Florida Department of Environmental Regulation

Southwest District • 4520 Oak Fair Boulevard • Tampa, Florida 33610-7347 • 813-623-5561

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary
Dr. Richard Garrity, Deputy Assistant Secretary

February 7, 1990

Mr. Ralph Baker
Manager of Florida Operations
GATX Terminals Corporation
100 GATX Drive
Tampa, FL 33605

Dear Mr. Baker:

Re: Hillsborough County - AP
Permit Amendment
Three Trucks and One Railcar
Loading Stations

The Department is in receipt of your request dated December 15, 1989 to amend permit number AO29-128572. The following changes are hereby made in the permit:

CHANGE PROCESS DESCRIPTION FROM:

For the operation of three trucks and one railcar loading stations at a solvent and petroleum storage tank farm. The loading racks are designated and described as follows:

Loading Station	Solvent/Petroleum Loaded
Petroleum Tank/Truck Loadout - T/T No. 1	Jet Fuel (Jet A), Diesel Fuel, and Gasoline
Tank Truck Loadout - T/T No. 2	Ethanol (some spray oil).
Tank Truck Loadout - T/T No. 3	Methanol, various solvents listed in Permit No. AO29-101494, with the exception of gasoline.
Tank Railcar Loadout - T/C No. 4	Ethanol and Caustic Soda.

T/T No. 1, Petroleum Tank Truck Loading Station, consists of three loading stations used for tank truck loading of gasoline, diesel oil, and jet fuel. Jet A Fuel is bottom loaded from the western loading station consisting of two loading arms. Diesel fuel and gasoline are bottom loaded from the eastern and central loading stations each consisting of six loading arms. The maximum throughput shall not

exceed 4,500,000 gallons of gasoline per year, 2,000,000 gallons of diesel oil per year, and 2,500,000 gallons of jet fuel per year. Volatile Organic Compound (VOC) emissions generated during jet fuel, diesel fuel and gasoline truck loading operations are ducted to a John Zink Company, Model GV-LH-8400-2, open flame flare unit. T/T No. 1 is subject to the requirements of 40 CFR 60.500, Subpart XX - Standards of Performance for Bulk Gasoline Terminals.

T/T No. 2 consists of three loading arms used to bottom load spray oil or ethanol. The northern arm loads spray oil and the remaining two arms load ethanol.

T/T No. 3 has thirty-two loading arms used to top load various solvents, referenced above, into trucks utilizing drop tubes to avoid splashing, and methanol bottom loading arm.

T/C No. 4 consists of two loading arms for railcar loading of ethanol and caustic soda. Both arms are used to top load railcars.

All top loading operations are equipped with pipe extensions for submerged filling. There is no railcar loading of gasoline.

CHANGE PROCESS DESCRIPTION TO:

For the operation of three trucks and one railcar loading stations at a solvent and petroleum storage tank farm. The loading racks are designated and described as follows:

Loading Station	Solvent/Petroleum Loaded
Petroleum Tank/Truck Loadout - T/T No. 1	Jet Fuel (Jet A), Diesel Fuel, and Gasoline
Tank Truck Loadout - T/T No. 2	Ethanol (some spray oil).
Tank Truck Loadout - T/T No. 3	Methanol, various solvents listed in Permit No. AO29-101494, with the exception of gasoline.
Tank Railcar Loadout - T/C No. 4	Ethanol and Caustic Soda.

T/T No. 1, Petroleum Tank Truck Loading Station, consists of three loading stations used for tank truck loading of gasoline, diesel oil, and jet fuel. Jet A Fuel is bottom loaded from the western loading station consisting of two loading arms. Diesel fuel and gasoline are bottom loaded from the eastern and central loading stations each consisting of six loading arms. The maximum throughput shall not exceed 4,500,000 barrels of gasoline per year, 2,000,000 barrels of diesel oil per year, and 2,500,000 barrels of jet fuel per year.

Volatile Organic Compound (VOC) emissions generated during jet fuel, diesel fuel and gasoline truck loading operations are ducted to a John Zink Company, Model GV-LH-8400-2, open flame flare unit. T/T No. 1 is subject to the requirements of 40 CFR 60.500, Subpart XX - Standards of Performance for Bulk Gasoline Terminals.

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T/C No. 4 consists of two loading arms for railcar loading of ethanol and caustic soda. Both arms are used to top load railcars.
All top loading operations are equipped with pipe extensions for submerged filling. There is no railcar loading of gasoline.

