

45.0 PREVENTION OF SIGNIFICANT DETERIORATION

45.1 Definitions

- A. Unless specifically defined in this Section, the definitions from Section 13.0 will apply:
1. "Actual Emissions" shall mean the actual rate of emissions of a pollutant from an emissions unit as determined below:
 - a. Actual emissions shall equal the average rate, in tons per year, at which the facility actually emitted the pollutant during a two year period which precedes the particular date and which is representative of normal operation. Actual emissions shall be calculated using the facility's actual operating hours, production rates, and type of materials processed, stored, or combusted during the selected time period.
 - b. The Director may presume that the source-specific allowable emissions for the facility are equivalent to the actual emissions of the facility.
 - c. For any facility which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.
 2. "Adverse Impact on Visibility" shall mean visibility impairment which interferes with the management, protection, preservation, or enjoyment of the visitors visual experience of the Federal Class I area. This determination must be made on a case-by-case basis taking into account the geographic extent, intensity, duration, frequency, and time of visibility impairments, and how these factors correlate with the times of visitor use of the Federal Class I area, and with the frequency and timing of natural conditions that reduce visibility.
 3. "Allowable Emissions" shall mean the emission rate calculated by using the maximum rated capacity of the source (unless the source is subject to legally enforceable permit conditions which limit the operating rate or hours of operation, or both) and the most stringent of the following:
 - a. The applicable State Implementation Plan Emission Limitation including those with a future compliance date.
 - b. The emission rate specified as a legally enforceable permit condition, including those with a future compliance date.
 4. "Attainment Area" shall mean any area which has met the Primary and Secondary National Ambient Air Quality Standard for such pollutant.
 5. "Baseline Area" shall mean any intrastate area (and every part thereof) designated as attainment or unclassifiable under section 107 (d) (1) (D) or (E) of the Clean Air Act in which the major source or major modification establishing the minor source baseline date would construct or would have an air quality impact equal to or greater than 1 ug/m^3 (annual average) of the pollutant for which the minor

source baseline date is established.

6. "Baseline Concentration" shall mean the actual ambient concentration level which exists in the baseline area at the time of the applicable minor source baseline date. A baseline concentration is determined for each pollutant for which a minor source baseline date is established and shall include:
 - a. Actual emissions representative of sources in existence on the applicable minor source baseline date, except as provided in subparagraphs c. and d. below;
 - b. Allowable emissions of major stationary sources which commenced construction before the major source baseline date, but were not in operation by the applicable minor source baseline date.

The following shall not be included in the baseline concentration and shall affect the applicable maximum allowable increase(s):

- c. Actual emissions from any major stationary source on which construction commenced after the major source baseline date; and
 - d. Actual emissions increases and decreases at any stationary source occurring after the minor source baseline date.
7. "Begin Construction" shall mean in general, initiation of physical on-site construction activities on an emissions unit which are of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying underground pipework and construction of permanent storage structures. With respect to a change in method of operations, this term refers to those on-site activities other than preparatory activities which mark the initiation of the change.
8. "Building, Structure, Facility, or Installation" shall mean all of the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control). Pollutant emitting activities shall be considered as part of the same "Major Group" (i.e., described by the first two digits in the code which is specified in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement (U.S- Government Printing Office stock numbers 4101-0066 and 003-005-00176-0, respectively)).
9. "Commenced" shall mean that an owner or operator has all necessary preconstruction approvals or permits, and has begun, or caused to begin a continuous program of actual on-site construction of the source, to be completed within the time frame allotted in 45.2 A. 4. or entered into a binding obligation, which cannot be canceled or modified without substantial loss to the owner or operator.
10. "Construction" shall mean any physical change or change in the method of operation such as fabrication, erection, installation, modification, or demolition

which would result in a change in actual emissions.

11. "Emissions Unit" shall mean any part of a stationary source which emits or would have the potential to emit any pollutant subject to regulation under the Knox County Air Pollution Control Regulations.
12. "Federal Land Manager" shall mean, with respect to any lands in the United States, the Secretary of the department with authority over such lands.
13. "Fugitive Emissions" shall mean those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening, as determined by the Director.
14. "High Terrain" shall mean any area having an elevation of 900 feet or more above the base of the stack of a source.
15. "Innovative Control Technology" shall mean any system of air pollution control that has not been adequately demonstrated in practice, but would have a substantial likelihood of achieving greater continuous emissions reduction than any control system in current practice or of achieving at least comparable reductions at lower cost in terms of energy, economics, or non-air quality environmental impacts as determined by the Director.
16. "Low Terrain" shall mean any area other than high terrain.
17. "Major Modification" shall mean any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Clean Air Act. A physical change or change in the method of operation shall not include:
 - a. Routine maintenance, repair, or replacement;
 - b. Use of an alternative fuel or raw material by reason of an order 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 pursuant to the Federal Power Act;
 - c. Use of an alternative fuel by reason of an order or rule under section 125 of the Clean Air Act;
 - d. An increase in the hours of operation or in the production rate, unless such a change is prohibited by a legally enforceable permit condition;
 - e. Any changes in ownership at a stationary source;
 - f. Use of an alternative fuel or raw material by a stationary source which the source was capable of accommodating before January 6, 1975, or under regulations in this Section 45.0;
 - g. Use of an alternative fuel at a steam generating unit to the extent that the

