RWANDA UTILITIES REGULATORY AUTHORITY
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REGULATION Nº07/R/GP-EWS/RURA/2021 OF 25/02/2021 MODIFYING AND COMPLEMENTING THE REGULATION N° 04/R/GP-EWS/RURA/2019 OF 15/11/2019 GOVERNING ABOVEGROUND PETROLEUM STORAGE FACILITIES AND IMPORTATION OF FUEL IN RWANDA

The Regulatory Board;

Pursuant to Law n° 09/2013 of 01/03/2013 establishing Rwanda Utilities Regulatory Authority (RURA) and determining its mission, powers, organization and functioning especially in Articles 2, 4 and 20;

Having reviewed the Regulation N° 04/R/GP-EWS/RURA/2019 of 15/11/2019 governing aboveground petroleum storage facilities and importation of fuel in Rwanda, especially section I.1 of its annex;

Upon due consideration and deliberation in its Session of 25th February 2021;

HEREBY issues the following regulation:

Article one: Purpose

The purpose of this regulation is to modify and complement the Annex to the Regulation N°04/R/GP-EWS/RURA/2019 of 15/11/2019 governing aboveground petroleum storage facilities and importation of fuel in Rwanda.

Article 2: Location, Design and installation of fuel depot

The section I.1 of the Annex on technical requirements of the design, installation, upgrade and operation of fuel depots in Rwanda is modified and complemented as follows:

I.1 Location of fuel depot

Storage tanks of fuel depot must be located in an isolated area with a buffer zone from other activities or facilities not related to petroleum activities and located outside the depot premises.

After providing necessary safety precaution, all the existing depots and new depots must provide a minimum buffer zone distance of 200m. This buffer zone is comprised of the following:

(a) 50 m secondary buffer zone which is the distance from tank farm to the property boundary; and
(b) 150 m primary buffer zone which is the distance that lies between the property boundary of the fuel depot with the property boundary of the adjacent properties.

Other activities and facilities in the buffer zones are subject to the Regulatory Authority approval.

Any plot planned for installation of a fuel depot must comply with the requirements of the master plan of that particular area, the environment legislation, Rwanda Building Code, National standards and any other relevant law in force.

The modified and complemented annex is attached to this regulation.

Article 3: Repealing provision

The Section I.1 of the annex to the Regulation N° 04/R/GP-EWS/RURA/2019 of 15/11/2019 governing aboveground petroleum storage facilities and importation of fuel in Rwanda is hereby repealed.

Article 4: Commencement

This Regulation shall come into force on the date of signature by the Chairperson of the Regulatory Board.

Kigali, on 25/02/2021

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Dr. Ignace GATARE
CHAIRPERSON OF THE REGULATORY BOARD

ANNEX: TECHNICAL REQUIREMENTS ON THE DESIGN, INSTALLATION, UPGRADE AND OPERATION OF FUEL DEPOTS IN RWANDA

I LOCATION, DESIGN AND INSTALLATION OF FUEL DEPOT

I.1 Location of fuel depot

Storage tanks of fuel depot must be located in an isolated area with a buffer zone from other activities or facilities not related to petroleum activities and located outside the depot premises.

After providing necessary safety precaution, all the existing depots and new depots must provide a minimum buffer zone distance of 200m. This buffer zone is comprised of the following:

(c) 50 m secondary buffer zone which is the distance from tank farm to the property boundary; and
(d) 150 m primary buffer zone which is the distance that lies between the property boundary of the fuel depot with the property boundary of the adjacent properties.

Other activities and facilities in the buffer zones are subject to the Regulatory Authority approval.

Any plot planned for installation of a fuel depot must comply with the requirements of the master plan of that particular area, the environment legislation, Rwanda Building Code, National standards and any other relevant law into force.

I.2 Facilities of fuel depot

The layout of a fuel depot must consider all the requirements stipulated in RS 141-2 and have at least the following facilities:

(a) Total tanks capacity of the fuel depot not less than 20,000 m^3;
(b) parking yard;
(c) firefighting system;
(d) drainage system;
(e) offices and laboratory;
(f) Slope tank with a capacity ranging between 0.3% to 1% of the total commercial storage tanks capacity;
(g) Sludge tank for storing waste oils;
(h) loading and unloading bays;
(i) fence;
(j) entrance and exit.

