

Facility DEC ID: 2620401661

**PERMIT
Under the Environmental Conservation Law (ECL)**

IDENTIFICATION INFORMATION

Permit Type: Air State Facility
Permit ID: 2-6204-01661/00002
Effective Date: Expiration Date:

Permit Issued To: Memorial Sloan-Kettering Cancer Center
1275 York Ave
New York, NY 10065-6007

Contact: Robert Berninger
Memorial Sloan Kettering Cancer Center
1275 York Ave
New York, NY 10065
(212) 639-6614

Facility: Memorial Sloan Kettering Cancer Center
417 East 68th Street
New York, NY 10065

Contact: Robert Berninger
Memorial Sloan Kettering Cancer Center
1275 York Ave
New York, NY 10065
(212) 639-6614

Description:
Memorial Sloan Kettering Cancer Center (MSKCC) operates as a private comprehensive cancer center with state-of-the-art clinical studies and treatment options. For purposes of this permit application, the "facility" consists of the two contiguous buildings located at 1275 York Ave (Main Campus/Memorial) and 417 East 68th St. (Zuckerman Research Center).

This is an application for an Air State Facility permit. MSKCC is proposing to install and operate six (6) combined heat and power (CHP) spark ignition internal compression engines of 557 kilowatts each and twenty-one (21) condensing boilers each of 6 mmbtu/hr (17 natural gas & four dual -fuel) in two contiguous MSKCC buildings, Memorial Campus and Zuckerman Campus. MSKCC also has 6 emergency generators.

The Memorial Bldg. will have two (2) CHP's, eight (8) nat. gas and four (4) dual-fuel boilers, and the Zuckerman Bldg. will have four (4) CHP's and nine (9) nat. gas boilers. The CHP engines are applicable to the requirements of 40 CFR Subpart JJJJ and 40 CFR 63 Subpart ZZZZ.

Facility is capping the facility wide nitrogen oxides (NOx) emissions below 25 tons per year by limiting the operation and fuel usage of all sources including the exempt

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sources. The facility wide total emission will be below any major source thresholds for nitrogen oxides, carbon monoxide, particulate matter, sulfur dioxide, and VOCs.

Also, MSKCC has performed an Air Quality Dispersion modeling and this permit has enforceable conditions to ensure that MSKCC will be in compliance with National Ambient Air Quality Standards.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator: STEPHEN A WATTS
 47-40 21ST ST
 LONG ISLAND CITY, NY 11101-5401

Authorized Signature: _____ Date: ___ / ___ / ___

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Notification of Other State Permittee Obligations

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification

The permittee expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the compliance permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in any compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

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- 6 5 Submission of application for permit modification or renewal - REGION 2 HEADQUARTERS

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DEC GENERAL CONDITIONS
****** General Provisions ******
GENERAL CONDITIONS - Apply to ALL Authorized Permits.

Condition 1: Facility Inspection by the Department
Applicable State Requirement: ECL 19-0305

Item 1.1:

The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3).

Item 1.2:

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

Item 1.3:

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Condition 2: Relationship of this Permit to Other Department Orders and Determinations
Applicable State Requirement: ECL 3-0301 (2) (m)

Item 2.1:

Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

Condition 3: Applications for permit renewals, modifications and transfers
Applicable State Requirement: 6 NYCRR 621.11

Item 3.1:

The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.

Item 3.2:

The permittee must submit a renewal application at least 180 days before the expiration of permits for Title V and State Facility Permits.

Item 3.3

Permits are transferrable with the approval of the department unless specifically prohibited by the statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

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Condition 4: Permit modifications, suspensions or revocations by the Department
Applicable State Requirement: 6 NYCRR 621.13

Item 4.1:

The Department reserves the right to exercise all available authority to modify, suspend, or revoke this permit in accordance with 6NYCRR Part 621. The grounds for modification, suspension or revocation include:

- a) materially false or inaccurate statements in the permit application or supporting papers;
- b) failure by the permittee to comply with any terms or conditions of the permit;
- c) exceeding the scope of the project as described in the permit application;
- d) newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
- e) noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

****** Facility Level ******

Condition 5: Submission of application for permit modification or renewal - REGION 2 HEADQUARTERS
Applicable State Requirement: 6 NYCRR 621.6 (a)

Item 5.1:

Submission of applications for permit modification or renewal are to be submitted to:
NYSDEC Regional Permit Administrator
Region 2 Headquarters
Division of Environmental Permits
1 Hunters Point Plaza, 4740 21st Street
Long Island City, NY 11101-5407
(718) 482-4997

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ARTICLE 19: AIR POLLUTION CONTROL - AIR STATE FACILITY PERMIT

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Permit Issued To: Memorial Sloan-Kettering Cancer Center
1275 York Ave
New York, NY 10065-6007

Facility: Memorial Sloan Kettering Cancer Center
417 East 68th Street
New York, NY 10065

Authorized Activity By Standard Industrial Classification Code:
8062 - GENERAL MEDICAL & SURGICAL HOSPITALS

Permit Effective Date:

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FEDERALLY ENFORCEABLE CONDITIONS

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**** Facility Level ****

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

This section contains terms and conditions which are federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: Sealing - 6 NYCRR 200.5

The Commissioner may seal an air contamination source to prevent its operation if compliance with 6 NYCRR Chapter III is not met within the time provided by an order of the Commissioner issued in the case of the violation. Sealing means labeling or tagging a source to notify any person that operation of the source is prohibited, and also includes physical means of preventing the operation of an air contamination source without resulting in destruction of any equipment associated with such source, and includes, but is not limited to, bolting, chaining or wiring shut control panels, apertures or conduits associated with such source.

No person shall operate any air contamination source sealed by the Commissioner in accordance with this section unless a modification has been made which enables such source to comply with all requirements applicable to such modification.

Unless authorized by the Commissioner, no person shall remove or alter any seal affixed to any contamination source in accordance with this section.