fuel is generated from municipal solid waste as determined by the Tennessee Division of Solid Waste Management.

18. "Major source Baseline Date" shall mean:
- a. For particulate matter and sulfur dioxide, January 6, 1975; and
 - b. For nitrogen dioxide, February 8, 1988.

The baseline date is established for each pollutant for which increments or other equivalent measures have been established and, in the case of a major stationary source, the pollutant would be emitted in significant amounts, or, in the case of a major modification, there would be a significant net emissions increase of the pollutant.

19. "Major Stationary Source" shall mean any of the following stationary sources:
- a. Any of the following stationary sources which emit or have the potential to emit 100 tons per year or more of any air pollutant regulated under the Clean Air Act.
 - (1) Fossil-fuel fired steam electric plants of more than 250 million BTU per hour heat input.
 - (2) Municipal incinerators capable of charging more than 250 tons of refuse per day.
 - (3) Fossil-fuel boilers (or combinations thereof) totaling more than 250 million BTU per hour heat input.
 - (4) Petroleum storage and transfer facilities with a total storage capacity exceeding 300,000 barrels.
 - (5) Coal cleaning plants (with thermal dryers).
 - (6) Kraft pulp mills.
 - (7) Portland cement plants.
 - (8) Primary zinc smelters.
 - (9) Iron and steel mill plants.
 - (10) Primary aluminum ore reduction plants.
 - (11) Primary copper smelters.
 - (12) Hydrofluoric acid plants.
 - (13) Sulfuric acid plants.

- (14) Nitric acid plants.
 - (15) Petroleum refineries.
 - (16) Lime plants.
 - (17) Phosphate rock processing plants.
 - (18) Coke oven batteries.
 - (19) Sulfur recovery plants.
 - (20) Carbon black plants (furnace process).
 - (21) Primary lead smelters.
 - (22) Fuel conversion plants.
 - (23) Sintering plants.
 - (24) Secondary metal production plants.
 - (25) Chemical process plants.
 - (26) Taconite ore processing plants.
 - (27) Glass fiber processing plants.
 - (28) Charcoal production plants.
- b. Any stationary sources which emit or have the potential to emit 250 tons per year or more of any air pollutant subject to regulation under the Clean Air Act.
 - c. Any stationary sources which undertakes a major modification.
 - d. Any physical change that would occur at a stationary source not otherwise qualifying under paragraph 45.1 A. 18. as a major stationary source if the change would constitute a major stationary source by itself.
20. Major Sources and Modifications for Ozone
- a. A source that is major for volatile organic compounds shall be considered major for ozone.
 - b. Any net emissions increase that is significant for volatile organic compounds shall be considered significant for ozone.
21. "Minor Source Baseline Date" shall mean the earliest date after the trigger date on which a major stationary source or a major modification subject to the provisions

of this section submits a complete application. The trigger date is:

- a. For particulate matter and sulfur dioxide, August 7, 1977; and
- b. For nitrogen dioxide, February 8, 1988.

The baseline date is established for each pollutant for which increments or other equivalent measures have been established and, in the case of a major stationary source, the pollutant would be emitted in significant amounts, or, in the case of a major modification, there would be a significant net emissions increase of the pollutant.

- 22. "Necessary Preconstruction Approvals or Permits" shall mean all permits or approvals required under the air quality control laws and regulations which are part of the Knox County Air Pollution Control Regulations.
- 23. Net Emissions Increases
 - a. "Net Emissions Increases" shall mean the amount by which the sum of the following exceeds zero:
 - (1) Any increase in the actual emissions from a particular physical change or change in the method of operation at a stationary source; and
 - (2) Any other increases and decreases in actual emissions at the source that are contemporaneous with the particular physical change and are otherwise creditable.
 - b. An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs between:
 - (1) The date five years before a completed application for the particular change is submitted; and
 - (2) The date that the increase from the particular change occurs.
 - c. An increase or decrease in actual emissions is creditable only if the Director has not relied on it in issuing a permit for the source under this regulation, which permit is in effect when the increase in actual emissions from the particular change occurs.
 - d. An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.
 - e. A decrease in actual emissions is creditable only to the extent that:
 - (1) The old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions; and

