



**Environmental
Protection
Agency**

Ganges Street, Sophia,
Georgetown, GUYANA
Tel.: (592) 225-0506
Fax: (592) 225-5481
Email: epa@epaguyana.org
Website: <http://www.epaguyana.org>

Environmental Permit (Renewed)

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.:	20201002- AGPGW
Fee:	Medium (C2) i.e., US\$800 per year
Fee Paid:	US\$ 800 for One (1) year (November 2023- October 2024)
Addressee:	Guyana Power and Light Inc. Lot 40, Main Street, Cummingsburg Georgetown Location of Plant: Onverwagt Village, West Coast Berbice.
Activity:	Operation of a Power Generation Facility inclusive of two (2) Electro Motive Vision-General Motors Generator Set and Five (5) Caterpillar Engines and supported by Storage of Fuel, Lubricants and Waste Oil

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 a Power Generation Facility supported by the Storage of Fuel, Lubricants and Waste Oil at Onverwagt Power Station- West Coast Berbice, hereinafter referred to as the "Project", in a manner indicated in the Application for Environmental Authorisation Renewed submitted on February 7, 2023, and subject to the terms and conditions set forth herein under the Environmental Protection Act, Cap. 20:05, existing and/or forthcoming regulations made under the said Act, and/or any other applicable laws, guidelines, best practices and standards relevant to this project.

This is a Renewal of Environmental Permit Ref. #: 20201002 - AGPGW issued to Guyana Power & Light Inc (GPL)- Onverwagt for the period November 2021 to October 2022.

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 Adhere to the requirements of the **Occupational Safety and Health Act, Cap. 99:06, Laws of Guyana.**
- 1.2 An application shall be made to the Agency to vary this Permit in instances where it becomes necessary to:
 - i. Change the construction, operation, structure, or layout of the Project and all associated buildings;
 - ii. change equipment, machine, apparatus, mechanism, system, or technology serving the Project;
 - iii. change the position and design of any outlet, at the point or points of discharge of effluents; or
 - iv. effect any other change outlined in Regulation 20(3) of the Environmental Protection (Authorisations) Regulations
- 1.3 An Environmental Assessment and Management Plan (EAMP) for the Project shall be submitted by **August 31, 2024**. The EAMP shall address mitigation measures for potential environmental impacts and have an Air and Noise monitoring plan, Water Quality Monitoring Plan, and Emergency Spill Response Plan (ESRP) which shall include, but not be limited to local emergency response authorities, notification of national and local authorities, coordination of clean-up activities, and assessment of health hazards to human and the environment.
- 1.4 Emergency spill kit shall be maintained at the Project for response to potential spills. Kit shall contain absorbent materials, drain seals, and other appropriate materials and tools for clean-up.
- 1.5 The Guyana Fire Service approval shall be maintained and fire protection measures such as fire extinguishers and sand buckets shall be provided in accordance with this approval.
- 1.6 All firefighting equipment shall be maintained and serviced according to the Guyana Fire Service requirements.
- 1.7 Chemicals shall be stored in accordance with the manufacturer's directions or Material Safety Data Sheet (MSDS/SDS) instructions.
- 1.8 Safety Data Sheets for all chemicals shall be readily available and easily accessible at all times at the Project.



2.0 POWER GENERATION

- 2.1 Inspection and maintenance reports for all Electro Motive Vision-General Motors Generator Set and Caterpillar Engines shall be maintained. Reports shall be made available for inspection by the EPA upon request.
- 2.2 Operational and maintenance manual shall be maintained and made available to employees at the project, to ensure engines are operating in accordance with their optimal specifications. Updates to the manual shall be made available to the EPA for inspection upon request.
- 2.3 The following records shall be maintained for all power generation engines identified at the Project and shall be submitted as a component of the annual report:
- Megawatt thermal input
 - Calorific value
 - Fuel-oil consumption
- 2.4 Scheduled training shall be maintained for employees involved in the Project. Training reports shall be made available for inspection by the EPA upon request.

