Facility Name: **Georgia Institute of Technology**
City: Atlanta
County: Fulton
AIRS #: 04-13-121-00129

Application #: TV-806187
Date Application Received: December 20, 2023
Permit No: 8221-121-0129-V-05-0

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Introduction

This narrative is being provided to assist the reader in understanding the content of referenced operating permit. Complex issues and unusual items are explained here in simpler terms and/or greater detail than is sometimes possible in the actual permit. The permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

I. Facility Description

A. Facility Identification

1. Facility Name: Georgia Institute of Technology

2. Parent/Holding Company Name

   Board of Regents, University System of Georgia

3. Previous and/or Other Name(s)

   None

4. Facility Location

   151 Sixth Street NW
   Atlanta, Georgia 30313

5. Attainment, Non-attainment Area Location, or Contributing Area

   The facility is within the limits of Fulton County, which EPA has designated attainment area for all criteria pollutants as of October 17, 2022.

B. Site Determination

There are no other facilities which could possibly be contiguous or adjacent and under common control.

C. Existing Permits

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/ Effectiveness	Purpose of Issuance
8221-121-0129-V-04-0	July 13, 2019	Title V Renewal Permit
8221-121-0129-V-04-1	March 14, 2024	Minor Modification to install boilers HWB2A and HWB2B, remove boiler HWB2, and modify permit language surrounding the Marcus Nanotechnology Research Center, NRC.

D. Process Description

1. SIC Codes(s)

8221

The SIC Code(s) identified above were assigned by EPD's Air Protection Branch for purposes pursuant to the Georgia Air Quality Act and related administrative purposes only and are not intended to be used for any other purpose. Assignment of SIC Codes by EPD's Air Protection Branch for these purposes does not prohibit the facility from using these or different SIC Codes for other regulatory and non-regulatory purposes.

Should the reference(s) to SIC Code(s) in any narratives or narrative addendum previously issued for the Title V permit for this facility conflict with the revised language herein, the language herein shall control; provided, however, language in previously issued narratives that does not expressly reference SIC Code(s) shall not be affected.

2. Description of Product(s)

There are no products being manufactured at this facility. The facility is an institution of higher education and research including boilers, hot water heaters, laboratory equipment, and emergency generators.

3. Overall Facility Process Description

Georgia Institute of Technology (Georgia Tech) is an institution of higher education and research. The facility process consists of the building heating systems, the hot water heating systems, the emergency backup power systems, ancillary small emission combustion units associated with the operations of the dormitories, classroom building, research laboratories and other associated support facilities. The campus is served by a central station boiler plant (the Holland Plant), which consists of three [3] large boilers (two [2] each at 90 MMBtu/hr and one [1] at 125 MMBtu/hr capacity respectively) and serves multiple buildings in the east campus. Distributed boilers and hot water heating systems serve other buildings. The West Campus area combustion units are served by a natural gas distribution system that is equipped with LPG tanks that are used during interruption of natural gas service. Likewise, the Holland Plant is served by natural gas and is equipped with LPG tanks that are used during interruption of natural gas service. Additionally, there are small combustion units throughout the campus that provide building heating, domestic hot water and fuel to emergency generators throughout the campus that are served by natural gas only, and do not have back up fuel.

Georgia Tech maintains laboratories that conduct various research and educational activities. These research laboratories have controlled fume hoods that have the potential to emit Hazardous Air Pollutants (HAPs). Also included in the renewal of this Title V Permit, is the minor modification permitted from Application No. 698794. The facility was issued Permit No. 8221-121-0129-V-04-1 for the removal of 10 MMBtu/hr hot water boiler, HWB2, the addition of two [2] new 5 MMBtu/hr hot water boilers, HWB2A and HWB2B, and the modification of permit language surrounding the emissions groups at the Marcus Nanotechnology Research Center, NRC.

4. Overall Process Flow Diagram

The facility provided a process flow diagram in their Title V permit application.

E. Regulatory Status

1. PSD/NSR

Georgia Tech is a major source under PSD and NSR regulations because potential facility-wide emissions of NOx and CO are above the major source threshold of 100 tons per year. The facility is located within the limits of Fulton County which is designated as attainment area by EPA effective October 17, 2022. The facility utilizes several large, on-site boilers, making it one of the 28 named source categories under PSD - "Fossil-fuel boilers (or combination thereof) totaling more than 250 MMBtu/hr heat input".

