

Facility DEC ID: 9294000022

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

IDENTIFICATION INFORMATION

Permit Type: Air State Facility
 Permit ID: 9-2940-00022/02001
 Effective Date: 08/10/2020 Expiration Date: 08/09/2030

Permit Issued To: MOOG INC
 400 JAMISON RD
 PO BOX 18
 EAST AURORA, NY 14052-0018

Contact: MATT MARTIN
 MOOG INC
 6686 WALMORE RD
 NIAGARA FALLS, NY 14304

Facility: MOOG-ISP
 6686 WALMORE RD
 WHEATFIELD, NY 14304

Contact: MATT MARTIN
 MOOG INC
 6686 WALMORE RD
 NIAGARA FALLS, NY 14304

Description:

(1) Moog ISP is a developer and supplier of liquid rocket engines, tanks, and propulsion systems for commercial, defense, and spacecraft launch vehicles. The facility is located at 6686 Walmore Road, Wheatfield, New York. At this facility, Moog ISP tests propulsion systems (i.e., thrusters) for satellite and missile altitude control applications. Moog ISP operations include test cells where thruster testing is conducted. Thrusters are monopropellant thrusters using a single type of propellant (i.e., fuel) or bipropellant thrusters using two types of propellants (i.e., fuel and oxidizer). The primary types of propellant used at the facility are hydrazine (fuel), monomethylhydrazine (fuel), and nitrogen tetroxide (oxidizer). The facility also uses other propellants including n,n-dimethylhydrazine (UDMH) and green propellants

(2) This permit action is being completed to change the current Air Facility Registration to an Air State Facility permit because the facility does not qualify for a registration. Specifically, the facility does not satisfy the applicability requirement per 6 NYCRR Part 201-4.1(a)(2), since the facility actual annual emissions of hydrazine are greater than the threshold listed in Table 1 of Subpart 201-9.

(3) The facility operates a natural gas-fired boiler with a heat input rating of 83.5 million Btu/hr. The boiler is used to generate steam required for the facility. The new boiler is equipped with low NOx burners. An air quality dispersion modeling analysis was conducted using AERMOD to demonstrate the new boiler does not lead to an exceedance of the National Ambient Air Quality Standards (NAAQS) or New York

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State ambient air quality standards for nitrogen dioxide (NO₂) and sulfur dioxide (SO₂). The results of the modeling, including ambient background concentrations, demonstrated all impacts comply with the corresponding standards.

(4) The 83.5 MMBtu/hr natural gas boiler is subject to 40 CFR 60 Subpart Dc. The facility must comply with the Subpart Dc fuel monitoring and recordkeeping requirements of 40 CFR 60.48c(g)(2) or (3) by recording the quantity of natural gas combusted on a monthly basis using fuel bills or meter readings.

(5) The 83.5 MMBtu/hr natural gas boiler is subject to the opacity requirements of 6 NYCRR Part 227-1.3 which specifies the opacity from the boiler stack shall be less than 20 percent (6-minute average) except for one 6-minute period per hour of not more than 27 percent opacity.

(6) Process emission sources were evaluated for compliance with 6 NYCRR Part 212. Individual contaminants that required a 6 NYCRR Part 212-2 evaluation included hydrazine, monomethylhydrazine, ammonia, and nitrogen tetroxide/nitrogen dioxide (N₂O₄/NO₂). The evaluation demonstrated the facility shall operate and maintain scrubbers to reduce hydrazine, methylhydrazine and N₂O₄/NO₂ emissions to satisfy the requirements of Part 212. The facility shall install the scrubbers and submit a monitoring plan one year after permit issuance.

(7) The facility operates an exempt surface coating process that is subject to the general requirements of 6 NYCRR Part 228-1.

(8) The facility operates an exempt solvent cleaning machine that is subject to 6 NYCRR Part 226-1. The cold cleaning degreasing machine has an internal volume greater than 2 gallons and must satisfy specific equipment specifications and use a cleaning solution with a maximum VOC content of 25 grams per liter. In addition, the cold cleaning machine is subject to the general and operating requirements of Part 226-1.

(9) The facility operates a 100 kW, spark ignition, natural gas fueled, emergency generator. The emergency generator is exempt from being listed in the permit. However, the generator is subject to the regulatory requirements of 40 CFR 60 Subpart JJJJ. The generator meets the requirements of 40CFR part 60 subpart JJJJ and is EPA certified. The generator requires a three-way catalyst (TWC) and Air/Fuel Ratio control system to meet the EPA certification requirements.

(10) The renewal application for this Air State Facility Permit must be submitted to the department at least 180 days, but not more than 18 months, prior to the date of permit expiration. While the renewal application is being processed by the department, the owner or operator of the facility may continue to operate under the terms and conditions of the existing permit, provided the application is submitted in accordance with 6NYCRR Part 201-5.2(c).

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict

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compliance with the ECL, all applicable regulations, the General Conditions specified and any Special Conditions included as part of this permit.

Permit Administrator: MARK F PASSUITE
 NYSDEC - REGION 9
 270 MICHIGAN AVE
 BUFFALO, NY 14203-2915

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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- 4 3 Applications for permit renewals, modifications and transfers
- 5 4 Permit modifications, suspensions or revocations by the Department

Facility Level

- 5 5 Submission of application for permit modification or renewal-REGION 9 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 9 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 9 Headquarters
Division of Environmental Permits
270 Michigan Avenue
Buffalo, NY 14203-2915
(716) 851-7165

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Permit Under the Environmental Conservation Law (ECL)

ARTICLE 19: AIR POLLUTION CONTROL - AIR STATE FACILITY PERMIT

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400 JAMISON RD
PO BOX 18
EAST AURORA, NY 14052-0018

Facility: MOOG-ISP
6686 WALMORE RD
WHEATFIELD, NY 14304

Authorized Activity By Standard Industrial Classification Code:
3764 - MISSILE/SPACE PROPULSION UNITS & PARTS

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- 9 4 40CFR 60, NSPS Subpart JJJJ: Compliance Demonstration

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- 10 5 6 NYCRR 227-1.3 (a): Compliance Demonstration
- 12 6 40CFR 60.48c(g), NSPS Subpart Dc: Compliance Demonstration

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- 13 7 6 NYCRR 212-2.4 (b): Compliance Demonstration

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FEDERALLY ENFORCEABLE CONDITIONS

FINAL

**** 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

If an existing emission source was subject to the permitting requirements of 6 NYCRR Part 201 at the time of construction or modification, and the owner and/or operator failed to apply for a permit for such emission source then the following provisions apply:

(a) The owner and/or operator must apply for a permit for such emission source or register the facility in accordance with the provisions of Part 201.

