

SECTION XIV

RULES

AND

REGULATIONS

TEXAS AIR CONTROL BOARD

GENERAL RULES

Rule 1. Definitions

In addition to the terms which are defined by Article 4477-5, V.T.C.S., the following terms shall have the meanings given herein:

- 1.01 Act. The Texas Clean Air Act, codified as Article 4477-5.
- 1.02 Ambient Air. That portion of the atmosphere, external to buildings, to which the general public has access.
- 1.03 Article. When followed by a number, "article" refers to provisions of the law as codified in Vernon's Revised Civil Statutes of Texas, 1925, as amended.
- 1.04 Background. Background concentration is defined as that level of air contaminants that cannot be reduced by controlling emissions from man-made sources. It is determined by measuring levels in non-urban areas.
- 1.05 Carbon Compounds. Compounds, excluding carbon dioxide, which contain carbon in combination with any other element or elements. Hydrocarbons, containing hydrogen and carbon, are one category of carbon compounds.
- 1.06 Combustion Unit. Any boiler plant, furnace, incinerator, flare, engine, or other device or system used to oxidize solid, liquid, or gaseous fuels, but excluding motors and engines used in propelling land, water, and air vehicles.
- 1.07 Commercial Incinerators. An incinerator used to dispose of waste material from retail and wholesale trade establishments.
- 1.08 Condensate. Liquids that result from the cooling and/or pressure changes of produced natural gas. Once these liquids are processed at gasoline plants, refineries, or in any other manner, they are no longer considered condensates.
- 1.09 Domestic Wastes. The garbage and rubbish normally resulting from the functions of life within a residence.
- 1.10 Downwind Level. The concentration of air contaminants from a source or sources on a property as measured at or beyond the property boundary.
- 1.11 Exhaust Emission. Air contaminants emitted to the atmosphere from an opening downstream from the exhaust ports of a motor vehicle engine.
- 1.12 Federal Motor Vehicle Regulation. The Motor Vehicle Air Pollution Standards, Title 45, Subtitle A, Part 85, Code of Federal Regulations.

- 1.13 Flue. Any duct, stack, chimney, or conduit used to conduct air contaminants into the open air.
- 1.14 Forage. Any vegetation which may be consumed by animals.
- 1.15 Garbage. Solid waste consisting of putrescible animal and vegetable waste materials resulting from the handling, preparation, cooking, and consumption of food, including waste materials from markets, storage facilities, handling and sale of produce and other food products.
- 1.16 Incinerator. An enclosed combustion apparatus and appurtenances thereto which is used in the process of burning wastes for the primary purpose of reducing its volume and weight by removing the combustibles of the waste, and which is equipped with a flue for conducting products of combustion to the atmosphere. An open trench type (with closed ends) combustion unit may be considered an incinerator when approved by the Executive Director.
- 1.17 Inorganic Fluoride Compounds. All inorganic chemicals having an atom or atoms of fluorine in their chemical structure.
- 1.18 Major Upset. An unscheduled occurrence or excursion of a process or operation that results in an emission of air contaminants that contravenes the Texas Air Control Board Regulations and/or the intent of the Texas Clean Air Act and is beyond immediate control, or a release that is initiated to protect life in the immediate or adjacent areas.
- 1.19 Motor Vehicle. A self-propelled vehicle designed for transporting persons or property on a street or highway.
- 1.20 Net Ground-Level Concentration. The upwind level subtracted from the downwind level.
- 1.21 New Source. Any stationary source, the construction or modification of which is commenced after the date of adoption of these Regulations.
- 1.22 Non-Methane Hydrocarbons. The total hydrocarbon content of the sample minus the methane content of the sample.
- 1.23 Opacity. The degree to which an emission of air contaminants obstructs the transmission of light expressed as the percentage to which the light is obstructed as measured by an optical instrument or trained observer.
- 1.24 Outdoor Burning. Any fire or smoke-producing process which is not conducted in a combustion unit.
- 1.25 Particulate Matter. Any material, except uncombined water, that exists as a solid or liquid in the atmosphere or in a gas stream at standard conditions.

- 1.26 Process or Processes. Any action, operation, or treatment embracing chemical, commercial, industrial, or manufacturing factors such as combustion units, kilns, stills, dryers, roasters, and equipment used in connection therewith, and all other methods or forms of manufacturing or processing that may emit smoke, particulate matter, gaseous matter, or visible emissions.
- 1.27 Process Weight Per Hour. "Process Weight" is the total weight of all materials introduced or recirculated into any specific process which process may cause any discharge into the atmosphere. Solid fuels charged into the process will be considered as part of the process weight, but liquid and gaseous fuels and combustion air will not. The "Process Weight Per Hour" will be 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 used to conduct the process is idle. For continuous operation, the "Process Weight Per Hour" will be derived by dividing the process weight for a 24-hour period by twenty-four.
- 1.28 Property. All land under common control or ownership on which any source or combination of sources is located, coupled with all improvements on such land, and all fixed or movable objects on such land, or any vessel on the waters of this State which may constitute a source.
- 1.29 Rubbish. Nonputrescible solid waste, consisting of both combustible and noncombustible waste materials; combustible rubbish includes paper, rags, cartons, wood, excelsior, furniture, rubber, plastics, yard trimmings, leaves, and similar materials; noncombustible rubbish includes glass, crockery, tin cans, aluminum cans, metal furniture, and like materials which will not burn at ordinary incinerator temperatures (1600°F to 1800°F).
- 1.30 Smoke. Small gas-borne particles resulting from incomplete combustion consisting predominantly of carbon and other combustible material and present in sufficient quantity to be visible.
- 1.31 Sour Gas. Any natural gas containing more than one and one-half (1 1/2) grains of hydrogen sulfide per one hundred (100) cubic feet, or more than thirty (30) grains of total sulfur per one hundred (100) cubic feet.
- 1.32 Sour Crude. A crude oil which will emit a sour gas when in equilibrium at atmospheric pressure.
- 1.33 Source. A point of origin of air contaminants, whether privately or publicly owned or operated. Upon request of a source owner the Executive Director shall determine whether multiple processes emitting air contaminants from a single point of emission will be treated as a single source or as multiple sources.

- 1.34 Standard Conditions. A condition at a temperature of 70°F and a pressure of 14.7 pounds per square inch absolute. Pollutant concentrations from an incinerator will be corrected to a condition of 50% excess air if the incinerator is operating at greater than 50% excess air.
- 1.35 Standard Metropolitan Statistical Area. An area consisting of a county or one or more contiguous counties which is officially so designated by the U. S. Bureau of the Budget.
- 1.36 Submerged Fill Pipe. Any fill pipe the discharge opening of which is entirely submerged when the liquid level is six inches above the bottom of the tank or is always submerged during filling operations; or when applied to a tank which is loaded from the side, shall mean any fill pipe the discharge opening of which is entirely submerged when the liquid level is two times the fill pipe diameter in inches above the bottom of the tank.
- 1.37 Sulfur Compounds. All inorganic or organic chemicals having an atom or atoms of sulfur in their chemical structure.
- 1.38 Sweet Crude Oil and Gas. Those crude petroleum hydrocarbons that are not "sour" as defined.
- 1.39 System or Device. Any article, chemical, machine, equipment, or other contrivance, the use of which may eliminate, reduce, or control the emissions of air contaminants to the atmosphere.
- 1.40 Upwind Level. The representative concentration of air contaminants flowing onto or across a property as measured at any point.
- 1.41 Visible Emissions. Particulate or gaseous matter which can be detected by the human eye. The radiant energy from an open flame shall not be considered a visible emission under this definition.
- 1.42 Volatile Carbon Compound. Any carbon compound or mixture of carbon compounds which has an aggregate vapor pressure of 1.5 pounds per square inch absolute or greater under actual conditions of storage or use.
- 1.43 Volatile Carbon Compound - Effluent Water Separation. Any tank, box, sump, or other container in which any volatile carbon compound, floating on or entrained or contained in water entering such tank, box, sump, or other container, is physically separated and removed from such water prior to outfall, drainage, or recovery of such water.

Rule 2. Other Definitions.

Unless specifically defined in the Act or in the Rules of the Board, the terms used by the Board have the meanings commonly ascribed to them in the field of air pollution control.

Rule 3. Multiple Air Contaminant Sources or Properties.

- 3.1 In an area where an additive effect occurs from the accumulation of air contaminants from two or more sources on a single property or from two or more properties, such that the level of air contaminants exceeds the ambient air quality standards established by the Texas Air Control Board, and each source or each property is emitting no more than the allowed limit for an air contaminant for a single source or from a single property, further reduction of emissions from each source or property shall be made as determined by the Board.
- 3.2 Two or more property holders in a county having a population of less than 50,000 as determined by the most recent federal census may petition the Board to have their properties designated a single property for purposes of controlling emissions therefrom, if the properties are contiguous except for intervening roads, railroads, rights-of-way, canals and watercourses, which are considered a part of the area for purposes of this provision. The petition shall describe generally the manner in which control of emissions from the combined properties will be administered and shall name the party or parties accepting responsibility thereof. The petition shall be accompanied by an executed copy of a written agreement between the property holders who consent to having their properties so designated and shall also be accompanied by a detailed map of the vicinity showing geographical features such as roads, watercourses, and well-known landmarks; the boundaries of the petitioner's properties; the area to be included in the single property designation; and present land uses in the areas surrounding the area to be included. The Board may place such conditions on the approval of the petition as it may deem appropriate.

Rule 4. Circumvention.

No person shall use any plan, activity, device or contrivance which the Executive Director determines will, without resulting in an actual reduction of air contaminants, conceal or appear to minimize the effects of an emission which would otherwise constitute a violation of the Act or Regulations. Air introduced for dilution purposes only is considered a circumvention of the Regulations.

Rule 5. Nuisance.

No person shall discharge from any source whatsoever one or more air contaminants or combinations thereof, in such concentration and of such duration as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation or property, or as to interfere with the normal use and enjoyment of animal life, vegetation or property.

Rule 6. Traffic Hazard.

No person shall discharge from any source whatsoever such quantities of air contaminants, uncombined water, or other materials which cause or have a tendency to cause a traffic hazard or an interference with normal road use.

Rule 7. Notification Requirements for Major Upset.

The Executive Director and the appropriate local air pollution control agency shall be notified as soon as possible of any major upset condition which causes or may cause an excessive emission that contravenes the intent of the Texas Clean Air Act and/or the Regulations of the Board. A list of persons to contact may be obtained from the Executive Director upon request.

Rule 8. Notification Requirements for Maintenance.

The Executive Director and the appropriate local air pollution control agency shall be notified in writing at least ten (10) days prior to any planned maintenance, start-up, or shut-down which will or may cause an excessive emission that contravenes the intent of the Texas Clean Air Act and/or the Regulations of the Board. If ten (10) days notice cannot be given due to an unplanned occurrence, notice shall be given as soon as practical prior to the shut-down.

Rule 9. Sampling

9.1 Any person owning or operating a source which emits air contaminants into the air of this State shall, upon request by the Board or the Executive Director, conduct sampling to determine the opacity, rate, composition, and/or concentration of such emissions. Sampling shall be conducted at a frequency and within a period of time which are reasonable as specified by the Board or Executive Director. The sampling method shall be specified by the Board or the Executive Director and, further, the sampling shall be conducted so as to reflect with reasonable accuracy the above listed characteristics of such emissions.

9.11 Any person affected by Rule 9.1 may request the Executive Director to approve alternate sampling techniques or other means to determine the opacity, rate, composition, and/or concentration of emissions. The Executive Director may approve such alternate methods or means if it can be demonstrated that such alternatives will be substantially equivalent to the sampling methods specified by the Executive Director or the Board.

- 9.2 If requested to obtain air contaminants emission data pursuant to Rule 9.1, the owner or operator shall attest to and report the results so obtained to the Executive Director within a reasonable time specified by and on forms furnished by the Executive Director.
- 9.3 Copies of all data, computations and results obtained under Rule 9.1 shall be retained by the owner or operator of a source for at least five years and shall be made available to the Board, or any members, employees or agents thereof, and to any local air pollution control agencies, during regular business hours.

Rule 10. Sampling Ports.

Any person, at the request of the Board shall provide in connection with each flue a power source near the point of testing in addition to such sampling and testing facilities and sampling ports, including safe and easy access thereto, exclusive of instruments and sensing devices, as may be necessary for the Board to determine the nature and quality of emissions which are or may be discharged as a result of source operations. Evidence and data based on these samples and calculations may be used to substantiate violations of the Act, Rules and Regulations. Agents of the Board shall be permitted to sample the stacks during operating hours.

Rule 11. Filing of Emissions Data.

Upon request by the Board or the Executive Director, any person affected by any Rule or Regulation of the Texas Air Control Board shall file emissions data with the Board on forms supplied by the Board.

Rule 12. Exemptions from Rules and Regulations.

- 12.1 Emissions occurring during major upsets may not be required to meet the allowable emission levels set by the Rules and Regulations upon proper notification as set forth in Rule 7 of these General Rules, if a determination is made by the Executive Director after consultation with appropriate local agencies and with appropriate officials of the subject source that the upset conditions were unavoidable and that a shut-down or other corrective actions were taken as soon as practicable.
- 12.2 Emissions occurring during start-up or shut-down of processes or during periods of maintenance may not be required to meet the allowable emission levels set by the Rules and Regulations if so determined by the Executive Director upon proper notification as set forth in Rule 8 of these General Rules. The Executive Director may specify the amount, time, and duration of emissions that will be allowed during start-up and shut-down and during periods of maintenance.

- 12.3 Smoke generators and other devices used for training inspectors in the evaluation of visible emissions at a training school approved by the Board are not required to meet the allowable emission levels set by the Rules and Regulations, but must be located and operated such that a nuisance is not created at any time.
- 12.4 Equipment, machines, devices, flues, contrivances built or installed to be used at a domestic residence for domestic use are not required to meet the allowable emission levels set by the Rules and Regulations unless specifically required by a particular Regulation.
- 12.5 Sources emitting air contaminants which cannot be controlled or reduced due to a lack of technological knowledge may be exempt from the applicable Rules and Regulations when so determined and ordered by the Texas Air Control Board. The Board may specify limitation and conditions as to the operation of such exempt sources.
- 12.6 No nuisance conditions shall be permitted to occur under these exemptions.

Rule 13. Board Seal.

The seal of the Board shall bear the words "Texas Air Control Board", the star, and the oak and olive branches common to other official State seals.

Rule 14. Use and Effect of Rules.

These rules may be used by the Board as guides in the exercise of discretion, where discretion is vested. They shall not be construed as a limitation or restriction on the exercise of discretion, where it exists, nor shall they be construed to deprive the Board of the exercise of any power, duties and jurisdiction conferred by law, or to limit or restrict the amount and character of data or information which may be required for the proper administration of the law.

Rule 15. Sampling Procedures and Terminology.

Where not otherwise specified in the Rules, Regulations, determinations and orders of the Board, the procedures used for sampling air and measuring air contaminants, and the methods of expressing the findings shall be those commonly accepted and used in the field of air pollution control.

Rule 16. Invoking Jurisdiction of the Board.

Any person may petition the Board through the Executive Director for such consideration and action related to air pollution control as he may desire. The Board will review and act on the petition in such manner as the Board may prescribe.

Rule 17. Petition for Variance.

Any person seeking a variance, amendment of a variance, or extension of a variance issued to that person shall file a petition on a form prepared by the Board. The form shall be furnished by the Board without charge upon request. In order to obtain a variance past the date by which compliance is to be achieved, a person must have demonstrated continuous and substantial progress toward compliance before the date of petition.

Rule 18. Effect of Acceptance of Variance or Permit.

Acceptance of a variance or a permit constitutes an acknowledgement and agreement that the holder thereof will comply with its terms and with the Rules, Regulations, and orders of the Board adopted pursuant to the Act.

Rule 19. Initiation of Review.

The Board may initiate proceedings to revoke or amend a variance or a permit on its own motion, on recommendation of the Executive Director, or upon request of an interested person who presents reasonable justifiable grounds therefor.

Rule 20. Transfers.

A variance or a permit is granted in personam, and does not attach to the realty to which it relates. A variance cannot be transferred without prior notification to the Board. If a transfer of ownership of a source covered by a variance is contemplated by the holder of the variance, and the source and characteristics of the emissions will remain unchanged, upon notification, the Executive Director shall issue an endorsement to the variance reflecting the name of the new owner. Continuation of emissions by the new owner without prior notification to the Board makes the variance subject to forfeiture.

Rule 21. Remedies Cumulative.

The administrative and judicial procedures available to the Board to prevent, correct or remedy air pollution conditions or violations are cumulative. Within the limits of the authority set forth in the Act and these Rules, the Board or the Executive Director may act under any one or more of these procedures, as applicable to the facts of a particular air pollution condition or claimed violation.

Rule 22. Severability.

If any provision of any of the Regulations of the Board or the application of that provision to any person, situation or circumstance is for any reason adjudged invalid, the adjudication does not affect any other provision of the Regulations or the application of the adjudicated provision to any other person, situation, or circumstance. The Board declares that it would have adopted the valid portions and applications of the Regulations without the invalid part and to this end the provisions of the Regulations are declared to be severable.

Rule 23. It is the intention of the Texas Air Control Board to utilize and enforce the Ambient Air Quality Standards and emission limitations promulgated pursuant to the Federal Clean Air Act, 42 U.S.C., 1857 et seq., as amended.

Rule 24. The National Primary and Secondary Ambient Air Quality Standards as published in the Federal Register, 36 Fed. Reg. 818F (April 30, 1971), are to be applied throughout all parts of Texas. The Primary Standards are to be achieved no later than three (3) years after the Implementation Plan is approved by the Environmental Protection Agency, and the Secondary Standards are to be achieved within a reasonable time thereafter as so determined by the Texas Air Control Board.

Rule 25. The general rules contained herein shall be in force immediately and shall supersede all previous General Provisions and Procedural Rules of the Texas Air Control Board.

Date Adopted: January 26, 1972
Date Filed with the Secretary of State: February 4, 1972
Date Effective: March 5, 1972

Amendment of Rule 9
Date Adopted: July 27, 1972
Date Filed with Secretary of State: August 1, 1972
Date Effective: August 31, 1972

Amendment of Rule 1
Date Adopted: February 13, 1973
Date Filed with Secretary of State: April 12, 1973
Date Effective: May 12, 1973

Amendment of Rule 9
Date Adopted: October 30, 1973
Date Filed with Secretary of State: November 1, 1973
Date Effective: December 1, 1973

TEXAS AIR CONTROL BOARD

REGULATION I

CONTROL OF AIR POLLUTION FROM
SMOKE, VISIBLE EMISSIONS, AND PARTICULATE MATTER

Rule 101. Outdoor Burning

101.1 No person may cause, suffer, allow or permit any outdoor burning within the State of Texas, except as provided by Rule 101.2.

101.2 Outdoor burning is authorized in the following instances if no nuisance is or will be created:

101.21 Outdoor burning when conducted pursuant to a written grant of authority by the Texas Air Control Board or Executive Director.