Item B: Acceptable Ambient Air Quality - 6 NYCRR 200.6

Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

Item C: Maintenance of Equipment - 6 NYCRR 200.7

Any person who owns or operates an air contamination source which is equipped with an emission control device shall operate such device and keep it in a satisfactory state of maintenance and repair in accordance with ordinary and necessary practices, standards and procedures, inclusive of manufacturer's specifications,

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required to operate such device effectively.

Item D: Unpermitted Emission Sources - 6 NYCRR 201-1.2

(a) Except as otherwise provided by this Part, construction or operation of a new, modified or existing air contamination source without a registration or permit issued pursuant to this Part is prohibited.

(b) If an existing facility or emission source was subject to the permitting requirements of this Part at the time of construction or modification, and the owner or operator failed to apply for a permit or registration as described in this Part, the owner or operator must apply for a permit or registration in accordance with the provisions of this Part. The facility or emission source is subject to all regulations that were applicable to it at the time of construction or modification and any subsequent requirements applicable to existing emission sources.

Item E: Recycling and Salvage - 6 NYCRR 201-1.7

Where practical, any person who owns or operates an air contamination source shall recycle or salvage air contaminants collected in an air cleaning device according to the requirements of 6 NYCRR.

Item F: Prohibition of Reintroduction of Collected Contaminants to the Air - 6 NYCRR 201-1.8

No person shall unnecessarily remove, handle, or cause to be handled, collected air contaminants from an air cleaning device for recycling, salvage or disposal in a manner that would reintroduce them to the outdoor atmosphere.

Item G: Proof of Eligibility for Sources Defined as Exempt Activities - 6 NYCRR 201-3.2 (a)

The owner and/or operator of an emission source or unit that is eligible to be exempt, may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source 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 which contains emission sources or units subject to 6 NYCRR Subpart 201-3, 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.

Item H: Proof of Eligibility for Sources Defined as Trivial

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Activities - 6 NYCRR 201-3.3 (a)

The owner and/or operator of an emission source or unit that is listed as being trivial in 6 NYCRR Part 201 may be required to certify that it operates within the specific criteria described in 6 NYCRR Subpart 201-3. The owner or operator of any such emission source 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 which contains emission sources or units subject to 6 NYCRR Subpart 201-3, 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.

Item I: Required Emission Tests - 6 NYCRR 202-1.1

An acceptable report of measured emissions shall be submitted, as may be required by the Commissioner, to ascertain compliance or noncompliance with any air pollution code, rule, or regulation. Failure to submit a report acceptable to the Commissioner within the time stated shall be sufficient reason for the Commissioner to suspend or deny an operating permit. Notification and acceptable procedures are specified in 6 NYCRR Subpart 202-1.

Item J: Open Fires Prohibitions - 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.

Item K: 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 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)

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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.

FEDERAL APPLICABLE REQUIREMENTS**The following conditions are federally enforceable.****Condition 1: Acceptable Ambient Air Quality
Effective for entire length of Permit****Applicable Federal Requirement:6 NYCRR 200.6****Item 1.1:**

Notwithstanding the provisions of 6 NYCRR Chapter III, Subchapter A, no person shall allow or permit any air contamination source to emit air contaminants in quantities which alone or in combination with emissions from other air contamination sources would contravene any applicable ambient air quality standard and/or cause air pollution. In such cases where contravention occurs or may occur, the Commissioner shall specify the degree and/or method of emission control required.

**Condition 2: Modeling Report
Effective for entire length of Permit****Applicable Federal Requirement:6 NYCRR 200.6**

Item 2.1: The facility owner or operator shall attach a copy of the final emissions modeling report for this facility, as approved by the Department, to this permit. The facility owner or operator shall implement all property access restrictions or other measures that are included in the approved modeling report. These restrictions include, but are not limited to, the posting and patrolling of facility property, restricted access to portions of the property when specific operations occur, or the requirement to place barriers along the property line. Any future updates to the approved modeling report must be incorporated into the version attached to this permit and implemented as appropriate.

**Condition 3: Compliance Demonstration
Effective for entire length of Permit****Applicable Federal Requirement:6 NYCRR 200.6**

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Item 3.1:

The Compliance Demonstration activity will be performed for the facility:
The Compliance Demonstration applies to:

Emission Unit: U-MBCHP Process: 1NG	Emission Source: MCHP1
Emission Unit: U-MBCHP Process: 1NG	Emission Source: MCHP2
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP1
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP2
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP3
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP4
Regulated Contaminant(s): CAS No: 0NY210-00-0	OXIDES OF NITROGEN

Item 3.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING

Monitoring Description:

This condition is effective during Phase 1 operation (before the installation of CHP NOx controls and a maximum of 5 (out of 6) CHPs operating simultaneously):

Within 180 days after initial startup of the facility, MSKCC must perform a stack test to verify the CHPs' NOx emission factor of 0.64 gr/bhp-hr. The Air Quality dispersion modeling (report dated February 26, 2021) to demonstrate compliance with National Ambient Air Quality Standards(NAAQS) during Phase 1 was performed using the NOx emission rate 0.64gr/bhp-hr.

The stack test protocol must be submitted to the Department for approval 60 days prior the stack test, and the test results must be reported within 60 days of testing.

If Phase 2 commences within 180 days of initial startup then Phase 1, the emission testing will not be required.

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Facility shall keep all records for a minimum period of 5 year and be available to the Department upon request.

Parameter Monitored: OXIDES OF NITROGEN
 Upper Permit Limit: 0.64 grams per brake horsepower-hour
 Reference Test Method: 40 CFR 60 Appendix A Method 7, 7E or 19
 Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION
 Averaging Method: 1-HOUR AVERAGE
 Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

**Condition 4: Compliance Demonstration
 Effective for entire length of Permit**

Applicable Federal Requirement: 6 NYCRR 200.6

Item 4.1:

The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

Emission Unit: U-MBCHP Process: 1NG	Emission Source: MCHP1
Emission Unit: U-MBCHP Process: 1NG	Emission Source: MCHP2
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP1
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP2
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP3
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP4
Regulated Contaminant(s): CAS No: 0NY210-00-0	OXIDES OF NITROGEN

Item 4.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING

Monitoring Description:

This condition is effective during Phase 2 operation.
 Phase 2 will commence once MSKCC implements NOx emission controls on all six CHP engines.

