

New York State Department of Environmental Conservation

Permit Review Report

Permit ID: 2-6005-00125/00003



04/03/2007

Facility Identification Data

Name: BRONX ZOO
Address: 2300 SOUTHERN BLVD
BRONX, NY 10460

Owner/Firm

Name: WILDLIFE CONSERVATION SOCIETY
Address: 2300 SOUTHERN BLVD
BRONX, NY 10460-1099, USA
Owner Classification: Corporation/Partnership

Permit Contacts

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Permit Description

Introduction

The Title V operating air permit is intended to be a document containing only enforceable terms and conditions as well as any additional information, such as the identification of emission units, emission points, emission sources and processes, that makes the terms meaningful. 40 CFR Part 70.7(a)(5) requires that each Title V permit have an accompanying "...statement that sets forth the legal and factual basis for the draft permit conditions". The purpose for this permit review report is to satisfy the above requirement by providing pertinent details regarding the permit/application data and permit conditions in a more easily understandable format. This report will also include background narrative and explanations of regulatory decisions made by the reviewer. It should be emphasized that this permit review report, while based on information contained in the permit, is a separate document and is not itself an enforceable term and condition of the permit.

Summary Description of Proposed Project

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This revised and updated title v permit application is for air emission sources at the Bronx Zoo facility--a facility owned by the City of New York (city) and operated by the wildlife conservation society (WCS) - located in the Bronx, New York (hereinafter the "facility"). This application replaces the facility's title v permit application, dated may 14, 2001, which is presently pending before DEC. This application covers all of the regulated air emission sources at the facility, including the following : cogeneration plant - the plant presently consisting of four dual-fuel (natural gas/diesel fuel) internal combustion engines (two 8 cylinder, cooper superior 40-gdx-8, 665 kw, 945 hp @ 900 rpm; one 12 cylinder, cooper superior 40-gdx-12, 1125 kw, 1650 h p @900 rpm; and one 16 cylinder, cooper superior 40-gdx-16, 1560 kw, 2200 hp @900 rpm). Pursuant to the NYSDEC approved NOx RACT plan, revised and updated as of December 22, 2005, WCS and the city will be replacing the existing four dual-fuel engines with manufacturer rebuilt (zero operating hour) 100% natural gas fired (spark ignition) endyn clean burn engines of the same size (model nos. 8gtlx (two engines), 12gtlx (one engine) and 16gtlx (one engine). This application covers the installation and operation of these four rebuilt engines. Incinerators - the facility utilizes two small on-site incinerators for the disposal of animal carcasses and animal tissue. Both incinerators operate in accordance with certificates of operation issued and renewed by the New York City Department of Environmental Protection. Exempt sources - the facility contains a number of exempt sources, including small boilers, emergency generators, and maintenance, laboratory and graphics operations. The Bronx zoo is a leading New York City cultural institution that has been operated on city park land by the wildlife conservation society ("WCS") and supported by the city for over a century. The city government built the Bronx Zoo cogeneration plant as part of its on-going commitment to provide for the power needs of designated cultural institutions. Over the years of its operation, the cogeneration plant provided, and continues to provide, significant benefits to WCS, the south Bronx and the city government. Specifically, by generating power at the Bronx zoo for use at the zoo, WCS has been able to safeguard the health and welfare of its world-famous collection by having reliable electric power independent of the surrounding grid system, which has suffered failures over the years. In fact, neighboring areas of the south Bronx have benefited by exports of electrical energy from the zoo which have prevented or shortened brown-outs. And the city government has benefited from sale of excess electricity. Further, although they are relatively minor facilities when compared to the cogeneration plant, all of the other air emission sources that are the subject of this application are critical to the continued operation of the Bronx zoo and to the health, safety and welfare of the zoo 's animal collection.

As of December 2006, facility plans to construct a new building (Center for Global Conservation "CGC") and put eight microturbines and one emergency generator to provide electricity, heating and cooling for the new CGC building. THE NYSDEC approves the installation and operation of this eight microturbines and 1 emergency generator, as they will be considered exempt sources with minimal emissions with the following conditions: the individual emissions from this units will be no more than .5 pounds/megawatt-hour for NOx and 1 pound /megawatt-hour for VOCs. Total emissions will be no more than 2102 pounds of NOx per year and 4205 pounds per year for VOCs.

Attainment Status

BRONX ZOO is located in the town of BRONX in the county of BRONX. The attainment status for this location is provided below. (Areas classified as attainment are those that meet all ambient air quality standards for a designated criteria air pollutant.)

Criteria Pollutant

Attainment Status

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Particulate Matter (PM)	ATTAINMENT
Particulate Matter < 10µ in diameter (PM10)	ATTAINMENT
Sulfur Dioxide (SO2)	ATTAINMENT
Ozone*	SEVERE NON-ATTAINMENT
Oxides of Nitrogen (NOx)**	ATTAINMENT
Carbon Monoxide (CO)	ATTAINMENT

* Ozone is regulated in terms of the emissions of volatile organic compounds (VOC) and/or oxides of nitrogen (NOx) which are ozone precursors.

