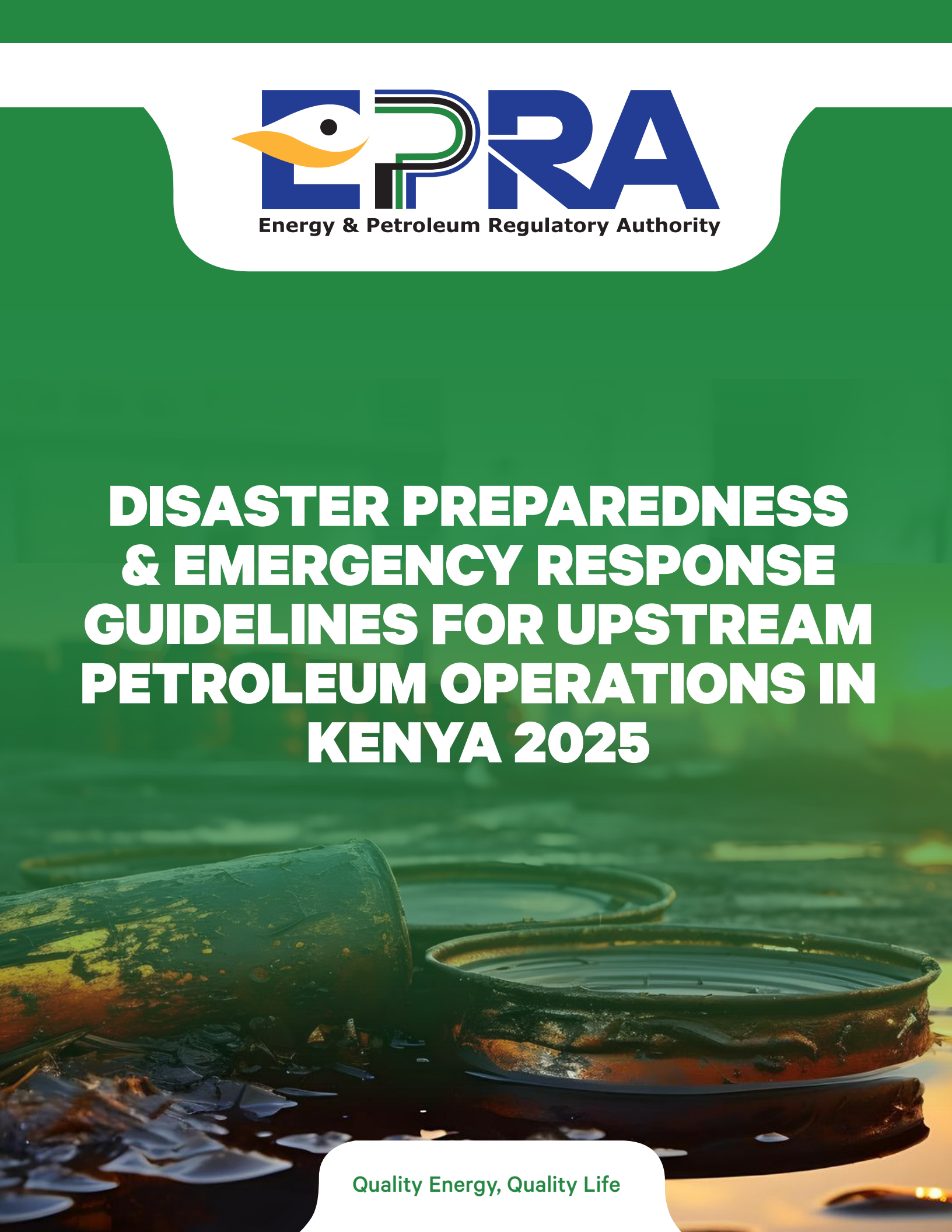
Energy & Petroleum Regulatory Authority

DISASTER PREPAREDNESS & EMERGENCY RESPONSE GUIDELINES FOR UPSTREAM PETROLEUM OPERATIONS IN KENYA 2025



Quality Energy, Quality Life

IN EXERCISE of the powers conferred by Part 1 Section 9 (1) of the Petroleum Act (Cap. 308), the Authority makes the following guidelines: -

CITATION AND COMMENCEMENT

These Guidelines may be cited as the Disaster Preparedness and Emergency Response Guidelines for Upstream Operations in Kenya 2025.

