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CHUCK CARR BROWN, Ph.D.
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Certified Mail No.

Activity No.: PER20170007
Agency Interest No. 32494

Ms. R. Renée Keys
Director, Environmental
Entergy Services, Inc.
10055 Grogans Mill Road
Parkwood II Bldg, Mail Code T-PHWD-4B
The Woodlands, TX 77380

RE: Part 70 Operating Permit, Entergy New Orleans, LLC (ENO) -Michoud Electric Generating Plant
New Orleans Power Station – RICE Option
New Orleans, Orleans Parish, Louisiana

Dear Ms. Keys:

This is to inform you that the permit renewal and modification for the above referenced facility has been approved under LAC 33:III.501. The permit is both a state preconstruction and Part 70 Operating Permit. The submittal was approved on the basis of the emissions reported and the approval in no way guarantees the design scheme presented will be capable of controlling the emissions as to the types and quantities stated. A new application must be submitted if the reported emissions are exceeded after operations begin. The synopsis, data sheets and conditions are attached herewith.

It will be considered a violation of the permit if all proposed control measures and/or equipment are not installed and properly operated and maintained as specified in the application.

Operation of this facility is hereby authorized under the terms and conditions of this permit. This authorization shall expire at midnight on the 31st of January, 2024, unless a timely and complete renewal application has been submitted six months prior to expiration. Terms and conditions of this permit shall remain in effect until such time as the permitting authority takes final action on the application for permit renewal. The permit number and agency interest number cited above should be referenced in future correspondence regarding this facility.

Please be advised that pursuant to provisions of the Environmental Quality Act and the Administrative Procedure Act, the Department may initiate review of a permit during its term. However, before it takes any action to modify, suspend or revoke a permit, the Department shall, in accordance with applicable statutes and regulations, notify the permittee by mail of the facts or operational conduct that warrant the intended action and provide the permittee with the opportunity to demonstrate compliance with all lawful requirements for the retention of the effective permit.

Done this 31st day of January, 2019.

Permit No.: 2140-00014-V5B

Sincerely,

A handwritten signature in blue ink, appearing to read "Elliott B. Vega".

Elliott B. Vega
Assistant Secretary
EBV:cew
c: EPA Region VI

AIR PERMIT BRIEFING SHEET
AIR PERMITS DIVISION
LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Michoud Electric Generating Plant
NOPS "RICE" Option
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Entergy New Orleans, LLC
New Orleans, Orleans Parish, Louisiana

I. Background

Entergy New Orleans, LLC, hereinafter "ENO," as a subsidiary of the New Orleans-based Entergy Corporation, Entergy Services, Inc. (ESI), owns and operates the Michoud Electric Generating Plant (Michoud Plant), an existing fossil fuel (natural gas-fired) steam/electric generation facility that began operation in 1957. New Orleans Public Service, Inc. built the Michoud Plant in 1957, with operations commencing on April 18, 1957, for the 120 MW Unit #1 Boiler as a gas-fired peaking unit. Boiler #2, which is rated at 240 MW, started operation on February 3, 1963. Boiler #3, which is rated at 553 MW, commenced operation on August 9, 1967, bringing the facility's total electric generation to 913 MW. The facility is located in the eastern portion of the city of New Orleans at the junction of the Gulf Intracoastal Waterway and the Mississippi River Gulf Outlet Canal. The Michoud Plant first operated under Permit No. 103, issued June 5, 1972. On April 22, 1996, New Orleans Public Service, Inc became Entergy New Orleans, Inc. The facility was issued Acid Rain Permit No. 2140-00014-IV0, on October 23, 1996. On October 12, 2004, the initial Part 70 Operating Permit, Permit No. 2140-00014-V0, was issued to Entergy New Orleans, Inc. for the Michoud Plant.

The Michoud Plant currently operates under Permit No. 2140-00014-V4, issued April 28, 2015.

II. Origin

A permit application and Emission Inventory Questionnaires were submitted by ENO on August 18, 2017, requesting renewal and modification of the Part 70 Operating Permit for the Michoud Electric Generating Plant. Additional information dated December 20, 2017 and July 27, 2018, was also received.

The application was deemed administratively complete in accordance with LAC 33:III.519.A on August 23, 2017.

III. Description

ENO-Michoud Plant consists of three electric generating boiler units and one auxiliary steam generating unit, which is used for startup steam for Unit No. 3. Units No. 1, 2, and 3 burn natural gas. ENO has permanently retired these existing generating units Unit 1, Unit 2, and Unit 3 identified as EPNs C1A & B-NG/EQT 0003, C2A & B-NG/EQT 0005, and EPN

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C3/EQT 0007, effective June 1, 2016, and is requesting removal of these sources from the permit, as they will be removed from the site. ENO is also requesting the removal of the Unit 3 Auxiliary Boiler (identified as EPN C4/EQT 0023), as this emission source has also been retired. Furthermore, the facility is requesting removal of gasoline storage tank EPN T2013/EQT0024 and emergency diesel generator EPN C5/EQT 0025.

In addition, ENO is proposing to construct and operate the New Orleans Power Station (NOPS). Two separate options are being proposed; the construction of one will exclude the construction of the other and the corresponding permit will be rescinded. The "SCGT" option consists of a simple cycle gas turbine (SCGT) to be covered under Permit No. 2140-00014-V5A. The "RICE" option consists of the installation of seven (7) Reciprocating Internal Combustion Engines (RICE) covered in this permit and described as follows:

The NOPS project will consist of the installation of seven natural gas-fired stationary spark ignition (SI) reciprocating internal combustion engines (RICE) and ancillary equipment that will be located within the property boundary of ENO's existing Michoud Electric Generating Plant. Each engine will have an average electricity generation capacity of approximately 18 megawatts (MW), for a nominal site capacity of 128 MW. The engines will be exclusively natural gas-fired. includes a 1676 horsepower (hp) diesel-fired emergency generator; a 153 hp propane-fired emergency generator; a 240 hp diesel-fired firewater pump; a 12,000 gallon lube oil storage tank; a 30,000 gallon pressurized aqueous ammonia storage tank; fugitive emissions; and insignificant activities; and General Condition XVII (maintenance) activities.

SI RICE

Normal Operations

The NOPS project will include seven, natural gas-fired SI RICE. Each engine will be a four-stroke, spark-ignited gas engine that uses lean burn technology. In a lean burn gas engine, the mixture of air and gas in the cylinder is lean, i.e., more air is present in the cylinder than is needed for complete combustion to generate electricity. With leaner combustion, the peak temperature is reduced and less nitrogen oxide (NO_x) is produced.

Thermal energy produced in the engines through the combustion of natural gas will be converted into mechanical energy by the expanded gases produced during combustion that cause the translational movement of pistons that are connected to the rotating drive shaft. The drive shafts couple with an electric generator to convert the rotational mechanical energy into electricity. The units will be designated as EPN NOPS-ENG1 through NOPS-ENG7.

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The primary pollutants from the combustion of natural gas in the units are nitrogen oxides (NO_x), carbon monoxide (CO), and to a lesser extent particulate matter less than 10 microns (PM₁₀), particulate matter less than 2.5 microns (PM_{2.5}), VOC, and hazardous air pollutants/toxic air pollutants (HAPs/TAPs). NO_x formation is primarily dependent on the high temperatures achieved in the combustor. Emissions of CO, VOC, and HAPs/TAPs are primarily the result of incomplete combustion.

NO_x is formed during the combustion of natural gas in the engines. The primary NO_x formation mechanism is thermal NO_x, which arises from the thermal dissociation and subsequent reaction of nitrogen (N₂) and oxygen (O₂) molecules at high flame temperatures in the combustion air. Fuel NO_x, which results from the reaction of fuel-bound nitrogen compounds with oxygen, is a smaller component of total NO_x from natural gas combustion in the engines. With the lean burn technology, peak temperature is lower and results in lower NO_x being produced as compared to standard engine units. Each unit will be equipped with selective catalytic reduction (SCR) to further control NO_x emissions. The ammonia will react on the catalyst surface with NO_x to form nitrogen gas (N₂) and water.

Emissions of sulfur compounds are directly related to the sulfur content of the fuel. The fuel sulfur is primarily oxidized to sulfur dioxide (SO₂) during the combustion process with a smaller amount oxidized to sulfur trioxide (SO₃). The SO₃ in the flue gas combines with water vapor to produce sulfuric acid mist (SAM). The design of the NOPS units is based on a maximum sulfur content of 0.40 grains/100 dry standard cubic feet (dscf).

Emissions of PM₁₀/PM_{2.5} from the NOPS engines will primarily result from carryover of noncombustible trace constituents in the fuel and inlet air. Filterable PM₁₀/PM_{2.5} is that portion of the total that exists in the stack in either the solid or liquid state. Condensable PM₁₀/PM_{2.5} exists as a gas in the stack but condenses in the cooler ambient air to form particulate matter. Condensable PM₁₀/PM_{2.5} may consist of sulfates, nitrates and unburned fuel hydrocarbons.

Carbon Monoxide (CO) emissions result from incomplete combustion because of insufficient residence time, temperature, or mixing to complete fuel carbon oxidation. Each unit will be equipped with an oxidation catalyst to reduce CO emissions. Exhaust gases from the engines will contact a catalyst bed that will produce the oxidation of CO to carbon dioxide (CO₂).

Volatile Organic Compounds (VOCs) can encompass a wide spectrum of organic materials, which are discharged when some of the fuel remains unburned or is only partially oxidized during the combustion process. With natural gas, some organics are carried over as unreacted, trace constituents of the gas, while others may be pyrolysis products of heavier hydrocarbon constituents. There will be some reduction of VOC emissions from the oxidation catalyst, as it will promote the oxidation of VOCs in the exhaust to CO₂ and water.

The combustion of natural gas in the NOPS engines will also produce emissions of trace pollutants, including specific organic toxics and metal toxics.

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The permit cap, GRP 16-CAP ENG-1-7 for Engine Nos. 1-7 (GRP0016), is included to limit the emissions of PM₁₀, PM_{2.5}, SO₂, NO_x, CO, VOC (Total) and Sulfuric Acid from the station. ENO will determine emissions per engine from the normal and startup modes using electrical generation (MW), number of startups and shutdowns, and hours of operation per month.

Fugitive Emissions

Fugitive emissions from the transfer of natural gas and ammonia are included in this permit.

Emergency Diesel Engine

A new 1676 HP certified TIER II (non-road) emergency diesel engine, designated as EPN NOPS-EMGEN1, will be used to generate electricity to operate critical systems when power is not otherwise available.

Diesel Firewater Pump

A new 240 HP diesel-fired firewater pump, designated as EPN NOPS-FWP1, will be constructed to service the fire protection needs of the new unit.

Propane Emergency Engine

The 153 HP Kohler/Model 25REZG (4SRB) propane engine, currently covered under the regulatory permit issued April 6, 2017, is being included in this permit as EPN NOPS-EMGEN2.

Storage Tanks

The facility will have a 30,000 gallon capacity, pressurized, horizontal aqueous ammonia storage tank storing aqueous ammonia at a concentration of 19 percent for the SCR system. A 12,000 gallon capacity lube oil storage tank and various insignificant storage tanks (including two new diesel storage tanks used to store fuel for the emergency generator and firewater pump, respectively) will also be constructed in support of the NOPS project.

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ENO is also proposing the following:

- Add ammonia emissions relating to Selective Catalytic Reduction operation (NO_x emissions from the seven RICE units will be controlled by SCR);
- Add fugitive ammonia emissions from piping components related to the SCR system;
- Include TAP/HAP emissions inadvertently omitted in the draft NOPS RICE permit;
- Update TAP/HAP emissions for pollutants not previously speciated in the draft NOPS RICE permit;
- Update Commissioning Phase emissions of PM₁₀, PM_{2.5} and SO₂; and
- Incorporate specific requirements on the NOPS RICE CAP to reflect the use of SCR for control of NO_x emissions and Oxidation Catalyst (OC) for control of CO emissions.

