

ENVIRONMENTAL INCIDENT PREVENTION AND RESPONSE PLAN

PETROVIETNAM - PVFCCo | PHU MY FERTILIZER PLANT

Document No: G6-00-KH-004 | Issue: 04

1. LEGAL BASIS FOR PROMULGATION

- Clause 4, Article 124, Law on Environmental Protection No. 72/2020/QH14 passed by the National Assembly, effective January 1, 2022.
- Clause 1, Article 109, Decree 08/2022/ND-CP issued by the Government, effective January 10, 2022.
- Decree No. 45-2022/ND-CP issued by the Government, effective July 7, 2022, on administrative penalties in environmental protection.
- Decision No. 146/QD-TTg of the Prime Minister dated February 23, 2023, on promulgating the National Plan for Waste Incident Response for the 2023-2030 period.
- Circular No. 02/2022/TT-BTNMT dated January 10, 2022, detailing the implementation of several articles of the Law on Environmental Protection.
- Environmental Incident Response Plan of Ba Ria - Vung Tau Province for 2023-2030 (No. 85/KH-BCH).

2. SCOPE OF REGULATION

This environmental incident response plan is developed for incidents related to the environmental protection works of the Phu My Fertilizer Plant.

It also covers incidents from other entities located within the plant's premises, including the Chemical Blending Workshop, FA Company (CO2 Plant), and PVCombank office.

Other incidents related to chemical leaks, fires, and explosions during production are addressed separately in previously issued Emergency Response Plans.

3. SUBJECTS OF APPLICATION

This plan applies to all officials, employees across all plant departments, contractor personnel, interns, and visitors working or visiting the Phu My Fertilizer Plant.

4. PURPOSE

As a chemical and fertilizer production facility, the plant generates wastes that pose risks to human health and the environment. This plan is compiled to provide timely measures to prevent the spread of pollution and to overcome

the consequences caused by environmental incidents, ensuring minimal long-term impact on the regional ecosystem.

5. DEFINITIONS AND ABBREVIATIONS

Environmental Incident: An event occurring during human activities or abnormal natural variations that causes serious environmental pollution, degradation, or alteration.

- **Emergency Level I (Minor):** Small incidents posing no immediate threat to life, property, or the environment. Controlled via on-site handling measures.
- **Emergency Level II (Medium):** Incidents posing certain dangers. Requires on-site forces coordinated by the Plant's Steering Committee, supported by local authorities and neighboring units.
- **Emergency Level III (Severe):** Serious threats to life, property, or environment. Directed directly by the Vietnam Oil and Gas Group (PVN) Steering Committee, potentially requiring national/international rescue resources.

6. GUIDELINE CONTENT

6.1 General Information

Location: Phu My I Industrial Zone, Phu My Ward, Phu My Town, Ba Ria - Vung Tau Province.

Production Line	Output Product	Design Capacity
Ammonia Production	NH3	540,000 tons/year
Urea Production	Urea	870,000 tons/year
UFC85 / AF37 Production	UFC85 / AF37	15,000 / 25,000 tons/year
NPK Production	NPK	250,000 tons/year

6.2 Environmental Protection Facilities

Facility Name	Capacity / Area	Technology / Technical Specs
Air: Primary Reformer Stack (10SK2001)	221,080 m ³ /h	Uses natural gas. Unprocessed gas dispersed directly via 40m stack. Emissions within regulated limits.
Air: Urea Prilling Tower (20Z1008)	827,000 m ³ /h	Exhaust from prilling contains Urea dust and NH ₃ . Dispersed via 96m stack. Within regulated limits.
Air: NPK Exhaust System (70-V-2006)	310,000 m ³ /h	NH ₃ and dust are pre-washed, followed by a final scrubber to remove Fluorine. Dispersed via 43.05m stack.
Water: UFC85 WWTP	25 m ³ /day	Handles wastewater containing high Nitrogen, COD, and HCHO. Uses activated sludge and MBR tech.
Water: Oily WWTP	480 m ³ /day	Handles technology and oil-contaminated water. Uses physicochemical (coagulation, flotation) tech.
Water: Centralized WWTP	680 m ³ /day	Receives domestic and treated waters from UFC85/Oily WWTPs. Uses activated sludge + MBR.
Solid Waste: Hazmat Storage	100 m ²	Concrete warehouse with sloped floors, liquid collection trenches, ventilation, and emergency response kits.

7. POTENTIAL INCIDENTS & RESPONSE ACTIVITIES

7.1 Forecast of Potential Environmental Incidents

Facility	Incident Risk	Causes	Impact Level
Centralized / Oily / UFC85 / NPK WWTPs	Overflow of untreated wastewater into the environment.	Heavy rain exceeding safe tank levels; pump failure causing water accumulation; structural tank rupture.	Level I / II (Rare)
NPK / UFC85 Exhaust Systems	Emission of untreated exhaust gases.	Treatment system failure (compressor/membrane damage); micro-organism death in biological tanks.	Level I (Possible)

Facility	Incident Risk	Causes	Impact Level
Hazardous Waste Storage	Fire, explosion, or chemical spill/leak.	Spark generation during work; short circuits; improper storage of reactive chemicals; physical container damage.	Level I / II (Rare/Possible)
Cooling Water System	Treated cooling water non-compliant upon discharge.	Chemical overdose (Javel, H2SO4, anti-scaling agents); pipe bursts.	Level I (Rare)
CO2 Plant / Blending Workshop	NH3/CO2 leaks, chemical spills, domestic wastewater overflow.	Equipment corrosion, valve failure, improper operation, tank overflow.	Level I (Possible)

7.2 Response and Prevention Measures

Incident Area	Prevention Measures	Emergency Response Measures
Wastewater Treatment Plants (Overflow/Leak)	Maintain safe water levels (>0.5m). Use roofs to limit rainwater ingress. Install backup pumps and conduct regular maintenance.	Isolate drainage valves. Pump overflow to temporary regulating tanks (BA2). Use sandbags to block discharge to Industrial Zone (IZ). Clean and replace contaminated soil. Notify IZ authority.
Exhaust Gas Systems	Monitor operational parameters continuously on DCS. Schedule periodic maintenance.	Immediately stop the related production unit. Identify and fix system failure before resuming operations.
Hazardous Waste Storage (Fire/Spill)	Separate reactive chemicals. Use spill pallets. Prohibit sparks/hot work without permits. Install fire extinguishers.	Evacuate area. Use appropriate extinguishers. Block stormwater drains with sandbags to contain contaminated firewater. For spills, use absorbents/sand, collect into sealed drums, and transfer to licensed handlers.
Cooling Water System	Automate chemical dosing based on continuous pH/Chlorine monitoring. Inspect pipelines regularly.	Reduce discharge flow, increase mixing. Stop discharge if parameters fail to meet standards. Repair damaged pipelines immediately.

Incident Area	Prevention Measures	Emergency Response Measures
Other Units (CO2, Blending Workshop)	Ensure strict adherence to operational procedures. Check tank capacities and wear proper PPE.	Coordinate with plant emergency response. Block drains at Gate 2. Halt reception of wastewater from affected units. Clean up and process waste correctly.

8. TRAINING AND DRILLS

- **Training:** Develop periodic training plans for environmental management and incident response for all relevant personnel. Conduct initial first-aid and safety/firefighting training annually.
- **Drills:** Organize annual environmental incident response drills, independently or integrated with general emergency drills at the Plant.
- **Updates:** The plan is updated whenever there are changes to environmental protection facilities, operational risks, or response procedures.