DEFINITION OF TERMS

- **"Authority"** means the Energy & Petroleum Regulatory Authority, established as the successor to the Energy Regulatory Commission (ERC) under section 10 of the Energy Act (Cap. 314).
- "**Petroleum**" means all hydrocarbons and includes crude oil and natural gas, whether capable of being produced from conventional and unconventional reservoirs, including shale oil, oil shale, shale gas, coal bed methane gas, tar sands and other sources of hydrocarbon reserves.
- "**Contractor**" means the person with whom the national government concludes a petroleum agreement.
- "**Facility**" includes-
    a. Any structure, device, roads, or other associated installations or infrastructure, including pipelines, rail stations, pump stations, compressor station and equipment constructed, placed or used to carry out upstream petroleum operations.
    b. Vessel, vehicle or craft when stationary and used for drilling or support of ongoing upstream petroleum operations.
    c. Vessel, vehicle or craft for transportation of petroleum in bulk when connected to a facility for loading of petroleum.
- "**Ministry**" means the ministry currently responsible for petroleum in Kenya.
- "**Operator**" means the designated entity that is responsible for managing the day-to-day operation of petroleum exploration, development and production.
- "**Upstream Petroleum Operations**" means all or any of the operations related to the exploration, development, production, separation and treatment, storage and transportation of petroleum up to the agreed delivery point.

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LIST OF ACRONYMS

EPRA	Energy & Petroleum Regulatory Authority
ERP	Emergency Response Plan
HAZOP	Hazard and Operability Study

1. INTRODUCTION

The upstream petroleum operations subsector is inherently fraught with risks and hazards. Disasters such as the Deep-Water Horizon of 2010 in the Gulf of Mexico are a testament to this, and a sober reminder of the ever-present hazards associated with the sector.

The upstream petroleum sector operations are associated with a range of disasters, which include:

- **OIL SPILLS:** The sector is well-known for its association with oil spills, which occur when leaks or ruptures in pipelines, blowouts at drilling rigs or accidents involving oil tankers. These spills have severe environmental consequences, causing harm to marine and terrestrial ecosystems, as well as impacting human health and local economies.
- **BLOWOUTS:** Blowouts happen when there is an uncontrolled release of oil or gas from a well. This can be due to equipment failure, human error, or geological complications. Blowouts can result in explosion fires and environmental contamination.
- **GAS LEAKS:** During drilling, transportation, or storage processes, hydrocarbon gas leaks, such as methane, can occur. Methane is a potent greenhouse gas contributing to climate change and can pose explosion risks in high concentrations.
- **WELL COLLAPSES:** Poorly constructed or maintained wells can collapse, releasing oil or gas, contaminating groundwater and subsiding land. Well integrity issues can arise from corrosion, cement failure or geological instability.
- **PIPELINE FAILURES:** Pipelines used for transporting petroleum can rupture due to corrosion, external damage (for example., from excavation equipment), or material defects. Pipeline failures can result in spills, fires, and environmental damage.
- **NATURAL DISASTERS:** Upstream facilities are vulnerable to natural disasters such as hurricanes, earthquakes and floods. These events can damage infrastructure, leading to spills, fires and disruptions to operations.
- **CHEMICAL SPILLS:** : Accidental spills or improper disposal of chemicals can contaminate soil, water and air, posing risks to ecosystems and human health.
- **WORKER ACCIDENTS:** Worker accidents can occur due to factors such as equipment malfunctions, inadequate safety measures, or human error. These accidents can result in injuries, fatalities, and long-term health effects for the workers involved.

Due to the inherent risk of such disasters, industry players must be adequately prepared to manage risks effectively and be prepared for emergencies.