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Within 60 days of achieving the maximum production rate, but no later than 180 days of commencement of operation, MSKCC must perform a stack test to verify the CHPs' NOx emission factor of 0.51 gr/bhp-hr. The Air Quality dispersion modeling (report dated February 26, 2021) to demonstrate compliance with National Ambient Air Quality Standards(NAAQS) was performed using the NOx emission rate 0.51 gr/bhp-hr.

The stack test protocol must be submitted to the Department for approval 60 days prior the stack test, and the test results must be reported within 60 days of testing.

Facility shall keep all records for a minimum period of 5 year and be available to the Department upon request.

Parameter Monitored: OXIDES OF NITROGEN

Upper Permit Limit: 0.51 grams per brake horsepower-hour

Reference Test Method: 40 CFR 60 Appendix A Method 7, 7E or 19

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: 1-HOUR AVERAGE

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

**Condition 5: Compliance Demonstration
Effective for entire length of Permit**

Applicable Federal Requirement:6 NYCRR 200.6

Item 5.1:

The Compliance Demonstration activity will be performed for the facility:
The Compliance Demonstration applies to:

Emission Unit: U-MBCHP
Process: EBG

Emission Unit: U-MBCHP
Process: VBG

Emission Unit: U-ZBCHP
Process: EGB

Item 5.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

Boiler fuel usage limit:
Total annual natural gas of 21 boilers is limited to 440,073,529 cubic feet per year as proposed in the

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modeling report dated dated February 26, 2021.

Facility shall keep all records on-site for a minimum period of 5 years and must be available to the Department upon request.

Work Practice Type: PROCESS MATERIAL THRUPUT
 Process Material: NATURAL GAS
 Upper Permit Limit: 440,073,529 cubic feet per year
 Monitoring Frequency: MONTHLY
 Averaging Method: 12-MONTH TOTAL, ROLLED MONTHLY
 Reporting Requirements: ANNUALLY (CALENDAR)
 Reports due 30 days after the reporting period.
 Subsequent reports are due every 12 calendar month(s).

Condition 6: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement:6 NYCRR 200.6

Item 6.1:

The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

Emission Unit: U-MBCHP
 Process: VBO

Item 6.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

Boiler fuel usage limit:
 Total annual distillate oil usage of four Vantage boilers is limited to 10,000 gallons per year as proposed in the modeling report dated dated February 26, 2021.

Facility shall keep all records onsite for a minimum period of 5 years and must be available to the Department upon request.

Work Practice Type: PROCESS MATERIAL THRUPUT
 Process Material: DISTILLATES
 Upper Permit Limit: 10,000 gallons per year
 Monitoring Frequency: MONTHLY
 Averaging Method: 12-MONTH TOTAL, ROLLED MONTHLY
 Reporting Requirements: ANNUALLY (CALENDAR)
 Reports due 30 days after the reporting period.
 Subsequent reports are due every 12 calendar month(s).

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Condition 7: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement:6 NYCRR 200.6

Item 7.1:

The Compliance Demonstration activity will be performed for the Facility.

Item 7.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES
Monitoring Description:

This condition is effective during Phase 1 operation for Scenario 3 as proposed (two Main Building CHPs and three Zuckerman Building CHPs operating) in the modeling report dated February 26, 2021.

At any time, no more than three CHP engines in Zuckerman building shall operate simultaneously as to remain in compliance with NAAQS.

Facility shall keep all records onsite for minimum period of 5 years and must be available to the Department upon request.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.

Subsequent reports are due every 12 calendar month(s).

Condition 8: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement:6 NYCRR 200.6

Item 8.1:

The Compliance Demonstration activity will be performed for the facility:

The Compliance Demonstration applies to:

Emission Unit: U-MBCHP
Process: EBG

Emission Unit: U-MBCHP
Process: VBG

Emission Unit: U-MBCHP
Process: VBO

Emission Unit: U-ZBCHP
Process: EGB

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Item 8.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

At both Memorial and Zuckerman, under normal operating conditions, all boilers shall not run simultaneously as demonstrated in the Modeling report dated February 26, 2021.

Boiler installation was designed with N+1 redundancy so that there is always an extra boiler available in case another boiler or boiler component fails. Therefore, at Memorial building, a maximum of 11 out of 12 boilers may run during normal operating conditions and at Zuckerman building, a maximum of 8 out of 9 boilers may run during normal operating conditions. All boilers will not run simultaneously if the CHP engines are operating. The CHP are part of the n+1 equation. If the CHPs are disabled (along with their emissions), all boilers may need to operate on a design weather day.

Facility shall keep all records onsite for minimum period of 5 years and must be available to the Department upon request.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.

Subsequent reports are due every 12 calendar month(s).

**Condition 9: Compliance Demonstration
Effective for entire length of Permit**

Applicable Federal Requirement: 6 NYCRR 200.6

Item 9.1:

The Compliance Demonstration activity will be performed for the facility:

The Compliance Demonstration applies to:

Emission Unit: U-MBCHP
Process: EBG

Emission Unit: U-MBCHP
Process: VBG

Emission Unit: U-MBCHP
Process: VBO

Emission Unit: U-ZBCHP

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Process: EGB

Item 9.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

MSKCC should follow the boiler operating loads below (as given in the Scenario 1, Table 2-3 of the modeling report dated February 26, 2021) to avoid any exceedance of NAAQS:

Season

Winter: December - February load 100%

Spring: March - May : Boiler load 60%

Summer: June - August 20%

Fall: September - November 65%

Boiler load percentage must not exceed above at any time.

A log of boiler run times shall be maintained on site.

All boiler operation shall be monitored and logged via the Building Management System(BMS), so that the facility can automatically enable and disable to match the load profile.

MSKCC must keep all records onsite for minimum period of 5 years and must be available to the Department upon request.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 0 days after the reporting period.

Subsequent reports are due every 12 calendar month(s).