3.0 AIR QUALITY MANAGEMENT

- 3.1 Adhere to the provisions of the **Environmental Protection (Air Quality) Regulations, 2000.**
- 3.2 The permit holder shall immediately respond to visible (opaque, grey to black) emissions that exceed six (6) minutes in the event of an incident. Record the date and time of any such incidents and actions taken to resolve such air pollution episodes. All records shall be maintained and made available for inspection by the EPA upon request.
- 3.3 Air quality monitoring shall be conducted at the boundaries of the project to assess compliance with the requisite standards below:

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

- 3.4 Monitoring shall be conducted during normal operations by trained personnel utilizing calibrated equipment. The results of all monitoring exercises shall be maintained and submitted as a component of the Annual Report.

- 3.5 Stack emission testing shall be conducted for all engines older than five (5) years 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

Monitoring shall be conducted annually by trained personnel using calibrated equipment. Records of all monitoring exercises shall be maintained and submitted as a component of the Annual Report.

- 3.6 Calibration certificate records shall be maintained and submitted to the Agency as a component of the project's Annual Report.
- 3.7 Calculate annual emissions of carbon dioxide and carbon dioxide equivalent from the operation of the engines using the formula below and the emission factors as outlined in the US EPA AP 42 Section 3.3 Gasoline and Diesel Industrial Engines. The results of all calculations shall be submitted as a component of the Annual Report.

where:

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

- E = emissions;
- A = activity rate;
- EF = emission factor, and
- ER = overall emission reduction efficiency, %

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) requirements.
- 4.3 Noise quality monitoring shall be conducted at the boundaries of the project 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 Monitoring shall be conducted bi-annually by trained personnel using calibrated Type 2 Sound Level Meters. Records of all monitoring exercises shall be maintained and submitted as part of the Annual Report.



5.0 FUEL HANDLING AND STORAGE

- 5.1 A register of the types and quantities of fuel and associated hazardous materials stored onsite shall be maintained. The registered information shall be made available for inspection by the EPA upon request.
- 5.2 Fuel shall at all times be stored above-ground, away from ignition sources. **'No Smoking'** signs shall be posted where fuel is handled or stored.

Secondary Containment

- 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 the hydrostatic pressure of any contained liquid when full. A summarized inspection report shall be maintained and available for inspection by the EPA upon request.
- 5.4 All secondary containment shall remain sealed and all piping must enter or exit the bund over the wall. Bunds shall provide total containment, and no part of the tank infrastructure (e.g., dispenser, filling hoses and valves) shall protrude outside the containment.
- 5.5 A monthly monitoring system shall be established to allow for early detection and repairs needed for the secondary containment and tank infrastructure.
- 5.6 Discharge from the secondary containment is **Strictly Prohibited**.
- 5.7 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.

Fuel Tank and Pipeline Maintenance

- 5.8 Fuel storage tanks shall be visually inspected monthly to verify their integrity. A summarised inspection report shall be compiled, maintained and made available for inspection by the EPA upon request.
- 5.9 Protection measures such as painting and coating shall be maintained to minimise corrosion of the fuel tanks.
- 5.10 Maintenance and/or repair of fittings, pipes and hoses shall be conducted in accordance with manufacturer's specifications. A summarised inspection report shall be maintained and made available for inspection by the EPA upon Request.
- 5.11 The following labels shall be posted on **ALL** fuel storage tanks in accordance with the Global Harmonization Standards (GHS):

5.11.1 The name of the fuel stored,



5.11.2 The tank capacity

5.11.3 Warning signs (“Danger”, “no-Smoking”, etc.)

Overfill Protection & Leak Detection

- 5.12 Overfill protection shall be installed and maintained on all fuel tanks by **December 31, 2023**. This may include an automatic shut off device or an audible or visible overfill alarm.
- 5.13 The safe fill level shall be clearly identified on the gauge and set at 90% to prevent overfilling. In the event of overfilling, all discharges shall be released into the containment bund.
- 5.14 Dispensing equipment shall be designed with the Best Available Technology (BAT) to minimise spills e.g., suction, pressure or gravity systems.

Fuel Transfer

- 5.15 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.
- 5.16 The Best Available Technology/ Technique (BAT) shall be employed to capture fuel lost during the unloading of fuel to storage tanks and refueling of equipment.
- 5.17 Secondary containment, drip trays or other overflow and drip containment measures shall be installed and maintained at connection points or other possible overflow points.