2. PURPOSE

The purpose of these guidelines is to: -

1. Assist in mitigating risks associated with the upstream petroleum subsector, including explosions, oil spills, fires, environmental degradation, injury and loss of life.
2. Ensure compliance with legal and policy requirements.
3. Minimise the risk of environmental degradation, such as contamination of water, air, or soil.
4. Help in protecting life and safeguarding property in the event of disasters and emergencies.
5. Minimise project disruptions and maintain operations through robust preparedness for disasters and emergencies.
6. Help maintain good community and stakeholder relations by demonstrating the project's commitment to safety and environmental protection.

3. SCOPE

These guidelines apply to all contractors, licensees, and/or permit holders undertaking upstream petroleum operations in Kenya, both onshore and offshore.

4. DISASTER PREPAREDNESS AND EMERGENCY RESPONSE MANAGEMENT

4.1 OVERVIEW

Kenya has been developing a robust regulatory framework to govern its emerging petroleum industry. This framework includes health, safety, and environmental management regulations that encompass disaster preparedness and emergency response requirements.

Disaster preparedness entails being ready to respond to an emergency and having the capabilities to manage the outcome or consequences of the incident. It involves identifying potential hazards, assessing risks, and developing plans and procedures to prevent and respond to incidents.

The Petroleum Act (Cap. 308) Section 69(4) denotes that contractors will maintain regular communication with the disaster preparedness, prevention and management unit under the Ministry to ensure adequate resource appraisal and information sharing on emergency preparedness. EPRA will develop regulations requiring industry players to develop and maintain disaster preparedness and emergency response plans. EPRA shall conduct inspections and audits to ensure companies have adequate plans in place as per the requirements of the regulations and have the capacity to respond to emergencies.

Upstream petroleum operators must develop Emergency Response Plans (ERPs) that outline the necessary steps to be taken in an emergency, including communication and notification procedures, evacuation plans and medical treatment protocols.

Additionally, other important components of emergency preparedness and response include: -

- Establishment of working relationships with other emergency responders,
- Undertaking public safety awareness, and
- Developing emergency response capabilities.

4.2 GUIDELINES

4.2.1 Contractors and other participants in up-stream petroleum operations shall ensure that they maintain efficient emergency preparedness measures at all times.

4.2.2 Contractors shall take adequate measures to prevent or reduce harmful effects.

4.2.3 Contractors shall include measures to ensure the impacted environment in the event of a disaster is restored to its original condition prior to the disaster.

4.2.4 Contractors are liable for ensuring they are ready and fit to respond to any incident level rapidly and suitably. Emergency readiness and reaction incorporate the level of preparation and efficiency in response during a crisis. These include:

- Identifying hazards and risks associated with any work performed during up-stream petroleum operations.
- Analysing consequences of likely hazards and as far as practicable, preventing the exposure of the same to workers,
- A contractor is required to prepare a disaster preparedness and emergency response plan that covers hazard identification, risk assessment, prevention measures, emergency response procedures, response resource allocation and drill training.

4.2.5 Preparing and maintaining emergency response measures and response procedures,

4.2.6 Ensure that the emergency response plans allocate sufficient resources and equipment for response personnel during an emergency.

4.2.7 The Contractor shall organize and conduct Upstream Petroleum Disaster Preparedness and Emergency Response drills in accordance with the relevant laws.

4.2.8 Designating response personnel and ensuring they are suitably equipped and can conduct their duties through training, drills and exercises.

4.3 HAZARD IDENTIFICATION AND CONSEQUENCES ANALYSIS

Identifying hazards that could activate emergency response procedures and analysing their consequences is necessary for establishing appropriate emergency preparedness and response strategies and procedures. Several techniques for identifying and assessing hazards exist, one of which is the HAZOP study.

4.3.1 Hazard and Operability Study (HAZOP)

The Contractor shall be required to undertake a HAZOP study prior to the commencement of operations and while developing an emergency response plan. The study is important for ensuring safety, efficiency, and environmental protection.

HAZOP studies will clearly:

- Identify any perceived changes from the intended operations and the cause and consequences of those changes.
- Identify and evaluate potential hazards and risks associated with process facilities.
- Identify any operations and maintenance issues.
- Determine likely hazards and determine the potential consequences if such hazards occur.
- Determine safeguards or risk reduction measures inherent in project design and their adequacy and;
- Recommend additional safeguards or risk reduction measures as necessary.