Estimated emissions in tons per year are as follows:

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
PM ₁₀	283.55	78.62	-204.93
PM _{2.5}	283.55	78.62	-204.93
SO ₂	22.55	3.45	-19.10
NO _x	8596.89	56.96	-8539.93
CO	3132.53	100.09	-3032.44
VOC ^a	205.35	104.51	-100.84

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^a VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Acetaldehyde	--	5.12	+5.12
Acrolein	--	3.15	+3.15
Benzene	0.08	0.27	+0.19
1,3-Butadiene	--	0.16	+0.16
1,1,2,2-Tetrachloroethane	--	0.02	+0.02
1,1,2-Trichloroethane	--	0.02	+0.02
1,1-Dichloroethane	--	0.01	+0.01
1,2-Dibromoethane (Ethylene Dibromide)	--	0.03	+0.03
1,2-Dichloroethane	--	0.01	+0.01
1,2-Dichloropropane	--	0.02	+0.02
1,3-Dichloropropene	--	0.02	+0.02
1,4-Dichlorobenzene	0.044	--	-0.044
2,2,4-Trimethylpentane	--	0.15	+0.15
2-Methylnaphthalene	--	0.02	+0.02
Biphenyl	--	0.13	+0.13
Carbon Tetrachloride	--	0.02	+0.02
Chlorobenzene	--	0.02	+0.02
Chloroform	--	0.02	+0.02
Ethyl benzene	--	0.02	+0.02
Chloroethane	--	<0.01	+<0.01
Formaldehyde	2.78	8.98	+6.20
Methanol	--	1.53	+1.53
Methylene Chloride	--	0.01	+0.01
Naphthalene	0.02	0.05	+0.03
Polynuclear Aromatic Hydrocarbons (PAHs)	<0.01	0.02	+0.02
Phenol	--	0.01	+0.01
Styrene	--	0.01	+0.01
Toluene	0.13	0.25	+0.12
Vinyl Chloride	--	0.01	+0.01
Xylene	--	0.11	+0.11
n-Hexane	67.25	0.68	-66.57
Total	70.314*	20.88	-49.434
Other VOC (TPY):	135.04*	83.63	-51.41

*reconciliation

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Non-VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Sulfuric Acid Mist (SAM, as sulfuric acid)	--	2.38	+2.38
Arsenic (and compounds)	0.01	--	-0.01
Ammonia	--	8.61	+8.61
Barium (and compounds)	0.16	--	-0.16
Beryllium (Table 51.1)	<0.01	--	-0.01
Cadmium (and compounds)	0.04	--	-0.04
Chromium VI (and compounds)	0.05	--	-0.05
Cobalt compounds	<0.01	--	-0.01
Copper (and compounds)	0.03	--	-0.03
Lead compounds	0.02	--	-0.02
Manganese (and compounds)	0.01	--	-0.01
Mercury (and compounds)	0.01	--	-0.01
Nickel (and compounds)	0.08	--	-0.08
Selenium (and compounds)	<0.01	--	-0.01
Zinc (and compounds)	1.08	--	-1.08
Total	1.52	10.99	+9.47

IV. Type of Review

This permit was reviewed for compliance with 40 CFR Part 70 and the Louisiana Air Quality Regulations, New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Air Pollutants (NESHAP). Compliance Assurance Monitoring (CAM) and Prevention of Significant Deterioration (PSD) do not apply.

This facility is a minor source of toxic air pollutants (TAPs) pursuant to LAC 33:III.Chapter 51. Emissions of Group 1 and Group 2 fossil fuels are exempt from Chapter 51 regulations per LAC 33:III.5105.B.3.

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NSPS

With the construction and operation of NOPS Unit 1, the following NSPS are applicable to the ENO-Michoud Electric Generating Plant:

- Subpart A – General Provisions;
- NSPS Subpart IIII-Standards of Performance for Stationary Compression Ignition Internal Combustion Engines -Diesel Engines; and
- NSPS Subpart JJJJ-Standards of Performance for Stationary Spark Ignition Internal Combustion Engines- Seven SI RICE and Emergency Propane Engine.

NESHAP

The facility is an area source of Hazardous Air Pollutants. The seven SI RICE, the emergency diesel and firewater engines, and the emergency propane engine comply with 40 CFR 63 Subpart ZZZZ-National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines by complying with 40 CFR 60 Subpart IIII or 40 CFR 60 Subpart JJJJ.

Acid Rain

ENO-Michoud Plant Facility is currently operating under Acid Rain Permit 2140-00014-IV3. Since the existing boilers and generating units have been deactivated and are permanently retired, Acid Rain requirements are no longer applicable to these units. The NOPS RICE is not subject to the provisions of the Acid Rain Program under 40 CFR Part 72 and LAC 33:III.505 because each engine meets the New Units Exemption under 40 CFR 72.7. The units do not serve a generator with a total nameplate capacity more than 25 MW and will burn gaseous fuel with an average sulfur content of 0.05 percent or less by weight pursuant to 40 CFR 72.7(a)(1) and (3).

Cross-State Air Pollution Rule (CSAPR)

The Clean Air Interstate Rule (CAIR) is being removed as a part of this permit modification; CAIR was discontinued on December 31, 2014. CAIR requirements have been replaced by the applicable requirements of 40 CFR 97, the Cross-State Air Pollution Rule (CSAPR). CSAPR was finalized by the EPA on July 6, 2011, under the "Good Neighbor" provisions of the Clean

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Air Act (CAA). The purpose of CSAPR is to improve ozone and PM_{2.5} air quality by reducing their precursors, namely NO_x and SO₂.

CSAPR establishes a new emission allowance system exclusive of existing CAA trading programs. CSAPR requires electric generating units (EGUs) in Louisiana to control ozone season NO_x emissions (May 1 through September 30), and allows affected sources to trade emissions allowances with other sources within the same program (i.e., ozone season NO_x) in the same or different states.

40 CFR 97.504(a)(1) defines a CSAPR unit as follows: "units in a State (and Indian country within the borders of such State) shall be CSAPR NO_x Ozone Season Group 1 units, and any source that includes one or more such units shall be a CSAPR NO_x Ozone Season Group 1 source, subject to the requirements of this subpart: Any stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, on or after January 1, 2005, a generator with nameplate capacity of more than 25 MWe producing electricity for sale." Since ENO's seven NOPS SI RICE do not meet the definition above, CSAPR does not apply to these engines.

Prevention of Significant Deterioration (PSD)

The Michoud Plant's source category is listed in Table A of the definition of "major stationary source" in LAC 33:III.509. As such, the PSD major source threshold is 100 TPY of a regulated pollutant. Since the NOPS will be located within an existing major source facility owned and operated by ENO, the proposed project emissions are compared to the PSD significance levels of subject pollutants. If the annual project-related emissions exceed the PSD significance levels, then any projects resulting in increases or decreases in emissions within the contemporaneous window of the NOPS project are also considered.

ENO conducted a New Source Review (NSR) applicability review of the proposed project. To determine "baseline actual emissions," the 24-month baseline period used for Units 1 and 3 is January 2011 through December 2012, and the 24-month baseline period used for Unit 2 is May 2011 through April 2013". This period was determined by reviewing actual emissions for the deactivated units prior to the decommissioning of Units 1, 2, and 3. Since existing Units 1 and 3 were deactivated in January 2016, and existing Unit 2 was deactivated in April 2016, with limited use of all three units prior to deactivation, ENO selected these 24-month time periods because they are more representative of normal operations for the deactivated units.

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Project "Potential Emissions" were based on proposed emissions for NOPS RICE (EPN NOPS-ENG1 through NOPS-ENG7), the emergency generator (EPN NOPS-EMGEN1), the emergency fire water pump (EPN NOPS-FWP1), the emergency propane engine (EPN NOPS-EMGEN2), the 12,000 gallon Lube Oil Storage Tank (EPN NOPS-TK1), fugitive emissions (EPN NOPS-FUG1) and several insignificant activities. The pollutants reviewed as part of the PSD analysis (without regard to decreases) are shown in Table 1, and the netting analysis is shown in Table 2. The analysis for Greenhouse Gas emissions for PSD purposes is not required unless the project triggers major source permitting for a pollutant other than Greenhouse Gases.

Table 1

Pollutant	Project Potential Emissions (TPY)	PSD Significance Level (TPY)	PSD Netting Analysis Review Required?
PM ₁₀	78.62	15	YES
PM _{2.5}	78.62	10	YES
SO ₂	3.45	40	NO
NO _x	56.92	40	YES
CO	100.02	100	YES
Total VOC	104.56	40	YES
SAM	2.38	7	NO

Table 2

Pollutant	Project Potential Emissions (TPY)	Contemporaneous Period Emissions Reductions (TPY)	Project Net Emissions Increase (TPY)	PSD Significance Level (TPY)	PSD Applicable?
PM _{2.5}	78.62	-90.8	-12.19	10	NO
PM ₁₀	78.62	-90.8	-12.19	15	NO
NO _x	56.92	-1,974.21	-1917.29	40	NO
CO	100.02	-1,208.33	-1108.31	100	NO
Total VOC	104.56	-65.71	+38.85	40	NO

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Since the "net emissions increase" is less than the respective PSD significance level for each pollutant reviewed, further PSD review is not required for the proposed project.

V. Credible Evidence

Notwithstanding any other provisions of any applicable rule or regulation or requirement of this permit that state specific methods that may be used to assess compliance with applicable requirements, pursuant to 40 CFR Part 70 and EPA's Credible Evidence Rule, 62 Fed. Reg. 8314 (Feb. 24, 1997), any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed shall be considered for purposes of Title V compliance certifications. Furthermore, for purposes of establishing whether or not a person has violated or is in violation of any emissions limitation or standard or permit condition, nothing in this permit shall preclude the use, including the exclusive use, by any person of any such credible evidence or information.

VI. Public Notice

A notice requesting public comment and announcing a public hearing on the proposed permits was published on LDEQ's "Public Notices" webpage on January 29, 2018. On January 29, 2018, copies of the public notice were mailed or e-mailed to the individuals who have requested to be placed on the mailing list maintained by the Office of Environmental Services (OES). The proposed permits were submitted to the U.S. Environmental Protection Agency (EPA) on January 29, 2018.

On February 2, 2018, a request for an extension of the public comment period was received. In response, LDEQ extended the comment period from March 12, 2018, to April 2, 2018. Notice of the extension was published on LDEQ's "Public Notices" webpage on February 9, 2018, and those on the OES mailing list were notified on February 8, 2018.

A public hearing was held on Tuesday, March 6, 2018, at the Mary Queen of Vietnam Catholic Church Parish Hall, located at 14001 Dwyer Boulevard in New Orleans, Louisiana.

Following the public hearing, LDEQ extended the comment period a second time, from April 2, 2018, to April 16, 2018. Notice of the extension was published on LDEQ's "Public Notices" webpage on March 12, 2018, and those on the OES mailing list were also notified on March 12, 2018. The comment period closed on Monday, April 16, 2018.

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After the close of the comment period, proposed Permit No. 2140-00014-V5B was revised based on additional information submitted by Entergy on July 27, 2018; therefore, LDEQ provided an additional opportunity for the public to provide input. A notice requesting public comment was published on LDEQ's "Public Notices" webpage on August 30, 2018, and those on the OES mailing list were notified on August 29, 2018.¹ The proposed permit was submitted to the EPA on August 29, 2018. The comment period closed on October 1, 2018.

VII. Effects on Ambient Air

Emissions associated with the proposed modification were reviewed by LDEQ to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

VIII. General Condition XVII Activities

Work Activity	Schedule	Emission Rates – tons per year						
		PM ₁₀	SO ₂	NO _x	CO	VOC	PM _{2.5}	SAM
None								

IX. Insignificant Activities

ID No.:	Description	Citation Insignificant Activities per LAC 33:III.501.B.5.
IA-13	NOPS-Lube Oil Tank (6000 gallons)	LAC 33:III.501.B.5.A.3
IA-14	NOPS-Lube Oil Tank (6000 gallons)	LAC 33:III.501.B.5.A.3
IA-15	NOPS-Scrubber/Filters Drain Tank (245 gallons)	LAC 33:III.501.B.5.A.2.
IA-16	NOPS-Diesel Storage Tank (320 gallons)	LAC 33:III.501.B.5.A.3
IA-17	NOPS-Diesel Storage Tank (360 gallons)	LAC 33:III.501.B.5.A.3

¹ This notice also informed the public that the proposed permits for the simple cycle combustion turbine will not be finalized.

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X.	Table 1. Applicable Louisiana and Federal Air Quality Requirements																
	ID No.:	Description	LAC 33:III.Chapter														
	5 ^A	9	11	13	15	2103	2104*	2107	2111	2113	2115	2121	22	29	51*	56	59*
UNF 03	1	1	1	1					3	1				3	2	1	3
EQT 27	1		1	1	3												
EQT 28	1		1	1	3												
EQT 30	1		1	1	3												
EQT 32	1			1	3												
EQT 33	1			1	3												
EQT 34	1			1	3												
EQT 35	1			1	3												
EQT 36	1			1	3												
EQT 37	1			1	3												

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Michoud Electric Generating Plant
Agency Interest No.: 32494
Entergy New Orleans LLC
New Orleans, Orleans Parish, Louisiana

X. Table 1. Applicable Louisiana and Federal Air Quality Requirements

ID No.:	Description	LAC 33:III.Chapter																
		5 [▲]	9	11	13	15	2103	2104*	2107	2111	2113	2115	2121	22	29	51*	56	59*
EQT 38	NOPS-ENG7 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 7	1			1	3												
EQT 39	NOPS-TK1 NOPS Lube Oil Tank 1						3											
FUG 02	NOPS-FUG1-NOPS Fugitive Emissions										3					3		

* The regulations indicated above are State Only regulations.

