Entergy

Entergy Services, LLC
639 Loyola Avenue (70113)
P.O. Box 61000
New Orleans, LA 70161-1000
Tel 504 576 6571
Fax 504 576 5579

Timothy S. Cragin
Assistant General Counsel
Legal Services - Regulatory

February 11, 2019

By Hand Delivery
Ms. Lora W. Johnson, CMC, LMMC
Clerk of Council
City Hall - Room 1E09
1300 Perdido Street
New Orleans, LA 70112

Re: Supplemental and Amending Application of Entergy New Orleans, LLC for Approval to Construct New Orleans Power Station and Request for Cost Recovery and Timely Relief
CNO Docket NO.: UD-16-02

Dear Ms. Johnson:

Pursuant to Council Resolution R-18-65, please find enclosed for your further handling an original and three copies of the State Preconstruction and Part 70 Operating Permit No. 2140-00014-V5B issued to Entergy New Orleans, LLC ("ENO") by the Louisiana Department of Environmental Quality ("LDEQ"), Office of Environmental Services for the Michoud Electric Generating Plant, New Orleans Power Station, Reciprocating Internal Combustion Engine Option. Also attached please find the LDEQ's Basis for Decision. Please file an original and two copies into the record in the above referenced matter, and return a date stamped copy to our courier.

If you have any questions regarding the above, please contact me.

Sincerely,

Timothy S. Cragin

Timothy S. Cragin

TSC\rdm

cc: Official Service List (UD-16-02 *via electronic mail*)

FEB = 3 22

JOHN BEL EDWARDS
GOVERNOR

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,

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
Agency Interest No.: 32494
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

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 (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), VOC, and hazardous air pollutants/toxic air pollutants (HAPs/TAPs). NOx 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.

NOx 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 (N_2) and oxygen (O_2) 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 NOx emissions. The ammonia will react on the catalyst surface with NO_x to form nitrogen gas (N_2) 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 (SO_2) during the combustion process with a smaller amount oxidized to sulfur trioxide (SO_3). The SO_3 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 $PM_{10}/PM_{2.5}$ from the NOPS engines will primarily result from carryover of noncombustible trace constituents in the fuel and inlet air. Filterable $PM_{10}/PM_{2.5}$ is that portion of the total that exists in the stack in either the solid or liquid state. Condensable $PM_{10}/PM_{2.5}$ exists as a gas in the stack but condenses in the cooler ambient air to form particulate matter. Condensable $PM_{10}/PM_{2.5}$ 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 (CO_2).

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 un-reacted, 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 CO_2 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.

The permit cap, GRP 16-CAP ENG-1-7 for Engine Nos. 1-7 (GRP0016), is included to limit the emissions of PM_{10}, $PM_{2.5}$, SO_2, 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 (NOx 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 PM_{10}, $PM_{2.5}$ and SO_2; and
- Incorporate specific requirements on the NOPS RICE CAP to reflect the use of SCR for control of NOx emissions and Oxidation Catalyst (OC) for control of CO emissions.

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
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-Methylnapthalene	--	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

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

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 SO_2.

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 NOx 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 NOx) 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

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.

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

		Emission Rates – tons per year						
Work Activity	Schedule	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.

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*
UNF 03	Unit Facility	1	1	1	1					3	1				3	2	1	3
EQT 27	NOPS-EMGEN1-NOPS Emergency Diesel Generator 1	1		1	1	3												
EQT 28	NOPS-FWP1 NOPS Emergency Diesel Firewater Pump 1	1		1	1	3												
EQT 30	NOPS-EMGEN-2 Kohler/Model: 25REZG (Propane-4SRB)	1		1	1	3												
EQT 32	NOPS-ENG1 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 1	1			1	3												
EQT 33	NOPS-ENG2 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 2	1			1	3												
EQT 34	NOPS-ENG3 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 3	1			1	3												
EQT 35	NOPS-ENG4 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 4	1			1	3												
EQT 36	NOPS-ENG5 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 5	1			1	3												
EQT 37	NOPS-ENG6 NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 6	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
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
UNF 01	Unit Facility	1													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		3	3								
EQT 27	NOPS-EMGEN1 NOPS Emergency Diesel Generator 1										1								1										
EQT 28	NOPS-FWP1 NOPS Emergency Diesel Firewater Pump 1										1								1										
EQT 30	NOPS-EMGEN-2 Kohler/Model: 25REZG (Propane-4SRB)											1							1										
EQT 32	NOPS-ENG1 NOPS Natural Gas- Fired Reciprocating Internal Combustion Engine 1											1		3					1						3	3		3	
EQT 33	NOPS- ENG2 NOPS Natural Gas- Fired Reciprocating Internal Combustion Engine 2											1		3					1						3	3		3	
EQT 34	NOPS-ENG3 NOPS Natural Gas- Fired Reciprocating Internal Combustion Engine 3											1		3					1						3	3		3	
EQT 35	NOPS-ENG4 NOPS Natural Gas- Fired Reciprocating Internal Combustion Engine 4											1		3					1						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				3																								
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.

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

ID No:	Requirement	Notes
UNF001 Unit Facility	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.
	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 SI RICE units that run solely on natural gas.
	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)]

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 ta nameplate capacity of more than 25 MWe (megawatt electrical) producing electricity for sale.

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	Emission Standards for Sulfur Dioxide [LAC 33:III.Chapter 15]	DOES NOT APPLY. Units emit less than 5 tons per year of SO_2, each. [LAC 33:III.1502.A.3]
	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)]
	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)]
	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 nameplate capacity of more than 25 MWe producing electricity for sale. [40 CFR 97.504(a)(1)]

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)]
	Control of Emission of Organic Compounds (LAC 33:III.Chapter 21	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]
EQT 27 NOPS-EMGEN1 NOPS Emergency Diesel Generator	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]
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]

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.

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.