101.22 Outdoor burning for the purpose of training fire-fighting personnel when requested by certified mail and when authorized in writing by the local air pollution control agency or local health unit. If notice of denial from the local air pollution control agency or local health unit is not received within ten (10) days of the request, the burning is authorized. Authorization to conduct outdoor burning under this provision may be revoked by the Texas Air Control Board if it is found that this provision is used to circumvent Rule 101.

101.23 Outdoor burning of domestic waste at and from a property designed for and used exclusively as a private residence, housing not more than three families when collection of the domestic waste is not provided by the local governmental entity having jurisdiction.

101.24 Outdoor burning consisting of campfires and fires used solely for recreational or ceremonial purposes, or in the non-commercial preparation of food.

101.25 Outdoor burning in a rural area of trees, brush, grass, and other dry vegetable matter from such area in land-clearing, right-of-way maintenance operations, forest management purposes, and range land management purposes, if all the following conditions are met:

- 101.251 The burning must be outside the corporate limits of a city or town except when it is necessary to eliminate a naturally occurring fire hazard.
- 101.252 The wind direction at the time of starting the burning must be away from any nearby city, town, residence, recreational, commercial, or industrial area.
- 101.253 The burning must be at least one thousand feet from any residence, recreational, commercial, or industrial area except those located on the property where the burning is to take place, except when it is necessary to eliminate a naturally occurring fire hazard.
- 101.254 Heavy oils, asphaltic materials, items containing natural or synthetic rubber or any material other than dry plant growth which may produce unreasonable amounts of smoke must not be burned.
- 101.255 If the burning will cause smoke to blow onto or across a highway, it is the responsibility of the person initiating the burning to post flagmen on affected roads in accordance with the requirements of the Department of Public Safety.
- 101.256 The initial burning for land clearing and right-of-way maintenance purposes may be commenced after 9:00 a.m. Material which will not be completely consumed before 5:00 p.m. shall not be added to the fire.
- 101.257 Burning within an area should be staggered so that total atmospheric loads of smoke are reduced.
- 101.258 Burning shall not be conducted when meteorological forecasts predict wind movement of less than three (3) miles per hour or greater than fifteen (15) miles per hour or when a significant shift in wind direction is predicted which could produce adverse effects to personnel, animals, or property during the burning period.
- 101.259 Burning shall not be conducted during periods of actual or predicted persistent (12 hours or more) low-level (below 1600 feet) atmospheric inversions or in areas covered by a current air stagnation advisory.

- 101.26 Outdoor burning of the garbage and rubbish generated by a city or town having a population of less than 5,000, as determined by the most recent federal census, or by any unincorporated area serving less than 5,000, as determined by the most recent federal census, may be conducted if the following conditions are met:
- 101.261 The city or unincorporated area and the location of the burning must be outside a defined Standard Metropolitan Statistical Area.
 - 101.262 Cities in newly designated Standard Metropolitan Statistical Areas shall have eighteen (18) months after the designation of the Standard Metropolitan Statistical Area to comply with Rule 101.
 - 101.263 The location of the burning must not be within a city or town; must be at least one mile from any residential, recreational, commercial or industrial area; and must be at least 300 yards from any public road.
 - 101.264 The initial burning may be commenced only between the hours of 9:00 a.m. and 1:00 p.m. Combustible material must not be added to the fire between 1:00 p.m. of one day and 9:00 a.m. of the following day.
 - 101.265 The exceptions provided by Rule 101.26 will not apply after December 31, 1973, to cities with a population over 3,000, as determined by the most recent federal census.
- 101.27 Outdoor burning of hydrocarbons from pipeline breaks and oil spills may be allowed upon proper notification as set forth in Rule 7 of the General Rules, if the Executive Director determines that the burning is necessary to protect the public welfare.
- 101.3 No disposal or deposit outdoors of any material capable of igniting spontaneously is allowed except where the disposal or deposit is made pursuant to a specific grant of authority by the Texas Air Control Board or the Executive Director.
- 101.4 The authority to conduct outdoor burning under this Regulation does not exempt or excuse the person responsible from the consequences, damages, or injuries resulting from the burning and does not exempt or excuse anyone from complying with all other applicable laws or ordinances, regulations and orders of governmental entities having jurisdiction even though the burning is otherwise conducted in compliance with the regulation.

Rule 102. Incineration

- 102.1 No person may cause, suffer, allow, or permit the burning of garbage or rubbish in a single-chamber residential or commercial incinerator unless the Executive Director approves an incinerator demonstrated to provide equivalent performance to multiple-chamber incinerators.
- 102.2 No person may cause, suffer or permit the burning of garbage or rubbish in a single-chamber incinerator constructed after April 1, 1972, unless the Executive Director approves an incinerator demonstrated to provide equivalent performance to multiple-chamber incinerators.

Rule 103. Visible Emissions.

- 103.1 No person may cause, suffer, allow, or permit visible emissions from any stationary flue to exceed an opacity of 30% averaged over a 5-minute period. No person may cause, suffer, allow, or permit visible emissions from any stationary flue beginning construction after January 31, 1972, to exceed an opacity of 20% averaged over a 5-minute period. Visible emissions during the cleaning of a firebox or the building of a new fire, sootblowing, equipment changes, ash removal and rapping of precipitators may exceed the limits set forth in Rule 103.1 for a period aggregating not more than five minutes in any sixty consecutive minutes, nor more than six hours in any ten-day period.
- 103.2 No person may cause, suffer, allow, or permit visible emissions from a waste gas flare for more than five minutes in any 2-hour period except as provided in Rule 12.1 of the General Rules.
- 103.3 No person may cause, suffer, allow, or permit excessive visible emissions from any building or enclosed facility.
- 103.4 No person may cause, suffer, allow, or permit excessive visible emissions from motor vehicles for more than ten consecutive seconds.
- 103.5 No person may cause, suffer, allow, or permit excessive visible emissions from any railroad locomotive, ship or any other vessel, except during reasonable periods of engine start-up.
- 103.6 No person may cause, suffer, allow, or permit visible emissions from any stationary flue having a total flow rate of 100,000 acfm or more to exceed an opacity of 15% averaged over a 5-minute period unless an optical instrument capable of measuring the opacity of emissions is installed in the flue. Records of all such measurements shall be retained as provided for in Rule 9 of the General Rules. The provision shall not apply to flues having gas streams containing moisture which interferes with proper instrument operation, if so determined by the Executive Director.

- 103.7 Contributions from uncombined water shall not be included in determining compliance with Rule 103. The burden of proof which establishes the applicability of Rule 103.7 shall be upon the person seeking to come within its provisions.
- Rule 104. Particulate Matter from Materials Handling, Construction, and Roads.
- 104.1 Rule 104 shall apply only in Standard Metropolitan Statistical Areas where the federal air quality standards for particulate matter are exceeded.
- 104.2 No person may cause, suffer, allow, or permit any fine material to be handled, transported, or stored without taking at least the following precautions to prevent particulate matter from becoming airborne:
- 104.21 Application of water or suitable chemicals or some other covering on materials stockpiles, and other surfaces which can create airborne dusts under normal conditions;
 - 104.22 Installation and use of hoods, fans and filters to enclose, collect, and clean the emissions of dusty materials;
 - 104.23 Covering or wetting at all times when in motion, of open-bodied trucks, trailers, or railroad cars transporting materials in areas where the general public has access which can create airborne particulate matter.
- 104.3 No person may cause, suffer, allow or permit a building structure to be used, constructed, altered, repaired or demolished without taking at least the following precautions to prevent particulate matter from becoming airborne:
- 104.31 Use of water or chemicals where feasible for control of dust in the demolition of buildings or structures, in construction operations, or in the clearing of land;
 - 104.32 Use of adequate methods to prevent airborne particulate matter during sandblasting of buildings or other similar operations.
- 104.4 No person may cause, suffer, allow, or permit a road to be used, constructed, altered, or repaired without taking at least the following precautions to prevent particulate matter from becoming airborne:
- 104.41 Application of asphalt, oil, water or suitable chemicals on heavily traveled dirt streets as necessary.

- 104.42 Paving of public or commercial parking surfaces having more than five parking spaces.
- 104.43 Removal as necessary from paved street and parking surfaces of earth or other material which have a tendency to become airborne.
- 104.5 Alternate means of control may be approved by the Executive Director of the Texas Air Control Board.

Rule 105. Particulate Matter

- 105.1 No person may cause, suffer, allow, or permit emissions of particulate matter from any source to exceed the allowable rates specified in Table 1 and/or Figure 1.
- 105.11 If a source has an effective stack height less than the standard effective stack height as determined from Table 2 and/or Figure 2, the allowable emission level must be reduced by multiplying it by:

$$\left(\frac{\text{Effective Stack Height}}{\text{Standard Effective Stack Height}} \right)^2$$

- 105.12 Effective stack height shall be calculated by the following equation:

$$h_e = h + 0.083 v_e D_e \left[1.5 + 0.82 \left(\frac{T_e - 550}{T_e} \right) D_e \right]$$

Where:

h_e = Effective stack height in feet (ft)

h = Physical stack height above ground level in feet (ft)

v_e = Stack exit velocity in feet per second (ft/sec)

D_e = Stack exit inside diameter in feet (ft)

T_e = Stack exit temperature in degrees Rankin ($^{\circ}R$)

- 105.2 No person may cause, suffer, allow or permit emissions of particulate matter from a source or sources operated on a property or from multiple sources operated on contiguous properties to exceed any of the following net ground level concentrations.

105.21 One hundred (100) micrograms per cubic meter ($\mu\text{g}/\text{M}^3$) of air sampled, averaged over any five (5) consecutive hours.

105.22 Two hundred (200) micrograms per cubic meter ($\mu\text{g}/\text{M}^3$) of air sampled, averaged over any three (3) consecutive hours.

105.23 Four hundred (400) micrograms per cubic meter ($\mu\text{g}/\text{M}^3$) of air sampled, averaged over any one (1) hour period.

105.3 Rules 105.1 and 105.2 shall not apply to any oil or gas fuel fired steam generator with a heat input greater than 2500 million BTU per hour or any solid fossil fuel fired steam generator.

105.31 No person may cause, suffer, allow, or permit emissions of particulate matter from any solid fossil fuel fired steam generator to exceed 0.3 lbs. per million BTU heat input maximum 2-hour average.

105.32 No person may cause, suffer, allow or permit emissions of particulate matter from any oil or gas fuel fired steam generator with a heat input greater than 2500 million BTU per hour to exceed 0.1 lb. per million BTU heat input maximum 2-hour average.

Rule 106. Transient Operations.

106.1 Rules 103 and 105 shall not apply to portable hot-mix asphaltic concrete plants, portable rock-crusher, and other transient operations engaged in public works projects which are not operated at the same premise for more than six months if all the following conditions are met:

106.11 The plant is located at least one mile outside the nearest corporate limits of any city or town.

106.12 The plant is located at least one mile from any occupied facility or recreational area other than that located on the same property as the plant.

106.13 The plant is equipped with cyclones, or wet scrubbers, or water sprays at the material transfer points open to the atmosphere, or other equipment or systems approved by the Executive Director, properly installed, in good working order and in operation.

106.2 The time requirement for Rule 106.1 may be extended by the Executive Director upon written request.

106.3 All emissions from sources operating under provisions of Rule 106 shall be controlled so as not to permit or create a nuisance.

106.4 Rule 106 shall not apply in Dallas or Harris Counties.

106.5 Rule 106 shall not apply to portable hot-mix asphaltic concrete plants after December 31, 1974.

Rule 107. Agricultural Process.

107.1 Rules 103, 104, 105 and 108 shall not apply to any person affected by Section 3.10 (e) of the Texas Clean Air Act.

- 107.2 No person affected by Section 3.10 (e) of the Texas Clean Air Act may cause, suffer, allow, or permit emissions of particulate matter from any or all sources associated with a specific process to exceed the allowable levels specified in Table 3 and/or Figure 3, except as provided by Rule 107.3.
- 107.3 Any person affected by Section 3.10 (e) of the Texas Clean Air Act who does not wish to be controlled by the process weight method, established by Rule 107.2, may select an alternate method of control which the Executive Director finds will provide emission control efficiency and measurement to achieve the same goal as Rule 107.2.
- 107.4 Any person affected by Section 3.10 (e) of the Texas Clean Air Act who does not select an alternate method and notify the Executive Director, in writing, prior to any plant investigation by the staff of the Texas Air Control Board shall be controlled by the process weight method established by Rule 107.2, unless the Executive Director, at his discretion, chooses to accept proposals for an alternate method at that time.
- 107.5 Nothing herein is intended to affect the limitations on burning set out in Rule 101.
- 107.6 Persons affected by Rule 107 shall be in compliance with the provisions set forth herein by February 15, 1973.
- Rule 108. Persons affected by this Regulation shall be in compliance with the provisions contained herein no later than December 31, 1973. Not later than six months after the effective date of this Regulation, any person affected by this Regulation shall submit to the Texas Air Control Board a written report on his compliance status, including but not limited to, the minimum time required to design, procure, install and test abatement equipment or procedures. Progress reports shall be submitted to the Board every four months commencing in July of 1972 until compliance is achieved.

All persons shall continue to be governed by the provisions of Regulation I, which became effective on March 16, 1967, and amended on January 23, 1968, September 12, 1969, and May 18, 1971, and Regulation II, which became effective February 22, 1968, and amended on September 12, 1969, until December 31, 1973, at which time this Regulation shall supersede the previous Regulation I and II.

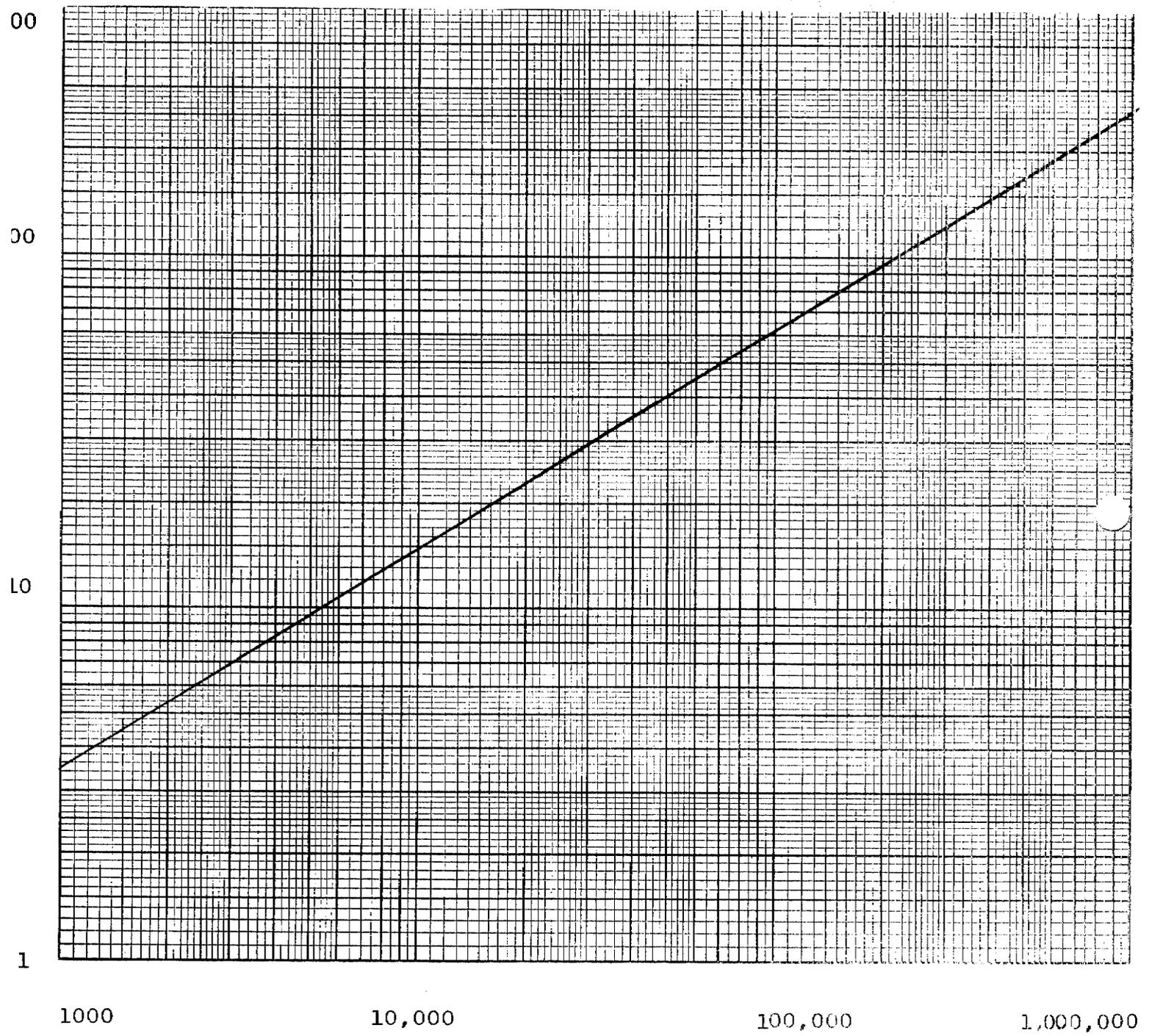
Date Adopted: January 26, 1972
 Date Filed with Secretary of State: February 4, 1972
 Date Effective: March 5, 1972
 Amendment of Rule 105.3
 Date Adopted: December 19, 1973
 Date Filed with Secretary of State: December 20, 1973
 Date Effective: January 19, 1974

TABLE 1
ALLOWABLE PARTICULATE EMISSION RATES
FOR SPECIFIC FLOW RATES

Effluent Flow Rate acfm	Rate of Emission lb/hr
1,000	3.5
2,000	5.3
4,000	8.2
6,000	10.6
8,000	12.6
10,000	14.5
20,000	22.3
40,000	34.2
60,000	44.0
80,000	52.6
100,000	60.4
200,000	92.9
400,000	143.0
600,000	184.0
800,000	219.4
1,000,000	252.0

Interpolation and extrapolation of the data in this table shall be accomplished by the use of the equation $E = 0.048 q^{0.62}$ where E is the allowable emission rate in lb/hr and q is the stack effluent flow rate in acfm.

FIGURE 1
ALLOWABLE PARTICULATE EMISSION RATES
FOR SPECIFIC FLOW RATES



STACK EFFLUENT FLOW RATE (acfm)

TABLE 2

STANDARD EFFECTIVE STACK HEIGHT
BASED ON SPECIFIC FLOW RATES

Effluent Flow Rate acfm	Standard Effective Stack Height ft
1,000	12
2,000	15
4,000	19
6,000	22
8,000	24
10,000	26
20,000	34
40,000	43
60,000	49
80,000	55
100,000	59
200,000	75
400,000	96
600,000	110
800,000	122
1,000,000	132

Interpolation and extrapolation of the data in this Table shall be accomplished by the use of the equation $H_e = 1.05 q^{0.35}$ where H_e is the standard effective stack height in feet and q is the stack effluent flow rate in acfm.