Effective October 17, 2022, Georgia Rules for Air Quality Control (GRAQC) 391-1-.03(8)(c)(14) is no longer applicable and has been removed from the GRAQC. The NAA-NSR avoidance limits for NOx and VOC are no longer applicable and have been removed from the permit. The corresponding NAA-NSR emissions groups have also been removed from the permit. The facility remains a major source for Title V as well as PSD, even though the facility has never undergone PSD NSR.

2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	yes			✓
PM_{10}	yes			✓
$PM_{2.5}$	yes			✓
SO_2	yes			✓
VOC	yes			✓
NO_x	yes	✓		
CO	yes	✓		
TRS	yes			✓
H_2S	yes			✓
Individual HAP	yes		✓	
Total HAPs	yes		✓	

3. MACT Standards

Georgia Tech is an area source for HAP emissions since the facility's HAP emissions are limited to less than 10 tpy for any single HAP and less than 25 tpy for any combined HAPs as permitted under Permit Condition No. 2.1.1.

40 CFR 63 Subpart JJJJJJ (Boiler GACT) regulates emissions from boilers located at an area source of HAP emissions. Since fuel oil is not burned in any of the boilers, the Boiler GACT does not apply to this facility.

40 CFR Part 63 Subpart ZZZZ (RICE MACT) applies to the generators at major and area sources. The determination of whether the generator is a new or existing generator depends on the source's major source status, the power output of the engine, and the date the engine was constructed/installed. The Permittee is required by Permit Condition No. 6.2.1 to keep a list of the engines and their construction date.

4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	no
Program Code 8 – Part 61 NESHAP	no
Program Code 9 - NSPS	yes
Program Code M – Part 63 NESHAP	yes
Program Code V – Title V	yes

Regulatory Analysis

II. Facility Wide Requirements

A. Emission and Operating Caps:

Georgia Tech has a practically enforceable emission limit on HAPs (less than 10 tpy for individual HAPs and less than 25 tpy for any combination of HAPs) in order for the facility to attain Synthetic Minor status with respect to HAPs.

The facility needs to maintain records of HAP use on a facility-wide basis. Since the facility burns only natural gas and propane as backup fuel, the fuel-burning equipment HAP emissions are considered insignificant, and therefore, will not be included in the HAP tracking documentation.

B. Applicable Rules and Regulations

40 CFR Part 98 – "Mandatory Greenhouse Gas Reporting"

40 CFR 98 establishes mandatory greenhouse gas (GHG) reporting requirements for owners and operators of facilities that directly emit GHG as well as for suppliers. Georgia Tech is subject to this regulation under 40 CFR 98.2(a)(3), which is applicable to a facility that does not contain any source category listed in Tables A-3 or A–4, a facility where the aggregate maximum rated heat input capacity of the stationary fuel combustion units at the facility is equal to or greater than 30 MMBtu/hr, and a facility that emits 25,000 metric tons CO_2e or more per year in combined emissions from all stationary fuel combustion sources. Georgia Tech has reported in Application No. 698794 that past actual emissions exceeded 25,000 metric tons of CO_2e, thus making them subject to mandatory GHG reporting. GHG reporting requirements for sources under Part 98 are currently not included in the definition of applicable requirements under 40 CFR 70.2 and 71.2. Although the requirements contained in the GHG reporting regulation are currently not considered applicable requirements under the Title V regulations and will not be included in this Title V permit, Georgia Tech is not relieved from the requirement to comply with the GHG reporting regulation separately from compliance with their Title V operating permit. It is the responsibility of Georgia Tech to determine the applicability of the GHG reporting regulation and to comply with it, as necessary.