**Condition 10: Facility Permissible Emissions
Effective for entire length of Permit**

Applicable Federal Requirement:6 NYCRR 201-7.1

Item 10.1:

The sum of emissions from the emission units specified in this permit shall not equal or exceed the following

Potential To Emit (PTE) rate for each regulated contaminant:

CAS No: 0NY210-00-0

PTE: 49,800 pounds per year

Name: OXIDES OF NITROGEN

**Condition 11: Capping Monitoring Condition
Effective for entire length of Permit**

Permit ID: 2-6204-01661/00002

Facility DEC ID: 2620401661

Applicable Federal Requirement: 6 NYCRR 201-7.1**Item 11.1:**

Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 201-6

6 NYCRR Subpart 231-5

Item 11.2:

Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 11.3:

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.

Item 11.4:

On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 11.5:

The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 11.6:

The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):

CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 11.7:

Compliance Demonstration shall include the following monitoring:

Capping: Yes

Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

This Condition is effective during Phase 1 operation (before the installation of CHP NO_x controls and a maximum of 5 (out of 6) CHPs operating simultaneously).

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Total 12-month rolling Oxides of Nitrogen (NO_x) emissions shall be limited to 49800 pounds (24.9 tons per) to cap out of the applicability requirements of NYCRR Parts 201-6 and 231-5.

MSKCC's air emission sources are 6(six)combined heat and power (CHP)engines burning natural gas, twenty one(21) boilers each rated @ 6mmbtu/hr (17 natural gas and four dual-fuel(#2 oil and gas)) and six emergency generators.

Compliance with NO_x emissions (pounds) shall be determined using the following two formulas on a monthly basis:

1. $CHP_{gas} \times A + EB_{gas} \times B + VB_{gas} \times C + VBoil \times D + E_{Goil} \times E =$ monthly total NO_x emissions `
2. 12-month rolling total NO_x emissions = monthly total NO_x emissions + previous 11- month total NO_x emissions

CHP_{gas} = monthly natural gas consumption of Zuckerman CHP units (Mcf) + monthly natural gas consumption of Memorial building CHP units (Mcf)

$A = 0.199$ lb of NO_x /Mcf

0.64 g/hp-hr (1.10 lbs/hr) CHP NO_x emission factor from engine manufacturer

Centrica data sheet: heat content of natural gas = 924 btu/cu ft; Full load input = 5.1 MMBtu/hr =

5.52Mcf/hr

$(1.1\text{lb/hr}) / (5.52 \text{ Mcf/hr}) = 0.199\text{lb NO}_x/\text{Mcf}$

EB_{gas} = monthly Endura Boiler natural gas consumption (Mcf) in Zuckerman building + monthly Endura Boiler natural gas consumption (Mcf) in Memorial building

$B = 0.011$ lb NO_x/Mcf, the Endura boiler NO_x emission factor 9 ppm during natural gas firing (from Fulton Endura boiler Technical data sheets)

NO_x ppm to lb/MMBtu conversion is using EPA method 19; 9ppm = 0.0109lb/mmbtu; 0.00102 btu/scf nat. gas

VB_{gas} = monthly Vantage boiler natural gas consumption (Mcf) in Memorial building

$C = 0.0372$ lb NO_x/Mcf, the Vantage boiler NO_x emission factor 30 ppm during natural gas firing (from Fulton vantage dual Technical data sheets)

NO_x ppm to lb/MMBtu conversion is using EPA Method 19; 30 ppm = 0.0364 lb/MMbtu; 0.00102btu/scf nat gas

$VBoil$ = monthly Vantage boilers No. 2 Fuel Oil (gal) consumption in Memorial building

Permit ID: 2-6204-01661/00002

Facility DEC ID: 2620401661

D = 0.0179 lb NO_x/gallon, the Vantage boiler NO_x emission factor 100 ppm during No.2 oil firing (from Fulton vantage dual Technical data sheets)
 NO_x ppm to lb/MMBtu conversion is using EPA method 19;
 100 ppm=0.128119lb/MMbtu; 140,000btu/gal

EG oil x E = monthly oil usage of three emergency generators CAT DM3111 (gal) x 0.45153lb/gal + monthly oil usage of two emergency CAT 3516 generators x 0.27631 lb/gallon + monthly oil usage of one emergency CAT 3516C generator x 0.27631 lb/gallon

0.45153 lb/gallon is based on AP=42 Table 3.4-1 NO_x emission factor for uncontrolled 3.2 lb/mmbtu and 140000 btu/gal heating value of oil.

0.27631 lb/gal is based on AP42 Table 3.4-1 emission factor for controlled 1.9 lb/mmbtu (5.9g-bhp hr).

Permit application includes EPA Certificate of conformity for engine CAT 3516C (engine family HCPXL78.INZS), certifying Tier 2 standard 5.07g/KW-hr) or 3.78g/bhp-hr.

Mcf = 1000 cubic feet

Records demonstrating compliance with the permit limit shall be kept at the facility for a minimum of five years, which shall include monthly and 12-month rolling fuel usage and calculation

Parameter Monitored: OXIDES OF NITROGEN

Upper Permit Limit: 49800 pounds per year

Monitoring Frequency: MONTHLY

Averaging Method: ANNUAL TOTAL ROLLED MONTHLY

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.

Subsequent reports are due every 12 calendar month(s).

**Condition 12: Capping Monitoring Condition
 Effective for entire length of Permit**

Applicable Federal Requirement:6 NYCRR 201-7.1

Item 12.1:

Under the authority of 6 NYCRR Part 201-7, this condition contains an emission cap for the purpose of limiting emissions from the facility, emission unit or process to avoid being subject to the following applicable requirement(s) that the facility, emission unit or process would otherwise be subject to:

6 NYCRR Subpart 201-6

6 NYCRR Subpart 231-5

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Item 12.2:

Operation of this facility shall take place in accordance with the approved criteria, emission limits, terms, conditions and standards in this permit.

Item 12.3:

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.

Item 12.4:

On an annual basis, unless otherwise specified below, beginning one year after the granting of an emissions cap, the responsible official shall provide a certification to the Department that the facility has operated all emission units within the limits imposed by the emission cap. This certification shall include a brief summary of the emissions subject to the cap for that time period and a comparison to the threshold levels that would require compliance with an applicable requirement.