FIGURE 2

STANDARD EFFECTIVE STACK HEIGHT
BASED ON SPECIFIC FLOW RATES

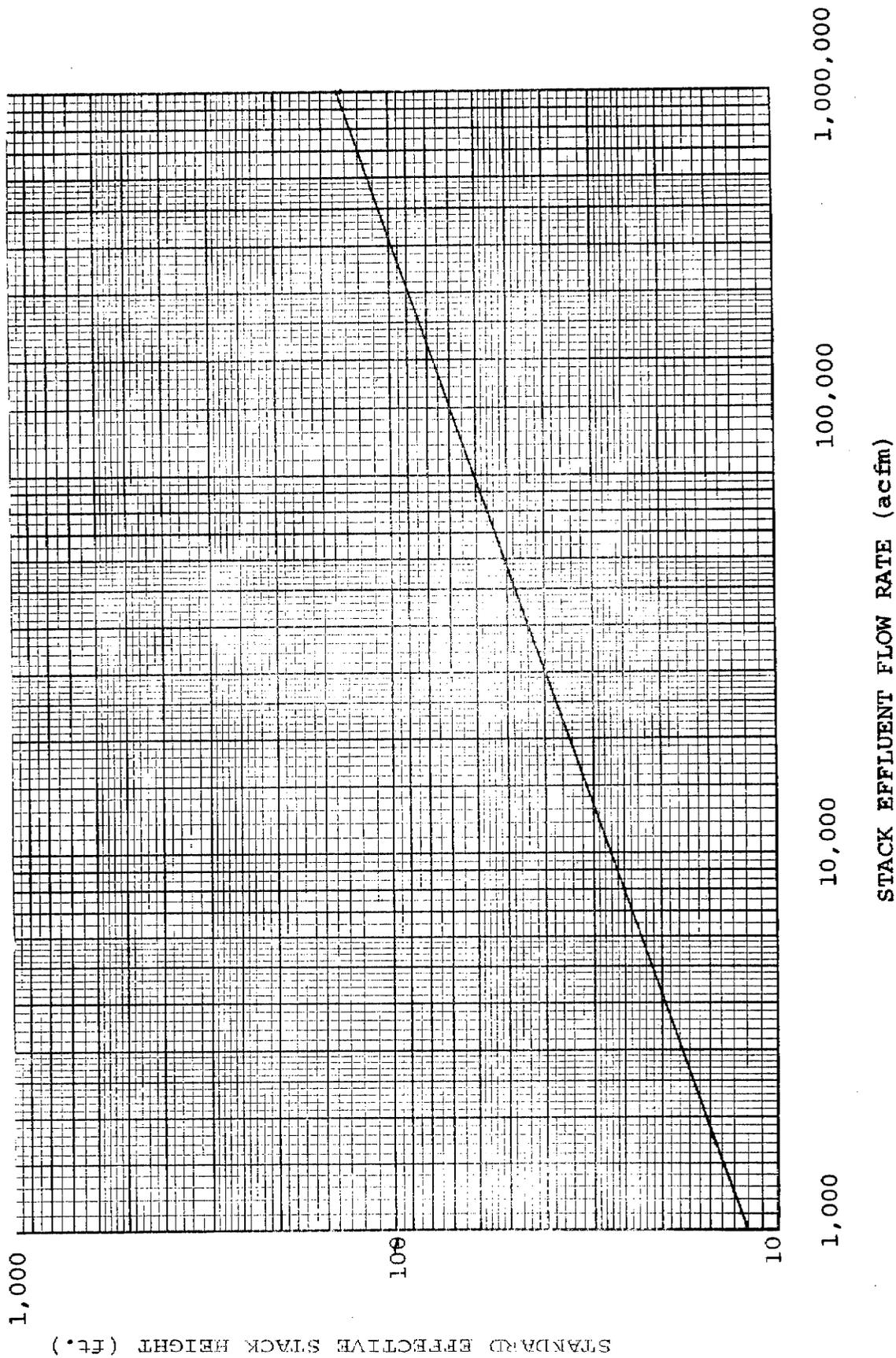


TABLE 3

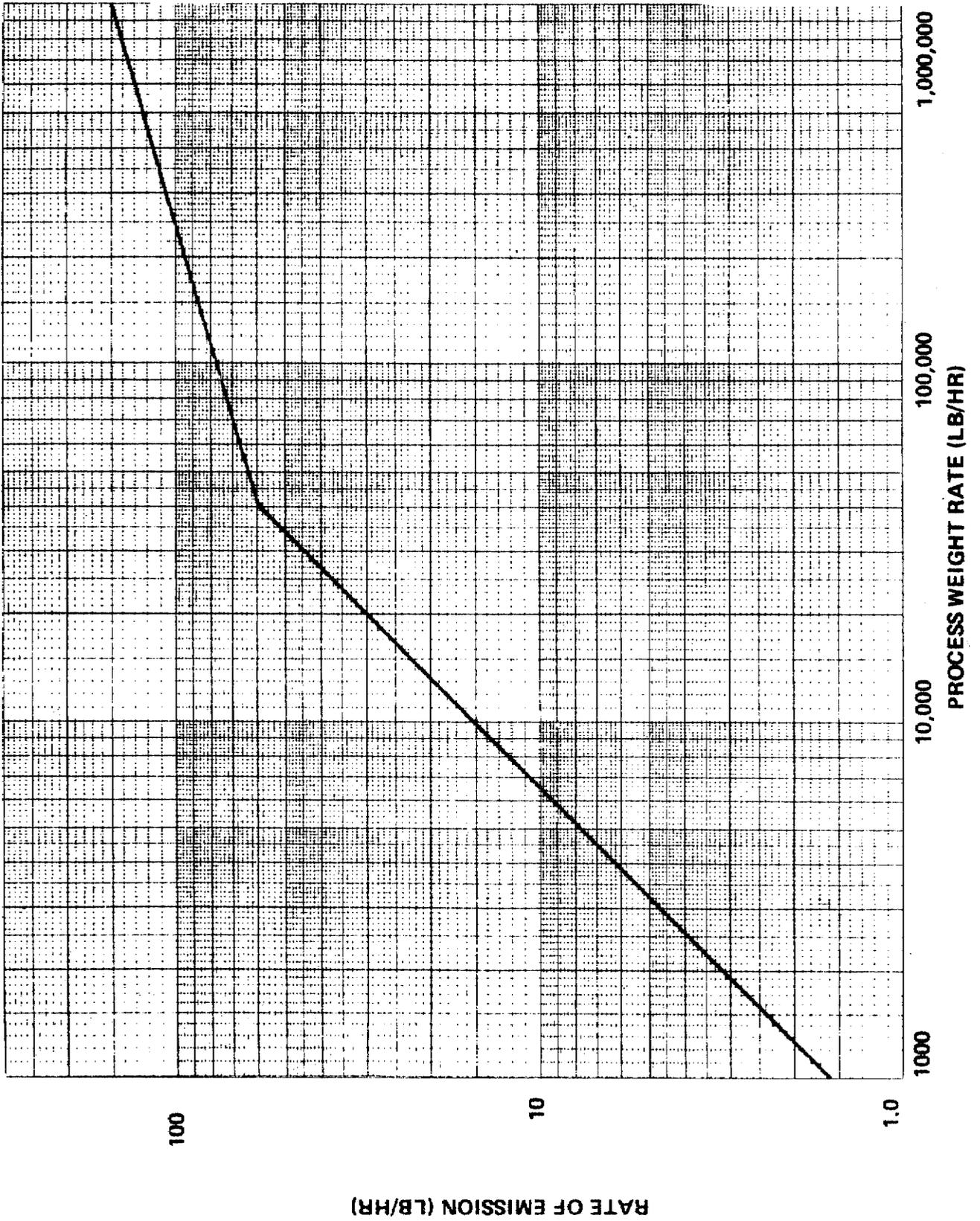
ALLOWABLE RATE OF EMISSION BASED ON PROCESS WEIGHT RATE

PROCESS WEIGHT RATE lb/hr	RATE OF EMISSION lb/hr	PROCESS WEIGHT RATE lb/hr	RATE OF EMISSION lb/hr
1,000	1.6	16,000	24.2
1,500	2.4	18,000	27.2
2,000	3.1	20,000	30.1
2,500	3.9	30,000	44.9
3,000	4.7	40,000	59.7
3,500	5.4	50,000	64.0
4,000	6.2	60,000	67.4
5,000	7.7	70,000	70.5
6,000	9.2	80,000	73.2
7,000	10.7	90,000	75.7
8,000	12.2	100,000	78.1
9,000	13.7	150,000	87.7
10,000	15.2	200,000	95.2
12,000	18.2	250,000	101.5
14,000	21.2	500,000	123.9

Interpolation of the data in this table for process weights up to 40,000 lb/hr shall be accomplished by the use of the equation $E = 3.12 (p^{0.985})$, and interpolation and extrapolation of the data for process weight rates in excess of 40,000 lb/hr shall be accomplished by use of the equation $E = 25.4(p^{0.287})$ where E = rate of emission in pounds per hour and p = process weight rate in tons per hour.

FIGURE 3

ALLOWABLE PARTICULATE EMISSION LEVELS BASED ON
PROCESS WEIGHT RATE



TEXAS AIR CONTROL BOARD

REGULATION II

CONTROL OF AIR POLLUTION FROM SULFUR COMPOUNDS

Rule 201. Control of Sulfur Dioxide.

201.01 No person may cause, suffer, allow or permit emissions of sulfur dioxide from any sulfuric acid plant burning elemental sulfur to exceed the allowable rates specified in Table 1 and/or Curve A of Figure 1.

201.011 If a source has an effective stack height less than the standard effective stack height as determined from Table 2 and/or Curve A of Figure 2, the allowable emission rates must be reduced by multiplying it by:

$$\left(\frac{\text{Effective Stack Height}}{\text{Standard Effective Stack Height}} \right)^2$$

201.012 Effective stack height shall be calculated by the following equation:

$$h_e = h + 0.083v_e D_e \left[1.5 + 0.82 \left(\frac{T_e - 550}{T_e} \right) D_e \right]$$

Where:

h_e = Effective stack height in feet (ft)

h = Physical stack height above ground level in feet (ft)

v_e = Stack exit velocity in feet per second (ft/sec)

D_e = Stack exit inside diameter in feet (ft)

T_e = Stack exit temperature in degrees Rankine (°R)

201.02 No person may cause, suffer, allow or permit emissions of sulfur dioxide from any sulfuric acid plant to exceed the allowable rates specified in Table 3 and/or Curve B of Figure 1.

201.021 If a source has an effective stack height less than the standard effective stack height as determined from Table 4 and/or Curve B of Figure 2, the allowable emission rates must be reduced by multiplying it by:

$$\left(\frac{\text{Effective Stack Height}}{\text{Standard Effective Stack Height}} \right)^2$$

201.022 Effective stack height shall be calculated by the equation in Rule 201.012.

201.03 No person may cause, suffer, allow or permit emissions of sulfur dioxide from any sulfur recovery plant to exceed the allowable rates specified in Table 5 and/or Curve C of Figure 1.

201.031 If a source has an effective stack height less than the standard effective stack height as determined from Table 6 and/or Curve D of Figure 2, the allowable emission rates must be reduced by multiplying it by:

$$\left(\frac{\text{Effective Stack Height}}{\text{Standard Effective Stack Height}} \right)^2$$

201.032 Effective stack height shall be calculated by the equation in Rule 201.012.

201.04 No person may cause, suffer, allow or permit emissions of sulfur dioxide from nonferrous smelters to exceed 0.8% by volume of the total flue gas.

201.041 If a source has an effective stack height less than the standard effective stack height as determined from Table 7 and/or Curve C of Figure 2, the allowable emission rates must be reduced by multiplying it by:

$$\left(\frac{\text{Effective Stack Height}}{\text{Standard Effective Stack Height}} \right)^2$$

201.042 Effective stack height shall be calculated by the equation in Rule 201.012.

201.05 No person may cause, suffer, allow or permit emissions of sulfur dioxide from any solid fossil fuel fired steam generator to exceed 3.0 lb. per million Btu heat input. New proven technology must be applied in removing sulfur dioxide from the emission from solid fossil fuel fired steam generators when it becomes available.

201.06 No person may cause, suffer, allow or permit emissions of sulfur dioxide from any liquid fuel fired steam generator, furnace or heater to exceed 440 ppm, by volume.

201.061 If a source has an effective stack height less than the standard effective stack height as determined from Table 8 and/or Figure 3, the allowable emission concentration must be reduced by multiplying it by:

$$\left(\frac{\text{Effective Stack Height}}{\text{Standard Effective Stack Height}} \right)^2$$

201.062 Effective stack height shall be calculated by the equation in Rule 201.012.

- 201.07 No person in Galveston or Harris Counties may cause, suffer, allow or permit emissions of sulfur dioxide from a source or sources operated on a property or multiple sources operated on contiguous properties to exceed a net ground level concentration of 0.28 ppm averaged over any 30-minute period.
- 201.08 No person in Jefferson or Orange Counties may cause, suffer, allow or permit emissions of sulfur dioxide from a source or sources operated on a property or multiple sources operated on contiguous properties to exceed a net ground level concentration of 0.32 ppm averaged over any 30-minute period.
- 201.09 No person may cause, suffer, allow or permit emissions of sulfur dioxide from a source or sources operated on a property or multiple sources operated on contiguous properties to exceed a net ground level concentration of 0.4 ppm averaged over any 30-minute period.
- 201.091 Except in El Paso County, a property or contiguous properties are exempt from the requirements of Rule 201.09 when a new or modified emission source is constructed and operated on such property or properties after the effective date of this Rule providing all of the following conditions are met:
- 201.0911 The construction and operation of the new or modified emission source meets any applicable Federal New Source Performance Standard and utilized best available control technology, with consideration to the technical practicability and economic reasonableness of reducing or eliminating the emissions from the facility.
 - 201.0912 The construction and operation of the new or modified emission source does not cause or contribute to a condition such that either the primary or the secondary sulfur dioxide air quality standards are exceeded in the area.
 - 201.0913 Sources existing on an exempt property prior to the effective date of this Rule are and will continue to be in compliance with Rule 201.09 or an area control plan obtained pursuant to Rule 201.17.
- 201.10 Emission rates of sulfur dioxide from sources not regulated by Rules 201.01, 201.02, 201.03, 201.04, 201.05 and 201.06 may be set by the Executive Director as necessary to attain ambient air quality standards.

- 201.11 If any person is unable to comply with Rules 201.06, 201.07, 201.08 or 201.09, solely because of the non-availability of low sulfur fuels, that person may file with the Texas Air Control Board a Temporary Fuel Shortage Control Plan, which shall include all of the following:
- 201.111 Evidence of the non-availability of low sulfur fuels. Such evidence shall include, but not be limited to statements from suppliers of fuel as to the availability of lower sulfur fuels, the price of such fuels and the expected duration of any periods of non-availability of particular fuels. Such evidence shall be updated semi-annually as long as the Temporary Fuel Shortage Control Plan remains on file with the Texas Air Control Board or as long as it can reasonably be concluded that there may be a necessity to operate under the Temporary Fuel Shortage Control Plan.
 - 201.112 A statement that all emission inventory data required by the Board are complete, accurate and on file with the Board.
 - 201.113 Data for each source within the entire plant that utilizes the higher sulfur fuel. The data shall include the type, quantity and sulfur content of all the fuels to be burned, excess air to be used and the associated sulfur abatement procedure to be used, if any.
 - 201.114 Any other information as specified by the Board or the Executive Director. The Executive Director may require more frequent and extensive monitoring for persons affected by Rule 201.11 than would normally be required for persons affected by Rules 201.06, 201.07, 201.08 and 201.09.
- 201.12 After a person has filed a Temporary Fuel Shortage Control Plan pursuant to Rule 201.11, the provisions of that plan will govern the operation of the source with regard to emissions of sulfur dioxide during the periods of low sulfur fuel shortages, and Rules 201.06, 201.07, 201.08 and 201.09 shall not apply during these periods, provided that the person has complied with the notification procedures of Rule 201.13 and provided that the cumulative emissions of sulfur dioxide from the entire plant will not cause or contribute to a condition in which the ambient air quality will exceed 0.5 ppm sulfur dioxide averaged over a three-hour period more than once per year. An evaluation of the plan will be made by the Executive Director using appropriate diffusion modeling. If the plan cannot adequately demonstrate that the burning of higher sulfur fuels will not cause or contribute to a

condition in which the ambient air quality will exceed 0.5 ppm sulfur dioxide averaged over a three-hour period more than once per year, then the Executive Director will notify the applicant of the inadequacy of the plan. If a revised acceptable plan is not received within fourteen (14) days of notification, the Executive Director will refer the plan to the Texas Air Control Board for appropriate action.

201.13 Any person who finds it necessary to operate under a Temporary Fuel Shortage Control Plan filed pursuant to Rule 201.11 must comply with the following notification procedures:

201.131 The Executive Director and the appropriate local air pollution control agency shall be notified in writing as soon as practicable of a fuel shortage or impending fuel shortage which causes or may cause an excessive emission that contravenes Rules 201.06, 201.07, 201.08 or 201.09. Such notification shall include an estimate of the expected duration of the fuel shortage which will necessitate the person to operate under the Temporary Fuel Shortage Control Plan.

201.132 The Executive Director and the appropriate local air pollution control agency shall be notified in writing as soon as practicable of the termination of a fuel shortage which would allow the person to operate in compliance with Rules 201.06, 201.07, 201.08 and 201.09.

201.14 Any person who files a Temporary Fuel Shortage Control Plan under 201.11 and operates under that plan pursuant to 201.12 and 201.13 must submit to the Texas Air Control Board on a semiannual basis a written report detailing the following:

201.141 The types, quantity and sulfur content of fuels burned during the prior six months and the sources at which these fuels were burned.

201.142 The program the person has undertaken to achieve compliance with the applicable Rules 201.06, 201.07, 201.08 or 201.09 by December 31, 1976, including, if applicable, the minimum time required to design, procure, install and test abatement equipment and procedures.

201.15 Rules 201.11, 201.12, 201.13 and 201.14 shall be effective only until December 31, 1976, at which time all persons must comply with Rule 201.06 and either 201.07, 201.08 or 201.09. Persons affected by Rules 201.11 and 201.12 must demonstrate through the reports required by 201.132 how compliance will be achieved with the applicable Rules 201.06, 201.07, 201.08 or 201.09 as soon as practicable, but in no event later than December 31, 1976. The

provisions of Rule 201.15 shall be reviewed periodically by the Board to determine if Rules 201.11, 201.12, 201.13 and 201.14 should be extended beyond December 31, 1976.

01.16 This rule is applicable to all processes in nonferrous smelters, including but not limited to roasters, smelting furnaces, converters, sintering machines, blast furnaces, fuming furnaces, retorts and slag treatment plants. This rule is also applicable to sulfuric acid plants in nonferrous smelters which are used to comply with the standards set forth in this rule.