- (2) It is legally enforceable at and after the time that actual construction on the particular change begins; and
 - (3) It has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change as determined by the Director.
- f. An increase that results from a physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period as determined by the Director, not to exceed 180 days.
 - g. An increase or decrease in actual emissions of sulfur dioxide, nitrogen dioxide, or particulate matter which occurs before the applicable baseline date is creditable only if it is required to be considered in calculating the amount of maximum allowable incremental increases remaining available.
24. "Non-Attainment Area" shall mean geographical area which is shown by monitoring data or which is calculated by air quality modeling, or other methods determined by the Director to be reliable and approved by the Environmental Protection Agency to exceed any national ambient air quality standard for any criteria pollutant, and designated non-attainment pursuant to 42 U.S.C. § 7407 (d) (1) (A) (i).
25. "Pollutant" shall mean those air contaminants which fall under the categories of criteria and non-criteria pollutants. Criteria pollutants are those for which an ambient air quality standard has been established. The criteria pollutants are found in Section 14.0, Table I. The non-criteria pollutants are as follows: fluorides, asbestos, beryllium, mercury, vinyl chloride, sulfuric acid mists, hydrogen sulfide (H₂S), total reduced sulfur (including H₂S), reduced sulfur compounds (including H₂S), arsenic, benzene, and any other air contaminant regulated by Knox County Air Pollution Control Regulations and the Environmental Protection Agency.
26. "Secondary Emissions" shall mean emissions which occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification itself. For the purpose of this section, secondary emissions must be specific, well defined, quantifiable, and impact the same general area as the stationary source or modification which causes the secondary emissions. Secondary emissions may include, but are not limited to emissions from any off-site support facility which would not otherwise be constructed or increase its emissions as a result of the construction or operation of the major stationary source or major modification. Secondary emissions do not include any emissions which come directly from a mobile source, such as emissions from the tailpipe of a motor vehicle, from a train, or from a vessel.
27. "Significant" shall mean any emission rate of a pollutant subject to regulation under the Clean Air Act, except the following pollutants for which emissions are

considered significant if they equal or exceed the following rates:

Pollutant and Emissions Rate

- a. Carbon monoxide: 100 tons per year (tpy).
- b. Nitrogen oxides: 40 tpy.
- c. Sulfur dioxide: 40 tpy.
- d. Particulate matter: 25 tpy of particulate matter emissions; 15 tpy of PM₁₀ emissions.
- e. Ozone: 40 tpy of volatile organic compounds.
- f. Lead: 0.6 tpy.
- g. Asbestos: 0.007 tpy.
- h. Beryllium: 0.0004 tpy.
- i. Mercury: 0.1 tpy.
- j. Vinyl chlorides: 1 tpy.
- k. Fluorides: 3 tpy.
- l. Sulfuric acid mist: 7 tpy.
- m. Hydrogen sulfide (H₂S): 10 tpy.
- n. Total reduced sulfur (including H₂S): 10 tpy.
- o. Reduced sulfur compounds (including H₂S): 10 tpy.

28. "Significant Impact on Air Quality" (minimum significance level) shall mean to contribute to air quality in the following amounts or more:

Pollutant and Concentration

- a. Particulate matter:
 - 1 ug/m³, annual average; or
 - 5 ug/m³, 24-hour average;
- b. Sulfur dioxide:
 - 1 ug/m³, annual average; or

5 ug/m³, 24-hour average; or

25 ug/m³, 3-hour average;

c. Carbon monoxide:

500 ug/m³, 8-hour average; or

2000 ug/m³, 1-hour average;

d. Nitrogen dioxide: 1 ug/m³, annual average;

e. Lead: 0.2 ug/m³, quarterly average;

f. Asbestos: 0.005 ug/m³, 24-hour average;

g. Mercury: 0.05 ug/m³, 24-hour average;

h. Any additional levels established and finalized by E.P.A.

All other air contaminants are to be determined on a case by case basis by the Director.

29. "Stationary Source" shall mean any structure, building, facility, or installation which emits or may emit any air pollutant subject to regulation under the Clean Air Act.