CHANGE SPECIFIC CONDITION NO. 10 FROM:

10. As stated in the construction permit application, in order to exempt the T/T No. 1 from the requirements of Section 17-2.510, F.A.C., New Source Review for Nonattainment Areas, total volatile organic compound (VOC) emissions from the facility covered under permits AC29-159753, AC29-160745, AC29-149635, AO29-101491, and this permit, shall not exceed 114.62 TPY and 9.55 tons per month. Furthermore, in order to ensure that this VOC emission limiting standard is met, the maximum product throughput shall not exceed the following limits:

Tank No.	Product Stored	Annual Throughput (gals.)	Monthly Throughput (gals.)
T/T No. 1	Jet A Fuel	2,500,000	208,333
	Diesel A Fuel	2,000,000	166,667
	Gasoline	4,500,000	375,000

CHANGE SPECIFIC CONDITION NO. 10 TO:

10. As stated in the construction permit application, in order to exempt the T/T No. 1 from the requirements of Section 17-2.510, F.A.C., New Source Review for Nonattainment Areas, total volatile organic compound (VOC) emissions from the facility covered under permits AC29-159753, AC29-160745, AC29-149635, AO29-101491, and this permit, shall not exceed 114.62 TPY and 9.55 tons per month. Furthermore, in order to ensure that this VOC emission limiting standard is met, the maximum product throughput shall not exceed the following limits:

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T/T No. 1	Jet A Fuel	2,500,000	208,333
	Diesel A Fuel	2,000,000	166,667
	Gasoline	4,500,000	375,000

Persons whose substantial interests are affected by this permit amendment have a right, pursuant to Section 120.57, Florida Statutes, to petition for an administrative determination (hearing) on it. The petition must conform to the requirements of Chapters 17-103 and 28-5.201, F.A.C., and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399, within fourteen (14) days of receipt of this notice. Failure to file a petition within the fourteen (14) days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, Florida Statutes. This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with this paragraph or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition and conforms to Rule 17-103.070, F.A.C. Upon timely filing of a petition or a request for an extension of time, this permit will not be effective until further Order of the Department.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date the Final Order is filed with the Clerk of the Department.

A copy of this letter must be attached to and becomes a part of permit number AO29-128572. If you have any questions, please call Mr. J. Harry Kerns of my staff at (813) 623-5561.

Sincerely,

Richard D. Garrity, Ph.D.
Deputy Assistant Secretary
Southwest District

RDG/SKB/bb

GATX

CENTRAL FLORIDA PIPELINE CORPORATION
subsidiary of
GATX TERMINALS CORPORATION

1904 Hemlock Avenue
Tampa, FL 33605
813-248-8361

December 31, 1990

Mr. C. H. Fancy, P. E.
Bureau Chief of Air Section
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Central Florida Pipeline Corporation
Modification to Existing Air Pollution Source
TN6 and C4 Flare (AC48-188406)

Dear Mr. Fancy:

Central Florida Pipeline Corporation (CFPL), a subsidiary of GATX Terminals Corporation (GATX), is in receipt of your request for additional information relative to the permit to modify an existing air pollution source with the proposed installation of a Flare Unit at the Taft facility, Orange County, Florida. In response to the Department's questions, GATX provides the following information:

1. Please submit a process flow diagram showing all fill connections of the existing facility (Permit No. A048-126131) which must include the average and maximum loading rates from racks T1, T2, TX3, C4, and TN6, along with updated process flow diagram showing the proposed changes.

   Response: GATX hereby submits a process flow diagram showing all fill connections of the existing facility with the average and maximum loading rates from each rack. Also provided is an updated process flow diagram showing the proposed changes to racks C4 and TN6. Please refer to Attachment I. The average and maximum loading rates for truck racks T1, T2 and TX3, respectively, are 240 GPM and 8200 GPM per rack. GATX proposes the average and maximum loading rates for truck racks TN6 and C4, respectively, to be 240 GPM and 9000 GPM.

   Note: The maximum GPM for the VRU and flare are per manufacturer's specifications.

2. List and quantify all pollutants including lead, NOx, CO, etc., from the combustor. Include assumptions and calculations.

   Response: GATX provides as Attachment II the assumptions and calculations of all known pollutants from the combustor. Based on available flare test results data,

pollutants other than VOC's indicate an inability to accurately estimate emissions. Therefore, AP-42 Table 1.5-1 was used for the basis of the quantification of all pollutants.

3. Estimate the change (increase or decrease) in emissions expected to result from the change from VRU to combustor control.