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:

Pollutant	Emissions lb/hr	Emissions (tons)
PM_{10}	5.33	2.80
$PM_{2.5}$	5.33	2.80
SO_2	0.63	0.33
NOx	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

Also Known As:

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
	Priority 2 Emergency Site	Priority 2 Emergency Site	07-25-2006
GD-071-0158	SW Generator ID #	Solid Waste Facility No.	05-01-2001
P-0091	Standard Permit	Solid Waste Permitting	06-11-1976
67763	Michoud Generating Station	TEMPO Merge	12-23-2000
695	Entergy New Orleans Inc - Michoud Plant	TEMPO Merge	05-13-2001
70129NTRGY3601P	TRI #	Toxic Release Inventory	07-12-2004
36006764	UST Facility ID (from UST legacy data)	UST FID #	10-11-2002

Physical Location: 3601 Paris Rd
New Orleans, LA 70129

Main Phone: 504-576-4928

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

Related People:

Name	Mailing Address	Phone (Type)	Relationship
Richie Corvers	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.c	Water Permit Contact For
Gus VonBodungen	PO Box 61000 L-ENT-5E New Orleans, LA 701611000	5045766037 (WP)	Water Permit Contact For

Related Organizations:

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 LDEQ'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@la.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 Membership:

ID	Description	Member of Groups
EQT 0032	NOPS-ENG1 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 1	CRG0000000001, GRP0000000016, SCN0000000011, SCN0000000012
EQT 0033	NOPS-ENG2 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 2	CRG0000000001, GRP0000000016, SCN0000000011, SCN0000000012
EQT 0034	NOPS-ENG3 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 3	CRG0000000001, GRP0000000016, SCN0000000011, SCN0000000012
EQT 0035	NOPS-ENG4 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 4	CRG0000000001, GRP0000000016, SCN0000000011, SCN0000000012
EQT 0036	NOPS-ENG5 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 5	CRG0000000001, GRP0000000016, SCN0000000011, SCN0000000012
EQT 0037	NOPS-ENG6 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 6	CRG0000000001, GRP0000000016, SCN0000000011, SCN0000000012
EQT 0038	NOPS-ENG7 - NOPS Natural Gas-Fired Reciprocating Internal Combustion Engine 7	CRG0000000001, GRP0000000016, SCN0000000011, SCN0000000012

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

	PM10			PM2.5			SO2			NOx		
Subject Item	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 NOPSRICESUSD		**37.31**			**37.31**			**1.47**			**96.46**	
SCN 0012 NOPSRICECOMM			**2.80**			**2.80**			**0.33**			**293.89**

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

	CO			VOC		
Subject Item	**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 NOPSRICESUSD		**105.63**			**69.02**	
SCN 0012 NOPSRICECOMM			**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
	Xylene (mixed isomers)	<0.001	0.001	<0.01
EQT 0030 NOPS-EMGEN2	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
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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
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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

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Activity Number: PER20170007
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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

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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
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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 GRP16-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
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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 0032 EQT 0033 EQT 0034 EQT 0035 EQT 0036 EQT 0037 EQT 0038

1	[40 CFR 60.4233(e)]	(Excluding formaldehyde) VOC, Total <= 0.7 g/BHP-hr (0.00154 lb/HP-hr; 60 ppmdv 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) <= 2.0 g/BHP-hr (0.0044 lb/HP-hr; 270 ppmdv 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 (NOx) <= 1.0 g/BHP-hr (0.0022 lb/HP-hr; 82 ppmdv 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) though (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 <= 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

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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)] Which Months: All Year Statistical Basis: None specified
21	[40 CFR 60.4211(a)(1)]	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)]
22	[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)]
23	[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)]
24	[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)]
25	[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)]
26	[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)]
27	[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)]
28	[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)]

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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 IIII. [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 IIII. [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 IIII. [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 IIII. [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 IIII is not available in CEDRI at the time that the report is due. Include the information specified in 40 CFR 60.4214(d)(1)(i) through (d)(1)(vii). Subpart IIII. [40 CFR 60.4214(d)]
35	[40 CFR 63.6590(c)]	Meet the requirements of 40 CFR 60 Subpart IIII 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

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

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39	[40 CFR 60.4205(c)]	Particulate matter (10 microns or less) (PM10) <= 0.15 g/BHP-hr (0.20 g/KW-hr). Subpart IIII. [40 CFR 60.4205(c)] Which Months: All Year Statistical Basis: None specified
40	[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.
41	[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)]
42	[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)] Which Months: All Year Statistical Basis: None specified
43	[40 CFR 60.4211(a)(1)]	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)]

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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 <= 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 <= 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.

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) though (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 <= 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 <= 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
70	[LAC 33:III.1513.C]	Record and retain at the site sufficient data to show annual potential sulfur dioxide emissions.

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

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

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-CAPENG1-7 (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 NOPSRICESUSD - NOPS RICE (Startup/Shutdown)

Group Members: EQT 0032 EQT 0033 EQT 0034 EQT 0035 EQT 0036 EQT 0037 EQT 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 NOPSRICECOMM - NOPS-RICE (Commissioning Phase)

Group Members: EQT 0032 EQT 0033 EQT 0034 EQT 0035 EQT 0036 EQT 0037 EQT 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. 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)]
83	[40 CFR 61.148]	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.

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.

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.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF ENVIRONMENTAL SERVICES

BASIS FOR DECISION

PART 70 OPERATING PERMIT NO. 2140-00014-V5B

ENTERGY NEW ORLEANS, LLC
MICHOUD ELECTRIC GENERATING PLANT – NEW ORLEANS POWER STATION
NEW ORLEANS, ORLEANS PARISH, LOUISIANA
Agency Interest No. 32494

The Louisiana Department of Environmental Quality (LDEQ), Office of Environmental Services (OES), through this decision, issues to Entergy New Orleans, LLC a renewal and minor modification to the Part 70 (Title V) operating permit for the existing Michoud Electric Generating Plant, located at 3601 Paris Road in New Orleans, Orleans Parish, Louisiana, to allow for the construction and operation of the New Orleans Power Station (NOPS).

LDEQ finds that as a part of the "IT Requirements,"[1] adverse environmental impacts have been minimized or avoided to the maximum extent possible. [Save Ourselves v. Envtl. Control Comm'n, 452 So.2d at 1152, 1157 (La. 1984)]. To make this determination, LDEQ finds that Entergy New Orleans, LLC has complied with all applicable federal and state statutes and regulations and has otherwise minimized or avoided environmental impacts to the maximum extent possible. Additionally, LDEQ finds that Entergy New Orleans, LLC has met the alternative sites, alternative projects, and mitigating measures requirements of Save Ourselves. Id. at 1157.

After LDEQ determined that adverse environmental effects had been minimized or avoided to the maximum extent possible, it balanced social and economic factors with environmental impacts. Notably, "the [Louisiana] constitution does not establish environmental protection as an exclusive goal, but requires a balancing process in which environmental costs and benefits must be given full and careful consideration along with economic, social and other factors." Id. LDEQ finds that the social and economic benefits of the proposed project will greatly outweigh its adverse environmental impacts.

The details of the LDEQ's reasoning are set forth below.[2]

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[1] The "IT Requirements" or "IT Questions" are five requirements [see Save Ourselves v. Envtl. Control Comm'n, 452 So. 2d at 1152, 1157 (La. 1984)] that both the permit applicant and the LDEQ consider during certain permit application processes. Although the five requirements have been expressed as three requirements (see Rubicon Inc., 670 So. 2d at 475, 483 (La. App. 1 Cir 1996), rehearing denied), the requirements remain basically the same whether stated as five or as three. The "IT Requirements" must satisfy the issues of whether:
1) the potential and real adverse environmental effects of the proposed project have been avoided to the maximum extent possible;
2) a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the project demonstrates that the latter outweighs the former; and
3) there are alternative projects or alternative sites or mitigating measures which would offer more protection to the environment than the proposed project without unduly curtailing non-environmental benefits to the extent applicable.