** NOx has a separate ambient air quality standard in addition to being an ozone precursor

Facility Description

The facility is a public zoo owned by the city and operated by WCS. The facility operates a cogeneration plant, two small on-site incinerators and numerous exempt sources, such as small boilers, emergency generators, and maintenance, laboratory and graphics operations.

Permit Structure and Description of Operations

The Title V permit for BRONX ZOO

is structured in terms of the following hierarchy: facility, emission unit, emission point, emission source and process.

A facility is defined as all emission sources located at one or more adjacent or contiguous properties owned or operated by the same person or persons under common control. The facility is subdivided into one or more emission units (EU). Emission units are defined as any part or activity of a stationary facility that emits or has the potential to emit any federal or state regulated air pollutant. An emission unit is represented as a grouping of processes (defined as any activity involving one or more emission sources (ES) that emits or has the potential to emit any federal or state regulated air pollutant). An emission source is defined as any apparatus, contrivance or machine capable of causing emissions of any air contaminant to the outdoor atmosphere, including any appurtenant exhaust system or air cleaning device.

[NOTE: Indirect sources of air contamination as defined in 6 NYCRR Part 203 (i.e. parking lots) are excluded from this definition]. The applicant is required to identify the principal piece of equipment (i.e., emission source) that directly results in or controls the emission of federal or state regulated air pollutants from an activity (i.e., process). Emission sources are categorized by the following types:

- combustion - devices which burn fuel to generate heat, steam or power
- incinerator - devices which burn waste material for disposal

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control - emission control devices
process - any device or contrivance which may emit air contaminants that is not included in the above categories.

BRONX ZOO is defined by the following emission unit(s):

Emission unit 100001 - This emissions unit (hereinafter the "farm incinerator") is a model CT-5 incinerator manufactured by Silent Glow Corporation. The farm incinerator was installed at the facility in or around 1966 and is subject to 6 NYCRR PART 219-4. The farm incinerator has a design capacity charge rate of 300 pounds per hour and a thrupt capacity of 2400 pounds per day based on an eight-hour operating day.

The design is similar to that of a "heated hearth" as the combustion gases pass under the primary section and re-enter the burner chamber before they are discharged through the stack. There are two temperature gauges, one is located (as far from the burner as possible) and the second is located at the exit of the secondary chamber.

Emission unit 100001 is associated with the following emission points (EP):

00001

It is further defined by the following process(es):

Process: 00A is located at FARM BUILDING - YARD, Building FARM - The farm incinerator is used to dispose of animal carcasses and animal tissues, and a small amount of clear plastic bags, latex gloves and paper used during necropsy procedures (less than 5% by weight). The farm incinerator is fired and used on an "as needed basis" (which at present is approximately once per month) and runs for approximately five hours per operation. At all other times, the farm incinerator is in shut-down mode and is not running or fired. The actual hours/days of operation and quantity of material incinerate d at the farm incinerator typically are much less than its design capacity and the limitations imposed under the nycdep certificate of operation.

The temp of primary unit and exit stack are visually observed. No operating temp are recorded.

Emission unit 100002 - This emissions unit (hereinafter the "ahc incinerator") is a model SP 300 incinerator manufactured by JK Environmental. The ahc incinerator was installed at the facility in or around 1985 and is subject to 6 NYCRR Part 219-4. The ahc incinerator has a design capacity charge rate of 300 pounds per hour and a thrupt capacity of 2400 pounds per day based on an eight-hour operating day.

It is cylinder shaped and consists of a large primary chamber and a much smaller secondary chamber (roughly 1/4 the size of the primary chamber). There are two temperature gauges, one is located (as far from the burner as possible) and the second is located at the exit of the secondary chamber.

Emission unit 100002 is associated with the following emission points (EP):

00002

It is further defined by the following process(es):

Process: 00B is located at ANIMAL HEALTH CENTER - The ahc incinerator is used to dispose of animal carcasses and animala tissues, and a small amount of clear plastic bags, latex gloves and paper used during necropsy procedures (less than 5% by weight). The ahc incerator is fired and used on an "as needed basis" (which at presen t is approximately two days per week) and runs for approximately five to

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six hours per operation. At all other times, the ahc incinerator is in shut-down mode and is not running or fired. The actual hours/days of operation and quantity of material inci nerated at the ahc incinerator typically are much less than its design capacity and the limitations imposed under the nycdep certificate of operation.

