

**Division of Air Resources
Permit Review Report**

Permit ID: 2-6202-00167/00005
Renewal Number: 4
12/18/2020

Facility Identification Data

Name: COLUMBIA UNIVERSITY-410 W 118TH ST
Address: 410 W 118TH ST
NEW YORK, NY 10027

Owner/Firm

Name: TRUSTEES OF COLUMBIA UNIVERSITY IN CITY OF NEW YORK
Address: 535 W 116TH ST
NEW YORK, NY 10027, USA
Owner Classification: Corporation/Partnership

Permit Contacts

Division of Environmental Permits:
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Division of Air Resources:
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Air Permitting Contact:
Name: GEORGE PECOVIC
Address: COLUMBIA UNIVERSITY
410 W 118TH ST RM B230 MC 3413
NEW YORK, NY 10027
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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

Application for renewal of Air Title V Facility to operate a central heating plant which consists of four mid-size boilers each with a maximum heat input capacity of 99.5 MMBtu/hr. With this permit renewal facility has also requested to withdraw their permit to install the 15 MW cogen plant.

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The permit - Renewal 3 (09/21/2015-09/20/2020) allowed the facility to do the following changes in the inventory:

- 1.) Install a 15 MW Co-generation system that includes a Titan 130 gas-firing turbine with a maximum heat input rating of 161.33 MMBtu/hr. and heat recovery Steam Generator (HRSG, non-firing boiler.)
- 2.) Remove (existing) Boiler # 4 prior to the installation of the co-generation system.
- 3.) Retrofit the remaining three boilers with new Ultra-Low NOx burners.

Due to constrains, the facility never built/installed the co-gen unit and has decided not to install the unit in the near future. Since there is no co-generation unit being built, the facility will bring boiler #4 back to the permit. The existing three (3) boilers are retrofitted with Ultra-Low NOx burners and retrofit of the Boiler #4 is in progress. All boilers meet NOx RACT regulations by fuel switching under the provision s of 227.2.5(a).

In this renewal application, the co-gen's Emission Unit U-00102 (Emission Source-ES00005, Process TBN) will be taken out and Boiler # 4 (Emission source ES 00004) will be added back to Emission Unit U-00101 along with its and process 002(gas firing) and 003(oil firing). However, at any given time, only 3 boilers will be used to satisfy the facility needs and the 4th boiler will be used as a backup source. Natural gas is the primary fuel for all four boilers and No.2 oil is secondary.

With this project modification, there will not be any increment in the emissions and does not trigger New Source Review (NSR) or Prevention of significant Deterioration (PSD) thresholds (SNEIT-Significant net emissions Increment Threshold). This allows plant wide NOx emissions to retain to 181 tpy.

The NOx RACT emission limit for the boilers on both oil and gas firing scenario is 0.20lbs/mmbtu/hr by choosing compliance option, fuel switching, under the provisions of 6 NYCRR Part 227-2.5(a).

This application is submitted in order to seek the above-mentioned modifications along with the renewal. I.e. Removal of co-gen system (gas turbine) and bringing back Boiler # 4 with Ultra-Low NOx burners retrofitted.

Attainment Status

COLUMBIA UNIVERSITY-410 W 118TH ST is located in the town of MANHATTAN in the county of NEW YORK.

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)	MODERATE NON-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 Columbia University Morningside Heights campus covers an area of about 4.5 million square feet (about 70 bldgs.) in the upper westside of Manhattan. The major emission source on campus is the central steam boiler plant which is in the basement of the CEPSR (Center for Eng. & Physical Science Research) building (530 W. 120th Street).

The boilers provide the steam for winter heating and summer cooling the numerous campus buildings. Each four boiler is rated at 99.5 MMBtu/hr. and burns natural gas fuel and No. 2 fuel oil. Exempt sources on campus include academic research laboratory hood vents, 180 small (exempt boilers/water heaters and sixteen (16) emergency diesel generators.

In the previous permit (renewal 3), the facility was permitted to install a new 15-MW cogeneration system and to remove Boiler # 4 (one 99.5 MMBtu/hr). But the facility didn't install any Cogen system or remove Boiler # 4. Currently, the facility decided not to install the cogeneration system and to bring Boiler # 4 back online.

