



**Environmental
Protection
Agency**

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Environmental Permit

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000

Reference No.:	20210914- GPLLR
Fee:	Medium (C1) i.e. US\$500 per year
Fee Paid:	US\$500 for (1) year (August 2022- July 2023)
Addressee:	Guyana Power and Light Inc. Lot 40, Main Street Cummingsburg Georgetown
Activity:	Operation of a Power Generation Facility inclusive of Three (3) Cummins Engines and supported by the Storage of Light Fuel Oil (LFO).

Guyana Power and Light Inc. hereinafter referred to as the "Permit Holder", is hereby authorised in accordance with the Environmental Protection Act, Cap. 20:05, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000, to operate the Power Generation Facility inclusive of Three (3) Cummins Engines and supported by the Storage of Light Fuel Oil (LFO) at Subplot 'AA' Enterprise Leguan, Essequibo River, hereinafter referred to as the "Project", in a manner indicated in the Application for Environmental Authorisation submitted on September 14, 2021, and subject to the terms and conditions set forth herein under the Environmental Protection Act, Cap. 20:05, existing and/or forthcoming regulations, guidelines, best practices, and standards relevant to this project.

The Permit Holder, His Servants, Agents, and/or Sub-Contractor(s) shall comply with the following Terms and Conditions for Operation:

1.0 OPERATION

- 1.1 Make an application to the Agency to vary this Permit in instances where it becomes necessary to:
- change the construction, operation, structure, or layout of the facility and all associated buildings;
 - change equipment, machine, apparatus, mechanism, system or technology serving the facility;
 - change the position and design of any outlet at the point or points of discharge of effluents; or
 - effect any other change outlined in Regulation 20(3) of the Environmental Protection (Authorisations) Regulations.

- 1.2 Emergency spill cleanup kits shall be maintained at the Project for response to potential spills. Kits shall contain absorbent materials, drain seals, and other appropriate tools for clean-up.
- 1.3 Fire prevention and control equipment shall be maintained in accordance with Guyana Fire Service Approval.
- 1.4 Make all employees, and third parties under your direction, aware of the conditions of the Environmental Authorisation and provide training on good environmental practices. Annual training records shall be maintained on-site and made available to the EPA upon request.
- 1.5 Adhere to the requirements of the **Occupational Safety and Health Act, Cap. 99:01, Laws of Guyana.**

2.0 POWER GENERATION

- 2.1 Commissioning Reports shall be submitted for the Cummins engines by **August 30, 2022**
- 2.2 The most recent copy of the inspection and maintenance report of the Cummins Engine shall be submitted to the EPA **by October 31, 2022.**
- 2.3 Prepare and Submit an Environmental Assessment Management Plan (EAMP) for the Project by **October 31, 2022.** The EAMP shall be prepared in accordance with the EPA July 2022 Updated EAMP Guidelines.
- 2.4 The following records shall be maintained for all power generation engines identified at the Project:
 - a. Megawatt thermal input;
 - b. Calorific value; and
 - c. Fuel-oil consumption.
- 2.5 The records outlined in **condition 2.4** shall be submitted to the EPA as a component of the **Annual Report.**

3.0 AIR QUALITY MANAGEMENT

- 3.1 Adhere to the provisions of the **Environmental Protection (Air Quality) Regulations, 2000.**
- 3.2 Conduct visual monitoring to determine the opacity of the emissions being released. Immediately respond to visible (opaque, grey to black) emissions that exceed six (6) minutes. Record the date and time of the incident and actions taken to resolve said air pollution episode. All records shall be available to the Agency upon request.