(b) The emission source or facility is subject to all regulations that were applicable to it at the time of construction or modification and any subsequent requirements applicable to existing sources or facilities.

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: Visible Emissions Limited
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable Federal Requirement:6 NYCRR 211.2

Item 1.1:

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 2: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable Federal Requirement:6 NYCRR 212-1.5 (d)

Item 2.1:

The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
 CAS No: 010102-44-0 NITROGEN DIOXIDE

Item 2.2:

Compliance Demonstration shall include the following monitoring:

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

Monitoring Description:

PART 212 EVALUATION
 N2O4/NO2 EMISSIONS

(1) Nitrogen tetroxide (N2O4) and Nitrogen dioxide (NO2) are emitted from four (4) process emission points including EP 58-53, EP 58-71, EP 58-79 and EP 58-80. The

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total, uncontrolled, Emission Rate Potential (ERP) for these emissions points is estimated at approximately 12 pounds per hour (lbs/hr) and 6,531 pounds per year (lbs/yr) NO₂, where N₂O₄ is evaluated as NO₂. The actual annual process emissions of total N₂O₄/NO₂ after air pollution controls are estimated at 65 lbs/yr.

(2) Emission point EP 58-71 is the largest process source of NO₂ emissions with an ERP of 12 lbs/hr. NO₂ emissions from EP 58-71 will be controlled by operating a wet Scrubber (SCB01) to reduce the hourly emission rate to 0.12 lb/hr. Emission point EP 58-53 is the second largest source with an ERP of 0.02 lb/hr NO₂. No controls are proposed for emission point EP 58-53. NO₂ emissions from emission points EP 58-79 and EP 58-80 are minimal and will be controlled with Scrubbers SCB02 and SCB03 to reduce the hourly emission rate to about 0.0013 lb/hr.

(3) NO₂ is a criteria air contaminant that when emitted from a process source must demonstrate compliance with the National Ambient Air Quality Standards (NAAQS) and Table 3 of 6 NYCRR Part 212. NO₂ is given an initial environmental rating of B.

(4) For Emission Point 58-71, in accordance with 6 NYCRR Part 212-2.3(a), Table 3, a source having an ERP greater than 10 lb/hr and less than 20 lbs/hr must reduce emissions by 90% and demonstrate compliance with the NAAQS. An air dispersion modeling analysis using a 90% reduction of emissions from EP 58-71 and uncontrolled emission rates from EP 58-53, 58-79 and 58-80, resulted in ambient concentrations that exceed the 1-HOUR NAAQS NO₂ standard of 188.1 ug/m³. Conversely, the ANNUAL maximum NO₂ impacts were less than the NAAQS limit of 100 ug/m³. Since the 1-HOUR NO_x NAAQS was exceeded, the emissions must be re-evaluated using an environmental rating of A for NO_x emissions.

(5) The NO₂ ERP emissions from the four emission points were re-evaluated using an Environmental Rating of A. For emission point 58-71, Table 3 requires an A-rated criteria contaminant emitted at a rate greater than 10 and less than 20 lbs/hr to have a 99% degree of air cleaning. The proposed scrubber SCB01 will reduce the maximum inlet N₂O₄/NO₂ emission rate of 12 lbs/hr by 99% or reduce the maximum outlet N₂O₄/NO₂ emissions to less than 0.12 lb/hr. By reducing the emissions from EP 58-71, the revised DAR-1 analysis using the controlled N₂O₄/NO₂ emissions from EP 58-71 and uncontrolled emissions from EP 58-53, 58-79 and 58-80 resulted in modeled ambient concentrations below the 1-hour NAAQS standard of 188 ug/m³ and in compliance with Part 212. Since the facility also has NO₂

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emissions from the boiler, an evaluation using both the process sources and boiler was completed and demonstrated compliance with the NO2 NAAQS.

(6) Based on the results of the Part 212 analysis, the facility must install, operate and maintain proposed scrubber SCB01 to reduce the hourly N2O4/NO2 emissions to less than 0.12 lb/hr or by 99% for Emission Point EP 58-71.

(7) The facility must maintain records of the design criteria of Scrubbers SCB01, SCB02, and SCB03 and provide this information upon request.

(8) The facility must submit an operating and monitoring plan for Scrubbers SCB01, SCB02, and SCB03 to demonstrate the scrubbers are operating within the design control parameters. The scrubbers must be installed, and the operating plan submitted for review one year after permit issuance.

(9) At the discretion of the department, a revised Part 212 evaluation may be required with the next permit renewal due to regulatory or process changes.

Parameter Monitored: NITROGEN DIOXIDE

Upper Permit Limit: 0.12 pounds per hour

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 3: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable Federal Requirement: 6 NYCRR 212-1.6 (a)

Item 3.1:

The Compliance Demonstration activity will be performed for the Facility.

Item 3.2:

Compliance Demonstration shall include the following monitoring:

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

Monitoring Description:

PROCESS SOURCES
 PART 212 - OPACITY LIMIT

(1) As required by 6NYCRR Part 212-1.6(a), no person

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shall cause or allow emissions having an average opacity during any six consecutive minutes of 20 percent or greater from any process emission source, except only the emission of uncombined water.