Permit Structure and Description of Operations

The Title V permit for COLUMBIA UNIVERSITY-410 W 118TH ST 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). 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)

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

COLUMBIA UNIVERSITY-410 W 118TH ST is defined by the following emission unit(s):

Emission unit U00101 - This unit consists of four (4) boilers of same size (each B & W FM 103-88; with a maximum design heat input capacity of 99.5 MMBtu/hr.), discharging to a common existing stack. All four (4) boilers are dual fuel burning (Natural gas or No. 2 oil). Three boilers are retrofitted with Ultra-Low NOx burners and boiler # 4 retrofitting will be done soon. Boilers located in basement of CEPSR building (530 W 120 ST). common stack extends above building roof.

Any time no more than three (3) boilers are operated simultaneously and the other boiler is used as a back up boiler. Natural gas is used as primary fuel and Number 2 oil as backup fuel.

Emission unit U00101 is associated with the following emission points (EP):

00101

Process: 002 is located at BASEMENT, Building CEPSR - Process 002 is when one or more of the three (3) boilers, each rated at 99.5 MMBtu/hr., fire natural gas. Flue gases exhaust via the common stack. These boilers generate steam for heating and cooling numerous campus buildings.

Process: 003 is located at BASEMENT, Building CEPSR - Process 003 is when one or more of the three (3) packaged boilers, each rated at 99.5 MMBtu/hr., fire no. 2 fuel oil. Flue gases exhaust via the common stack.

This process has begun as of October 2013. Usage of fuel oil # 6 has been terminated as of October 2013. These boilers generate steam for heating and cooling numerous campus buildings.

Title V/Major Source Status

COLUMBIA UNIVERSITY-410 W 118TH ST is subject to Title V requirements. This determination is based on the following information:

This facility's annual emissions for Oxides of Nitrogen (NOx) exceed 25 tons which is above the major source thresholds.

Program Applicability

The following chart summarizes the applicability of COLUMBIA UNIVERSITY-410 W 118TH ST with

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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)	YES
NSPS	YES
TITLE IV	NO
TITLE V	YES
TITLE VI	NO
RACT	YES
SIP	YES

NOTES:

PSD Prevention of Significant Deterioration (40 CFR 52, 6 NYCRR 231-7, 231-8) - 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 231-5, 231-6) - 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, 6 NYCRR 200.10) - 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, 6 NYCRR 200.10) - contaminant and source specific emission standards established by the 1990 CAAA. Under Section 112 of the CAAA, the US 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, 6 NYCRR 200.10) - 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, 6 NYCRR 201-6) - regulations which mandate the implementation of the acid rain control program for large stationary combustion facilities.

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Title VI Stratospheric Ozone Protection (40 CFR 82, Subpart A thru G, 6 NYCRR 200.10) - 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 212-3, 220-1.6, 220-1.7, 220-2.3, 220-2.4, 226, 227-2, 228, 229, 230, 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, 6 NYCRR 200.10) - 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 services rendered. Larger facilities typically have more than one SIC code.

SIC Code

Description

4961	STEAM SUPPLY
6221	COMMODITY CONTRACTS BROKERS, DEALERS
8221	COLLEGES AND UNIVERSITIES, NEC

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

1-03-005-02	EXTERNAL COMBUSTION BOILERS - COMMERCIAL/INDUSTRIAL COMMERCIAL/INSTITUTIONAL BOILER - DISTILLATE OIL 10-100MMBTU/HR **
1-03-006-02	EXTERNAL COMBUSTION BOILERS - COMMERCIAL/INDUSTRIAL

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COMMERCIAL/INSTITUTIONAL BOILER - NATURAL
GAS
10-100 MMBtu/Hr

Facility Emissions Summary

In the following table, the CAS No. or Chemical Abstract Service 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 of 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 for each contaminant that is displayed represents the facility-wide PTE in tons per year (tpy) or pounds per year (lbs/yr). In some instances the PTE represents a federally enforceable emissions cap or limitation for that contaminant. 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.

