FEDERAL REGISTER (42 FR 9529), EPA announced a final decision, made on February 28, 1978, to exempt from the new PSD requirements any source the evaluation of which EPA would have completed before March 1, 1978, but for an extension of the public comment period pursuant to a meritorious request for such an extension. The Administrator communicated this final decision to each of the Regional Administrators. His statement to them, which appeared in the FEDERAL REGISTER on March 8, 1978, follows:

As some of you are aware, significant public comment has been generated in the case of certain sources that have submitted applications for PSD permits. In some of these cases, interested persons have requested additional time to comment on the propriety of granting the permit. While I do not believe that the situations are many, I am concerned about the completion of any PSD review of any case where an extension of the comment period has been requested on meritorious grounds. Accordingly, by this notification I am announcing a policy change regarding the March 1 PSD deadline. This policy change will be applicable only to those situations where the normal public comment period has ended and EPA review of a permit would have been completed by March 1, were it not for a request for additional comment time requested by interested parties.

In the case of any such situation, described above, the comment period involved may be extended as provided by EPA's current PSD regulations. Where such an extension is granted, the March 1 date now designated as the effective date of the new PSD requirements will not apply to that permit application. Instead, the permit application may continue to be processed (and granted or denied) under EPA's current PSD regulations.

I intend to put a notice in the FEDERAL REGISTER to the above effect. I wish to reemphasize that the policy set forth above only applies to those situations where review would have been completed by March 1 absent our action granting a request for additional comment time.

D. POTENTIAL EMISSIONS

Section 165 of the Act requires that each new or modified "major emitting facility" undergo preconstruction or premodification review for PSD. Section 169(1) defines "major emitting facility" in terms of a source's "potential to emit." On November 3, 1977, EPA proposed to define "potential emissions" as "those emissions expected to occur without control equipment * * *" 42 FR 57479, 57483.

Virtually every comment spoke to the issue of subjecting sources to PSD review on the basis of their uncontrolled emissions. Industry and State pollution control agency comments noted that the Agency's interpretation would needlessly force through PSD review several sources whose allowable emissions would be relatively insignificant. Allowable emissions are those that would occur after the application of the controls required under any air pollution control laws and regulations or more stringent controls under an enforceable permit. Many State and local agencies expressed a deep concern that subjecting sources to the PSD requirements solely on the basis of uncontrolled emissions would result in an unmanageable number of detailed and costly reviews. The organization representing State air pollution control agencies, State and Territorial Air Pollution Program Administrators (STAPPA), urged the Agency to consider both uncontrolled emissions and allowable emissions in determining which sources would be subject to review. It suggested that EPA assess the air quality impact of only those sources whose allowable emissions would be significant. Industry comments uniformly urged the Agency to interpret "potential to emit" as referring to allowable emissions.

The Agency has decided to apply PSD solely on the basis of what a source might emit without control. The final regulations published today define "potential to emit" as the "capability at maximum capacity to emit a pollutant in the absence of air pollu-

tion control equipment." See § 52.21(b)(3).

The Agency has concluded that Congress intended "potential to emit" to refer to uncontrolled, not allowable, emissions. If Congress had intended PSD to apply on the basis of allowable emissions, it would not have included Section 165(b) in the Act. Section 165(b) provides that an applicant for a PSD permit for a modification to certain major emitting facilities need not show that the modification will not cause or contribute to a violation of a Class II increment, if the "allowable emissions" of SO_2 and PM from the modification would after the application of BACT "be less than fifty tons per year" and would not cause or contribute to a violation of the applicable NAAQS. Section 169(1) defines "major emitting facility" as a source with the "potential to emit" either, depending on its type, 100 or 250 tons per year or more. If Section 169(1) were read to subject to PSD only those modifications with allowable emissions equal to or greater than 100 or 250 tons per year before the application of BACT, no owner or operator whose modification would emit less than 50 tons per year after BACT would need the relief Section 165(b) provides. This is because, if BACT or some less stringent control could reduce the emissions of the modification to less than 50 tons per year, the owner or operator would apply it in order to reduce the emissions of the modification to below the applicable 100 or 250 ton cutoff and thereby avoid PSD altogether. Congress, however, did include Section 165(b). Hence, it appears that Congress did not intend PSD to apply on the basis of allowable emissions. *See also* Sen. Rep. No. 95-127, at 33 (1977) (last paragraph). Since the only other concept to which Congress could have been referring is that of uncontrolled emissions, it must have intended PSD to apply on the basis of such emissions.

There is another similar reason for reaching that conclusion: if Congress had intended PSD to apply on the basis of emissions after controls, it would not have used the phrase "potential to emit" in Section 169(1).[4] First, Congress would not have used two different phrases to refer to the same concept, and it had already used "allowable emissions" in Section 165(b). Second, Congress knew that EPA had already established in its offset policy for nonattainment areas (41 FR 55524 (December 21, 1976)) the phrase "allowable emissions" as denoting emissions after controls. Pub. L. 95-95, section 129(a)(1), 91 Stat. 745 (1977). Indeed, Congress has been careful to distinguish "allowable emissions" from at least one other concept. Prior to the enactment on November 16, 1977, of technical and conforming amendments to the 1977 Amendments, Section 165(b) contained the phrase "actual allowable emissions." Id. section 127(a), at 736. The November 16 amendments deleted the word "actual" in order to "eliminate an apparent inconsistency." 123 Cong. Rec. H11955, H11957 (November 1, 1977). Finally, the legislative history indicates that Congress knew that in the air pollution field the phrase "potential emissions" has traditionally been understood to denote uncontrolled emissions. *See e.g.* Sen. Rep. No. 95-127, at 45, 96-97 (1977).

The Agency has decided to apply PSD on the basis of uncontrolled emissions also for an important practical reason. In enforcement programs, reporting systems have been and must be based on uncontrolled emissions. Otherwise a source with controls to capture 90 percent of the potential emissions might well be below the cutoff for reporting, but could virtually turn off the control equipment, emit 10 times the allowed level and not be tracked.

In its November 3 definition of "potential emissions," EPA indicated that, in determining the potential emissions of a source, it would not take into account emissions that "necessary" or "integral" control equipment would capture. Equipment was "necessary" or "integral" if business or production consequences would follow, independently of applicable air pollution laws and regulations, from removing or not using the equipment. Several comments pointed out that such a general credit could not realistically be implemented, since the permitting authority would be faced frequently with having to make difficult case-by-case factual determinations. Considerable time would be lost by both the applicant and the permitting authority in making such case-by-case decisions.

In view of these comments, the Agency will interpret the phrase "air pollution control equipment" in the definition of "potential to emit" as referring to control equipment which is not, aside from air pollution control requirements, vital to production of the normal product of the source or to its normal operation. The Agency will consider equipment vital if the source could not produce its normal product or operate without it.

E. TWO-TIERED REVIEW

By the proposed regulations, EPA indicated its intention to subject each new major stationary source and major modification to full PSD review. Full review would have consisted of (1) a case-by-case BACT determination as to each pollutant regulated under the act for which the source or modification would be considered major, (2) ambient impact analyses of whether the source or modification would cause or contribute to a violation of the applicable increments and NAAQS, (3) an assessment of the direct and indirect effects of the source or modification on visibility, soils, and vegetation, and (4) public comment, including an opportunity for a public hearing, on each material determination. Full review might also have entailed an analysis of the effects of the source or modification on air quality related values in a class I area. Finally, full review might have required the applicant to submit extensive air quality monitoring data and to commit to post-construction monitoring.

As noted above, STAPPA predicted that the States would find PSD applications too numerous, and their review too costly, to manage. STAPPA and others asserted that full PSD review would contribute unduly to the construction costs experienced by small, otherwise well-controlled sources.

In response to these comments, EPA attempted to quantify the effects of full PSD review under the proposal. It estimated that the new requirements would cover approximately 4,000 sources and modifications per year. The old PSD regulations, by contrast, covered only 165 sources per year. EPA also projected that permitting authorities would have to devote approximately 279 more man-years of new source review effort to conduct full PSD review of these new sources (or an additional 65 percent of their present effort on new source review), and that applicants would have to spend up to $6 million on modeling and $24 million on monitoring (or $30 million in total) to obtain PSD permits for these sources.

Applicants would also have to spend additional time and money meeting the requirements of a detailed PSD review. Considerable delay costs are expected from the increased planning and construction costs as well as the foregone return on investment from delaying start-up for a new source. Although it is not possible to accurately quantify the amount of these costs due to their site-specific nature, such costs could be greater than the monitoring and modeling costs of $30 million. In addition the changeover from reviewing 165 sources to 4,000 sources per year would probably lead to delays in the start-up of new sources.

Section 165(b) of the act shows that Congress shared the concern of STAPPA and the other commentators. As noted above, section 165(b) exempts certain modifications with allowable emissions of less than 50 tons

[4] Part D of the Act parallels Part C in its usage of the phrases "allowable emissions" and "potential to emit." Section 173(1)(A) refers to "allowable emissions," whereas the section defining those sources to which Part D applies, Section 320(j), uses the phrase "potential to emit."

per year after the application of BACT from demonstrating that they would not cause or contribute to a violation of any applicable class II increment, and thus from substantial expenditures on modeling and monitoring. The Senate Committee explained:

> Section [165(b)] exempts smaller, well-controlled sources which are expansions of existing facilities from having to demonstrate compliance with the class II increments. Many such sources which are *small and relatively insignificant with respect to air quality* would otherwise be brought under the requirements of [Part C] by the "major emitting facility" definition of 100 tons per year potential emissions of any pollutant.

Sen. Rep. No. 95-127, at 33 (1977) (emphasis added).

Following Congress lead, EPA attempted to quantify the effects of expanding the exemption in section 165(b) to all new sources and modifications with less than 50 tons per year allowable emissions. Analysis revealed that under such an exemption only 1,600 of the 4,000 sources per year are likely to undergo full PSD review, that permitting authorities would need to devote only an additional 112 man-years to the effort of reviewing those 1,600 sources fully if the remaining 2,400 are first reviewed under the State new source review program, and that applicants might now have to spend only about $2 million on modeling and $7 million on monitoring (or $9 million in total).

Delay costs would also be reduced significantly. The sources exempted from the full PSD review would typically be small. The average size of the investment for these sources is thought to be about $1 million. If delays of two months occur for each of these 2,400 sources, this could lead to delay costs from foregone returns on investment of about $16 million. (This is based on an estimated four percent difference between the rate of return for a new source and the investor's next best alternative, an average two-month delay and an average new source investment of $1 million.) Delay costs would be higher in those cases where the delay leads to increased construction and planning costs.

Subsequent analysis indicated that the costs of making a case-by-case BACT determination each year for each of the 2,400 sources with allowable emissions under an enforceable SIP construction permit of less than 50 tons per year far outweighed the benefits of such a determination. EPA estimated that the applicable SIP would in many cases impose its own BACT requirement. To conduct a PSD BACT review of those sources would be pointless. In the other cases, applicants would incur the expense of preparing a BACT proposal and the associated delay for review and approval by the permitting authority. Permitting authorities would have to expend the necessary time and effort to make the BACT determination. For EPA, this determination would in general require it to duplicate much of the effort that the State permitting authority had already expended in becoming knowledgeable about the source. The benefits, in contrast, are relatively insignificant. EPA estimates that BACT applied by virtue of PSD review to the 2,400 50-ton sources would capture annually only 300 tons more of SO_2 and 8,000 tons more of PM than what those controls that the source would install in order to meet the 50 tons per year cutoff would capture. 300 tons is less than 1 percent of the estimated total new emissions of SO_2 per year, while 8,000 tons is less than 2 percent of the estimated total new emissions of PM per year.

In light of section 165(b) and these findings, EPA has decided generally to exempt from full PSD review any new major stationary source or major modification (hereafter, a "major new source") which would have allowable emissions of less than 50 tons per year, 1,000 pounds per day, or 100 pounds per hour, whichever is more restrictive (hereafter, a "50-ton source"). The 100 pounds per hour criterion, it should be noted, would apply only with respect to a pollutant for which an increment or standard for a period less than 24 hours had been established. For example, the criterion would apply to a source with respect to SO_2, but not PM.

In accordance with the decision, under § 52.21(j), no 50-ton source need apply BACT in order to get a PSD permit. An applicant must demonstrate, however, that the source would meet all applicable emission limitations under the SIP and all applicable emission standards and standards of performance under 40 CFR part 60 and part 61. An applicant may demonstrate that the source would meet those limitations and standards by presenting an enforceable SIP permit under which the source would have to meet them. Any major new source with allowable emissions equal to or greater than 50 tons per year, 1,000 pounds per day, or 100 pounds per hour would be subject to the case-by-case BACT requirement.

Under § 52.21(k), no applicant for a PSD permit for a 50-ton source would have to demonstrate that the source would not cause or contribute to a violation of an applicable increment or NAAQS, to assess the direct and indirect effects of the source on visibility, soils and vegetation, and to provide monitoring data, unless the source would impact a class I area or an area where an applicable increment is known to be violated.