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- 3.3 Monitor ambient air quality at the boundary of the property to assess compliance with the requisite standards below:

No.	Air Pollutant	Averaging Time	Maximum Permissible Level	Type of Monitoring
1.	Carbon Monoxide	1 h	35ppm	Ambient
2.	Nitrogen Dioxide	1 h	200µg/m ³	Ambient
3.	Sulfur Dioxide	24 h	20 µg/m ³	Ambient
4.	PM _{2.5}	24 h	25 µg/m ³	Ambient
5.	PM ₁₀	24h	50µg/m ³	Ambient

- 3.4 Conduct stack emission testing of all engines older than five (5) years and the incinerator to determine compliance with the requisite standards outlined below:

No.	Air Pollutant	Maximum Permissible Level	Type of Monitoring
1.	Carbon Monoxide	1000mg/m ³	Stack
2.	Oxides of Nitrogen	350mg/m ³	Stack
3.	Sulphuric Trioxide	100mg/m ³	Stack
4.	Particulate Matter	100mg/m ³	Stack

- 3.5 All air quality monitoring, including stack emission testing shall be determined by the EAMP. Once the EAMP is approved, results from monitoring shall be maintained and submitted as a component of the Annual Report.
- 3.6 Monitoring shall be conducted during normal operations by trained personnel utilizing calibrated equipment.
- 3.7 The calibration certificates shall be submitted to the EPA as a component of the project's **Annual Report**.
- 3.8 Calculate annual emissions of carbon dioxide and carbon dioxide equivalent from the operation of the engines. The recommended formula for the calculation of annual emissions of carbon dioxide is:

$$E = A \times EF \times (1-ER/100)$$

Where:

- E = emissions;
 - A = activity rate;
 - EF = emission factor, and
 - ER =overall emission reduction efficiency, %
- 3.9 The Developer shall determine a methodology for the calculation of carbon dioxide equivalent which shall be submitted to the EPA for approval.

The results of all calculations shall be submitted in the Annual Report.

4.0 NOISE MANAGEMENT

4.1 Adhere to the provisions of the **Environmental Protection (Noise Management) Regulations, 2000.**

4.2 All significant noise-producing equipment, such as generators, shall be equipped with silencers or mufflers and/or be enclosed in suitable acoustic enclosures where necessary, to reduce noise levels impacting the surrounding environment to achieve compliance with Guyana National Bureau of Standards (GNBS) requirement.

4.3 Noise emissions from the operation shall be monitored at the property boundary to determine compliance with the Guyana National Bureau of Standards (GNBS) Guidelines for Noise Emission into the Environment.

Industrial Limits: 100 dB (Day-time (06:00 h -18:00 h))

80 dB (Night- time (18:00 h - 06:00 h))

4.4 Noise quality monitoring shall be determined by the EAMP. Once the EAMP is approved, results from monitoring shall be maintained and submitted as a component of the Annual Report.

5.0 FUEL HANDLING, STORAGE AND TRANSFER

5.1 Adopt and comply with the National SOP "Guidance for the Design, Construction, Modification, and Maintenance of Petrol Filling Stations" and any forthcoming code of practice/guidelines pertaining to the operation of fuel storage.

5.2 Fuel shall at all times be stored above-ground and away from ignition sources. '**No Smoking**' signs shall be posted where fuel is handled or stored.

5.3 Existing secondary containment around the fuel tanks shall be inspected monthly for cracks and breakage to ensure they are liquid-tight to withstand hydrostatic pressure of any contained liquid when full.

5.4 The base of the secondary containment of the fuel storage facility shall be impervious material.

5.5 All secondary containment shall remain sealed and all piping must enter or exit the containment over the wall. Secondary containment shall provide total containment, and no part of the tank infrastructure (e.g., dispenser, filling hoses, and valves) shall protrude outside the containment.

5.6 Discharge from the secondary containment is **Strictly Prohibited.**

5.7 Wastewater from the secondary containment shall be channeled to the oil-water separator for treatment.

5.8 Fuel storage tanks shall be visually inspected to verify their integrity.



- 5.9 Protection measures for fuel storage tanks such as painting and coating shall be maintained to minimise corrosion of fuel tanks.
- 5.10 Overfill protection shall be installed and maintained on all fuel tanks. This may include an automatic shut-off device or an audible or visible overfill alarm.

FUEL TRANSFER

- 5.11 The Best Available Technology/ Technique (BAT) shall be employed to capture fuel lost during the unloading of fuel to storage tanks.
- 5.12 Secondary containment, drip trays or other overflow and drip containment measures shall be installed and maintained at connection points or other possible overflow points.
- 5.13 A Standard Operating Procedure (SOP) for fuel transfer operations including a checklist of measures to follow during filling operations shall be established and maintained. A copy of this SOP shall be made available to the EPA upon request.
- 5.14 All employees shall be trained on the SOP outlined in **condition 5.13**. An Annual training schedule shall be maintained and submitted to the EPA upon request.