(2) Compliance with this requirement shall be determined by the facility owner/operator conducting a routine survey of visible emissions when a process is in operation. Visible emission observations shall be performed, as best as possible, at a location to obtain the proper sun angle, background, and line of sight. The observer must be knowledgeable regarding the effects on the visibility of emissions caused by background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor).

(3) Visible emissions are not expected when properly operated. If any visible emissions are identified, inspect the source and restore operation of the emission unit (including the control device, if any, and the associated capture system) to its normal operation as expeditiously as practicable.

(4) Records of any visible emission event shall be maintained to include the date and length of time any visible emissions were observed, and the corrective action taken. The records shall be kept on-site and made available to the Department upon request. Documentation is not required when no visible emissions are observed during an inspection.

(5) The Department reserves the right to perform or require the performance of a Method 9 opacity evaluation from any process emission source.

(6) Upon request, a written report of any visible emission event shall be submitted to the Department.

Parameter Monitored: OPACITY

Upper Permit Limit: 20 percent

Reference Test Method: EPA Method 9

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 4: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable Federal Requirement: 40CFR 60, NSPS Subpart JJJJ

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Item 4.1:

The Compliance Demonstration activity will be performed for the Facility.

Item 4.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

EXEMPT EMERGENCY GENERATOR
40 CFR 60 SUBART JJJJ

(1) The facility has a Generac Model SG100, 100 kW, Spark ignition, natural gas fueled, emergency generator to service the scrubber building and other parts of the facility.

(2) The emergency generator is exempt from being listed in the permit. However, the generator is subject to the regulatory requirements of 40 CFR 60 Subpart JJJJ.

(3) The Generac spark-ignited genset meets the requirements of 40CFR part 60 subpart JJJJ and is EPA certified. This generator set is labeled as EPA Certified with decals affixed to the engines' valve covers. The EPA certification is # HGNXB08.92C1-035.

(4) The generator requires a three-way catalyst (TWC) and Air/Fuel Ratio control system to meet the EPA certification requirements.

(5) The facility shall operate and maintain the TWC and Air/Fuel Ratio control system in a manner consistent with manufacturer's specifications and good engineering practices. Failure to do so constitutes a violation of this Part.

(6) The facility must maintain all records necessary for demonstrating compliance with this Subpart on-site for a period of five years, and make them available to representatives of the department upon request.

Monitoring Frequency: UPON REQUEST OF REGULATORY AGENCY

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

**** Emission Unit Level ****

Condition 5: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

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

Item 5.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: 1-BOILR

Item 5.2:

Compliance Demonstration shall include the following monitoring:

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

Monitoring Description:

COMBUSTION SOURCES
PART 227 - OPACITY LIMIT

(1) The 83.5 MMBtu/hr natural gas boiler is subject to the opacity requirements of 6 NYCRR Part 227-1.3 which specifies the opacity from the boiler stack shall be less than 20 percent (6-minute average) except for one 6-minute period per hour of not more than 27 percent opacity.

(2) Compliance with this requirement shall be determined by the facility owner/operator conducting a routine survey of visible emissions when the combustion source is in operation. Visible emission observations shall be performed, as best as possible, at a location to obtain the proper sun angle, background, and line of sight. The observer must be knowledgeable regarding the effects on the visibility of emissions caused by background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor).

(3) Visible emissions are not expected when properly operated. If any visible emissions are identified, inspect the source and restore operation of the emission unit (including the control device, if any, and the associated capture system) to its normal operation as expeditiously as practicable.

(4) Records of any visible emission event shall be maintained to include the date and length of time any visible emissions were observed, and the corrective action taken. The records shall be kept on-site and made available to the Department upon request. Documentation is not required when no visible emissions are observed during an inspection.

(5) The Department reserves the right to perform or

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require the performance of a Method 9 opacity evaluation from any applicable emission source.

(6) Upon request, a written report of any visible emission event shall be submitted to the Department.

Parameter Monitored: OPACITY

Upper Permit Limit: 20 percent

Reference Test Method: EPA Method 9

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 6: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable Federal Requirement: 40CFR 60.48c(g), NSPS Subpart Dc

Item 6.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: 1-BOILER

Item 6.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

NATURAL GAS BOILER
MONTHLY FUEL RECORDS

The 83.5 MMBtu/hr natural gas boiler is subject to 40 CFR 60 Subpart Dc. The facility must comply with the Subpart Dc fuel monitoring and recordkeeping requirements of 40 CFR 60.48c(g)(2) or (3) by recording the quantity of natural gas combusted on a monthly basis using fuel bills or meter readings.

§ 60.48c(g) Reporting and recordkeeping requirements.

(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.

(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood,

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fuels using fuel certification in §60.48c(f) to demonstrate compliance with the SO₂ standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

(3) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in §60.42C to use fuel certification to demonstrate compliance with the SO₂ standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

Monitoring Frequency: MONTHLY

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 7: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable Federal Requirement: 6 NYCRR 212-2.4 (b)

Item 7.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: 2-ETEST

Emission Point: 58-82

Item 7.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

COOLING TOWER
 PART 212 - PARTICULATE MATTER (PM) EMISSION LIMIT

The control of particulate emissions generated from the cooling tower are restricted as follows:

(1) As required by 6NYCRR Part 212-2.4(b)(1), emissions of solid particulates are limited to less than 0.050 grains of particulates per cubic foot of exhaust gas, expressed at standard conditions on a dry gas basis (grains/dscf).

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(2) Compliance with this requirement shall be completed by operating the equipment in accordance with manufacturer recommendations.

(3) Maintenance records shall be kept on-site and be made available to the Department upon request.