30. "Volatile Organic Compounds" (VOC) shall mean any organic compound which participates in atmospheric photochemical reactions. This includes any organic compound other than the following compounds: methane, ethane, methyl chloroform (1,1,1-trichloroethane), CFC-113 (trichlorotrifluoroethane), methylene chloride, CFC-11 (trichlorofluoromethane), CFC-12 (dichlorodifluoromethane), CFC-22 (chlorodifluoromethane), FC-23 (trifluoromethane), CFC-114 (dichlorotetrafluoroethane), CFC-115 (chloropentafluoroethane), HCFC-123 (dichlorotrifluoroethane), HCFC-134a (tetrafluoroethane), HCFC-141b (dichlorofluoroethane), HCFC-142b (chlorodifluoroethane), HCFC-124 (2-chloro-1,1,1,2-tetrafluoroethane), HFC-125 (pentafluoroethane), HFC-134 (1,1,2,2-tetrafluoroethane), HFC-143a (1,1,1-trifluoroethane), HFC-152a (1,1-difluoroethane), PFC (cyclic, branched, or linear, completely fluorinated alkanes), PFC (cyclic, branched, or linear, completely fluorinated ethers with no unsaturations), PFC (cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations), PFC (sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine). These compounds have been determined to have negligible photochemical reactivity.

For purposes of determining compliance with emission limits, VOC will be measured by the test method delineated in Knox County Air Pollution Control Regulations or 40 CFR, Part 60, Appendix A, as applicable. Where such a method also measures compounds with negligible photochemical reactivity, these negligibly-reactive compounds may be excluded as VOC if the amount of such

compounds is accurately quantified and such exclusion is approved by the Director.

As a precondition to approval for the exclusion of the compounds as VOC, the Director may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the satisfaction of the Director, the amount of negligibly-reactive compounds in the source's emissions.

For purposes of quantifying the amount of negligibly-reactive compounds, U.S. Environmental Protection Agency approved test and monitoring methods specified in Knox County Air Pollution Control Regulations or in permits issued by the Knox County Department of Air Pollution Control shall be utilized.

45.2 Prevention of Significant Deterioration - Regulation

A. General Provisions

1. No major stationary source or major modification shall be constructed unless the requirements of this section, as applicable, have been met.
2. The requirements of this section shall only apply to a proposed major stationary source, or major modification with respect to any pollutant which is emitted in significant amounts, or would result in a significant net emissions increase of the pollutant respectively. Also, the requirements of this section do not apply to proposed pollutant emission sources or modifications in a non-attainment area for any pollutant to be emitted by the proposed source or modification for which the area is classified non-attainment.
3. 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.
4. Approval to construct shall become invalid if construction is not commenced within 18 months after issuance of an approved permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time as determined by the Director. The Director may extend the 18 month period upon a satisfactory showing that an extension is justified. The 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.
5. Approval to construct shall not relieve any owner or operator of the responsibility to comply fully with applicable provisions under this Knox County Air Pollution Control Regulation and any other requirements under local, State, or Federal law.

B. Major stationary sources and major modifications of sources are exempt from certain

provisions of this section in accordance with the following:

1. Any stationary source or modification which would be subject to the provisions of this section only if fugitive emissions, to the extent quantifiable, are considered in calculating potential emissions and which does not belong to any of the categories of subparagraph 45.1 A. 16. a. shall be exempt from this section, except any source subject to Section 41.0 (Regulation for the Review of New Sources) or Section 35.0 (Hazardous Air Contaminants).
2. Any major stationary source or major modification shall be exempt from the requirements of this section with respect to a particular pollutant if the owner or operator demonstrates that the source or modification is located in an area designated nonattainment for that pollutant.
3. Source impact and air quality analysis as required in parts C. 1., C. 3., and C. 7. of this section shall not apply to a proposed major stationary source or major modification with respect to a particular pollutant if the allowable emissions of that pollutant or the net emissions increase of that pollutant would be temporary and would not impact any Class I area or any area where an applicable increment is known to be violated.
4. Source impact and air quality analysis as required in parts C. 1., C. 3., and C. 7. of this section as they relate to any maximum allowable increase for a Class II area shall not apply to a major modification of a stationary source that was in existence on March 1, 1978, if the net increase in allowable emissions of each pollutant from the modification after the application of best available control technology would be less than 50 tons per year.
5. Air quality analysis as required in this section may be exempted with respect to preconstruction monitoring for a particular pollutant by the Director if:
 - a. The emissions increase of the pollutant from a new stationary source or the net emissions increase of the pollutant from a modification would cause, in any area, air quality impacts less than the following amounts:
 - (1) Carbon monoxide: 575 ug/m³, 8-hour average;
 - (2) Nitrogen dioxide: 14 ug/m³, annual average;
 - (3) Particulate matter:
10 ug/m³ of TSP, 24-hour average;
10 ug/m³ of PM₁₀, 24-hour average;
 - (4) Sulfur dioxide: 13 ug/m³, 24-hour average;
 - (5) Ozone: No de minimis air quality level has been established, however, any net increase of 100 tons per year or more of volatile

organic compounds subject to PSD would be required to perform an ambient impact analysis including the gathering of ambient air quality data;