201.161 Concentration Limits. No person may cause, suffer, allow or permit emissions of sulfur dioxide to the atmosphere from any process as specified in Rule 201.16 to exceed the applicable concentration of sulfur dioxide as follows:

	SO ₂ ppm (v) Maximum	
	Two Hour Avg.	Six Hour Avg.
1) Primary Copper Smelter/ for all processes other than those listed below:	---	650
Reverberatory Furnace	---	6000
2) Primary Zinc Smelter	1000	---
3) Primary Lead Smelter/ for all processes other than those listed below:	650	---
Sinter Machine Discharge End (Provided gases do not pass through Sinter bed) and Sinter Handling Equipment Emission Col- lection Systems	2500	---
4) Other Primary Smelter	2500	---
5) Secondary Metal Recovery Facility	3500	---
6) Sulfuric Acid Plant	---	650

201.162 Each stack or emission point in a primary smelter or secondary metal recovery facility shall have a standard effective stack height not less than that determined from the appropriate curve of Figure 4 or Table 7. When two or more gas streams either wholly or in part are discharged through a single stack, the combined flow rate of all streams shall be used to determine the required standard effec-

tive stack height. If streams with different SO₂ concentration allowables (as determined in Rule 201.161) are combined into a single stream, the required effective stack height is determined as follows:

1. Calculate a total combined stream SO₂ concentration allowable as follows:

$$PPM_T = \frac{(PPM_1)(SCFM_1) + (PPM_2)(SCFM_2) + \dots (PPM_N)(SCFM_N)}{(SCFM_1 + SCFM_2 + \dots SCFM_N)}$$

Where:

PPM_T = Allowable SO₂ concentration in total combined stream, ppm(v),

PPM₁ = Allowable SO₂ concentration in stream No. 1, ppm(v),

PPM₂ = Same as PPM₁ except for stream No. 2,

PPM_N = Same as PPM₁ except for Nth stream,

SCFM₁ = Effluent flow rate of stream No. 1, scfm,

SCFM₂ = Same as SCFM₁ except for stream No. 2,

SCFM_N = Same as SCFM₁ except for Nth stream.

2. Calculate interpolation constant (K_T) for the total combined stream as follows:

$$K_T = \frac{(PPM_T - PPM_L)(K_H - K_L)}{(PPM_H - PPM_L)} + K_L$$

Where:

K_T = Interpolation constant for use in standard effective stack height equation shown below,

PPM_T = Allowable SO₂ concentration in total combined stream calculated above, and

IF PPM _T :	PPM _L	PPM _H	K _L	K _H
650 to 1000	650	1000	0.50	0.61
1000 to 2500	1000	2500	0.61	0.90
> 2500	2500	3500	0.90	1.17

3. Calculate standard effective stack height (H_e) for total combined stream as follows:

$$H_e = K_T (q)^{0.5} \text{feet}$$

Where:

K_T = Interpolation constant calculated above

$$q = (\text{SCFM}_1 + \text{SCFM}_2 + \dots \text{SCFM}_N), \text{scfm.}$$

- 201.162.1 If a stack or emission point has an effective stack height less than the standard effective stack height as determined in Rule 201.162, the allowable concentration of sulfur dioxide must be reduced by multiplying it by:

$$\left(\frac{\text{Effective Stack Height}}{\text{Standard Effective Stack Height}} \right)^2$$

- 201.162.1 Effective stack height shall be calculated by the equation in Rule 201.012.

- 201.163 The owner or operator of a nonferrous smelter shall utilize best engineering techniques to capture and vent fugitive SO_2 emissions through a stack or stacks. Such techniques shall include, but not be limited to:

201.163.1 Operating and maintaining all ducts, flues, and stack in a leakfree condition.

201.163.2 Operating and maintaining all process equipment and gas collection systems in such a fashion that leakage of SO_2 gases will be prevented to the maximum extent possible.

201.163.3 Whenever possible, using gas collection systems and/or ducting collected SO_2 emissions through the tallest stack or stacks serving the facility.

- 201.164 The owner or operator of any primary smelter subject to the provisions of Rule 201.16 shall install, calibrate, maintain and operate a measurement system(s) approved by the Executive Director for continuously monitoring sulfur dioxide concentrations in the effluent of each process subject to Rule 201.161. The Executive Director shall not require continuous monitoring for sources emitting insignificant amounts of SO_2 into the atmosphere. "Continuous monitoring" is defined as sampling and recording of at least one measurement of sulfur dioxide concentration

in each 15-minute period from the effluent of each affected process or the emission control system serving each affected process.

201.165 Persons affected by Rule 201.16 shall be in compliance with the provisions contained therein as soon as practicable, but not later than May 31, 1975. All persons affected by this rule shall continue to be governed by Rule 201.04 until compliance with Rule 201.16 can be achieved, but not later than May 31, 1975, at which time Rule 201.16 shall supersede Rule 201.04.

201.17 Any person or persons who own or operate a source or sources which emit sulfur dioxide may request the Texas Air Control Board for relief from the requirements of Rule 201.09 by filing with the Executive Director an application for an Area Control Plan. An application for an Area Control Plan shall include, but is not limited to, a combination of evidence that best available control technology is being employed at all the affected sources, having due regard for the technical practicability and the economic reasonableness of reducing or eliminating the emissions of sulfur dioxide resulting from the affected facilities; and, an ambient air sampling system for the recording of sulfur dioxide levels in the affected area. Any person or persons filing an Application for an Area Control Plan must demonstrate the capability of all sources in the affected area of the State to maintain all promulgated sulfur dioxide ambient air standards.

201.18 Upon recommendation by the Executive Director, the Texas Air Control Board may enter a Board Order exempting those sources who have filed an Application pursuant to Rule 201.17 from the requirements of Rule 201.09, conditioned upon the person or persons complying with the remaining terms of the Board Order.

201.19 No person or persons who have been issued a Board Order establishing an Area Control Plan pursuant to Rule 201.18 may cause or contribute to a condition in which the ambient air quality in the affected area of the State will exceed 0.5 ppm sulfur dioxide averaged over a three-hour period more than once per year.

Rule 202. Persons affected by Rule 201 of this Regulation shall be in compliance with the provisions contained herein no later than December 31, 1973. No later than six months after the effective date of this Regulation, any person affected by this Regulation shall submit to the Texas Air Control Board a written report on his compliance status, including but not limited to, the minimum time required to design, procure, install and test abatement

equipment or procedures. Progress reports shall be submitted to the Board every four months commencing in August of 1972 until compliance is achieved.

All persons shall continue to be governed by the provisions of Regulation III which became effective on February 22, 1968, until December 31, 1973, at which time Rule 201 shall supersede the previous Regulation III with regard to sulfur dioxide emissions.

Rule 203. Control of Hydrogen Sulfide.

203.1 No person may cause, suffer, allow or permit emissions of hydrogen sulfide from a source or sources operated on a property or multiple sources operated on contiguous properties to exceed a net ground level concentration of 0.08 ppm averaged over any 30-minute period if the downwind concentration of hydrogen sulfide affects a property used for residential, business or commercial purposes.

203.2 No person may cause, suffer, allow or permit emissions of hydrogen sulfide from a source or sources operated on a property or multiple sources operated on contiguous properties to exceed a net ground level concentration of 0.12 ppm averaged over any 30-minute period if the downwind concentration of hydrogen sulfide affects only property used for other than residential, recreational, business or commercial purposes, such as industrial property and vacant tracts and range lands not normally occupied by people.

Rule 204. Control of Sulfuric Acid.

204.1 No person may cause, suffer, allow or permit emissions of sulfuric acid from a source or sources operated on a property or multiple sources operated on contiguous properties to exceed:

- 1) A net ground level concentration of 15 μg per cubic meter of air averaged over any 24-hour period; or
- 2) A net ground level concentration of 50 μg per cubic meter of air averaged over a one-hour period of time more than once during any consecutive 24-hour period; or
- 3) 100 μg per cubic meter of air maximum at any time.

Rule 205. Calculation Methods.

205.1 Determination of the net ground level concentration shall be performed in accordance with the procedures outlined in Appendix A for hydrogen sulfide and Appendix B for sulfuric acid.

Rule 206. Rules 203, 204 and 205 hereof shall be in force immediately and shall supersede the previous Regulation III of the Texas Air Control Board which became effective on February 22, 1968 with regard to hydrogen sulfide and sulfuric acid emissions.

Date Adopted: January 26, 1972

Date Filed with Secretary of State: February 4, 1972

Date Effective: March 5, 1972

Amendment of Rule 201 by adding Rules 201.11, 201.12, 201.13, 201.14 and 201.15; Amendment of Rule 202; and addition of Rules 203, 204, 205 and 206.

Date Adopted: December 19, 1973

Date Filed with Secretary of State: December 20, 1973

Date Effective: January 19, 1974

Amendment of Rule 201.09 by adding Rule 201.091, 201.16, 201.17, 201.18 and 201.19.

Date Adopted: January 30, 1975

Date Filed with Secretary of State: February 3, 1975

Date Effective: March 5, 1975

TABLE 1
 SULFURIC ACID PLANTS BURNING ELEMENTAL SULFUR
 ALLOWABLE SULFUR DIOXIDE EMISSION RATES
 FOR SPECIFIC FLOW RATES

EFFLUENT FLOW RATE	RATE OF EMISSION
scfm	lb/hr
1,000	19.8
2,000	39.6
4,000	79.2
6,000	119.0
8,000	158.0
10,000	198.0
20,000	396.0
40,000	792.0
60,000	1190.0
80,000	1580.0
100,000	1983.0

Interpolation and extrapolation of the data in this Table shall be accomplished by the use of the equation $E=0.0198 q$, where E is the allowable emission rate in lb/hr and q is the stack effluent flow rate in scfm.

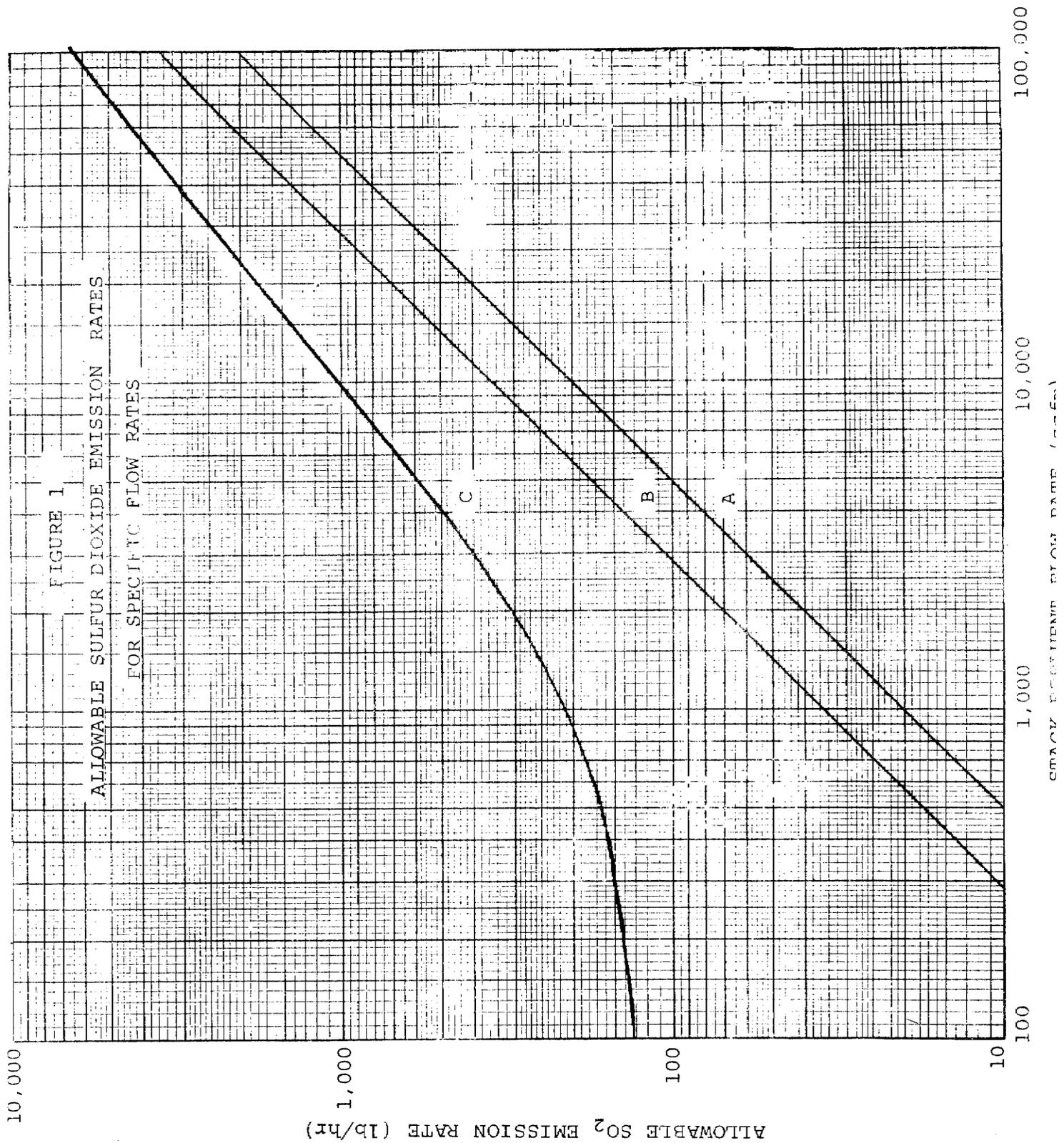


TABLE 2

SULFURIC ACID PLANTS BURNING ELEMENTAL SULFUR

STANDARD EFFECTIVE STACK HEIGHT
BASED ON SPECIFIC FLOW RATES

EFFLUENT FLOW RATE	STANDARD EFFECTIVE STACK HEIGHT
scfm	ft
1,000	28
2,000	40
4,000	56
6,000	69
8,000	79
10,000	89
20,000	125
40,000	177
60,000	217
80,000	250
100,000	280

Interpolation and extrapolation of the data in this Table shall be accomplished by the use of the equation $H_e = 0.885 q^{0.5}$, where H_e is the standard effective stack height in ft. and q is the effluent flow rate in scfm.

FIGURE 2

STANDARD EFFECTIVE STACK HEIGHT
BASED ON SPECIFIC FLOW RATES

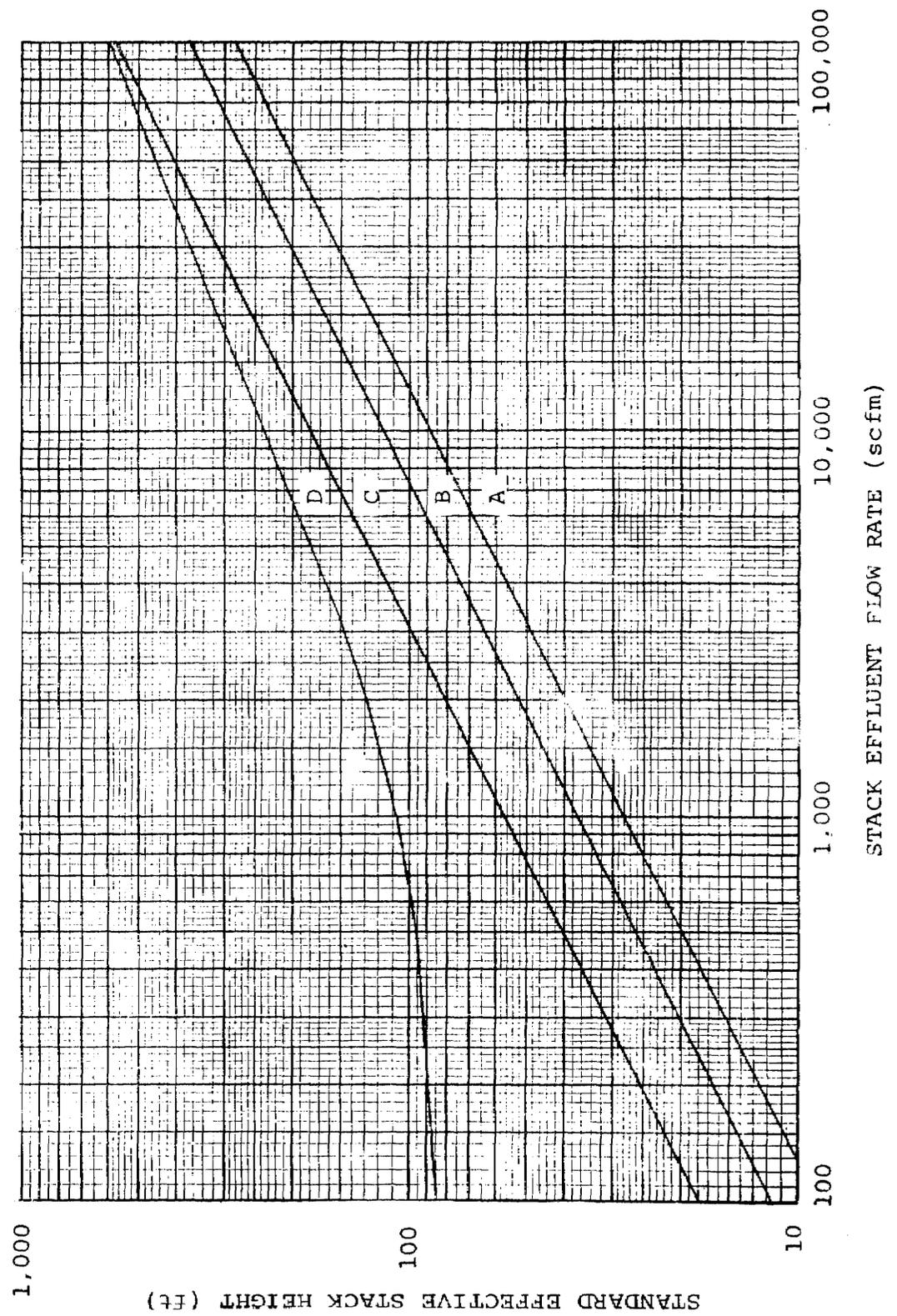


TABLE 3

SULFURIC ACID PLANTS BURNING OTHER THAN ELEMENTAL SULFUR

ALLOWABLE SULFUR DIOXIDE EMISSION RATES
FOR SPECIFIC FLOW RATES

EFFLUENT FLOW RATE	RATE OF EMISSION
scfm	lb/hr
1,000	34.7
2,000	69.4
4,000	138.8
6,000	208.2
8,000	277.6
10,000	347.0
20,000	694.0
40,000	1388.0
60,000	2082.0
80,000	2776.0
100,000	3470.0

Interpolation and extrapolation of the data in this Table shall be accomplished by the use of the equation $E = 0.0347 q$, where E is the allowable emission rate in lb/hr and q is the stack effluent flow rate in scfm.