(4) Upon request, a written report of any malfunction of the equipment shall be submitted to the Department.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 8: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable Federal Requirement:6 NYCRR 228-1.1 (b)

Item 8.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: 4-SURFC

Item 8.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

SURFACE COATING PROCESS
6 NYCRR PART 228-1 APPLICABILITY

The facility operates a surface coating operation listed in 6 NYCRR Part 228-1.1(b)(9) as an exemption where facility wide usage is less than or equal to 55 gallons of coatings (or up to 400 pounds of actual VOC usage) on a 12-month rolling total. This exemption is contingent on the facility maintaining records of such surface coatings, and maintaining compliance with all requirements of section 228-1.3, 'General Requirements', as follows.

§ 228-1.3(a) 'Opacity'

No person shall cause or allow emissions to the outdoor atmosphere having an average opacity of 20 percent or greater for any consecutive six-minute period.

§ 228-1.3(b) 'Recordkeeping'

Emission sources exempt from this Subpart as set forth in section 228-1.1(b)(9) must maintain records on an as used basis. The records must include the relevant regulatory

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citation of each exemption and quantity of coating used. If the exemption criteria are based on VOC usage, the records must contain calculations and supplier/manufacturer material data sheets for verification of VOC usage. All records required by this paragraph must be maintained at the facility for a period of five years.

§ 228-1.3(d) ‘Handling, storage and disposal of volatile organic compounds’.

Within the work area associated with the coating line:

- (1) use closed, non-leaking containers to store or dispose of cloth or other absorbent applicators impregnated with VOC solvents that are used for surface preparation, cleanup or coating removal;
- (2) store in closed, non-leaking containers spent or fresh VOC solvents to be used for surface preparation, cleanup or coating removal;
- (3) not use VOC solvents to cleanup spray equipment unless equipment is used to collect the cleaning compounds and to minimize VOC evaporation;
- (4) not use open containers to store or dispense surface coatings and/or inks unless production, sampling, maintenance or inspection procedures require operational access; and
- (5) minimize spills during the handling and transfer of coatings and VOC solvents.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 9: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable Federal Requirement:6 NYCRR Subpart 226-1

Item 9.1:

The Compliance Demonstration activity will be performed for:

Emission Unit: 5-DEGRS
 Process: P07

Item 9.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

COLD CLEANING DEGREASER
 PART 226-1 REQUIREMENTS

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GENERAL REQUIREMENTS - Section 226-1.3

Owners or operators conducting solvent cleaning processes must:

- (a) store solvent in covered containers and transfer or dispose of waste solvent in such a manner that less than 20 percent of the waste solvent (by weight) can evaporate into the atmosphere;
- (b) maintain equipment to minimize leaks and fugitive emissions;
- (c) display at the equipment location a conspicuous summary of proper operating procedures consistent with minimizing emissions of VOCs;
- (d) keep the degreaser cover closed except when parts are being placed into or being removed from the degreaser, the cover needs to be open in order to add or remove solvent from the degreaser, no solvent is in the degreaser, or manually cleaning parts in a cold cleaning degreaser;
- (e) create and maintain a record of solvent consumption for five years. This record must be retained for five years and made available to the department upon request.
- (f) not clean sponges, fabric, wood, leather, paper products and other absorbent materials in a degreaser; and
- (g) if using a cold cleaning degreaser that is subject to paragraph 226-1.4(a)(4) of this Subpart, retain a record of the following three items for five years and provide these records to the department upon request. An invoice, a bill of sale, a certificate covering multiple sales, manufacturers published information or other appropriate documentation acceptable to the department may be used to comply with this requirement:
 - (1) the name and address of the solvent supplier;
 - (2) the type of solvent including the product or vendor identification number; and
 - (3) the VOC content of the cleaning solution in grams per liter (gm/l) or the vapor pressure of the solvent measured in mm Hg at 20°C (68°F) as appropriate to verify compliance

EQUIPMENT SPECIFICATIONS &

CONTROL REQUIREMENTS - Section 226-1.4

The following types of control requirements must be used by an owner or operator conducting solvent cleaning:

- (a) 'Cold cleaning degreasing when the internal volume of the machine is greater than two gallons.'
 - (1) A cover which can be operated easily.
 - (2) An internal drainage facility (under cover), if practical.
 - (3) A control system that limits VOC emissions to those achievable with equipment having a freeboard ratio

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greater than or equal to 0.5, or a water cover when the solvent is insoluble in and heavier than water. Remote reservoir degreasers are exempt from this requirement.

(4) Cleaning solution with a maximum VOC content of 25 grams per liter at 20°C must be used.

OPERATING REQUIREMENTS - Section 226-1.5

The following operating practices are required by a person conducting solvent cleaning:

(a) 'Cold cleaning degreasing.' Clean parts shall be drained at least 15 seconds or until dripping ceases.

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

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 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 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 with 6 NYCRR Part 616 - Public Access to Records.

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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 10: Contaminant List

Effective between the dates of 08/10/2020 and 08/09/2030

Applicable State Requirement: ECL 19-0301

Item 10.1:

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

CAS No: 000060-34-4
Name: METHYL HYDRAZINE

CAS No: 000302-01-2
Name: HYDRAZINE

CAS No: 007664-41-7
Name: AMMONIA

CAS No: 010102-44-0

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Name: NITROGEN DIOXIDE

Condition 11: Malfunctions and start-up/shutdown activities
Effective between the dates of 08/10/2020 and 08/09/2030**Applicable State Requirement:6 NYCRR 201-1.4****Item 11.1:**

(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 malfunctions, maintenance, or start-up/shutdown activities when they can be expected to result in an exceedance of any applicable emission standard, and shall submit a report of such activities to the department when requested to do so, or when so required by a condition of a permit issued for the corresponding air contamination source. Such reports shall state whether any violations occurred and, if so, whether they were unavoidable, include the time, frequency and duration of the maintenance and/or start-up/shutdown activities, 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 stack monitoring and quarterly reporting requirements need not submit additional reports for equipment maintenance or start-up/shutdown activities for the facility to the department.