   Response: GATX expects the emissions to decrease as a result in change from VRU to combustor control. Per the manufacturer's specifications ratings, the VRU model is 95% efficient while the flare combustor control unit is rated at 97.3% efficiency.

4. According to the construction permit application, only two of the five loading racks vapors will be routed to the flare. Do you plan to route the vapors from the remaining three loading racks to the flare in future? Do you plan to load kerosene along with gasoline and diesel at the C4 loading rack?

   Response: GATX proposes only routing the two loading racks to the flare unit, which is to supplement the existing VRU. Please note the Attachment I drawing that entails the bypass connection between the VRU and flare unit which enables utilization of the VRU operation if necessary. GATX does not intend to load kerosene at the loading racks.

5. What is the net heating value of the gas being combusted and the maximum velocity (Vmax) for the flare? As per Item H, Section III, the inlet gas flow rate is 1203 ACFM. Is this the maximum inlet gas flow you expect to be routed to the flare unit both racks/all fill connections operating simultaneously? Include assumptions and calculations.

   Response: The net heating value of the gas being combusted varies over time and condition. The anticipated average net heating value is 400 BTU/scf. As per the application Item H, Section III, the inlet gas flow rate should be 962.52 ACFM rather than 1203 ACFM. The 1203 ACFM was derived on the basis of a five bay truck loading rack rather than the four bay loading racks at the Taft terminal. As well the outlet gas flow rate should be reduced to 18,228.52 ACFM rather than 18,469 ACFM. The maximum velocity is 59.41 fps. See Attachment III for assumptions and calculations.

The diameter of the stage 1 burner is 6" and the stage 2 burner is 8". The effective area of each should be reduced to half the calculated area due to the presence of a spiral wound crimped ribbon flame arrester installed between the staging control valve and the burner tips.

6. How is the presence of the flare pilot flame and gas flow rates monitored on a continuous basis?

   Response: The flare pilot flame is monitored by a thermocouple, which feeds a process logic controller, which in turn, communicates to the main terminal controller. Loading of trucks is not permitted unless the flare pilot flame is present. The gas flow rates are monitored by a liquid seal drum which is maintained by high and low pressure and level switches. When the water column reaches 5" water column the first stage burner is activated. The second stage burner will open when the operating pressure reaches 5" water column level again.

7. What is the height of the nearest building/structure and how far is it from the flare stack?

   Response: The distance of the nearest building in relation to the flare is 100 feet. However, please note the definition of a stack referenced in 17-2.100 (190). Therefore, GATX does not believe the regulation 17-2.270(3)(a) 1 and 2 is applicable (referenced regulation copies attached).

8. To meet the 35 mg/l VOC emission standard, the flare should be enclosed so that appropriate compliance testing can be conducted. Please submit a stack drawing showing sampling locations.

   Response: EPA has established an alternative performance standard for flares to ensure compliance with the 35 mg/l standard. The flare testing procedure is contained in 40 CFR 60.18 (copy attached). This alternative method was developed to avoid having to stack test flares using conventual stack testing techniques. Under this method all measurement/samples are taken upstream of the burner prior to combustion. Therefore, enclosure of the flame is not

necessary. See Attachment IV for an example of the proposed alternative method.

I trust this additional information completes CFPL's construction permit application. Should this not be the case, please contact me as soon as possible so that CFPL may provide any further information.

Sincerely,
CENTRAL FLORIDA PIPELINE CORPORATION

Caren J. Lennie for

Tom Rigg
Florida Operations Manager

CL:TR:mr

c: M. Baig, FDER
C. Collins, FDER Central District
D. Nester, Orange County EPD

8400 gpm.

813-241-1139 → Caren Lennie

GATX

GATX TERMINALS CORPORATION
100 GATX DRIVE
TAMPA, FL 33605

Fold at line over top of envelope to the right of the return address.

CERTIFIED

P 798 260 380

MAIL

Mr. Mirza Baig
Florida Dept. of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

ATTACHMENT II

RESPONSE TO FDER'S LETTER OF NOV. 15, 1990

Item 2

In order to provide FDER with an estimate of emissions from the flare, the total uncontrolled VOC's entering the flare were calculated using the information from application. The results where then equated to an equivalent amount of propane. The emissions were calculated using AP-41 Table 1.5.-1 emission factors for industrial propane combustion.