[2] Any finding of fact more appropriately designated as a conclusion of law shall be considered also a conclusion of law; and any conclusion of law more appropriately designated as a finding of fact shall be considered also as a finding of fact.

FINDINGS OF FACT

I. BACKGROUND

A. Background

Entergy New Orleans, LLC (hereinafter "Entergy"), a subsidiary of the New Orleans-based Entergy Corporation, owns and operates the Michoud Electric Generating Plant, an existing natural gas-fired steam/electric generating facility. New Orleans Public Service, Inc. built the Michoud Electric Generating Plant in 1957. Operation of the Unit 1 Boiler, rated at 120 megawatts (MW), commenced on April 18, 1957. Operation of the Unit 2 Boiler, rated at 240 MW, commenced on February 3, 1963. Operation of the Unit 3 Boiler, rated at 553 MW, commenced on August 9, 1967, bringing the facility's total electric generation capacity 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.

B. Permit Application

Entergy submitted a permit application and Emissions Inventory Questionnaire (EIQ) dated August 18, 2017, requesting a renewal of and modification to the Part 70 operating permit for the Michoud Electric Generating Plant.

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

Entergy permanently retired Unit 1, Unit 2, and Unit 3, identified as Emission Point Nos. (EPNs) C1A & B-NG (EQT 0003), C2A & B-NG (EQT 0005), and C3 (EQT 0007), respectively, effective June 1, 2016, and requested that these sources be removed from the permit, as they will be removed from the site. Entergy also requested removal of the Unit 3 Auxiliary Boiler, EPN C4 (EQT 0023); the Emergency Gasoline Storage Tank, EPN T2013 (EQT0024); and Emergency Diesel Generator, EPN C5 (EQT 0025), from the permit.[3]

Entergy also requested approval to construct and operate at the Michoud Electric Generating Plant either a single natural gas-fired simple cycle combustion turbine *or* seven natural gas-fired Wärtsilä reciprocating internal combustion engines (RICE) to provide peaking/reserve power for Entergy New Orleans' service area. The new electrical generating equipment is identified as the New Orleans Power Station (NOPS).

C. Description of Facility

On March 8, 2018, the New Orleans City Council approved construction of the RICE option. Therefore, the simple cycle combustion turbine will not be constructed, and proposed Permit Nos. 2140-00014-V5A and 2140-00014-IV4 will not be finalized.

[3] EDMS Doc ID 10761708

The NOPS will include seven four-stroke, spark ignition (SI) stationary reciprocating internal combustion engines (designated as EPNs NOPS-ENG1 through NOPS-ENG7) and ancillary equipment. Each engine will have an average electrical generation capacity of approximately 18 MW, for a nominal site capacity of 128 MW. The engines will be fired only with natural gas. Ancillary equipment will include 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. This equipment will be located entirely within the property boundaries of the Michoud Electric Generating Plant. Each source of air emissions will be addressed further below.

Engines

Thermal energy produced in the engines via the combustion of natural gas will be converted into mechanical energy. Expanding gases produced during combustion will cause the translational movement of pistons that are connected to the rotating drive shaft. The drive shaft couples with an electric generator to convert the rotational mechanical energy into electricity.

Nitrogen oxides (NO_X) will be formed as a result of the combustion of natural gas in the engines. The primary NO_X formation mechanism will be thermal NO_X, which arises from the thermal dissociation and subsequent reaction of nitrogen (N_2) and oxygen (O_2) molecules at high flame temperatures in the combustion air. Fuel NO_X, which results from the reaction of fuel-bound nitrogen compounds with oxygen, will be a smaller component of total NO_X emissions.

Each SI RICE will employ 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). As a result, the peak temperature is reduced, and thermal NO_X emissions are minimized. Each engine will also be equipped with selective catalytic reduction (SCR) add-on controls to further reduce NOx emissions. Ammonia injected into the engine exhaust will react with NO_X on the catalyst surface to form nitrogen gas (N_2) and water.

Emissions of sulfur compounds are directly related to the sulfur content of the fuel. The fuel sulfur will primarily be oxidized to sulfur dioxide (SO_2) during the combustion process, with a smaller amount oxidized to sulfur trioxide (SO_3). The SO_3 in the exhaust may combine 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 particulate matter ($PM_{10}/PM_{2.5}$) from the engines will primarily result from carryover of noncombustible trace constituents in the fuel and inlet air. Filterable $PM_{10}/PM_{2.5}$ is that portion of the total that exists in the stack in either the solid or liquid state. Condensable $PM_{10}/PM_{2.5}$ exists as a gas in the stack, but condenses in the cooler ambient air to form particulate matter. Condensable $PM_{10}/PM_{2.5}$ may consist of sulfates, nitrates, and unburned fuel hydrocarbons.

Carbon monoxide (CO) emissions will 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 oxidize CO to carbon dioxide (CO_2).

Volatile organic compounds (VOCs) can encompass a wide spectrum of organic materials, which are discharged when some of the fuel remains unburned or is partially oxidized during the combustion process. Some organic compounds are carried over as un-reacted, 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 CO_2 and water.

The combustion of natural gas in the engines will also result in emissions of VOC and non-VOC LAC 33:III.Chapter 51-regulated toxic air pollutants (TAPs).

Diesel-Fired Emergency Generator

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

Propane-Fired Emergency Engine

A 153 hp Kohler Model 25REZG four-stroke rich burn (4SRB) propane-fired engine, currently authorized by a regulatory permit issued April 6, 2017, is being included in this permit as EPN NOPS-EMGEN2.

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.

Storage Tanks

The facility will have a 30,000 gallon, pressurized, horizontal aqueous ammonia storage tank storing aqueous ammonia at a concentration of 19 percent for the SCR system. A 12,000 gallon 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) will also be constructed in support of the NOPS project.

Fugitive Emissions

Fugitive emissions from the transfer of natural gas (i.e., leaks from valves, connectors, etc.) are included in the permit.