To ensure that air quality does not deteriorate beyond the level of any increment, EPA will periodically assess increment consumption in an area. For the same purpose, it has, in the part 51 regulations also published today, imposed on each State the same obligation as well as the obligation to revise its SIP to cure the violation of any increment. It should be noted, too, that the assessment of increment consumption must be subject to public comment and an opportunity for a public hearing.

Finally, under § 52.21(r), the issuance of a PSD permit to a 50-ton source would be subject to public scrutiny only if and to the extent that the underlying determinations had not been previously subject to public scrutiny. For example, if the State in granting a SIP permit provided an opportunity for only written comment on whether the source would meet the applicable emission limitations and standards, then EPA would require an opportunity for a public hearing on those questions and an opportunity for written comment and a public hearing on whether the source would impact a class I area or an area where the increment is known to be violated. The purpose of this public participation exemption is to avoid duplication of effort. Applicants should be prepared to prove to what extent the public had an opportunity to scrutinize the issuance of the SIP permit.

The general exemption for 50-ton sources is consistent with the relevant purposes of the new PSD requirements as set forth in sections 101(b)(1) and 160 of the act: to prevent significant deterioration of air quality, to "preserve, protect and enhance" air quality over class I areas, and to assure that any decision to permit increased air pollution is made only after careful evaluation and informed public participation. Nondeterioration is assured since increment consumption will be assessed periodically and SIPs revised to cure any violation. Class I areas are fully protected, since the exemption does not apply as to them. Finally, each material determination behind the issuance of a PSD permit will be subject to at least one round of public participation.

The exemption, moreover, is within the spirit of section 165(b). Each year it will avoid imposing an unnecessary expenditure of up to $21 million on approximately 2,400 controlled sources of relatively insignificant air quality impact. It will, in addition, conserve substantial Federal and State resources for other, more important air pollution control tasks. Finally, the exemption will encourage improvements in control technology, since potential applicants will strive to reduce their emissions below 50 tons per year in order to be eligible for the streamlined review process.

EPA has included the short-term criteria of pounds per day or per hour to sure that seasonal or intermittent ration of sources which have significant short-term emissions will be subject to review. Industries which commented uniformly felt that the Agency was without legal ability to implement the short-term criteria. The act does not, however, preclude the use of short-term criteria and, in fact, seems to require their use in those cases where short-term increments and NAAQS have been established. The short-term criteria would not apply under the regulations where no counterpart increment or standard had been established. State agency comments agreed that short-term criteria would be an important and necessary mechanism to assist in the protection of short-term increments and national ambient air quality standards.

F. OTHER EXEMPTIONS

The regulations promulgated today incorporate several other review exemptions. These exemptions will streamline the review process so that the review will focus on those sources of real air quality significance.

The exemptions are effective only when the public has been afforded an opportunity to comment on any material determinations. Also, protection of increment is assured by, first, not allowing a review exemption that might affect a class I area or an area where an applicable increment is known to be violated and, second, by EPA (or the State when implementing PSD) periodically reviewing the aggregate air quality impacts of unreviewed sources. Such periodic reviews of aggregate impacts, as mentioned above, shall be subject to public comment and an opportunity for public hearing. Additionally, the relevant impact of emissions of all previously unreviewed sources must be included in the review of any source subject to ambient air impact analysis.

Under the first exemption, any major source subject to nonattainment offset requirements for a particular pollutant which would impact no clean air area is not subject to PSD review for that pollutant. Review of such a source would be pointless. The nonattainment requirements would impose LAER, a limitation more stringent than BACT, and would ensure that the source would not contribute to a violation of any applicable NAAQS. Since the source would impact no clean air area, ambient review would be unnecessary to forestall any significant deterioration.

Temporary sources are also exempt from full PSD review, since their ambient air impacts are short-lived. Temporary emissions include, but are not limited to, those from a pilot plant, portable facility, construction or exploration. Emissions occurring for less than 2 years at one location would generally be considered temporary. Emissions for longer periods of time might also be considered to be temporary (such as the emissions related to the construction of power plants or other large sources), but should be dealt with on a case-by-case basis. Additionally, once a portable facility has received a PSD permit, it may relocate without undergoing PSD review: *Provided*, That the source notifies the reviewing agency of such relocation 30 days in advance, the proposed relocation would impact no class I area and no area where the increment is known to be violated, and emissions from the facility would not exceed allowable emissions.

The Agency's proposed PSD regulations stated that if an emitting unit within a source were modified so as to increase potential emissions by 250 tons per year (100 tons for certain listed source types), the unit be required to install best available control technology even if accompanying emission reductions within the source totally offset the new emissions. Industry roundly criticized this proposal as an unauthorized extension of the PSD program to situations where no threat of worsening air quality would exist. After a careful review of the meaning of "modification" in the PSD provisions of the act and consideration of the potential air quality effects of intrasource pollutant tradeoffs, the Agency has decided to adopt a regulatory scheme that in part accommodates industry's expressed concerns.

The regulations apply the definition of "modification" to the entire source (plant), with the result that if net emissions from the source do not increase when an existing unit is revamped, the source would not require full PSD review. This exemption would not be applicable as to BACT in situations where a major facility is added to or is reconstructed at a source, whether the addition is to replace previous production capacity or for growth.

The Agency believes that this approach is consistent with Congress' use of the term "modification" in section 169(2)(C). In adopting that section, one of the November 1977 "technical and conforming amendments" to the 1977 amendments, Congress said that it was honoring the conference agreement by conforming the terminology to its use in section 111, the provision on new source performance standards. At the time the conferees reached agreement and at the time the technical amendments were enacted, "modification" in section 111 had been interpreted by EPA regulation to allow source owners and operators to avoid the application of new source performance standards to changed existing facilities whose emissions would increase, if that increase were totally offset elsewhere in the source. Although the EPA interpretation was overturned by a United States court of appeals in early 1978 (*ASARCO v. EPA*, 11 ERC 1129 (D.C. Cir.)), there is no reason to believe that the Congress in late 1977 did not regard the definition, which had existed as law since 1975, as being well-suited to its purposes in the PSD program.

Under the regulations, source owners or operators who claim to be undertaking a modification exempt from the PSD program because of intrasource tradeoffs will typically not be allowed to obtain credit for reducing emissions from stacks while increasing emissions from roof monitors or other low-level emission points. Stack and nonstack emissions generally have very different impacts on air quality in areas near a source. Since the PSD program is ultimately concerned with effects on air quality, EPA does not feel bound to apply mechanically the pre-*ASARCO* case definition of "modification" in section 111, a section directed toward technology, so as to frustrate the air quality protection purpose of PSD.

The effects of treating "modifications" as discussed above will be that modifications to existing facilities will not require installation of best available control technology determined on a case-by-case basis, if the owner or operator demonstrates that zero net emissions would attend the change. The delay and expense involved in those determinations will, therefore, be avoided. Any applicable new source performance standards will, however, apply to modified facilities in accordance with the *ASARCO* decision.

The Administrator intends to use the following criteria in determining whether a no net increase exemption for a modified facility from the BACT requirement would apply: (1) All emission reductions from sources included in the baseline will be credited in terms of actual emissions using reasonable assumptions for operating conditions, except in two cases. Where a SIP revision was pending as of August 7, 1977, the applicable SIP as later relaxed would represent the baseline for crediting emission reduction. Changes in allowable emissions will also be used to credit reductions from major construction which commenced before January 6, 1975, but was not yet operating by August 7, 1977. For emission reductions from major construction previously approved to consume portions of an increment, allowable emissions as expressed in the PSD permit will be the basis for determining reduction credit. (2) All reductions must be enforceable (e.g., contained in the permit) and proposed in conjunc-

tion with the source undergoing preconstruction review. Proposed reductions must occur or have occurred before construction is complete. In determining whether no net increase would occur, credit will be given only for emission reductions accomplished in conjunction with the proposed modification. (3) The reduction(s) must equal or exceed those allowable emissions approved for the proposed construction. This determination will generally be made on a pounds-per-hour basis when all facilities involved are operating at their maximum expected production rate. When reductions are proposed on a tons-per-year basis, actual annual operating hours for the previous 1- or 2-year period will be used, as appropriate. (4) All proposed emission reductions must not be otherwise needed to provide for additional growth already approved. Finally, (5) air quality need not improve at every location affected by the proposed construction but on balance the affected area should not be adversely impacted.

The Administrator further believes that all new or modified facilities within sources without a net emission increase should generally be exempt on a pollutant-specific basis from the detailed ambient review requirements. In most cases no useful purpose is served by requiring an air quality impact review of sources that would obviously not degrade air quality. This exemption is not intended to apply when the source would impact a class I area or an area where the increment is known to be violated. The Administrator generally intends to use the same criteria as mentioned above for BACT exemptions in determining if a zero emission increase exemption for ambient review would apply. However, in contrast to the analysis required in the case of modified facilities seeking exemption from BACT review, the no net emission increase analysis employed for purposes of exemption from the ambient review shall take into account all emission increases and decreases occurring at the source since August 7, 1977.

G. FUGITIVE DUST

Several comments from representatives of strip mine and other surface mining interests questioned whether Congress intended dust emissions from surface mines resulting from mobile source activity and the action of the wind on exposed surfaces to be taken into account in reviewing the mines for PSD. The commentors contended that Congress only intended PSD review to apply to "stationary" sources and that mobile source activity and the action of the wind were not stationary sources. While Congress apparently did intend PSD to apply to stationary sources only, surface mines are stationary sources. Consequently, dust emanating from them should not be excluded from PSD review merely on the basis of what causes it to become airborne.

It was also argued that surface mines should receive some relief from strict consideration of ambient particulate concentrations associated with surface mining activities. A number of arguments were presented: that a large majority of the associated particulate matter is nonrespirable; that mining activity occurs in areas with limited population; that the particulate matter arises at ground level and falls out within very short distances; that visibility is not affected because the light scattering which hinders visibility is caused by smaller particles; and that even after the application of BACT, short-term particulate standards for NAAQS and PSD increments might not be met.

In view of these comments and other studies,[5] EPA has decided to exclude from any air quality impact assessment of a source or modification any fugitive dust that would emanate from it. "Fugitive dust", as defined in the regulations, consists of particles of native soil which is uncontaminated by pollutants resulting from industrial activity. Fugitive dust may come from haul roads or exposed surfaces through the action of man or the wind or both.

Additional support for this exclusion can be found in the legislative history. It points to the utilization of "administrative good sense" regarding fugitive dust (see S. Rep. No. 95-127, at 98 (1977)) and suggests that Congress did not intend PSD to prohibit surface mines of an economically viable size (see H. Rep. No. 95-294, at 165-66 (1977)). In addition, accurately assessing the short-term ambient impact of fugitive dust is often not possible. The Agency will continue its efforts to develop better short-term modeling techniques for fugitive dust.

Certain aspects of this exclusion for fugitive dust should be noted. First, the burden of showing to what extent emissions from the proposed source or modification would be made up of fugitive dust rests with the applicant. Second, the regulations do not exclude fugitive dust from the determination of potential emissions. Any source or modification which, taking into account emissions of fugitive dust, would have potential emissions equal to or greater than 250 tons per year would be subject to the applicable PSD requirements, especially in many instances the BACT requirement. Finally, EPA will treat emissions of fugitive dust as not consuming increment for the purpose of evaluating other sources under PSD.

The Administrator would like to emphasize that EPA intends to implement the above policy of excluding the fugitive dust only on an interim basis. EPA will reassess the implications of the policy and any possible technical improvements in modeling fugitive dust, and will adjust the policy as appropriate.

H. COMMENCE CONSTRUCTION

It is important in many cases to determine whether a source has commenced construction by a certain date. If a source commenced construction before June 1, 1975, it would be exempt (or "grandfathered") from PSD review altogether. 40 CFR 52.21(d). If a source commenced construction before August 7, 1977, it would be exempt from the amendments that EPA promulgated on November 3, 1977. 42 FR 57459. Finally, certain major stationary sources or major modifications will be exempt from today's final regulations if they obtained all applicable air pollution permits by March 1, 1978, and commence construction before 9 months from today.

In determining whether construction has "commenced," as that term is defined in section 169(2) of the act, it is first necessary to determine whether the owner or operator has obtained and continues to hold all necessary preconstruction approvals or permits required by Federal, State, or local air pollution emissions and air quality laws or regulations under the applicable State implementation plan. If all such permits have not been obtained or maintained, the inquiry can stop; this requirement is a prerequisite for finding that construction has commenced.

Assuming that the permit requirement is satisfied, it is still necessary to determine whether the source meets one of two additional requirements. The first requirement is that a continuous, physical on-site construction program has begun by the date in question and will be completed within a reasonable time. The words "continuous" and "on-site" are key to this test. It will not suffice merely to have begun erection of auxiliary buildings or construction sheds unless there is clear evidence (through contracts or otherwise) that construction of the entire facility will definitely go forward in a continuous manner (no breaks greater than 18 months). Nor will it suffice that erection of certain components began off-site.