Emission unit C00001 - This emissions unit (hereinafter the "cogen plant") presently consists of four (4) dual fuel (natural gas/diesel fuel) lean burn internal combustion engines/generators with waste heat boilers. Pursuant to the dec- approved NOx RACT plan, revised and updated as of December 22, 2005, WCS and the City will be replacing all four of the dual fuel engines with manufacturer rebuilt (zero operating hour) 100% natural gas-fired (spark ignition) endyn cleanburn engines of the same size. This modification to the cogen plant will reduce the level of NOx formed during the combustion process below the April 1, 2005 emission requirement of 1.5 gr/bhp-hr for this type of engine.

It is further defined by the following process(es):

Process: 003 is located at FIRST FLOOR, Building JWC - The cogen plant will consist of four (4) 100% natural gas-fired (spark ignition) endyn cleanburn engines - two (2) 8 cylinder engines, one 12 cylinder engine and one 16 cylinder engine and associated waste heat boilers for the production of electricity an nd hot water for the bronx zoo.

Emission unit G00001 - The emission unit G-00001 consists a total of 8 microturbines and a chiller/heating unit to supply electricity and heating and cooling for the new Center for Global Conservation building. All of the microturbine units (which will be supplied by UTC Power) are Capstone Model C60. 6 of the microturbines are incorporated into the PureComfort Model 360M unit, which unit will be directed connected to chiller/heater to generate electricity as well as cooling/heating. Waste gases from the microturbines drive the chiller/heater at any operating level between full exhaust and complete diversion to the chiller/heater. The remaining 2 Capstone Model C60 microturbines units will be stand-alone and independent of the PureComfort Model 360M unit, and will provide peak electrical generation and will not be connected to the chiller/heater. None of the 8 microturbines will be connected to the internal WCS electrical grid or Coned grid. An exempt emergency generator is also being added as part of this project.

THE NYSDEC approves the installation and operation of this eight microturbines and 1 emergency generator, as they will be considered exempt sources with minimal emissions with the following conditions: the individual emissions from this units will be no more than .5 pounds/megawatt-hour for NOx and 1 pound /megawatt-hour for VOCs. Total emissions will be no more than 2102 pounds of NOx per year and 4205 pounds per year for VOCs.

Emission unit G00001 is associated with the following emission points (EP):

00010, 00011, 00012, 00013

It is further defined by the following process(es):

Process: G10 is located at Building CGC - Natural gas fueled 8 microturbines turbines to provide heating, cooling, electriciy for the CGC building.

Title V/Major Source Status

BRONX ZOO is subject to Title V requirements. This determination is based on the following information:

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This is major source for its Potential to Emit its Notrogen Oxides (NOx) emissions.

Program Applicability

The following chart summarizes the applicability of BRONX ZOO with regards to the principal air pollution regulatory programs:

Regulatory Program	Applicability
PSD	NO
NSR (non-attainment)	NO
NESHAP (40 CFR Part 61)	NO
NESHAP (MACT - 40 CFR Part 63)	NO
NSPS	YES
TITLE IV	NO
TITLE V	YES
TITLE VI	NO
RACT	YES
SIP	YES

NOTES:

PSD Prevention of Significant Deterioration (40 CFR 52) - requirements which pertain to major stationary sources located in areas which are in attainment of National Ambient Air Quality Standards (NAAQS) for specified pollutants.

NSR New Source Review (6 NYCRR Part 231) - requirements which pertain to major stationary sources located in areas which are in non-attainment of National Ambient Air Quality Standards (NAAQS) for specified pollutants.

NESHAP National Emission Standards for Hazardous Air Pollutants (40 CFR 61) - contaminant and source specific emission standards established prior to the Clean Air Act Amendments of 1990 (CAAA) which were developed for 9 air contaminants (inorganic arsenic, radon, benzene, vinyl chloride, asbestos, mercury, beryllium, radionuclides, and volatile HAP's)

MACT Maximum Achievable Control Technology (40 CFR 63) - contaminant and source specific emission standards established by the 1990 CAAA. Under Section 112 of the CAAA, the US

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EPA is required to develop and promulgate emissions standards for new and existing sources. The standards are to be based on the best demonstrated control technology and practices in the regulated industry, otherwise known as MACT. The corresponding regulations apply to specific source types and contaminants.

NSPS New Source Performance Standards (40 CFR 60) - standards of performance for specific stationary source categories developed by the US EPA under Section 111 of the CAAA. The standards apply only to those stationary sources which have been constructed or modified after the regulations have been proposed by publication in the Federal Register and only to the specific contaminant(s) listed in the regulation.

Title IV Acid Rain Control Program (40 CFR 72 thru 78) - regulations which mandate the implementation of the acid rain control program for large stationary combustion facilities.

Title VI Stratospheric Ozone Protection (40 CFR 82, Subparts A thru G) - federal requirements that apply to sources which use a minimum quantity of CFC's (chlorofluorocarbons), HCFC's (hydrofluorocarbons) or other ozone depleting substances or regulated substitute substances in equipment such as air conditioners, refrigeration equipment or motor vehicle air conditioners or appliances.