▲ All LAC 33:III Chapter 5 citations are federally enforceable including LAC 33:III.501.C.6 citations, except when the requirement found in the "Specific Requirements" report specifically states that the regulation is State Only.

KEY TO MATRIX

- 1 -The regulations have applicable requirements that apply to this particular emission source.
 -The emission source may have an exemption from control stated in the regulation. The emission source may not have to be controlled but may have monitoring, recordkeeping, or reporting requirements.
 - 2 -The regulations have applicable requirements that apply to this particular emission source but the source is currently exempt from these requirements due to meeting a specific criterion, such as it has not been constructed, modified or reconstructed since the regulations have been in place. If the specific criteria changes the source will have to comply at a future date.
 - 3 -The regulations apply to this general type of emission source (i.e. vents, furnaces, towers, and fugitives) but do not apply to this particular emission source.
- Blank – The regulations clearly do not apply to this type of emission source.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

**Michoud Electric Generating Plant
Agency Interest No.: 32494
Energy New Orleans LLC
New Orleans, Orleans Parish, Louisiana**

X. Table 1. Applicable Louisiana and Federal Air Quality Requirements		ID No.:	Description	40 CFR 60 NSPS													40 CFR 61					40 CFR 63 NESHAP					40 CFR				
				A	K	Ka	Kb	D	Da	Db	Dc	GG	4I	4J	4K	4T	A	M	A	4Y	4Z	5D	5U	52	64	68	72	75	82	97	98
UNF 01			Unit Facility												1	1	1							2	3	3	3	3	3	1	
GRP 16			NOPS-ENG CAP Natural Gas-Fired Generator Engine CAP								1	3	3					3													
EQT 27			NOPS-EMGEN1 NOPS Emergency Diesel Generator 1							1																					
EQT 28			NOPS-FWPI NOPS Emergency Diesel Firewater Pump 1							1																					
EQT 30			NOPS-EMGEN-2 Kohler/Model: 25REZG (Propane-4SRB)								1																				
EQT 32			NOPS-ENG1 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 1								1		3														3	3	3		
EQT 33			NOPS-ENG2 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 2								1		3														3	3	3		
EQT 34			NOPS-ENG3 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 3								1		3														3	3	3		
EQT 35			NOPS-ENG4 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 4								1		3														3	3	3		

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Michoud Electric Generating Plant
 Agency Interest No.: 32494
 Entergy New Orleans LLC
 New Orleans, Orleans Parish, Louisiana

X. Table 1. Applicable Louisiana and Federal Air Quality Requirements

ID No.:	Description	40 CFR 60 NSPS												40 CFR 61		40 CFR 63 NESHAP					40 CFR								
		A	K	Ka	Kb	D	Da	Db	Dc	GG	4I	4J	4K	4T	A	M	A	4Y	4Z	5D	5U	52	64	68	72	75	82	97	98
EQT 36	NOPS-ENG5 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 5										1		3					1							3	3		3	
EQT 37	NOPS-ENG6 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 6										1		3					1							3	3		3	
EQT 38	NOPS-ENG7 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 7										1		3					1							3	3		3	
EQT 39	NOPS-TK1 NOPS-Lube Oil Tank 1																												
FUG 02	NOPS-FUG1-NOPS Fugitive Emissions																												

KEY TO MATRIX

- 1 -The regulations have applicable requirements that apply to this particular emission source.
 - The emission source may have an exemption from control stated in the regulation. The emission source may not have to be controlled but may have monitoring, recordkeeping, or reporting requirements.
 - 2 -The regulations have applicable requirements that apply to this particular emission source but the source is currently exempt from these requirements due to meeting a specific criterion, such as it has not been constructed, modified or reconstructed since the regulations have been in place. If the specific criteria changes the source will have to comply at a future date.
 - 3 -The regulations apply to this general type of emission source (i.e. vents, furnaces, towers, and fugitives) but do not apply to this particular emission source.
- Blank – The regulations clearly do not apply to this type of emission source.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Michoud Electric Generating Plant
 Agency Interest No.: 32494
 Entergy New Orleans LLC
 New Orleans, Orleans Parish, Louisiana

XI. Table 2. Explanation for Exemption Status or Non-Applicability of a Source	Requirement	Notes
ID No:	Pumps and Compressors [LAC 33:III.2111]	DOES NOT APPLY. Facility does not utilize pumps or compressors that handle VOCs with a true vapor pressure of ≥ 1.5 psia at handling conditions.
UNF001	Odor Regulations [LAC 33:III.2901]	DOES NOT APPLY. Facility does not have major sources or operations that can produce odors. The facility will utilize seven SIRICE units that run solely on natural gas.
Unit Facility	Comprehensive Toxic Air Pollutant Emission Control Program [LAC 33:III.Chapter 51]	EXEMPT. Per LAC 33:III.5105.B.3, Units firing virgin fossil fuels (natural gas) are exempt from the requirements of this subchapter. [LAC 33:III.5105.B]
	Chemical Accident Prevention and Minimization of Consequences. [LAC 33:III.Chapter 59]	DOES NOT APPLY. Facility does not store or process any referenced list of substances greater than the threshold amounts. [LAC 33:III.5907.A]
	Compliance Assurance Monitoring [40 CFR 64]	EXEMPT. This site does not have sources subject to federal emission standards for which a control device is used where there are no methods of compliance defined within the applicable regulation. [40 CFR 64.2(a)]
	Chemical Accident Prevention Provisions [40 CFR 68]	DOES NOT APPLY. Facility does not store or process any referenced list of substances greater than the threshold amounts. [40 CFR 68.10(a)]
	Acid Rain Program (40 CFR Part 72)	EXEMPT. Each engine meets the New Units Exemption under 40 CFR 72.7 The units do not serve a generator with a total nameplate capacity more than 25 MW and will burn gaseous fuel with an average sulfur content of 0.05 percent or less by weight. [40 CFR 72.7(a)(1) and (3)]

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

**Michoud Electric Generating Plant
 Agency Interest No.: 32494
 Entergy New Orleans LLC
 New Orleans, Orleans Parish, Louisiana**

XI. Table 2. Explanation for Exemption Status or Non-Applicability of a Source

ID No:	Requirement	Notes
UNF001 Unit Facility (Continued)	Continuous Emission Monitoring (40 CFR Part 75)	DOES NOT APPLY. Each engine meets the New Units Exemption under 40 CFR 72.7 (Acid Rain Program) pursuant to sections 412 and 821 of the CAA, 42 U.S.C. 7401-7671q as amended by Public Law 101-549 (November 15, 1990) [the Act]. In addition there are no provisions for the monitoring, recordkeeping, and reporting of NO _x mass emissions with which EPA, individual States, or groups of States have required for this source to comply in order to demonstrate compliance with a NO _x mass emission reduction program, to the extent these provisions are adopted as requirements under such a program. [40 CFR 75.1(a)]
	Protection of Stratospheric Ozone (40 CFR 82)	DOES NOT APPLY. Facility does not utilize refrigeration units or equipment that contains ozone depleting substances. [40 CFR 82.150(b)]
	Trading Program (40 CFR Part 97, Subpart BBBBB) “CSAPR”	DOES NOT APPLY. The engines are not fossil-fuel-fired boilers or stationary, fossil-fuel-fired combustion turbines serving at any time, on or after January 1, 2005, a generator with a nameplate capacity of more than 25 MWe (megawatt electrical) producing electricity for sale.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

**Michoud Electric Generating Plant
Agency Interest No.: 32494
Entergy New Orleans LLC
New Orleans, Orleans Parish, Louisiana**

XI. Table 2. Explanation for Exemption Status or Non-Applicability of a Source	
ID No:	Notes
EQT 32-38 NOPS-ENG1 thru NOPS-ENG7 NOPS Natural Gas- Fired Reciprocating Internal Combustion Engines 1-7	DOES NOT APPLY. Units emit less than 5 tons per year of SO ₂ each. [LAC 33:III.1502.A.3]
Requirement Emission Standards for Sulfur Dioxide [LAC 33:III.Chapter 15]	EXEMPT. Each engine meets the New Units Exemption under 40 CFR 72.7 The units do not serve a generator with a total nameplate capacity more than 25 MW and will burn gaseous fuel with an average sulfur content of 0.05 percent or less by weight. [40 CFR 72.7(a)(1) and (3)]
Acid Rain Program (40 CFR Part 72)	DOES NOT APPLY. Each engine meets the New Units Exemption under 40 CFR 72.7 (Acid Rain Program) pursuant to sections 412 and 821 of the CAA, 42 U.S.C. 7401-7671q as amended by Public Law 101-549 (November 15, 1990) [the Act]. In addition there are no provisions for the monitoring, recordkeeping, and reporting of NO _x mass emissions with which EPA, individual States, or groups of States have required for this source to comply in order to demonstrate compliance with a NO _x mass emission reduction program, to the extent these provisions are adopted as requirements under such a program. [40 CFR 75.1(a)]
Continuous Emission Monitoring (40 CFR Part 75)	DOES NOT APPLY. The engines are not fossil-fuel fired boilers or stationary, fossil-fuel fired combustion turbines serving at any time, on or after January 1, 2005, a generator with nameplate capacity of more than 25 MWe producing electricity for sale. [40 CFR 97.504(a)(1)]
Trading Program (40 CFR Part 97, Subpart BBBBBB) ("CSAPR")	

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

**Michoud Electric Generating Plant
Agency Interest No.: 32494
Entergy New Orleans LLC
New Orleans, Orleans Parish, Louisiana**

XI. Table 2. Explanation for Exemption Status or Non-Applicability of a Source

ID No:	Requirement	Notes
EQT 32-38 NOPS-ENG1 thru NOPS-ENG7 NOPS Natural Gas- Fired Reciprocating Internal Combustion Engines 1-7 (Continued)	Standards of Performance for Electric Generating Units [40 CFR 60, Subpart TTTT]	DOES NOT APPLY. The engines are not steam generating units, IGCCs, or stationary combustion turbines that commenced reconstruction after June 18, 2014 or commenced reconstruction after June 18, 2014 that serve a generator or generators capable of selling greater than 25 MW of electricity to a utility power distribution system. [40 CFR 60.5509(a)]
NOPS-TK1 NOPS Lube Oil Tank 1	Standards of Performance for Storage Vessels for Petroleum Liquids (40 CFR 60 Subpart Kb)	DOES NOT APPLY. Storage capacity of this tank is less than 75 cubic meters. [40 CFR 60.110b(a)]
EQT 27 NOPS-EMGEN1 NOPS Emergency Diesel Generator	Control of Emission of Organic Compounds (LAC 33:III.Chapter 21 Emission Standards for Sulfur Dioxide [LAC 33:III.Chapter 15]	DOES NOT APPLY. This tank will not store materials with a maximum true vapor pressure of 1.5 psia or greater at storage conditions. [LAC 33:2103.A] DOES NOT APPLY. Unit emits less than 5 tons per year of SO ₂ . [LAC 33:III.1502.A.3]
EQT 28 NOPS-FWP1 NOPS Emergency Diesel Firewater Pump 1	Emission Standards for Sulfur Dioxide [LAC 33:III.Chapter 15]	DOES NOT APPLY. Unit emits less than 5 tons per year of SO ₂ . [LAC 33:III.1502.A.3]

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

**Michoud Electric Generating Plant
 Agency Interest No.: 32494
 Entergy New Orleans LLC
 New Orleans, Orleans Parish, Louisiana**

XI. Table 2. Explanation for Exemption Status or Non-Applicability of a Source		
ID No:	Requirement	Notes
EQT 30 NOPS-EMGEN2 NOPS Emergency Generator 2 (Propane)	Emission Standards for Sulfur Dioxide [LAC 33:III.Chapter 15]	DOES NOT APPLY. Unit emits less than 5 tons per year of SO ₂ . [LAC 33:III.1502.A.3]
FUG 02 NOPS-FUG1 NOPS Fugitive Emissions	Pumps and Compressors [LAC 33:III.2111]	DOES NOT APPLY. There are no rotary pumps or compressors at this facility that handle volatile organic compounds with a true vapor pressure of 1.5 psia or greater. [LAC 33:III.2111.A]
	Fugitive Emissions Control [LAC 33:III.2121]	DOES NOT APPLY. This facility is not a petroleum refinery, natural gas plant, synthetic organic chemical manufacturing industry (SOCMI) facility, methyl tertiary butyl ether (MTBE) manufacturing facility, or polymer manufacturing facility. [LAC 33:III.2121.A]

The above table provides explanation for both the exemption status or non-applicability of a source cited by 1, 2 or 3 in the matrix presented in Section X (Table 1) of this permit.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

**Michoud Electric Generating Plant
Agency Interest No.: 32494
Entergy New Orleans LLC
New Orleans, Orleans Parish, Louisiana**

1. Startup and Shutdown (SU/SD) Mode:

Startup Mode begins when fuel is introduced to ignite the RICE. Startup Mode ends and Normal Operation Mode begins when the RICE enters Environmental Compliance Mode and the startup emissions have purged through the unit. Normal Operation Mode ends and Planned Shutdown Mode begins when fuel flow to the RICE is terminated and exhaust is no longer emitted out of the stack.