The second requirement is that by the date in question binding agree-

[5] *EIS Colorado Environmental Impact Statement*, Department of Interior, 1976; *Survey of Fugitive Dust from Coal Mines*, EPA 908/1-78-003, February, 1978; *Impact of Significant Deterioration Proposals Upon Western Surface Coal Mining Operations*, Federal Energy Administration, May 5, 1976.

ments were established for construction of the facility to be completed in a reasonable time. From the legislative history, it is clear that boiler contracts, even those with penalty clauses, will typically not suffice. See S. Rep. No. 95-127, at 32-33 (1977). The source must enter into site-specific commitment through contracts.

The act specifies that the agreements must be ones "which cannot be cancelled or modified without substantial loss". The word "substantial" is clearly key to this test. EPA proposed for public comment on November 3, 1977, a "10 percent" test. Under this test, if the amount the owner would have had to pay to cancel construction agreements as of the date in question would have totalled more than 10 percent of the total project cost, the loss would be deemed "substantial."

Several comments were received, particularly from industry, on the "10 percent" test. Many of the commentators thought that the 10 percent rule was arbitrary since they regarded even smaller percentage losses on a $100,000,000 project as clearly being substantial. In response to these comments, EPA has abandoned the proposed 10 percent test as a firm rule. However, in order to help minimize administrative burdens and to provide some certainty, the Administrator will consider a loss as being substantial if it would be more than 10 percent of the total project cost. Whether a loss equal to or less than 10 percent is substantial will be determined on a case-by-case basis. The dominant consideration will be whether the "source has so committed itself, financially and otherwise, to the use of a particular site for a particular facility that relocation is not an option and delay or substantial modification would be severely disruptive." Id. at 32.

For a phased construction project for which a permit has been given for a number of phases (additional guidance below), EPA will apply the 10 percent guide to each phase of the project. Thus, if the loss for a phase would exceed 10 percent of the total cost of the phase, then EPA will treat the substantial loss criterion as having been met for that phase.

I. PHASED CONSTRUCTION PROJECTS

Multifacility sources approved for construction in distinct phases require special guidance. In general, if the phases of the major facilities involved are mutually dependent[6] and one of the major facilities has, by an applicable grandfather date, commenced construction, then all other dependent facilities specifically approved for construction at the same time will also hold such status. Conversely, each independent facility must individually commence construction by the prescribed grandfather date(s). For example, if a power company commenced construction on the first boiler of a three-boiler project in 1977 and plans to commence construction on the second in 1980, and on the third in 1982, the fact that there may be a phased construction process at the same general site does not mean that the boilers to be constructed in 1980 and 1982 can escape the new PSD requirements promulgated today.

The Administrator is concerned about the issuance of permits for phased construction projects that would have the effect of "reserving" the increment for a single source, thereby limiting growth options in the area. The options are to not issue phased construction permits at all or to limit the conditions under which a phased construction may reserve an increment well into the future. The Administrator intends to implement the latter option when plans for a phased project are certain and well-defined. One mechanism to be used is to reassess the BACT determination for the later phases of the project prior to construction to ensure that the most up-to-date control technology will be used. The Administrator will specify at the time that the original permit is issued which BACT determinations will be reassessed. The Administrator may also adopt regulations in the future to deal with this issue more comprehensively.

Also, for phased construction projects, the Administrator does not generally intend to limit the time for construction of the project. However, the first phase must be commenced within 18 months after permit approval, and each construction phase thereafter must commence within 18 months of the date approved in the permit and must not have breaks exceeding 18 months. The Administrator will further evaluate the 18 month criteria as it applies to breaks in construction to determine if a shorter time period (e.g., 6 months) should be used.

J. MISCELLANEOUS SOURCE APPLICABILITY QUESTIONS

EPA also sought comments as to the applicability of PSD to proposed sources below the stated size cutoffs present on the list of 28 source types. The Administrator specifically asked in the December 8, 1977 supplement to the November 3 proposal if fossil-fuel fired steam electric plants rated at or below 250 million British thermal units per hour heat input, municipal incinerators charging not more than 250 tons per day of refuse, fossil-fuel boilers rated at or below 250 million British thermal units per hour heat input, and petroleum storage and transfer units with a capacity of 300,000 barrels or less should be subject to PSD review under the general 250 tons per year potential emission applicability criterion.

EPA has decided that the 250 tons per year criterion should apply even though a source may be below a stated size cutoff. For example, a modification that increases capacity by more than 300,000 barrels for a petroleum storage unit would be subject to review if it has 100 tons per year potential emissions. Also, if a modification increases capacity by only 290,000 barrels but would have more than 250 tons per year potential emissions, then it, too must be reviewed. It should also be noted that the capacity size cutoff like the increased potential emission criteria for defining major modification is cumulative in nature. This approach prevents the "sized" sources from avoiding PSD review merely by limiting an increase to just below the size cutoff. It also ensures that all sources with potential emissions of 250 tons per year or more are treated equally.

In the November 3, 1977 proposal, EPA proposed not to treat a voluntary switch to an alternative fuel or raw material as a modification, if, prior to January 6, 1975, the source were capable of accommodating such fuel or material. Environmentalists opposed this treatment of voluntary fuel switches on the ground that Congress intended all such switches to be treated as modifications. EPA disagrees with this contention. Section 169(2)(C) of the Act by its reference to Section 111(a) in effect adopts the definition of "modification" under Section 111(a) for the purposes of PSD. In adding Section 169(2)(C) to the Act, Congress indicated that it intended to conform the meaning of "modification" to "usage in other parts of the Act." 123 Cong. Rec. H11955, 11957 (November 1, 1977). At the time, regulations promulgated under Section 111 had defined "modifications" to exclude voluntary fuel switches when the source, "prior to the date any standard under this part becomes applicable to that source type * * * [,] was designed to accommodate that alternative use." 40 CFR 60.14(e)(4) (1977). Apparently, Congress intended voluntary fuel switches to be treated similarly for PSD purposes. The PSD regulations first became applicable on January 6, 1975. Consequently, it would appear

[6] The dependence of facilities within a source will be determined on an individual basis. Two or more facilities will generally be considered dependent if the construction of one would necessitate the construction of the other facility(ies) at the same site in order to complete a given project or provide a given type (not level of) service. A kraft pulp mill is an example of a source with dependent facilities, whereas a three-boiler power plant is a typical example of a source with major independent facilities.

that Congress did not intend voluntary fuel switches to be treated as modifications for PSD purposes, if the source could have accommodated the fuel prior to January 6, 1975. In any event, the proposed treatment of voluntary fuel switches has been an integral part of the PSD regulations since their original promulgation in 1974. *See* 39 FR 42510 (December 5, 1974) § 52.01(d)(2)(iii)).

Since the proposed treatment of voluntary switches is consistent with Congressional intent and since that treatment was already a part of the pre-existing regulations, EPA has retained it in the revisions promulgated today. It should be noted, however, that although such switches will not be subject to PSD review, they will consume increment.

EPA also asked on November 3 whether it should treat a conversion to an alternative fuel by reason of an order under the Energy Supply and Environmental Coordination Act of 1974 or a natural gas curtailment plan pursuant to the Federal Power Act as a modification or not. Shortly thereafter, Congress answered this question. On November 16, it enacted technical and conforming amendments to the 1977 Amendments. Among those amendments was Section 169(2)(C). It in effect defined a modification as not including such conversions. *See* Clean Air Act Sections 111(a)(8) and 169(2)(C) (the latter added by Pub. L. 95-190, Sections 14(a)(54), 91 Stat. 1393, 1402 (November 16, 1977)).

In order to conform the final regulation to the Act and avoid confusion, EPA has further qualified the definition of "major modification" by adding the provision that a switch to an alternative fuel by reason of an order or rule under Section 125 of the Act is not a modification. *See* Clean Air Act Section 125(e).

Best Available Control Technology

The November 3, 1977 proposal solicited comment on the use of a de minimis level of 100 tons per year potential emissions for each pollutant for triggering the BACT requirement. The Agency stated the issue:

> For example, if a source is subject to PSD review either because it is one of the named sources or because it has potential emissions of 250 tons per year of a given pollutant, BACT would be required only for those pollutants whose potential emissions exceed 100 tons per year.

Comments received indicated that if a source were subject to PSD on the basis of the 250 tons per year criterion, then the BACT de minimis level should be made consistent for such sources (i.e., BACT would be required only for those pollutants for which the potential emissions exceed 250 tons per year). The Administrator agrees with this argument and appropriate changes are made in the regulations set forth below.[1]

Some questions have been raised regarding what "subject to regulation under this Act" means relative to BACT determinations. The Administrator believes that the proposed interpretation published on November 3, 1977, is correct and is today being made final. As mentioned in the proposal, "subject to regulation under the Act" means any pollutant regulated in Subchapter C of Title 40 of the Code of Federal Regulations for any source type. This then includes all criteria pollutants subject to NAAQS review, pollutants regulated under the Standards of Performance for new Stationary Sources (NSPS), pollutants regulated under the National Emission Standards for Hazardous Air Pollutants (NESHAP), and all pollutants regulated under Title II of the Act regarding emission standards for mobile sources.

BACT determinations are to be made on a case-by-case basis by the reviewing authority, taking into account several factors, including cost, energy, and technical feasibility. Efforts are now underway within EPA to assist States (and EPA itself in the interim) in making BACT determinations when they assume responsibility for implementing the PSD program. The Agency is preparing and will distribute a guidance document to assist reviewing authorities in implementing the BACT requirement. In addition, the Agency, in response to numerous comments, will establish a national clearinghouse for distributing BACT determinations. The Administrator intends that such a clearinghouse will serve to advise reviewing authorities of each other's determinations and thereby promote a consistent basis of experience. The clearinghouse is not, however, intended to substitute for a case-by-case analysis on the part of the reviewing authority to assess what control technology is required under BACT for the specific source undergoing review.

Other questions have arisen concerning the possibility for requiring control technology transfer for installing control technology to meet the BACT requirement. In general, the BACT requirement does not preclude consideration of technology used in other types of sources but not yet demonstrated for the specific source type undergoing review. However, due consideration of the other factors (economic costs, energy, etc.) must also be given before requiring such technology transfer in order to comply with the BACT requirement.

In addition, some questions, predominantly from the industrial sector, were raised during the public comment period concerning EPA's ability to impose a design, equipment, work practice, or operational standard under the review for BACT. The Administrator continues to believe that using such a standard is well within the intent of Congress. Under Section 111 (Standards of Performance for New Stationary Sources (NSPS)) such a standard, or a combination of such standards, can be promulgated by the Administrator if in his judgment such a standard is achievable and a conventional standard of performance is not feasible. Since an applicable NSPS forms the minimum BACT requirement, it follows that the Administrator should be able to prescribe a design, equipment, work practice, or operational standard for BACT. In addition, EPA's Interpretative Ruling of December 21, 1976 (41 FR 55524) to Section 110 governing new source review in nonattainment situations includes an opportunity for the Administrator to prescribe such a standard where emission limits are not feasible. The Administrator should also have this ability under PSD. It should be emphasized that the Administrator will prescribe a design, equipment, work practice, or operational standard only when technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of an emission standard infeasible.

Finally, it has come to the Administrator's attention that it may be appropriate to make the innovative technology waiver for NSPS under Section 111(j) of the Act applicable to BACT determinations under the PSD program. Briefly, Section 111(j) allows additional time for a source to comply with an applicable NSPS if: (1) The source plans to use innovative technology which has a substantial likelihood of meeting the NSPS at lower cost in terms of energy, economic, or non-air quality environmental impacts; and (2) the source would not cause an unreasonable risk to public health or welfare in its operation or malfunction. The addition of similar provisions to the PSD regulations would seem consistent with Congressional intent under NSPS and perhaps necessary to avoid the BACT determinations from negating the provisions of Section 111(j). Comments are solicited on this issue.

Geographic Applicability

The regulations made final today require any major source that affects air quality in areas with air quality cleaner than NAAQS (both internal and external to areas designated as nonattainment under Section 107) to meet

[1] It should be remembered that a 50-ton source is exempt from BACT review only as to the pollutant for which it is such a source.

the applicable preconstruction requirements of Section 165. In this respect, the Section 107 designations are not binding on source obligations. This reflects a continuation of EPA's policy of reviewing sources in nonattainment areas to prevent the transport of any emissions which would cause significant deterioration in an affected clean area. Conversely, any source which can make a specific demonstration, subject to public comment and opportunity for public hearing, that no impact will occur in a clean area (whether the area in question is designated as attainment or nonattainment) is exempt from PSD preconstruction review for the applicable pollutant.