RACT Reasonably Available Control Technology (6 NYCRR Parts 212.10, 226, 227-2, 228, 229, 230, 232, 233, 234, 235, 236) - the lowest emission limit that a specific source is capable of meeting by application of control technology that is reasonably available, considering technological and economic feasibility. RACT is a control strategy used to limit emissions of VOC's and NOx for the purpose of attaining the air quality standard for ozone. The term as it is used in the above table refers to those state air pollution control regulations which specifically regulate VOC and NOx emissions.

SIP State Implementation Plan (40 CFR 52, Subpart HH) - as per the CAAA, all states are empowered and required to devise the specific combination of controls that, when implemented, will bring about attainment of ambient air quality standards established by the federal government and the individual state. This specific combination of measures is referred to as the SIP. The term here refers to those state regulations that are approved to be included in the SIP and thus are considered federally enforceable.

Compliance Status

Facility is in compliance with all requirements

SIC Codes

SIC or Standard Industrial Classification code is an industrial code developed by the federal Office of Management and Budget for use, among other things, in the classification of establishments by the type of activity in which they are engaged. Each operating establishment is assigned an industry code on the basis of its primary activity, which is determined by its principal product or group of products produced or distributed, or

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services rendered. Larger facilities typically have more than one SIC code.

SIC Code	Description
8422	BOTANICAL AND ZOOLOGICAL GARDENS

SCC Codes

SCC or Source Classification Code is a code developed and used by the USEPA to categorize processes which result in air emissions for the purpose of assessing emission factor information. Each SCC represents a unique process or function within a source category logically associated with a point of air pollution emissions. Any operation that causes air pollution can be represented by one or more SCC's.

SCC Code	Description
2-03-002-04	INTERNAL COMBUSTION ENGINES - COMMERCIAL/INSTITUTIONAL COMMERCIAL/INSTITUTIONAL IC ENGINE - NATURAL GAS COGENERATION
2-01-002-01	INTERNAL COMBUSTION ENGINES - ELECTRIC GENERATION ELECTRIC UTILITY INTERNAL COMBUSTION ENGINE - NATURAL GAS Turbine
5-02-001-02	SOLID WASTE DISPOSAL - COMMERCIAL/INSTITUTIONAL SOLID WASTE DISPOSAL: COMMERCIAL - INCINERATION Single Chamber

Facility Emissions Summary

In the following table, the CAS No. or Chemical Abstract Series code is an identifier assigned to every chemical compound. [NOTE: Certain CAS No.'s contain a 'NY' designation within them. These are not true CAS No.'s but rather an identification which has been developed by the department to identify groups of contaminants which ordinary CAS No.'s do not do. As an example, volatile organic compounds or VOC's are identified collectively by the NY CAS No. 0NY998-00-0.] The PTE refers to the Potential to Emit. This is defined as the maximum capacity of a facility or air contaminant source to emit any air contaminant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or air contamination source to emit any air contaminant, including air pollution control equipment and/or restrictions on the hours of operation, or on the type or amount or material combusted, stored, or processed, shall be treated as part of the design only if the limitation is contained in federally enforceable permit conditions. The PTE Range represents an emission range for a contaminant. Any PTE quantity that is displayed represents a facility-wide emission cap or limitation for that contaminant. If no PTE quantity is displayed, the PTE Range is provided to indicate the approximate magnitude of facility-wide emissions for the specified contaminant in terms of tons per year (tpy). The term 'HAP' refers to any of the hazardous air pollutants listed in section 112(b) of the Clean Air Act Amendments of 1990. Total emissions of all hazardous air pollutants are listed under the special NY CAS No. 0NY100-00-0. In addition, each individual hazardous air pollutant is also listed under its own specific CAS No. and is identified in the list below by the (HAP) designation.

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Cas No.	Contaminant Name	PTE	
		lbs/yr	Range
000630-08-0	CARBON MONOXIDE		>= 100 tpy but < 250 tpy
0NY100-00-0	HAP		> 0 but < 2.5 tpy
007439-92-1	LEAD (HAP)		> 0 but < 10 tpy
0NY210-00-0	OXIDES OF NITROGEN		>= 50 tpy but < 100 tpy
0NY075-00-0	PARTICULATES		>= 2.5 tpy but < 10 tpy
0NY075-00-5	PM-10		>= 2.5 tpy but < 10 tpy
007446-09-5	SULFUR DIOXIDE		>= 2.5 tpy but < 10 tpy
0NY998-00-0	VOC		>= 25 tpy but < 40 tpy

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

Item A: Emergency Defense - 6NYCRR Part 201-1.5

An emergency constitutes an affirmative defense to an action brought for noncompliance with emissions limitations or permit conditions for all facilities in New York State.

(a) The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

- (1) An emergency occurred and that the facility owner and/or operator can identify the cause(s) of the emergency;
- (2) The equipment at the permitted facility causing the emergency was at the time being properly operated;
- (3) During the period of the emergency the facility owner and/or operator took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
- (4) The facility owner and/or operator notified the Department within two working days after the event occurred. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the facility owner and/or operator seeking to establish the occurrence of an emergency has the burden of proof.