I.3 Design and installation of Storage tanks

Design plans must be approved by a professional engineer or entity who certifies that such plans comply with relevant standards.

Any storage tank must:

1. be designed in accordance with approved standards such as RS 141-2, API Std 620, API Std 650, and RS OIML R71;
2. be vertical and consist of not more than one compartment;
3. be equipped with a normal and an emergency vent which comply with the requirements of international and national standards, such as API STD 2000, RS 141-2;
4. be labelled with the product name and the tank number and in accordance with RS OIML R71.
5. The authorized units of measurement shall be those of the International System of Units (SI).
6. The data plate shall be made of a metal which remains practically unchanged under normal conditions of use. The plate shall be fixed on an integral part of the tank, so located that it is readily visible and easily legible, not subject to deterioration. The data plate shall include the following information but not limited to:
    - i Date on which the tank was built;
    - ii Builder;
    - iii Nominal capacity;
    - iv Maximum fill height;
    - v Reference height.
7. The shape, material, reinforcement, construction and assembly of the tank shall be in a way that the tank is resistant to the atmosphere and the effects of the contained petroleum product. Under normal condition of use, tank should not suffer any deformation.

II.4 Safety distances between storage tanks and adjacent facilities within fuel depot compound

Vertical tanks must be installed such that the minimum shell to shell spacing between vertical tanks must be:

i. One-sixth of the sum of adjacent tank diameters but not less than one (1) meter for tanks of diameter not exceeding forty-five (45) meters;
ii. One-quarter of the sum of adjacent tank diameters for tanks of diameter exceeding forty-five (45) meters.

The minimum distance between fuel tanks to neighboring facilities including roads and buildings are set out in the table below and must comply with the distances set out in RS 141-2 depending on operating pressure of the tank.

Table 1: Distance between storage tanks vis-a-vis neighboring facilities within the depot

Tank capacity [m^3]	**Minimum distance [m]**
Less than 1	1.5
1.0 – 2.2	1.5
2.201 – 45.0	1.5
45.001 – 82.0	1.5
82.001 – 200.0	3.0
200.001 – 378.0	4.5
378.001 – 1.892.5	7.6
1,892.501 – 3,785.0	11.0
3,785.001 – 7,570.0	13.7
7,570.001 – 11,355.0	17.0
11,355.001 or more	18.0

The spacing of the filling sheds and pump slabs must be determined by the RS 141-2 standard.

I.5 Safety distances between storage tanks and depot boundaries

The location of fuel tanks vis a vis depot boundary must comply with the safety distance as provided in the table below and in accordance with RS 141-2.

Table 2: Distance between storage tanks vis-a-vis fuel depot boundaries

Tank capacity [m^3]	**Minimum distance (m)**
Less than 1	1.5
1.0 – 2.2	3.0
2.201 – 45.0	4.5
45.001 – 82.0	6.0
82.001 – 200.0	9.0
200.001 – 378.0	15.0
378.001 – 1.892.5	25.0
1,892.501 – 3,785.0	30.5
3,785.001 – 7,570.0	41.0
7,570.001 – 11,355.0	50.0
11,355.001 or more	53.0

I.6 Tank farm and bunding

Tank farm must be surrounded by a bund wall that complies with RS 141-2.

The volumetric capacity of the bunded area must not be less than the greatest amount of product that can be released from the largest tank in the bunded area.

Tanks must be sited in a way that each tank is adjacent to an accessible firefighting equipment.

Draining must be controlled to prevent petroleum products entering natural watercourses, public sewers or public drains by means of interceptors.

I.7 Loading and unloading facilities

To ensure the safety at fuel depot, loading and unloading facilities must:

1. have the canopy or roof that does not limit the dissipation of heat or dispersion of flammable vapors and also does not restrict access and control of fire-fighting system;
2. be well arranged to ensure that trucks enter from one side and leave from the other side without any need for reversing or repositioning;
3. be provided with loading arms and calibrated measuring system installed and maintain according to RS OIML R 117;
4. be fully paved, curbed, drained and connected with oil/water drains system;
5. be provided with electrically grounding to protect against static electricity hazards.