Due to several comments received regarding the applicability of the PSD review in rural areas impacted by dust consisting of native soil, the Administrator wishes to reaffirm Agency policy that PSD preconstruction review generally applies to these areas. In general, a new major source to be located in a rural area with infrequent short-term violations of the total suspended particulate matter NAAQS should be allowed to construct after applying the required controls provided that the dust in question is uncontaminated by pollutants from industrial activity and the emissions of the source in conjunction with emissions from other sources in the vicinity (excluding such dust) would not cause a violation of the applicable increment(s) or the applicable NAAQS, assuming as to the NAAQS an appropriate "non-urban" background concentration.[4]

Modeling

In the regulations published today, EPA's assessment of the air quality impacts of new major sources and modifications will be based on EPA's "Guideline on Air Quality Models," OAQPS 1.2-080, U.S. Environmental Protection Agency, Research Triangle Park, N.C. 27711, April, 1978. This guideline is incorporated by reference into the regulations. Sources may request approval from the Administrator to use air quality dispersion models other than those noted in the "Guideline." If the Administrator determines that the model recommended in the "Guideline" and the model proposed by a source are comparable, the proposed model may be used. Methods outlined in EPA's "Workbook for the Comparison of Air Quality Models," U.S. EPA, Research Triangle Park, N.C. 27711, November 1977, may be used to determine comparability of models.

[4]Guideline on Air Quality Models, OAQPS 1.2-080, U.S. Environmental Protection Agency, Research Triangle Park, N.C. 27711, 1978.

The comments on the "Guideline" received in connection with the November 3 proposal and the Modeling Conference addressed three basic policy issues regarding implementation of the modeling guidelines. The first is whether a preliminary screening technique should be used to determine if full scale modeling would be necessary for preconstruction review. The second is whether the modeled estimate of source impact should be limited to a certain distance or a minimum numerical impact or both. Finally, the need to create an arbitration board to resolve modeling disputes was raised.

Industry and State agency comments on the first issue favored the use of some type of screening technique to alleviate resource burdens, i.e., the costs and time involved in sophisticated computer modeling of ambient air impacts. For screening purposes, conservative estimates of emission characteristics and ambient impacts would be modeled using relatively straightforward mathematical formula. However, industry comments stated that the specific screening techniques proposed on November 3, 1977, would be of little real value because of what they considered undue conservatism in the techniques. Environmental groups, however, felt screening techniques would improperly allow deterioration beyond increment allowances.

EPA intends to retain the screening procedures set forth in "Guidelines for Air Quality Maintenance Planning and Analysis, Vol. 10 (Revised), Procedures for Evaluating Air Quality Impact of New Stationary Sources," (October 1977, U.S. EPA, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711). The purpose of such procedures is to reduce resource burdens where there is little or no threat to the PSD increments or NAAQS. However, as the threat to the increment increases, more sophisticated techniques would be used. If these procedures indicate that the ambient concentration increase would exceed one-half of the remaining ambient increment or ceiling allowance, then refined analytical techniques would be used. Thus, as the available increment becomes smaller, sources that can be quickly estimated as impacting less than half the remaining increment will necessarily be those with smaller and smaller impacts.

As a result of comments received on the second policy issue, the Administrator intends to limit generally the application of air quality models to a downwind distance of no more than 50 kilometers. This is because dispersion parameters commonly in use are based on experiments relatively close to sources, and extending these parameters to long downwind distances results in great uncertainty as to the accuracy of the model estimates at such distances. Also, since the air quality impact of many sources falls off rapidly to insignificant levels, EPA does not intend to analyze the impact of a source beyond the point where the concentrations from the source fall below certain levels (which are generally based on the Class I increments). These levels shown below are therefore interpreted by the Administrator as representing the minimum amount of ambient impact that is significant.

Pollutant	Annual	Averaging time			
		24-Hour	8-Hour	3-Hour	1-Hour
SO_2	1 ug/m³	5 ug/m³		25 ug/m³	
TSP	1 ug/m³	5 ug/m³			
NO_2	1 ug/m³				
CO			0.5 mg/m³		2 mg/m³

However, since the 1977 Amendments provide special concern for Class I areas, any reasonably expected impacts for these areas must be considered irrespective of the 50 kilometer limitation or the above significance levels.

Comments were also received urging the creation of an arbitration board to resolve disputes in situations where refined assessment techniques are not readily available and where significant professional judgment must be made on a case-by-case basis, such as those involving fugitive dust and complex terrain problems, and long range transport. The Agency feels that such an approach would serve to unduly delay the decision making process. The Agency realizes that special concern will have to be addressed to these situations and that EPA Regional Office consistency will have to be assured. EPA intends to use the requirements under section 301(a)(2) of the Act as the mechanism for ensuring Regional consistency. Additionally, the Agency intends to establish an external advisory group to review periodically the modeling guidance and rec-

ommend proposed changes as necessary.

Many other comments of a technical nature were made regarding the Agency's modeling guidance. In many cases, solutions to the issues raised must rely on further scientific development. Some inherently must rely on case-by-case technical judgments by qualified scientists. EPA is actively working in the areas of model validation and improvement, turbulence characterization and the use of representative meteorological data and will provide additional guidance on these areas as it becomes available. Any proposed revisions to the currently issued "Guideline on Air Quality Models" will be subjected to review by the scientific community and interested and affected parties. Procedural mechanisms for effecting a thorough review are currently being investigated. It is anticipated that the "Guideline on Air Quality Models" will be reviewed and updated every 18-24 months. Notice of any proposed revisions will at a minimum be published in the FEDERAL REGISTER for review and comment prior to final issuance.

MONITORING REQUIREMENTS

Another issue frequently raised in the comments was that of the proposed monitoring requirements. Through sections 165 (a)(2) and (e) of the Act, Congress imposed on the owner or operator of a proposed major source who submits an application after August 7, 1978, the task of gathering and analyzing air quality monitoring data for inclusion in the application. Such data must be related to and gathered over the year preceding submittal of the complete application. In addition, through section 165(a)(7), the owner or operator may be required to conduct such post-construction monitoring as may be necessary to determine the effect the source or modification may have or is having on air quality in any area it might affect. It is apparent that Congress included the monitoring requirements as a means of checking the accuracy of the modeling results. However, in many cases, monitoring data may not provide an adequate "real world" check on the accuracy of modeling as it applies to increment consumption.

As proposed, EPA has decided generally not to require preconstruction or postconstruction ambient monitoring to determine how much of the increment has been used up. First, the year-to-year variability of air quality data limits the usefulness of certain data collected. Next, the increments are generally consumed by new or modified sources on the basis of allowable emissions, whereas ambient monitoring will measure air quality as it is affected by changes in actual emissions. Moreover, several emission changes that would be detected by an ambient monitor may not consume increment. That is because certain emissions which do or will affect air quality levels do not count against the increments (e.g., emissions from any source commencing construction prior to January 6, 1975, but completed at some later date; emissions resulting from compliance with an order under section 125). In addition, the State may exempt certain emission changes which otherwise would consume a portion of the available PSD increment (e.g., Federally-ordered fuel switches, temporary emissions, and new sources outside the United States). Finally, the stack height provisions of section 123 of the Act require in any case where a source uses a stack the height of which exceeds good engineering practice that dispersion modeling efforts assume a good engineering practice stack height. In actual practice, assessment of the available increment will normally be accomplished through an accounting procedure whereby atmospheric modeling of individual sources will be used to keep track of changes in actual and allowable emissions as appropriate.

Although increment consumption must of necessity be tracked through modeling, EPA does not intend that there be no "real world" checks on the accuracy of modeling. If an applicant or other party believes that a model used by EPA has either overpredicted or underpredicted the air quality impact of a source, EPA welcomes the submission of data which will more precisely define the impact of the source. For isolated sources, air quality monitoring may be sufficient for this purpose. However, model validation using air quality monitoring is generally expensive, since a complex monitoring network is usually required to ensure that maximum concentrations are measured. Other model validation methods may be less expensive and more reliable (e.g., tracer studies and wind tunnel experiments), especially where more than one source may contribute to the increment consumption. In any case, where subsequent data demonstrate to EPA's satisfaction that the modeling is in error, EPA will make appropriate adjustments so as to provide more (or less) of the increment for future use.

Since PSD review now includes a review against the applicable NAAQS, EPA intends to focus the preconstruction and postconstruction monitoring requirements on obtaining the necessary data for this purpose. To that end existing air quality data will be used to the maximum extent practicable and preconstruction monitoring will only be required as necessary. Also, if preliminary modeling or other data indicate that the new source would not pose a threat to a NAAQS, EPA will exempt the source from the preconstruction monitoring requirements altogether. For example, if an SO_2 source plans to construct in an area with no other SO_2 sources, no preconstruction monitoring for SO_2 would be required. On the other hand, because of the long range transport of oxidants, if a major source of volatile organic compounds intends to locate in an attainment or unclassified area for photochemical oxidant, EPA will routinely require that the source submit oxidant monitoring data. Finally, since certain sources with allowable emissions of less than 50 tons per year, 1,000 pounds per day, or 100 pounds per hour, are exempt from an air quality impact analysis, air quality monitoring would not be required for such sources.

All air quality monitoring must adhere to EPA's monitoring procedures in effect at the time of the monitoring. Currently, these requirements include criteria for siting monitors and instrument probes, the specification of reference methods and equivalent methods, and a minimum quality assurance program. EPA will implement the monitoring requirements promulgated in this rulemaking primarily through guidance found in "Ambient Air Monitoring Guidelines for Prevention of Significant Deterioration," OAQPS 1.2-096, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, May 1978. EPA encourages permit applicants to consult with the reviewing authority regarding the need for and implementation of the monitoring requirements.

The number of monitors will be based on a case-by-case determination considering source emission characteristics, terrain and meteorology. In some cases, one instrument per pollutant may be adequate. The source will be permitted to use existing data where appropriate. Judgments on the representativeness of existing data taken near the source must be made on a case-by-case basis.

Twenty-four hour samples for SO_2 (bubbler method) will not be acceptable, since 3-hour values would not be available for comparison with the 3-hour secondary NAAQS standard and increment. Also, if bubblers were to be used, detailed quality assurance requirements would be required because of known temperature instability problems with the bubbler methods. In most situations, the cost of running a bubbler may not be significantly different from a continuous analyzer due to the more rigid quality assurance procedures and the need for laboratory support.

Existing 24-hour particulate samples on 6-day intervals will generally be acceptable. In many areas, such data have been collected for a period of

years. As to such areas, additional monitoring will generally be unnecessary. However, the Administrator may require sample collection more often than every sixth day.

Baseline Concentration

The term "baseline concentration" is used in an abstract sense to establish the starting point for defining significant deterioration. This term is applicable for only sources of SO_2 and PM. Changes in the emission levels of these pollutants from sources contributing to the baseline concentration will in turn affect the amount of air quality increment that remains available to accommodate additional growth.

On November 3, 1977, EPA proposed a definition of baseline concentration that reflected a January 6, 1975, starting date for most sources. Additionally, this proposal contained specific guidance on how a baseline concentration might be established in a given area. Due to several implementation and legal concerns raised during the public comment period, the proposal of November 3 has been amended in three respects. The regulations promulgated today reflect an August 7, 1977, baseline date, place primary emphasis on tracking emission changes rather than on establishing a baseline concentration, and provide additional guidance as to what emission levels contribute to the baseline concentration.

Section 169(4) of the Act generally defines baseline in terms of the ambient concentration existing at the time of the first application for a permit in an area. However, major construction commencing after January 6, 1975, is specifically acknowledged to consume increment and cannot be considered as contributing to the baseline concentration. Both the November 3 proposal and the regulations promulgated today recognize the severe technical and administrative problems with implementing a definition of baseline concentration that relates to the date of first permit application in an area. The administrator believes that a strict interpretation of the Act's language would create thousands of different areas each with different baseline starting points. Moreover, these areas would eventually overlap as more and more sources applied for PSD permits. The final regulations and those proposed on November 3, 1977, resolve those problems by establishing a uniform starting date for defining the baseline concentration in all areas. The November 3 proposal, however, differs with the final regulations as to what the starting date should be.

The Administrator believes that an August 7, 1977, baseline date rather than one of January 6, 1975, better fulfills the requirements of the Act is the earliest possible time that could be used as a uniform starting date. This date coincides with the time that PSD review under some of the new Act provisions could have taken place and with the time that States were given affirmative responsibility to protect the applicable PSD increments in their plans. As required by the Act, major source construction commencing after January 6, 1975, is not included in the baseline. Such activities consume increments as discussed below.

The November 3, 1977, proposal also contained guidance for establishing a baseline concentration through the use of existing air quality data. That proposal also suggested an alternative means to construct a baseline concentration using air quality dispersion modeling when appropriate air quality data did not exist. The regulations promulgated today no longer suggest that the baseline concentration be formally established. The Administrator feels that increment consumption can be best tracked by tallying changes in the emission levels of sources contributing to the baseline concentration and increases in emissions due to new sources. Data to establish baseline air quality in an absolute sense would be needed only if increment consumption were to be tracked using ambient measurements. Thus, to implement the air quality increment approach set forth in the Act, the reviewing authority needs to verify that all changes from baseline emission rates (decreases or increases as appropriate) in conjunction with the increased emissions associated with approved new source construction will not violate an applicable increment or NAAQS. However, before this concept can be carried out, some additional guidance must be given regarding the type of emission changes that must be tracked.