Permitted emissions from the facility, in tons per year (TPY), are as follows:

Criteria Pollutants [4]

Pollutant		Before [5]	After [6]	Change
Particulate matter	PM_{10} [7]	283.55	78.62	-204.93
Particulate matter	$PM_{2.5}$ [8]	283.55	78.62	-204.93
Sulfur dioxide	SO_2	22.55	3.45	-19.10
Nitrogen oxides	NO_X	8596.89	56.96	-8539.93
Carbon monoxide	CO	3132.53	100.09	-3032.44
Volatile organic compounds	VOC	205.35	104.51	-100.84

VOC Toxic Air Pollutants (TAPs) [9]

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-methylnapthalene	–	0.02	+0.02
biphenyl	–	0.13	+0.13
carbon tetrachloride	–	0.02	+0.02
chlorobenzene	–	0.02	+0.02
chloroethane	–	<0.01	+<0.01
chloroform	–	0.02	+0.02
ethyl benzene	–	0.02	+0.02

[4] Any compound for which an ambient air quality standard has been listed in LAC 33:III.Chapter 7; VOC are included as a precursor for ozone.
[5] Permit No. 2140-00014-V4
[6] Permit No. 2140-00014-V5B
[7] Particulate matter with a nominal diameter of less than or equal to 10 micrometers
[8] Particulate matter with a nominal diameter of less than or equal to 2.5 micrometers
[9] TAPs include the VOC and non-VOC compounds listed in LAC 33:III.5112, Tables 51.1 and 51.3.

Pollutant	Before	After	Change
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	+0.01
phenol	–	0.01	+0.01
styrene	–	0.01	+0.01
toluene	0.13	0.25	+0.12
vinyl chloride	–	0.01	+0.01
xylene (mixed isomers)	–	0.11	+0.11
n-hexane	67.25	0.68	-66.57
	70.314	20.88	-49.434

Non-VOC TAPs

Pollutant	Before	After	Change
ammonia	–	8.61	+8.61
sulfuric acid	–	2.38	+2.38
arsenic (and compounds)	0.01	–	-0.01
barium (and compounds)	0.16	–	-0.16
beryllium (and compounds)	<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
	1.52	10.99	+9.47

The NOPS will be a major source of criteria pollutants, but a minor source of federally-regulated hazardous air pollutants (HAPs) and a minor source of state-regulated TAPs.[10]

[10] Emissions from the combustion of Group 1 virgin fossil fuels, which include natural gas and diesel, are exempt from the requirements of Subchapter A of Chapter 51 per LAC 33:III.5105.B.3.a.

Further, because the NOPS does not trigger Prevention of Significant Deterioration (PSD) review (as explained below), emissions of greenhouse gases (measured as carbon dioxide equivalents, or CO_2e) need not be quantified or addressed by the permit.[11]

The Michoud Electric Generating 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 any regulated NSR pollutant. The Michoud Electric Generating Plant is therefore an existing major stationary source.

Because potential PM_{10}, $PM_{2.5}$, NO_X, CO, and VOC emissions associated with the NOPS exceed their respective PSD significance levels, any other increases or decreases that are contemporaneous with the project must be considered in order to determine if the NOPS constitutes a "major modification."

Pollutant	Potential to Emit	Significance Level	Netting Required?
PM/PM_{10}	78.62	25/15	Yes
$PM_{2.5}$	78.62	10	Yes
SO_2	3.45	40	No
NO_X	56.96	40	Yes
CO	100.09	100	Yes
VOC	104.51	40	Yes
Sulfuric acid	2.38	7	No

As shown in the table below, during the contemporaneous period, there were significant reductions in actual emissions as a result of the deactivation of the existing boilers and ancillary equipment at the facility (see Section I.B).

Pollutant	Project Increase	Contemporaneous Change	Net Emissions Increase	Significance Level	PSD Review Required?
PM_{10}	78.62	-90.80	-12.18	25/15	No
$PM_{2.5}$	78.62	-90.80	-12.18	10	No
NO_X	56.96	-1974.21	-1917.25	40	No
CO	100.09	-1208.33	-1108.24	100	No
VOC	104.51	-65.71	-38.80	40	No

To determine "baseline actual emissions," the 24-month baseline period used for Units 1 and 3 was January 2011 through December 2012, and the 24-month baseline period used for Unit 2 was May 2011 through April 2013. Since Units 1 and 3 were deactivated in January 2016, and Unit 2 was deactivated in April 2016, with limited use of all three units prior to deactivation, the 24-month time periods selected are representative of normal source operation.[12]

[11] *Utility Air Regulatory Group v. EPA*, 573 U.S. ___ (2014), decided June 23, 2014

[12] Per the definition of "net emissions increase" in LAC 33:III.509.B, baseline actual emissions for calculating contemporaneous increases and decreases shall be determined as provided in LAC 33:III.509.B.*Baseline Actual Emissions*, except that Clauses B.*Baseline Actual Emissions*.a.iii and b.iv shall not apply.

Because the "net emissions increase" is less than the PSD significance levels for PM_{10}, $PM_{2.5}$, NO_X, CO, and VOC, the NOPS does not constitute a "major modification" under LAC 33:III.509.

II. PUBLIC COMMENT

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.

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.[13] The proposed permit was submitted to the EPA on August 29, 2018. The comment period closed on October 1, 2018.

During the comment periods, the proposed permits, Statement of Basis (SOB), permit application, additional information, and Environmental Assessment Statement (EAS) were available for review at LDEQ's Public Records Center (Room 127), 602 North 5th Street, Baton Rouge, Louisiana; and at the New Orleans Public Library - East New Orleans Branch, 5641 Read Boulevard, New Orleans, Louisiana. These documents were also accessible through LDEQ's Electronic Document Management System (EDMS).[14]

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

[14] EDMS is the electronic repository of official records that have been created or received by LDEQ. LDEQ Employees and members of the public can search and retrieve documents stored in EDMS via the internet at http://edms.deq.louisiana.gov.

III. PUBLIC COMMENTS RESPONSE SUMMARY

A "Public Comment Response Summary" was prepared for all significant comments and is attached and made a part of this Basis for Decision.[15]

IV. ALTERNATIVE SITES: Are there alternative sites, which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?

While LDEQ recognizes that the concepts of alternative sites, alternative projects, and mitigating measures are closely interrelated and overlap, each concept is addressed separately in this document for purposes of emphasis and clarity. However, LDEQ stresses the interrelation of the three. For example, the choice of a particular site could involve mitigating factors and possibly alternative project considerations. Likewise, selection of an alternative project could invoke mitigating factors and impact site selection. Apparently, the Louisiana First Circuit Court of Appeal has also recognized this interrelationship and now considers the three requirements as one. Matter of Rubicon, Inc., 95-0108 (La. App. 1 Cir. 2/14/96); 670 So. 2d 475, 483.

Therefore, because of this interrelationship, LDEQ adopts any and all of its findings on all three factors under each of the specific designated areas -- alternative sites (Section IV), alternative projects (Section V), and mitigating measures (Section VI). Additionally, the assessment and findings set forth in Section VII (Avoidance of Adverse Environmental Effects) also interrelate and have been considered relative to these facts.

