

**LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF ENVIRONMENTAL SERVICES**

**BASIS FOR DECISION**

**PART 70 OPERATING PERMIT NO. 2140-00014-V5B**

**ENTERGY NEW ORLEANS, LLC  
MICHLOUD 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,”<sup>1</sup> adverse environmental impacts have been minimized or avoided to the maximum extent possible. [Save Ourselves v. Env’tl. 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.<sup>2</sup>

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<sup>1</sup> The “IT Requirements” or “IT Questions” are five requirements [see Save Ourselves v. Env’tl. 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.

<sup>2</sup> 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.<sup>3</sup>

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.

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<sup>3</sup> 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<sub>x</sub>) will be formed as a result of the combustion of natural gas in the engines. The primary NO<sub>x</sub> formation mechanism will be thermal NO<sub>x</sub>, which arises from the thermal dissociation and subsequent reaction of nitrogen (N<sub>2</sub>) and oxygen (O<sub>2</sub>) molecules at high flame temperatures in the combustion air. Fuel NO<sub>x</sub>, which results from the reaction of fuel-bound nitrogen compounds with oxygen, will be a smaller component of total NO<sub>x</sub> 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<sub>x</sub> emissions are minimized. Each engine will also be equipped with selective catalytic reduction (SCR) add-on controls to further reduce NO<sub>x</sub> emissions. Ammonia injected into the engine exhaust will react with NO<sub>x</sub> on the catalyst surface to form nitrogen gas (N<sub>2</sub>) 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<sub>2</sub>) during the combustion process, with a smaller amount oxidized to sulfur trioxide (SO<sub>3</sub>). The SO<sub>3</sub> 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<sub>10</sub>/PM<sub>2.5</sub>) from the engines will primarily result from carryover of noncombustible trace constituents in the fuel and inlet air. Filterable PM<sub>10</sub>/PM<sub>2.5</sub> is that portion of the total that exists in the stack in either the solid or liquid state. Condensable PM<sub>10</sub>/PM<sub>2.5</sub> exists as a gas in the stack, but condenses in the cooler ambient air to form particulate matter. Condensable PM<sub>10</sub>/PM<sub>2.5</sub> 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<sub>2</sub>).

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<sub>2</sub> 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*<sup>4</sup>

<u>Pollutant</u>		<u>Before</u> <sup>5</sup>	<u>After</u> <sup>6</sup>	<u>Change</u>
Particulate matter	PM <sub>10</sub> <sup>7</sup>	283.55	78.62	-204.93
Particulate matter	PM <sub>2.5</sub> <sup>8</sup>	283.55	78.62	-204.93
Sulfur dioxide	SO <sub>2</sub>	22.55	3.45	-19.10
Nitrogen oxides	NO <sub>x</sub>	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)*<sup>9</sup>

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
acetaldehyde	–	5.12	+5.12
acrolein	–	3.15	+3.15
benzene	0.08	0.27	+0.19
1,3-butadiene	–	0.16	+0.16
1,1,2,2-tetrachloroethane	–	0.02	+0.02
1,1,2-trichloroethane	–	0.02	+0.02
1,1-dichloroethane	–	0.01	+0.01
1,2-dibromoethane (ethylene dibromide)	–	0.03	+0.03
1,2-dichloroethane	–	0.01	+0.01
1,2-dichloropropane	–	0.02	+0.02
1,3-dichloropropene	–	0.02	+0.02
1,4-dichlorobenzene	0.044	–	-0.044
2,2,4-trimethylpentane	–	0.15	+0.15
2-methylnaphthalene	–	0.02	+0.02
biphenyl	–	0.13	+0.13
carbon tetrachloride	–	0.02	+0.02
chlorobenzene	–	0.02	+0.02
chloroethane	–	<0.01	+<0.01
chloroform	–	0.02	+0.02
ethyl benzene	–	0.02	+0.02

<sup>4</sup> 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.

<sup>5</sup> Permit No. 2140-00014-V4

<sup>6</sup> Permit No. 2140-00014-V5B

<sup>7</sup> Particulate matter with a nominal diameter of less than or equal to 10 micrometers

<sup>8</sup> Particulate matter with a nominal diameter of less than or equal to 2.5 micrometers

<sup>9</sup> TAPs include the VOC and non-VOC compounds listed in LAC 33:III.5112, Tables 51.1 and 51.3.