- (6) Lead: 0.1 ug/m³, 3 month average;
 - (7) Mercury: 0.25 ug/m³, 24-hour average;
 - (8) Beryllium: 0.001 ug/m³, 24-hour average;
 - (9) Fluorides: 0.25 ug/m³, 24-hour average;
 - (10) Vinyl chloride: 15 ug/m³, 24-hour average;
 - (11) Total reduced sulfur: 10 ug/m³, 1-hour average;
 - (12) Hydrogen sulfide: 0.2 ug/m³, 1-hour average;
 - (13) Reduced sulfur compounds: 10 ug/m³, 1-hour average; or
- b. The pollutants are not listed in subparagraph 5. a.; or
 - c. Representative existing ambient air quality data are available for any pollutant as emitted by a major stationary source or major modifications consistent with air quality monitoring guidelines for Prevention of Significant Deterioration (PSD) as referenced in E.P.A. (document) 450/4-87-007; or
 - d. The existing air pollutant levels are conservatively estimated to be small and a monitoring network may not reliably measure the predicted background concentrations.
6. Any portable major source which has previously received a permit under this section shall be exempt from further review when the owner or operator proposes to relocate provided:
- a. The emissions at the new location would be temporary and would not exceed the allowable emission rate; and
 - b. The emissions from the source would not impact any Class I area or any area where an applicable increment is known to be violated; and
 - c. Notice is given to the Director 30 days prior to the relocation, giving the new temporary location and the probable length of operation at the new location.
7. Exclusions from Increment Consumption
- a. Maximum allowable increases (ambient air increments) as specified in subparagraph 45.2 F. shall not apply to concentrations as described below.

- (1) 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;
 - (2) 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 an applicable Federal Power Act requirement over the emissions from such sources before the effective date of such plan;
 - (3) Concentrations of particulate matter attributable to the increase in emissions from construction or other temporary emissions related activities of new or modified sources;
 - (4) Concentrations attributable to the temporary increase in emissions of sulfur dioxide, nitrogen dioxide, or particulate matter from stationary sources which are affected by plan revisions approved as meeting the criteria specified in subparagraph 7. c.
- b. No exclusion of such concentrations shall apply more than five years after the effective date of the order to which item 7. a. (1) refers or of the plan to which item 7. a. (2) 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.
- c. For purposes of excluding concentrations pursuant to item 7. a. (4), the proposed plan revision shall:
- (1) Specify the time over which the temporary emissions increase of sulfur dioxide, nitrogen dioxide, or particulate matter would occur. Such time is not to exceed two years in duration.
 - (2) Specify that the time period for excluding certain contributions in accordance with item 7. c. (1) is not renewable.
 - (3) Allow no emission increase from a stationary source which would:
 - (a) Impact a Class I area or an area where an applicable increment is known to be violated; or
 - (b) Cause or contribute to the violation of a national ambient air quality standard;
 - (4) Require limitations to be in effect at the end of the time period specified in accordance with item 7. c. (1) which would ensure that the emissions levels from stationary sources affected by the plan revision

would not exceed those levels occurring from such sources before the plan revision was approved.

C. The owner or operator of the proposed major stationary source or major modification:

1. Shall demonstrate by performing source impact analysis that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reduction (including secondary emissions) would not cause or contribute to air pollution in violation of:
 - a. Any national ambient air quality standard in the source impact area;
 - b. Any applicable maximum allowable increase over the baseline concentration (as stated in subparagraph 45.2 D.) in any area.
2. Shall submit all data necessary to make the analyses and determinations required in this section. The data shall include, but may not be limited to:
 - a. 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.
 - b. A detailed proposed schedule for construction of the source or modification.
 - c. A detailed description as to what system of continuous emission reduction is planned for the source or modification, emissions estimates, and any other information necessary to determine that best available control technology would be applied where required by this section.
 - d. Additional impact analysis detailing the following:
 - (1) The impairment to visibility, soils, and vegetation that would occur as a result of the source or modification and the associated general commercial, residential, industrial, and other growth. Vegetation having no significant commercial or recreational value may be excluded from the analysis.
 - (2) 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.
 - (3) The Director may require monitoring of visibility in any Federal Class I area near the proposed new stationary source or major modification, for such purposes and by such means as the Director deems necessary and appropriate.
 - e. The air quality impact of the source or modification, including meteorological and topographical data, upon request of the Director.