C. Compliance Status

The facility did not indicate any issues of non-compliance in their application; however, the facility's first semiannual report dated September 5, 2024 indicated that the CEMS operating times for Boiler 4 experienced several periods of downtime. Condition 5.2.1 of the Permit requires the facility to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring and recording nitrogen oxides (NOx) emissions from Holland Boiler No. 4 (Emission Unit ID: PP4). The CEMS malfunctioned on January 20, 2024, and failed a calibration on January 21, 2024, at which time Boiler 4 was shutdown. Attempts to repair the CEMS were unsuccessful, leading to the installation of a new analyzer on January 29, 2024. Following a commissioning period, a new backup analyzer was put into service on February 13, 2024. During the commissioning period, Boiler 4 remained in warmup mode. While in warmup mode, Boiler 4 briefly operated at minimum firing rate to ensure the boiler is available to generate steam on an emergency basis. This allowed facility personnel to continue troubleshooting the CEMS. The facility stated that monitoring downtime was 66 hours, which

excludes quality assurance and calibration checks, so the total operating time was 142 hours. This resulted in 46.4% of the monitoring downtime for Boiler 4. Acceptable performance is generally considered to be a source that has monitor downtime less than 5% of its total operating time during any semiannual period. Since the facility appears to have taken appropriate corrective actions to address the violation of Permit Condition No. 5.2.1, the Division has decided not to pursue further enforcement action as reflected in a Notice of Violation/No Further Action letter dated November 22, 2024.

D. Permit Conditions

Permit Condition No. 2.1.1 limits the facility's individual HAP emissions to less than 10 tons per year and any combination of individual HAPs to less than 25 tons per year. This emission limit was requested by the facility in order to ensure synthetic minor status for HAPs.

III. Regulated Equipment Requirements

A. Equipment List for the Process

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
Holland Plant Equipment Group				
PP1	Holland Boiler #1 90 MMBtu/hr	391-3-1-.02(2)(b) 391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(rrr)	None	N/A
PP2	Holland Boiler #2 90 MMBtu/hr	391-3-1-.02(2)(b) 391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(rrr)	None	N/A
PP4	Holland Boiler #4 125 MMBtu/hr	391-3-1-.02(2)(d) 391-3-1-.02(2)(g) 391-3-1-.02(2)(lll) NSPS Subpart A NSPS Subpart Db	None	N/A
Carbon Neutral Energy Solutions Lab (CNES) Equipment Group				
CTC1	CNES Combustion Test Cell 1 17.6 MMBtu/hr	391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	None	N/A
CTC2	CNES Combustion Test Cell 2 17.6 MMBtu/hr	391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	None	N/A
CTC3	CNES Combustion Test Cell 3 17.6 MMBtu/hr	391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	None	N/A
CTC4	CNES Combustion Test Cell 4 17.6 MMBtu/hr	391-3-1-.02(2)(b) 391-3-1-.02(2)(g)	None	N/A
Nanotechnology Research Center Equipment Group				
NRC1	Marcus Nanotechnology Research Center	391-3-1-.02(2)(b)	AS01 AS02 GC01	Scrubber Scrubber Scrubber
Gasoline Storage and Dispensing				
TNK1	Gasoline storage tank and dispensing facility (10,000 gallon capacity)	391-3-1-.02(2)(rr)	None	N/A

* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards are intended as a compliance tool and may not be definitive.

B. Equipment & Rule Applicability

Emission and Operating Caps:

The facility must operate either scrubber (AS01 or AS02) and scrubber (GC01) at all times that the fume hoods and gas storage cylinders under emission group, NRC1, are in operation.

Rules and Regulations Assessment:

Georgia Rule 391-3-1-.02(2)(b) – "Visible Emissions"
Georgia Rule (b) limits the opacity of visible emissions from any air contaminant source that is subject to some other emission limitations under 391-3-1-.02(2) unless the source is subject to another opacity standard in GRAQC 391-3-1-.02. Under Rule (b), the opacity of visible emissions from regulated sources may not exceed 40 percent under this general visible emission standard. Many of the facility's emissions units are subject to GRAQC 391-3-1-.02(2)(b).