(c) In the event that emissions of air contaminants in excess of any emission standard in this Subchapter occur due to a malfunction, the facility owner or operator shall compile and maintain records of the malfunction and 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. 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, identification of air contaminants, and an estimate of the emission rates.

(d) The department may also require the 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 12: Emission Unit Definition
Effective between the dates of 08/10/2020 and 08/09/2030**Applicable State Requirement:6 NYCRR Subpart 201-5****Item 12.1:**

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

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Emission Unit: 1-BOILR

Emission Unit Description:

Emission Unit 1-BOILR consists of a natural gas fired boiler with a heat input rating of 83.5 million British thermal units per hour (MMBtu/hr). The boiler generates steam required for facility operation.

Building(s): 10

Item 12.2:

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

Emission Unit: 2-ETEST

Emission Unit Description:

Emission Unit 2-ETEST consists of the primary rocket engine testing conducted in test cells at the facility. The emission unit contains two types of processes: rocket combustion exhaust systems and propellant storage. The rockets utilize two types of thrusters: monopropellant thrusters and bipropellant thrusters. The thrust for a rocket is generated from reactions associated with propellant(s) that are rapid and reach very high temperatures creating large volumes of hot combustion gases from a small amount of propellant. For monopropellant thrusters, a fuel is combusted over a catalyst. The primary fuel currently used in monopropellant engine testing is hydrazine. For bipropellant thrusters, a fuel is reacted with the oxidizer. The primary types of fuel used in bipropellant thrusters are hydrazine or Monomethylhydrazine (MMH). n,n-Dimethylhydrazine (UDMH) is used as a fuel on a very limited basis. The oxidizer used at the facility is N₂O₄. Depending on the engine test, the exhaust gases are directed to either a series of vacuum pumps or to one of two steam ejector systems.

The facility maintains several tanks used to store and transfer propellants (fuel and oxidizer) for use in engine testing. Propellants, in liquid form, are currently stored in four storage tanks located in the test cell building. In addition, two small run tanks are located in test Cell A1 and one overboard bleed (OBB) tank is located in Test Cell B1. Propellant is transferred from the storage tanks directly to the rockets or to the run tanks so that the rockets can be fed directly from within the cell. Three new propellant storage tanks will be also installed in the new propellant storage building. The storage tanks currently located in the test cell building may be relocated to the new propellant storage building. This relocation will not affect the venting of the tanks.

Building(s): 52/58

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Item 12.3:

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

Emission Unit: 3-GTEST

Emission Unit Description:

Emission Unit 3-GTEST includes engine testing conducted with “green” propellants. A "green" propellant is an alternative to conventional chemical propulsion systems which seeks to improve overall propellant efficiency while reducing the handling concerns with conventional chemicals, such as, hydrazine. The facility conducts only a small amount of thruster testing with green monopropellants. The green monopropellants include stabilized hydroxylammonium nitrate (HAN) and 2-hydroxyethylhydrazine nitrate (HEHN). The thrust for the rocket is generated from the reaction associated with propellant on the catalyst that are rapid and reach very high temperatures creating large volumes of hot combustion gases from a small amount of propellant. The exhaust gases are emitted through a movable emission vent that is placed along the cell for testing. The emission unit includes one process: Process P04 consists of engine testing conducted in Test Cell D3 with green propellants.

Building(s): 52/58

Item 12.4:

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

Emission Unit: 4-SURFC

Emission Unit Description:

Emission Unit 4-SURFC consists of the application of surface coatings to miscellaneous components that are used in testing equipment within the facility paint booth.

Building(s): 64

Item 12.5:

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

Emission Unit: 5-DEGRS

Emission Unit Description:

Emission unit 5-DEGRS includes a cold cleaning batch degreasing unit.

Condition 13: Renewal deadlines for state facility permits
Effective between the dates of 08/10/2020 and 08/09/2030

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

Item 13.1:

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.

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Condition 14: CLCPA Applicability
Effective between the dates of 08/10/2020 and 08/09/2030

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

Item 14.1:

Pursuant to The New York State Climate Leadership and Community Protection Act (CLCPA) and Article 75 of the Environmental Conservation Law, emission sources shall comply with regulations to be promulgated by the Department to ensure that by 2030 statewide greenhouse gas emissions are reduced by 40% of 1990 levels, and by 2050 statewide greenhouse gas emissions are reduced by 85% of 1990 levels.

Condition 15: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable State Requirement:6 NYCRR 201-5.3 (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:

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 9
270 Michigan Ave.
Buffalo, NY 14203

Reporting Requirements: ANNUALLY (CALENDAR)

Reports due 30 days after the reporting period.

The initial report is due 1/30/2021.

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

Condition 16: Air pollution prohibited
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable State Requirement:6 NYCRR 211.1

Item 16.1:

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

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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.

Condition 17: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable State Requirement: 6 NYCRR 212-2.2

Item 17.1:

The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
 CAS No: 000302-01-2 HYDRAZINE

Item 17.2:

Compliance Demonstration shall include the following monitoring:

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

Monitoring Description:

PART 212 EVALUATION
 HYDRAZINE EMISSIONS
 ANNUAL EMISSION LIMIT

(1) Hydrazine is emitted from three (3) process emission points identified as EP58-79, EP58-80, and EP58-81. Hydrazine is a High Toxicity Air Contaminant (HTAC) with a mass emission limit (MEL) of 0.1 pound per year (lb/yr) as listed in Part 212-2.2, Table 2. Actual annual hydrazine emissions from the process sources total 4.6 lbs/yr which exceeds the MEL of 0.1 lb/yr. The facility can either limit the actual annual hydrazine emissions from all process operations to not exceed the MEL, or demonstrate compliance with the air cleaning requirements of Part 212-2.3(b), Table 4.