I.8 Parking yard for road tankers and Traffic arrangement

Any parking yard for road tankers and traffic arrangement must fulfill the following:

1. be well designed to overcome over-parking, site congestion resulting in dangerous maneuvers causing blocking of pedestrian routes, a large spill or fire incident which can also endanger the tank farm, buildings or other facilities;

2. possess a separate parking area for private cars;

3. All roads, exits and entrances of trucks must be unobstructed and favor the access to firefighting equipment; and

4. On-site roads must not be used for parking.

I.9 Pipe network

All pipelines of fuel depot must comply with the requirements as provided for in RS 141-2.

The outer surfaces of aboveground pipelines must be protected by a suitable coating. All underground pipelines must be protected with suitable corrosion resistant materials. A cathodic protection system must follow the electrical safety requirements of RS 565 standard;

All pipes, valves and pipe fittings must be designed and built in accordance with applicable national or international standards and must have a safety factor that is adequate for the conditions of service.

I.10 Firefighting system

Water supply system must be at sufficient rate and pressure to supply the required volume of water at fuel depot.

Sufficient foam compound must be stocked to cater for the largest, extinguishable fire at least for one (1) hour.

Hydrants and fire-fighting equipment must be strategically located so that they can be approached from different directions, and distinctly marked that they can be easily seen.

I.11 Buildings at fuel depot

Administrative buildings shall be located in a safe area, preferably near the main gates with access from the roadway so that visitors to the offices do not have to enter the working area of the depot.

All buildings must comply with applicable construction legislation.

Fuel depot must have a laboratory to analyze the quality of fuel.

I.12 Electrical equipment and installations

Electrical installations must comply with RS 141-3, RS 116-1 and relevant national standards.

Electric motors that are used to drive pumps must be rated for continuous operation at the maximum power output required in service.

Electric motors and associated equipment located within a hazardous area must be installed in accordance with the requirements of RS 141-3 and RS 116-1; and

A generator for power backup must be provided at the fuel depot.

II OPERATION OF FUEL DEPOT

II.1 Testing and commissioning of a Fuel Depot

Prior to operate a fuel depot, the operator must request the Regulatory Authority to witness all testing and commissioning activities to ensure that all fuel depot facilities comply with applicable standards and are ready for operation.

All tanks and measuring instruments specifically thermometers, pressure gauges and density meter must be calibrated/ verified and pressure test on pipeline shall be performed. Storage tank instruments such as level indicators, level transmitters, alarm systems, pressure relief systems, valve actuation systems or pump cut-off systems must also be tested.

Prior to the depot becoming operational, all valves, fill pipes, vent pipes and monitoring wells must be well identifiable.
Safety signs and notices on the fill points, tanks, pipework and dispensing equipment must be clearly marked.

On completion of all tests, the entire storage tank must be free from leaks to the satisfaction of the certified inspector in accordance with applicable national or international standards.

II.2 Loading and Unloading operations

The loading and unloading operations must observe the protocol/policy hereunder:

1. Only authorized personnel are allowed in the loading area and no one is permitted in the cab of a truck while loading;
2. The depot operator must ensure that the quality of fuel delivered to and from the fuel storage tanks complies with national standard;
3. In the case of top loading the road tankers, the loading arms should reach the end compartments of a vehicle tank in such a manner that the down pipe can penetrate vertically to the bottom of the compartment;
4. For bottom loading, deflectors should be fitted in the vehicle tank at the point of entry of the product into the compartment in order to minimize the amount of vapor formation and reduce product losses;
5. Grounding/bonding devices must be connected before loading and disconnected when finished loading;
6. Before fuel is unloaded from a road tanker into a storage tank, the operator should ensure there is enough ullage space in the tank to take the quantity being delivered. If there is insufficient ullage space, the operator should not authorize the delivery of a product.

II.3 Records keeping and reporting system

The depot operator must maintain all records related to depot' logistics, laboratory tests results and trainings of personnel, and they must be provided to the Regulatory Authority upon request.

All major incidents and oil spills occurred at depot' premises and corrective measures taken must be notified to the Regulatory Authority within twenty-four (24) hours.