The maximum actual hourly and annual loading rates for gasoline and diesel from the application have been used in conjunction with the loading loss equation in AP-42 Section 4.4 (the original application for a summary of the input parameters), the inlet concentration to the flare would be:

Hourly

$$L_L = \frac{12.46\ (1.0)\ (7.9)\ (64)\ (108{,}808\ \text{gal/hr})}{532\ (1000)}$$

= 1288.47 lbs/hr gasoline vapor to flare

$$L_L = \frac{12.46\ (1.0)\ (130)\ (0.0105)\ (19{,}200)}{532\ (1000)}$$

= 0.61 lbs/hr diesel to flare

The total hydrocarbons per hour to the burner would therefore be:

1288.47 lbs/hr as gasoline vapors
0.61 lbs/hr as diesel vapors
5.10 lbs/hr as propane
1294.18 lbs/hr of hydrocarbons to burner

or 305 gal/hr at 4.24 lbs/gal as propane

Annual:

$$L_L = \frac{12.46\ (1.0)\ (7.9)\ (64)\ (10.2 \times 10^6\ \text{Bbl/yr})\ (42)}{532\ (1000)}$$

= 5,072,978 lbs/yr gasoline vapor to flare

$$L_L = \frac{12.46\ (1.0)\ (130)\ (0.0105)\ (1.8 \times 10^6\ \text{Bbl/yr})\ (42)}{532\ (1000)}$$

= 2417 lbs/yr diesel vapor to flare

LPG

Annual propane usage (maximum worse case) would be:

$$\frac{5.1\ \text{lbs}}{\text{hr}} \times \frac{8760\ \text{hrs.}}{\text{yr}} = \frac{44{,}676\ \text{lbs.}}{\text{yr}}$$

The total hydrocarbon per year to the burner would therefore be:

5,072,978 lbs/yr gasoline vapor
2,417 lbs/yr diesel vapor
44,676 lbs/yr propane

5,120,071 lbs/yr hydrocarbons to flare

or 1,207,564 gal/yr at 4.24 lbs/gal as propane

Per AP-42 Table 1.5-1, the following results are obtained:

Pollutant	Emission Factor lbs/1,000 gal	lbs/hr	tons/yr
TSP	.44	0.13	0.27
SO_x	.9S*	1.38	2.72
NO^x	12.4	3.78	7.49
CO^x	3.1	0.95	1.87
Non-Methane Hydrocarbon	0.25	0.08	0.15

*S = 5 gr/100 CF

In regard to lead emissions, our current fuel handled by the facility contain no lead. Therefore no emission calculations are necessary.

ATTACHMENT III

GATX anticipates the following to be the maximum flow rate:

$$Q_{max} = \frac{600 \text{ GPM}}{\text{Loading Arm}} \times 12 \text{ loading arms} = 7200 \text{ GPM}$$

$$Q_{max} = \frac{80.21 \text{ ft}^3/\text{min}}{\text{Loading Arm}} \times 12 = 962.52 \text{ ft}^3/\text{min}$$

With both burners in operation, the maximum anticipated velocity would be:

$$Vel = Q/A$$

$$\text{GATX Vmax} = \frac{962.52 \text{ ft}^3}{\text{min.}} \times \frac{1}{.27 \text{ ft}^2} \times \frac{1 \text{ min.}}{60 \text{ sec.}} = 59.41 \text{ ft/sec.}$$

The following equation is the maximum permitted velocity for air assisted flares:

$$H_T = MJ/SCM$$

$$H_T = \frac{400 \text{ BTU}}{\text{SCF}} \times \frac{J}{9.48 \times 10^{-4} \text{BTU}} \times \frac{35.32 \text{ ft}}{\text{m}^3} = 14{,}902{,}953 \text{ J/m}^3$$

$$= 14.902953 \text{ MJ/m}^3$$

$$Vmax = 8.706 + (.7084 \times 14.902953) = \text{Reference 40 CFR Sec. 60.18 (f)(6)}$$

Regulatory Limit = 19.26 m/s

$$= 19.26 \text{ m/s} \times 3.281 \text{ ft/m} = 63.20 \text{ ft/sec.}$$

PART I: DEFINITIONS

(186) "Solid Sulfur Storage and Handling Facility" – A facility designed and utilized for unloading, transferring, or storing elemental sulfur in pelletized form.

(187) "Solvent" – Organic materials which are liquid at standard conditions and which are used as dissolvers, viscosity reducers, or cleaning agents.

(188) "Solvent Metal Cleaning" – The process of cleaning soil from metal surfaces by cold cleaning or open top vapor degreasing or conveyorized degreasing.

