



Environmental Protection Agency

Ganges Street, Sophia,
Georgetown, GUYANA
Tel.: (592) 225-0506 /5467-69, 71-72
Fax: (592) 225-5481
Email: epa@epaguyana.org
Website: <http://www.epaguyana.org>

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.:	20230731-GNINJ
Fee per year:	Medium (C1) - US\$ 500
one	US\$1500 for three (3) years (February 2024 – January 2027)

Addressee(s): GO NDE Inc.
Vreed-en-hoop Shore base
West Bank Demerara

Activity: Store, Transport and Use of Sealed Iridium 192 Sources to conduct non-destructive examinations at the Gas to Energy Project.

GO NDE Inc., hereinafter referred to as the “Permit Holder”, is hereby authorised in accordance with the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection Regulations, 2000, to Store, Use and transport Sealed Radioactive Sources listed in Table 1 (on page 2) for non-destructive examinations at the Gas to Energy Project, hereinafter referred to as the “Project”, in the manner indicated in the Application submitted on July 27th, 2023, and subject to the terms and conditions set forth herein and in any existing or forthcoming regulations made under the Environmental Protection Act, Cap. 20:05, the International Atomic Energy Agency (IAEA) Safety Standards – Regulations for the Transport of Radioactive Materials, 2018, and the Code of Conduct on the Safety and Security of Radioactive Sources, Number 7 on the UN classification of dangerous goods, and/or any other applicable laws, best practices, guidelines and standards relevant to this project.

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




- 1.3 Conduct an annual quality assurance assessment to determine that all radiation protection, safety and security requirements outlined in this Permit are satisfied. A summary of the findings should be submitted as part of the Annual Report.
- 1.4 Make an application to the Agency to vary this Environmental Permit in instances where it becomes necessary to:
 - i. change the construction, operation, structure, or layout of the facility and all associated structures/ vessels;
 - ii. change equipment, machine, apparatus, mechanism, system or technology serving the facilities/ vessels;
 - iii. effect any other change outlined in 20 (3) of the Environmental Protection (Authorisations) Regulations.
 - iv. Add additional radioactive sources to the inventory
- 1.5 Notify the Agency in writing of any proposed new source(s) that will be added to the Inventory (Table 1). This notification shall include the information referenced in condition 1.2.
- 1.6 Make all employees/third-party contractors aware of the Conditions of this Environmental Permit and provide training on radiation safety, transport and management. Training records should be available upon the Agency's request during Compliance Inspection.
- 1.7 Display the radiation trefoil on all radioactive sources and nuclear materials to warn of potential hazards.
- 1.8 Adhere to the GO NDE INC. Radiation Safety & Emergency Program, LII-GONDE-HSE-10-04.
- 1.9 Adhere to the **As Low As Reasonably Achievable (ALARA)** principle at all facilities/vessels.
- 1.10 Restrict access to only personnel with the required qualifications in areas where high-activity radioactive sources are stored.
- 1.11 Ensure that the Radiation Safety Officer receives continual training under a recognised international standard to conduct his/her duties efficiently.



3.0 TRANSPORT OF RADIOACTIVE SOURCES

- 3.1 Ensure adequate shielding and containment of the radioactive material during each transport activity, in compliance with The International Atomic Energy Agency (IAEA) Safety Standards – Regulations for the Transport of Radioactive Materials, 2018.
- 3.2 All sealed radioactive sources to be transported to Guyana shall meet the performance requirements of:
- i. Test level ISO 2919: 2012 of the International Organization for Standardization-Standard Sealed Radioactive Sources-ANSI N43.6-Classification or
 - ii. Test level 46515 of the American National Standards Institute N5.10-1968-Classification of Sealed Radioactive Sources.
- 3.3 Notify the Agency via email (radiation@epaguyana.org) of the intent to transport sealed radioactive sources listed within **Table 1** within the jurisdiction of the Cooperative Republic of Guyana at least **seventy-two (72) hours** before transport. The notification must include:
- i. The date of shipment;
 - ii. The expected date of arrival;
 - iii. Final destination and
 - iv. The proposed route.
- 3.4 Maintain records of the transport of sealed sources at each production facility utilising radioactive sources at all times.
- 3.5 Radioactive sources are **Prohibited** for transport:
- 3.5.1 On passenger vessels (e.g., a ferry)
 - 3.5.2 On Passenger Aircraft
- 3.6 Appropriate signage and labelling shall be affixed on all packages and freight containing the source during transport.
- 3.7 The Radiation Safety Officer shall be responsible for ensuring that the radiation shield is securely fastened inside a transport container with the security seal tag attached and serial number affixed.