- f. The air quality impacts, and the nature and extent of any or all general commercial, residential, industrial, and other growth which occurred since the PSD baseline date in the area the source or modification would affect, upon request of the Director. Such data in the possession of the Department shall be made available to the owner or operator.
3. Shall, after construction of the stationary source or modification, conduct such post-construction monitoring as the Director determines is necessary to determine the effect emissions from the stationary source or modification may have or are having on air quality in any area.
4. Shall meet the quality assurance requirements as specified in 44 FR 27571, Part 58, Appendix B, May 10, 1979, during the operation of monitoring stations for purposes of satisfying parts 45.2 C. 3. and 45.2 C. 7. of this section.
5. Shall insure that the major stationary source or the major modification be in compliance with all applicable emission limitations of this Knox County Air Pollution Control Regulations.
6. Shall pay the cost of all publications required under this section.
7. Shall perform the preapplication air quality analysis as outlined below:
 - a. Any application for a construction permit pursuant to the regulations of this section shall contain an analysis of ambient air quality as required by the Director in the area that the major source or major modification would affect for each of the following pollutants:
 - (1) For the source, each pollutant that it would have the potential to emit in a significant amount;
 - (2) For the modification, each pollutant for which it would result in a significant net emissions increase.
 - b. For a pollutant for which a Knox County Ambient Air Quality Standard (Section 14.1, Table I) exists the analysis shall contain continuous air quality monitoring data gathered for purposes of determining whether emissions of that pollutant would cause or contribute to a violation of the standard or any maximum allowable increase unless specifically exempted in subparagraph 45.2 B. of this section.
 - c. In general, the continuous air monitoring data that is required shall have been gathered over a period of one year and shall represent the year preceding receipt of the application, except that, if the Director determines that a complete and adequate analysis can be accomplished with monitoring data gathered over a period shorter than one year (but not to be less than four months), the data that is required shall have been gathered over at least that shorter period.
 - d. With respect to any pollutant for which no Knox County Ambient Air

Quality Standard exists, the analysis shall contain such air quality monitoring data as the Director determines is necessary to assess ambient air quality for that pollutant in any area that the emissions of the pollutant would affect.

- e. With respect to any requirements for air quality monitoring of PM₁₀ under this section, the owner or operator of the source or modification shall use a monitoring method approved by the Director and shall estimate the ambient concentrations of PM₁₀ using the data collected by such approved monitoring method in accordance with estimating procedures approved by the Director.

- D. Ambient Air Increments. In areas designated as Class I, II, or III, increases in pollutant concentration over the baseline concentration shall be limited to those specified in Table I. 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.

Table I: Allowable Air Increments

Maximum Allowable Increase

Class I

Particulate Matter:		
TSP, annual geometric mean	5	ug/m ³
TSP, 24-hour maximum	10	ug/m ³
Sulfur dioxide:		
Annual arithmetic mean	2	ug/m ³
24-hour maximum	5	ug/m ³
3-hour maximum	25	ug/m ³
Nitrogen dioxide:		
Annual arithmetic mean	2.5	ug/m ³

Class II

Particulate matter:		
TSP, annual geometric mean	19	ug/m ³
TSP, 24-hour maximum	37	ug/m ³
Sulfur dioxide:		
Annual arithmetic mean	20	ug/m ³
24-hour maximum	91	ug/m ³
3-hour maximum	512	ug/m ³
Nitrogen dioxide:		
Annual arithmetic mean	25	ug/m ³

Class III

Particulate matter:		
TSP, annual geometric mean	37	ug/m ³
TSP, 24-hour maximum	75	ug/m ³
Sulfur dioxide:		
Annual arithmetic mean	40	ug/m ³
24-hour maximum	182	ug/m ³
3-hour maximum	700	ug/m ³
Nitrogen dioxide:		
Annual arithmetic mean	50	ug/m ³

E. Area Classifications. For the purpose of this section, the following classifications shall apply:

1. Class I Areas - Great Smoky Mountains National Park, Joyce Kilmer Slickrock National Wilderness Area, and the Cohutta Wilderness Area.
2. Class III Areas - None.
3. Class II Areas - Remainder of the state.

Areas in surrounding states are classified as specified in the EPA approved implementation plan for each adjoining state.

F. 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:
 - a. International parks;
 - b. National wilderness areas which exceed 5,000 acres in size;
 - c. National memorial parks which exceed 5,000 acres in size;
 - d. National parks which exceed 6,000 acres in size.
2. Areas which were redesignated as Class I 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:
 - a. 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
 - b. A national park or national wilderness area established after August 7, 1977, which exceeds 10,000 acres in size.