EPA generally intends to use an actual emissions concept in implementing the above baseline approach. The concept of an actual emissions baseline has been used in implementing EPA's previous PSD regulations, and the Administrator believes that the Act intends for this concept to be continued. Section 169(4) defines baseline concentration in terms of existing air quality. In carrying out an actual emissions baseline, EPA will use reasonable assumptions for various factors affecting the level of source operation. 1977 values will generally be used for hours of operation, capacity utilization, and the types of materials combusted, processed and/or stored, unless another previous year would be more representative or such use would not be allowed under established permit conditions. Actual emissions also includes into the baseline any future increases in hours of operation or capacity utilization as they occur if such are allowed to the source as of August 7, 1977, and if the source could have been reasonably expected to make these increases on this date. This policy is consistent with the intent of the Act to base increment consumption on all emission increases from new and modified sources, but to allow consumption of the increment to occur from only certain non-modification activities (e.g., some fuel-switches) of existing sources. Thus, with the exceptions mentioned below, the Administrator will implement an actual emissions baseline in the regulations promulgated today.

An actual emissions baseline would be inappropriate to address situations where a SIP relaxation had been submitted to EPA, and was still pending, on August 7, 1977. Application of an actual emissions baseline would penalize those States that required sources which the SIP relaxation would affect to comply with the allowable rates under the existing SIP while EPA was in the process of reviewing the proposed SIP revision. Such States should not be forced to lose substantial portions of the applicable increments when other States allowed their sources to emit at the relaxed SIP level in advance of formal EPA approval. Therefore, the regulations promulgated today require that contributions to the baseline concentration from existing sources affected by a SIP relaxation pending as of August 7, 1977, would be based on the allowable emissions under the SIP as revised.

In addition, the actual emissions concept does not apply to those sources on which construction commenced before January 6, 1975, but which were not in operation by August 7, 1977. In such cases, the allowable emissions as defined in the construction approval will be used to define the contribution of those sources to baseline.

Increment Consumption

The comments raised a number of specific issues related to the consumption of PSD increments. The Administrator wishes to clarify first that increment consumption occurs in general as a result of new major stationary sources and major modifications commencing construction after January 6, 1975. The degree of such consumption is in general determined on the basis of approved allowable emissions. This procedure is consistent with the Act language of Part C to restrict increases in ambient concentration above baseline levels less than certain specified increments. Increases in the baseline emissions of sources contributing to the baseline concentration will also consume increment (see discussion on baseline concentration). Conversely, reductions in the baseline emissions of sources existing in 1977 generally expand the available PSD

increment(s). As indicated above, the degree of increment expansion that is creditable will generally be determined through air quality dispersion modeling of the source's emission clean-up beyond its 1977 actual emissions level. For a new source permitted under PSD before August 7, 1977, any renegotiated emission limits more restrictive than those previously permitted will count toward expanding the PSD increment available for other new source construction. States are free to choose the mechanisms for allocating the allowable increment to sources, including reversing any expansion of the increment achieved by control of existing sources for those sources which have installed additional controls.

In addition, offsets (i.e., additional control of existing sources) may be permitted in order to allow the construction of a new source in an area where the increment would not otherwise permit the construction of the source. Such offsets have always been acceptable under the Agency's PSD regulations, and the regulations promulgated below do not change this policy. To be acceptable, such reductions must be expressed in terms of actual emissions when the offsetting source has its emissions included in the baseline. An exception to this would be a major source commencing construction prior to January 6, 1975, but not yet operating by August 7, 1977. For such sources and for situations involving reductions from major construction projects commencing construction after January 6, 1975, offsets are to be transacted on the basis of allowable emissions.

In an area where the PSD increments are known to be exceeded, then the plan must be revised to correct any such violation. Applicable SIP revisions may include the use of economic incentives such as emission charges or the development of offset markets. In such areas major construction cannot continue to be approved unless all increment violations significantly impacted by the proposed emission increase are corrected prior to operation of the proposed source. Accordingly, if acceptable offsets are secured by the proposed source, then such source can be approved for construction. Alternatively, the SIP can be revised by the State to restore an increment and thus accommodate the new construction. Where a proposed major construction project would cause a new violation of the applicable increment, offsetting reductions must be obtained that are sufficient to avoid causing the violation.

The Administrator intends that any increment analysis as appropriate include the effects of growth and reduction in emissions of other sources in the area affected by the proposed source occurring since the date of the effective baseline. Sources will be generally required to obtain such information, but the information will be available from the State air pollution control agency.

Questions have also arisen regarding how SIP relaxations are to be taken into account in terms of consuming available PSD increments. As stated above, increments are consumed as allowable emissions are increased, and this is true whether those increases are a result of new source growth or SIP relaxations. The regulations promulgated elsewhere in today's FEDERAL REGISTER require that any SIP relaxation that would affect a PSD area must include a determination that the applicable increment will not be exceeded. Whether a plan relaxation would consume the available increment would be typically determined through modeling the difference between the allowable emissions resulting from the new relaxed SIP limit and the emissions of the applicable source(s) which were included in the baseline.

SIP relaxations received by EPA after August 7, 1977, but before today's FEDERAL REGISTER do consume increment. However, EPA believes that such revisions require special consideration due to the uncertainty of how the new Act would apply to such SIP relaxations. To review these proposed revisions as to the degree of anticipated increment consumption without advance notice would have caused considerable delay and economic disruption. Therefore, the Administrator feels that these SIP relaxations need not be individually assessed to determine the precise amount of consumed increment before such relaxations may be approved. The periodic assessment requirement to verify that the applicable increments have not been exceeded is thought to be sufficient protection. This assessment would result in revisions to the SIP if an increment were found to have been violated. All SIP relaxations received after today will be individually reviewed against the available PSD increments. If deterioration beyond that allowed under the available increments would occur under a SIP relaxation, then such a SIP revision would be disapproved to the extent that it would cause significant deterioration.

The Administrator is concerned that while States are developing their own PSD regulations and EPA is implementing the PSD program, EPA should not make decisions which would have a significant impact upon future growth options of the States. In the interim, EPA generally will allocate use of the increments on a first-come, first-served basis as has been done under the previous PSD regulations. The Administrator recognizes that this approach may not be adequate on a long-term basis to achieve the purposes of the Act. Other options are available and should be pursued by the States in the development of their plans for PSD. Under 40 CFR 51.24, published today, States are required to develop a program for increment allocation and a number of program options are suggested for their consideration. EPA will be assessing the merits and feasibility of several allocation options (including first-come, first-served) and thereafter issue guidance for the submission of revised State implementation plans. This evaluation will consider alternatives in which carefully designed economic incentives serve as an adjunct to or a replacement for an administrative permitting procedure. The economic incentive programs to be considered include marketable permits, emission fees, and emissions density zoning.

While EPA is administering the PSD permit program, the Administrator will solicit and give careful consideration during the permit process to the views of State and local officials regarding the impact of proposed permit decisions on an area's potential for economic development. Additionally, where a source is expected to consume the entire remaining increment, the Administrator will notify the Governor of this proposed action.

In response to comments from the Department of Energy, EPA while implementing the PSD program will exclude, if so requested by a Governor, certain concentrations in calculating increment usage as provided in section 163(c) of the Act. These concentrations include ambient impacts from federally ordered fuel switches, fuel switches caused by gas curtailment plans, temporary emissions and new sources outside the United States. The Administrator will assume that all fuel conversion operations consume portions of the available increment unless otherwise requested by the Governor.

The Governor's ability to effect exclusions under section 163(c) will not automatically extend beyond nine months from today. No exclusion beyond this time will occur unless the Governor has submitted a plan which meets all requirements of 40 CFR 51.24 (published elsewhere in today's FEDERAL REGISTER). The Administrator would also like to point out that exclusions under section 163(c) are not always of a permanent nature. Exclusions from increment consumption for stationary sources affected by a natural gas curtailment plan or by orders under the Energy Supply and Environmental Coordination Act of 1974 may occur no later than 5 years after the effective date of the applicable plan or order. A Governor should realize that full use of such exclusions may lead to plan revisions in the future in order to

preserve the PSD increment. The exclusions will allow more sources to be approved than could be otherwise in the interim. Consequently, when the exclusions expire, the excluded concentrations may well cause exceedences.

To allow the Governor to make use of section 163(c) prior to plan approval reflects a change from the Agency's preliminary position. In the November 3, 1977, proposal, the Agency stated that the Act does not appear to make such exclusions available as to a particular State until EPA has approved a PSD SIP revision for that State. Behind that position was the Agency's perception that Congress had conditioned the availability of the exclusions on approval of such revisions in order to give the States added incentive for submitting them. The Agency still believes that that was Congress' purpose. It has concluded, however, that making the exclusions unavailable nine months from today to States which have failed to submit an approvable PSD revision will serve that purpose as well as making them available at that time only to States which have submitted such a revision. A State will have as much reason to submit a plan revision under the present rule as it would have had under the old. In addition, making the exclusions available now will give the States more flexibility than they would have had for permitting growth.

Another issue related to increment consumption and EPA involvement concerns the review of major construction that would impact interstate areas. The Administrator is pursuing various mechanisms to allocate the amount of increment consumption to such sources when affected States are in disagreement. If an interstate dispute arises before more definitive guidance can be prepared, the Administrator intends to restrict increment consumption to equal amounts at the State line. In other words, when two States are involved in an interstate dispute over increment consumption, no source or series of sources in either State can be approved for construction if they would consume over one-half of the total applicable increment at the State line. Applicable increment here refers to that increment applying in the State where such construction would occur.

Federal Lands

A number of comments suggested that EPA prepare and publish guidance on determining the impacts a source may have on "air quality related values." Such general guidance is not currently available and, until such time as it is, determinations should be made on a case-by-case basis. Sources which may impact Federal Class I areas should consult with the EPA Regional Offices on questions concerning the possibility of adverse impacts on air quality values and the type of analysis that must be included with the permit application.

Environmental groups pointed out that the proposed regulations did not specifically require Federal Land Managers to protect "affirmatively" air quality related values in Federal Class I areas. Federal Land Managers do have such a responsibility, and the regulations now say so explicitly. It was also suggested that a Federal Land Manager is obligated to withhold any other permits for which he or she is the issuing authority or over which he or she may have control, if EPA did not concur with the Federal Land Manager's determination that air quality related values would be adversely impacted. Part C of the Act and therefore the regulations promulgated today do not require this, but neither do they prohibit a Federal Land Manager from withholding a permit.

Section 165(d)(2)(C)(ii) of the Act would bar the issuance of a PSD permit "[i] in any case where the Federal Land Manager (of lands in a Class I area) demonstrates to the satisfaction of the State" that the proposed source or modification would adversely impact the air quality related values of such lands. Section 165(d)(2)(C)(iii), on the other hand, would allow the "State" to issue a permit if the Federal Land Manager were to certify that the source or modification would not adversely impact such values, even though it would cause or contribute to a violation of the applicable Class I increments. Both sections presuppose that the "State" would be the permitting authority. The final regulations published today contain provisions (§ 52.21(q) (3) and (4)) which for the most part parallel Sections 165(d)(2)(C) (ii) and (iii). The regulations, however, treat the "Administrator" as the permitting authority, not the "State". This is appropriate. Congress must have recognized that there would be instances in which EPA, and not a State, would be the permitting authority. Furthermore, Congress would have expected, in such instances, that the safeguard of Section 165(d)(2)(C)(ii) and the variance of Section 165(d)(2)(C)(iii) would be available.

National Ambient Air Quality Standards

Under the regulations published today, no PSD permit for a source whose increased allowable emissions are equal to or greater than 50 tons per year, 1,000 pounds per day, or 100 pounds per hour may be granted without assurance that emissions from the source will not cause or contribute to a violation of a NAAQS. If an initial determination shows that such a source may interfere with an applicable ambient standard, the owner or operator must reduce emissions or secure appropriate emission offsets from other nearby sources. While EPA is implementing the PSD program, it does not intend to be involved directly in approving emission offsets for a proposed source except where EPA is also implementing a State new source review program. Thus, the owner or operator would first have to obtain offsets through the State agency new source review program before EPA could approve the source under PSD. An EPA permit cannot be issued until the State permit is granted. Sources are encouraged to seek concurrent review from the State when applying for a PSD permit to minimize review delays. Such action will assist the source to commence construction on schedule as required under the PSD permit.

Other Issues

A number of other important concerns were raised by comments, including undue review delays, the effects of pending reclassifications on preconstruction reviews, guidance on other impact analyses, the definition of source and the high costs of required newspaper advertisements.

Several comments raised the concern that PSD review might be unduly long, especially for those sources which would have only minimal air quality impacts. The Administrator will take steps to expeditiously evaluate permit applications and will inform applicants as to the completeness of their submittals within 30 days or less of receiving the application. In addition, the exemption for 50-ton sources discussed above will greatly reduce the permit delays that were possible under the proposed regulation. The Administrator expects that such sources will satisfy most, if not all, their PSD requirements by going through the State new source review programs. Although such a source must still obtain a PSD permit the Administrator does not intend generally to duplicate the analyses and determinations made during the State new source review. In reviewing a 50-ton source, every effort will be made to complete the required analyses within 30 days after receiving a complete application and the public participation process to the extent necessary within 45 days thereafter. If a public comment period is necessary, it will run for 30 days from the first day of the 45-day period. On that day EPA will give due notice of the Agency's determinations and tentative decision. At this time, EPA will also solicit comment on the need to conduct a public hearing, if one is necessary. If no response to the latter is received by day

15, no public hearing will be held. If no supportable concerns are received during the scheduled 30-day public comment period (or the public hearing if one is held), the Administrator intends to issue final approval to construct within 15 days after the public comment period has ended. These are current estimates of the maximum time required for PSD review of smaller sources. Every effort will be made to shorten this review time.