Georgia Rule 391-3-1-.02(2)(d) – "Fuel Burning Equipment"
Georgia Rule (d) limits the visible opacity and emissions of particulate matter and NOx from sources that meet the definition of "fuel-burning equipment". Holland Boilers Nos. 1 and 2, PP1 and PP2, are subject to Georgia Rule 391-3-1-.02(2)(d)1(ii) since they were constructed before January 1, 1972 and have a heat input greater than 10 MMBtu per hour but less than 2,000 MMBtu per hour. Holland Boiler No. 4, PP4, is subject to Georgia Rule 391-3-1-.02(2)(d)2(ii) since it was constructed after January 1, 1972 and has a heat input greater than 10 MMBtu per hour but less than 2,000 MMBtu per hour. Boiler PP4 is also subject to the opacity standards of Georgia Rule 391-3-1-.02(2)(d)3. Boilers PP1 and PP2 are subject to the opacity standards of Georgia Rule 391-3-1-.02(2)(b)1. The smaller boilers listed in the insignificant activities checklist are subject to the opacity standards of Georgia Rule 391-3-1-.02(2)(d)3.

None of the fuel burning equipment at the facility are greater than 250 MMBtu per hour. Therefore, the NOx emission standards of Georgia Rule 391-3-1-.02(2)(d)4 do not apply to this facility.

Georgia Rule 391-3-1-.02(2)(g) – "Sulfur Dioxide"
Georgia Rule (g) limits the sulfur content of fuel burned in all fuel burning sources. All fuel burning sources at the facility are less than 250 MMBtu/hr, with the exception of Holland Boiler No. 4 (PP4) which is greater than 100 MMBtu/hr. Therefore, Rule (g) applies to each fuel burning source, and the fuel must contain less than 2.5% sulfur, except for Boiler PP4 which may contain up to 3% sulfur.

Georgia Rule 391-3-1-.02(2)(rr) – "Gasoline Dispensing Facility – Stage I"
Georgia Rule (rr) applies to all stationary storage tanks located at gasoline dispensing facilities as defined by 391-3-1-.02(2)(rr)(2) and 391-3-1-.02(2)(rr)(3) with capacities of 2,000 gallons or more, which were in place before January 1, 1979, and stationary storage tanks located at gasoline dispensing facilities with capacities of 250 gallons or more which were in place after December 31, 1978. Gasoline storage tank and dispensing facility (TNK1) is subject to GRAQC 391-3-1-.02(2)(rr).

Georgia Rule 391-3-1-.02(2)(lll) – "NOx Emissions from Fuel-Burning Equipment"
Holland Boiler No. 4 (PP4) is the only fuel-burning equipment equal to or greater than 10 MMBtu/hr and less than or equal to 250 MMBtu/hr that was installed or modified on or after May 1, 1999. Rule (lll) limits NOx emissions to less than 30 ppm at 3 percent oxygen. This rule applies during the time period from May 1 through September 30 of each year.

Georgia Rule 391-3-1-.02(2)(mmm) – "NOx Emissions from Gas Turbines and Stationary Engines used to Generate Electricity"
Most emergency generators at the facility are subject to Georgia Rule (mmm) because they have electric generating capacities greater than 100 kWe and less than 25 MWe. Approximately, one-third

of the emergency generators on campus have a capacity less than 100 kW. Each emergency generator engine with a capacity greater than 100 kWe and less than 25 MWe is for emergency use only and shall operate less than 200 hours per year to comply with GRAQC 391-3-1-.02)(2)(mmm)4i.

Georgia Rule 391-3-1-.02(2)(rrr) – "NOx Emissions from Small Fuel-Burning Equipment"

Georgia Rule 391-3-1-.02(2)(rrr) applies to boilers that have potential NOx emissions equaling or exceeding one ton per year and were installed before May 1, 1999 and has a maximum design heat input capacity of less than 100 MMBtu/hr, or was installed on or after May 1, 1999 and has a maximum design heat input capacity of less than 10 MMBtu/hr. Rule (rrr) limits the firing of fuel oil to curtailment only and allows natural gas, LPG or propane to be fired in the fuel burning equipment during the calendar months of May through September each year. Annual tune-up shall be performed using the manufacturer's recommended settings for reduced NOx emissions or using a NOx analyzer. The facility must comply with the requirements of Rule (rr) by installing an Enhanced Vapor Recovery System, effective May 1, 2012.

40 CFR 60 Subpart Dc – "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units"

Subpart Dc applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/h). Hot water boiler (HWB2) was removed from the permit in Application No. 698794 (Permit No. 8221-121-0129-04-1) and replaced with two 5MMBtu/hr hot water boilers (HWB2A and HWB2B). The facility is no longer subject to the requirements of 40 CFR 60 Subpart Dc since the two new boilers are each rated at less than 10 MMBtu/hr.