The equipment supplier provided estimates of PM10, PM2.5, NOx, CO, and VOC emissions during SU/SD events. These estimates are used to quantify emissions from each unit during these events.

During SU/SD operations, each NOPS-RICE will be allowed to operate at maximum lb/hr emission rates as delineated in the table below:

Max Lb/Hr Emissions Rates for NOPS-RICE (Startups/Shutdowns-Per Engine)	
Particulate Matter (PM ₁₀)	5.33
Particulate Matter (PM _{2.5})	5.33
Sulfur dioxide	0.21
Nitrogen oxides	13.78
Carbon Monoxide	15.09
Sulfuric Acid Mist (SAM)	0.14
Volatile Organic Compounds (VOC)	9.86

Additionally, since ENO participates in the Midcontinent Independent System Operator, Inc. (MISO) regional transmission organization, the occurrence of SU/SD events may be governed by the demand of the MISO market structure. As part of the MISO market structure, ENO makes owned or controlled generation available to MISO which, in turn, commits and dispatches generation as needed to serve electric needs of all MISO-participating load serving entities in the region, including utilities other than ENO.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

**Michoud Electric Generating Plant
Agency Interest No.: 32494
Entergy New Orleans LLC
New Orleans, Orleans Parish, Louisiana**

2. Commissioning Phase:

This permit includes an estimate of potential emissions during the initial startup and commissioning (Commissioning Phase) of the NOPS. Prior to transferring control of the NOPS from the Engineering Procurement and Construction (EPC) contractor to ENO, the Commissioning Phase allows the EPC contractor to demonstrate that the NOPS is built to specification and capable of performing as designed. During this Phase, a series of engineering tasks and tests are performed in a prescribed sequence in order to clean, inspect, assess, adjust and tune all aspects of the RICE Units, including fuel firing at various loads, engine efficiency, power generation, and instrumentation, monitoring and operational control systems. At some stages during the Commissioning Phase, fuel will be fired in the engines, electricity will be generated, and emissions will occur.

The Commissioning Phase is used by the EPC contractor to clean, test, and tune all plant equipment in order to optimize the operation for generation after substantial completion (as defined in the EPC contract) of the NOPS has been completed. Aspects of the Commissioning Phase include rough tuning on the generator engines, final tuning on the generator engines, relay and generator testing for coordination with the transmission grid, and performance testing to ensure the generator engines operate as designed. Testing is performed by starting and shutting down each unit to make sure the controls work properly to protect the equipment and personnel. The Commissioning Phase is managed by and under the control of the EPC contractor and typically lasts approximately 12 weeks, but could last longer.

The estimated emissions from these tasks in the Commissioning Phase are listed in the table below, and are **total** emissions allowed for all seven engines during the Commissioning Phase:

<u>Pollutant</u>	<u>Emissions lb/hr</u>	<u>Emissions (tons)</u>
PM ₁₀	5.33	2.80
PM _{2.5}	5.33	2.80
SO ₂	0.63	0.33
NO _x	561.67	293.89
CO	305.39	159.79
VOC	113.68	59.48

General Information

AI ID: 32494 Entergy New Orleans Inc - Michoud Electric Generating Plant
Activity Number: PER20170007
Permit Number: 2140-00014-V5B
Air - Title V Regular Permit Renewal

ID	Name	User Group	Start Date
2207100014	AFS (EPA Air Facility System)	AFS (EPA Air Facility System)	01-01-2000
2140-00014	CDS Number	CDS Number	08-05-2002
7448111	EPA EIS Facility Site ID	EPA EIS Facility Site ID	01-01-2008
LAD000757567	Entergy New Orleans Inc - Michoud Plant	Hazardous Waste Notification	08-18-1980
LA0004324	LPDES Permit #	LPDES Permit #	11-21-1999
1409	ORIS Code	ORIS Code	09-16-2008
GD-071-0158	Priority 2 Emergency Site	Priority 2 Emergency Site	07-25-2006
P-0091	SW Generator ID #	Solid Waste Facility No.	05-01-2001
67763	Standard Permit	Solid Waste Permitting	06-11-1976
695	Michoud Generating Station	TEMPO Merge	12-23-2000
70129NTRGY3601P	Entergy New Orleans Inc - Michoud Plant	TEMPO Merge	05-13-2001
36006764	TRI #	Toxic Release Inventory	07-12-2004
	UST Facility ID (from UST legacy data)	UST FID #	10-11-2002

Main Phone: 504-576-4928

Physical Location:
 3601 Paris Rd
 New Orleans, LA 70129

Mailing Address:
 PO Box 61000 Mail Unit L-ENT-3D
 New Orleans, LA 701611000

Location of Front Gate: 30.011011 latitude, -89.936872 longitude, Coordinate Method: Lat.\Long. - DMS, Coordinate Datum: NAD83

Name	Mailing Address	Phone (Type)	Relationship
Richie Conyers	PO Box 61000 New Orleans, LA 701611000		Air Permit Contact For
R. Renee Keys	10055 Grogan's Mill Rd The Woodlands, TX 77380	2812973315 (WP)	Responsible Official for
Gus VonBodungen	PO Box 61000 L-ENT-5E New Orleans, LA 701611000	gvonbod@entergy.ca	Water Permit Contact For
Gus VonBodungen	PO Box 61000 L-ENT-5E New Orleans, LA 701611000	5045766037 (WP)	Water Permit Contact For

Name	Address	Phone (Type)	Relationship
Entergy New Orleans Inc	PO Box 61000 Mail Unit L-ENT-3D New Orleans, LA 701611000	5042533000 (WP)	Owns
Entergy New Orleans Inc	PO Box 61000 Mail Unit L-ENT-3D New Orleans, LA 701611000	5042533000 (WP)	Operates
Entergy New Orleans Inc	3601 Paris Rd New Orleans, LA 70129		Accident Prevention Billing Party for
Entergy New Orleans Inc	3601 Paris Rd New Orleans, LA 70129		UST Billing Party for
Entergy New Orleans Inc	PO Box 61000 Mail Unit L-ENT-3D New Orleans, LA 701611000	5042533000 (WP)	Emission Inventory Billing Party
Entergy New Orleans Inc	3601 Paris Rd New Orleans, LA 70129		Groundwater Billing Party for

General Information

AI ID: 32494 Entergy New Orleans Inc - Michoud Electric Generating Plant
Activity Number: PER20170007
Permit Number: 2140-00014-V5B
Air - Title V Regular Permit Renewal

Related Organizations:	Name	Address	Phone (Type)	Relationship
	Louisiana Environmental Support	639 Loyola Ave Mail Unit L-ENT-3D New Orleans, LA 70113		Solid Waste Billing Party for
	Louisiana Environmental Support	639 Loyola Ave Mail Unit L-ENT-3D New Orleans, LA 70113		Water Billing Party for
	Louisiana Environmental Support	639 Loyola Ave Mail Unit L-ENT-3D New Orleans, LA 70113		Air Billing Party for
	Louisiana Environmental Support	639 Loyola Ave Mail Unit L-ENT-3D New Orleans, LA 70113		Haz. Waste Billing Party for

NAIC Codes: 22111, Electric Power Generation

Note: This report entitled "General Information" contains a summary of facility-level information contained in LDEC's TEMPO database for this facility and is not considered a part of the permit. Please review the information contained in this document for accuracy and completeness. If any changes are required or if you have questions regarding this document, you may email your changes to facupdate@ja.gov.

INVENTORIES

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant
 Activity Number: PER20170007
 Permit Number: 2140-00014-V5B
 Air - Title V Regular Permit Renewal

Subject Item Inventory:

ID	Description	Tank Volume	Max. Operating Rate	Normal Operating Rate	Contents	Operating Time
NOPS RICE						
EQT 0027	NOPS-EMGEN1 - NOPS Emergency Generator 1		1676 horsepower	1676 horsepower	Diesel	100 hr/yr
EQT 0028	NOPS-FWP1 - Emergency Fire Water Pump		240 horsepower	240 horsepower	Diesel	100 hr/yr
EQT 0030	NOPS-EMGEN2 - NOPS Emergency Generator 2		153 horsepower	153 horsepower	Propane	100 hr/yr
EQT 0032	NOPS-ENG1 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 1		18 MW	18 MW	NG Fired with SCR Oxidation Catalyst	(None Specified)
EQT 0033	NOPS-ENG2 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 2		18 MW	18 MW	NG Fired with SCR Oxidation Catalyst	(None Specified)
EQT 0034	NOPS-ENG3 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 3		18 MW	18 MW	NG Fired with SCR Oxidation Catalyst	(None Specified)
EQT 0035	NOPS-ENG4 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 4		18 MW	18 MW	NG Fired with SCR Oxidation Catalyst	(None Specified)
EQT 0036	NOPS-ENG5 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 5		18 MW	18 MW	NG Fired with SCR Oxidation Catalyst	(None Specified)
EQT 0037	NOPS-ENG6 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 6		18 kW	18 MW	NG Fired with SCR Oxidation Catalyst	(None Specified)
EQT 0038	NOPS-ENG7 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 7		18 MW	18 MW	NG Fired with SCR Oxidation Catalyst	(None Specified)
EQT 0039	NOPS-TK1 - NOPS Lube Oil Tank 1	12000 gallons	360000 gallons/yr	360000 gallons/yr	Lube Oil	8760 hr/yr
FUG 0002	NOPS-FUG1 - NOPS Fugitive Emissions RICE					8760 hr/yr

Stack Information:

ID	Description	Velocity (ft/sec)	Flow Rate (cubic ft/min-actual)	Diameter (feet)	Discharge Area (square feet)	Height (feet)	Temperature (oF)
NOPS RICE							
EQT 0027	NOPS-EMGEN1 - NOPS Emergency Generator 1	293.7	9534	.83		13	1015
EQT 0028	NOPS-FWP1 - Emergency Fire Water Pump	51	1046	.67		9	1056
EQT 0032	NOPS-ENG1 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 1	87.5	116740	5.3		60	841
EQT 0033	NOPS-ENG2 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 2	87.5	116740	5.3		60	841
EQT 0034	NOPS-ENG3 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 3	87.5	116740	5.3		60	841
EQT 0035	NOPS-ENG4 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 4	87.5	116740	5.3		60	841
EQT 0036	NOPS-ENG5 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 5	87.5	116740	5.3		60	841
EQT 0037	NOPS-ENG6 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 6	87.5	116740	5.3		60	841
EQT 0038	NOPS-ENG7 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 7	87.5	116740	5.3		60	841
EQT 0039	NOPS-TK1 - NOPS Lube Oil Tank 1			.33		20	

INVENTORIES

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant
Activity Number: PER20170007
Permit Number: 2140-00014-V5B
Air - Title V Regular Permit Renewal

Relationships:

Subject Item Groups:

ID	Group Type	Group Description
CRG 0001	Common Requirements Group	CRGENG 1-7 - ENGINE NOS. 1-7 REQUIREMENTS
GRP 0016	Equipment Group	GRP16-CAPENG 1-7 - CAP FOR ENGINE NOS. 1-7
SCN 0011	Alternate Operating Scenario	NOPSRICESUSD - NOPS RICE (Startup/Shutdown)
SCN 0012	Alternate Operating Scenario	NOPSRICECOMM - NOPS-RICE (Commissioning Phase)
UNF 0003	Unit or Facility Wide	Entire Facility - NOPS RICE

Group Memberships:

ID	Description	Member of Groups
EQT 0032	NOPS-ENG1 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 1	CRG00000000001, GRP00000000016, SCN00000000011, SCN00000000012
EQT 0033	NOPS-ENG2 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 2	CRG00000000001, GRP00000000016, SCN00000000011, SCN00000000012
EQT 0034	NOPS-ENG3 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 3	CRG00000000001, GRP00000000016, SCN00000000011, SCN00000000012
EQT 0035	NOPS-ENG4 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 4	CRG00000000001, GRP00000000016, SCN00000000011, SCN00000000012
EQT 0036	NOPS-ENG5 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 5	CRG00000000001, GRP00000000016, SCN00000000011, SCN00000000012
EQT 0037	NOPS-ENG6 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 6	CRG00000000001, GRP00000000016, SCN00000000011, SCN00000000012
EQT 0038	NOPS-ENG7 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 7	CRG00000000001, GRP00000000016, SCN00000000011, SCN00000000012

NOTE: The UNF group relationship is not printed in this table. Every subject item is a member of the UNF group

Annual Maintenance Fee:

Fee Number	Air Contaminant Source	Multiplier	Units Of Measure
1420	1420 C) Electric Power Gen. (Natural Gas Fired) (Rated Capacity)	128	MW

SIC Codes:

4911	Electric services	AI 32494
4911	Electric services	UNF 003

EMISSION RATES FOR CRITERIA POLLUTANTS AND CO2e

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Subject Item	PM10			PM2.5			SO2			NOx		
	Avg lb/hr	Max lb/hr	Tons/Year	Avg lb/hr	Max lb/hr	Tons/Year	Avg lb/hr	Max lb/hr	Tons/Year	Avg lb/hr	Max lb/hr	Tons/Year
NOPS RICE												
EQT 0027 NOPS-EMGEN1	0.55	0.67	0.03	0.55	0.67	0.03	0.02	0.02	<0.01	17.74	21.28	0.89
EQT 0028 NOPS-FWP1	0.08	0.10	<0.01	0.08	0.10	<0.01	0.003	0.003	<0.01	1.59	1.91	0.08
EQT 0030 NOPS-EMGEN2	0.008	0.009	<0.01	0.008	0.009	<0.01	<0.001	<0.001	<0.01	0.89	1.06	0.04
EQT 0032 NOPS-ENG1		4.70			4.70			0.21			3.28	
EQT 0033 NOPS-ENG2		4.70			4.70			0.21			3.28	
EQT 0034 NOPS-ENG3		4.70			4.70			0.21			3.28	
EQT 0035 NOPS-ENG4		4.70			4.70			0.21			3.28	
EQT 0036 NOPS-ENG5		4.70			4.70			0.21			3.28	
EQT 0037 NOPS-ENG6		4.70			4.70			0.21			3.28	
EQT 0038 NOPS-ENG7		4.70			4.70			0.21			3.28	
EQT 0039 NOPS-TK1												
FUG 0002 NOPS-FUG1												
GRP 0016 GRP16-CAPENG 1-7	27.58		78.59	27.58		78.59	1.19		3.45	19.60		55.95
SCN 0011		37.31			37.31			1.47			96.46	
NOPSRICESUSD												
SCN 0012			2.80			2.80			0.33			293.89
NOPSRICECOMIM												

EMISSION RATES FOR CRITERIA POLLUTANTS AND CO2e

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Subject Item	CO			VOC		
	Avg lb/hr	Max lb/hr	Tons/Year	Avg lb/hr	Max lb/hr	Tons/Year
NOPS RICE						
EQT 0027 NOPS-EMGEN1	9.61	11.53	0.48	17.74	21.28	0.89
EQT 0028 NOPS-FWP1	1.38	1.65	0.07	1.59	1.91	0.08
EQT 0030 NOPS-EMGEN2	1.45	1.74	0.07	0.012	0.014	<0.01
EQT 0032 NOPS-ENG1		5.89			7.44	
EQT 0033 NOPS-ENG2		5.89			7.44	
EQT 0034 NOPS-ENG3		5.89			7.44	
EQT 0035 NOPS-ENG4		5.89			7.44	
EQT 0036 NOPS-ENG5		5.89			7.44	
EQT 0037 NOPS-ENG6		5.89			7.44	
EQT 0038 NOPS-ENG7		5.89			7.44	
EQT 0039 NOPS-TK1				<0.001	<0.001	<0.01
FUG 0002 NOPS-FUG1				0.094	0.113	0.41
GRP 0016 GRP16-CAPENG 1-7	34.93		99.47	36.19		103.13
SCN 0011 NOPS-RICESUSD		105.63			69.02	
SCN 0012 NOPS-RICECOMM			159.79			59.48

Note: Emission rates in bold are from alternate scenarios and are not included in permitted totals unless otherwise noted in a footnote.

Emission rates Notes:

- SCN 0011 PM10 Max lb/hr . Maximum emission rate that could occur at any point during a Start-up/Shut-down event Which Months: All Year
- SCN 0011 PM2.5 Max lb/hr . Maximum emission rate that could occur at any point during a Start-up/Shut-down event Which Months: All Year
- SCN 0011 SO2 Max lb/hr . Maximum emission rate that could occur at any point during a Start-up/Shut-down event Which Months: All Year
- SCN 0011 NOx Max lb/hr . Maximum emission rate that could occur at any point during a Start-up/Shut-down event Which Months: All Year
- SCN 0011 CO Max lb/hr . Maximum emission rate that could occur at any point during a Start-up/Shut-down event Which Months: All Year
- SCN 0011 VOC Max lb/hr . Maximum emission rate that could occur at any point during a Start-up/Shut-down event Which Months: All Year

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
EQT 0027 NOPS-EMGEN1	Acetaldehyde	<0.001	<0.001	<0.01
	Acrolein	<0.001	<0.001	<0.01
	Benzene	0.009	0.011	<0.01
	Formaldehyde	0.001	0.001	<0.01
	Naphthalene	0.002	0.002	<0.01
	Polynuclear Aromatic Hydrocarbons	0.003	0.003	<0.01
	Toluene	0.003	0.004	<0.01
	Xylene (mixed isomers)	0.002	0.003	<0.01
EQT 0028 NOPS-FWP1	1,3-Butadiene	<0.001	<0.001	<0.01
	Acetaldehyde	0.001	0.002	<0.01
	Acrolein	<0.001	<0.001	<0.01
	Benzene	0.002	0.002	<0.01
	Formaldehyde	0.002	0.002	<0.01
	Naphthalene	<0.001	<0.001	<0.01
	Polynuclear Aromatic Hydrocarbons	<0.001	<0.001	<0.01
	Toluene	0.001	0.001	<0.01
EQT 0030 NOPS-EMGEN2	Xylene (mixed isomers)	<0.001	0.001	<0.01
	1,1,2,2-Tetrachloroethane	<0.001	<0.001	<0.01
	1,1,2-Trichloroethane	<0.001	<0.001	<0.01
	1,1-Dichloroethane	<0.001	<0.001	<0.01
	1,2-Dibromoethane	<0.001	<0.001	<0.01
	1,2-Dichloroethane	<0.001	<0.001	<0.01
	1,2-Dichloropropane	<0.001	<0.001	<0.01
	1,3-Butadiene	<0.001	<0.001	<0.01
	1,3-Dichloropropene	<0.001	<0.001	<0.01
	Acetaldehyde	0.001	0.001	<0.01
	Acrolein	0.001	0.001	<0.01
	Benzene	<0.001	<0.001	<0.01
	Carbon tetrachloride	<0.001	<0.001	<0.01
	Chlorobenzene	<0.001	<0.001	<0.01
	Chloroform	<0.001	<0.001	<0.01
	Dichloromethane	<0.001	<0.001	<0.01
	Ethyl benzene	<0.001	<0.001	<0.01
Formaldehyde	0.008	0.010	<0.01	

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
EQT 0030 NOPS-EMGEN2	Methanol	0.001	0.001	<0.01
	Naphthalene	<0.001	<0.001	<0.01
	Polynuclear Aromatic Hydrocarbons	<0.001	<0.001	<0.01
	Styrene	<0.001	<0.001	<0.01
	Toluene	<0.001	<0.001	<0.01
	Vinyl chloride	<0.001	<0.001	<0.01
	Xylene (mixed isomers)	<0.001	<0.001	<0.01
EQT 0032 NOPS-ENG1	1,1,2,2-Tetrachloroethane		0.001	
	1,1,2-Trichloroethane		0.001	
	1,1-Dichloroethane		0.001	
	1,2-Dibromoethane		0.002	
	1,2-Dichloroethane		0.001	
	1,2-Dichloropropane		0.001	
	1,3-Butadiene		0.010	
	1,3-Dichloropropene		0.001	
	2,2,4-Trimethylpentane		0.009	
	2-Methylnaphthalene		0.001	
	Acetaldehyde		0.308	
	Acrolein		0.189	
	Ammonia		0.480	
	Benzene		0.016	
	Biphenyl		0.008	
	Carbon tetrachloride		0.001	
	Chlorobenzene		0.001	
	Chloroethane		<0.001	
	Chloroform		0.001	
	Dichloromethane		0.001	
	Ethyl benzene		0.001	
	Formaldehyde		0.540	
	Methanol		0.092	
	n-Hexane		0.041	
	Naphthalene		0.003	
	Phenol		0.001	
Polynuclear Aromatic Hydrocarbons		0.001		

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
EQT 0032 NOPS-ENG1	Styrene		0.001	
	Sulfuric acid		0.14	
	Toluene		0.015	
	Vinyl chloride		0.001	
	Xylene (mixed isomers)		0.007	
EQT 0033 NOPS-ENG2	1,1,2,2-Tetrachloroethane		0.001	
	1,1,2-Trichloroethane		0.001	
	1,1-Dichloroethane		0.001	
	1,2-Dibromoethane		0.002	
	1,2-Dichloroethane		0.001	
	1,2-Dichloropropane		0.001	
	1,3-Butadiene		0.010	
	1,3-Dichloropropene		0.001	
	2,2,4-Trimethylpentane		0.009	
	2-Methylnaphthalene		0.001	
	Acetaldehyde		0.308	
	Acrolein		0.189	
	Ammonia		0.480	
	Benzene		0.016	
	Biphenyl		0.008	
	Carbon tetrachloride		0.001	
	Chlorobenzene		0.001	
	Chloroethane		<0.001	
	Chloroform		0.001	
	Dichloromethane		0.001	
	Ethyl benzene		0.001	
	Formaldehyde		0.540	
	Methanol		0.092	
	n-Hexane		0.041	
	Naphthalene		0.003	
	Phenol		0.001	
	Polynuclear Aromatic Hydrocarbons		0.001	
Styrene		0.001		
Sulfuric acid		0.14		

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
EQT 0033 NOPS-ENG2	Toluene		0.015	
	Vinyl chloride		0.001	
	Xylene (mixed isomers)		0.007	
EQT 0034 NOPS-ENG3	1,1,2,2-Tetrachloroethane		0.001	
	1,1,2-Trichloroethane		0.001	
	1,1-Dichloroethane		0.001	
	1,2-Dibromoethane		0.002	
	1,2-Dichloroethane		0.001	
	1,2-Dichloropropane		0.001	
	1,3-Butadiene		0.010	
	1,3-Dichloropropene		0.001	
	2,2,4-Trimethylpentane		0.009	
	2-Methylnaphthalene		0.001	
	Acetaldehyde		0.308	
	Acrolein		0.189	
	Ammonia		0.480	
	Benzene		0.016	
	Biphenyl		0.008	
	Carbon tetrachloride		0.001	
	Chlorobenzene		0.001	
	Chloroethane		<0.001	
	Chloroform		0.001	
	Dichloromethane		0.001	
	Ethyl benzene		0.001	
	Formaldehyde		0.540	
	Methanol		0.092	
	n-Hexane		0.041	
	Naphthalene		0.003	
	Phenol		0.001	
	Polynuclear Aromatic Hydrocarbons		0.001	
	Styrene		0.001	
Sulfuric acid		0.14		
Toluene		0.015		
Vinyl chloride		0.001		