II.4. Measurements at a fuel depot

a) The units of measurement shall be in International Systems of units (SI).
b) The volume/mass shall be recorded at meter condition; it is the responsibility of the operator to show the meter readings to the client.
c) Only the software method shall be used during density and volume conversion. The software shall be based on national or international standards and validated by accredited entity.
d) Temperature shall be indicated in degree Celsius and the fuel measuring system shall be fitted with calibrated thermometer. It shall be placed near the flow meter to measure the temperature at meter conditions.
e) The scale interval of the thermometer shall not exceed $0.5^{o}C$
f) The indicated temperature shall be used to convert back to the density and volume of loaded or offloaded product at $20^{o}C$. It is the responsibility of the operator to show the thermometer readings to the client.

II.5 Safety protection

All operations at the fuel depot must comply with specific requirements with regard to safety protection as provided hereunder:

a) Ensure that a switch that is capable of cutting off the power supply to all fuel dispensing lines and equipment is in function;

b) Firefighting equipment and necessary chemicals must be in place and ready for use;
c) All source of ignition such as electronic devices and smoking must be avoided at the fuel storage and delivery points;

d) Personal protective equipment must be provided to all personnel who are involved in the depot operations;

e) The operations in the fuel depot must be monitored via CCTV Cameras.

II.6. Inspection check list for road tankers at fuel depot

Each road tanker entering a fuel depot shall pass an inspection on the items included but not limited to the check list below before its fuel is offloaded in the fuel tanks.

Table 3: inspection check-list for road tankers at fuel depot

No	Items for local road tanker
1	Competent authority transportation Authorization or License
2	Vehicle issued with valid fire extinguisher
3	Vehicle issued with calibration certificate
4	Vehicle issued with pressure test certificate
5	Appropriate hazchem placards fitted
6	Valid fire extinguishers
7	Electrical wire conditions and all light in good order and operating
8	Batteries covered
9	Check for leaks (water, oil and products)
10	Driver to wear personal protective equipment (PPE)
11	Worn out tires
12	Mobiles phones to be switch off
13	Fuel Leakages
14	Compartments carrying capacity indicated
15	Overfill system operational
16	Loading earth bonding point fitted
17	Delivery hoses in good condition
18	Meters calibrated and sealed

II.7 Environment protection

All operations at the fuel depot must comply with specific requirements with regard to environment protection as provided hereunder:

All used oil and waste oil must be recovered in the waste oil disposal facility in accordance with the environmental legislation and other related regulations; and

a) In case of adulterated product, waste oil or tank washings, a system arrangement shall be provided to transfer the adulterated product into a slop tank or combination of slop tanks.

b) Have a procedure in place to deal with any spillages that occur during delivery of petroleum products.

II.8 Maintenance and Calibration

The fuel depot management must perform regular maintenance of the facility including cleaning of storage tanks by complying with the requirements set out in RS 141-2 and RS OIML R71.

During cleaning services, fuel storage tanks must meet normal procedure according to relevant standards and the employee in charge must wear appropriate protective clothing.

Calibration and maintenance of storage tank shall be performed at least once every 10 years and cleaning once every 3 years for Jet A-1 and 10 years for the remaining products.

II.9 Testing Laboratory

Each fuel depot must have a laboratory capable of measuring at least parameters such as density, temperature, water content, flash point, and also capable of conducting distillation and conductivity tests.

Each laboratory must be operated by qualified and trained technician on properties of petroleum products and related testing equipment.

The depot manager must ensure that petroleum products stored meet the requirements of Rwandan standards.

Sampling must be performed at the levels of unloading and loading points as well as storage tanks.

II.10 Training of personnel

The personnel involved in depot operations must have appropriate trainings from a competent trainer or entity related to:

i. Firefighting equipment;
ii. Loading and unloading of petroleum products;
iii. Health, Safety and Environment guidelines; and
iv. Emergency response Plan designed to minimize hazards to human health and environment.

II.11. Decommissioning of fuel storage tanks

The Depot operator must notify the Regulatory Authority immediately upon taking storage tank out of service, unless the tank is out of service because of scheduled testing or maintenance.

Any storage tank that is temporarily out of service, for a period exceeding ninety (90) days, must not be placed back in service until the Depot operator notifies the Regulatory Authority in writing that the tank conforms to applicable standards.

Any storage tank that is permanently out of Service must be rendered free of petroleum vapors and all connecting lines must be disconnected and securely capped. The soil surrounding the tank must be assessed to determine whether there is no soil contamination.

Kigali, on 25/02/2021

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Dr. Ignace GATARE
Chairperson of the Regulatory Board