40 CFR 60 Subpart Db – "Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units"

Subpart Db applies to each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 MMBtu/hr). Holland Boiler No. 4 (PP4) was constructed after June 19, 1984 and has a heat input capacity greater than 100 MMBtu/hr, therefore, it is subject to NSPS Subpart Db requirements. The boiler only fires natural gas and propane and is therefore not subject to SO_2 and PM emission limitations. The boiler is subject to NOx emission limitation of 0.20 lb NOx/MMBtu heat input on a 30-day rolling avg per 40 CFR 60.44b.

40 CFR 63 Subpart DDDDD – "National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters"

Subpart DDDDD (Boiler MACT) establishes emission limitations for HAPs emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP. The facility has voluntarily taken limits to be a Synthetic Minor Source and reduce potential HAP emissions below the major source threshold. Therefore, the Boiler MACT does not apply to the facility.

40 CFR 63 Subpart JJJJJJ – "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources"

Subpart JJJJJJ (Boiler GACT) regulates emissions from boilers located at an area source of HAP emissions. The Boiler GACT lists specific classes of boilers that are not subject to this subpart in 40

CFR 63.11195, including gas-fired boilers in paragraph (e) and hot water heaters in paragraph (f). Because the boilers and water heaters meet the required definitions under 40 CFR 63.11237, the facility is exempt from Subpart JJJJJJ.

40 CFR 60 Subpart IIII – "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines"

Subpart IIII regulates each emergency compression ignition generator engine constructed after July 11, 2005 and manufactured after April 1, 2006. Only a few of the facility's emergency generators use compression ignition engines, and all but one of these generators were constructed prior to the July 11, 2005 applicability date. Therefore, Subpart IIII only applies to the Technology Enterprise Park – T3 Labs generator. The generators are used as an emergency use only generator; they must have non-resettable hour meters installed, and they may not operate more than 100 hours per year for non-emergency purposes. The generators may be used for operational readiness testing, maintenance testing, or unlimited emergency use per 40 CFR 60.4211(f).

40 CFR 60 Subpart JJJJ – "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines"

Subpart JJJJ regulates each spark ignition emergency generator engine constructed, reconstructed, or modified after June 12, 2006. Most of the facility's emergency generators use spark ignition engines, so Subpart JJJJ is applicable to the facility. The facility must either purchase certified engines or test the engines once installed. They must have non-resettable hour meters installed, and they may not operate more than 100 hours per year for non-emergency purposes. The generators may be used for operational readiness testing, maintenance testing, or unlimited emergency use per 40 CFR 60.4243(d).

40 CFR Part 63 Subpart ZZZZ – "National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines"

Subpart ZZZZ (RICE MACT) establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. The determination of whether the generator is a new or existing generator depends on the source's major source status, the power output of the engine, and the date the engine was constructed/installed. Since Georgia Tech is an area source of HAPs due to the facility-wide HAPs limit in Condition 2.1.1, all stationary engines at the facility constructed before June 12, 2006 are considered existing for the purposes of Subpart ZZZZ. Existing emergency use only engines at an institution are exempt from Subpart ZZZZ per 40 CFR 63.6585(f)(3). Engines constructed after June 12, 2006 are considered new for the purposes of Subpart ZZZZ. New engines that meet the criteria of 40 CFR 63.6590(c) comply with Subpart ZZZZ by complying with NSPS IIII or NSPS JJJJ.

C. Permit Conditions

Permit Condition No. 3.2.1 was modified in Application No. 698794 (Permit No. 8221-121-0129-V-04-1) to remove reference to laboratory fume hoods, LH01 and LH02. This condition requires the Permittee to operate either scrubber (AS01 or AS02) and scrubber (GC01) at all times.

Permit Condition No. 3.3.1 establishes the applicability of 40 CFR 60 Subparts A and Db to the Holland Boiler No. 4 (PP4) at the facility.

Permit Condition No. 3.3.2 prohibits the Permittee from discharging NOx emissions from the Holland Boiler No. 4 (PP4) in excess of 0.2 pounds NOx/MMBtu heat input during any thirty consecutive day period.