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
EQT 0034 NOPS-ENG3	Xylene (mixed isomers)		0.007	
EQT 0035 NOPS-ENG4	1,1,2,2-Tetrachloroethane		0.001	
	1,1,2-Trichloroethane		0.001	
	1,1-Dichloroethane		0.001	
	1,2-Dibromoethane		0.002	
	1,2-Dichloroethane		0.001	
	1,2-Dichloropropane		0.001	
	1,3-Butadiene		0.010	
	1,3-Dichloropropene		0.001	
	2,2,4-Trimethylpentane		0.009	
	2-Methylnaphthalene		0.001	
	Acetaldehyde		0.308	
	Acrolein		0.189	
	Ammonia		0.480	
	Benzene		0.016	
	Biphenyl		0.008	
	Carbon tetrachloride		0.001	
	Chlorobenzene		0.001	
	Chloroethane		<0.001	
	Chloroform		0.001	
	Dichloromethane		0.001	
	Ethyl benzene		0.001	
	Formaldehyde		0.540	
	Methanol		0.092	
	n-Hexane		0.041	
	Naphthalene		0.003	
	Phenol		0.001	
	Polynuclear Aromatic Hydrocarbons		0.001	
Styrene		0.001		
Sulfuric acid		0.14		
Toluene		0.015		
Vinyl chloride		0.001		
Xylene (mixed isomers)		0.007		
EQT 0036 NOPS-ENG5	1,1,2,2-Tetrachloroethane		0.001	

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
EQT 0036 NOPS-ENG5	1,1,2-Trichloroethane		0.001	
	1,1-Dichloroethane		0.001	
	1,2-Dibromoethane		0.002	
	1,2-Dichloroethane		0.001	
	1,2-Dichloropropane		0.001	
	1,3-Butadiene		0.010	
	1,3-Dichloropropene		0.001	
	2,2,4-Trimethylpentane		0.009	
	2-Methylnaphthalene		0.001	
	Acetaldehyde		0.308	
	Acrolein		0.189	
	Ammonia		0.480	
	Benzene		0.016	
	Biphenyl		0.008	
	Carbon tetrachloride		0.001	
	Chlorobenzene		0.001	
	Chloroethane		<0.001	
	Chloroform		0.001	
	Dichloromethane		0.001	
	Ethyl benzene		0.001	
	Formaldehyde		0.540	
	Methanol		0.092	
	n-Hexane		0.041	
	Naphthalene		0.003	
	Phenol		0.001	
	Polynuclear Aromatic Hydrocarbons		0.001	
	Styrene		0.001	
Sulfuric acid		0.14		
Toluene		0.015		
Vinyl chloride		0.001		
Xylene (mixed isomers)		0.007		
EQT 0037 NOPS-ENG6	1,1,2,2-Tetrachloroethane		0.001	
	1,1,2-Trichloroethane		0.001	
	1,1-Dichloroethane		0.001	

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
EQT 0037 NOPS-ENG6	1,2-Dibromoethane		0.002	
	1,2-Dichloroethane		0.001	
	1,2-Dichloropropane		0.001	
	1,3-Butadiene		0.010	
	1,3-Dichloropropene		0.001	
	2,2,4-Trimethylpentane		0.009	
	2-Methylnaphthalene		0.001	
	Acetaldehyde		0.308	
	Acrolein		0.189	
	Ammonia		0.480	
	Benzene		0.016	
	Biphenyl		0.008	
	Carbon tetrachloride		0.001	
	Chlorobenzene		0.001	
	Chloroethane		<0.001	
	Chloroform		0.001	
	Dichloromethane		0.001	
	Ethyl benzene		0.001	
	Formaldehyde		0.540	
	Methanol		0.092	
	n-Hexane		0.041	
	Naphthalene		0.003	
	Phenol		0.001	
	Polynuclear Aromatic Hydrocarbons		0.001	
	Styrene		0.001	
	Sulfuric acid		0.14	
	Toluene		0.015	
Vinyl chloride		0.001		
Xylene (mixed isomers)		0.007		
EQT 0038 NOPS-ENG7	1,1,2,2-Tetrachloroethane		0.001	
	1,1,2-Trichloroethane		0.001	
	1,1-Dichloroethane		0.001	
	1,2-Dibromoethane		0.002	
	1,2-Dichloroethane		0.001	

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
EQT 0038 NOPS-ENG7	1,2-Dichloropropane		0.001	
	1,3-Butadiene		0.010	
	1,3-Dichloropropene		0.001	
	2,2,4-Trimethylpentane		0.009	
	2-Methylnaphthalene		0.001	
	Acetaldehyde		0.308	
	Acrolein		0.189	
	Ammonia		0.480	
	Benzene		0.016	
	Biphenyl		0.008	
	Carbon tetrachloride		0.001	
	Chlorobenzene		0.001	
	Chloroethane		<0.001	
	Chloroform		0.001	
	Dichloromethane		0.001	
	Ethyl benzene		0.001	
	Formaldehyde		0.540	
	Methanol		0.092	
	n-Hexane		0.041	
	Naphthalene		0.003	
	Phenol		0.001	
	Polynuclear Aromatic Hydrocarbons		0.001	
	Styrene		0.001	
	Sulfuric acid		0.14	
Toluene		0.015		
Vinyl chloride		0.001		
Xylene (mixed isomers)		0.007		
FUG 0002 NOPS-FUG1	Ammonia	0.14		0.63
GRP 0016 GRP16-CAPENG 1-7	1,1,2,2-Tetrachloroethane	0.007		0.02
	1,1,2-Trichloroethane	0.007		0.02
	1,1-Dichloroethane	0.007		0.01
	1,2-Dibromoethane	0.007		0.03
	1,2-Dichloroethane	0.007		0.01
	1,2-Dichloropropane	0.007		0.02

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
GRP 0016 GRP18-CAPENG 1-7	1,3-Butadiene	0.056		0.16
	1,3-Dichloropropene	0.007		0.02
	2,2,4-Trimethylpentane	0.06		0.15
	2-Methylnaphthalene	0.007		0.02
	Acetaldehyde	1.799		5.12
	Acrolein	1.106		3.15
	Ammonia	2.80		7.98
	Benzene	0.098		0.27
	Biphenyl	0.049		0.13
	Carbon tetrachloride	0.007		0.02
	Chlorobenzene	0.007		0.02
	Chloroethane	<0.001		<0.01
	Chloroform	0.007		0.02
	Dichloromethane	0.007		0.01
	Ethyl benzene	0.007		0.02
	Formaldehyde	3.15		8.98
	Methanol	0.54		1.53
	n-Hexane	0.24		0.68
	Naphthalene	0.014		0.05
	Phenol	0.007		0.01
	Polynuclear Aromatic Hydrocarbons	0.007		0.02
	Styrene	0.007		0.01
	Sulfuric acid	0.84		2.38
	Toluene	0.09		0.25
Vinyl chloride	0.007		0.01	
Xylene (mixed isomers)	0.042		0.11	
SCN 0011 NOPSRICESUSD	Sulfuric acid		0.98	
UNF 0003 Entire Facility	1,1,2,2-Tetrachloroethane			0.02
	1,1,2-Trichloroethane			0.02
	1,1-Dichloroethane			<0.01
	1,2-Dibromoethane			0.03
	1,2-Dichloroethane			0.01
	1,2-Dichloropropane			0.02
	1,3-Butadiene			0.16

EMISSION RATES FOR TAP/HAP & OTHER POLLUTANTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

Emission Pt.	Pollutant	Avg lb/hr	Max lb/hr	Tons/Year
UNF 0003 Entire Facility	1,3-Dichloropropene			0.02
	2,2,4-Trimethylpentane			0.15
	2-Methylnaphthalene			0.02
	Acetaldehyde			5.12
	Acrolein			3.15
	Ammonia			8.61
	Benzene			0.27
	Biphenyl			0.13
	Carbon tetrachloride			0.02
	Chlorobenzene			0.02
	Chloroethane			<0.01
	Chloroform			0.02
	Dichloromethane			0.01
	Ethyl benzene			0.02
	Formaldehyde			8.98
	Methanol			1.53
	n-Hexane			0.68
	Naphthalene			0.05
	Phenol			0.01
	Polynuclear Aromatic Hydrocarbons			0.02
Styrene			0.01	
Sulfuric acid			2.38	
Toluene			0.25	
Vinyl chloride			0.01	
Xylene (mixed isomers)			0.11	

Note: Emission rates in bold are from alternate scenarios and are not included in permitted totals unless otherwise noted in a footnote. Emission rates attributed to the UNF reflect the sum of the TAP/HAP limits of the individual emission points (or caps) under this permit, but do not constitute an emission cap.

Emission Rates Notes:

SCN 0011 Sulfuric acid Max lb/hr . Maximum emission rate that could occur at any point during a Start-up/Shut-down event Which Months: All Year

SPECIFIC REQUIREMENTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

CRG 0001 CRGENG 1-7 - ENGINE NOS. 1-7 REQUIREMENTS

Group Members: EQT 0032EQT 0033EQT 0034EQT 0035EQT 0036EQT 0037EQT 0038

- 1 [40 CFR 60.4233(e)] (Excluding formaldehyde) VOC, Total \leq 0.7 g/BHP-hr (0.00154 lb/HP-hr; 60 ppm_{dv} at 15% O₂). Subpart JJJJ. [40 CFR 60.4233(e)]
Which Months: All Year Statistical Basis: None specified
- 2 [40 CFR 60.4233(e)] Carbon monoxide (CO) \leq 2.0 g/BHP-hr (0.0044 lb/HP-hr; 270 ppm_{dv} at 15% O₂). Subpart JJJJ. [40 CFR 60.4233(e)]
Which Months: All Year Statistical Basis: None specified
- 3 [40 CFR 60.4233(e)] Nitrogen oxides (NO_x) \leq 1.0 g/BHP-hr (0.0022 lb/HP-hr; 82 ppm_{dv} at 15% O₂). Subpart JJJJ. [40 CFR 60.4233(e)]
Which Months: All Year Statistical Basis: None specified
- 4 [40 CFR 60.4234] Operate and maintain stationary SI ICE to achieve the emission standards as required in 40 CFR 60.4233 over the entire life of the engine.
Subpart JJJJ.
- 5 [40 CFR 60.4243(b)(2)] Demonstrate compliance according to the emission standards specified in 40 CFR 60.4233(e), the requirements specified in 40 CFR 60.4244, as applicable, and the requirements specified in 40 CFR 60.4243(b)(2)(i) and (b)(2)(ii), as applicable. Subpart JJJJ. [40 CFR 60.4243(b)(2)]
- 6 [40 CFR 60.4243(b)(2)] Ensure that the engine is maintained and operated to the extent practicable in a manner consistent with good air pollution control practice for minimizing emissions. Subpart JJJJ. [40 CFR 60.4243(b)(2)]
- 7 [40 CFR 60.4243(b)(2)] If performance testing is required, conduct an initial performance test. For engines greater than 500 HP, conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance. Subpart JJJJ. [40 CFR 60.4243(b)(2)]
- 8 [40 CFR 60.4243(e)] Operate using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations. Keep records of such use. If propane is used for more than 100 hours per year and the engine is not certified to the emission standards when using propane, conduct a performance test to demonstrate compliance with the emission standards of 40 CFR 60.4233. Subpart JJJJ. [40 CFR 60.4243(e)]
- 9 [40 CFR 60.4243(f)] If performance testing is required, perform initial performance testing as indicated in 40 CFR 60.4243, if the engine is either non-certified or is not operated or maintained, along with the control device, according to the manufacturer's written emission-related instructions. Conduct subsequent performance testing, if the engine is rebuilt or undergoes major repair or maintenance. Subpart JJJJ. [40 CFR 60.4243(f)]
- 10 [40 CFR 60.4243(g)] Air-to-fuel ratio controller: Maintain and operate appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times. Subpart JJJJ. [40 CFR 60.4243(g)]
- 11 [40 CFR 60.4244] If performance testing is required, conduct performance tests by following the procedures in 40 CFR 60.4244(a) through (g). Subpart JJJJ.
- 12 [40 CFR 60.4245(a)] Equipment/operational data recordkeeping by electronic or hard copy at the approved frequency. Keep records of the information in 40 CFR 60.4245(a)(1) through (a)(4). Subpart JJJJ. [40 CFR 60.4245(a)]
- 13 [40 CFR 60.4245(c)] Submit an initial notification as required in 40 CFR 60.7(a)(1). Include the information in 40 CFR 60.4245(c)(1) through (c)(5). Subpart JJJJ. [40 CFR 60.4245(c)]
- 14 [40 CFR 60.4245(d)] Submit performance test results: Due within 60 days after each test conducted according to 40 CFR 60.4244 has been completed. Subpart JJJJ. [40 CFR 60.4245(d)]
- 15 [40 CFR 63.6590(c)] Meet the requirements of 40 CFR 60 Subpart JJJJ for spark ignition engines. Subpart ZZZZ. [40 CFR 63.6590(c)]
- 16 [LAC 33:III.1311.C] Opacity \leq 20 percent, except for emissions that have an average opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes. (Complies by using sweet natural gas as fuel).
Which Months: All Year Statistical Basis: Six-minute average