Item 12.5:

The emission of pollutants that exceed the applicability thresholds for an applicable requirement, for which the facility has obtained an emissions cap, constitutes a violation of Part 201 and of the Act.

Item 12.6:

The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):

CAS No: 0NY210-00-0 OXIDES OF NITROGEN

Item 12.7:

Compliance Demonstration shall include the following monitoring:

Capping: Yes

Monitoring Type: MONITORING OF PROCESS OR CONTROL DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

This Condition is effective during Phase 2 operation (after the installation of CHP NOx controls).

Total 12-month rolling Oxides of Nitrogen (NOx) emissions shall be limited to 49800 pounds (24.9 tons per) to cap out of the applicability requirements of NYCRR Parts 201-6 and 231-5.

MSKCC's air emission sources are 6(six)combined heat and power (CHP)engines burning natural gas, twenty one(21) boilers each rated @ 6mmbtu/hr (17 natural gas and four dual-fuel(#2 oil and gas)) and six emergency generators.

Compliance with NOx emissions (pounds) shall be determined

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using the following two formulas on a monthly basis:

1. $CHP_{gas} \times A + EB_{gas} \times B + VB_{gas} \times C + VBoil \times D + EGoil \times E = \text{monthly total NO}_x \text{ emissions}$
2. 12-month rolling total NO_x emissions = monthly total NO_x emissions + previous 11-month total NO_x Emissions

CHP_{gas} = monthly natural gas consumption of Zuckerman CHP units (Mcf) + monthly natural gas consumption of Memorial building CHP units (Mcf)
 A = NO_x emission factor lb/Mcf derived from the most recent Department approved stack test
 g/hp-hr (lbs/hr) - CHP NO_x emission factor from most recent Department approved stack test (not more than 0.51hg/bhp-hr to allow the concurrent operation of all six CHPs and maintain compliance with the NAAQS)

EB_{gas} = monthly Endura Boiler natural gas consumption (Mcf) in Zuckerman building + monthly Endura Boiler natural gas consumption (Mcf) in Memorial building
 B = 0.011 lb NO_x/Mcf, the Endura boiler NO_x emission factor 9 ppm during natural gas firing (from Fulton Endura boiler Technical data sheets)
 NO_x ppm to lb/MMBtu conversion is using EPA method 19;
 9ppm = 0.0109lb/mmmbtu; 0.00102 btu/scf nat. gas

VB_{gas} = monthly Vantage boiler natural gas consumption (Mcf) in Memorial building
 C = 0.0372 lb NO_x/Mcf, the Vantage boiler NO_x emission factor 30 ppm during natural gas firing (from Fulton vantage dual Technical data sheets)
 NO_x ppm to lb/MMBtu conversion is using EPA Method 19; 30 ppm = 0.0364 lb/MMmbtu; 0.00102btu/scf nat gas

$VBoil$ = monthly Vantage boilers No. 2 Fuel Oil (gal) consumption in Memorial building
 D = 0.0179 lb NO_x/gallon, the Vantage boiler NO_x emission factor 100 ppm during No.2 oil firing (from Fulton vantage dual Technical data sheets)
 NO_x ppm to lb/MMBtu conversion is using EPA method 19;
 100 ppm=0.128119lb/MMmbtu; 140,000btu/gal

$EG \text{ oil} \times E$ = monthly oil usage of three emergency generators CAT DM3111 (gal) x 0.45153lb/gal + monthly oil usage of two emergency CAT 3516 generators x 0.27631 lb/gallon + monthly oil usage of one emergency CAT 3516C generator x 0.27631 lb/gallon

0.45153 lb/gallon is based on AP=42 Table 3.4-1 NO_x emission factor for uncontrolled 3.2 lb/mmmbtu and 140000 btu/gal heating value of oil.

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0.27631 lb/gal is based on AP42 Table 3.4-1 emission factor for controlled 1.9 lb/mmBtu (5.9g-bhp hr).
 Permit application includes EPA Certificate of conformity for engine CAT 3516C (engine family HCPXL78.INZS), certifying Tier 2 standard 5.07g/KW-hr or 3.78g/bhp-hr.

Mcf = 1000 cubic feet

Records demonstrating compliance with the permit limit shall be kept at the facility for a minimum of five years, which shall include monthly and 12-month rolling fuel usage and calculations.

Parameter Monitored: OXIDES OF NITROGEN
 Upper Permit Limit: 49800 pounds per year
 Monitoring Frequency: MONTHLY
 Averaging Method: ANNUAL TOTAL ROLLED MONTHLY
 Reporting Requirements: ANNUALLY (CALENDAR)
 Reports due 30 days after the reporting period.
 Subsequent reports are due every 12 calendar month(s).

Condition 13: Visible Emissions Limited
Effective for entire length of Permit

Applicable Federal Requirement: 6 NYCRR 211.2

Item 13.1:
 Except as permitted by a specific part of this Subchapter and for open fires for which a restricted burning permit has been issued, no person shall cause or allow any air contamination source to emit any material having an opacity equal to or greater than 20 percent (six minute average) except for one continuous six-minute period per hour of not more than 57 percent opacity.

Condition 14: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement: 6 NYCRR 225-1.2 (d)

Item 14.1:
 The Compliance Demonstration activity will be performed for the Facility.

Item 14.2:
 Compliance Demonstration shall include the following monitoring:

Monitoring Type: WORK PRACTICE INVOLVING SPECIFIC OPERATIONS

Monitoring Description:

Owners or operators of emission sources that fire

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distillate oil are limited to a 0.0015 percent sulfur content by weight of the fuel. Compliance with the sulfur-in-fuel limitation is based on fuel vendor receipts. All fuel vendor receipts must be maintained on site or at a Department approved alternative location for a minimum of five years.

Note - Process sources and incinerators must comply with the above requirements on or after July 1, 2023.