6.0 STORAGE OF CHEMICALS (LUBRICANTS, GREASE & COOLANT)

- 6.1 Chemical Storage Areas shall be clearly labeled with “Danger, Chemical Storage Area- Authorized Personnel Only” where applicable as a spill control measure.
- 6.2 Flammable materials shall be stored away from ignition sources. ‘**No Smoking**’ signs shall be posted where these materials are handled and stored.
- 6.3 Secondary containment (bund area) shall be established and maintained around storage areas of all liquid chemicals. The secondary containment (bund area) shall possess 110% of the volume of liquid stored within the largest storage container and walls shall be constructed of impermeable materials.
- 6.4 Chemicals shall be stored in accordance with the manufacturer's directions or Safety Data Sheet (SDS) instructions.
 - 6.4.1 SDS shall be readily available and easily accessible at all times at the Project.
- 6.5 Chemicals shall be segregated and stored in accordance with their hazard characteristics compatibility e.g., toxic, flammable, corrosive, acid, etc.
- 6.6 Chemical containers shall be clearly labelled in accordance with the Globally Harmonized System of Classification and Labelling. The following must be evident:

- i. Signal Word;



- ii. GHS Symbols- (Hazard Pictograms);
- iii. Manufacturer Information;
- iv. Precautionary Statements/ First Aid;
- v. Hazard Statements; and
- vi. Product Name or Identifiers.

- 6.7 Storage containers shall be inspected for signs of leakage or corrosion and damaged containers must be replaced immediately. Inspection reports must be maintained and signed by the appropriately qualified inspecting officer and his/her supervisor.
- 6.8 Chemicals shall not be stored on damaged or inadequately secured racking or on damaged pallets to minimize the risk of spills.
- 6.9 A register of the quantities of chemicals stored at the Project shall be established and maintained. Registered information shall be maintained on-site and made available to the EPA upon request.
- 6.10 All employees involved in the management of chemicals shall be trained on Hazardous Material Communication and Emergency Preparedness Response. Training reports shall be maintained on-site and made available to the EPA upon request.

7.0 WATER QUALITY MANAGEMENT

- 7.1 Adhere to the provisions of the **Environmental Protection (Water Quality) Regulations, 2000.**
- 7.2 The oil- water separator at the Project shall be maintained and the GPS coordinate for this separator and its final discharge point shall be submitted to the EPA by **August 30,2022.**
- 7.3 All effluent from secondary containments at the Project shall flow through the oil-water separator and shall be in accordance with the Guyana National Bureau of Standards (GNBS) *Interim Guidelines for Industrial Effluent Discharge into the Environment*. The following allowable limits shall not be exceeded:

Parameter	Maximum Concentration	Units
Oil and Grease	Total Petroleum Hydrocarbon (TPH) < 40	mg/L
Thermal effluent	<40	°C

- 7.4 Water quality monitoring shall be determined by the EAMP. Once the EAMP is approved, results from monitoring shall be maintained and submitted as a component of the Annual Report.
- 7.5 Fuel/lubricants including waste oils/used oil shall not be drained from equipment onto the ground or into waterways.

- 7.6 Perimeter drains shall be maintained on site, they must be adequately sloped to collect storm flow.