TABLE 4

SULFURIC ACID PLANTS BURNING OTHER THAN ELEMENTAL SULFUR

STANDARD EFFECTIVE STACK HEIGHT
BASED ON SPECIFIC FLOW RATES

EFFLUENT FLOW RATE	STANDARD EFFECTIVE STACK HEIGHT
scfm	ft
1,000	37
2,000	52
4,000	74
6,000	91
8,000	105
10,000	117
20,000	165
40,000	234
60,000	287
80,000	331
100,000	370

Interpolation and extrapolation of the data in this Table shall be accomplished by the use of the equation $H_e = 1.17 q^{0.5}$, where H_e is the standard effective stack height in ft. and q is the stack effluent flow rate in scfm.

TABLE 5
 SULFUR RECOVERY PLANTS
 ALLOWABLE SULFUR DIOXIDE EMISSION BASED ON
 SPECIFIC FLOW RATES

EFFLUENT FLOW RATE	RATE OF EMISSION
scfm	lb/hr
1,000	214
2,000	305
3,000	396
4,000	487
5,000	579
6,000	670
7,000	759
8,000	845
9,000	929
10,000	1012
20,000	1766
30,000	2447
40,000	3084
50,000	3690

Interpolation and extrapolation of the data in this Table for stack effluent flow rates less than or equal to 4,000 scfm shall be accomplished by the use of the equation $E = 123.4 + 0.091 q$, where E is the allowable emission rate in lb/hr and q is the stack effluent flow rate in scfm. Interpolation and extrapolation of the data for stack effluent flow rates in excess of 4,000 scfm shall be accomplished by the use of the equation $E = 0.614 q^{0.8042}$

TABLE 6
SULFUR RECOVERY PLANTS
STANDARD EFFECTIVE STACK HEIGHT
BASED ON SPECIFIC FLOW RATES

EFFLUENT FLOW RATE	STANDARD EFFECTIVE STACK HEIGHT
scfm	ft
100	85
500	96
1,000	109
2,000	129
3,000	148
4,000	164
5,000	178
6,000	192
7,000	204
8,000	215
9,000	226
10,000	236
20,000	311
30,000	366
40,000	411
50,000	450
60,000	484
80,000	544
100,000	595

Interpolation and extrapolation of the data for stack effluent flow rates less than or equal to 4,000 scfm shall be accomplished by the use of the equation $H_e = 7.4 \sqrt{123.4 + 0.091 q}$, where H_e is the standard effective stack height in feet and q is the stack effluent flow rate in scfm. Interpolation and extrapolation of the data for stack effluent in excess of 4,000 scfm shall be accomplished by the use of the equation $H_e = 5.8 q^{0.402}$.

TABLE 7

(Reference Fig. 4)

NON FERROUS SMELTERS

STANDARD EFFECTIVE STACK HEIGHT
BASED ON SPECIFIC FLOW RATES

Column A - Primary Copper Smelter
 Primary Lead Smelter (all processes except sintering
 machine discharge end and equipment ventilation)
 Metallurgical Sulfuric Acid Plant

Column B - Primary Zinc Smelter

Column C - Other Primary Smelters
 Primary Lead Smelter Sintering Machine Discharge End
 and Equipment Ventilation

Column D - Secondary Metal Recovery Facilities

EFFLUENT FLOW RATE SCFM (q)	STANDARD EFFECTIVE STACK HEIGHT FEET			
	A (650 PPM)	B (1000 PPM)	C (2500 PPM)	D (3500 PPM)
1,000	16	19	28	37
2,000	22	27	40	52
4,000	32	39	57	74
6,000	39	47	70	91
8,000	45	55	80	105
10,000	50	61	90	117
20,000	71	86	127	165
40,000	100	122	180	234
60,000	122	149	220	287
80,000	141	173	255	331
100,000	158	193	285	370
200,000	224	273	402	523
400,000	316	386	569	740
600,000	387	473	697	906
800,000	447	546	805	1046
1,000,000	500	610	900	1170
Interpolation Constant (K)	0.50	0.61	0.90	1.17

Interpolation and extrapolation of the data in this table shall be accomplished by the use of the equation $H_e = K(q)^{0.5}$, where "He" is the standard effective stack height in feet, "K" is the interpolation constant shown above and "q" is the effluent flow rate in SCFM.

TABLE 8
 STEAM GENERATORS, BOILERS AND HEATERS BURNING LIQUID FUEL
 STANDARD EFFECTIVE STACK HEIGHT
 BASED ON SPECIFIC FLOW RATE

EFFLUENT FLOW RATE	STANDARD EFFECTIVE STACK HEIGHT
scfm	ft.
1,000	15
2,000	22
4,000	31
6,000	38
8,000	44
10,000	49
20,000	69
40,000	98
60,000	120
80,000	138
100,000	155

Interpolation and extrapolation of the data in this Table shall be accomplished by the use of the equation $H_e = 0.49 q^{0.50}$, where H_e is the standard effective stack height in feet and q is the stack effluent flow rate in scfm.

FIGURE 3

STANDARD EFFECTIVE STACK HEIGHT
BASED ON SPECIFIC FLOW RATES

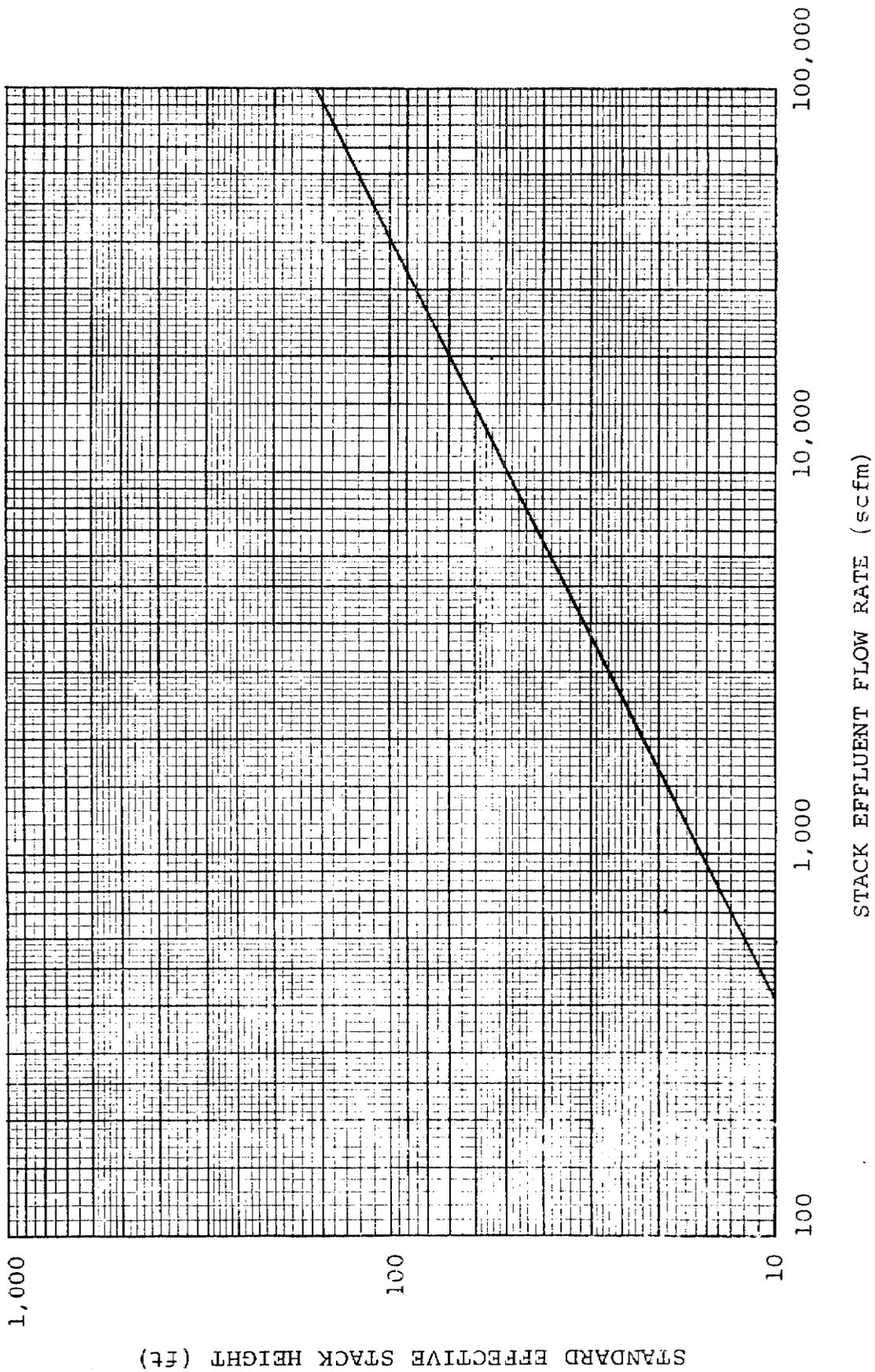
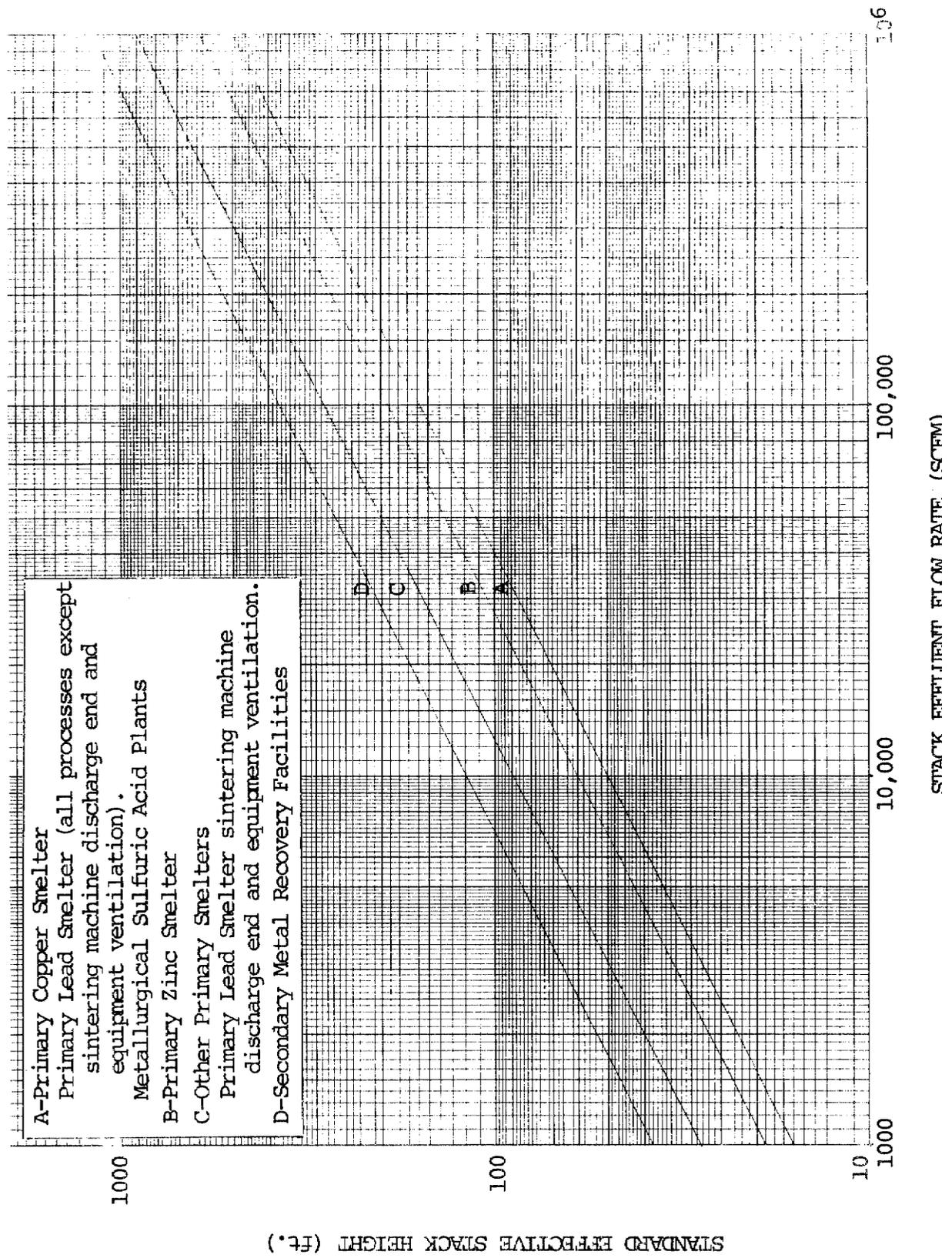


FIGURE 4
 NON FERROUS SMELTERS
 STANDARD EFFECTIVE STACK HEIGHT
 BASED ON SPECIFIC FLOW RATES
 (Reference Table 7)



APPENDIX A

I. Determination of compliance with emission limits.

In most cases downwind samples will suffice; however, if the sampled properties are suspected of being influenced by an upwind source of H₂S, then both upwind and downwind samples will be taken. The concentration of H₂S in the "downwind sample" less the concentration in the "upwind sample" shall be used in determining whether the emissions from the property comply with the requirements of Rule 203 of this Regulation. Calculated maximum allowable emission rates or ground level concentrations which are obtained by the Method in Section II below may be used in determining whether a property is in compliance with the emission limits specified.

II. Calculations of H₂S Concentrations from Stack Samples and Measurements

The maximum allowable H₂S emission rate which may be made from a stack on a property to comply with the emission limit set forth in Rule 203 of this Regulation may be calculated by Sutton's equation which has been modified to consider the critical wind speed and to correspond to a 30 minute air sample. Additional credit on stack emissions can be obtained if the distance from the stack to the property line is greater than thirty (30) stack heights. Those properties with greater than 30 stack heights to the property line should contact the Executive Director to obtain the proper correction factor.

A. For exit stack gas for temperatures of less than 125°F.

1. Rule 203.1. The H₂S ambient air level is 0.08 ppm for 30 minutes.

$$Q_a = 8 \times 10^{-4} V_s d_s^2 \frac{1}{\left[\frac{d_s}{h_s} \right]^{1.29}} \quad (1)$$

where:

Q_a = emission rate, lbs/hr

V_s = stack exit velocity, ft/sec.

d_s = exit stack diameter, ft.

h_s = physical stack height, ft.

To plot Graph II, assume a basic stack height of 100 ft. and plot $\left[\frac{d_s}{100}\right]^{1.29}$ for various stack diameters versus stack velocity.

2. Rule 203.2. The H_2S ambient air level of 0.12 ppm for 30 minutes.

$$Q_a = 12 \times 10^{-4} V_s d_s^2 \frac{1}{\left[\frac{d_s}{h_s}\right]^{1.29}} \quad (2)$$

Symbols same as in equation (1) above.

- B. For exit stack gas for temperatures greater than 125°F.

1. Rule 203.1. The H_2S ambient air level is 0.08 ppm for 30 minutes.

$$Q_a = 1.68 \times 10^{-3} V_s d_s \left[1.5 + 0.82 \left(\frac{\Delta T}{T_s} \right) d_s \right] h_s \quad (3)$$

where:

Q_a = emission rate, lbs/hr

V_s = stack exit velocity, ft/sec.

d_s = exit stack diameter, ft.

ΔT = temperature difference between stack gas and the outdoor atmosphere in °Rankine. An outdoor temperature of 90°F (550°R) is assumed in preparing dispersion graphs.

T_s = stack exit temperature in °Rankine.

To plot Graph III assume a basic stack height of 100 ft. and an exit velocity of 20 ft/sec. Let stack gas temperature vary with stack diameter.

2. Rule 203.2. The H₂S ambient air level is 0.12 ppm for 30 minutes.

$$Q_a = 2.52 \times 10^{-3} V_s d_s \left[1.5 + 0.82 \left(\frac{\Delta T}{T_s} \right) d_s h_s \right] \quad (4)$$

Symbols same as used in equation (3).

Example 1 (Temperature of stack gas less than 125°F.)

How many lbs/hr of H₂S can be discharged from a 200 ft. stack having a 4 ft exit diameter (ID) and a 30 ft/sec exit gas velocity? The stack gases temperature is 100°F and the distance to property line is 3000 ft. Emissions under Rule 203.1.

Solution

1. The ratio of stack diameter to 100 ft. is $\frac{4}{100} = 0.04$
2. Enter ordinate of Graph II with 0.04; go horizontally to intersection of 30 ft/sec. velocity curve. At the intersection read on the abscissa 24 lbs/hr on (Rule 203.1) scale. This is the permitted value for a 100 ft. stack.
3. Correct emissions for a 200 ft. stack. Enter Graph I at 200 ft and obtain correction factor of 2.3. Thus the emissions become $24 \times 2.3 = 55$ lbs/hr.

Note: Less than 30 stack heights to property line - no credit.

Example 2 (Temperature of stack gas greater than 125°F)

How many lbs/hr of H₂S can be discharged from a 200 ft. stack having a 4 ft exit diameter (ID) and a 30 ft/sec exit gas velocity? The temperature of the exit gases is 400°F. Emissions under Rule 203.1.

Solution

1. Enter ordinate of Graph III with 400; go horizontally to intersection of 4 ft. diameter, read on the abscissa on Rule 203.1 scale 36 lbs/hr emission. This is permitted

value for 100 ft stack and exit velocity of 20 ft/sec.

2. Correct for stack height of 200 ft. This is direct ratio and becomes $\frac{200'}{100'} = 2$. The emission now becomes $36 \times 2 = 72$ lbs/hr.
3. Correct for stack exit velocity of 30 ft/sec. This is a direct ratio and becomes $\frac{30}{20} = 1.5$. The allowed emission now becomes $72 \times 1.5 = 108$ lbs/hr.

Note: Less than 30 stack heights to property line - no credit.

APPENDIX B

- I. Determination of Compliance with Emission Limits. In most cases downwind samples will suffice; however, if the sampled properties are suspected of being influenced by an upwind source of H_2SO_4 , then both upwind and downwind samples will be taken. The concentration of H_2SO_4 in the "downwind sample" less the concentration in the "upwind sample" shall be used in determining whether the emissions from the property comply with the requirements of Rule 204 of this Regulation. Calculated maximum allowable emission rates or ground level concentrations which are obtained by the Method in Section II below may be used in determining whether a property is in compliance with the emission limits specified.
- II. Calculations of H_2SO_4 Concentrations from Stack Samples and Measurement
- The maximum allowable H_2SO_4 emission rate which may be made from a stack on a property to comply with the emission limit set forth in Rule 204 of this Regulation may be calculated by Sutton's equation which has been modified to consider the critical wind speed and to correspond to one hour sample. Additional credit on stack emissions can be obtained if the distance from the stack to the property line is greater than 30 stack heights. Those properties with greater than 30 stack heights to the property line should contact the Executive Director to obtain the proper correction factor.
- A. For exit stack gas for temperatures of less than 125°F.
1. Rule 204.1 - The H_2SO_4 ambient air level of $80 \mu g/M^3$ for one hour is used.

$$Q_a = 5.56 \times 10^{-4} V_s d_s^2 \left[\frac{1}{\left[\frac{d_s}{h_s} \right]^{1.29}} \right] \quad (1)$$

where,

Q_a = emission rate, lbs/hr

V_s = stack exit velocity, ft/sec.

d_s = exit stack diameter, ft.

h_s = physical stack height, ft.