6.0 STORAGE OF CHEMICALS (LUBRICANTS AND GREASE)

- 6.1 Secondary containment for chemical storage shall be established and maintained by **December 31 2023**.
- 6.2 The chemical storage area shall be clearly labeled with “**Danger, Hazardous Storage Area- Authorized Personnel Only**” where applicable as a spill control measure.
- 6.3 Flammable materials shall be stored away from ignition sources. ‘**No Smoking**’ signs shall be posted where these materials are handled and stored.
- 6.4 Chemicals shall be stored in accordance with the manufacturer's directions or Safety Data Sheet (SDS) instructions.
- 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 storage containers shall be clearly labelled in accordance with the Globally Harmonized System of Classification and Labelling. The following must be evident:
- Signal Word
 - GHS Symbols- (Hazard Pictograms)
 - Manufacturer Information
 - Precautionary Statements/ First Aid
 - Hazard Statements
 - Product Name or Identifiers
- 6.7 Storage containers shall be inspected **monthly** 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. Records of inspections shall be maintained and made available for inspection by the EPA upon request.
- 6.8 Chemicals **shall not** be stored on damaged, or inadequately secured racking or on damaged pallets thereby minimizing the risk of spills.
- 6.9 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 for inspection by the EPA upon request.

7.0 WATER QUALITY MANAGEMENT

- 7.1 Adhere to the provisions of the **Environmental Protection (Water Quality) Regulation, 2000**.
- 7.2 Fuel /lubricants including waste oils shall not be drained from equipment onto the ground or into waterways.
- 7.3 Interceptor drains shall be maintained on-site, they must be adequately sloped to collect storm flow.
- 7.4 All effluent from secondary containments 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	Sample type
Oil and Grease	Total Petroleum Hydrocarbon (TPH) < 40	mg/L	Grab
Thermal effluent	<40	°C	In-situ

Monitoring shall be conducted annually by trained personnel using calibrated equipment. Records of all monitoring exercises shall be maintained and submitted as part of the **Annual Report**.

8.0 WASTE MANAGEMENT

- 8.1 In accordance with the **Environmental Protection (Litter Enforcement) Regulation, 2013**, promote good sanitation and solid waste disposal practices on site; covered garbage receptacles must be placed at strategic locations at the facility.
- 8.2 Waste materials shall not be burnt on site. All solid waste shall be disposed of, at an approved Solid Waste Disposal Site.
- 8.3 Good house-keeping, sanitary, and hygienic practices shall be maintained at all times. The facility surroundings shall be kept free of vegetation and litter.
- 8.4 Septic Tank(s) shall be constructed and maintained in accordance with Guyana National Bureau of Standards Code of Practice for the Design and Construction of Septic Tanks and Associated Secondary Treatment and Disposal Systems.
- 8.5 Septic Tank(s) shall at all times be accessible for cleaning and de-sludging by an EPA authorised waste disposal company.
- 8.6 Any modification to the Septic Tank(s) must be in accordance with the Guyana National Bureau of Standards (GNBS) Code of Practice for the Design and Construction of Septic Tanks and Associated Secondary Treatment and Disposal Systems.

9.0 HAZARDOUS WASTES (WASTE OIL) MANAGEMENT

- 9.1 Adhere to the provisions of the **Environmental Protection (Hazardous Waste Management) Regulations 2000**.
- 9.2 Hazardous wastes (waste oils, etc.) generated by the power plant operation, shall be treated and disposed of by a certified Hazardous Waste Treatment and Disposal Company.
- 9.3 Hazardous waste shall be stored in sealed metal containers, appropriate for the waste stream.
- 9.4 Hazardous waste containers shall be labelled with the following:
 - i. The words **“Waste Oil or “Used oil” or “Sludge”**
 - ii. Beginning accumulation date
- 9.5 Waste oil 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.
- 9.6 Each transport of hazardous waste shall generate a manifest. The manifest shall contain the following:
- i. The name and address of the waste generator;
 - ii. The name and description of the waste and hazardous class;
 - iii. The number and type of containers;
 - iv. The quantity of waste being transported; and
 - v. The name and address of the facility designated to receive the waste
- 9.7 Copies of signed manifests shall be maintained by the Project for not less than three years and made available for inspection by the EPA upon request.