Old Permit Condition No. 3.3.3 has been deleted from the Permit following Application No. 698794 and the remaining Permit Conditions of Part 3.3 of the Permit have been renumbered.

Permit Condition No. 3.3.3 establishes the applicability of 40 CFR 60 Subparts A and IIII to the emergency generator engines at the facility.

Permit Condition No. 3.3.4 establishes the applicability of 40 CFR 60 Subparts A and JJJJ to the emergency generator engines at the facility.

Permit Condition No. 3.3.5 establishes the applicability of 40 CFR 63 Subparts A and ZZZZ to the emergency generator engines at the facility.

Permit Condition No. 3.3.6 requires the Permittee to purchase certified engines, as well as operate and maintain the engines and their control devices according to manufacturer emission-related written instructions for each emergency engines subject to NSPS or MACT.

Permit Condition No. 3.4.1 requires the Permittee to fire only natural gas, LPG or propane in each piece of fuel-burning equipment.

Permit Condition No. 3.4.2 prohibits the Permittee from emitting NOx in amounts greater than 30 ppm at 3 percent oxygen during May 1 through September 30 each year.

Permit Condition No. 3.4.3 prohibits the Permittee from emitting PM and fly ash in amounts equaling or exceeding the rate as calculated by GRAQC 391-3-1-.02(2)(d)2(ii) for boilers (PP1 and PP2).

Permit Condition No. 3.4.4 was modified in Application No. 698794 (Permit No. 8221-121-0129-V-04-1) to remove reference to laboratory fume hoods, LH01 and LH02, and include refence to the NRC. This condition prohibits the Permittee from visible emissions from stationary sources equaling or exceeding 40 percent opacity.

Permit Condition No. 3.4.5 was modified in Application No. 698794 (Permit No. 8221-121-0129-V-04-1) to remove reference to hot water boiler, HWB2. This condition prohibits the Permittee from emitting PM and fly ash in amounts equaling or exceeding the rate as calculated by GRAQC 391-3-1-.02(2)(d)1(ii) for boiler (PP4).

Permit Condition No. 3.4.6 prohibits the Permittee from visible emissions equaling or exceeding 20 percent opacity, except for one six-minute period per hour of not more than 27 percent opacity, with the exception of Permit Condition No. 3.4.4.

Permit Condition No. 3.4.7 prohibits the Permittee from emitting PM and fly ash in amounts exceeding 0.5 lb/MMBtu heat input from any fuel burning equipment with a heat input of less than 10 MMBtu/hr.

Permit Condition No. 3.4.8 has been modified to reflect updates made to 40 CFR 60 Subpart IIII on August 10, 2022 for the operation of emergency stationary engines. This condition allows unlimited use of emergency engines in emergency situations and operation requirements for non-emergency use.

Permit Condition No. 3.4.9 requires the Permittee to utilize distillate fuel oil with less than 0.5% sulfur in the mentioned emergency generators. 'One generator at Tech Way Building' was included in this condition at the request of the facility.

Permit Condition No. 3.4.10 requires the Permittee to follow design and work practice requirements pertaining to the gasoline storage tank and dispensing facility (TNK1).

Permit Condition No. 3.4.11 requires the Permittee to maintain the Enhanced Stage I Vapor Recovery System in proper condition as specified by the manufacturer per Georgia Rule (rr). This condition has been revised to remove the option to operate a co-axial Stage I Vapor Recovery System and requires only an Enhanced Stage I Vapor Recovery System as of May 1, 2012, per Rule 391-3-1-.02(2)(rr)5.

Permit Condition No. 3.4.12 requires the Permittee to only fire gaseous fuels with less than 2.5% sulfur, by weight, in the CNES Combustion Test Cells (CTC1, CTC2, CTC3, and CTC4)

New Permit Condition No. 3.4.13 has been separated from Permit Condition No. 3.4.8 and made into a condition of this own. This condition limits the annual hours of operation for the emergency generator engines to less than 200 hours per year.