To plot Graph IV assume a basic stack height of 100 ft. and plot $\left[\frac{d_s}{100} \right]^{1.29}$ for various stack diameters versus stack velocity.

B. For exit stack gas for temperature greater than 125°F.

1. Rule 204.1 - The H_2SO_4 ambient air level of 80 $\mu g/M^3$ for one hour is used.

$$Q_a = 12.32 \times 10^{-4} V_s d_s \left[1.5 + 0.82 \left(\frac{\Delta T}{T_s} \right) d_s \right] h_s \quad (2)$$

where,

Q_a = emission rate, lbs/hr

V_s = stack exit velocity, ft/sec

d_s = exit stack diameter; ft.

h_s = physical stack height, ft.

ΔT = temperature difference between stack gas and the outdoor atmosphere in °Rankine. An outdoor temperature of 90°F (550°R) is assumed in preparing dispersion graphs.

T_s = stack exit temperature in °Rankine.

To plot Graph V, assume a basic stack height of 100 feet and an exit velocity of 20 ft/sec. Let stack gas temperature vary with stack diameter.

Example 1 (Temperature of stack gas less than 125°F)

How many lbs/hr of H_2SO_4 can be discharged from a 200 ft stack having 4 ft exit diameter (ID) and a 30 ft/sec exit gas velocity? The temperature of the exit gases is 100°F.

Solution

1. The ratio of stack diameter to 100 ft is $\frac{4}{100} = 0.04$.
2. Enter ordinate of Graph IV with 0.04; go horizontally to intersection of 30 ft/sec. velocity curve. At this intersection read on the abscissa 17 lbs/hr. This is the permitted value for a 100 ft. stack.
3. Correct emissions for a 200 ft. stack. Enter Graph I at 200 ft. and obtain correction factor of 2.3. Thus the emissions become $17 \times 2.3 = 39$ lbs/hr.

Example 2 (Temperature of stack gas greater than 125°F)

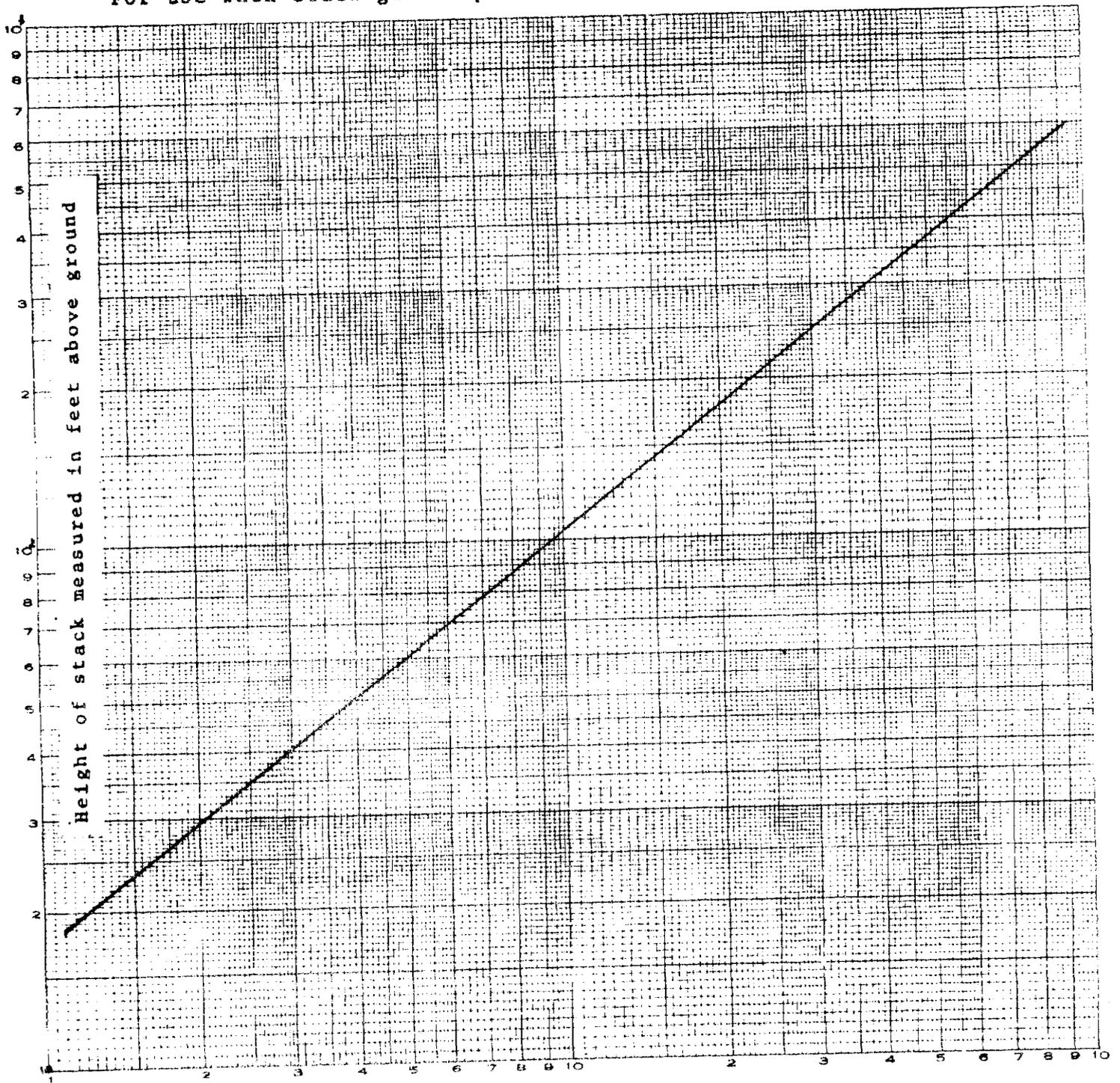
How many lbs/hr of H_2SO_4 can be discharged from a 200 ft. stack having a 4 ft. exit diameter (ID) and a 30 ft/sec. exit gas velocity. The temperature of the exit gases is 400°F.

Solution

1. Enter ordinate of Graph V with 400; go horizontally to intersection of 4 ft. diameter and read on abscissa 26 lbs/hr emission. This is permitted value for 100 ft. stack and exit velocity of 20 ft./sec.
2. Correct for stack height. Thus $\frac{200}{100} = 2$. We now have $26 \times 2 = 52$ lbs/hr.
3. Correct for stack exit velocity of 30 ft/sec. This is a direct ratio and becomes $\frac{30}{20} = 1.5$. The emission now is $52 \times 1.5 = 78$ lbs/hr.