(c) This provision is in addition to any emergency or upset provision contained in any applicable requirement.

Item B: Public Access to Recordkeeping for Title V Facilities - 6NYCRR Part 201-1.10(b)

The Department will make available to the public any permit application, compliance plan, permit, and monitoring and compliance

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certification report pursuant to Section 503(e) of the Act, except for information entitled to confidential treatment pursuant to 6NYCRR Part 616 - Public Access to records and Section 114(c) of the Act.

Item C: Timely Application for the Renewal of Title V Permits - 6 NYCRR Part 201-6.3(a)(4)

Owners and/or operators of facilities having an issued Title V permit shall submit a complete application at least 180 days, but not more than eighteen months, prior to the date of permit expiration for permit renewal purposes.

Item D: Certification by a Responsible Official - 6 NYCRR Part 201-6.3(d)(12)

Any application, form, report or compliance certification required to be submitted pursuant to the federally enforceable portions of this permit shall contain a certification of truth, accuracy and completeness by a responsible official. This certification shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Item E: Requirement to Comply With All Conditions - 6 NYCRR Part 201-6.5(a)(2)

The permittee must comply with all conditions of the Title V facility permit. Any permit non-compliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

Item F: Permit Revocation, Modification, Reopening, Reissuance or Termination, and Associated Information Submission Requirements - 6 NYCRR Part 201-6.5(a)(3)

This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Item G: Cessation or Reduction of Permitted Activity Not a Defense - 6NYCRR Part 201-6.5(a)(5)

It shall not be a defense for a permittee in an enforcement action to claim that a cessation or reduction in the permitted activity would have been necessary in order to maintain compliance with the conditions of this permit.

Item H: Property Rights - 6 NYCRR Part 201-6.5(a)(6)

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This permit does not convey any property rights of any sort or any exclusive privilege.

Item I: Severability - 6 NYCRR Part 201-6.5(a)(9)

If any provisions, parts or conditions of this permit are found to be invalid or are the subject of a challenge, the remainder of this permit shall continue to be valid.

Item J: Permit Shield - 6 NYCRR Part 201-6.5(g)

All permittees granted a Title V facility permit shall be covered under the protection of a permit shield, except as provided under 6 NYCRR Subpart 201-6. Compliance with the conditions of the permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that such applicable requirements are included and are specifically identified in the permit, or the Department, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the major stationary source, and the permit includes the determination or a concise summary thereof. Nothing herein shall preclude the Department from revising or revoking the permit pursuant to 6 NYCRR Part 621 or from exercising its summary abatement authority. Nothing in this permit shall alter or affect the following:

- i. The ability of the Department to seek to bring suit on behalf of the State of New York, or the Administrator to seek to bring suit on behalf of the United States, to immediately restrain any person causing or contributing to pollution presenting an imminent and substantial endangerment to public health, welfare or the environment to stop the emission of air pollutants causing or contributing to such pollution;
- ii. The liability of a permittee of the Title V facility for any violation of applicable requirements prior to or at the time of permit issuance;
- iii. The applicable requirements of Title IV of the Act;
- iv. The ability of the Department or the Administrator to obtain information from the permittee concerning the ability to enter, inspect and monitor the facility.

Item K: Reopening for Cause - 6 NYCRR Part 201-6.5(i)

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This Title V permit shall be reopened and revised under any of the following circumstances:

- i. If additional applicable requirements under the Act become applicable where this permit's remaining term is three or more years, a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which this permit is due to expire, unless the original permit or any of its terms and conditions has been extended by the Department pursuant to the provisions of Part 201-6.7 and Part 621.
- ii. The Department or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
- iii. The Department or the Administrator determines that the Title V permit must be revised or reopened to assure compliance with applicable requirements.
- iv. If the permitted facility is an "affected source" subject to the requirements of Title IV of the Act, and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit.

Proceedings to reopen and issue Title V facility permits shall follow the same procedures as apply to initial permit issuance but shall affect only those parts of the permit for which cause to reopen exists.

Reopenings shall not be initiated before a notice of such intent is provided to the facility by the Department at least thirty days in advance of the date that the permit is to be reopened, except that the Department may provide a shorter time period in the case of an emergency.

Item L:

Permit Exclusion - ECL 19-0305

The issuance of this permit by the Department and the receipt thereof by the Applicant does not and shall not be construed as barring, diminishing, adjudicating or in any way affecting any legal, administrative or equitable rights or claims, actions, suits, causes of action or demands whatsoever that the Department may have against the Applicant for violations based on facts and circumstances alleged

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to have occurred or existed prior to the effective date of this permit, including, but not limited to, any enforcement action authorized pursuant to the provisions of applicable federal law, the Environmental Conservation Law of the State of New York (ECL) and Chapter III of the Official Compilation of the Codes, Rules and Regulations of the State of New York (NYCRR). The issuance of this permit also shall not in any way affect pending or future enforcement actions under the Clean Air Act brought by the United States or any person.