In response to comments received, EPA has excluded from the final regulations the proposed provision requiring that final action on a permit be delayed if the source would impact upon an area where a proposed redesignation to a more stringent class was pending. The original intent of this provision was to protect potential class I areas during start-up of the new PSD program. Under the previous PSD regulations, all areas were initially class II. Now Congress has designated several mandatory class I areas. Moreover, States have had considerable opportunity to designate any others. Thus, this provision is no longer necessary. States may establish such a requirement as part of their own implementation plans.

The analysis related to a source's impact on soils, vegation, and visibility should focus primarily on such impacts in class I areas, since final approval may turn on the effects of the source on air quality related values in class I areas. Where there would be no class I impacts, impacts elsewhere may affect the BACT determination, but would typically not have a significant bearing on the final approval decision. The impact assessment should generally be qualitative in nature and designed to inform the general public of the relative impact of the source on those values. It should be noted, too, that the Administrator intends to base approval or disapproval of a major source regarding its ambient air quality impact on both the direct emissions of that source and those secondary emissions that can be accurately quantified.[4] All secondary emissions that cannot be accurately estimated during the preconstruction review will consume the applicable increment(s) as they occur.

[4]Where a new source will result in specific and well defined secondary emissions which can be accurately quantified, the reviewing authority should consider such secondary emissions in determining whether the source would cause or contribute to a violation of an ambient ceiling or increment. However, since EPA's authority to perform or require indirect source review relating to mobile sources regulated under Title II of the Act (motor vehicles and aircraft), has been restricted by statute, consideration of the indirect impacts of motor vehicles and aircraft traffic is not required under this Ruling.

Pursuant to comments on the November 3, 1977, proposal, the Administrator is revising the definition of source to mean any structure, building, facility, equipment, installation, or operation (or combination thereof) which is located on one or more contiguous or adjacent properties and owned or operated by the same person or persons under common control. This precludes a large plant from being separated into individual production lines for purposes of determining applicability of the PSD requirements. This in turn resolves the issue raised in the proposal regarding PSD applicability to a facility which is constructed at the site of, but is different than, a source listed in the 28 categories. Such a facility would be part of the source under the above definition, and thus would be subject to PSD review as a modification to it.

A number of State agencies commented that the cost of "prominent newspaper advertisement" of the opportunity for public comment at a hearing could become prohibitively expensive, especially if the number of PSD reviews under the act increases as expected. Therefore, the regulations have been changed to remove the requirement for "prominent" newspaper advertisement. Nevertheless, whatever notice is given must provide a meaningful opportunity for public comment.

Final Action

The following regulatory amendments are nationally applicable, and this action is based upon determinations of nationwide scope and effect. Therefore, under section 307(b)(1) of the act, judicial review may be sought only in the United States Court of Appeals for the District of Columbia. Petitions for judicial review must be filed on or before August 18, 1978.

(Sec. 101(b)(1), 110, 111, 123, 125(c), 160-169, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7401(b)(1), 7410, 7411, 7423, 7425(c), 7470-7479, 7601(a)).)

Dated June 9, 1978.

Douglas M. Costle,
Administrator.

Title 40, Part 52 of the Code of Federal Regulations is amended as follows:

1. Section 52.21 is revised as follows:

§ 52.21 Prevention of significant deterioration of air quality.

(a) *Plan disapproval.* The provisions of this section are applicable to any State implementation plan which has been disapproved with respect to prevention of significant deterioration of air quality in any portion of any State where the existing air quality is better than the national ambient air quality standards. Specific disapprovals are listed where applicable, in subparts B through DDD of this part. The provisions of this section have been incorporated by reference into the applicable implementation plans for various States, as provided in subparts B through DDD of this part. Where this section is so incorporated, the provisions shall also be applicable to all lands owned by the Federal Government and Indian Reservations located in such State. No disapproval with respect to a State's failure to prevent significant deterioration of air quality shall invalidate or otherwise affect the obligations of States, emission sources, or other persons with respect to all portions of plans approved or promulgated under this part.

(b) *Definitions.* For the purposes of this section:

(1) "Major stationary source" means—

(i) Any of the following stationary sources of air pollutants which emit, or have the potential to emit, 100 tons per year or more of any air pollutant regulated under the Clean Air Act (the "Act"): Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries, lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300 thousand barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants; and

(ii) Notwithstanding the source sizes specified in paragraph (b)(1)(i) of this section, any source which emits, or has the potential to emit, 250 tons per year or more of any pollutant regulated under the Act.

(2) "Major modification" means any physical change in, change in the method of operation of, or addition to a stationary source which increases the potential emission rate of any air pollutant regulated under the act (including any not previously emitted and taking into account all accumulated increases in potential emissions occurring at the source since August 7, 1977, or since the time of the last construction approval issued for the source pursuant to this section, which-

ever time is more recent, regardless of any emission reductions achieved elsewhere in the source) by either 100 tons per year or more for any source category identified in paragraph (b)(1)(i) of this section, or by 250 tons per year or more for any stationary source.

(i) A physical change shall not include routine maintenance, repair and replacement.

(ii) A change in the method of operation, unless previously limited by enforceable permit conditions, shall not include:

(a) An increase in the production rate, if such increase does not exceed the operating design capacity of the source;

(b) An increase in the hours of operation;

(c) Use of an alternative fuel or raw material by reason of an order in effect under Sections 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation), or by reason of a natural gas curtailment plan in effect pursuant to the Federal Power Act;

(d) Use of an alternative fuel or raw material, if prior to January 6, 1975, the source was capable of accommodating such fuel or material; or

(e) Use of an alternative fuel by reason of an order or rule under Section 125 of the Act;

(f) Change in ownership of the source.

(3) "Potential to emit" means the capability at maximum capacity to emit a pollutant in the absence of air pollution control equipment. "Air pollution control equipment" includes control equipment which is not, aside from air pollution control laws and regulations, vital to production of the normal product of the source or to its normal operation. Annual potential shall be based on the maximum annual rated capacity of the source, unless the source is subject to enforceable permit conditions which limit the annual hours of operation. Enforceable permit conditions on the type or amount of materials combusted or processed may be used in determining the potential emission rate of a source.

(4) "Source" means any structure, building, facility, equipment, installation, or operation (or combination thereof) which is located on one or more contiguous or adjacent properties and which is owned or operated by the same person (or by persons under common control).

(5) "Facility" means an identifiable piece of process equipment. A source is composed of one or more pollutant-emitting facilities.

(6) "Fugitive dust" means particulate matter composed of soil which is uncontaminated by pollutants resulting from industrial activity. Fugitive dust may include emissions from haul roads, wind erosion of exposed soil surfaces and soil storage piles and other activities in which soil is either removed, stored, transported, or redistributed.

(7) "Construction" means fabrication, erection, installation, or modification of a source.

(8) "Commence" as applied to construction of a major stationary source or major modification means that the owner or operator has all necessary preconstruction approvals or permits and either has:

(i) Begun, or caused to begin, a continuous program of physical on-site construction of the source, to be completed within a reasonable time; or

(ii) Entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction of the source to be completed within a reasonable time.

(9) "Necessary preconstruction approvals or permits" means those permits or approvals required under Federal air quality control laws and regulations and those air quality control laws and regulations which are part of the applicable State implementation plan.

(10) "Best available control technology" means an emission limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR part 60 and part 61. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of an emission standard infeasible, a design, equipment, work practice or operational standard, or combination thereof, may be prescribed instead to require the application of best available control technology. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.

(11) "Baseline concentration" means that ambient concentration level reflecting actual air quality as of August 7, 1977, minus any contribution from major stationary sources and major modifications on which construction commenced on or after January 6, 1975. The baseline concentration shall include contributions from:

(i) The actual emissions of other sources in existence on August 7, 1977, except that contributions from facilities within such existing sources for which a plan revision proposing less restrictive requirements was submitted on or before August 7, 1977, and was pending action by the Administrator on that date shall be determined from the allowable emissions of such facilities under the plan as revised; and

(ii) The allowable emissions of major stationary sources and major modifications which commenced construction before January 6, 1975, but were not in operation by August 7, 1977.

(12) "Federal Land Manager" means, with respect to any lands in the United States, the Secretary of the department with authority over such lands.

(13) "High terrain" means any area having an elevation 900 feet or more above the base of the stack of a facility.

(14) "Low terrain" means any area other than high terrain.

(15) "Indian Reservation" means any Federally-recognized reservation established by Treaty, Agreement, Executive Order, or Act of Congress.

(16) "Indian Governing Body" means the governing body of any tribe, band, or group of Indians subject to the jurisdiction of the United States and recognized by the United States as possessing power of self-government.

(17) "Reconstruction" will be presumed to have taken place where the fixed capital cost of the new components exceed 50 percent of the fixed capital cost of a comparable entirely new facility or source. However, any final decision as to whether reconstruction has occurred shall be made in accordance with the provisions of 40 CFR 60.15(f)(1)-(3). A reconstructed source will be treated as a new source for purposes of this section, except that use of an alternative fuel or raw material by reason of an order in effect under section 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation), by reason of a natural gas curtailment plan in effect pursuant to the Federal Power Act, or by reason of an order or rule under section 125 of the act, shall not be considered reconstruction. In determining best available control technology for a reconstructed source, the provisions of

40 CFR 60.15(f)(4) shall be taken into account in assessing whether a standard of performance under 40 CFR part 60 is applicable to such source.

(18) "Fixed capital cost" means the capital needed to provide all of the depreciable compo:

(19) "Allowable emissions" means the emission rate calculated using the maximum rated capacity of the source (unless the source is subject to enforceable permit conditions which limit the operating rate, or hours of operation, or both) and the most stringent of the following:

(i) Applicable standards as set forth in 40 CFR part 60 and part 61,

(ii) The applicable State implementation plan emission limitation, or

(iii) The emission rate specified as a permit condition.

(c) *Ambient air increments.* In areas designated as class I, II or III, increases in pollutant concentration over the baseline concentration shall be limited to the following:

Maximum allowable increase

[Micrograms per cubic meter]

Pollutant	Class I	Class II	Class III
Particulate matter:			
Annual geometric mean	5	19	37
24-h maximum	10	37	75
Sulfur dioxide:			
Annual arithmetic mean	2	20	40
24-h maxium	5	91	182
3-h maximum	25	512	700

For any period other than an annual period, the applicable maximum allowable increase may be exceeded during one such period per year at any one location.

(d) *Ambient air ceilings.* No concentration of a pollutant shall exceed:

(1) The concentration permitted under the national secondary ambient air quality standard, or

(2) The concentration permitted under the national primary ambient air quality standard, whichever concentration is lowest for the pollutant for a period of exposure.

(e) *Restrictions on area classifications.* (1) All of the following areas which were in existence on August 7, 1977, shall be Class I areas and may not be redesignated:

(i) International parks,

(ii) National wilderness areas which exceed 5,000 acres in size,

(iii) National memorial parks which exceed 5,000 acres in size, and

(iv) National parks which exceed 6,000 acres in size.

(2) Areas which were redesignated as Class I under regulations promulgated before August 7, 1977, shall remain Class I, but may be redesignated as provided in this section.

(3) Any other area, unless otherwise specified in the legislation creating such an area, is initially designated Class II, but may be redesignated as provided in this section.

(4) The following areas may be redesignated only as Class I or II:

(i) An area which as of August 7, 1977, exceeded 10,000 acres in size and was a national monument, a national primitive area, a national preserve, a national recreational area, a national wild and scenic river, a national wildlife refuge, a national lakeshore or seashore; and

(ii) A national park or national wilderness area established after August 7, 1977, which exceeds 10,000 acres in size.

(f) *Exclusions from increment consumption.* (1) Upon written request of the Governor, made after notice and opportunity for at least one public hearing to be held in accordance with procedures established in 51.4 of this chapter, the Administrator shall exclude the following concentrations in determining compliance with a maximum allowable increase:

(i) Concentrations attributable to the increase in emissions from sources which have converted from the use of petroleum products, natural gas, or both by reason of an order in effect under Sections 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) over the emissions from such sources before the effective date of such order;

(ii) Concentrations attributable to the increase in emissions from sources which have converted from using natural gas by reason of a natural gas curtailment plan in effect pursuant to the Federal Power Act over the emissions from such sources before the effective date of such plan;

(iii) Concentrations of particulate matter attributable to the increase in emissions from construction or other temporary activities; and

(iv) The increase in concentrations attributable to new sources outside the United States over the concentrations attributable to existing sources which are included in the baseline concentration.