(2) Department guidance, known as DAR-1, allows a facility to demonstrate compliance with an HTAC by accepting state-enforceable permit conditions to limit the process annual actual emissions below the MEL. If this compliance option is chosen, no further review is required for the HTAC contaminant that has been limited. The facility opted to limit the annual actual hydrazine emissions below the MEL of 0.1 lb/yr by controlling emissions.

(3) The facility must install, operate and maintain three scrubbers identified as SCB02, SCB03 and SCB04 to reduce the hydrazine emissions to less than 0.1 lb/yr. The scrubbers must be installed and operated one year after

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permit issuance.

(4) The facility must maintain records of the design criteria of each scrubber and be able to provide this information upon request.

(5) The facility must submit an operating & monitoring plan for each scrubber to demonstrate that the scrubbers are operating within the design control parameters. Submit the operating & monitoring plan one year after permit issuance.

(6) Demonstrate compliance with the 0.1 lb/yr hydrazine annual emission limit after installation and operation of the scrubbers by recording monthly hydrazine emissions and computing a rolling, 12-month total emission rate.

(7) After installation and operation of the scrubbers, submit an annual compliance certification or capping report to the Region 9 Regional Air Pollution Control Engineer no later than January 30 for the previous calendar year. The first report is due January 30, 2022.

(8) At the discretion of the department, a revised Part 212 evaluation may be required with the next permit renewal due to regulatory or process changes.

Parameter Monitored: HYDRAZINE

Upper Permit Limit: 0.1 pounds per year

Monitoring Frequency: MONTHLY

Averaging Method: 12-MONTH TOTAL, ROLLED MONTHLY

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 18: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable State Requirement: 6 NYCRR 212-2.3 (b)

Item 18.1:

The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):

CAS No: 000060-34-4 METHYL HYDRAZINE

Item 18.2:

Compliance Demonstration shall include the following monitoring:

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

Monitoring Description:

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PART 212 EVALUATION
MONOMETHYLHYDRAZINE EMISSIONS
ANNUAL EMISSION LIMIT

(1) Monomethylhydrazine (MMH) is emitted from three (3) process emission points identified as EP 58-79, EP 58-80, and EP 58-81. The total, uncontrolled, Emission Rate Potential (ERP) of MMH from these emission points is 0.72 pound per hour (lb/hr) and 6,307 pounds per year (lbs/yr).

The proposed, controlled, annual MMH emissions are 18 lbs/yr.

(2) The facility will install, operate and maintain three scrubbers identified as SCB02, SCB03 and SCB04 to reduce MMH emissions. By limiting the annual MMH emissions to less than 18 lb/yr, the Part 212 analysis demonstrated the MMH emissions resulted in ambient concentrations less than the AGC of 0.045 ug/m3.

(3) Demonstrate compliance with the 18 lb/yr MMH annual emission limit after installation and operation of the scrubbers by recording monthly MMH emissions and computing a rolling, 12-month total emission rate.

(4) After installation and operation of the scrubbers, submit an annual compliance certification or capping report to the Region 9 Regional Air Pollution Control Engineer no later than January 30 for the previous calendar year. The first annual report is due January 30, 2022.

(5) At the discretion of the department, a revised Part 212 evaluation may be required with the next permit renewal due to regulatory or process changes.

Parameter Monitored: METHYL HYDRAZINE

Upper Permit Limit: 18 pounds per year

Monitoring Frequency: MONTHLY

Averaging Method: 12-MONTH TOTAL, ROLLED MONTHLY

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

Condition 19: Compliance Demonstration
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable State Requirement: 6 NYCRR 212-2.3 (b)

Item 19.1:

The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):

CAS No: 007664-41-7 AMMONIA

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Facility DEC ID: 9294000022

Item 19.2:

Compliance Demonstration shall include the following monitoring:

Monitoring Type: RECORD KEEPING/MAINTENANCE PROCEDURES

Monitoring Description:

PART 212 EVALUATION
AMMONIA EMISSIONS

- (1) Ammonia is emitted from five (5) process emission points including EP 58-05, EP 58-06, EP 58-79, EP 58-80 and EP 58-82. The total, uncontrolled, Emission Rate Potential (ERP) from these emissions points amounts to 1.68 pounds per hour (lbs/hr) and 14,717 pounds per year (lbs/yr). The proposed potential ammonia emissions, after air pollution control equipment, are 875 lbs/yr.
- (2) Ammonia is not a High Toxicity Air Contaminant and is referred to as a non-HTAC. Department guidance, known as DAR-1, requires each non-HTAC emitted from process sources with an ERP greater than 100 pounds per year, facility-wide, to demonstrate compliance with the requirements of 6 NYCRR Part 212. The 14,717 lbs/yr ERP of ammonia is greater than 100 lbs/yr and must be evaluated.
- (3) Ammonia is given an initial environmental rating of C. In accordance with 6 NYCRR Part 212-2.3(b), Table 4, a source having an ERP greater than 1 lb/hr and less than 10 lbs/hr with an environmental rating of C must use air dispersion modeling to demonstrate that the maximum offsite air concentration is less than the short-term guideline concentration (SGC) and annual guideline concentration (AGC). The analysis demonstrated the ERP of 1.68 lbs/hr and 14,717 lbs/yr ammonia emissions resulted in ambient concentrations below the SGC and AGC thresholds without the use of air pollution control equipment.
- (4) The facility chooses to further reduce ammonia emissions by 99% from emission points EP 58-79 and 58-80 by operating two wet scrubbers. It is recommended the scrubbers be operated in accordance with manufacturer specifications.
- (5) At the discretion of the department, a revised Part 212 evaluation may be required with the next permit renewal due to regulatory or process changes.
- (6) No records or reporting are required for this permit condition unless requested by the Department.