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
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	<u>67.25</u>	<u>0.68</u>	<u>-66.57</u>
	70.314	20.88	-49.434

*Non-VOC TAPs*

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
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)	<u>1.08</u>	<u>–</u>	<u>-1.08</u>
	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.<sup>10</sup>

<sup>10</sup> 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<sub>2e</sub>) need not be quantified or addressed by the permit.<sup>11</sup>

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<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, 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 <sub>10</sub>	78.62	25/15	Yes
PM <sub>2.5</sub>	78.62	10	Yes
SO <sub>2</sub>	3.45	40	No
NO <sub>x</sub>	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).

<u>Pollutant</u>	<u>Project Increase</u>	<u>Contemporaneous Change</u>	<u>Net Emissions Increase</u>	<u>Significance Level</u>	<u>PSD Review Required?</u>
PM <sub>10</sub>	78.62	-90.80	-12.18	25/15	No
PM <sub>2.5</sub>	78.62	-90.80	-12.18	10	No
NO <sub>x</sub>	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.<sup>12</sup>

<sup>11</sup> *Utility Air Regulatory Group v. EPA*, 573 U.S. \_\_\_\_ (2014), decided June 23, 2014

<sup>12</sup> 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<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, 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.<sup>13</sup> 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).<sup>14</sup>

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<sup>13</sup> This notice also informed the public that the proposed permits for the simple cycle combustion turbine will not be finalized.

<sup>14</sup> 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.<sup>15</sup>

### 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.<sup>16</sup>

- 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;<sup>17</sup>
- 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.

<sup>15</sup> 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).

<sup>16</sup> EDMS Doc ID 10904730 (p. 36 of 79)

<sup>17</sup> 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.<sup>18</sup>

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.<sup>19</sup>

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.<sup>20</sup>

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.<sup>21</sup>

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<sup>18</sup> EDMS Doc ID 10904730 (pp. 34 and 36-37 of 79)

<sup>19</sup> *Id.* (p. 35 of 79)

<sup>20</sup> *Id.* (pp. 35-36 of 79)

<sup>21</sup> *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.<sup>22</sup>

*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.

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<sup>22</sup> *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<sub>2</sub> 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<sup>23</sup> or Louisiana risk-based ambient air standard (AAS).

*Criteria Pollutants*

Pollutant	Averaging Period	Maximum Ground Level Concentration (µg/m <sup>3</sup> )	NAAQS (µg/m <sup>3</sup> )
PM <sub>10</sub>	Annual	21.82	150
PM <sub>2.5</sub>	24-hour	2.05	35
	Annual	0.14	12
SO <sub>2</sub>	1-hour	1.18	196
	3-hour	1.36	1300
	24-hour	0.82	365
	Annual	0.12	80
NO <sub>2</sub>	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 (µg/m <sup>3</sup> )	AAS (µg/m <sup>3</sup> )
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.<sup>24</sup>

**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.

<sup>23</sup> 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.

<sup>24</sup> 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.<sup>25</sup>

Wastewater generated by the operation of the NOPS will consist of non-hazardous low-volume process contact water,<sup>26</sup> 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.<sup>27</sup> 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.<sup>28</sup>

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

<sup>25</sup> *Id.* (p. 16 of 79)

<sup>26</sup> 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.

<sup>27</sup> EDMS Doc ID 10904730 (p. 15 of 79)

<sup>28</sup> *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).<sup>29</sup>

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.<sup>30</sup>

## **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.<sup>31</sup>

## **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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<sup>29</sup> *Id.* (pp. 16 and 53 of 79)

<sup>30</sup> *Id.* (p. 53 of 79)

<sup>31</sup> *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.<sup>32,33</sup>

#### **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.<sup>34</sup>

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.

<sup>32</sup> *Id.* (pp. 19 and 45-46 of 79)

<sup>33</sup> 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.

<sup>34</sup> 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.<sup>35</sup>

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),<sup>36</sup>
- salaries and associated benefits (estimated at \$3.6 million annually);<sup>37</sup>
- purchases to cover operating costs (around \$3 million per year),<sup>38</sup>
- local sales tax revenue (estimated at \$861,430 during the planning and construction phase and \$209,122 per year once the facility is operational),<sup>39</sup> 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.<sup>40</sup>

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.<sup>41</sup>

<sup>35</sup> EDMS Doc ID 10904730 (pp. 22-23 of 79)

<sup>36</sup> EDMS Doc ID 10904730 (p. 61 of 79)

<sup>37</sup> *Id.* (p. 65 of 79)

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> *Id.*

<sup>41</sup> *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.<sup>42</sup>

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.

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<sup>42</sup> "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. Choate*, 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.<sup>43</sup>

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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<sup>43</sup> 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. Env'tl. 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