Work Practice Type: PARAMETER OF PROCESS MATERIAL
 Process Material: DISTILLATES - NUMBER 1 AND NUMBER 2 OIL
 Parameter Monitored: SULFUR CONTENT
 Upper Permit Limit: 0.0015 percent by weight
 Monitoring Frequency: PER DELIVERY
 Averaging Method: MAXIMUM - NOT TO BE EXCEEDED AT ANY TIME (INSTANTANEOUS/DISCRETE OR GRAB)
 Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 15: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement: 6 NYCRR 227-1.3 (c)

Item 15.1:

The Compliance Demonstration activity will be performed for the Facility.

Item 15.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

The owner or operator of a stationary combustion installation must perform an annual tune-up on each emission source subject to 6 NYCRR Subpart 227-1. Records of the tune-up shall be maintained at the facility or at a Department approved alternative location for a minimum of five years. The records shall, at a minimum, include the date the tune-up(s) occurred and the details of the tune-up procedures for each emission source.

Monitoring Frequency: ANNUALLY

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 16: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement: 6 NYCRR 227-1.4 (a)

Item 16.1:

The Compliance Demonstration activity will be performed for the Facility.

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Item 16.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: MONITORING OF PROCESS OR CONTROL
DEVICE PARAMETERS AS SURROGATE

Monitoring Description:

No owner or operator of a stationary combustion installation subject to this Subpart shall operate an emission source which exhibits greater than 20 percent opacity (based on a six minute average), except for one 6 minute period per hour of not more than 27 percent opacity. The owner or operator will conduct a Method 9 test annually. A report of the results of the test will be submitted to the Department within 30 days of the completion of the Method 9 test. All records generated by the permittee must be maintained at the facility or at an alternative location approved by the Department for a minimum of five years.

Parameter Monitored: OPACITY

Upper Permit Limit: 20 percent

Reference Test Method: 40 CFR 60, Appendix A, Method 9

Monitoring Frequency: ANNUALLY

Averaging Method: 6-MINUTE AVERAGE (METHOD 9)

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 17: Compliance Demonstration
Effective for entire length of Permit

Applicable Federal Requirement: 40CFR 60.7(a)(1), NSPS Subpart A

Item 17.1:

The Compliance Demonstration activity will be performed for the Facility.

Item 17.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

Any owner or operator subject to the provisions of this part shall furnish the Administrator written notification or, if acceptable to both the Administrator and the owner or operator of a source, electronic notification, as follows:

A notification of the date construction (or reconstruction as defined under 40 CFR Part 60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.

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Facility DEC ID: 2620401661

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Reporting Requirements: ONCE / BATCH OR MONITORING OCCURRENCE

**Condition 18: Applicability
 Effective for entire length of Permit**

Applicable Federal Requirement:40CFR 60, NSPS Subpart IIII

Item 18.1:

Facilities that have stationary compression ignition internal combustion engines must comply with applicable portions of 40 CFR 60 Subpart IIII.

**Condition 19: Applicability
 Effective for entire length of Permit**

Applicable Federal Requirement:40CFR 60, NSPS Subpart JJJJ

Item 19.1:

This Condition applies to:

Emission Unit: UMBCHP
Process: 1NG Emission Source: MCHP1

Emission Unit: UMBCHP
Process: 1NG Emission Source: MCHP2

Emission Unit: UZBCHP
Process: 2NG Emission Source: ZCHP1

Emission Unit: UZBCHP
Process: 2NG Emission Source: ZCHP2

Emission Unit: UZBCHP
Process: 2NG Emission Source: ZCHP3

Emission Unit: UZBCHP
Process: 2NG Emission Source: ZCHP4

Item 19.2:

Facilities that have stationary spark ignition internal combustion engines must comply with applicable portions of 40 CFR 60 subpart JJJJ.

**Condition 20: Applicability of facilities subject to Subpart JJJJ
 Effective for entire length of Permit**

Applicable Federal Requirement:40CFR 60.4230(a)(4)(i), NSPS Subpart JJJJ

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Item 20.1:

This Condition applies to:

- Emission Unit: UMBCHP
Process: 1NG Emission Source: MCHP1

- Emission Unit: UMBCHP
Process: 1NG Emission Source: MCHP2

- Emission Unit: UZBCHP
Process: 2NG Emission Source: ZCHP1

- Emission Unit: UZBCHP
Process: 2NG Emission Source: ZCHP2

- Emission Unit: UZBCHP
Process: 2NG Emission Source: ZCHP3

- Emission Unit: UZBCHP
Process: 2NG Emission Source: ZCHP4

Item 20.2:

The provisions of 40 CFR 60 Subpart JJJJ are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) that commence construction after June 12, 2006, and where the stationary SI ICE are manufactured on or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP). For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

Condition 21: Applicability
Effective for entire length of Permit

Applicable Federal Requirement: 40CFR 63, Subpart ZZZZ

Item 21.1:

This Condition applies to:

- Emission Unit: UMBCHP
Process: 1NG Emission Source: MCHP1

- Emission Unit: UMBCHP
Process: 1NG Emission Source: MCHP2

- Emission Unit: UZBCHP
Process: 2NG Emission Source: ZCHP1

- Emission Unit: UZBCHP
Process: 2NG Emission Source: ZCHP2

- Emission Unit: UZBCHP

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Process: 2NG

Emission Source: ZCHP3

Emission Unit: UZBCHP

Process: 2NG

Emission Source: ZCHP4

Item 21.2:

Facilities that have reciprocating internal combustion engines must comply with applicable portions of 40 CFR 63 subpart ZZZZ.

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STATE ONLY ENFORCEABLE CONDITIONS

****** Facility Level ******

NOTIFICATION OF GENERAL PERMITTEE OBLIGATIONS

This section contains terms and conditions which are not federally enforceable. Permittees may also have other obligations under regulations of general applicability

Item A: Emergency Defense - 6 NYCRR 201-1.5

An emergency, as defined in 6 NYCRR 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 demonstrate, 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 facility was being properly operated and maintained;

(3) during the period of the emergency the facility owner or operator took all reasonable steps to minimize the 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 any 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 malfunction provision contained in any applicable requirement.