Unlike waste disposal facilities and many manufacturing facilities, electrical generation plants must rely on transmission lines and other infrastructure that only exist at a limited number of sites. Sites lacking the necessary infrastructure would increase potential adverse environmental impacts (and costs) because construction of transmission lines and other support structures would be required.

With this consideration in mind, Entergy developed the following list of general criteria considered crucial to siting of the NOPS:[16]

- a suitable site within Orleans Parish in accordance with Entergy New Orleans' Integrated Resource Plan (IRP), which identified a long-term need for new generating capacity and reliability benefits from constructing new generation in its service territory;[17]
- sufficient available space to accommodate all components of the project;
- proximity and accessibility to firm, reliable transmission capacity and other necessary infrastructure;
- proximity to available water supply;
- accessibility to navigable waterways capable of accommodating river barges or ocean-going vessels (for deliveries of large equipment); and
- proximity to highways.

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[15] No comments were received from EPA during either of the comments periods, nor did EPA object to the proposed permits per 40 CFR 70.8(c).

[16] EDMS Doc ID 10904730 (p. 36 of 79)

[17] See Section VIII.B for further discussion of this topic.

Based on the aforementioned criteria, Entergy identified two potential locations for the NOPS – the Michoud Electric Generating Plant and the former A.B. Paterson Steam Electric Station (AI 703) in New Orleans.

Both sites are "brownfield" sites located in the region requiring additional electrical capacity. Critical infrastructure that can support a new power plant, such as natural gas supply, existing water wells, and transmission lines, is still present at Michoud; however, all above-ground power plant structures were removed and utilities were disconnected and capped/plugged at A.B. Paterson. In addition, Michoud has the capacity for transmission lines to be added to connect the new power plant, whereas the A.B. Paterson site does not. The sites were also evaluated based on their accessibility to transportation routes, such as barge-navigable waterways and highways. Based on this evaluation, the existing Michoud site was the preferred location for the proposed NOPS.[18]

The Michoud Electric Generating Plant offers a number of benefits that will allow construction and operation of the proposed project with minimal impacts to the environment. These advantages are as follows.

1. There is a substantial amount of land and infrastructure available at the existing site for equipment and facilities to support the project, including a natural gas supply pipeline, a surface water discharge structure, and roads and other access routes.

2. The existing site is located on the Intracoastal Waterway (ICWW) in proximity to the Mississippi River and Gulf of Mexico. Therefore, the site has access to river transportation for the delivery of equipment and materials.

3. The existing groundwater wells can be utilized as the water source for the closed loop radiator system for the engines. This infrastructure will need only minor modifications to supply the makeup cooling water for the NOPS.

4. The proposed location of the NOPS is within an existing utility site; therefore, disturbance of currently undeveloped non-industrial acreage at another site will be avoided.

5. No known threatened or endangered species are expected to be impacted by the construction and operation of the NOPS and ancillary facilities.

6. No known archaeological sites will be impacted.[19]

In addition, use of the existing site reduces the amount of grading and drainage work required since most of the required work was accomplished during construction of the original structures.[20]

Finally, the Michoud Electric Generating Plant is zoned as Heavy Industrial and located in an industrial area within Orleans Parish approximately 1.1 miles from the nearest residential area.[21]

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[18] EDMS Doc ID 10904730 (pp. 34 and 36-37 of 79)
[19] *Id.* (p. 35 of 79)
[20] *Id.* (pp. 35-36 of 79)
[21] *Id.* (p. 38 and 43 of 79)

CONCLUSION: For the foregoing reasons, the LDEQ finds there are no alternative sites that would offer more protection to the environment than the existing site without unduly curtailing non-environmental benefits.

V. ALTERNATIVE PROJECTS: Are there alternative projects, which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?

LDEQ finds that the project as proposed offers more protection to the environment than any other possible alternative without unduly curtailing non-environmental benefits. Additionally, LDEQ recognizes that selection of the most environmentally sound projects usually also serves as a mitigating measure because the two considerations overlap substantially.

LDEQ adopts Entergy's analysis which describes a number of technologies considered for the proposed NOPS. The evaluation of each is summarized below.[22]

Simple-Cycle Combustion Turbine

As described in Section I.C, Entergy proposed installing a simple cycle combustion turbine (SCCT) as an alternative technology for the NOPS. Both the SCCT and the RICE options would offer a very similar level of environmental protection, and both could meet the capacity and reliability objectives of the project. However, the New Orleans City Council, the local governing body with jurisdiction over the project, selected the RICE option.

Combined Cycle Gas Turbine

A combined cycle gas turbine consists of a gas turbine equipped with a heat recovery steam generator (HRSG). Duct burners may also be utilized for additional firing on the HRSG. Although the CCGT technology utilizes the waste heat from the gas turbine to generate additional electricity, RICE technology can generate electricity with much shorter startup and shutdown timeframes.

Wind

The generation of power from wind involves using a wind turbine to capture the energy associated with the velocity of wind to drive a generator to produce electricity. However, wind is a very low density energy source, making it a poor choice to meet the peaking/reserve capacity needs of the project. The ability to produce the equivalent amount of energy that the NOPS will generate using wind power would require an area many times larger than that required for the RICE technology, and the power would still be dependent on wind, thus making it unreliable. The south Louisiana area is not a sustained high wind area that would make the Michoud site an effective location to generate wind energy. Furthermore, wind would not be able to address Entergy's reliability issues. For these reasons, wind is not a viable option.

[22] *Id.* (pp. 29-31 of 79)

Solar

Solar photovoltaic systems generate power by absorbing and converting sunlight into electricity. Solar, like wind, is intermittent because it relies on the sun to produce energy, thus limiting Entergy's ability to rely on it to meet customer demand. Additionally, because solar is dependent on the amount of sunlight available at a given time, it is not dispatchable and cannot be counted on for meeting peak demand. Renewables such as solar must be supported by dispatchable resources, like NOPS, that can ramp up and produce replacement energy when the sun is not shining. Furthermore, like wind, solar is land-intensive, and there is not enough land available in the appropriate locations in New Orleans to meet Entergy's reliability needs. Based on these reasons, solar is not considered a viable option for the generation of reliable peaking/reserve power.

RICE

As previously discussed, RICE technology was selected to generate electricity at the NOPS. RICE technology is well suited to generate electricity during peak demand times. The RICE's relatively short startup and shutdown times make it an effective choice to generate electricity for short periods of time. Further, this technology will allow the facility start up without a backfeed of power from the electric grid after a major system outage. RICE also have a high thermal efficiency, thereby minimizing CO_2 emissions, and the technology has a higher electrical efficiency than SCGTs and CCGTs.

CONCLUSION: For the foregoing reasons, LDEQ finds there are no alternative projects that would offer more protection to the environment than the proposed project without curtailing non-environmental benefits.