(2) No exclusion under paragraph (f)(1) (i) or (ii) of this section shall apply more than five years after the effective date of the order to which paragraph (f)(1)(i) refers or the plan to which paragraph (f)(1)(ii) refers, whichever is applicable. If both such order and plan are applicable, no such exclusion shall apply more than five years after the later of such effective dates.

(3) No exclusion under paragraph (f) of this section shall occur after March 19, 1979, if a State implementation plan revision meeting the requirements of 40 CFR 51.24 has not been submitted to the Administrator by that time.

(g) *Redesignation.* (1) All areas (except as otherwise provided under paragraph (e) of this section) are designated Class II as of December 5, 1974. Redesignation (except as otherwise precluded by paragraph (e) of this section) may be proposed by the respective States or Indian Governing Bodies, as provided below, subject to approval by the Administrator as a revision to the applicable State implementation plan.

(2) The State may submit to the Administrator a proposal to redesignate areas of the State Class I or Class II provided that:

(i) At least one public hearing has been held in accordance with procedures established in § 51.4 of this chapter;

(ii) Other States, Indian Governing Bodies, and Federal Land Managers whose lands may be affected by the proposed redesignation were notified at least 30 days prior to the public hearing;

(iii) A discussion of the reasons for the proposed redesignation, including a satisfactory description and analysis of the health, environmental, economic, social and energy effects of the proposed redesignation, was prepared and made available for public inspection at least 30 days prior to the hearing and the notice announcing the hearing contained appropriate notification of the availability of such discussion;

(iv) Prior to the issuance of notice respecting the redesignation of an area that includes any Federal lands, the State has provided written notice to the appropriate Federal Land Manager and afforded adequate opportunity (not in excess of 60 days) to confer with the State respecting the redesignation and to submit written comments and recommendations. In redesignating any area with respect to which any Federal Land Manager had submitted written comments and recommendations, the State shall have published a list of any inconsistency between such redesignation and such comments and recommendations (together with the reasons for making such redesignation against the recommendation of the Federal Land Manager); and

(v) The State has proposed the redesignation after consultation with the elected leadership of local and other substate general purpose governments in the area covered by the proposed redesignation.

(3) Any area other than an area to which paragraph (c) of this section refers may be redesignated as Class III if—

(i) The redesignation would meet the requirements of paragraph (g)(2) of this section;

(ii) The redesignation, except any established by an Indian Governing Body, has been specifically approved by the Governor of the State, after consultation with the appropriate committees of the legislature, if it is in session, or with the leadership of the legislature, if it is not in session (unless State law provides that the redesignation must be specifically approved by State legislation) and if general purpose units of local government representing a majority of the residents of the area to be redesignated enact legislation or pass resolutions concurring in the redesignation;

(iii) The redesignation would not cause, or contribute to, a concentration of any air pollutant which would exceed any maximum allowable increase permitted under the classification of any other area or any national ambient air quality standard; and

(iv) Any permit application for any major stationary source or major modification, subject to review under paragraph (l) of this section, which could receive a permit under this section only if the area in question were redesignated as Class III, and any material submitted as part of that application, were available insofar as was practicable for public inspection prior to any public hearing on redesignation of the area as Class III.

(4) Lands within the exterior boundaries of Indian Reservations may be redesignated only by the appropriate Indian Governing Body. The appropriate Indian Governing Body may submit to the Administrator a proposal to redesignate areas Class I, Class II, or Class III: *Provided*, That:

(i) The Indian Governing Body has followed procedures equivalent to those required of a State under paragraphs (g)(2), (g)(3)(iii), and (g)(3)(iv) of this section; and

(ii) Such redesignation is proposed after consultation with the State(s) in which the Indian Reservation is located and which border the Indian Reservation.

(5) The Administrator shall disapprove, within 90 days of submission, a proposed redesignation of any area only if he finds, after notice and opportunity for public hearing, that such redesignation does not meet the procedural requirements of this paragraph or is inconsistent with paragraph (e) of this section. If any such disapproval occurs, the classification of the area shall be that which was in effect prior to the redesignation which was disapproved.

(6) If the Administrator disapproves any proposed redesignation, the State or Indian Governing Body, as appropriate, may resubmit the proposal after correcting the deficiencies noted by the Administrator.

(h) *Stack heights.* (1) The degree of emission limitation required for control of any air pollutant under this section shall not be affected in any manner by—

(i) So much of the stack height of any source as exceeds good engineering practice, or

(ii) Any other dispersion technique.

(2) Paragraph (h)(1) of this section shall not apply with respect to stack heights in existence before December 31, 1970, or to dispersion techniques implemented before then.

(i) *Review of major stationary sources and major modifications—Source applicability and general exemptions.* (1) No major stationary source or major modification shall be constructed unless the requirements of paragraphs (j) through (r) of this section, as applicable, have been met. The requirements of paragraphs (j) through (r) shall apply to a proposed source or modification only with respect to those pollutants for which it would be a major stationary source or major modification.

(2) The requirements of paragraphs (j) through (r) of this section shall not apply to a major stationary source or major modification that was subject to the review requirements of 40 CFR 52.21(d)(1) for the prevention of significant deterioration as in effect before March 1, 1978, if the owner or operator—

(i) Obtained under 40 CFR 52.21 a final approval effective before March 1, 1978;

(ii) Commenced construction before March 19, 1979; and

(iii) Did not discontinue construction for a period of 18 months or more and completed construction within a reasonable time.

(3) The requirements of paragraphs (j) through (r) of this section shall not apply to a major stationary source or major modification that was not subject to 40 CFR 52.21 as in effect before March 1, 1978, if the owner or operator—

(i) Obtained all final Federal, State and local preconstruction permits necessary under the applicable State implementation plan before March 1, 1978;

(ii) Commenced construction before March 19, 1979; and

(iii) Did not discontinue construction for a period of 18 months or more and completed construction within a reasonable time.

(4) The requirements of paragraphs (j) through (r) of this section shall not apply to a major stationary source or major modification that was subject to 40 CFR 52.21 as in effect before March 1, 1978, if review of an application for approval for the source or modification under 40 CFR 52.21 would have been completed by March 1, 1978, but for an extension of the public comment period pursuant to a request for such an extension. In such a case, the application shall continue to be processed, and granted or denied, under 40 CFR 52.21 as in effect prior to March 1, 1978.

(5) The requirements of paragraphs (j), (l), (n) and (p) of this section shall not apply to a major stationary source or major modification with respect to a particular pollutant if the owner or operator demonstrates that—

(i) As to that pollutant, the source or modification is subject to the emission offset ruling (41 FR 55524), as it may be amended, or to regulations approved or promulgated pursuant to Section 173 of the Act; and

(ii) The source or modification would impact no area attaining the national ambient air quality standards (either internal or external to areas designated as nonattainment under Section 107 of the Act).

(6) The requirements of paragraphs (j) through (r) of this section shall not apply, upon written request of the Governor of a State, to a nonprofit health or education institution to be located in that State.

(7) A portable facility which has previously received construction approval under the requirements of this section as applicable may relocate without again being subject to those requirements if—

(i) Emissions from the facility would not exceed allowable emissions;

(ii) Emissions from the facility would impact no Class I area and no area where an applicable increment is known to be violated; and

(iii) Notice is given to the Administrator at least 30 days prior to such relocation identifying the proposed new location and the probable duration of operation at such location.

(j) *Control technology review.* (1) A major stationary source or major modification shall meet all applicable emission limitations under the State implementation plan and all applicable emission standards and standards of performance under 40 CFR Part 60 and Part 61.

(2) A major stationary source or major modification shall apply best available control technology for each applicable pollutant, unless the increase in allowable emissions of that pollutant from the source or modification would be less than 50 tons per year, 1,000 pounds per day, or 100 pounds per hour, whichever is most restrictive.

(i) The preceding hourly and daily rates shall apply only with respect to a pollutant for which an increment, or national ambient air quality standard, for a period less than 24 hours or for a

24 hour period, as appropriate, has been established.

(ii) In determining whether and to what extent a modification would increase allowable emissions, there shall be taken into account no emission reductions achieved elsewhere at the source at which the modification would occur.

(3) In the case of a modification, the requirement for best available control technology shall apply only to each new or modified facility which would increase the allowable emissions of an applicable pollutant.

(4) Where a facility within a source would be modified but not reconstructed, the requirements for best available control technology, notwithstanding paragraph (j)(2) of this section, shall not apply to such facility if no net increase in emissions of an applicable pollutant would occur at the source, taking into account all emission increases and decreases at the source which would accompany the modification, and no adverse air quality impact would occur.

(5) For phased construction projects the determination of best available control technology shall be reviewed, and modified as appropriate, at the latest reasonable time prior to commencement of construction of each independent phase of the proposed source or modification.

(k) *Exemptions from impact analyses.* (1) The requirements of paragraphs (l), (n), and (p) shall not apply to a major stationary source or major modification with respect to a particular pollutant, if—

(i) The increase in allowable emissions of that pollutant from the source or modification would impact no Class I area and no area where an applicable increment is known to be violated; and

(ii) The increase in allowable emissions of that pollutant from the source or modification would be less than 50 tons per year, 1000 pounds per day, or 100 pounds per hour, whichever is more restrictive; or

(iii) The emissions of the pollutant are of a temporary nature including but not limited to those from a pilot plant, a portable facility, construction, or exploration; or

(iv) A source is modified, but no increase in the net amount of emissions for any pollutant subject to a national ambient air quality standard and no adverse air quality impact would occur.

(2) The hourly and daily rates set in paragraph (k)(1)(ii) of this section shall apply only with respect to a pollutant for which an increment, or national ambient air quality standard, for a period of less than 24 hours or for a 24 hour period, as appropriate, has been established.

(3) In determining for the purpose of paragraph (k)(1)(ii) of this section whether and to what extent the modification would increase allowable emissions, there shall be taken into account no emission reduction achieved elsewhere at the source at which the modification would occur.

(4) In determining for the purpose of paragraph (k)(1)(iv) of this section whether and to what extent there would be an increase in the net amount of emissions for any pollutant subject to a national ambient air quality standard from the source which is modified, there shall be taken into account all emission increases and decreases occurring at the source since August 7, 1977.

(5) The requirements of paragraphs (l), (n) and (p) of this section shall not apply to a major stationary source or to a major modification with respect to emissions from it which the owner or operator has shown to be fugitive dust.

(l) *Air quality review.* The owner or operator of the proposed source or modification shall demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions, would not cause or contribute to air pollution in violation of:

(1) Any national ambient air quality standard in any air quality control region; or

(2) Any applicable maximum allowable increase over the baseline concentration in any area.

(m) *Air quality models.* (1) All estimates of ambient concentrations required under this section shall be based on the applicable air quality models, data bases, and other requirements specified in the "Guideline on Air Quality Models" (OAQPS 1.2-080, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, April 1978). This document is incorporated by reference. On April 27, 1978, the Office of the Federal Register approved this document for incorporation by reference. A copy of the guideline is on file in the Federal Register library.

(2) Where an air quality impact model specified in the "Guideline on Air Quality Models" is inappropriate, the model may be modified or another model substituted. Such a change must be subject to notice and opportunity for public comment under paragraph (r) of this section. Written approval of the Administrator must be obtained for any modification or substitution. Methods like those outlined in the "Workbook for the Comparison of Air Quality Models" (U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, May, 1978) should be used to determine the comparability of air quality models.

(3) The documents referenced in this paragraph are available for public inspection at EPA's Public Information Reference Unit and at the libraries of each of the ten EPA Regional Offices. Copies are available as supplies permit from the Library Service Office (MD-35), U.S. Environmental Protection Agency, Research Triangle Park, N.C. 27711. Also, copies may be purchased from the National Technical Information Service, 5285 Port Royal Road, Springfield, Va. 22161.

(n) *Monitoring.* (1) The owner or operator of a proposed source or modification shall, after construction of the source or modification, conduct such ambient air quality monitoring as the Administrator determines may be necessary to establish the effect which emissions from the source or modification of a pollutant for which a national ambient air quality standard exists (other than non-methane hydrocarbons) may have, or is having, on air quality in any area which such emissions would affect.

(2) As necessary to determine whether emissions from the proposed source or modification would cause or contribute to a violation of a national ambient air quality standard, any permit application submitted after August 7, 1978, shall include an analysis of continuous air quality monitoring data for any pollutant emitted by the source or modification for which a national ambient air quality standard exists, except non-methane hydrocarbons. Such data shall relate to, and shall have been gathered over, the year preceding receipt of the complete application, unless the owner or operator demonstrates to the Administrator's satisfaction that such data gathered over a portion or portions of that year or another representative year would be adequate to determine that the source or modification would not cause or contribute to a violation of a national ambient air quality standard.

(o) *Source information.* The owner or operator of a proposed source or modification shall submit all information necessary to perform any analysis or make any determination required under this section.