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- 4.7 Provide adequate shielding for the source to ensure dose rates do not exceed 7.5 microSv/h at any occupied location outside the storage areas.
- 4.8 Store all Radioactive Sources at **facilities authorised by the EPA**. Storage at unauthorised facilities is **Prohibited**.

5.0 WATER QUALITY

- 5.1 Hazardous waste shall not be stored in an area where it could enter any waterways due to heavy rainfall or high winds. All hazardous waste shall be stored at least **5m** from any site drains.
- 5.2 Samples of **treated water** from the Waste Water Treatment System shall be collected for analysis of the Wastewater Treatment System prior to final discharge into the environment.
- 5.3 Samples of **effluent discharge** shall be collected for analysis from the final discharge points on a **quarterly** basis.
- 5.4 The treated water and effluent discharge 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	Daily Maximum Concentration	Units	Sample type
pH	(pH 5.0-9.0)		Grab
Temperature	<40	°C	Grab
Total Suspended Solids (TSS)	< 50	mg/L	Composite
Oil and Grease	< 10	mg/L	Composite
Biochemical Oxygen Demand (BOD)	< 50	mg/L	Composite

(Signature)

the site **within seven (7) days of the commencement** of the activities at the site.

- 6.4 At all times, there shall be a sufficient number of trained and qualified workers to conduct authorised activities.
- 6.5 Provide prior written notification to the Agency of any intention to — sell, relocate, or dispose of any of the permitted radiation sources.
- 6.6 Inform the Agency in **writing at least seventy-two (72) hours** after standard procedures were conducted for any stuck radiation sources.

7.0 RADIOACTIVE WASTE /DISUSED SOURCES

- 7.1 Ensure provision for radioactive sources is in place to return materials to the **manufacturer**.
- 7.2 Submit an agreement with the manufacturer/ provider of the sources to collect all spent sources within three (3) Months of issuance of this permit.
- 7.3 Maintain a waste disposal record, including subsequent abandonment of radioactive source down-hole.
- 7.4 Ensure waste disposal records reflect the final disposition of all radioactive materials and must be maintained for inspection by the Agency.

8.0 COMPLIANCE MONITORING AND REPORTING

- 8.1 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.
- 8.2 Notify the Environmental Protection Agency **within 24 hours** of the occurrence of any environmental emergencies, e.g., hazardous materials/waste spill, 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).



- 8.7 Notify the Agency in writing of any change of name or ownership of the Permit Holders' facility **within thirty days** after the change occurs.
- 8.8 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.

9.0 INSTITUTIONAL AUTHORITY/LIABILITIES

- 9.1 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.
- 9.2 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.
- 9.3 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.
- 9.4 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.
- 9.5 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.
- 9.6 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.



- 9.13 The Permit Holder is obligated to ensure that the import of all sealed radioactive sources is approved by the Guyana Revenue Authority (GRA).
- 9.14 This Environmental Permit is effective for the period stipulated herein from **February 2024 to January 2027**.
- 9.15 This Environmental Permit shall remain valid until **January 31, 2027**, 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.
- 9.16 This Permit must be renewed by submitting a completed Application Form for Nuclear Safety and Radiation Protection to the Agency at least 6 months before this Environmental Permit expires, no later than **July 31, 2026**.
- 9.17 Any late submission of renewal application (s) after the specified date as stated above, may require the Permit Holder to pay, in addition to 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.
- 9.18 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  on behalf of the Environmental Protection Agency.

 **Kemraj Parsram**
Executive Director

Date 2024-02-02