EQT 0027 NOPS-EMGEN1 - NOPS Emergency Generator 1

SPECIFIC REQUIREMENTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

EQT 0027 NOPS-EMGEN1 - NOPS Emergency Generator 1

- 17 [40 CFR 60.4205(b)] Comply with the emission standards for new nonroad CI engines in 40 CFR 60.4202, for all pollutants, for the same model year and maximum engine power. Subpart IIII. [40 CFR 60.4205(b)]
- 18 [40 CFR 60.4206] Operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR 60.4204 and 40 CFR 60.4205 over the entire life of the engine. Subpart IIII.
- 19 [40 CFR 60.4207(b)] Use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. Subpart IIII. [40 CFR 60.4207(b)]
- 20 [40 CFR 60.4209(a)] Operating time monitored by hour/time monitor continuously during operation. If the emergency engine meets the standards applicable to emergency engines, install a non-resettable hour meter prior to startup of the engine. Subpart IIII. [40 CFR 60.4209(a)]
- 21 [40 CFR 60.4211(a)(1)] Which Months: All Year Statistical Basis: None specified
- 22 [40 CFR 60.4211(a)(2)] Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions, except as permitted in 40 CFR 60.4211(g). Subpart IIII. [40 CFR 60.4211(a)(1)]
- 23 [40 CFR 60.4211(a)(3)] Change only those emission-related settings that are permitted by the manufacturer, except as permitted in 40 CFR 60.4211(g). Subpart IIII. [40 CFR 60.4211(a)(2)]
- 24 [40 CFR 60.4211(c)] Meet the requirements of 40 CFR 89, 94 and/or 1068, as applicable, except as permitted in 40 CFR 60.4211(g). Subpart IIII. [40 CFR 60.4211(a)(3)]
- 25 [40 CFR 60.4211(f)(1)] Ensure engine is certified to the emission standards in 40 CFR 60.4204(b), or 40 CFR 60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. Install and configure according to the manufacturer's emissions-related specifications, except as permitted in 40 CFR 60.4211(g). Subpart IIII. [40 CFR 60.4211(c)]
- 26 [40 CFR 60.4211(f)(2)(i)] There is no time limit on the use of emergency stationary ICE in emergency situations. Subpart IIII. [40 CFR 60.4211(f)(1)]
- 27 [40 CFR 60.4211(f)(3)] Operate for maintenance checks and readiness testing for a maximum of 100 hours per calendar year, provided that the tests are recommended by the federal, state or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance company associated with the engine. LDEQ may be petitioned for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if records are maintained indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. Subpart IIII. [40 CFR 60.4211(f)(2)(i)]
- 28 [40 CFR 60.4211(f)] Operate for up to 50 hours per calendar year for maintenance and testing provided in 40 CFR 60.4211(f)(2)(i). Do not use the 50 hours per calendar year for non-emergency situations for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity, except as provided in 40 CFR 60.4211(f)(3)(i). Subpart IIII. [40 CFR 60.4211(f)(3)]
- 29 [40 CFR 60.4211(f)] Operate according to the requirements in 40 CFR 60.4211(f)(1), (f)(2)(i), and (f)(3). In order for the engine to be considered an emergency stationary ICE under 40 CFR 60 Subpart IIII, any operation other than as described in 40 CFR 60.4211(f)(1), (f)(2)(i), and (f)(3) is prohibited. If the engine is not operated according to these requirements, the engine will not be considered an emergency engine under 40 CFR 60 Subpart IIII and must meet all requirements for non-emergency engines. Subpart IIII. [40 CFR 60.4211(f)]

SPECIFIC REQUIREMENTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

EQT 0027 NOPS-EMGEN1 - NOPS Emergency Generator 1

- 29 [40 CFR 60.4211(g)] Conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year after the engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions (can include within 1 year of startup), or within 1 year after the emission-related settings are changed in a way that is not permitted by the manufacturer. Conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance, if the engine is greater than 500 HP. Subpart III. [40 CFR 60.4211(g)]
- 30 [40 CFR 60.4211(g)] Keep records of conducted maintenance. If the engine is not installed, configured, operated or maintained in accordance with the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must keep a maintenance plan and records of conducted maintenance. Subpart III. [40 CFR 60.4211(g)]
- 31 [40 CFR 60.4211(g)] Maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. Subpart III. [40 CFR 60.4211(g)]
- 32 [40 CFR 60.4214(b)] If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time. [40 CFR 60.4214(b)]
- 33 [40 CFR 60.4214(b)] Operating time recordkeeping by electronic or hard copy upon occurrence of event. If the emergency engine meets the standards applicable to emergency engines in the applicable model year, keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. Record the time of operation of the engine and the reason the engine was in operation during that time. Subpart III. [40 CFR 60.4214(b)]
- 34 [40 CFR 60.4214(d)] Submit report : Due annually, by the 31st of March. Submit report electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central DataExchange (CDX) (www.epa.gov/cdx). Submit the written report to EPA at the appropriate address listed in 40 CFR 60.4, if the reporting form specific to 40 CFR 60 Subpart III is not available in CEDRI at the time that the report is due. Include the information specified in 40 CFR 60.4214(d)(i) through (d)(1)(vii). Subpart III. [40 CFR 60.4214(d)]
- 35 [40 CFR 63.6590(c)] Meet the requirements of 40 CFR 60 Subpart III for compression ignition engines. Subpart ZZZZ. [40 CFR 63.6590(c)]
- 36 [LAC 33:III.1101.B] Opacity <= 20 percent, except for emissions that have an average opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes. Determine opacity by using Method 9 of 40 CFR Part 60, Appendix A or by using a continuous opacity monitoring system (COMS) meeting the requirements outlined in 40 CFR 60.13(c) and (d).
Which Months: All Year Statistical Basis: None specified
- 37 [LAC 33:III.1311.C] Opacity <= 20 percent, except for emissions that have an average opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes.
Which Months: All Year Statistical Basis: Six-minute average

EQT 0028 NOPS-FWP1 - Emergency Fire Water Pump

- 38 [40 CFR 60.4205(c)] Non-methane hydrocarbons plus Nitrogen oxides (NOx) <= 3.0 g/BHP-hr (4.0 g/KW-hr). Subpart III. [40 CFR 60.4205(c)]
Which Months: All Year Statistical Basis: None specified

SPECIFIC REQUIREMENTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

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Air - Title V Regular Permit Renewal

EQI 0028 NOPS-FWP1 - Emergency Fire Water Pump

- 39 [40 CFR 60.4205(c)] Particulate matter (10 microns or less) (PM10) \leq 0.15 g/BHP-hr (0.20 g/KW-hr). Subpart IIII. [40 CFR 60.4205(c)]
- 40 [40 CFR 60.4206] Which Months: All Year Statistical Basis: None specified
- 41 [40 CFR 60.4207(b)] Operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR 60.4204 and 40 CFR 60.4205 over the entire life of the engine. Subpart IIII.
- 42 [40 CFR 60.4209(a)] Use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. Subpart IIII. [40 CFR 60.4207(b)]
- Operating time monitored by hour/time monitor continuously during operation. If the emergency engine meets the standards applicable to emergency engines, install a non-resettable hour meter prior to startup of the engine. Subpart IIII. [40 CFR 60.4209(a)]
- 43 [40 CFR 60.4211(a)(1)] Which Months: All Year Statistical Basis: None specified
- Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions, except as permitted in 40 CFR 60.4211(g). Subpart IIII. [40 CFR 60.4211(a)(1)]
- 44 [40 CFR 60.4211(a)(2)] Change only those emission-related settings that are permitted by the manufacturer, except as permitted in 40 CFR 60.4211(g). Subpart IIII. [40 CFR 60.4211(a)(2)]
- 45 [40 CFR 60.4211(a)(3)] Meet the requirements of 40 CFR 89, 94 and/or 1068, as applicable, except as permitted in 40 CFR 60.4211(g). Subpart IIII. [40 CFR 60.4211(a)(3)]
- 46 [40 CFR 60.4211(c)] Ensure engine is certified to the emission standards in 40 CFR 60.4204(b), or 40 CFR 60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. Install and configure according to the manufacturer's emissions-related specifications, except as permitted in 40 CFR 60.4211(g). Subpart IIII. [40 CFR 60.4211(c)]
- 47 [40 CFR 60.4211(e)(2)] Conduct a performance test to demonstrate initial compliance with emission standards according to the requirements specified in 40 CFR 60.4212 or 40 CFR 60.4213, as appropriate, within 60 days after commencing operation after a modification or reconstruction. Subpart IIII. [40 CFR 60.4211(e)(2)]
- 48 [40 CFR 60.4211(f)(1)] There is no time limit on the use of emergency stationary ICE in emergency situations. Subpart IIII. [40 CFR 60.4211(f)(1)]
- 49 [40 CFR 60.4211(f)(2)(i)] Operate for maintenance checks and readiness testing for a maximum of 100 hours per calendar year, provided that the tests are recommended by the federal, state or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance company associated with the engine. LDEQ may be petitioned for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if records are maintained indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. Subpart IIII. [40 CFR 60.4211(f)(2)(i)]
- 50 [40 CFR 60.4211(f)(3)] Operate for up to 50 hours per calendar year in non-emergency situations. Count the 50 hours of operation in non-emergency situations as part of the 100 hours per calendar year for maintenance and testing provided in 40 CFR 60.4211(f)(2)(i). Do not use the 50 hours per calendar year for non-emergency situations for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity, except as provided in 40 CFR 60.4211(f)(3)(i). Subpart IIII. [40 CFR 60.4211(f)(3)]
- 51 [40 CFR 60.4211(f)] Operate according to the requirements in 40 CFR 60.4211(f)(1), (f)(2)(i), and (f)(3). In order for the engine to be considered an emergency stationary ICE under 40 CFR 60 Subpart IIII, any operation other than as described in 40 CFR 60.4211(f)(1), (f)(2)(i), and (f)(3) is prohibited. If the engine is not operated according to these requirements, the engine will not be considered an emergency engine under 40 CFR 60 Subpart IIII and must meet all requirements for non-emergency engines. Subpart IIII. [40 CFR 60.4211(f)]

SPECIFIC REQUIREMENTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

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Air - Title V Regular Permit Renewal

EQT 0028 NOPS-FWP1 - Emergency Fire Water Pump

- 52 [40 CFR 60.4211(g)] Conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year after the engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions (can include within 1 year of startup), or within 1 year after the emission-related settings are changed in a way that is not permitted by the manufacturer. Conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance, if the engine is greater than 500 HP. Subpart IIII. [40 CFR 60.4211(g)]
- 53 [40 CFR 60.4211(g)] Keep records of conducted maintenance. If the engine is not installed, configured, operated or maintained in accordance with the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must keep a maintenance plan and records of conducted maintenance. Subpart IIII. [40 CFR 60.4211(g)]
- 54 [40 CFR 60.4211(g)] Maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. Subpart IIII. [40 CFR 60.4211(g)]
- 55 [40 CFR 60.4212] If performance testing is required, conduct performance tests according to 40 CFR 60.4212(a) through (e). Subpart IIII.
- 56 [40 CFR 60.4214(b)] Operating time recordkeeping by electronic or hard copy upon occurrence of event. If the emergency engine meets the standards applicable to emergency engines in the applicable model year, keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. Record the time of operation of the engine and the reason the engine was in operation during that time. Subpart IIII. [40 CFR 60.4214(b)]
- 57 [40 CFR 63.6590(c)] Meet the requirements of 40 CFR 60 Subpart IIII for compression ignition engines or 40 CFR 60 Subpart JJJJ for spark ignition engines. Subpart ZZZZ. [40 CFR 63.6590(c)]
- 58 [LAC 33-III.1101.B] Opacity \leq 20 percent, except for emissions that have an average opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes. Determine opacity by using Method 9 of 40 CFR Part 60, Appendix A or by using a continuous opacity monitoring system (COMS) meeting the requirements outlined in 40 CFR 60.13(c) and (d).
Which Months: All Year Statistical Basis: None specified
- 59 [LAC 33-III.1311.C] Opacity \leq 20 percent, except for emissions that have an average opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes.
Which Months: All Year Statistical Basis: Six-minute average

EQT 0030 NOPS-EMGEN2 - NOPS Emergency Generator 2

- 60 [40 CFR 60.4234] Operate and maintain stationary SI ICE to achieve the emission standards as required in 40 CFR 60.4233 over the entire life of the engine. Subpart JJJJ.
- 61 [40 CFR 60.4237(c)] Operating time monitored by hour/time monitor continuously during operation. If the emergency engine meets the standards applicable to emergency engines, install a non-resettable hour meter prior to startup of the engine. [40 CFR 60.4237(c)]
- 62 [40 CFR 60.4243(f)] If performance testing is required, perform initial performance testing as indicated in 40 CFR 60.4243, if the engine is either non-certified or is not operated or maintained, along with the control device, according to the manufacturer's written emission-related instructions. Conduct subsequent performance testing, if the engine is rebuilt or undergoes major repair or maintenance. Subpart JJJJ. [40 CFR 60.4243(f)]
- 63 [40 CFR 60.4243(g)] Air-to-fuel ratio controller: Maintain and operate appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times. Subpart JJJJ. [40 CFR 60.4243(g)]
- 64 [40 CFR 60.4244] If performance testing is required, conduct performance tests by following the procedures in 40 CFR 60.4244(a) through (g). Subpart JJJJ.