(189) "Source" or "Stationary Source" – An identifiable piece of equipment (or the smallest integral combination of pieces of equipment, structures, and necessary appurtenances) that is used as a complete unit to accomplish a specific purpose or to produce a specific product; and which:

(a) Includes at least one activity or operation which is the point of origin of an air pollutant, in that it separates or allows the separation of a pollutant from process or other materials or accomplishes the conversion of all or part of various materials or fuels into a pollutant;

(b) Has at least one emission or discharge point; and

(c) Exists at or is designed to be operated as a unit at a fixed location, although parts of the source may move while the source is in operation.

(190) "Stack" – A pipe, duct, chimney, or other functionally equivalent device that confines and conveys air pollutants from a source or group of sources into the atmosphere through an emission point designed to discharge air pollutants into the atmosphere, but not including flares.

(191) "Stack in Existence" – A stack where the owner or operator had, as of a particular date:

(a) Begun, or caused to begin, a continuous program of physical on-site construction of the stack; or

(b) Entered into binding agreements or contractual obligations, which could not be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction of the stack to be completed in a reasonable time.

(192) "Stagnant Atmospheric Condition" – The atmospheric and meteorological conditions which cause a reduction in the diffusion and dispersement of air pollutants in the atmosphere.

(193) "State Implementation Plan (SIP)" or "Implementation Plan" – The EPA approved plan which Section 110 of the Act requires a state to submit to the Administrator.

(194) "Standard Conditions" – A temperature of 68° Fahrenheit (20°C) and a pressure of 14.7 pounds per square inch absolute (760 mm Hg).

3. Smoke management in agricultural or silvicultural prescribed burning programs;

4. Episodic restrictions on residential woodburning and open burning; or

5. Techniques under Rule 17-2.270(2)(a)3. which increase final exhaust gas plume rise where the resulting allowable emissions of sulfur dioxide from the facility do not exceed 5,000 tons per year.

(3) Good Engineering Practice.

(a) "Good engineering practice" (GEP) stack height means the greater of:

1. 65 meters, measured from the ground-level elevation at the base of the stack;

2. The stack height as determined below:

a. For stacks in existence on January 12, 1979, and for which the owner or operator had obtained all applicable permits or approvals required under 40 CFR Parts 51 and 52,

Hg = 2.5H,

provided the owner or operator produces evidence that this equation was actually relied on in establishing an emission limitation;

b. For all other stacks,

Hg = H + 1.5L, where

Hg = good engineering practice stack height, measured from the ground-level elevation at the base of the stack,

H = height of nearby structure(s) measured from the ground-level elevation at the base of the stack,

L = lesser dimension, height or projected width, of nearby structure(s)

provided that the EPA, Department, or local air program may require the use of a field study or fluid model to verify GEP stack height for the source; or

3. The height demonstrated by a fluid model or a field study approved by the EPA, Department, or local air program which ensures that the emissions from a stack do not result in excessive concentrations of any air pollutant as a result of atmospheric downwash, wakes, or eddy effects created by the source itself, nearby structures, or nearby terrain features. If this height exceeds the height allowed by Rule 17-2.270(3)(a)1. or 2.,

FAC, the Department shall notify the public of the availability of the demonstration study and provide an opportunity for a public hearing on it.

(b) "Nearby" as used in Rule 17-2.270(3)(a), FAC, is defined for a specific structure or terrain feature and:

1. For purposes of applying Rule 17-2.270(3)(a)2., FAC, means that distance up to five times the lesser of the height or the width dimension of a structure, but not greater than 0.8 km (1/2 mile), and

2. For conducting demonstrations under Rule 17-2.270(3)(a)3., FAC, means not greater than 0.8 km (1/2 mile), except that the portion of a terrain feature may be considered to be nearby which falls within a distance of up to 10 times the maximum height (Ht) of the feature, not to exceed two miles if such feature achieves a height (ht) 0.8 km from the stack that is at least 40 percent of the GEP stack height determined by the formula provided in Rule 17-2.270(3)(a)2.b., FAC, or 26 meters, whichever is greater, as measured from the ground-level elevation at the base of the stack. The height of the structure or terrain feature is measured from the ground-level elevation at the base of the stack.