Item M: Federally Enforceable Requirements - 40 CFR 70.6(b)

All terms and conditions in this permit required by the Act or any applicable requirement, including any provisions designed to limit a facility's potential to emit, are enforceable by the Administrator and citizens under the Act. The Department has, in this permit, specifically designated any terms and conditions that are not required under the Act or under any of its applicable requirements as being enforceable under only state regulations.

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

Item A: General Provisions for State Enforceable Permit Terms and Condition - 6 NYCRR Part 201-5

Any person who owns and/or operates stationary sources shall operate and maintain all emission units and any required emission control devices in compliance with all applicable Parts of this Chapter and existing laws, and shall operate the facility in accordance with all criteria, emission limits, terms, conditions, and standards in this permit. Failure of such person to properly operate and maintain the effectiveness of such emission units and emission control devices may be sufficient reason for the Department to revoke or deny a permit.

The owner or operator of the permitted facility must maintain all required records on-site for a period of five years and make them available to representatives of the Department upon request. Department representatives must be granted access to any facility regulated by this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations or law.

Regulatory Analysis

Location	Regulation	Short Description	Condition
Facility/EU/EP/Process/ES			

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FACILITY	ECL 19-0301	Powers and Duties of the Department with respect to air pollution control	45
FACILITY	40CFR 52-HH	Approval and Promulgation of Implementation Plans - New York	30
FACILITY	40CFR 60-A	General provisions	31
FACILITY	40CFR 68	Chemical accident prevention provisions	21
FACILITY	40CFR 82-F	Protection of Stratospheric Ozone - recycling and emissions reduction	22
FACILITY	6NYCRR 200.6	Acceptable ambient air quality.	1
FACILITY	6NYCRR 200.7	Maintenance of equipment.	10
FACILITY	6NYCRR 201-1.4	Unavoidable noncompliance and violations	46
FACILITY	6NYCRR 201-1.7	Recycling and Salvage	11
FACILITY	6NYCRR 201-1.8	Prohibition of reintroduction of collected contaminants to the air	12
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Applicability Discussion:

Mandatory Requirements: The following facility-wide regulations are included in all Title V permits:

ECL 19-301.

This section of the Environmental Conservation Law establishes the powers and duties assigned to the Department with regard to administering the air pollution control program for New York State.

6NYCRR Part 200-.6

Acceptable ambient air quality - prohibits contravention of ambient air quality standards without mitigating measures

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6NYCRR Part 200-.7

Anyone owning or operating an air contamination source which is equipped with an emission control device must operate the control consistent with ordinary and necessary practices, standards and procedures, as per manufacturer's specifications and keep it in a satisfactory state of maintenance and repair so that it operates effectively

6NYCRR Part 201-1.4

This regulation specifies the actions and recordkeeping and reporting requirements for any violation of an applicable state enforceable emission standard that results from a necessary scheduled equipment maintenance, start-up, shutdown, malfunction or upset in the event that these are unavoidable.

6NYCRR Part 201-1.7

Requires the recycle and salvage of collected air contaminants where practical

6NYCRR Part 201-1.8

Prohibits the reintroduction of collected air contaminants to the outside air

6NYCRR Part 201-3.2(a)

An owner and/or operator of an exempt emission source or unit may be required to certify that it operates within the specific criteria described in this Subpart. All required records must be maintained on-site for a period of 5 years and made available to department representatives upon request. In addition, department representatives must be granted access to any facility which contains exempt emission sources or units, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

6NYCRR Part 201-3.3(a)

The owner and/or operator of a trivial emission source or unit may be required to certify that it operates within the specific criteria described in this Subpart. All required records must be maintained on-site for a period of 5 years and made available to department representatives upon request. In addition, department representatives must be granted access to any facility which contains trivial emission sources or units subject to this Subpart, during normal operating hours, for the purpose of determining compliance with this and any other state and federal air pollution control requirements, regulations, or law.

6NYCRR Part 201-6

This regulation applies to those terms and conditions which are subject to Title V permitting. It establishes the applicability criteria for Title V permits, the information to be included in all Title V permit applications as well as the permit

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content and terms of permit issuance. This rule also specifies the compliance, monitoring, recordkeeping, reporting, fee, and procedural requirements that need to be met to obtain a Title V permit, modify the permit and demonstrate conformity with applicable requirements as listed in the Title V permit. For permitting purposes, this rule specifies the need to identify and describe all emission units, processes and products in the permit application as well as providing the Department the authority to include this and any other information that it deems necessary to determine the compliance status of the facility.

6NYCRR 201-6.5(a)(4)

This mandatory requirement applies to all Title V facilities. It requires the permittee to provide information that the Department may request in writing, within a reasonable time, in order to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. The request may include copies of records required to be kept by the permit.