10.0 COMPLIANCE MONITORING AND REPORTING

- 10.1 Notify the Environmental Protection Agency **within one (1) hour** of the occurrence of any environmental emergencies (e.g., oil spills, hazardous materials/wastes, chemicals 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).
- 10.2 Make all employees, and third parties under your direction, aware of the conditions of this Operation Permit and provide training on environmental practices.
- 10.3 An incident spill report shall be done for **EVERY** occurrence of spills during the collection and/or transportation of hazardous waste. Records of spill reports shall be maintained and submitted to the Agency upon request.
- 10.4 Spill Reports shall be submitted to the Agency **within twenty-four (24) hours of the incident**.
- 10.5 The Clean-up Plan shall be available on site and shall include, but not be limited to, the location of all materials stored and operations/actions in the event of a spill.
- 10.6 Annual Training schedules and reports shall be submitted to the Agency as a component of the required **Annual Report** referred to as Monitoring and Compliance. Training shall include but not be limited to Employees working in confined spaces and prolonged noisy areas.
- 10.7 Monitor the implementation of the conditions of this Permit, insofar as they involve adherence by your employees.
- 10.8 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.



- 10.9 Notify the Agency **within twenty-one (21) days** in the event of death, bankruptcy, liquidation, or receivership of the Permit Holder or if the Company becomes a party to an amalgamation.
- 10.10 Submit **Annual Reports** to the EPA on the progress of the operation and compliance with the conditions under which this Permit was granted on or before **March 31** each year.
- 10.11 Report to the Agency any non-compliance(s) with the Operation Permit:
- I. Within **twenty-four (24) hours** of the time, the Holder of the Environmental Authorisation for Operation becomes aware of the non-compliance, and the anticipated manner in which it may endanger human health or the environment.
 - II. Within **seventy-two (72) hours**, submit to the Agency a written report containing a description of the non-compliance, its cause, and the period of non-compliance including exact dates and time.
 - III. Submit a report to the Agency indicating the reasons and the anticipated time it is expected to continue if the non-compliance has not been corrected.
- 10.12 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.
- 10.13 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.

11.0 INSTITUTIONAL AUTHORITY/ LIABILITIES

- 11.1 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.
- 11.2 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.
- 11.3 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.
- 11.4 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.

- 11.5 The Permit Holder shall be liable to compensate any person who suffers any loss or damage as a result of contravening conditions 7.3 and 7.4 of this Environmental Permit, pursuant to s. 19 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 11.6 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, of 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.
- 11.7 The Permit Holder shall be liable for 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.
- 11.8 Should 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.
- 11.9 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.
- 11.10 The EPA reserves the right to conduct regular inspections of the Permit Holder's construction 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.
- 11.11 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 upon request. 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.
- 11.12 The EPA has the right to modify, cancel or suspend this Permit for breach of any of

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the terms and conditions contained herein.

- 11.13 **This Environmental Permit (Renewed) is not the final consent; all relevant Permissions shall be obtained from other regulatory bodies for continued operation.**
- 11.14 This Environmental Permit (Renewed) is valid for the period stipulated herein **November 2023 to October 2024.**
- 11.15 This Environmental Permit (Renewed) shall remain valid until **October 31, 2024**, unless otherwise suspended or revoked in accordance with the provisions of this Permit or the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.
- 11.16 This Permit must be renewed by submitting a completed Application Form for Renewal of Environmental Authorisation to the Agency at least six months before this Permit expires, that is, no later than **April 30, 2024.**
- 11.17 Any submission of the application required by Condition 12.16 beyond the date specified therein, the agency may require the Permit Holder to pay, in addition to the application fee, a late penalty fee (accruing at the time such obligation was first owed for renewal) at a rate of **two thousand dollars (GY\$2,000.00) per day for every business day late**, until such application is submitted to the Agency, without prejudice to any other rights of the Permit Holder in connection therewith.
- 11.18 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 to 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.

Signed by


Kemraj Parsram
Executive Director

on behalf of the Environmental Protection Agency.

Date

2023.11.21

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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, 2000.

We hereby accept the above terms and conditions upon which this Operation 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	Arifea Hassan
DATE	2023-12-22
SIGNATURE	Arifea Hassan
DESIGNATION	Environmental officer