Cas No.	Contaminant	PTE lbs/yr	PTE tons/yr	Actual lbs/yr	Actual tons/yr
0NY750-00-0	CARBON DIOXIDE EQUIVALENTS	978332000		384411359	
000630-08-0	CARBON MONOXIDE	446660		204353.72	
007439-92-1	LEAD		2.82E-6	0.000347	
0NY210-00-0	OXIDES OF NITROGEN	362000		160054	
0NY075-00-0	PARTICULATES	137800000		12121	
0NY075-02-5	PM 2.5	68900		12121.14	
0NY075-00-5	PM-10	68900		12121.14	
007446-09-5	SULFUR DIOXIDE	12480		6	
0NY100-00-0	TOTAL HAP	222		27.19	
0NY998-00-0	VOC	40240		13731.27	

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

Item A: Public Access to Recordkeeping for Title V Facilities - 6 NYCRR 201-1.10(b)
The Department will make available to the public any permit application, compliance plan, permit, and monitoring and compliance certification report pursuant to Section 503(e) of the Act, except for information entitled to confidential treatment pursuant to 6 NYCRR Part 616 - Public Access to records and Section 114(c) of the Act.

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Item B: Timely Application for the Renewal of Title V Permits -6 NYCRR Part 201-6.2(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 C: Certification by a Responsible Official - 6 NYCRR Part 201-6.2(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 D: Requirement to Comply With All Conditions - 6 NYCRR Part 201-6.4(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 E: Permit Revocation, Modification, Reopening, Reissuance or Termination, and Associated Information Submission Requirements - 6 NYCRR Part 201-6.4(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 F: Cessation or Reduction of Permitted Activity Not a Defense - 6 NYCRR 201-6.4(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 G: Property Rights - 6 NYCRR 201-6.4(a)(6)

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

Item H: Severability - 6 NYCRR Part 201-6.4(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 I: Permit Shield - 6 NYCRR Part 201-6.4(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

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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 J: Reopening for Cause - 6 NYCRR Part 201-6.4(i)

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 2 01-6.7 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 K: Permit Exclusion - ECL 19-0305

The issuance of this permit by the Department and the receipt thereof by the Applicant

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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 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 L: 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: Emergency Defense - 6 NYCRR 201-1.5

An emergency, as defined by subpart 201-2, constitutes an affirmative defense to penalties sought in an enforcement action brought by the Department 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 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 and maintained;
 - (3) During the period of the emergency the facility owner 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 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 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

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applicable requirement. item_02

**Item B: 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 Facility/EU/EP/Process/ES	Regulation	Condition	Short Description

FACILITY	ECL 19-0301	47	Powers and Duties of the Department with respect to air pollution control
FACILITY	40CFR 60-A.13	36	General provisions - Monitoring requirements
FACILITY	40CFR 60-A.9	35	General provisions - Availability of information
FACILITY	40CFR 60-Dc.40c	37	Steam generators 10-100 million Btu per hour
FACILITY	40CFR 60-Dc.48c (d)	38	Reporting and Recordkeeping Requirements.
U-00101	40CFR 60-Dc.48c (g)	45	Reporting and Recordkeeping Requirements.
FACILITY	40CFR 63-JJJJJJ	39	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources
FACILITY	40CFR 68	18	Chemical accident prevention provisions
FACILITY	40CFR 82-F	19	Protection of Stratospheric Ozone - recycling and emissions reduction
FACILITY	6NYCRR 200.6	1	Acceptable ambient