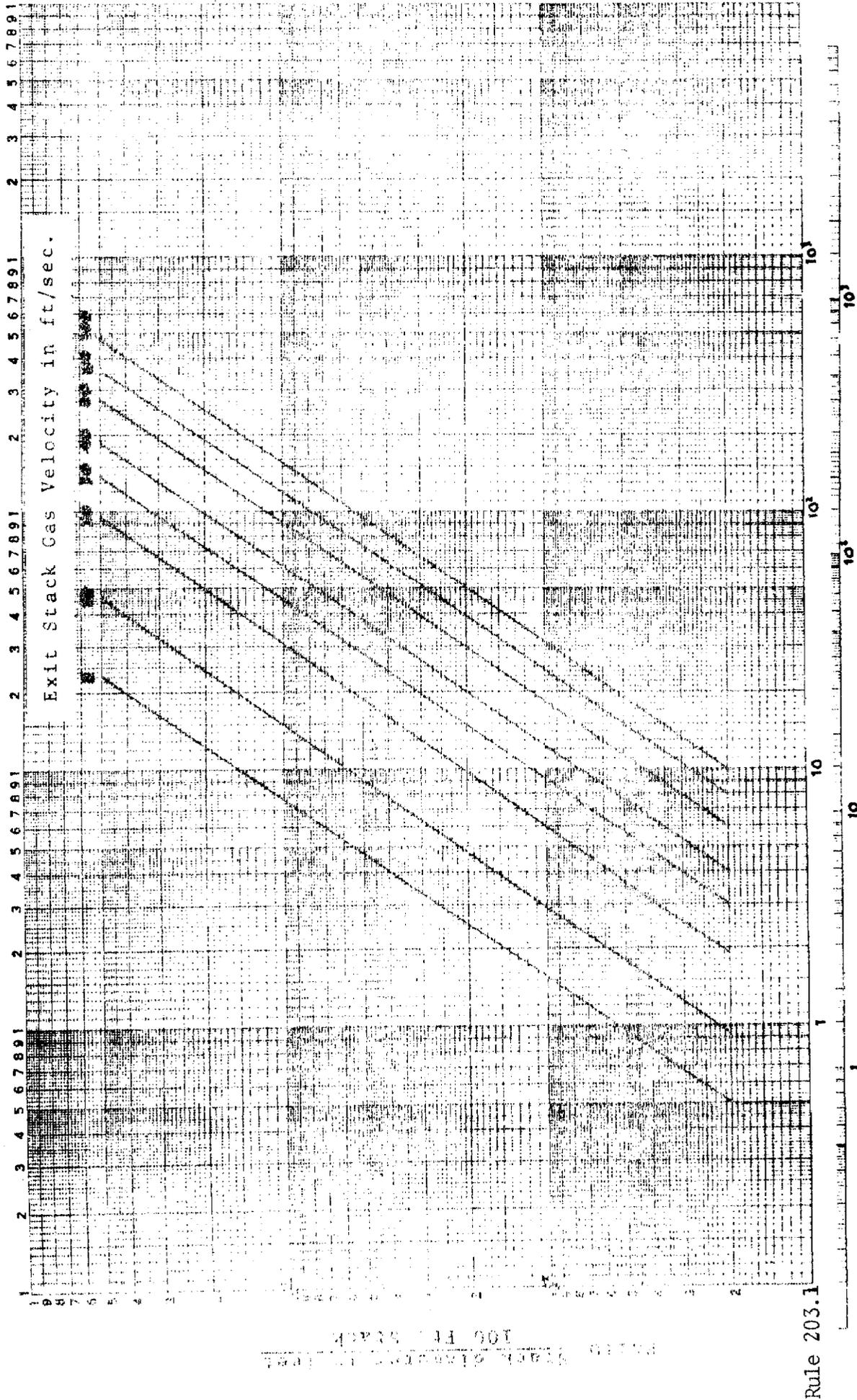
Correction Factors for Stack Height

For use when stack gas temperature is equal or less than 125°F



CORRECTION FACTORS

GRAPH I



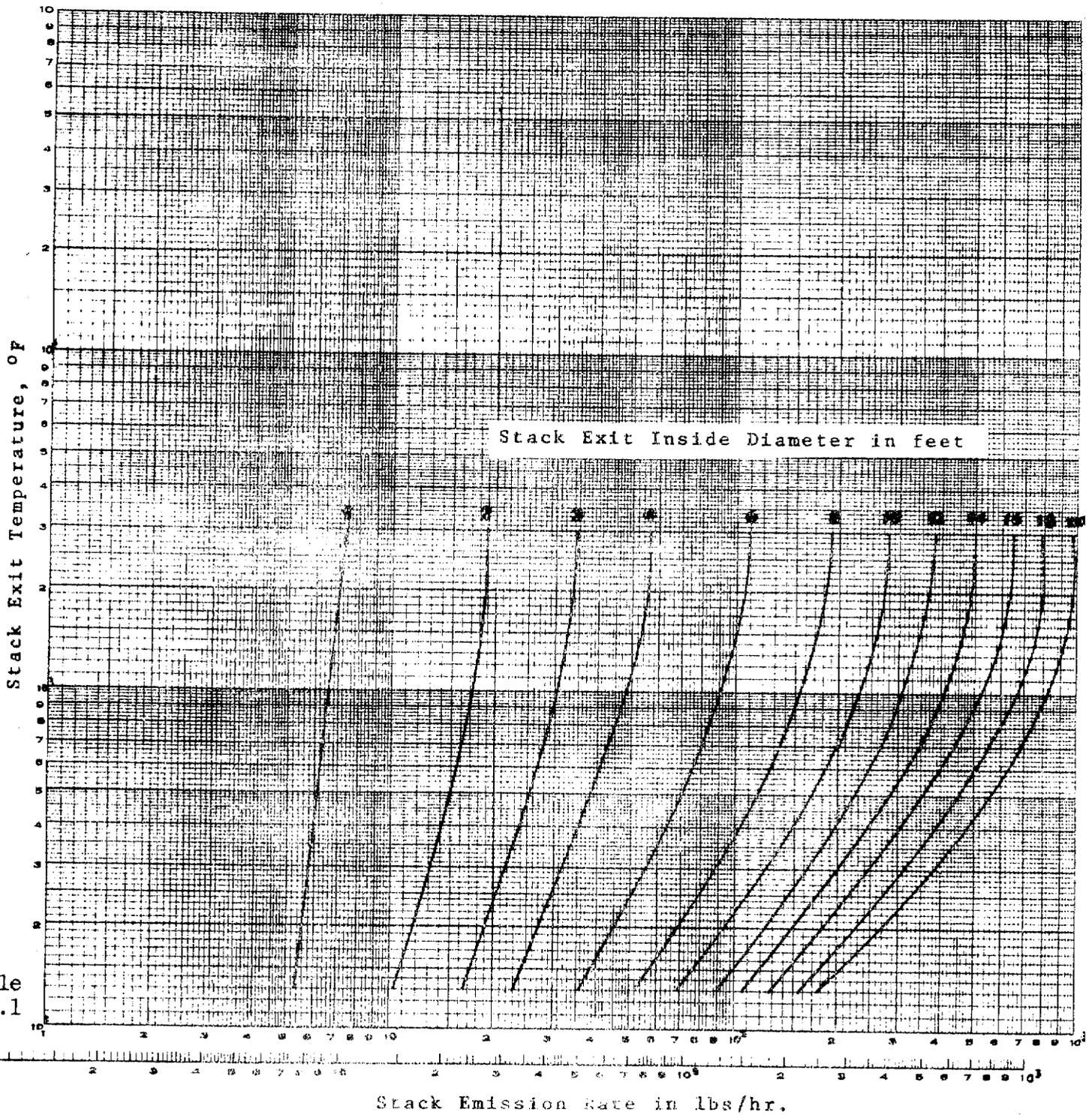
Rule 203.1

Rule 203.2

GRAPH II

TT-R5

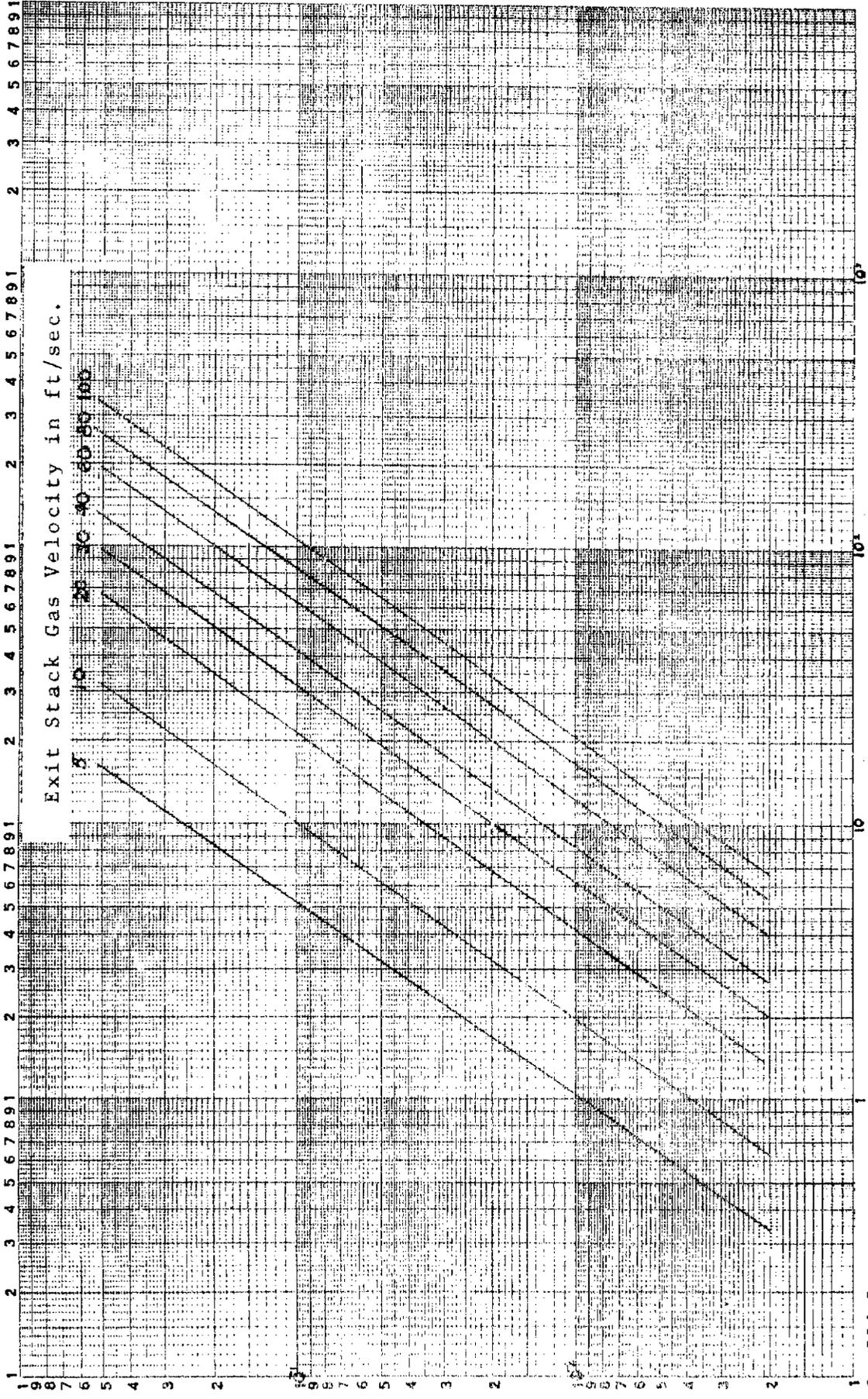
Addition 2-15-74



HYDROGEN SULFIDE

GRAPH II

For Use When The Exit Temperature is greater than 1250F



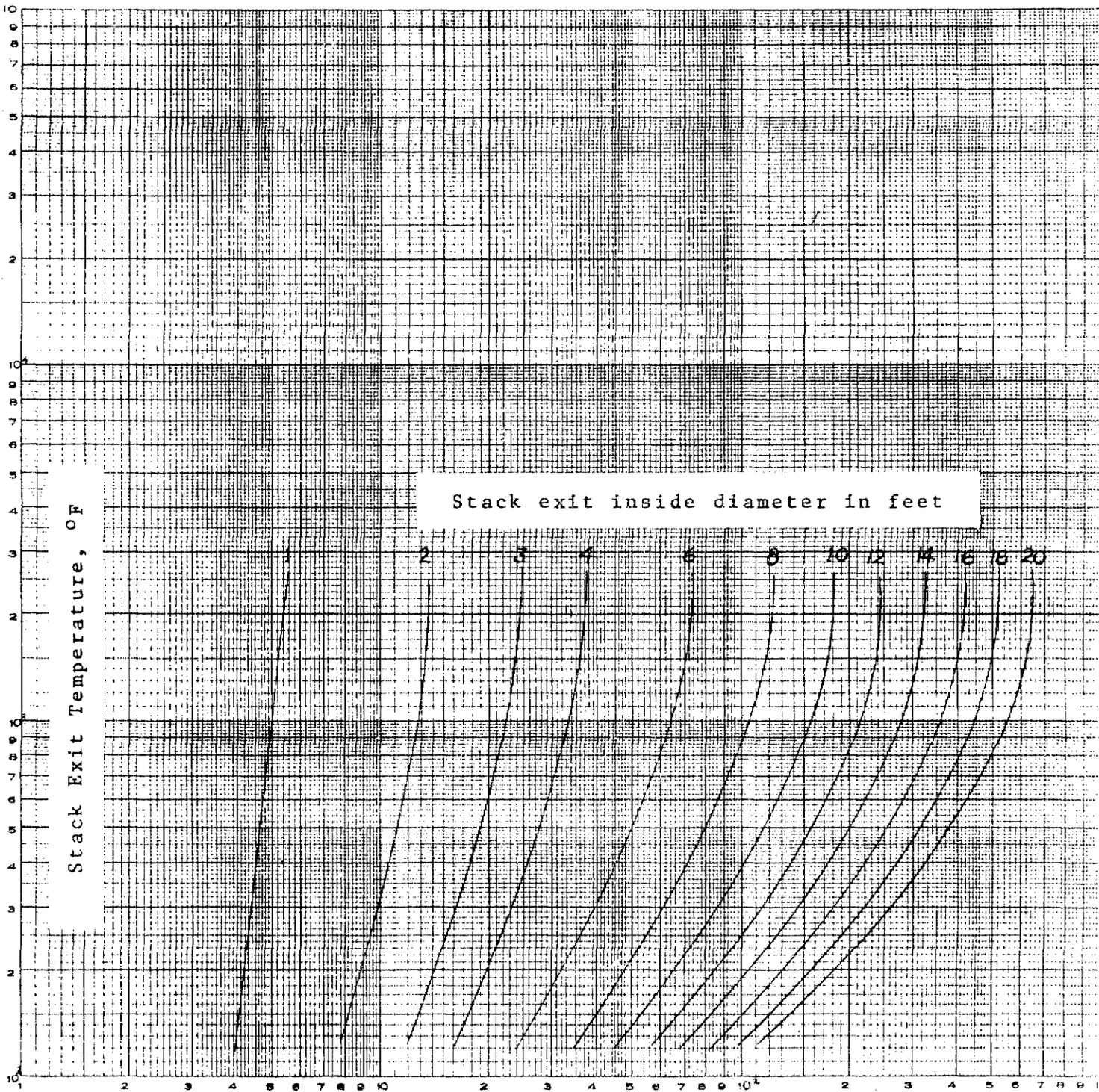
Rule 204.1

Stack Emission Rate in lbs/hr.

SULFURIC ACID MIST

(Exit Stack Gas Temperature Less Than 125°F)

GRAPH IV



Rule 204.1

SULFURIC ACID MIST

GRAPH V

Stack Emission Rate in lbs/hr.

For Use When The Exit Temperature is greater than 125°F

TEXAS AIR CONTROL BOARD

REGULATION IV

CONTROL OF AIR POLLUTION
FROM MOTOR VEHICLES

- Rule 401. Maintenance and operation of air pollution control systems or devices used to control emissions from motor vehicles.
- 401.1 Any person owning or operating any motor vehicle or motor vehicle engine on which is installed or incorporated a system or device used to control emissions from the motor vehicle in compliance with federal motor vehicle rules shall maintain the system or device in good operable condition and shall use it at all times that the motor vehicle or motor vehicle engine is operated.
- 401.2 No person may remove or make inoperable any system or device used to control emissions from a motor vehicle or motor vehicle engine or any part thereof, except where the purpose of removal of the system or device, or part thereof, is to install another system or device, or part thereof, which is equally effective in reducing emissions from the vehicle.
- 401.3 No person may sell in the State of Texas any motor vehicle which was originally equipped with a control system in accordance with federal requirements unless all of the following conditions are met:
- 401.31 The motor vehicle shall be equipped with either the control systems or devices that were a part of the motor vehicle or motor vehicle engine when sold by the manufacturer in accordance with federal requirements or an alternate control system or device as designated in Rule 401.2.
- 401.32 The control system or device required in 401.31 shall be in good operable condition.
- 401.4 Any part or component of an air pollution control system or device of a motor vehicle or motor vehicle engine equipped with such air pollution control system or device in compliance with federal motor vehicle rules shall not be replaced with a different part or component unless such part or component is designated as a replacement for the specific make and model of the vehicle or vehicle engine.
- Rule 402. This regulation does not apply to motor vehicles or motor vehicle engines which are intended solely or primarily for use on a farm or ranch; or for legally sanctioned motor competitions; for research and development uses or for instruction in a bona fide vocational training program where the use of a system or device would be detrimental to the purpose for which the vehicle or engine is intended to be used.

Rule 403. The rules contained in this regulation shall be in force immediately and shall supersede the previous Regulation IV of the Texas Air Control Board which became effective on March 5, 1972 and was amended May 12, 1973.

Date Adopted: October 30, 1973

Date Filed with Secretary of State: November 1, 1973

Date Effective: December 1, 1973

REGULATION V

CONTROL OF AIR POLLUTION FROM VOLATILE CARBON COMPOUNDS

- Rule 501. Regulation V shall apply only in the following counties: Aransas, Bexar, Brazoria, Calhoun, Dallas, El Paso, Galveston, Harris, Jefferson, Matagorda, Montgomery, Nueces, Orange, San Patricio, Travis and Victoria.
- Rule 502. Storage of Volatile Carbon Compounds.
- 502.1 No person shall place, store, or hold in any stationary tank, reservoir, or other container of more than 25,000 gallons capacity any volatile carbon compounds unless such tank, reservoir, or other container is a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the atmosphere or is designed and equipped with one of the following vapor loss control devices:
- 502.11 A floating roof, consisting of a pontoon type, double deck type roof, or internal floating cover, which will rest on the surface of the liquid contents and be equipped with a closure seal or seals to close the space between the roof edge and tank wall. This control equipment shall not be permitted if the volatile carbon compounds have a vapor pressure of 11.0 pounds per square inch absolute or greater under actual storage conditions. All tank gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.
- 502.12 A vapor recovery system which reduces the emissions such that the aggregate partial pressure of all volatile carbon compound vapors in vent gases or other material emitted to the atmosphere will not exceed a level of 1.5 psia.
- 502.2 No person shall place, store, or hold in any new stationary storage vessel of more than 1,000 gallons capacity, any volatile carbon compound unless such vessel is equipped with a permanent submerged fill pipe or is a pressure tank as described in 502.1 or is fitted with a vapor recovery system as described in 502.12.

502.3 Crude oil or condensate storage containers are exempt from Rule 502.

Rule 503. Volatile Carbon Compounds Loading and Unloading Facilities.

503.1 No person shall permit the loading or unloading of volatile carbon compounds from any loading facility having 20,000 gallons or more throughput per day, averaged over any 30-day period, unless such facility is equipped with a vapor recovery system which reduces the emissions such that the aggregate partial pressure of all volatile carbon compound vapors in vent gases or other material emitted to the atmosphere will not exceed a level of 1.5 psia.

When loading or unloading is effected through the hatches of a tank truck or trailer or railroad tank car with a loading arm equipped with a vapor collecting adaptor, then pneumatic, hydraulic, or other mechanical means shall be provided to force a vapor-tight seal between the adaptor and the hatch. A means shall be provided to prevent liquid drainage from the loading device when it is removed from the hatch of any tank truck, trailer or railroad tank car, to accomplish complete drainage before such removal. When loading or unloading is effected through means other than hatches, all loading and vapor lines shall be equipped with fittings which make vapor-tight connections and which close automatically when disconnected or equipped to permit residual volatile carbon compounds in the loading line to discharge into a recovery or disposal system after loading is complete.

503.2 All loading or unloading facilities for crude oil or condensate and for ships and barges are exempt from Rule 503.

Rule 504. Volatile Carbon Compound - Water Separation.

504.1 No person shall use any compartment of any single or multiple compartment volatile carbon compound water separator which compartment receives 200 gallons or more of volatile carbon compounds a day from any equipment which is processing, refining, treating, storing, or handling volatile carbon compounds unless such compartment is controlled in one of the following ways:

504.11 The compartment has all openings sealed and totally encloses the liquid contents. All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

504.12 The compartment is equipped with a floating roof or internal floating cover which will rest on the surface of the contents and be equipped with a closure seal or seals to close the space between the roof edge and tank wall. All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

504.13 The compartment is equipped with a vapor recovery system which reduces the emissions such that the aggregate partial pressure of the volatile carbon compound vapors in vent gases or other material emitted to the atmosphere will not exceed a level of 1.5 psia.

504.2 Volatile carbon compound water separators used exclusively in conjunction with the production of crude oil or condensate are exempt from Rule 504.

Rule 505. Waste Gas Disposal.

505.1 No person shall emit in any consecutive 24 hour period more than 100 lbs. of ethylene in a waste gas stream from an ethylene producing or consuming plant under normal operating conditions unless the waste gas stream is burned properly at a temperature equal to or greater than 1300°F in a smokeless flare or a direct-flame incinerator.

505.2 No person shall emit a waste gas stream from any process vent containing one or more of the specific carbon compounds listed in Rule 505.21 or one or more compounds which are members of one or more of the classes of carbon compounds listed in Rule 505.22 unless the waste gas stream is burned properly at a temperature equal to or greater than 1300°F in a smokeless flare or a direct-flame incinerator before it is allowed to enter the atmosphere; alternate means of control may be approved by the Executive Secretary in accordance with Rule 506.

505.21 Emission of the following specific carbon compounds shall be regulated under Rule 505.2:

Butadiene	Isoprene
Isobutylene	Propylene
Styrene	α-Methyl-Styrene

505.22 Emissions of the following classes of carbon compounds shall be regulated under Rule 505.2:

Aldehydes	Amines
Alcohols	Acids
Aromatics	Esters
Ethers	Ketones
Olefins	Sulfides
Peroxides	Branched chain hydrocarbons (C ₈ and above)

505.23 The following waste gas streams are exempt from the requirements of Rule 505.2:

505.231 A waste gas stream having a combined weight of the carbon compounds or classes of compounds specified in 505.21 and 505.22 equal to or less than 100 lbs. in any consecutive 24 hour period.

505.232 A waste gas stream having a combined weight of the carbon compounds or classes of compounds specified in 505.21 and 505.22 greater than 100 lbs. in any consecutive 24 hour period but less than 250 lbs. per hour averaged over any consecutive 24 hour period and having an aggregate partial pressure of the carbon compounds specified in 505.21 and 505.22 less than .44 psia.

505.3 No person shall emit in any one calendar year more than five (5) tons of total carbon compounds excluding methane in a waste gas stream from any catalyst regeneration of a petroleum or petrochemical process system, basic oxygen furnace, or fluid-coking unit into the atmosphere unless the waste gas stream is properly burned at a temperature equal to or greater than 1300°F in a direct-flame incinerator or boiler.

505.4 No person shall emit a waste gas stream from any iron cupola into the atmosphere unless the waste gas stream is properly burned at a temperature equal to or greater than 1300°F in an afterburner having a retention time of at least one-fourth (1/4) of a second, and having a steady flame that is not affected by the cupola charge and relights automatically if extinguished.

505.5 Waste gas streams from blast furnaces shall be burned in a smokeless flare or be used in one or more of the following ways:

505.51 To preheat the blast air before injection into the furnace through the tuyeres;

505.52 For steam generation;

505.53 For the heating of soaking pits;

505.54 For the underfiring of coke ovens;

505.55 For other miscellaneous heating uses.

505.6 Rule 505 is not intended to require incineration as an exclusive method of control. In no event shall a waste gas stream be incinerated if the incineration will have no practical effect in reducing the emission of air contaminants or will result in an actual degradation of air quality. In all such cases, application shall be made to the Executive Secretary for approval of an alternate method of control. The Executive Secretary shall approve such alternate method if it represents the best available alternative having due regard for the intent of Rule 505 and the effect of the emissions on ambient air quality.

Rule 506. Any person affected by any section of this Regulation may request the Executive Secretary to approve alternate means of control. The Executive Secretary shall approve such alternate means of control if it can be demonstrated that such control will be substantially equivalent to the methods of control approved by this Regulation.

Rule 507. The Executive Secretary, after consultation with appropriate local governmental agencies, may exempt specific compounds or a specific waste gas stream from the application of this Regulation if it can be demonstrated that the emissions from the compound or specific waste gas stream will not make a significant contribution of air contaminants in the atmosphere.

Rule 508. Compliance.

508.1 Any person affected by Rule 502.1 hereof with regard to the storage of a volatile carbon compound in a container having a capacity in excess of 50,000 gallons; any person affected by Rule 502.2 hereof; any person affected by Rule 503 hereof; any person affected by Rule 504 hereof; any person affected by Rule 505.1 hereof with regard to a waste gas stream from an ethylene producing plant; any person affected by Rule 505.3 hereof with regard to catalyst regeneration of a petroleum

cracking system, and any person affected by Rule 505.4 or 505.5 shall be in compliance therewith as soon as practicable, but not later than December 31, 1973. Any person who has not previously submitted to the Texas Air Control Board a written report on his compliance status, including but not limited to, the minimum time required to design, procure, install, and test abatement equipment and procedures shall do so immediately. In addition, all persons affected by Rule 508.1 shall submit progress reports to the Board every four months commencing in May of 1973 until compliance is achieved.

508.2 All persons affected by this Regulation except as provided in Rule 508.1, shall be in compliance herewith as soon as practicable, but not later than May 31, 1975; and shall submit to the Texas Air Control Board not later than December 31, 1973 a final control plan for compliance detailing the method to be followed to achieve compliance and specifying the exact dates upon which the following steps shall be taken to achieve compliance:

508.21 Dates by which contracts for emission control systems or process modifications will be awarded; or dates by which orders will be issued for the purchase of component parts to accomplish emission control or process modification;

508.22 Date of initiation of on-site construction or installation of emission control equipment or process change;

508.23 Date by which on-site construction or installation of emission control equipment or process modification is to be completed;

508.24 Date by which final compliance is to be achieved.

508.3 All persons affected by Rule 508.2 shall not deviate from the terms of such final control plans including the date for final compliance and the dates for accomplishing the required steps in such plans. The Executive Secretary may, upon application of any person affected, change the date for accomplishing the required steps in a plan, provided such change is not likely to affect the achievement of

the final compliance date specified in such plan. Within five (5) days after completion of each of the required steps listed in 508.21 through 508.24, the person submitting the plan shall so notify the Executive Secretary in writing.

Rule 509. The rules contained in this Regulation shall be in force immediately and shall supersede Regulation V on Control of Air Pollution from Volatile Organic Compounds and Carbon Monoxide which became effective on March 5, 1972 and was amended on August 31, 1972.

Date Adopted: April 10, 1973

Date Filed with Secretary of State: April 12, 1973

Date Effective: May 12, 1973

REGULATION VI

CONTROL OF AIR POLLUTION BY PERMITS FOR NEW CONSTRUCTION OF MODIFICATION

- Rule 601. Section 3.27(a) and Section 3.28(a) of the Texas Clean Air Act require any person who plans to construct any new facility or to engage in the modification of any existing facility which may emit air contaminants into the air of this State to obtain a construction permit from the Texas Air Control Board before any actual work is begun on the facility, and to obtain an operating permit from the Texas Air Control Board in order to continue to operate the facility after a sixty day start-up period.
- Rule 602. The owner of the facility or the operator of the facility authorized to act for the owner is responsible for applying for and obtaining a permit to construct and operate.
- Rule 603. Consideration of Granting a Permit to Construct and Operate.
- 603.1 In order to be granted a permit to construct, the owner or operator of the proposed facility shall submit information to the Texas Air Control Board in order that the Texas Air Control Board may determine that:
- 603.11 The proposed facility will comply with all Rules and Regulations of the Texas Air Control Board and with the intent of the Texas Clean Air Act.
 - 603.12 The proposed facility will not prevent the maintenance or attainment of any ambient air quality standard.
 - 603.13 The proposed facility will not cause significant deterioration of existing ambient air quality in the area.
 - 603.14 The proposed facility will have provisions for measuring the emission of significant air contaminants as determined by the Executive Secretary.
 - 603.15 The proposed facility will be located in accordance with proper land use planning.
 - 603.16 The proposed facility will utilize the best available control technology, with consideration to the technical practicability and economic reasonableness of reducing or eliminating the emissions resulting for the facility.
 - 603.17 The proposed facility will achieve the performance specified in the application for a permit to construct.

603.2 If the owner of the proposed facility cannot demonstrate that the facility will comply with Rule 603.17, a conditional construction permit may be granted until such time as the owner can demonstrate compliance with Rule 603.17.

603.3 In order to be granted a permit to operate the owner of the facility shall demonstrate that:

603.31 The facility is complying with the Rules and Regulations of the Texas Air Control Board and the intent of the Texas Clean Air Act.

603.32 The facility has been constructed in accordance with the requirements and conditions contained in the permit to construct.

Rule 604. Pursuant to Section 3.27(a) of the Texas Clean Air Act, a permit to construct and a permit to operate shall not be required for those sources exempt by the Texas Air Control Board. A list of exemptions is available upon request from the Executive Secretary of the Board.

Rule 605. Persons desiring to be exempt from the permit system may apply in writing to the Executive Secretary of the Texas Air Control Board.

Rule 606. Installations exempt by the Texas Air Control Board may be required by local air pollution control agencies to receive a permit or permits from that agency, or register with that agency.

Rule 607. The rules contained in this Regulation shall be in force immediately and shall supersede the previous Regulation VI which became effective on March 5, 1972.

Date Adopted: July 27, 1972

Date Filed with Secretary of State: August 1, 1972

Date Effective: August 31, 1972

REGULATION VII

CONTROL OF AIR POLLUTION FROM NITROGEN COMPOUNDS

Rule 701. Gas Fired Steam Generating Units.

701.1 Rules 701.2, 701.3 and 701.4 shall apply only in the Dallas-Fort Worth and Houston-Galveston Air Quality Control Regions.