6NYCRR 201-6.5(a)(7)

This is a mandatory condition that requires the owner or operator of a facility subject to Title V requirements to pay all applicable fees associated with the emissions from their facility.

6NYCRR 201-6.5(a)(8)

This is a mandatory condition for all facilities subject to Title V requirements. It allows the Department to inspect the facility to determine compliance with this permit, including copying records, sampling and monitoring, as necessary.

6NYCRR Part 201-6.5(c)

This requirement specifies, in general terms, what information must be contained in any required compliance monitoring records and reports. This includes the date, time and place of any sampling, measurements and analyses; who performed the analyses; analytical techniques and methods used as well as any required QA/QC procedures; results of the analyses; the operating conditions at the time of sampling or measurement and the identification of any permit deviations. All such reports must also be certified by the designated responsible official of the facility.

6NYCRR Part 201-6.5(c)(2)

This requirement specifies that all compliance monitoring and recordkeeping is to be conducted according to the terms and conditions of the permit and follow all QA requirements found in applicable regulations. It also requires monitoring records and supporting information to be retained for at least 5 years from the time of sampling, measurement, report or application. Support information is defined as including all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

6NYCRR Part 201-6.5(c)(3)(ii)

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This regulation specifies any reporting requirements incorporated into the permit must include provisions regarding the notification and reporting of permit deviations and incidences of noncompliance stating the probable cause of such deviations, and any corrective actions or preventive measures taken.

6NYCRR 201-6.5(d)(5)

This condition applies to every Title V facility subject to a compliance schedule. It requires that reports, detailing the status of progress on achieving compliance with emission standards, be submitted semiannually.

6NYCRR Part 201-6.5(e)

Sets forth the general requirements for compliance certification content; specifies an annual submittal frequency; and identifies the EPA and appropriate regional office address where the reports are to be sent.

6NYCRR 201-6.5(f)(6)

This condition allows changes to be made at the facility, without modifying the permit, provided the changes do not cause an emission limit contained in this permit to be exceeded. The owner or operator of the facility must notify the Department of the change. It is applicable to all Title V permits which may be subject to an off permit change.

6NYCRR Part 202-1.1

This regulation allows the department the discretion to require an emission test for the purpose of determining compliance. Furthermore, the cost of the test, including the preparation of the report are to be borne by the owner/operator of the source.

6NYCRR Part 202-2.1

Requires that emission statements shall be submitted on or before April 15th each year for emissions of the previous calendar year.

6NYCRR Part 202-2.5

This rule specifies that each facility required to submit an emission statement must retain a copy of the statement and supporting documentation for at least 5 years and must make the information available to department representatives.

6NYCRR Part 211-2

This regulation prohibits any emissions of air contaminants to the outdoor atmosphere which may be detrimental to human, plant or animal life or to property, or which unreasonably interferes with the comfortable enjoyment of life or property regardless of the existence of any specific air quality standard or emission limit.

6NYCRR Part 211.3

This condition requires that the opacity (i.e., the degree to which emissions other than water reduce the transmission of light) of the emissions from any air contamination source be less than 20 percent (six minute average) except for one

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continuous six-minute period per hour of not more than 57 percent.

6 NYCRR Part 215

Prohibits open fires at industrial and commercial sites.

40 CFR Part 68.

This Part lists the regulated substances and their applicability thresholds and sets the requirements for stationary sources concerning the prevention of accidental releases of these substances.

40 CFR Part 82, Subpart F

Subpart F requires the reduction of emissions of class I and class II refrigerants to the lowest achievable level during the service, maintenance, repair, and disposal of appliances in accordance with section 608 of the Clean Air Act Amendments of 1990. This subpart applies to any person servicing, maintaining, or repairing appliances except for motor vehicle air conditioners. It also applies to persons disposing of appliances, including motor vehicle air conditioners, refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment. Those individuals, operations, or activities affected by this rule, may be required to comply with specified disposal, recycling, or recovery practices, leak repair practices, recordkeeping and/or technician certification requirements.

Facility Specific Requirements

In addition to Title V, BRONX ZOO has been determined to be subject to the following regulations:

40CFR 52-HH

This is a federal regulation regarding the sulfur content of the fuel burned in the combustion units at this facility. The sulfur content shall not exceed 0.2% by weight..

40CFR 60-A

This regulation contains the General Provisions of 40 CFR 60. The facility owner is responsible for reviewing these general provisions in detail and complying with all applicable technical, administrative and reporting requirements

6NYCRR 201-7

This regulation sets forth an emission cap that cannot be exceeded by the facility. In this permit that cap is

6NYCRR 212

This is general process regulation.

6NYCRR 212 .6 (a)

This rule specifies an opacity limitation of less than 20% for any six consecutive minute period for all

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process emission sources.