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FACILITY	6NYCRR 201-1.4	48	air quality. Unavoidable noncompliance and violations
FACILITY	6NYCRR 201-1.7	10	Recycling and Salvage
FACILITY	6NYCRR 201-1.8	11	Prohibition of reintroduction of collected contaminants to the air
FACILITY	6NYCRR 201-3.2 (a)	12	Exempt Activities - Proof of eligibility
FACILITY	6NYCRR 201-3.3 (a)	13	Trivial Activities - proof of eligibility
FACILITY	6NYCRR 201-6	20, 40, 41	Title V Permits and the Associated Permit Conditions
FACILITY	6NYCRR 201-6.4 (a) (4)	14	General Conditions - Requirement to Provide Information
FACILITY	6NYCRR 201-6.4 (a) (7)	2	General Conditions - Fees
FACILITY	6NYCRR 201-6.4 (a) (8)	15	General Conditions - Right to Inspect
FACILITY	6NYCRR 201-6.4 (c)	3	Recordkeeping and Reporting of Compliance Monitoring
FACILITY	6NYCRR 201-6.4 (c) (2)	4	Records of Monitoring, Sampling and Measurement
FACILITY	6NYCRR 201- 6.4 (c) (3) (ii)	5	Reporting Requirements - Deviations and Noncompliance
FACILITY	6NYCRR 201-6.4 (d) (4)	21	Compliance Schedules - Progress Reports
FACILITY	6NYCRR 201-6.4 (e)	6	Compliance Certification
FACILITY	6NYCRR 201-6.4 (f) (6)	16	Off Permit Changes
FACILITY	6NYCRR 201-6.5 (a)	49	State Enforceable Requirements
FACILITY	6NYCRR 201-7	22, 42	Federally Enforceable Emissions Caps
FACILITY	6NYCRR 202-1.1	17, 25	Required emissions tests.
FACILITY	6NYCRR 202-1.2	26	Notification.
FACILITY	6NYCRR 202-1.3	27	Acceptable procedures.
FACILITY	6NYCRR 202-2.1	7	Emission Statements - Applicability
FACILITY	6NYCRR 202-2.5	8	Emission Statements - record keeping requirements.
FACILITY	6NYCRR 211.1	50	General Prohibitions - air pollution prohibited
FACILITY	6NYCRR 211.2	28	General Prohibitions - visible emissions limited.
FACILITY	6NYCRR 215.2	9	Open Fires - Prohibitions
FACILITY	6NYCRR 225-1.2 (h)	29	Sulfur-in-Fuel Limitations
FACILITY	6NYCRR 225-1.6 (a)	30	Required Fuel Analysis

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FACILITY	6NYCRR 225-1.6 (b)	31	Recordkeeping Requirements
FACILITY	6NYCRR 225-1.6 (f)	32	Excess Emission Reports
U-00101	6NYCRR 227.2 (b) (1)	44	Particulate emissions.
U-00101	6NYCRR 227-1.4 (a)	51	Stack Monitoring. (see narrative)
FACILITY	6NYCRR 227-1.4 (b)	33	Stack Monitoring
U-00101/00101	6NYCRR 227-1.4 (c)	46	Stack Monitoring
FACILITY	6NYCRR 227-1.7 (b)	34	General Test Methods.
U-00101	6NYCRR 227-2.5 (a)	43	Fuel switching option.

Applicability Discussion:

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

ECL 19-0301

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.

6 NYCRR 200.6

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

6 NYCRR 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.

6 NYCRR 201-1.7

Requires the recycle and salvage of collected air contaminants where practical

6 NYCRR 201-1.8

Prohibits the reintroduction of collected air contaminants to the outside air

6 NYCRR 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.

6 NYCRR 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.

6 NYCRR Subpart 201-6

This regulation applies to those terms and conditions which are subject to Title V permitting. It establishes

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the applicability criteria for Title V permits, the information to be included in all Title V permit applications as well as the permit 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.

6 NYCRR 201-6.4 (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.

6 NYCRR 201-6.4 (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.

6 NYCRR 201-6.4 (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.

6 NYCRR 201-6.4 (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.

6 NYCRR 201-6.4 (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.

6 NYCRR 201-6.4 (c) (3) (ii)

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.

6 NYCRR 201-6.4 (d) (4)

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.

6 NYCRR 201-6.4 (e)

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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.

6 NYCRR 201-6.4 (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.

6 NYCRR 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.

6 NYCRR 202-2.1

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

6 NYCRR 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.

6 NYCRR 211.2

This regulation limits opacity from sources to less than or equal to 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.

6 NYCRR 215.2

Except as allowed by section 215.3 of 6 NYCRR Part 215, no person shall burn, cause, suffer, allow or permit the burning of any materials in an open fire.