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EQT 0030 NOPS-EMGEN2 - NOPS Emergency Generator 2

- 65 [40 CFR 60.4245(a)] Equipment/operational data recordkeeping by electronic or hard copy at the approved frequency. Keep records of the information in 40 CFR 60.4245(a)(1) through (a)(4). Subpart JJJJ. [40 CFR 60.4245(a)]
- 66 [40 CFR 60.4245(d)] Submit performance test results: Due within 60 days after each test conducted according to 40 CFR 60.4244 has been completed. Subpart JJJJ. [40 CFR 60.4245(d)]
- 67 [40 CFR 63.6590(c)] Meet the requirements of 40 CFR 60 Subpart IIII for compression ignition engines or 40 CFR 60 Subpart JJJJ for spark ignition engines. Subpart ZZZZ. [40 CFR 63.6590(c)]
- 68 [LAC 33:III.1101.B] Opacity \leq 20 percent, except for emissions that have an average opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes. Determine opacity by using Method 9 of 40 CFR Part 60, Appendix A or by using a continuous opacity monitoring system (COMS) meeting the requirements outlined in 40 CFR 60.13(c) and (d).
Which Months: All Year Statistical Basis: None specified
- 69 [LAC 33:III.1311.C] Opacity \leq 20 percent, except for emissions that have an average opacity in excess of 20 percent for not more than one six-minute period in any 60 consecutive minutes. (Complies by using sweet natural gas as fuel).
Which Months: All Year Statistical Basis: Six-minute average
Record and retain at the site sufficient data to show annual potential sulfur dioxide emissions.
- 70 [LAC 33:III.1513.C]

GRP 0016 GRP16-CAPENG 1-7 - CAP FOR ENGINE NOS. 1-7

Group Members: EQT 0032EQT 0033EQT 0034EQT 0035EQT 0036EQT 0037EQT 0038

- 71 [LAC 33:III.501.C.6] Submit report: Due annually, by the 30th of April. This report can be combined with reports required under LAC 33:III.535. Report the Startup/Shutdown events, annual operating hours, operating load (heat input) and fuel consumption. The allowable emission limits (average (lb/hr), maximum (lb/hr) and tons per year) in this permit, shall not be exceeded. Notify the Office of Environmental Compliance if the emission rates exceed the maximum listed in this permit.
- 72 [LAC 33:III.501.C.6] CO, VOC and volatile organic TAP/HAP (VOTAP) emissions from the RICE shall be controlled via the oxidation catalyst (OC) system. The OC shall be installed, operated and maintained to meet the annual ton per year CO, VOC and individual VOTAP emission limits specified in the Emission Rates for Criteria Pollutants and Emission Rates for HAP/TAP and Other Pollutants, tables. The OC system may be bypassed while the RICE are operational during periods of commissioning, startup, shutdown, and malfunction, and for maintenance of the control system. To the extent practicable, OC maintenance shall be scheduled for periods when the RICE are not operational.
- 73 [LAC 33:III.501.C.6] Equipment/operational data recordkeeping by electronic or hard copy monthly. Keep records of the Startup/Shutdown events, hours of operation, operating load (heat input) and fuel consumption for each engine on a monthly basis, and for the last twelve consecutive month period. Records shall be kept on site and made available for inspection by LDEQ personnel.
- 74 [LAC 33:III.501.C.6] NOx emissions shall be controlled via selective catalytic reduction (SCR). SCR shall be installed, operated and maintained to meet the annual ton per year NOx emission limit specified in the Emission Rates for Criteria Pollutants table. The SCR may be bypassed while the RICE are operational during periods of commissioning, startup, shutdown, and malfunction, and for maintenance of the control system. To the extent practicable, SCR maintenance shall be scheduled for periods when the RICE are not operational.

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GRP 0016 GRP16-CAPENG 1-7 - CAP FOR ENGINE NOS. 1-7

75 [LAC 33:III.501.C.6]

Permittee shall demonstrate compliance with the RICE Engine CAP "GRP16-CAPENGI-7 (CAP for Engine Nos. 1-7) through the calculated actual emissions compared to the annual emissions limitations identified in the "Emission Rates for Criteria Pollutants and CO2e" and "Emission Rates for TAP/HAP & Other Pollutant" tables of this permit. Emissions (in tons per year) shall be based upon calculations on a twelve consecutive month rolling period and records shall be kept on site and made available for inspection by the Office of Environmental Compliance. The emissions over the maximum listed in the "Emission Rates for Criteria Pollutants and CO2e" and "Emission Rates for TAP/HAP & Other Pollutants" table for any twelve consecutive month period shall be considered a violation of this permit and must be reported to the Office of Environmental Compliance.

76 [LAC 33:III.507.H.1.a]

The Startup/Shutdown events, hours of operation, operating load (heat input) and fuel consumption of each engine shall be monitored by technically sound method continuously.

SCN 0011 NOPSICESUSD - NOPS RICE (Startup/Shutdown)

Group Members: EQT 0032EQT 0033EQT 0034EQT 0035EQT 0036EQT 0037EQT 0038

77 [LAC 33:III.507.H.1.a]

Operating time monitored by technically sound method continuously with indications of the operating condition of the NOPS-RICE, specifically indicating if a unit is in startup/shutdown mode.

78 [LAC 33:III.507.H.1.a]

Operating time recordkeeping by electronic or hard copy continuously with indications of the operating condition of the NOPS-RICE, specifically showing if the unit is in startup or shutdown mode. Keep records of the total startup and shutdown operating time each month. Make records available for inspection by LDEQ personnel.

79 [LAC 33:III.507.H.1.a]

Submit report: Due annually, by the 30th of April. Report the startup and shutdown operating time for the NOPS-RICE for the preceding calendar year to the Office of Environmental Compliance. This report can be combined with reports required under LAC 33:III.535.

SCN 0012 NOPSRIECOMM - NOPS-RICE (Commissioning Phase)

Group Members: EQT 0032EQT 0033EQT 0034EQT 0035EQT 0036EQT 0037EQT 0038

80 [LAC 33:III.501.C.6]

Emissions during the Commissioning Phase are limited to the emissions identified in the Emission Rates for "Criteria Pollutants and CO2e" table of this permit.

UNF 0003 Entire Facility - NOPS RICE

81 [40 CFR 60.]

All affected facilities shall comply with all applicable provisions in 40 CFR 60 Subpart A.

82 [40 CFR 61.145(b)(1)]

Provide DEQ with written notice of intention to demolish or renovate prior to performing activities to which 40 CFR 61 Subpart M applies.

83 [40 CFR 61.148]

Delivery of the notice by U.S. Postal Service, commercial delivery service, or hand delivery is acceptable. Subpart M. [40 CFR 61.145(b)(1)] Do not install or reinstall on a facility component any insulating materials that contain commercial asbestos if the materials are either molded and friable or wet-applied and friable after drying. Subpart M.

84 [40 CFR 61.]

All affected facilities shall comply with all applicable provisions in 40 CFR 61 Subpart A.

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AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

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UNF 0003 Entire Facility - NOPS RICE

- 85 [40 CFR 63.] All affected facilities shall comply with all applicable provisions in 40 CFR 63 Subpart A as delineated in Table 8 of 40 CFR 63 Subpart ZZZZ.
- 86 [LAC 33:III.1103] Emissions of smoke which pass onto or across a public road and create a traffic hazard by impairment of visibility as defined in LAC 33:III.111 or intensifies an existing traffic hazard condition are prohibited.
- 87 [LAC 33:III.1109.B] Outdoor burning of waste material or other combustible material is prohibited.
- 88 [LAC 33:III.1303.B] Emissions of particulate matter which pass onto or across a public road and create a traffic hazard by impairment of visibility or intensify an existing traffic hazard condition are prohibited.
- 89 [LAC 33:III.2113.A] Maintain best practical housekeeping and maintenance practices at the highest possible standards to reduce the quantity of organic compounds emissions. Good housekeeping includes, but is not limited to, the practices listed in LAC 33:III.2113.A.1 through A.5.
- 90 [LAC 33:III.219] Failure to pay the prescribed application fee or annual fee as provided herein, within 90 days after the due date, will constitute a violation of these regulations and shall subject the person to applicable enforcement actions under the Louisiana Environmental Quality Act including, but not limited to, revocation or suspension of the applicable permit, license, registration, or variance.
- 91 [LAC 33:III.501.C.6] Compliance shall be demonstrated through the calculated actual annual emissions compared to the annual emissions limitations identified in the "Emission Rates for Criteria Pollutants and CO₂e" and "Emission Rates for TAP/HAP & Other Pollutants" tables of this permit.
- 92 [LAC 33:III.501.C.6] ENO shall document the sulfur content of the natural gas via a purchase contract, tariff sheet, or pipeline transportation contract.
- 93 [LAC 33:III.501.C.6] The annual operating hours, load (heat input), and number of startup/shutdown events used in the emission calculations are intended to be representative of anticipated usage for purposes of providing a conservative estimate of annual emissions (in tons per year), but are not intended as operating limits. The resulting emission limits as incorporated into this permit are the enforceable limits. Actual hours of operation, load, and number of startup/shutdown events will be determined by demand and may vary from the values shown in the emission calculation, but the allowable emission limits (average (lb/hr), maximum (lb/hr) and tons per year) in this permit shall not be exceeded.
- 94 [LAC 33:III.5151.F.1.f] An individual or company contracted to perform a demolition or renovation activity which disturbs RACM must be recognized by the Licensing Board for Contractors to perform asbestos abatement, and shall meet the requirements of LAC 33:III.5151.F.2 and F.3 for each demolition or renovation activity.
- 95 [LAC 33:III.535] Comply with the Part 70 General Conditions as set forth in LAC 33:III.535 and the Louisiana General Conditions as set forth in LAC 33:III.537. [LAC 33:III.535, LAC 33:III.537]
- 96 [LAC 33:III.5609.A.1.b] Activate the preplanned abatement strategy listed in LAC 33:III.5611.Table 5 when DEQ declares an Air Pollution Alert.
- 97 [LAC 33:III.5609.A.2.b] Activate the preplanned strategy listed in LAC 33:III.5611.Table 6 when DEQ declares an Air Pollution Warning.
- 98 [LAC 33:III.5609.A.3.b] Activate the preplanned abatement strategy listed in LAC 33:III.5611.Table 7 when DEQ declares an Air Pollution Emergency.
- 99 [LAC 33:III.5609.A] Prepare standby plans for the reduction of emissions during periods of Air Pollution Alert, Air Pollution Warning and Air Pollution Emergency. Design standby plans to reduce or eliminate emissions in accordance with the objectives as set forth in LAC 33:III.5611.Tables 5, 6, and 7.
- 100 [LAC 33:III.919] Submit Emission Inventory (EI)/Annual Emissions Statement: Due annually, by the 30th of April to the Office of Environmental Services, for the reporting period of the previous calendar year that coincides with period of ownership or operatorship, unless otherwise directed by DEQ. Submit both an emissions inventory and the certification statement required by LAC 33:III.919.F.1.c, separately for each AI, in a format specified by DEQ. Include the information specified in LAC 33:III.919.F.1.a through F.1.d.

SPECIFIC REQUIREMENTS

AI ID: 32494 - Entergy New Orleans Inc - Michoud Electric Generating Plant

Activity Number: PER20170007

Permit Number: 2140-00014-V5B

Air - Title V Regular Permit Renewal

UNF 0003 Entire Facility - NOPS RICE

101 [LAC 33:III.927]

Report the unauthorized discharge of any air pollutant into the atmosphere in accordance with LAC 33:I.Chapter 39, Notification Regulations and Procedures for Unauthorized Discharges. Submit written reports to the department pursuant to LAC 33:I.3925. Submit timely and appropriate follow-up reports detailing methods and procedures to be used to prevent similar atmospheric releases.