701.2 No person may cause, suffer, allow or permit emissions of nitrogen oxides, calculated as nitrogen dioxide, from any "opposed fired" steam generating unit of more than 600,000 lbs/hour maximum continuous steam capacity to exceed 0.7 lbs/million Btu heat input, maximum two-hour average, at maximum steam capacity. An "opposed fired" steam generating unit is defined as a unit having burners installed on two opposite vertical firebox surfaces.

701.3 No person may cause, suffer, allow or permit emissions of nitrogen oxides, calculated as nitrogen dioxide, from any "front fired" steam generating unit of more than 600,000 lbs/hour maximum continuous steam capacity to exceed 0.5 lbs/million Btu heat input, maximum two-hour average, at maximum steam capacity. A "front fired" steam generating unit is defined as a unit having all burners installed in a geometric array on one vertical firebox surface.

701.4 No person may cause, suffer, allow or permit emissions of nitrogen oxides, calculated as nitrogen dioxide, from any "tangential fired" steam generating unit of more than 600,000 lbs/hour maximum continuous steam capacity to exceed 0.25 lbs/million Btu heat input, maximum two-hour average, at maximum steam capacity. A "tangential fired" steam generating unit is defined as a unit having burners installed on all corners of the unit at various elevations.

Rule 702. Nitric Acid Manufacturing.

702.1 No person may cause, suffer, allow, or permit emissions of nitrogen oxides, calculated as nitrogen dioxide, from any nitric acid manufacturing plant to exceed 600 parts per million by volume.

Rule 703. Any person required to modify one steam generating unit to comply with Rule 701 shall be in compliance by July 1, 1974. Any person required to modify two or more steam generating units to comply with Rule 701 shall achieve compliance on at least 50% of such units by July 1, 1974, and shall achieve total compliance by July 1, 1976. On or before December 1, 1972, any person affected by Rule 701 shall submit to the Texas Air Control Board a written report of his compliance status, including but not limited to, the minimum time required to design, procure, install and test abatement equipment or procedures. Thereafter, progress reports shall be submitted to

the Board every six months no later than June 1 and December 1 of each year until compliance is achieved.

Persons affected by Rule 702 shall be in compliance with the provisions of Rule 702 not later than December 31, 1973. On or before September 15, 1972, any person affected by Rule 702 shall submit to the Board a written report of his compliance status, including but not limited to, the minimum time required to design, procure, install and test abatement equipment or procedures. Thereafter, progress reports shall be submitted to the Board every four months, not later than January 15, May 15 and September 15 of each year until compliance is achieved.

Rule 704. The rules contained in this Regulation shall be in force immediately and shall supersede the previous Regulation VII which became effective on March 5, 1972.

Date Adopted: July 27, 1972

Date Filed with Secretary of State: August 1, 1972

Date Effective: August 31, 1972

REGULATION VIII

CONTROL OF AIR POLLUTION EMERGENCY EPISODES

Rule 801. Episode Criteria

801.1 Emergency Episode - The excessive build-up of air contaminants to a level which would, if sustained, pose an imminent and substantial endangerment to the health of persons.

801.2 Episode Criteria - The conditions by which the severity of an emergency episode is judged and which determine what action must be taken. The Executive Secretary in making such judgment shall be guided by the following criteria:

801.21 Air Pollution Forecast - An internal watch by personnel of the Texas Air Pollution Control Services that may be actuated by receipt of an Atmospheric Stagnation Advisory (ASA), or equivalent local forecast of stagnant atmospheric conditions, is in effect.

801.22 "Alert" - The level of the concentration of air contaminants at first stage when control action is to begin, necessitating the declaration of an Air Pollution Alert. First stage concentration occurs when any of the following levels is reached at the monitoring site:

Sulfur Dioxide (SO₂) - 800 µg/M³ (0.3 ppm),
24-hour average

Particulate - 3.0 COHs or 375 µg/M³, 24-hour
average

Sulfur Dioxide and Particulate Combined - product
of sulfur dioxide ppm, 24-hour average, and COHs
equal to 0.2 or product of sulfur dioxide -- µg/M³,
24-hour average, and particulate µg/M³, 24-hour
average equal to 65 x 10³

Carbon Monoxide (CO) - 17 mg/M³ (15 ppm), 8-hour
average

Oxidant (O₃) - 200 µg/M³ (0.1 ppm) 1-hour average

Nitrogen Dioxide (NO₂) - 1130 µg/M³ (0.6 ppm),
1-hour average, 282 µg/M³ (0.15 ppm), 24-hour
average,

and meteorological conditions are such the pollutant concentrations can be expected to remain at the above levels for twelve (12) or more hours or increase unless control actions are taken.

801.23 "Warning" - The level of the concentration of air contaminants at second stage that indicates air quality is continuing to degrade and that additional control actions are necessary. The declaration of an Air Pollution Warning is necessary at second stage. Second stage concentration occurs when any one of the following levels is reached at the monitoring site:

Sulfur Dioxide (SO₂) - 1,600 µg/M³ (0.6 ppm), 24-hour average.

Particulate - 5.0 COHs or 625 µg/M³, 24-hour average.

Sulfur Dioxide and Particulate Combined - Product of sulfur dioxide ppm, 24-hour average and COHs equal to 0.8 or product of sulfur dioxide µg/M³, 24-hour average and particulate µg/M³, 24-hour average equal to 261 x 10³.

Carbon Monoxide (CO) - 34 mg/M³ (30 ppm), 8-hour average.

Oxidant (O₃) - 800 µg/M³ (0.4 ppm) 1-hour average.

Nitrogen Dioxide (NO₂) - 2,260 µg/M³ (1.2 ppm), 1-hour average; 565 µg/M³ (0.3 ppm), 24-hour average,

and meteorological conditions are such that pollutant concentration can be expected to remain at the above levels for twelve (12) or more hours or increase unless control actions are taken.

801.24 "Emergency" - The level of concentration of air contaminants at third stage that indicates air quality is continuing to degrade to the point that the most stringent controls become necessary. The declaration of an Air Pollution Emergency is necessary at third stage. Third stage concentration occurs when any one of the following levels is reached at the monitoring site:

Sulfur Dioxide (SO₂) - 2,100 µg/M³ (0.8 ppm), 24-hour average.

Particulate - 7.0 COHs or 875 µg/M³, 24-hour average.

Sulfur Dioxide and Particulate Combined - Product of sulfur dioxide ppm, 24-hour average and COHs equal to 1.2 or product of SO₂ µg/M³, 24-hour average and particulate µg/M³, 24-hour average equal to 393 x 10³.

Carbon Monoxide (CO) - 46 mg/M³ (40 ppm), 8-hour average.

Oxidant (O₃) - 1,200 µg/M³ (0.6 ppm), 1-hour average.

Nitrogen Dioxide (NO₂) - 3,000 µg/M³ (1.6 ppm), 1-hour average; 750 µg/M³ (0.4 ppm), 24-hour average,

and meteorological conditions are such that this condition can be expected to continue for twelve (12) or more hours.

Rule 802 Provisions Governing Emergency Episode Control

802.1 When the Executive Secretary determines that episode criteria levels will be reached, he shall make or have made a declaration of an Air Pollution Alert, an Air Pollution Warning, or an Air Pollution Emergency, and the owner and/or operator of an emission source shall upon notice put into effect the abatement strategy emission plans as set forth in Appendices I, II, and III, respectively, which are made a part of this Regulation, according to the following schedule:

802.11 Air Pollution Alert - When an Air Pollution Alert is declared, any owner and/or operator of an emissions source shall take Alert Level Actions and put into effect emission reduction plans as set forth in Appendix I.

802.12 Air Pollution Warning - When an Air Pollution Warning is declared, any owner and/or operator of an emissions source shall take Warning Level Actions and put into effect emission reduction plans as set forth in Appendix II.

802.13 Air Pollution Emergency - When an Air Pollution Emergency is declared, any owner and/or operator of an emission source shall take Emergency level actions and put into effect emission reduction plans as set forth in Appendix III.

802.2 In the event a specified criteria level has been reached at one or more monitoring sites solely because of emissions from a limited number of sources, these sources shall be notified that the emission reduction plans of Appendices I, II, and III, or standby plans, are required to be put into effect until the criteria of the specified levels no longer apply.

802.3 Enforcement - The Governor or any other properly designated official shall have the authority to declare an air pollution episode in accordance with Rule 801.2. The power to declare an emergency, to act on the basis of that declaration, and to take applicable enforcement measures is set forth in Section 3.14 (c) and Sub-Chapter D of the Texas Clean Air Act.

Rule 803. Compliance Schedule

803.1 Any owner and/or operator of a stationary source emitting 100 tons or more of any air contaminant per year shall submit in writing to the Executive Secretary, no later than 90 days after the adoption of this regulation, an emission reduction plan and monitoring schedule pertaining to his particular source in accordance with the objectives of Appendices I, II, and III, and Rule 802 herein. The emission reduction plan shall contain a statement as to the percent of reduction expected to be attained by implementation of each phase according to the Appendices. Each emission reduction plan, when approved by the Executive Secretary, shall be binding as of the effective date of this Rule. If an emergency episode should occur before the effective date, the sources affected by Rule 803.1 will be requested to take voluntary abatement action to reduce emissions during the emergency episode. If a request for voluntary curtailment of emissions does not result in reduction of the emissions, the Executive Secretary shall take the actions provided for in Section 3.14 of the Texas Clean Air Act to reduce or discontinue immediately the emission of air contaminants.

803.2 Any owner and/or operator responsible for the operation of a source of air contaminants emitting less than 100 tons per year may be notified in writing by the Board or the Executive Secretary of the requirements of this regulation and shall be required to submit in writing to the Executive Secretary emission reduction plans designed to reduce or eliminate emissions pertaining to his

particular source in accordance with the objectives of Appendices I, II, and III, and Rule 803 herein. Each reduction plan shall be submitted 90 days after request. When approved by the Executive Secretary, the plan shall be binding. If an emergency episode should occur prior to the Executive Secretary's request, the sources affected by this Rule 803.2 may be requested to take voluntary abatement action to reduce emissions during the emergency episode. If a request for voluntary curtailment of emissions does not result in the reduction of the emissions, the Executive Secretary shall take the actions provided for in Sec. 3.14 of the Texas Clean Air Act to reduce or discontinue immediately the emission of air contaminants.

Rule 804. An Operations Manual for Emergency Episodes

Detailed procedures for public notification of impending (and actual) ASA's, Alert, Warning, and Emergency Phases; actions required by Texas Air Pollution Control Services personnel and local air pollution control personnel; notification of public officials; transmission of information to contiguous states as required will be made, upon publication, a part of this regulation.

Rule 805. The rules contained in this regulation shall be in force immediately.

Date Adopted: January 26, 1972

Date Filed with Secretary of State: February 4, 1972

Date Effective: March 5, 1972

APPENDIX I

ABATEMENT STRATEGIES FOR EMISSION REDUCTION PLANS

ALERT LEVEL

Part A. GENERAL

1. There shall be no open burning by any persons of tree waste, vegetation, refuse, or debris in any form.
2. The use of incinerators for the disposal of any form of solid waste shall be limited to the hours between 12:00 noon and 4:00 p.m. except where the incinerator is an anti-pollution device integral in a process allowed to operate under "Source Curtailment" sections.
3. Persons operating fuel-burning equipment which required boiler lancing or soot blowing shall perform such operations only between the hours of 12:00 noon and 4:00 p.m.
4. Persons operating motor vehicles should eliminate all unnecessary operations.

Part B. SOURCE CURTAILMENT

Any person responsible for the operation of a source of air pollutants listed below shall take all required control actions for this Alert Level.

<u>Source of Air Pollution</u>	<u>Control Action</u>
1. Coal or oil-fired electric power generating facilities.	<ol style="list-style-type: none">a. Substantial reduction by utilization of fuels having low ash and sulfur content.b. Maximum utilization of mid-day (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.c. Substantial reduction by diverting electric power generation to facilities outside of Alert Area.

2. Coal and oil-fired process steam generating facilities.
 - a. Substantial reduction by utilization of fuels having low ash and sulfur content.
 - b. Maximum utilization of mid-day (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.
 - c. Substantial reduction of steam load demands consistent with continuing plant operations.

3. Manufacturing industries of the following classifications:
 - Primary Metals Industry.
 - Petroleum Refining Operations.
 - Chemical Industries.
 - Mineral Processing Industries.
 - Paper and Allied Products.
 - Grain Industry.
 - a. Substantial reduction of air pollutants from manufacturing operations by curtailing, postponing, or deferring production and all operations.
 - b. Maximum reduction by deferring trade waste disposal operations which emit solid particles, gas vapors or malodorous substances.
 - c. Maximum reduction of heat load demands for processing.
 - d. Maximum utilization of mid-day (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.

APPENDIX II

ABATEMENT STRATEGIES FOR EMISSION REDUCTION PLANS

WARNING LEVEL

Part A. GENERAL

1. There shall be no open burning by any persons of tree waste, vegetation, refuse, or debris in any form.
2. The use of incinerators for the disposal of any form of solid waste shall be prohibited except where the incinerator is an anti-pollution device integral in a process allowed to operate under "Source Curtailment" sections.
3. Persons operating fuel-burning equipment which requires boiler lancing or soot blowing shall perform such operations only between the hours of 12:00 noon and 4:00 p.m.
4. Persons operating motor vehicles must reduce operations by the use of car pools and increased use of public transportation and elimination of unnecessary operation.

Part B. SOURCE CURTAILMENT

Any person responsible for the operation of a source of air pollutants listed below shall take all required control actions for this Warning Level.

Source of Air Pollution

Control Action

- | | |
|--|---|
| 1. Coal or oil-fired electric power generating facilities. | a. Maximum reduction by utilization of fuels having lowest ash and sulfur content. |
| | b. Maximum utilization of mid-day (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing. |
| | c. Maximum reduction by diverting electric power generation to facilities outside of Warning Area. |

2. Coal and oil-fired process steam generating facilities.
 - a. Maximum reduction by utilization of fuels having the lowest available ash and sulfur content.
 - b. Maximum utilization of mid-day (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.
 - c. Making ready for use a plan of action to be taken if an emergency develops.

3. Manufacturing industries which require considerable lead time for shut-down including the following classifications:
 - Petroleum Refining.
 - Chemical Industries.
 - Primary Metals Industries.
 - Glass Industries.
 - Paper and Allied Products.
 - a. Maximum reduction of air contaminants from manufacturing operations by, if necessary, assuming reasonable economic hardships by postponing production and allied operation.
 - b. Maximum reduction by deferring trade waste disposal operations which emit solid particles, gases vapors, or malodorous substances.
 - c. Maximum reduction of heat load demands for processing.
 - d. Maximum utilization of mid-day (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing or soot blowing.

4. Manufacturing industries which require relatively short lead time for shut-down including the following classifications:
 - Primary Metals Industries.
 - Chemical Industries.
 - Mineral Processing Industries.
 - Grain Industry.
 - a. Elimination of air pollutants from manufacturing operations by ceasing, curtailing, postponing, or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.
 - b. Elimination of air pollutants from trade waste disposal processes which emit solid particles, gases, vapors, or malodorous substances.

- c. Maximum reduction of heat load demands for processing.
- d. Maximum utilization of mid-day (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing or soot blowing.

APPENDIX III

ABATEMENT STRATEGIES FOR EMISSION REDUCTION PLANS

EMERGENCY LEVEL

Part A. GENERAL

1. There shall be no open burning by any persons of tree waste, vegetation, refuse, or debris in any form.
2. The use of incinerators for the disposal of any form of solid or liquid waste shall be prohibited except where the incinerator is an anti-pollution device integral in a process allowed to operate under "Source Curtailment" sections.
3. All places of employment described below shall immediately cease operations.
 - a. Mining and quarrying of nonmetallic minerals.
 - b. All construction work except that which must proceed to avoid emergent physical harm.
 - c. All manufacturing establishments except those required to have in force an air pollution emergency plan.
 - d. All wholesale trade establishments; i.e., places of business primarily engaged in selling merchandise to retailers, or industrial, commercial, institutional or professional users, or to other wholesalers, or acting as agents in buying merchandise for or selling merchandise to such persons or companies, except those engaged in the distribution of drugs, surgical supplies and food.
 - e. All offices of local, county, and State government including authorities, joint meetings, and other public bodies excepting such agencies which are determined by the chief administrative officer of local, county, or State government, authorities, joint meetings and other public bodies to be vital for public safety and welfare and the enforcement of the provisions of this order.
 - f. All retail trade establishments except pharmacies, surgical supply distributors, and stores primarily engaged in the sale of food.
 - g. Banks, credit agencies other than banks, securities and commodities brokers, dealers, exchanges and services; offices of insurance carriers, agents and brokers, real estate offices.

- h. Wholesale and retail laundries, laundry services and cleaning and dyeing establishments; photographic studios; beauty shops, barber shops, shoe repair shops.
 - i. Advertising offices; consumer credit reporting, adjustment and collection agencies; duplicating, addressing, blue-printing; photocopying, mailing list and stenographic services; equipment rental services, commercial testing laboratories.
 - j. Automobile repair, automobile services, garages.
 - k. Establishments rendering amusement and recreational services including motion picture theaters.
 - l. Elementary and secondary schools, colleges, universities, professional schools, junior colleges, vocational schools, and public and private libraries.
4. All commercial and manufacturing establishments not included in this order will institute such actions as will result in maximum reduction of air pollutants from their operation by ceasing, curtailing, or postponing operations which emit air pollutants to the extent possible without causing injury to persons or damage to equipment.
5. The use of motor vehicles is prohibited except in emergencies with the approval of local or State police.

Part B. SOURCE CURTAILMENT

Any person responsible for the operation of a source of air pollutants listed below shall take all required control actions for this Emergency Level.

<u>Source of Air Pollution</u>	<u>Control Action</u>
1. Coal or oil-fired electric power generating facilities.	<ul style="list-style-type: none"> a. Maximum reduction by utilization of fuels having lowest ash and sulfur content. b. Maximum utilization of mid-day (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing or soot blowing. c. Maximum reduction by diverting electric power generation to facilities outside of Emergency Area.

2. Coal and oil-fired process steam generating facilities.

- a. Maximum reduction by reducing heat and steam demands to absolute necessities consistent with preventing equipment damage.
- b. Maximum utilization of mid-day (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing and soot blowing.
- c. Taking the action called for in the emergency plan.

3. Manufacturing industries of the following classifications:

Primary Metals Industries.
Petroleum Refining.
Chemical Industries.
Mineral Processing Industries.
Grain Industry.
Paper and Allied Products

- a. Elimination of air pollutants from manufacturing operations by ceasing, curtailing, postponing or deferring production and allied operations to the extent possible without causing injury to persons or damage to equipment.
- b. Elimination of air pollutants from trade waste disposal processes which emit solid particles, gases, vapors, or malodorous substances.
- c. Maximum reduction of heat load demands for processing.
- d. Maximum utilization of mid-day (12:00 noon to 4:00 p.m.) atmospheric turbulence for boiler lancing or soot blowing.