40 CFR Part 68

This Part lists the regulated substances and there 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, COLUMBIA UNIVERSITY-410 W 118TH ST has been determined to be subject to the following regulations:

40 CFR 60.13

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This regulation specifies how monitoring shall be performed and which methods and appendices are used to determine if the monitoring is adequate and in compliance with the regulated standards.

40 CFR 60.40c

This regulation requires the source owner or operator to comply with the applicable General Provisions of 40 CFR 60 Subpart Dc. The facility owner is responsible for reviewing these general provisions in detail and complying with all applicable technical, administrative and reporting requirements.

40 CFR 60.48c (d)

This regulation requires the owner or operator of the facility subject to the SO₂ emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c, to submit semi-annual reports to the EPA

40 CFR 60.48c (g)

The owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each day.

40 CFR 60.9

This rule citation allows the public access to any information submitted to the EPA Administrator (or state contact), in conjunction with a project subject to this section of the regulation.

40 CFR Part 63, Subpart JJJJJ

This regulation covers facilities that own or operate an industrial, commercial, or institutional boiler as defined in §63.11237 that is located at, or is part of, an area source of hazardous air pollutants (HAP), as defined in §63.2, except as specified in §63.11195.

6 NYCRR 201-6.5 (a)

This section identifies state enforceable requirements for Title V permits.

6 NYCRR 202-1.2

This regulation specifies that the department is to be notified at least 30 days in advance of any required stack test. The notification is to include a list of the procedures to be used that are acceptable to the department. Finally, free access to observe the stack test is to be provided to the department's representative.

6 NYCRR 202-1.3

This regulation requires that any emission testing, sampling and analytical determination used to determine compliance must use methods acceptable to the department. Acceptable test methods may include but are not limited to the reference methods found in 40 CFR Part 60 appendix A and Part 61, appendix B. Alternate methods may also be used provided they are determined to be acceptable by the department. Finally, unless otherwise specified, all emission test reports must be submitted within 60

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days after completion of testing.

6 NYCRR 211.1

This regulation requires that no person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property.

6 NYCRR 225-1.2 (h)

Sulfur-in-fuel limitation for the firing of distillate oil on or after July 1, 2016.

6 NYCRR 225-1.6 (a)

This citation requires a subject facility to analyze their fuel.

6 NYCRR 225-1.6 (b)

This citation sets the the types of records a subject facility must keep to prove compliance with this Subpart.

6 NYCRR 225-1.6 (f)

This citation requires subject facilities to submit excess emissions reports to the Department.

6 NYCRR 227.2 (b) (1)

This regulation is from the 1972 version of Part 227 and still remains as part of New York's SIP. The rule establishes a particulate limit of 0.10 lbs/mmBtu based on a 2 hour average emission for any oil fired stationary combustion installation.

6 NYCRR 227-1.4 (a)

Subdivisions (a) and (f) of this section (227-1.4) have not been approved by EPA and have not been included in the NYS SIP.

6 NYCRR 227-1.4 (b)

This regulation requires the specific contents of excess emissions reports for opacity from facilities that employ continuous opacity monitors (COMs).

6 NYCRR 227-1.4 (c)

This is the applicability section for requiring the use of COMs for monitoring purposes.

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6 NYCRR 227-1.7 (b)

This specifies the requirement for acceptable fuel sample test methods.

6 NYCRR 227-2.5 (a)

Fuel switching NOx RACT compliance option.

6 NYCRR Subpart 201-7

This regulation sets forth an emission cap that cannot be exceeded by the facility.

Compliance Certification

Summary of monitoring activities at COLUMBIA UNIVERSITY-410 W 118TH ST:

Location Facility/EU/EP/Process/ES	Cond No.	Type of Monitoring

FACILITY	38	record keeping/maintenance procedures
FACILITY	5	record keeping/maintenance procedures
FACILITY	6	record keeping/maintenance procedures
FACILITY	23	record keeping/maintenance procedures
FACILITY	24	monitoring of process or control device parameters as surrogate
FACILITY	7	record keeping/maintenance procedures
FACILITY	29	work practice involving specific operations
FACILITY	31	record keeping/maintenance procedures
FACILITY	32	record keeping/maintenance procedures
U-00101	44	intermittent emission testing
U-00101	51	monitoring of process or control device parameters as surrogate
FACILITY	33	record keeping/maintenance procedures
U-00101	43	intermittent emission testing

Basis for Monitoring

With this Title V renewal application Columbia University also withdrawing their previous plan to install the Cogen Unit- Hence all the conditions pertaining the Cogen application have been removed from the permit. Facility wide NOx cap is changed back to 181 tons per year(tpy).