8.0 HAZARDOUS WASTES (WASTE OIL) MANAGEMENT

- 8.1 Adhere to the provisions of the **Environmental Protection (Hazardous Waste Management) Regulations 2000**.
- 8.2 Hazardous wastes such as; waste oils/used oil and waste chemical shall be treated and disposed of by a certified Hazardous Waste Treatment and Disposal Company.
- 8.3 Hazardous waste shall be stored in sealed metal containers, appropriate for the waste stream.
- 8.4 Hazardous waste containers shall be labelled with the following:
- i. The words **“Waste Oil or “Used oil”**
 - ii. Beginning accumulation date
- 8.5 Hazardous waste shall be stored in a covered, bunded area. This area shall include the following:
- i. Signage- **“Hazardous Waste Storage Area”**
 - ii. Low traffic
 - iii. No floor drains
 - iv. Secondary containment capable of containing 110% of the largest volume therein.
- 8.6 All hazardous waste shall be treated and/ or disposed of by an EPA-authorized Hazardous Waste Disposal Facility. All hazardous waste treatment and disposal shall be documented on a Waste Manifest Form which shall be submitted to the EPA upon request. The manifest must contain the following:
- i. The name and address of the generator;
 - ii. The name, description, and hazard class of the waste;
 - iii. The number and type of containers;
 - iv. The quantity of waste being transported and collected; and
 - v. The name and address of the facility designated to receive the waste.
- 8.7 An incident spill report shall document **EVERY** occurrence of spills during the collection and/or transportation of hazardous waste. A copy of the spill report shall be submitted to the Agency **within twenty-four (24) hours of the incident**.
- 8.8 A Notification and Clean-up Plan for the Project shall be a component of the EAMP. The plan shall include, but not be limited to, the location of all materials stored and a notification and clean-up plan for each proposed site of operation in the event of a spill.

9.0 COMPLIANCE MONITORING AND REPORTING

- 9.1 Notify the Environmental Protection Agency **within one (1) hour** of the occurrence of any environmental emergencies (e.g. oil spills, hazardous materials/wastes spills, sudden onset disaster, natural, technological, or human-induced factors that cause or threaten to cause severe environmental damage as well as harm to human health or livelihood).
- 9.2 Monitor the implementation of the conditions of this Permit, insofar as they involve adherence by your employees and all third parties under your direction.
- 9.3 Notify the Agency in writing of any change of name or ownership of the Permit Holder's facility within **thirty (30) days** after the change occurs.
- 9.4 Notify the Agency **within twenty-one (21) days** in event of death, bankruptcy, liquidation or receivership of the Permit Holder or if the Company becomes a party to an amalgamation.
- 9.5 Maintain and submit to the Agency records of the type, composition and quantity of contaminant released (i.e., any solid, liquid, gas, odor, sound, vibration, radiation, heat or combination of any of them).
- 9.6 Submit **Annual Reports** to the EPA on your compliance with this Environmental Permit on or before **March 31, each year**.
- 9.7 Report to the Agency any non-compliance(s) with the Environmental Permit:
 - i. Within **twenty-four (24) hours** of the time the Holder of the Environmental Permit for Operation becomes aware of the non-compliance outlining the anticipated manner in which human health or the environment may be impacted.
 - ii. Within **seventy-two (72) hours** of the time the Holder of the Environmental Permit becomes aware of the non-compliance, submit to the Agency a written report containing a description of the non-compliance, its cause, the period of non-compliance including exact dates and time and the anticipated time it is expected to continue if the non-compliance(s) has not been corrected.
- 9.8 Comply with any lawful directions given by the EPA from time-to-time in furtherance of the implementation of any international or other obligation for the environmental protection of Guyana.
- 9.9 It is the responsibility of the Permit Holder to ensure the permitted activity and premises are secured and that all practicable steps necessary to prevent fires, explosions, leaks or suspected leaks and spills at the permitted premises are taken.