Monitoring Frequency: UPON REQUEST OF REGULATORY AGENCY

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Reporting Requirements: UPON REQUEST BY REGULATORY AGENCY

Condition 20: Compliance Demonstration
 Effective between the dates of 08/10/2020 and 08/09/2030

Applicable State Requirement: 6 NYCRR 212-2.3 (b)

Item 20.1:

The Compliance Demonstration activity will be performed for the Facility.

Regulated Contaminant(s):
 CAS No: 000060-34-4 METHYL HYDRAZINE

Item 20.2:

Compliance Demonstration shall include the following monitoring:

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

Monitoring Description:

PART 212 EVALUATION
 MONOMETHYLHYDRAZINE EMISSIONS
 HOURLY EMISSION LIMIT EP 58-81

(1) Monomethylhydrazine (MMH) is emitted from three (3) process emission points identified as EP 58-79, EP 58-80, and EP 58-81. The total, uncontrolled, Emission Rate Potential (ERP) of MMH from these emission points is 0.72 pound per hour (lb/hr) and 6,307 pounds per year (lbs/yr). The proposed, controlled, annual MMH emissions are 18 lbs/yr.

(2) MMH is not a High Toxicity Air Contaminant and is referred to as a non-HTAC. Department guidance, known as DAR-1, requires each non-HTAC emitted from process sources with an ERP greater than 100 pounds per year, facility-wide, to demonstrate compliance with the requirements of 6 NYCRR Part 212. The 6,307 lbs/yr ERP of MMH is greater than 100 lbs/yr and must be evaluated.

(3) Emission point EP 58-81 is the largest source of MMH emissions with an uncontrolled ERP of 0.64 lb/hr. MMH Emissions from EP 58-81 will be controlled by operating a wet scrubber (SCB04) to reduce the hourly emission rate to 0.064 lb/hr. Emission points EP 58-79 and EP 58-80 have minimal annual MMH emissions and will be controlled with Scrubbers SCB02 and SCB03.

(4) MMH is given an initial environmental rating of B. In accordance with 6 NYCRR Part 212-2.3(b), Table 4, a process source having an ERP less than 1 lb/hr with an

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environmental rating of B must use air dispersion modeling to demonstrate that the maximum offsite air concentration is less than the short-term guideline concentration (SGC) and annual guideline concentration (AGC). MMH does not have an SGC. An impact analysis was completed using the ERP from the three emission points and resulted in ambient concentrations that exceed the AGC.

(5) The MMH emissions were re-evaluated using an environmental rating of A. For EP 58-81, Table 4 requires an A-rated contaminant emitted at a rate greater than 0.1 lb/hr and less than 1 lb/hr to have a 90% degree of air cleaning. For EP 58-79 and 58-80, Table 4 requires air dispersion modeling. The facility proposed to reduce the MMH emissions from EP 58-81 to less than 0.1 lb/hr or by 90% using a wet scrubber SCB04. By reducing the MMH emissions from EP 58-81 a minimum of 90%, the Part 212 required degree of air cleaning is satisfied. To satisfy the air dispersion modeling, the facility proposed to limit the annual MMH emissions to less than 18 lb/yr which demonstrated the MMH ambient concentrations are less than the AGC of 0.045 ug/m3.

(6) Based on the results of the Part 212 analysis, the facility must install, operate and maintain Scrubber SCB04 to reduce the MMH emissions to less than 0.1 lb/hr or by a minimum of 90% from emission point EP 58-81. In addition, the facility must limit the annual MMH emissions to less than or equal to 18 lbs/yr.

(7) The facility must maintain records of the design criteria of Scrubbers SCB02, SCB03, and SCB04 and provide this information upon request.

(8) The facility must submit an operating and monitoring plan for Scrubbers SCB02, SCB03, and SCB04 to demonstrate the scrubbers are operating within the design control parameters. The scrubbers must be installed, and the operating plan submitted for review one year after permit issuance.

(9) At the discretion of the department, a revised Part 212 evaluation may be required with the next permit renewal due to regulatory or process changes.

Parameter Monitored: METHYL HYDRAZINE

Upper Permit Limit: 0.1 pounds per hour

Monitoring Frequency: AS REQUIRED - SEE PERMIT MONITORING DESCRIPTION

Averaging Method: MAXIMUM - NOT TO EXCEED STATED VALUE - SEE MONITORING DESCRIPTION

Reporting Requirements: AS REQUIRED - SEE MONITORING DESCRIPTION

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**** Emission Unit Level ****

Condition 21: Emission Point Definition By Emission Unit
Effective between the dates of 08/10/2020 and 08/09/2030

Applicable State Requirement: 6 NYCRR Subpart 201-5

Item 21.1:

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

Emission Unit: 1-BOILR

Emission Point: 10-10

Height (ft.): 45 Diameter (in.): 36
 NYTMN (km.): 4779.665 NYTME (km.): 180.133 Building: 10

Item 21.2:

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

Emission Unit: 2-ETEST

Emission Point: 58-05

Height (ft.): 18 Diameter (in.): 8
 NYTMN (km.): 4779.707 NYTME (km.): 180.164 Building: 52/58

Emission Point: 58-06

Height (ft.): 18 Diameter (in.): 8
 NYTMN (km.): 4779.707 NYTME (km.): 180.166 Building: 52/58

Emission Point: 58-71

Height (ft.): 48 Diameter (in.): 3
 NYTMN (km.): 4779.713 NYTME (km.): 180.203 Building: 52/58

Emission Point: 58-79

Height (ft.): 48 Diameter (in.): 20
 NYTMN (km.): 4779.701 NYTME (km.): 180.202 Building: 52/58

Emission Point: 58-80

Height (ft.): 48 Diameter (in.): 20
 NYTMN (km.): 4779.703 NYTME (km.): 180.206 Building: 52/58