Item B: Public Access to Recordkeeping for Facilities With State Facility Permits - 6 NYCRR 201-1.10 (a)

Where facility owners and/or operators keep records pursuant to compliance with the requirements of 6 NYCRR Subpart 201-5.4, and/or the emission capping requirements of 6 NYCRR Subpart 201-7, the Department will make such records available to the public upon request in accordance

Permit ID: 2-6204-01661/00002

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with 6 NYCRR Part 616 - Public Access to Records.
 Facility owners and/or operators must submit the records required to comply with the request within sixty working days of written notification by the Department.

Item C: 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.

STATE ONLY APPLICABLE REQUIREMENTS

The following conditions are state only enforceable.

**Condition 22: Contaminant List
 Effective for entire length of Permit**

Applicable State Requirement:ECL 19-0301

Item 22.1:

Emissions of the following contaminants are subject to contaminant specific requirements in this permit(emission limits, control requirements or compliance monitoring conditions).

CAS No: 0NY210-00-0
 Name: OXIDES OF NITROGEN

CAS No: 0NY998-00-0
 Name: VOC

**Condition 23: Malfunctions and Start-up/Shutdown Activities
 Effective for entire length of Permit**

Permit ID: 2-6204-01661/00002

Facility DEC ID: 2620401661

Applicable State Requirement:6 NYCRR 201-1.4**Item 23.1:**

(a) The facility owner or operator shall take all necessary and appropriate actions to prevent the emission of air pollutants that result in contravention of any applicable emission standard during periods of start-up, shutdown, or malfunction.

(b) The facility owner or operator shall compile and maintain records of all equipment maintenance and start-up/shutdown activities when they are expected to result in an exceedance of any applicable emission standard, and shall submit a report of such activities to the department when required by a permit condition or upon request by the department. Such reports shall state whether an exceedance occurred and if it was unavoidable, include the time, frequency and duration of the exceedance, and an estimate of the emission rates of any air contaminants released. Such records shall be maintained for a period of at least five years and made available for review to department representatives upon request. Facility owners or operators subject to continuous monitoring and quarterly reporting requirements need not submit additional reports of exceedances to the department.

(c) In the event that air contaminant emissions exceed any applicable emission standard due to a malfunction, the facility owner or operator shall notify the department as soon as possible during normal working hours, but not later than two working days after becoming aware that the malfunction occurred. In addition, the facility owner or operator shall compile and maintain a record of all malfunctions. Such records shall be maintained at the facility for a period of at least five years and must be made available to the department upon request. When requested by the department, the facility owner or operator shall submit a written report to the department describing the malfunction, the corrective action taken, the air contaminants emitted, and the resulting emission rates and/or opacity.

(d) The department may also require the facility owner or operator to include, in reports described under Subdivisions (b) and (c) of this Section, an estimate of the maximum ground level concentration of each air contaminant emitted and the effect of such emissions.

(e) A violation of any applicable emission standard resulting from start-up, shutdown, or malfunction conditions at a permitted or registered facility may not be subject to an enforcement action by the department and/or penalty if the department determines, in its sole discretion, that such a violation was unavoidable. The actions and recordkeeping and reporting requirements listed above must be adhered to in such circumstances.

**Condition 24: Emission Unit Definition
Effective for entire length of Permit****Applicable State Requirement:6 NYCRR Subpart 201-5****Item 24.1:**

The facility is authorized to perform regulated processes under this permit for:

Emission Unit: U-MBCHP

Emission Unit Description:

Permit ID: 2-6204-01661/00002

Facility DEC ID: 2620401661

This emission unit consist of two (2) natural gas fired combined heat and powers systems (CHP)s each rated 557 KW with its own stack (Emission Points MCHP1 & MCHP2), eight Endura condensing boilers each rated 6 mmbtu/hr fire only natural gas and four Vantage dual fuel condensing boilers each rated at 6mmbtu/hr fire #2 oil only when natural gas is not available. These sources are located in Memorial building.

CHPs are spark ignition internal compression engines subject to the requirements of 40 CFR 60 Subpart JJJJ.

Engine details:

4-Stroke lean burn engine

12 cylinders

2.15 liters per cylinder

1573 cu. in displacement

These CHP units are also subject to the requirements of 40 CFR ZZZZ.

The boilers are not subject to 40 CFR 63 Subpart JJJJJ because they meet the definition of gas-fired boiler.

Building(s): 1

Item 24.2:

The facility is authorized to perform regulated processes under this permit for:

Emission Unit: U-ZBCHP

Emission Unit Description:

This emission unit consists of four (4) natural gas fired combined heat and power systems (CHPs) each rated 557 KW with its own stack (Emission Points ZCHP1, ZCHP2, ZCHP3 & ZCHP4) and nine (9) natural gas fired Endura condensing boilers each rated at 6mmbtu/hr. These sources are located in Zuckerman Research Center building.

These are spark ignition internal compression engines subject to the requirements of 40 CFR 60 Subpart JJJJ.

Engine details:

4-Stroke lean burn engine

12 cylinders

2.15 liters per cylinder

1573 cu. in displacement

These CHP units are also subject to the requirements of 40 CFR ZZZZ.

The boilers are not subject to 40 CFR 63 Subpart JJJJJ because they meet the definition of gas-fired boiler.

Building(s): 2

Permit ID: 2-6204-01661/00002

Facility DEC ID: 2620401661

Condition 25: Compliance Demonstration
Effective for entire length of Permit

Applicable State Requirement: 6 NYCRR Subpart 201-5

Item 25.1:

The Compliance Demonstration activity will be performed for the facility:
 The Compliance Demonstration applies to:

Emission Unit: U-MBCHP Process: 1NG	Emission Source: MCHP1
Emission Unit: U-MBCHP Process: 1NG	Emission Source: MCHP2
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP1
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP2
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP3
Emission Unit: U-ZBCHP Process: 2NG	Emission Source: ZCHP4
Regulated Contaminant(s): CAS No: 0NY998-00-0	VOC

Item 25.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: INTERMITTENT EMISSION TESTING

Monitoring Description:

Within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup of the facility, the owner or operator of the facility shall conduct performance test to verify CHP'S VOC emission factor.