(c) "Excessive concentration" is defined for the purpose of determining good engineering practice stack height under Rule 17-2.270(3)(a)3., FAC, and means:

1. For sources seeking credit for stack height exceeding that established under Rule 17-2.270(3)(a)2., FAC, a maximum ground-level concentration due to emissions from a stack due in whole or part to downwash, wakes, and eddy effects produced by nearby structures or nearby terrain features which individually is at least 40 percent in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects and which contributes to a total concentration due to emissions from all sources that is greater than an ambient air quality standard. For sources subject to the prevention of significant deterioration program (40 CFR 52.21 or Rule 17-2.500, FAC), an excessive concentration alternatively means a maximum ground-level concentration due to emissions from a stack due in whole or part to downwash, wakes, or eddy effects produced by nearby structures or nearby terrain features which individually is at least 40 percent in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects and greater than a prevention of significant deterioration increment. The allowable emission rate to be used in making demonstrations under this part shall be prescribed by the new source performance standard (40 CFR 60) that is applicable to the source category unless the owner or operator demonstrates that this emission rate is infeasible. Where such demonstrations are approved by the Department, an alternative emission rate shall be established in consultation with the owner or operator;

2. For sources seeking credit after October 11, 1983, for increases in existing stack heights up to the heights established under Rule 17-2.270(3)(a)2., FAC, either:

a. A maximum ground-level concentration due in whole or part to downwash, wakes, or eddy effects as provided in Rule 17-2.270(3)(c)1., FAC, except that the emission rate specified by the State Implementation Plan (or, in the absence of such a limit, the actual emission rate) shall be used; or

b. The actual presence of a local nuisance caused by the existing stack, as determined by the Department; and

3. For sources seeking credit after January 12, 1979, for a stack height determined under Rule 17-2.270(3)(a)2., FAC, where the Department requires the use of a field study or fluid model to verify GEP stack height; for sources seeking stack height credit after November 9, 1984, based on the aerodynamic influence of cooling towers; and for sources seeking stack height credit after December 31, 1970, based on the aerodynamic influence of structures not adequately represented by the equations in Rule 17-2.270(3)(a)2., FAC: a maximum ground-level concentration due in whole or part to downwash, wakes, or eddy effects that is at least 40 percent in excess of the maximum concentration experienced in the absence of such downwash, wakes, or eddy effects.

Specific Authority: 403.061, F.S.
Law Implemented: 403.021, 403.031, 403.061, 403.087, F.S.
History: New 11-1-81, Amended 8-26-81, 5-28-86, 10-20-86.

17-2.280 Severability. The provisions of this entire rule are severable. If one or more of the provisions should be invalidated, the Department intends that the other portions should become effective or remain in effect.

Specific Authority: 403.061, F.S.
Law Implemented: 403.021, 403.031, 403.061, 403.087, F.S.
History: New 11-1-81, Amended 8-26-81, Formerly 17-2.24.

17-2.290 Effective Date. The effective date of this rule shall be November 1, 1981.

Specific Authority: 403.061, F.S.
Law Implemented: 403.021, 403.031, 403.061, 403.087, F.S.
History: New 11-1-81, Amended 8-26-81.

(50) ASTM D1835-86, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for §§60.41b; 60.41c.

[60.17(a)(50) amended by 55 FR 37683, September 12, 1990]

(51) ASTM D3286-85, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isothermal-Jacket Bomb Calorimeter, IBR approved for Appendix A to Part 60, Method 19.

(52) ASTM D4057-81, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for Appdenix A to Part 60, Method 19.

(53) ASTM D4239-85, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for Appendix A to Part 60, Method 19.

[60.17 (a)(54) and (55) added by 53 FR 5872, February 26, 1988]

(54) ASTM D2016-74 (Reapproved 1983), Standard Test Methods for Moisture Content of Wood * * * for Appendix A, Method 28.

(55) ASTM D4442-84, Standard Test Methods for Direct Moisture Content Measurement in Wood and Wood-base Materials * * * for Appendix A, Method 28.

[60.17(a)(56) - (59) added by 54 FR 34026, August 17, 1989; amended by 55 FR 40175, October 2, 1990]

(56) ASTM D129-64 (Reapproved 1978), Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved August 17, 1989 for §60.106(j)(2).

(57) ASTM D1552-83, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved August 17, 1989, for §60.106(j)(2).

(58) ASTM D2622-87, Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry, IBR approved August 17, 1989, for §60.106(j)(2).

(59) ASTM D1266-87, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved August 17, 1989, for §60.106(j)(2).

(b) The following material is available for purchase from the Association of Official Analytical Chemists, 1111 North 19th Street, Suite 210, Arlington, Virginia 22209.

(1) AOAC Method 9, Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12, IBR approved January 27, 1983 for §§60.204(d)(2), 60.214(d)(2), 60.224(d)(2), 60.234(d)(2), 60.244(f)(2).

(c) The following material is available for purchase from the American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20037.