6NYCRR 219-4

This subpart sets forth the emission standards and requirements for all new and modified (after January 1, 1989) crematories and pathological waste incinerators.

6NYCRR 219-4.3

This section sets forth the emission standards of particulates for the crematories, which is 0.08 grains per dry standard cubic foot of flue gas, corrected to seven percent oxygen.

6NYCRR 219-4.5 (a)

This section sets forth the emission standards of six-minute average opacity for the crematories, which is less than 10 percent.

6NYCRR 225 .1 (a) (3)

This regulation limits the amount of sulfur that can be in fuel burned at a stationary source. It references Table 1 of the 1979 version of the sulfur in fuel limitations expressed in terms of percent by weight for fuel oil and pounds per million Btu gross heat content for solid fuel. **NOTE: This citation has been replaced by requirements cited under 225-1.2(a)(2) and is no longer part of current State regulations, however, it remains part of New York State's approved State Implementation Plan (SIP).**

6NYCRR 225 .7 (a)

The commissioner may require an owner of an air contamination source to retain for up to three years, and to submit to him, fuel analyses, information on the quantity of fuel received, burned or sold, and results of stack sampling, stack monitoring and other procedures to ensure compliance with the provisions of the Part. **NOTE: This citation has been replaced by requirements cited under 225-1.8(a) and is no longer a part of current State regulations, however, it remains as part of New York State's approved State Implementation Plan (SIP).**

6NYCRR 227-1.3

This regulation requires a limitation and compliance monitoring for opacity from a stationary combustion installation.

6NYCRR 227-1.3 (a)

This regulation prohibits any person from operating a stationary combustion installation which emits smoke equal to or greater than 20% opacity except for one six-minute period per hour of not more than 27% opacity.

6NYCRR 227-2

This regulation limits the emission of oxides of nitrogen (NOx) from stationary combustion installations (boilers, combustion turbines and internal combustion engines).

6NYCRR 227-2.4 (f) (2)

This citation sets emission limits of oxides of nitrogen for lean burn engines.

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6NYCRR 227-2.4 (g)

This subdivision is meant to require RACT on a significant combustion source which has no RACT provisions. This includes those units which have been "exempted." Rather than treat a significant source that falls below the size cutoffs of other subdivisions in this section as requiring no control, if the unit emits over 3 lb/hr uncontrolled or more than 15 lb./day.

As an example, a 300 hp internal combustion engines which is uncontrolled is exempt from needing a permit upstate. However, this unit emits about 7 lb/hr. This unit is a significant source of NOx and should therefore have RACT applied.

6NYCRR 227-2.4 (g) (1)

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As an example, a 300 hp internal combustion engines which is uncontrolled is exempt from needing a permit upstate. However, this unit emits about 7 lb/hr. This unit is a significant source of NOx and should therefore have RACT applied.

6NYCRR 230.2 (b)

This regulation requires gasoline tanks greater than or equal to 250 gallons and installed after January 1, 1979 to install Stage I vapor collection systems in the New York City Metropolitan Area.

6NYCRR 231-1.5

This is 231.

6NYCRR 231-2

The provisions of Subpart 231-2 apply to new or modified major facilities. The contaminants of concern state-wide are nitrogen oxides and volatile organic compounds since New York State is located in the ozone transport region and because there are ozone non-attainment areas within the state. In addition, particulate matter less than 10 microns in size (PM-10) is a non-attainment contaminant in Manhattan County.

Compliance Certification

Summary of monitoring activities at BRONX ZOO:

Location Facility/EU/EP/Process/ES	Type of Monitoring	Cond No.
FACILITY	work practice involving specific operations	30
FACILITY	record keeping/maintenance procedures	5
FACILITY	record keeping/maintenance procedures	6
FACILITY	work practice involving specific operations	24
FACILITY	record keeping/maintenance procedures	7
G-00001	monitoring of process or control device	42

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FACILITY	record keeping/maintenance procedures	25
FACILITY	record keeping/maintenance procedures	48
1-00001	intermittent emission testing	51
1-00002	intermittent emission testing	53
FACILITY	record keeping/maintenance procedures	49
1-00001	monitoring of process or control device	52
	parameters as surrogate	
1-00002	monitoring of process or control device	54
	parameters as surrogate	
FACILITY	work practice involving specific operations	26
FACILITY	record keeping/maintenance procedures	27
C-00001	record keeping/maintenance procedures	36
C-00001	monitoring of process or control device	37
	parameters as surrogate	
FACILITY	record keeping/maintenance procedures	28
C-00001/-/003/00108	intermittent emission testing	38
C-00001/-/003/00208	intermittent emission testing	39
C-00001/-/003/00312	intermittent emission testing	40
C-00001/-/003/00416	intermittent emission testing	41
G-00001	intermittent emission testing	43
G-00001	monitoring of process or control device	44
	parameters as surrogate	
FACILITY	record keeping/maintenance procedures	50

Basis for Monitoring

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