IV. Testing Requirements (with Associated Record Keeping and Reporting)

A. General Testing Requirements

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days (or sixty (60) days for tests required by 40 CFR Part 63) prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

B. Specific Testing Requirements

Georgia Tech is subject to two types of specific testing requirements. First, the Permittee must perform a Relative Accuracy Test Audit (RATA) on the CEMS for Holland Boiler No. 4 (Emission Unit ID No. PP4) once every 4 operating quarters. Second, the Permittee must certify/recertify the Stage I vapor recovery system at the gasoline dispensing facility. The following permit conditions are related to this specific testing.

Permit Condition No. 4.2.1 requires the Permittee to conduct a Relative Accuracy of the CEMS for the Holland Boiler No. 4 (PP4), while firing natural gas, once every 4 operating quarters.

Permit Condition No. 4.2.2 requires the Permittee to conduct certification and recertification testing for the gasoline storage tank and dispensing facility (TNK1) according to the established schedule per GRAQC 391-3-1-.02(2)(rr)8. This condition has been revised to remove reference to the previously required co-axial Stage I Vapor Recovery System. This condition has been revised to update the new recertification timing to every 12 months from 24 months.

Permit Condition No. 4.2.3 requires the Permittee to notify the Division's Mobile and Area Source Program's Compliance Unit at least five business days in advance before conducting any performance test(s) required by Permit Condition No. 4.2.2. This Condition has been revised to rename the "Mobile and Area Source Program's Enforcement Unit" to the "Mobile and Area Source Program's Compliance Unit".

Permit Condition No. 4.2.4 requires the Permittee to submit reports of the performance test(s) required by Condition 4.2.2 within 30 days after such test(s).

V. Monitoring Requirements

A. General Monitoring Requirements

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

B. Specific Monitoring Requirements

Permit Condition No. 5.2.1 requires the Permittee to install and operate a continuous monitoring system to measure and record NOx emissions from the Holland Boiler No. 4 (PP4).

Permit Condition No. 5.2.2 requires the Permittee to install and operate non-resettable monitoring devices on each emergency generator to measure the cumulative total hours of operation as required by Condition 6.2.10.

Permit Condition No. 5.2.3 requires the Permittee to record all quarterly accuracy determinations and daily calibration drift tests on Holland Boiler No. 4 (PP4) in accordance with 40 CFR Part 60, Appendix F.

Permit Condition No. 5.2.4 establishes the procedures for performing annual tune-ups on each fuel-burning unit as defined in 391-3-1-.02(2)(rrr)4.

Permit Condition No. 5.2.5 requires the Permittee to install and operate a continuous monitoring system to measure the scrubbant flow rate, system static pressure of the gas stream, and scrubbant pH of all three scrubbers in the NRC (AS01, AS02, and GC01)

Old Permit Condition No. 5.2.6 has been deleted from the Permit following Application No. 698794 and the remaining Permit Conditions of Part 5.2 have been renumbered.

Permit Condition Nos. 5.2.6 and 5.2.7 detail the requirements of the facility's CAM plan, requiring the Permittee to monitor the system static pressure of the gas stream, scrubbant flow rate, and the scrubbant pH to ensure proper operation of Scrubbers AS01, AS02 and GC01 to comply with the 10/25 tpy HAPs limit.

Permit Condition No. 5.2.6 was modified in Application No. 698794 (Permit No. 8221-121-0129-V-04-1) to remove reference to the gas storage room, GS01, and fume hood groups 1 and 2, LH01 and LH02.

Permit Condition No. 5.2.7 was modified in Application No. 698794 (Permit No. 8221-121-0129-V-04-1) to reference laboratory fume hood groups 1 and 2, LH01 and LH02, and the gas storage room, GS01. There were no changes made to the referenced table.

C. Compliance Assurance Monitoring (CAM)

In order for the facility to maintain Synthetic Minor status with respect to HAPs, the facility must comply with the emission limit of Permit Condition No. 2.1.1 by operating either scrubber (AS01 or AS02) at all times that the fume hoods and gas storage cylinders under the Marcus Nanotechnology Research Center Emission Group (NRC1) are in operation. The Permittee shall also operate scrubber (GC01) for the gas storage room at all times.

A CAM plan is required for the Marcus Nanotechnology Research Center Emission Group (NRC1) as the fume hoods and gas storage cylinders have potential pre-controlled emissions that exceed the major source threshold, are subject to emission limits, and use scrubbers (AS01, AS02, and GC01) to achieve compliance. The facility submitted the CAM plan for these emission units with Application No. 806187 and it has been incorporated into this permit.