Emission Point: 58-81

Height (ft.): 48 Diameter (in.): 3
 NYTMN (km.): 4779.712 NYTME (km.): 180.2 Building: 52/58

Emission Point: 58-82

Height (ft.): 17 Length (in.): 19 Width (in.): 12
 NYTMN (km.): 4779.696 NYTME (km.): 180.143

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Item 21.3:

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

Emission Unit: 3-GTEST

Emission Point: 58-53

Height (ft.): 20

Diameter (in.): 4

NYTMN (km.): 4779.694 NYTME (km.): 180.222 Building: 52/58

Item 21.4:

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

Emission Unit: 4-SURFC

Emission Point: 64-04

Height (ft.): 25

Diameter (in.): 24

NYTMN (km.): 4779.712 NYTME (km.): 180.27 Building: 64

Condition 22: Process Definition By Emission Unit

Effective between the dates of 08/10/2020 and 08/09/2030

Applicable State Requirement:6 NYCRR Subpart 201-5

Item 22.1:

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

Emission Unit: 1-BOILR

Process: P01

Source Classification Code: 1-02-006-02

Process Description:

Process P01 consists of the combustion of natural gas in the 83.5 MMBtu/hr natural gas fired boiler used to generate steam required for facility operation.

Emission Source/Control: BLR01 - Combustion

Design Capacity: 83.5 million Btu per hour

Item 22.2:

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

Emission Unit: 2-ETEST

Process: P02

Source Classification Code: 2-04-002-02

Process Description:

Process P02 includes rocket engine testing in test cells with monopropellant or bipropellant thrusters. For these engine tests, a steam ejector system is used to evacuate combustion gases from the test cell being used. Two steam ejector systems are used at the facility. Each steam ejector system includes a series of ejectors and condensers which are used to maintain vacuum conditions in the test cell while simultaneously cooling the exhaust gas stream and removing condensable components. After cooling, the exhaust gases from the steam ejector systems

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are released to the atmosphere.

Emission Source/Control: CTW01 - Process

Emission Source/Control: SES01 - Process

Emission Source/Control: SES02 - Process

Item 22.3:

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

Emission Unit: 2-ETEST

Process: P03

Source Classification Code: 2-04-002-02

Process Description:

Process P03 includes rocket engine testing in test cells with monopropellant or bipropellant thrusters. For these engine tests, three mechanical vacuum pumps are used to evacuate combustion gases and residual unreacted propellants from the test cell being used. The vacuum pumps operate in parallel. Combustion gases and unreacted propellants are cooled with indirect heat exchangers prior to release through the vacuum pumps. In general, the vacuum pumps are used only for smaller engines and/or smaller amounts of propellant. Exhaust from the mechanical vacuum pumps will be directed to Scrubber SCB02 and SCB03.

Emission Source/Control: SCB02 - Control

Control Type: WET SCRUBBER

Emission Source/Control: SCB03 - Control

Control Type: WET SCRUBBER

Emission Source/Control: VAC01 - Process

Emission Source/Control: VAC02 - Process

Emission Source/Control: VAC03 - Process

Item 22.4:

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

Emission Unit: 2-ETEST

Process: P04

Source Classification Code: 3-01-885-99

Process Description:

Process P04 includes tanks to store and transfer propellants (fuel and oxidizer) for use in engine testing. Propellants are in tanks in liquid form. Inert gas (helium) is used to pressurize the headspace of the propellant tanks. The pressure of helium in the storage tanks facilitates transfer of propellants through feed lines directly to the rockets or to the test cell run

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tanks. To reduce pressure in a tank (e.g., at the end of testing), helium is released from the tank. Small amounts of propellant may be vaporized into the helium as it comes into equilibrium in the vapor space of each tank. Thus, some propellant may be present in the helium as it is released from the tanks. Oxidizer tanks will be connected to an oxidizer scrubber (SCB01). Fuel tanks will be connected to a fuel scrubber (SCB04).

Emission Source/Control: SCB01 - Control
Control Type: WET SCRUBBER

Emission Source/Control: SCB04 - Control
Control Type: WET SCRUBBER

Emission Source/Control: TNK01 - Process

Emission Source/Control: TNK02 - Process

Emission Source/Control: TNK03 - Process

Emission Source/Control: TNK04 - Process

Emission Source/Control: TNK05 - Process

Emission Source/Control: TNK06 - Process

Emission Source/Control: TNK07 - Process

Emission Source/Control: TNK08 - Process

Emission Source/Control: TNK09 - Process

Emission Source/Control: TNK10 - Process

Item 22.5:

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

Emission Unit: 3-GTEST

Process: P05

Source Classification Code: 2-04-002-02

Process Description:

Process P05 includes thruster testing conducted with "green" propellants which seeks to improve overall propellant efficiency while reducing the handling concerns with conventional chemicals. The green monopropellants include stabilized hydroxylammonium nitrate (HAN) and 2-hydroxyethylhydrazine nitrate (HEHN). The thrust for the rocket is generated from the reaction associated with propellant on the catalyst that are rapid and reach very high temperatures creating large volumes of hot combustion gases from a small amount of propellant. The exhaust gases are emitted through a movable emission vent that is

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placed along the cell for testing. Engine testing is conducted in test Cell D3.

Emission Source/Control: CLLD3 - Process

Item 22.6:

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

Emission Unit: 4-SURFC

Process: P06

Source Classification Code: 4-02-001-01

Process Description:

Process P06 includes the application of surface coatings to miscellaneous components that are used in testing equipment in the facility paint booth.

Emission Source/Control: PBH01 - Process

Item 22.7:

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

Emission Unit: 5-DEGRS

Process: P07

Source Classification Code: 4-01-002-95

Process Description:

Process P07 includes a cold cleaning batch degreasing unit with an internal volume greater than two gallons.

Emission Source/Control: DEGRS - Process

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