4.4 SAFETY ZONE

4.4.1 A Contractor shall maintain a safety zone surrounding every Facility carrying out up-stream petroleum operations unless otherwise determined by the Cabinet Secretary in charge of Petroleum. EPRA will provide technical advice to the cabinet secretary on such decisions.

4.4.2 The Safety Zone will be a geographic area around facilities, including wells and pipelines, where planning is done to implement specific preparedness actions to reduce or minimise the impact on public health and safety in an emergency.

4.4.3 The Cabinet Secretary shall determine the extent of Safety Zones. Where a Safety Zone extends across a state boundary, the Cabinet Secretary shall consult Parliament.

4.4.4 In the event of an accident or emergency, the Cabinet Secretary in charge may direct a contractor to establish new or extend the existing Safety Zones.

4.4.5 The Contractor will suspend upstream petroleum operations to the extent and length of time prudently necessary in the event of an accident or emergency.

4.4.6 The Cabinet Secretary may also direct the Contractor to suspend operations to the extent necessary or continue with conditions where special conditions exist.

5. STAKEHOLDER NOTIFICATION AND CONSULTATION

A disaster preparedness, prevention and management unit formed under the Ministry and EPRA will, in liaison with the contractor, undertake public awareness and sensitization for local communities living in areas where upstream petroleum operations are ongoing.

A contractor must consult with relevant national government and county authorities as well as the neighbouring communities when developing emergency preparedness measures. In particular, the contractor must ensure notification and consultation with fenceline communities and relevant county government departments.

The contractor will communicate any changes to the ERP necessitated by such consultations to EPRA and the disaster preparedness, prevention and management unit.

6. EMERGENCY RESPONSE PLAN MANAGEMENT

The Emergency Response Plan management aims to ensure that plans are consistently and adequately updated to keep them fit for their purpose. It also ensures that all relevant stake-holders are updated on any changes made to the plan.

The Contractor must regularly review their ERPs to keep them updated and demonstrate their efficacy.

Regular stakeholder awareness of the ERP should be undertaken at least annually. Information packages should be provided to stakeholders containing a minimum of the following.

a. Key emergency response information

b. A review of public protection measures

c. Answers to any public/community questions and concerns.

6.1 EMERGENCY RESPONSE PLAN CONTENTS

An ERP shall, at minimum, consist of the following elements:

6.1.1 Types of emergencies, anticipated consequences and planned responses. The ERP will also discuss the procedures put in place to actuate responses as well as availed resources for required actions.

6.1.2 Hazard monitoring procedures,

6.1.3 Mapped evacuation plans and procedures from the facility.

6.1.4 Communications plan

6.1.5 Contact lists of all relevant persons and personnel.

6.1.6 Any mutual aid arrangements in place

6.1.7 Contractor's emergency response personnel and their responsibilities

6.1.8 Incident Management Procedures

6.1.9 Equipment list

6.1.10 ERP distribution list

7. MUTUAL ARRANGEMENTS

The Contractor will state any mutual aid arrangements with third parties. Such agreements should be included in the submitted ERP. Where duty holders have more than one operation or operations run by a third party, each contractor's ERP of those operations must include a bridging summary statement that:

- Sets out communication protocols between the duty holders in the event of an emergency,
- Describes the operations' shared emergency response procedures, responsibilities, and support , and;
- Lists out all the ERPs of the related operations.

A bridging document will also be applicable where operations are temporarily transferred from one entity to another until the latter can integrate the transferred assets into its ERP.

8. EMERGENCY RESPONSE TRAINING

Response personnel must undergo training and regular refresher training to ensure competency in implementing set-out emergency response procedures. Contractors must undertake emergency training exercises at least once a year focusing on communications and at least one major exercise every three (3) years.

Operators will liaise with the established disaster preparedness, prevention and management unit and must communicate and coordinate intended major exercises at least thirty (30) days before the activity date.

A contractor shall place facilities at the disposal of relevant authorities for emergency and security drills.

EFFECTIVE DATE

The effective date of the guidelines shall be :

30th June 2025

UPSTREAM PETROLEUM DISASTER PREPAREDNESS & EMERGENCY RESPONSE GUIDELINES

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