[60.17(c) introductory paragraph and (1) amended by 52 FR 11428, April 8, 1987]

(1) API Publication 2517, Evaporation Loss from External Floating Roof Tanks, Second Edition, February 1980, IBR approved January 27, 1983 for §§60.111(i), 60.111a(f), 60.111a(f)(1) and 60.116b (e)(2)(i).

(d) The following material is available for purchase from the Technical Association of the Pulp and Paper Industry (TAPPI), Dunwoody Park, Atlanta, Georgia 30341.

(1) TAPPI Method T624 os-68, IBR approved January 27, 1983 for §60.285(d)(4).

(e) The following material is available for purchase from the Water Pollution Control Federation (WPCF), 2626 Pennsylvania Avenue NW., Washington, D.C. 20037.

(1) Method 209A, Total Residue Dried at 103-105 °C, in *Standard Methods for the Examination of Water and Wastewater*, 15th Edition, 1980, IBR approved February 25, 1985 for §60.683(b).

(2) [Reserved]

[60.17(e) added by 50 FR 7699, February 25, 1985]

[60.17 (f) and (g) added by 53 FR 5872, February 26, 1988]

(f) The following material is available for purchase from the following address: Underwriter's Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, Illinois 60062.

(1) UL 103, Sixth Edition revised as of September 3, 1986, Standard for Chimneys, Factory-built, Residential Type and Building Heating Appliance.

(g) The following material is available for purchase from the following address: West Coast Lumber Inspection Bureau, 6980 SW. Barnes Road, Portland, Oregon 97223.

(1) West Coast Lumber Standard Grading Rules No. 16, pages 5-21 and 90 and 91, September 3, 1970, revised 1984.

(h) The ASME *Power Test Codes* 4.1, 8 August 1972, is available for purchase from the following address: The American Society of Mechanical Engineers, 22 Law Drive, Box 2350, Fairfield, New Jersey 07007-2350.

[60.17(h) added by 54 FR 51824, December 18, 1989]

§60.18 General control device requirements.

[60.18 added by 51 FR 2701, January 21, 1986]

(a) *Introduction.* This section contains requirements for control devices used to comply with applicable subparts of Part 60 and Part 61. The requirements are placed here for administrative convenience and only apply to facilities covered by subparts referring to this section.

(b) *Flares.* Paragraphs (c) through (f) apply to flares.

(c)(1) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(2) Flares shall be operated with a flame present at all times, as determined by the methods specified in paragraph (f).

(3) Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value

of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f).

(4)(i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), less than 18.3 m/sec (60 ft/sec), except as provided in paragraph (b)(4)(ii) and (iii).

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), less than the velocity, V_{max1} as determined by the method specified in paragraph (f)(5), and less than 122 m/sec (400 ft/sec) are allowed.

(5) Air-assisted flares shall be designed and operated with an exist velocity less than the velocity. V_{max} as determined by the method specified in paragraph (f)(6).

(6) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.

(d) Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices.

(e) Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(f)(1) Reference Method 22 shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22.

(2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C;

$$K = \text{Constant}, \quad 1.740 \times 10^{-7} \quad \left(\frac{1}{ppm}\right) \left(\frac{g\ mole}{scm}\right) \left(\frac{MJ}{kcal}\right)$$

where the standard temperature for $\left(\frac{g\ mole}{scm}\right)$ is 20°C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 (Incorporated by reference as specified in § 60.17); and

H_i = Net heat of combustion of sample component i, kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 (incorporated by reference as specified in § 60.17) if published values are not available or cannot be calculated.

(4) The actual exist velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.

(5) The maximum permitted velocity, V_{max}, for flares complying with paragraph (c)(4)(iii) shall be determined by the following equation.

$$\text{Log}_{10}(V_{max}) = (H_T + 28.8)/31.7$$

V_{max} = Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T = The net heating value as determined in paragraph (f)(3).

(6) The maximum permitted velocity, V_{max}, for air-assisted flares shall be determined by the following equation.

$$V_{max} = 8.706 + 0.7084\ (H_T)$$

V_{max} = Maximum permitted velocity, m/sec

8.706 = Constant

0.7084 = Constant

H_T = The net heating value as determined in paragraph (f)(3).

Subpart B—Adoption and Submittal of State Plans for Designated Facilities

§ 60.20 Applicability.

The provisions of this subpart apply to States upon publication of a final guideline document under § 60.22(a).

§ 60.21 Definitions.