VI. MITIGATING MEASURES: Are there mitigating measures, which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?

Permit No. 2140-00014-V5B requires Entergy to meet or exceed the requirements of all applicable federal New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) and Louisiana air quality regulations. As previously stated, the NOPS will be a minor source of TAPs, as well as a minor source of HAPs regulated pursuant to Section 112 of the Clean Air Act.

In addition to the federal and state requirements to which the NOPS will be subject, LDEQ has also imposed monitoring, recordkeeping, and reporting provisions in order to assure compliance with the terms and conditions of the Part 70 permit, such as requirements to monitor hours of operation, operating load (heat input), and fuel consumption for each RICE continuously, including operating time in startup and shutdown modes.

The emission limits established by Permit No. 2140-00014-V5B have been determined to be protective of human health and the environment. As shown in the table below, LDEQ has found that emissions from the NOPS, as modeled using AERMOD (EPA's

"preferred/recommended" dispersion model), will not cause or contribute to a violation of a health-based NAAQS[23] or Louisiana risk-based ambient air standard (AAS).

Criteria Pollutants

Pollutant	Averaging Period	Maximum Ground Level Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
PM_{10}	Annual	21.82	150
$PM_{2.5}$	24-hour	2.05	35
	Annual	0.14	12
SO_2	1-hour	1.18	196
	3-hour	1.36	1300
	24-hour	0.82	365
	Annual	0.12	80
NO_2	1-hour	18.56	188
	Annual	1.18	100
CO	1-hour	180	40,000
	8-hour	162	10,000

TAPs

Pollutant	Averaging Period	Maximum Ground Level Concentration ($\mu g/m^3$)	AAS ($\mu g/m^3$)
benzene	Annual	0.046	12.00
formaldehyde	Annual	1.04	7.69

In sum, standards such as the NAAQS and AAS contemplate multiple sources of pollution and establish protective limits on cumulative emissions that should ordinarily prevent adverse air quality impacts.

The NOPS will also use far less groundwater than the recently retired boilers and will be located more than a mile from the nearest residential area.[24]

CONCLUSION: For the foregoing reasons, the LDEQ finds there are no mitigating measures, which would offer more protection to the environment than the NOPS RICE, as proposed, without unduly curtailing non-environmental benefits.

[23] According to EPA, air quality that adheres to such standards is protective of public health, animals, soils, and vegetation. For more information, see LDEQ Response to Comment No. 13 in the Public Comments Response Summary.

[24] EDMS Doc ID 10904730 (p. 44 of 79)

VII. AVOIDANCE OF ADVERSE ENVIRONMENTAL EFFECTS: Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?

As part of the permitting process, potential and real adverse environmental impacts of pollutant emissions from the NOPS are assessed prior to construction to ensure that they are minimized to the maximum extent possible. The following paragraphs describe this assessment by media. The discussion related to air emissions is addressed in Section VI – Mitigating Measures.

A. Wastewater

For the construction phase of the project, Entergy must comply with the terms of LDEQ's General Permit for Discharges of Storm Water from Construction Activities (Five (5) Acres or More), LAR100000. This permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) to minimize the impact of construction activities due to storm water runoff. Entergy will ensure that storm water runoff in all construction areas associated with the project will be managed to prevent adverse effects on storm water ditches and surrounding areas.[25]

Wastewater generated by the operation of the NOPS will consist of non-hazardous low-volume process contact water,[26] sanitary wastewater, and metal cleanings wastewater. Potentially contaminated wastewater will be routed to an oil-water separator, then to the east or west final equalization pond prior to discharge into the ICWW.[27] Any discharges to waters of the state must be in accordance with the requirements and limitations of the facility's Louisiana Pollutant Discharge Elimination System (LPDES) permit, which Entergy must obtain prior to the discharge of wastewater. Notably, the NOPS is anticipated to be a "minor facility" under LAC 33:IX (Water Quality).

The LPDES program also establishes requirements for storm water management to ensure that industrial facilities use proper design and engineering concepts to reduce storm water runoff. Using a combination of structural controls, such as containment dikes, berms, and drainage systems, the NOPS will be designed to minimize the quantity of storm water runoff that could come in contact with potential contaminants. Entergy must also develop a SWPPP for the operational phase of the project. Consistent with the SWPPP, Entergy will perform visual inspections of the facility to ensure that any potentially-contaminated storm water is routed to the east or west final equalization pond prior to discharge into the ICWW. Uncontaminated storm water will be conveyed through a storm water drainage system prior to discharge to the ICWW.[28]

In addition, Entergy must develop a Spill Prevention, Control and Countermeasure (SPCC) Plan as required by 40 CFR 112 and a Spill Prevention and Control (SPC) Plan as required by LAC 33:IX.Chapter 9 to address contingency planning and implementation of procedures and practices to prevent and control the discharge of pollutants resulting from spill events. These plans must include a prediction of the

[25] *Id.* (p. 16 of 79)

[26] Includes *de minimis* oily wastewater, process area and floor drainage, hydrostatic test waters, reverse osmosis, polisher effluent, and maintenance wastewaters, including fire protection waters and general facility wash down water.

[27] EDMS Doc ID 10904730 (p. 15 of 79)

[28] *Id.*

direction, rate of flow, and total quantity of substances that could be spilled at the site where experience indicates there is a reasonable potential for equipment failure and/or operator error. Appropriate containment and/or diversionary structures or equipment to prevent such substances from reaching waters of the state will be provided through use of dikes, berms, or retaining walls sufficiently impervious to contain spills; curbing, drip pans, culverts, gutters, and other drainable systems; weirs, booms, and other barriers; detention basin(s); sorbent substances; and sumps and collection systems. Entergy must also meet secondary containment standards for storage vessels.

B. Waste

The NOPS will generate waste from construction activities, normal operations, and maintenance activities. During construction of the facility, scrap metal, wood, plastic, and other building materials will be generated. During normal plant operations, the NOPS is expected to generate small amounts of paper, plastic, and general office wastes. In addition, the facility will likely generate small quantities of non-hazardous solid wastes, such as used oil drums, paint cans, lube oil filters, cleaning solvents, spent coolants, and other maintenance wastes, and minimal amounts of hazardous wastes (e.g., cleaning products).[29]

Solid and hazardous wastes will be properly managed and may be temporarily stored onsite in accordance with applicable federal and state regulations prior to being transported to an authorized solid waste disposal facility; hazardous waste treatment, storage, and disposal facility; or recycling center, as appropriate. Entergy will not construct an industrial solid waste landfill on the property, nor will the NOPS operate as a hazardous waste treatment, storage, and disposal facility.