6 NYCRR Part 200.6: This facility is located at 530 West 120 Street, NY, which is designated as a severe non-attainment area for ozone NAAQS. Facility has conducted an Air Dispersion Modeling in and the 1-hr NO2 modeling report dated January 9, 2020 has demonstrated that the 1-hr NO2 impacts will not cause or contribute to an exceedance of National Ambient Air Quality Standards.

6 NYCRR 201-6.4(c)(3)(ii)). This is a facility-wide condition that applies to monitoring conditions for all Title V Permits. All facilities that are subject to the Title V requirements must submit reports of any

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required monitoring to the NYSDEC every six months.

6 NYCRR 201.6.4(e): This is a facility-wide record keeping requirement that applies to all Title V facilities. These facilities must submit an annual compliance certification to the NYSDEC and the USEPA.

6 NYCRR 201-7. This capping condition limits facility wide NO_x emissions to 181 tpy, rolled monthly. Columbia University has capped out of PSD applicability (40 CFR 52.21) by limiting total facility NO_x emissions to 181 tons per year (less than 250 tpy applicability). Permit condition requires facility to calculate facility wide 12 month rolling NO_x emissions from all sources including exempt sources using stack test emission factors for boilers and EPA approved emission factors for exempt sources to demonstrate compliance with the NO_x emission cap. Also, this facility is limited to operate three boilers at a time. Facility is required to maintain records verifying that only three boilers are operated simultaneously. These conditions ensure compliance with the NO_x cap.

Over the past years facility has switched from # 6 fuel oil to a cleaner fuel #2 distillate oil and the facility potential for SO₂ emissions are reduced to 6 tons/yr. Therefore, SO₂ capping condition is removed from the permit, since it is no longer needed.

Condition 6 NYCRR 202-2.1 This is a requirement for all Title V facilities. These facilities must submit an annual emission statement by April 15th of each year.

6 NYCRR 225-1.2 (h). This permit condition limits the sulfur content of distillate oil to 0.0015 percent by weight, and requires facility to obtain and maintain seller fuel certification for the compliance, per fuel delivery & Condition 6 NYCRR 225-1.6 (f) requires facility to report excess emission report on semiannual basis. These conditions ensure facility's ongoing compliance with the fuel oil sulfur content limit.

6 NYCRR Part 227-1.4(a), b & c specify the opacity limits that the facility should comply with. All four boilers exhaust are through one common emission point, 00101. This emission point has a combined heat input greater than 250 mmBtu/hr, and as per the regulation the facility monitors opacity using a continuous opacity monitoring and submits excess emission report on a quarterly basis.

6 NYCRR Part 227-2.5(a)-. This condition applies to facility's four oil/gas fired mid-size boilers. By switching from residual oil # 6 to distillate oil # 2, the facility chose the fuel switching option under the provisions of 6 NYCRR 227-2.5(a) and all the boilers are required to meet NO_x emission limit 0.20 pounds per million Btus. Facility is required to stack test once during every five years to demonstrate compliance with this NO_x limit.

6 NYCRR Part 227.2(b)(1). This condition limits boiler particulate emissions to 0.11 lb/mmBtu while firing oil and requires stack testing requirement once every five years.

40 CFR Subpart Dc- NSPS. Boiler 0004 installed in the year 1998 is subject to the sulfur and particulate matter emission limiting requirements. Similar or more stringent NYCRR requirements are placed in the permit for these contaminants which will also satisfy NSPS requirements.

40 CFR 63 JJJJJJ- Columbia University is an area source for HAPs and the boilers are subject to the requirement of this regulation.

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