G. Ambient Air Ceilings

1. No concentration of a pollutant shall exceed the concentration permitted under the Knox County secondary ambient air quality standard (Section 14.1, Table I), or the concentration permitted under the Knox County primary ambient air quality standard (Section 14.1, Table I), whichever concentration is lowest for the pollutant for a period of exposure.

2. Except as permitted by Section 123 of the Clean Air Act Amendments of 1977, dispersion techniques which exceed good engineering practice, and which were implemented after December 31, 1970, will not be considered when determining the emission limitations required for control of any pollutant.

H. Control Technology Review

1. A major stationary source or major modification shall meet each applicable emissions limitation under this section of the applicable implementation plan.
2. A new major stationary source shall apply best available control technology for any pollutant that it would have the potential to emit in significant amounts.
3. A major modification shall apply best available control technology for any pollutant for which it would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit.
4. For phased construction projects, the determination of best available control technology shall be reviewed and modified as appropriate at the latest reasonable time which occurs no later than 18 months prior to commencement of construction of each independent phase of the project. At such time, the owner or operator of the applicable stationary source may be required to demonstrate the adequacy of any previous determination of best available control technology for the source.

I. Air Quality Models

All estimates of ambient concentrations required under this section shall be based on the applicable air quality models and data bases as described in 40 CFR 51.166 (1). If determined to be necessary, the Director may specify additional requirements.

J. Public Participation

1. Within 30 days after receipt of an application to construct, or any addition to such application, the Director 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 Director received all required information.
2. The Director shall make a final determination on the application no later than 6 months after receipt of a complete application. If there is a need for a longer period of time for review, it shall be agreed upon by mutual consent. In no case may this review period be longer than 1 year. The review process involves performing the following actions:
 - a. The Director shall make a preliminary determination within 60 days after receipt of the completed application whether construction should be approved, approved with conditions, or disapproved.

- b. Within 75 days after receipt of a completed application, the Director shall notify the public by advertisement in a local newspaper of the preliminary determination, the degree of increment consumption expected from the source or modification, and the opportunity for comment at a public hearing as well as written public comment. The Director shall also make available to the public a copy of all materials submitted by the applicant, except as specified in Section 33.0 (Confidentiality and Accessibility of Records), a copy of the preliminary determination, and a copy or summary of the other materials considered in making the preliminary determination.
- c. The Director shall send a copy of the notice of public comment to the applicant, to the EPA Region IV Regional Administrator, to the Tennessee Department of Health and Environment, Division of Air Pollution Control, to the Mayor of Knoxville, to the Executive Director of the Metropolitan Planning Commission, and any State or Federal Land Manager whose lands may be affected by emissions from the source or modification.
- d. The Director shall 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 it, the control technology required, and other appropriate considerations.
- e. The Director shall 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 or request an extension for this purpose. The Director shall consider the applicant's response in making a final decision. The Director shall make all comments available for public inspection in the same place where the Director made available preconstruction information relating to the proposed source or modification.
- f. The Director shall make a final determination whether construction should be approved, approved with conditions, or disapproved pursuant to this section. The Director shall also notify the applicant in writing of the final determination and make such notification available for public inspection at the same location where the Director made available preconstruction information and public comments relating to the source or modification.
- g. All public comments and written comments prepared by the Director will be maintained in the public depositories for one year from the date of issuance of the final determination.

K. Violations of Air Quality Increments

The Director shall not issue a construction permit to a source or facility to construct in an area where the increment is known to be violated or the air quality review predicts a violation of the increment or the ambient air quality standards except in accordance with the following:

1. All new or modified facilities shall utilize good engineering practice as determined by the Director in designing stacks. In no event shall that part of a stack which exceeds good engineering practice stack height be taken into account for the purpose of determining the degree of emission limitation required for the control of any pollutant for which there is an ambient air quality standard established in Section 14.1, Table I.
2. A major source or modification which would normally be required to meet BACT shall be required to meet the Lowest Achievable Emission Rate (LAER) for that type of source as determined by the Director at the time of the permit application. The term "lowest achievable emission rate" means for any source that rate of emissions which reflects:
 - a. The most stringent emission limitation which is contained in the implementation plan of any state for such a class or category of source unless the owner or operator of the proposed source demonstrates that such limitations are not achievable; or
 - b. The most stringent emission limitation which is achieved in practice by such class or category of source.
3. If requirements of parts K. 1. and K. 2. above are not adequate to protect the increment or the ambient air quality standards, the source shall obtain emission offsets, legally enforceable at or before the time of PSD permit issuance, sufficient to predict that the increment or air quality standard will no longer be violated. The offsets shall be accomplished on or before the time of the new source operation and demonstrated through a source test or through another method acceptable to the Director.
4. This rule does not exempt the source from meeting the requirements of the State Implementation Plan.