Entergy will also provide training to its employees that addresses the importance of waste minimization and the proper disposal of wastes generated on-site. This training program will help ensure that non-compatible wastes are not mixed and that all wastes are stored, packaged, labeled, and disposed of properly in compliance with applicable environmental regulations.[30]

C. Groundwater Use

The selected technology will utilize a closed-loop radiator cooling system for the engines. The source of make-up water for the radiator cooling system will be from two existing groundwater wells. Approximately 3.9 gallons per minute (gpm) of water will be required for cooling water makeup, engine turbo washing, plant wash-down, and potable water. No new surface water intake system will be required; therefore, the cooling system will not be subject to the Section 316(b) of the Clean Water Act.[31]

D. Process Safety

Materials of construction for tanks, equipment, piping, and accessories will be compatible with process fluids to prevent failure from corrosion, stress cracking, and fatigue. Periodic inspections will be performed to keep all process and safety systems in optimum operating condition.

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[29] *Id.* (pp. 16 and 53 of 79)
[30] *Id.* (p. 53 of 79)
[31] *Id.* (pp. 14-15 of 79)

Operations, maintenance, and support personnel will be thoroughly trained and periodically tested in the proper use and operation of appropriate equipment and will be familiar with the potential hazards of operating the RICE units.

All employees will be properly trained and receive periodic refresher training on all applicable safety and operational procedures in accordance with Occupational Safety and Health Administration (OSHA) regulations. Further, employees will be trained in the applicable pollution prevention, SPCC, and SWPPP measures and procedures. Through proper design, construction, training, and operation, the potential for release of hazardous materials will be minimized.[32,33]

E. Wetlands

Impacts to jurisdictional wetlands will be minimal. Construction of NOPS will impact only 0.015 acres of wetlands and temporarily impact only 0.3 acres of wetlands during construction.[34]

Where impacts are unavoidable, Entergy will comply with the compensatory mitigation requirements promulgated pursuant to Section 404 of the Clean Water Act via off-site mitigation and in-lieu fee programs. These approaches are often preferred because they facilitate the preservation of large contiguous tracts of land which are more beneficial to wildlife than isolated fragmented lots such as the Michoud Electric Generating Plant.

F. Other

No threatened or endangered species or cultural or historic resources will be negatively impacted as a result of the proposed modification.

CONCLUSION: Accordingly, LDEQ determines that Entergy has avoided, to the maximum extent possible, adverse environmental impacts without unduly curtailing non-environmental benefits.

VIII. COST/BENEFIT ANALYSIS (BALANCING): Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?

The social and economic benefits of the proposed project will outweigh its adverse environmental impacts. Notably the Louisiana constitution requires balancing, not protection of the environment as an exclusive goal. Save Ourselves, 452 So. 2d at 1157.

A. Environmental Impact Costs

Impacts to air quality and other media are discussed in Sections VI and VII above. These impacts have been avoided to the maximum extent possible.

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[32] *Id.* (pp. 19 and 45-46 of 79)

[33] Notably, Entergy will not be subject to 40 CFR 68 (Chemical Accident Prevention Provisions) because the NOPS will not have more than a threshold quantity of a regulated substance in a process.

[34] EDMS Doc ID 10904730 (pp. 37-38 of 79)

B. Social and Economic Benefits

Entergy's 2015 Integrated Resource Plan (IRP) identified the need for additional generation in Entergy New Orleans' service area. The most recent forecast shows a capacity need of 99 MW in 2026, growing to 248 MW by 2036. The forecast additionally shows a persistent peaking and reserve deficit of approximately 342 MW on average in each year of the 20-year planning horizon from 2017 to 2037. The NOPS is intended to meet the projected shortfall in capacity, as well as address electrical system reliability concerns in Entergy New Orleans' service area. Currently, there is very little generating capacity in Orleans Parish, and the NOPS will add needed local generation and facilitate Entergy's ability to restore electric service after a major storm or emergency outage.[35]

The construction of the NOPS will result in the creation of approximately 20 permanent jobs and numerous temporary construction-related jobs. The direct economic benefits of the facility are significant and include, but are not limited to:

- capital expenditures associated with construction (anticipated to be about $210 million);[36]
- salaries and associated benefits (estimated at $3.6 million annually);[37]
- purchases to cover operating costs (around $3 million per year);[38]
- local sales tax revenue (estimated at $861,430 during the planning and construction phase and $209,122 per year once the facility is operational);[39] and
- additional state and federal tax payments.

The NOPS will also result in positive indirect economic impacts, such as income tax payments and purchases made by its employees and contractors and the increased development of local support services and related businesses.

To quantify these impacts, an economic study was performed by Loren Scott, Ph.D. of Loren S. Scott & Associates, Inc. Dr. Scott estimates that operating the NOPS will generate:

- nearly $12.8 million in new sales for businesses in the parish;
- about $6 million in new earnings for parish residents;
- 59 new permanent jobs in the parish; and
- as indicated above, $209,122 a year in new sales tax collections for the parish treasury.[40]

Operation of the NOPS will annually support:

- nearly $19 million in new sales at businesses in the state;
- nearly $10.4 million in new household earnings for state citizens;
- 153 new jobs; and
- $727,005 in new revenues for the state treasury.[41]

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[35] EDMS Doc ID 10904730 (pp. 22-23 of 79)
[36] EDMS Doc ID 10904730 (p. 61 of 79)
[37] *Id.* (p. 65 of 79)
[38] *Id.*
[39] *Id.*
[40] *Id.*
[41] *Id.* (p. 70 of 79)

CONCLUSION: Based on the reasoning above, the LDEQ finds that the social and economic benefits outweigh the environmental impact costs.

IX. ENVIRONMENTAL JUSTICE CONSIDERATIONS

In responding to a Title VI administrative complaint filed on June 9, 1998, against the Michigan Department of Environmental Quality (MDEQ), EPA's Office of Civil Rights addressed allegations regarding "adverse" and "disparate" air quality impacts as follows.[42]

> The environmental laws that EPA and the states administer generally do not prohibit pollution outright; rather, they treat some level of pollution as "acceptable" when pollution sources are regulated under individual, facility-specific permits, recognizing society's demand for such things as power plants, waste treatment systems, and manufacturing facilities. In effect, Congress--and, by extension, society--has made a judgment that some level of pollution and possible associated risk should be tolerated for the good of all, in order for Americans to enjoy the benefits of a modern society--to have electricity, heat in our homes, and the products we use to clean our dishes or manufacture our wares. Similarly, society recognizes that we need facilities to treat and dispose of wastes from our homes and businesses (such as landfills to dispose of our trash and treatment works to treat our sewage), despite the fact that these operations also result in some pollution releases. The expectation and belief of the regulators is that, assuming that facilities comply with their permit limits and terms, the allowed pollution levels are acceptable and low enough to be protective of most Americans.
>
> EPA and the states have promulgated a wide series of regulations to effectuate these protections. Some of these regulations are based on assessment of public health risks associated with certain levels of pollution in the ambient environment. The NAAQS established under the Clean Air Act (CAA) are an example of this kind of health-based ambient standard setting. Air quality that adheres to such standards is presumptively protective of public health. Other standards are "technology-based," requiring installation of pollution control equipment which has been determined to be appropriate in view of pollution reduction goals. In the case of hazardous air pollutants under the CAA, EPA sets technology-based standards for industrial sources of toxic air pollution. The maximum achievable control technology standards under the Clean Air Act are examples of this kind of technology-based standard setting. After the application of technology-based standards, an assessment of the remaining or residual risk is undertaken and additional controls implemented where needed.