(1) With respect to a source or modification to which paragraphs (j), (l), (n) and (p) of this section apply, such information shall include:

(i) A description of the nature, location, design capacity, and typical operating schedule of the source or modification, including specifications and drawings showing its design and plant layout;

(ii) A detailed schedule for construction of the source or modification;

(iii) A detailed description as to what system of continuous emission reduction is planned for the source or modification, emission estimates, and any other information necessary to deter-

ine that best available control technology would be applied.

(2) Upon request of the Administrator, the owner or operator shall also provide information on:

(i) The air quality impact of the source or modification, including meteorological and topographical data necessary to estimate such impact; and

(ii) The air quality impacts, and the nature and extent of any or all general commercial, residential, industrial, and other growth which has occurred since August 7, 1977, in the area the source or modification would affect.

(p) *Additional impact analyses.* (1) The owner or operator shall provide an analysis of the impairment to visibility, soils and vegetation that would occur as a result of the source or modification and general commercial, residential, industrial and other growth associated with the source or modification. The owner or operator need not provide an analysis of the impact on vegetation having no significant commercial or recreational value.

(2) The owner or operator shall provide an analysis of the air quality impact projected for the area as a result of general commercial, residential, industrial and other growth associated with the source or modification.

(q) *Sources impacting Federal Class I areas—additional requirements.*—(1) *Notice to Federal Land Managers.* The Administrator shall provide notice of any permit application for a proposed major stationary source or major modification the emissions from which would affect a Class I area to the Federal Land Manager, and the Federal official charged with direct responsibility for management, of any lands within any such area. The Administrator shall provide such notice promptly after receiving the application. The Administrator shall also provide the Federal Land Manager and such Federal officials with a copy of the preliminary determination required under paragraph (r) of this section, and shall make available to them any materials used in making that determination, promptly after the Administrator makes it.

(2) *Federal Land Manager.* The Federal Land Manager and the Federal official charged with direct responsibility for management of such lands have an affirmative responsibility to protect the air quality related values (including visibility) of such lands and to consider, in consultation with the Administrator, whether a proposed source or modification will have an adverse impact on such values.

(3) *Denial—impact on air quality related values.* The Federal Land Manager of any such lands may demonstrate to the Administrator that the emissions from a proposed source or modification would have an adverse impact on the air quality-related values (including visibility) of those lands, notwithstanding that the change in air quality resulting from emissions from such source or modification would not cause or contribute to concentrations which would exceed the maximum allowable increases for a Class I area. If the Administrator concurs with such demonstration, then he shall not issue the permit.

(4) *Class I variances.* The owner or operator of a proposed source or modification may demonstrate to the Federal Land Manager that the emissions from such source or modification would have no adverse impact on the air quality related values of any such lands (including visibility), notwithstanding that the change in air quality resulting from emissions from such source or modification would cause or contribute to concentrations which would exceed the maximum allowable increases for a Class I area. If the Federal Land Manager concurs with such demonstration and he so certifies, the State may authorize the Administrator: *Provided*, That the applicable requirements of this section are otherwise met, to issue the permit with such emission limitations as may be necessary to assure that emissions of sulfur dioxide and particulate matter would not exceed the following maximum allowable increases over baseline concentration for such pollutants:

	Maximum allowable increase (micrograms per cubic meter)
Particulate matter:	
Annual geometric mean	19
24-hr maximum	37
Sulfur dioxide:	
Annual arithmetic mean	20
24-hr maximum	91
3-hr maximum	325

(5) *Sulfur dioxide variance by Governor with Federal Land Manager's concurrence.* The owner or operator of a proposed source or modification which cannot be approved under paragraph (q)(4) of this section may demonstrate to the Governor that the source cannot be constructed by reason of any maximum allowable increase for sulfur dioxide for a period of twenty-four hours or less applicable to any Class I area and, in the case of Federal mandatory Class I areas, that a variance under this clause would not adversely affect the air quality related values of the area (including visibility). The Governor, after consideration of the Federal Land Manager's recommendation (if any) and subject to his concurrence, may, after notice and public hearing, grant a variance from such maximum allowable increase. If such variance is granted, the Administrator shall issue a permit to such source or modification pursuant to the requirements of paragraph (q)(7) of this section: *Provided*, That the applicable requirements of this section are otherwise met.

(6) *Variance by the Governor with the President's concurrence.* In any case where the Governor recommends a variance in which the Federal Land Manager does not concur, the recommendations of the Governor and the Federal Land Manager shall be transmitted to the President. The President may approve the Governor's recommendation if he finds that the variance is in the national interest. If the variance is approved, the Administrator shall issue a permit pursuant to the requirements of paragraph (q)(7) of this section: *Provided*, That the applicable requirements of this section are otherwise met.

(7) *Emission limitations for Presidential or gubernatorial variance.* In the case of a permit issued pursuant to paragraph (q) (5) or (6) of this section the source or modification shall comply with such emission limitations as may be necessary to assure that emissions of sulfur dioxide from the source or modification would not (during any day on which the otherwise applicable maximum allowable increases are exceeded) cause or contribute to concentrations which would exceed the following maximum allowable increases over the baseline concentration and to assure that such emissions would not cause or contribute to concentrations which exceed the otherwise applicable maximum allowable increases for periods of exposure of 24 hours or less for more than 18 days, not necessarily consecutive, during any annual period:

Maximum Allowable Increase

(Micrograms per cubic meter)

Period of exposure	Terrain areas	
	Low	High
24-hr maximum	36	62
3-hr maximum	130	221

(r) *Public participation.* (1) Within 30 days after receipt of an application to construct, or any addition to such application, the Administrator shall advise the applicant of any deficiency in the application or in the information submitted. In the event of such a deficiency, the date of receipt of the application shall be, for the purpose of this section, the date on which the Administrator received all required information.

(2) Within 1 year after receipt of a complete application, the Administrator shall make a final determination on the application. This involves performing the following actions in a timely manner:

(i) Make a preliminary determination whether construction should be approved, approved with conditions, or disapproved.

(ii) Make available in at least one location in each region in which the proposed source or modification would be constructed a copy of all materials the applicant submitted, a copy of the preliminary determination and a copy or summary of other materials, if any, considered in making the preliminary determination.

(iii) Notify the public, by advertisement in a newspaper of general circulation in each region in which the proposed source or modification would be constructed, of the application, the preliminary determination, the degree of increment consumption that is expected from the source or modification, and the opportunity for comment at a public hearing as well as written public comment.

(iv) Send a copy of the notice of public comment to the applicant and to officials and agencies having cognizance over the location where the proposed construction would occur as follows: State and local air pollution control agencies, the chief executives of the city and county where the source or modification would be located, any comprehensive regional land use planning agency and any State, Federal Land Manager, or Indian Governing Body whose lands may be affected by emissions from the source or modification.

(v) Provide opportunity for a public hearing for interested persons to appear and submit written or oral comments on the air quality impact of the source or modification, alternatives to the source or modification, the control technology required, and other appropriate considerations.

(vi) Consider all written comments submitted within a time specified in the notice of public comment and all comments received at any public hearing(s) in making a final decision on the approvability of the application. No later than 10 days after the close of the public comment period, the applicant may submit a written response to any comments submitted by the public. The Administrator shall consider the applicant's response in making a final decision. The Administrator shall make all comments available for public inspection in the same locations where the Administrator made available preconstruction information relating to the proposed source or modification.

(vii) Make a final determination whether construction should be approved, approved with conditions, or disapproved pursuant to this section.

(viii) Notify the applicant in writing of the final determination and make such notification available for public inspection at the same location where the Administrator made available preconstruction information and public comments relating to the source or modification.

(3) The requirements of paragraph (r) of this section shall not apply to any major stationary source or major modification which paragraph (k) would exempt from the requirements of paragraphs (j), (n), and (p), but only to the extent that, with respect to each of the criteria for construction approval under the applicable State implementation plan and for exemption under paragraph (k), requirements providing the public with at least as much participation in each material determination as those of paragraph (r) have been met in the granting of such construction approval.

(s) *Source obligation.* (1) Any owner or operator who constructs or operates a source or modification not in accordance with the application submitted pursuant to this section or with the terms of any approval to construct, or any owner or operator of a source or modification subject to this section who commences construction after the effective date of these regulations without applying for and receiving approval hereunder, shall be subject to appropriate enforcement action.

(2) Approval to construct shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Administrator may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between construction of the approved phases of a phased construction project; each phase must commence construction within 18 months of the projected and approved commencement date.

(3) Approval to construct shall not relieve any owner or operator of the responsibility to comply fully with applicable provisions of the State implementation plan and any other requirements under local, State, or Federal law.

(t) *Environmental impact statements.* Whenever any proposed source or modification is subject to action by a Federal Agency which might necessitate preparation of an environmental impact statement pursuant to the National Environmental Policy Act (42 U.S.C. 4321), review by the Administrator conducted pursuant to this section shall be coordinated with the broad environmental reviews under that Act and under Section 309 of the Clean Air Act to the maximum extent feasible and reasonable.

(u) *Disputed permits or redesignations.* If any State affected by the redesignation of an area by an Indian Governing Body, or any Indian Governing Body of a tribe affected by the redesignation of an area by a State, disagrees with such redesignation, or if a permit is proposed to be issued for any major stationary source or major modification proposed for construction in any State which the Governor of an affected State or Indian Governing Body of an affected tribe determines will cause or contribute to a cumulative change in air quality in excess of that allowed in this part within the affected State or Indian Reservation, the Governor or Indian Governing Body may request the Administrator to enter into negotiations with the parties involved to resolve such dispute. If requested by any State or Indian Governing Body involved, the Administrator shall make a recommendation to resolve the dispute and protect the air quality related values of the lands involved. If the parties involved do not reach agreement, the Administrator shall resolve the dispute and his determination, or the results of agreements reached through other means, shall become part of the applicable State implementation plan and shall be enforceable as part of such plan. In resolving such disputes relating to area redesignation, the Administrator shall consider the extent to which the lands involved are of sufficient size to allow effective air quality management or have air quality related values of such an area.

(v) *Delegation of authority.* (1) The Administrator shall have the authority to delegate his responsibility for conducting source review pursuant to this section, in accordance with paragraphs (v) (2) and (3) of this section.

(2) Where the Administrator delegates the responsibility for conducting source review under this section to any agency other than a Regional Office of the Environmental Protection Agency, the following provisions shall apply:

(i) Where the delegate agency is not an air pollution control agency, it shall consult with the appropriate State and local air pollution control agency prior to making any determination under this section. Similarly, where the delegate agency does not have continuing responsibility for managing land use, it shall consult with the appropriate State and local agency primarily responsible for managing land use prior to making any determination under this section.

(ii) The delegate agency shall send a copy of any public comment notice required under paragraph (r) of this section to the Administrator through the appropriate Regional Office.

(3) The Administrator's authority for reviewing a source or modification located on an Indian Reservation shall not be redelegated other than to a Regional Office of the Environmental Protection Agency, except where the State has assumed jurisdiction over such land under other laws. Where the

State has assumed such jurisdiction, the Administrator may delegate his authority to the States in accordance with paragraph (v)(2) of this section.

(4) In the case of a source or modification which proposes to construct in a class III area, emissions from which would cause or contribute to air quality exceeding the maximum allowable increase applicable if the area were designated a class II area, and where no standard under section 111 of the act has been promulgated for such source category, the Administrator must approve the determination of best available control technology as set forth in the permit.

§ 52.01 [Amended]

2. In § 52.01, paragraph (f), which defines "best available control technology," is deleted and reserved.

3. In §§ 52.60 (AL), 52.96 (AK), 52.144 (AZ), 52.181 (AR), 52.270 (CA), 52.343 (CO), 52.382 (CT), 52.432 (DE), 52.499 (DC), 52.530 (FL), 52.581 (GA), 52.632 (HI), 52.683 (ID), 52.738 (IL), 52.793 (IN), 52.833 (IA), 52.884 (KS), 52.931 (KY), 52.986 (LA), 52.1029 (ME), 52.1116 (MD), 52.1165 (MA), 52.1180 (MI), 52.1234 (MN), 52.1280 (MS), 52.1339 (MO), 52.1382 (MT), 52.1436 (NB), 52.1485 (NV), 52.1529 (NH), 52.1603 (NJ), 52.1634 (NM), 52.1689 (NY), 52.1778 (NC), 52.1829 (ND), 52.1884 (OH), 52.1919 (OK), 52.1987 (OR), 52.2058 (PA), 52.2083 (RI), 52.2131 (SC), 52.2178 (SD), 52.2233 (TN), 52.2303 (TX), 52.2346 (UT), 52.2380 (VT), 52.2451 (VA), 52.2497 (WA), 52.2528 (WV), 52.2581 (WI), 52.2630 (WY), 52.2676 (GU), 52.2729 (PR), 52.2779 (VI), and 52.2827 (AmS), paragraphs (a) and (b) are revised to read as follows:

* * * * *

(a) The requirements of sections 160 through 165 of the Clean Air Act are not met, since the plan does not include approvable procedures for preventing the significant deterioration of air quality.

(b) *Regulation for preventing significant deterioration of air quality.* The provisions of § 52.21 (b) through (v) are hereby incorporated and made a part of the applicable State plan for the State of ———.

* * * * *

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