The stack test protocol must be submitted to the Department for approval 60 days prior the stack test, and the results of the testing must be reported within 60 days.

The emission factor 0.03 gr/bhp-hr (Certificate of Conformity certifies 0.7g/bhp-hr) was used to calculate CHPs potential VOC emissions to verify that the total facility VOC emissions are below the major source threshold (25 tpy) for Title V and New Source review. If

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VOC emission rate is found to be more than 0.03 gr/bhp-hr during the stack test, facility must demonstrate compliance by submitting relevant operational records and calculations.

Facility shall keep all records on-site for minimum period of 5 years and must be available to the Department upon request.

Parameter Monitored: VOC

Upper Permit Limit: 0.03 grams per brake horsepower-hour

Reference Test Method: 40 CFR Part 60 Appendix A Method 25 A and 18

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: 1-HOUR AVERAGE

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

**Condition 26: Compliance Demonstration
Effective for entire length of Permit**

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 26.1:

The Compliance Demonstration activity will be performed for the Facility.

Item 26.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

Facility shall inform the Department within 30 days of the commencement of Phase 2 operation (after the installation of NOx controls).

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

**Condition 27: Renewal deadlines for state facility permits
Effective for entire length of Permit**

Applicable State Requirement:6 NYCRR 201-5.2 (c)

Item 27.1:

The owner or operator of a facility having an issued state facility 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.

**Condition 28: Compliance Demonstration
Effective for entire length of Permit**

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Applicable State Requirement:6 NYCRR 201-5.3 (c)

Item 28.1:

The Compliance Demonstration activity will be performed for the Facility.

Item 28.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

Any reports or submissions required by this permit shall be submitted to the Regional Air Pollution Control Engineer (RAPCE) at the following address:

Division of Air Resources
NYS Dept. of Environmental Conservation
Region 2
47-40 21st St.
Long Island City, NY 11101

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

**Condition 29: Air pollution prohibited
Effective for entire length of Permit**

Applicable State Requirement:6 NYCRR 211.1

Item 29.1:

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. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.

****** Emission Unit Level ******

**Condition 30: Emission Point Definition By Emission Unit
Effective for entire length of Permit**

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 30.1:

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: U-MBCHP

Emission Point: MCHP1

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Height (ft.): 154 Diameter (in.): 12
 NYTMN (km.): 4513.12 NYTME (km.): 588.001 Building: 1

Emission Point: MCPH2
 Height (ft.): 154 Diameter (in.): 12
 NYTMN (km.): 4513.12 NYTME (km.): 588.001 Building: 1

Item 30.2:

The following emission points are included in this permit for the cited Emission Unit:

Emission Unit: U-ZBCHP

Emission Point: ZCHP1
 Height (ft.): 161 Diameter (in.): 12
 NYTMN (km.): 4513.179 NYTME (km.): 588.088 Building: 2

Emission Point: ZCHP2
 Height (ft.): 161 Diameter (in.): 12
 NYTMN (km.): 4513.178 NYTME (km.): 588.09 Building: 2

Emission Point: ZCHP3
 Height (ft.): 161 Diameter (in.): 12
 NYTMN (km.): 4513.178 NYTME (km.): 588.088 Building: 2

Emission Point: ZCHP4
 Height (ft.): 161 Diameter (in.): 12
 NYTMN (km.): 4513.178 NYTME (km.): 588.09 Building: 2

**Condition 31: Process Definition By Emission Unit
 Effective for entire length of Permit**

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 31.1:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-MBCHP
 Process: ING Source Classification Code: 2-03-002-04
 Process Description:
 Two (2) Combined Heat and Power Units Firing Natural Gas

Emission Source/Control: MCHP1 - Combustion
 Design Capacity: 557 kilowatts

Emission Source/Control: MCHP2 - Combustion
 Design Capacity: 557 kilowatts

Emission Source/Control: MCAT1 - Control
 Control Type: CATALYTIC OXIDATION

Emission Source/Control: MCAT2 - Control
 Control Type: CATALYTIC OXIDATION

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Item 31.2:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-MBCHP
Process: EBG Source Classification Code: 1-03-006-03
Process Description: Eight Endura boilers firing natural gas.

Emission Source/Control: ENDU1 - Combustion
Design Capacity: 6 million Btu per hour

Item 31.3:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-MBCHP
Process: VBG Source Classification Code: 1-02-006-03
Process Description: Four Vantage dual fuel boilers firing natural gas.

Emission Source/Control: VANB1 - Combustion
Design Capacity: 6 million Btu per hour

Item 31.4:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-MBCHP
Process: VBO Source Classification Code: 1-03-005-03
Process Description: Four Vantage dual fuel boilers firing #2 oil.

Emission Source/Control: VANB1 - Combustion
Design Capacity: 6 million Btu per hour

Item 31.5:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-ZBCHP
Process: 2NG Source Classification Code: 2-03-002-04
Process Description:
Four (4) Combined Heat and Power Units Firing Natural Gas

Emission Source/Control: ZCHP1 - Combustion
Design Capacity: 557 kilowatts

Emission Source/Control: ZCHP2 - Combustion
Design Capacity: 557 kilowatts

Emission Source/Control: ZCHP3 - Combustion
Design Capacity: 557 kilowatts

Emission Source/Control: ZCHP4 - Combustion
Design Capacity: 557 kilowatts

Emission Source/Control: ZCAT1 - Control

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Control Type: CATALYTIC OXIDATION

Emission Source/Control: ZCAT2 - Control
Control Type: CATALYTIC OXIDATION

Emission Source/Control: ZCAT3 - Control
Control Type: CATALYTIC OXIDATION

Emission Source/Control: ZCAT4 - Control
Control Type: CATALYTIC OXIDATION

Item 31.6:

This permit authorizes the following regulated processes for the cited Emission Unit:

Emission Unit: U-ZBCHP

Process: EGB

Source Classification Code: 1-02-006-02

Process Description: Nine Endura boilers firing natural gas.

Emission Source/Control: ENDU9 - Combustion

Design Capacity: 6 million Btu per hour

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Facility DEC ID: 2620401661