[42] "Investigative Report for Title VI Administrative Complaint File No. 5R-980R5 (Select Steel Complaint)," pp. 27-29 (internal citations omitted)

Title VI and EPA's implementing regulations set out a requirement independent of the environmental statutes that all recipients of EPA financial assistance ensure that they implement their environmental programs in a manner that does not have a discriminatory effect based on race, color, or national origin. If recipients of EPA funding are found to have implemented their EPA-delegated or authorized federal environmental programs *(e.g.,* permitting programs) in a manner which distributes the otherwise acceptable residual pollution or other effects in ways that result in a harmful concentration of those effects in racial or ethnic communities, then a finding of an adverse disparate impact on those communities within the meaning of Title VI may, depending on the circumstances, be appropriate.

Importantly, to be actionable under Title VI, an impact must be both "adverse" and "disparate." The determination of whether the distribution of effects from regulated sources to racial or ethnic communities is "adverse" within the meaning of Title VI will necessarily turn on the facts and circumstances of each case and the nature of the environmental regulation designed to afford protection. As the United States Supreme Court stated in the case of *Alexander v. Choat*e, 469 U.S. 287 (1985), the inquiry for federal agencies under Title VI is to identify the sort of disparate impacts upon racial or ethnic groups which constitute "sufficiently significant social problems, and [are] readily enough remediable, to warrant altering the practices of the federal grantees that had produced those impacts." *Id.* at 293-94 (emphasis added).

The complaint in this case raises air quality concerns regarding several NAAQS-covered pollutants, as well as several other pollutants. With respect to the NAAQS-covered pollutants, and as explained more fully below, EPA believes that where, as here, an air quality concern is raised regarding a pollutant regulated pursuant to an ambient, health-based standard, and where the area in question is in compliance with, and will continue after the operation of the challenged facility to comply with, that standard, the air quality in the surrounding community is presumptively protective and emissions of that pollutant should not be viewed as "adverse" within the meaning of Title VI. By establishing an ambient, public health threshold, standards like the NAAQS contemplate multiple source contributions and establish a protective limit on cumulative emissions that should ordinarily prevent an adverse air quality impact.

With respect to the pollutants of concern in the complaint which are not covered by the NAAQS, Title VI calls for an examination of whether those pollutants have become so concentrated in a racial or ethnic community that the addition of a new source will pose a harm to that community. Because EPA has determined that there is no "adverse" impact for anyone living in the vicinity of the facility, it is unnecessary to reach the question of whether the impacts are "disparate."

In sum, complying with the NAAQS creates a presumption of no adversity that will stand unless affirmatively overcome.[43]

LDEQ accepts EPA's assessment and reasoning. Entergy will meet the primary and secondary NAAQS and the Louisiana AAS for TAPs. Accordingly, there will be no "adverse" and "disparate" impact in the surrounding area.

Also note that the United States Supreme Court held in *Alexander v. Sandoval* (532 U.S. 275) (2001) [No. 99-1908, decided April 24, 2001] that there is no private cause of action to enforce Section 602 of Title VI of the Civil Rights Act of 1964, 78 Stat. 252, as amended, 42 U.S.C. §2000d *et seq.*

X. ENFORCEMENT HISTORY

Pursuant to La. R.S. 30:2014(A)(2), LDEQ is required to consider the "history of violations and compliance" for the facility when making a permit decision.

In the past 10 years, no enforcement actions have been issued to the Michoud Electric Generating Plant.

XI. CONCLUSION

LDEQ's Office of Environmental Services has conducted a review of the information submitted and is of the opinion that the Part 70 (Title V) operating permit for the Michoud Electric Generating Plant should be renewed and modified to allow for construction of the NOPS.

As detailed herein, the proposed permit's emission limitations and Specific Requirements mandate that emissions be controlled to meet or exceed the requirements of all applicable federal and state regulations and should not allow for air quality impacts that could adversely affect human health or the environment.

The local, state, and national economy will benefit from the construction and operation of the NOPS at the Michoud Electric Generating Plant, which will provide personal income for the facility's permanent and contract employees; increase the tax revenues for Orleans Parish, the state of Louisiana, and the federal government; and necessitate the purchase of goods and services from other businesses. These benefits are major, significant, and tangible, and outweigh the environmental impacts of the proposed project.

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[43] Under EPA's "Draft Revised Guidance for Investigating Title VI Administrative Complaints Challenging Permits," complying with the NAAQS created a presumption of no adversity that would stand unless affirmatively overcome (i.e., the "rebuttable presumption" approach). In 2013, EPA proposed to eliminate application of the rebuttable presumption when investigating allegations about environmental health-based thresholds. See "Draft Policy Papers Released for Public Comment: Title VI of the Civil Rights Act of 1964: Adversity and Compliance With Environmental Health-Based Thresholds, and Role of Complainants and Recipients in the Title VI Complaints and Resolution Process" (78 FR 24739, April 26, 2013). EPA solicited "input and/or comment" on this document over 5 years ago. However, the policy remains in draft form and has never been formally adopted by the agency, perhaps due to consideration of the comments received. Accordingly, the "rebuttable presumption" approach remains EPA's most recent articulation of its environmental justice policy.

Based on a careful review and evaluation of the entire administrative record, which includes the permit application, additional information, proposed permit and associated Statement of Basis (SOB), Environmental Assessment Statement (EAS), and all public comments, the LDEQ, Office of Environmental Services, finds that Entergy's proposed project complies with all applicable federal and state statutes and regulations and the requirements of Save Ourselves v. La. Envtl. Control Comm'n, 452 So.2d at 1152, 1157 (La. 1984). Particularly, LDEQ finds that the proposed permit has minimized or avoided potential and real adverse environmental impacts to the maximum extent possible and that social and economic benefits of the NOPS at the Michoud Electric Generating Plant outweigh its adverse environmental impacts.

Accordingly, the Department hereby issues Permit No. 2140-00014-V5B.

Elliott B. Vega
Assistant Secretary
Office of Environmental Services

1/31/2019
Date

EBV:CEW