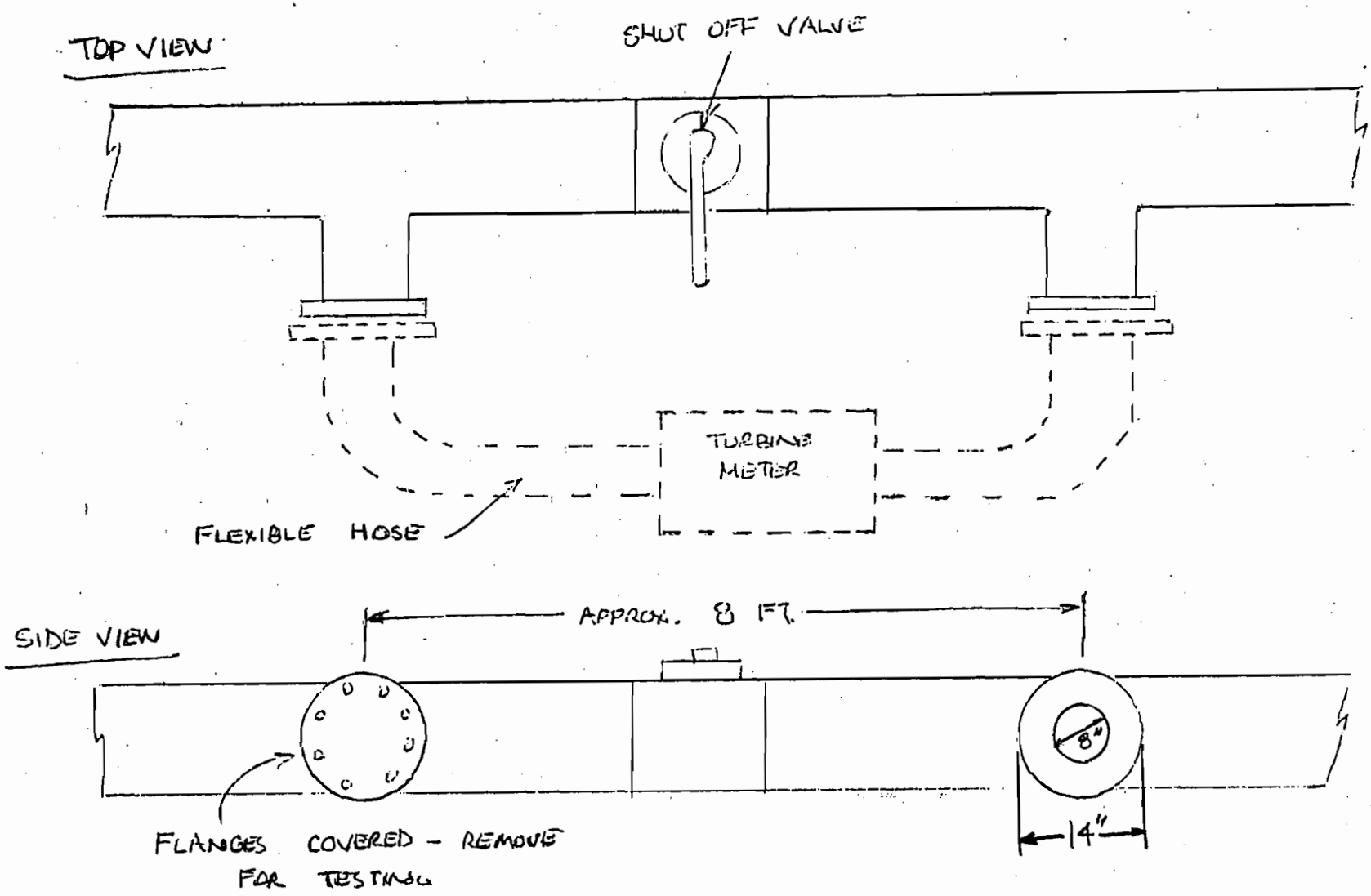
Terms used but not defined in this subpart shall have the meaning given them in the Act and in Subpart A:

(a) "Designated pollutant" means any air pollutant, emissions of which are subject to a standard of performance for new stationary sources but for which air quality criteria have not been issued, and which is not included on a list published under section 108(a) or section 112(b)(1)(A) of the Act.

(b) "Designated facility" means any existing facility (see § 60.2(aa)) which emits a designated pollutant and which would be subject to a standard of performance for that pollutant if the existing facility were an affected facility (see § 60.2(e)).

(c) "Plan" means a plan under section 111(d) of the Act which establishes emission standards for designated pollutants from designated facilities and provides for the implementation and enforcement of such emission standards.

(d) "Applicable plan" means the plan, or most recent revision thereof, which has been approved under § 60.27(b) or promulgated under § 60.27(d).



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