L. Sources Impacting Class I Areas - Additional Requirements

1. Notice to Federal Land Managers and the EPA Administrator

The Director shall promptly provide written notice of receipt of any permit application for a proposed major stationary source or major modification, the emissions from which may affect a Class I area, to the EPA Administrator, the Federal Land Manager, and the Federal official charged with direct responsibility for management of any lands within any such area. The Director shall transmit to the EPA Administrator and the Federal Land Manager a copy of each permit application relating to a major stationary source or major modification which may affect a Class I area. This application shall include a copy of all information relevant to the permit application and shall be given within 30 days of receipt of the permit application, and at least 60 days prior to any public hearing on the application for a permit to construct. Such notification shall include an analysis of the proposed source's anticipated impacts on visibility in the Federal Class I area. The Director shall also provide the EPA Administrator, the Federal Land Manager and such Federal officials with a copy of the preliminary determination promptly

after the Director makes it. In addition, notification of public hearings, final determinations, and permits issued shall be provided. Finally, the Director shall also notify all affected Federal Land Managers within 30 days of receipt of any advance notification of any such permit application.

2. Denial - Impact on Air Quality Related Values

The Federal Land Manager of any such lands may demonstrate to the Director 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 Director concurs with such demonstration, than he shall not issue the permit.

3. 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 Director, provided that the applicable requirements of this paragraph are otherwise met, may issue the permit with such emission limitations as may be necessary as approved by the Knox County Air Pollution Control Board to assure that emissions of sulfur dioxide, nitrogen oxides, and particulate matter would not exceed the following maximum allowable increases over the baseline concentration for such pollutants:

Maximum Allowable Increase

Particulate matter:	
TSP, annual geometric mean	19.ug/m ³
TSP, 24-hour maximum	37.ug/m ³
Sulfur dioxide:	
Annual arithmetic mean	20.ug/m ³
24-hour maximum	91.ug/m ³
3-hour maximum	325 ug/m ³
Nitrogen dioxide:	
Annual arithmetic mean	25.ug/m ³

4. Visibility Analysis

The Director shall consider any analysis performed by the Federal Land Managers, provided within 30 days.of the notification and analysis required in part L. 1. of this subparagraph, that a proposed new major stationary source or

major modification may have an adverse impact on visibility in any Federal Class I area. If the Director concurs with the analysis then he shall not issue the permit. Where the Director finds that such an analysis does not demonstrate to the satisfaction of the Director that an adverse impact on visibility will result in the Federal Class I area, the Director must, in the notice of public hearing on the permit application, either explain his decision or give notice as to where the explanation can be obtained.

M. Innovative Control Technology

1. The owner or operator of a proposed major source or major modification may request that the Director approve a system of innovative control technology.
2. The Director, after consulting with the Governor(s) of the other affected State(s), may determine that the source or modification may employ a system of innovative control technology if:
 - a. The proposed control system would not cause or contribute to an unreasonable risk to public health, welfare, or safety in its operation or function.
 - b. The owner or operator agrees to achieve a level of continuous emissions reduction equivalent to that which would have been required under part H. 1. by a date specified by the Director. Such date shall not be later than 4 years from the time of startup, or 7 years from permit issuance.
 - c. The source or modification would meet the requirements of parts C. 1. and H. 1. based on the emission rate that the stationary source employing the system of innovative control technology would be required to meet on the date specified by the Director.
 - d. The source or modification shall not:
 - (1) Cause or contribute to a violation of an applicable Knox County ambient air quality standard; or
 - (2) Impact any area where an applicable increment is known to be violated; and
 - e. All other applicable requirements including those for public participation have been met.
 - f. The provisions of part L (relating to Class I areas) have been satisfied with respect to all periods during the life of the source or modification.
3. The Director shall withdraw any approval to employ a system of innovative control technology made under this subparagraph if:
 - a. The proposed system fails by the specified date to achieve the required continuous emissions reduction rate; or

- b. The proposed system fails before the specified date so as to contribute to an unreasonable risk to public health, welfare, or safety.
 - c. The Director decides at any time that the proposed system is unlikely to achieve the required level of control, or to protect the public health, welfare, or safety.
4. If a source or modification fails to meet the required level of continuous emission reduction within the specified time period or the approval is withdrawn in accordance with part M. 3. above, the Director may allow the source or modification up to an additional 3 years to meet the requirement for the application of best available control technology through use of a demonstrated system of control.

THIS IS THE FEDERALLY APPROVED REGULATION AS OF APRIL 28, 1993

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