Permit Condition Nos. 5.2.6 and 5.2.7 detail the requirements of the CAM plan.

VI. Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a semiannual basis.

Permit Condition No. 6.1.7.d.iv has been removed from the Permit because the requirements of Georgia Rule 391-3-1-.02(2)(2)(zz) are no longer applicable since Rule (zz) has been vacated.

Permit Condition No. 6.1.8 has been removed from the Permit because the requirement to submit an annual emissions statement is no longer applicable.

B. Specific Record Keeping and Reporting Requirements

The insignificant emission sources that are exempt from permitting are widely dispersed across the facility's campus making them difficult to easily locate. To simplify tracking and demonstration of compliance with the NSPS and/or MACT standards, the Permittee will be required to maintain a list of these small emissions units and have the list available upon inspection.

Permit Condition No. 6.2.1 requires the Permittee to keep a record of all emissions units at the facility and maintain this record for inspection.

Permit Condition No. 6.2.2 requires the Permittee to obtain and maintain fuel oil supplier certifications to verify each shipment of distillate fuel oil received is distillate oil.

Permit Condition No. 6.2.3 requires the Permittee to maintain monthly usage records of the HAP containing materials discharged from the university's campus.

Permit Condition No. 6.2.4 requires the Permittee to calculate monthly HAP emissions from the entire facility using the usage records from Permit Condition No. 6.2.3.

Permit Condition No. 6.2.5 requires the Permittee to calculate the 12-month rolling total emissions of each individual HAP for each month and the 12-month rolling total combined HAP emissions for each month from the entire facility using the monthly HAP emissions calculated in Permit Condition No. 6.2.4.

Permit Condition No. 6.2.6 establishes equations to use when calculating the facility-wide monthly HAP emissions in accordance with Permit Condition No. 6.2.4.

Permit Condition No. 6.2.7 requires the Permittee to submit a semiannual report that contains the 12-month rolling total HAP emissions values that are calculated in Permit Condition No. 6.2.5.

Permit Condition No. 6.2.8 requires the Permittee to keep records of engine manufacturer certifications for each emergency generator engine subject to 40 CFR 60 Subparts IIII and JJJJ.

Permit Condition No. 6.2.9 requires the Permittee to maintain specific records as specified in GRAQC 391-3-1-.02(2)(rr) for the Enhanced Stage I vapor recovery system at the gasoline dispensing facility.

New Permit Condition 6.2.10 requires the Permittee to record the total monthly operating hours for each emergency generator and record the monthly cumulative operating hours for each generator for the most recent 12-months.

VII. Specific Requirements

A. Operational Flexibility

- None Applicable

B. Alternative Requirements

- None Applicable

C. Insignificant Activities

See Permit Application on GEOS website.
See Attachment B of the permit

D. Temporary Sources

- None Applicable

E. Short-Term Activities

- None Applicable

F. Compliance Schedule/Progress Reports

- None Applicable

G. Emissions Trading

- Not Applicable

H. Acid Rain Requirements

- None Applicable

I. Stratospheric Ozone Protection Requirements

The standard permit condition pursuant to 40 CFR 82 Subpart F has been included in the Title V Permit. These Title VI requirements apply to all air conditioning and refrigeration units containing ozone-depleting substances regardless of the size of the unit or of the source. Since Georgia Tech has at least some air conditioners, chillers and refrigerators Subpart F is an applicable requirement.

Georgia Tech does not service motor vehicles, so 40 CFR 82 Subpart B is not currently applicable.

J. Pollution Prevention

- None Applicable

K. Specific Conditions

- None Applicable

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Template Condition 8.14.1 was updated in September 2011 to change the default submittal deadline for Annual Compliance Certifications to February 28.

Template Condition Section 8.27 was updated in August 2014 to include more detailed, clear requirements for emergency generator engines currently exempt from SIP permitting and considered insignificant sources in the Title V permit.

Template Condition Section 8.28 was updated in August 2014 to more clearly define the applicability of the Boiler MACT or GACT for major or minor sources of HAP.

Addendum to Narrative

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//