10.0 INSTITUTIONAL AUTHORITY/ LIABILITIES

- 10.1 The Permit Holder shall be liable for any material environmental harm caused by polluting the environment, pursuant to s. 39 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 10.2 The Permit Holder shall be liable for any serious environmental harm caused by polluting the environment, pursuant to s. 39 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 10.3 The Permit Holder shall be liable for any activity that causes or is likely to cause pollution of the environment unless all reasonable and practicable measures are taken to prevent or minimize any resulting adverse effect, pursuant to s. 19 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 10.4 The Permit Holder shall be liable for discharging, causing or permitting the entry into the environment, of any contaminant in any amount, concentration or level excess of that prescribed by the regulations or stipulated by this Environmental Permit, pursuant to s. 19 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 10.5 The Permit Holder shall be liable to compensate any person who suffers any loss or damage as a result of contravening conditions 10.3 and 10.4 of this Environmental Permit, pursuant to s. 19 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 10.6 The Permit Holder shall not be indemnified by the Agency for any activity that causes or is likely to cause pollution to the environment, resulting from adverse effects through the discharge, any contaminant in any amount, concentration, ultra hazardous substances, chemicals or otherwise, and shall be rendered liable to prosecution and to penalties prescribed under the Environmental Protection Act and Regulations.
- 10.7 The Permit Holder shall be liable of any gross negligence or willful misconduct caused by the Permit Holder, his Servants and/or Agents, to the environment, biodiversity, protected species and natural habitat with respect to any release, discharge, or spill, of contaminant fluids, oil or lubricants.
- 10.8 Shall the Permit Holder contravene or be likely to contravene any condition of this Permit, the Agency (EPA) may serve on him an Enforcement Notice in accordance with Section 26 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 10.9 Where it appears to the Agency that the Permit Holder is engaged in any activity that may pose a serious threat to natural resources or the environment, or a risk of serious pollution of the environment or any damage to public health, the EPA may issue to the Permit Holder a Prohibition Notice, which may order him to immediately cease the offending activity, in accordance with Section 27 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.

- 10.10 The EPA reserves the right to conduct regular inspections of the Permit Holder's activities as part of its monitoring and enforcement requirements under the Environmental Protection Act, Cap 20:05, and the Environmental Protection (Amendment) Act, 2005, and Environmental Protection (Authorisations) Regulations, 2000.
- 10.11 The Permit Holder, His Servants and/or Agents shall at all times, allow entry to the permitted facility to any Officer designated by the EPA for the purposes of conducting inspections or any other legitimate business of the Agency. Pursuant to Section 38 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana, it is an offence to assault, obstruct or hinder an authorised person in the execution of his/her duty under the said Act or its Regulations and the Permit Holder shall be liable to penalties prescribed under paragraph (c) of the Fifth Schedule for doing so.
- 10.12 The EPA has the right to modify, cancel or suspend this Permit for breach of any of the terms and conditions contained herein.
- 10.13 **This Environmental Permit is not the final consent; all relevant Permissions shall be obtained from other regulatory bodies for continued operation.**
- 10.14 This Environmental Permit is effective for the period stipulated herein; **August 2022 to July 2023.**
- 10.15 This Environmental Permit shall remain valid until **July 31, 2023**, unless otherwise suspended, cancelled, modified, or varied, in accordance with the provisions of this Permit or the Environmental Protection Act, Cap. 20:05, Laws of Guyana, Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.
- 10.16 This Permit must be renewed by submitting a completed Renewal Application Form for Environmental Authorisation to the Agency at least six months before this Permit expires, that is, no later than **January 31, 2023.**
- 10.17 Any late submission of renewal application (s) after the specified date as stated above, may require the Permit Holder to pay, in addition to the renewal fee, a late penalty fee (accruing at the time such obligation was first owed for renewal) at a rate of **two thousand dollars (GY\$2000.00) per day for every business day late, until such renewal application is submitted to the Agency**, without prejudice to any other rights of the Permit Holder in connection therewith.
- 10.18 Failure to comply with the requirements of this Permit or with applicable laws and regulations, whether existing or forthcoming, shall render the Permit Holder liable to prosecution and penalties, inclusive of civil penalties, injunctive relief, and imprisonment, as prescribed under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection Regulations, and other applicable Laws of Guyana.

Environmental Permit Ref. No. 20210914- GPLLR

Issued under of the Environmental Protection Act, Cap 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations,

Signed by *Sharifah Lazack* on behalf of the Environmental Protection Agency.

for **Kemraj Parsram**
Executive Director

Date

2022.08.16

I hereby accept the above terms and conditions upon which this Environmental Permit is granted and agree to abide by the Environmental Protection Act, Cap. 20:05, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000, and any existing or forthcoming regulations, guidelines, best practices, and standards made under this Act.

NAME:	<i>Arifec Hassan</i>
DATE:	<i>23-08-2022</i>
SIGNATURE:	<i>Arifec Hassan for Gary Hall</i>
DESIGNATION:	<i>Assistant Environmental Officer</i>



