

# GUIDELINES FOR CONSTRUCTION OF PETROL STATIONS

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## 1. MINIMUM STANDARD REQUIREMENTS OF A PETROL FILLING STATION

A petrol filling station should have **at least**:

- One underground storage tank for each petroleum product sold at the station with a minimum capacity of 5 m<sup>3</sup>
- One digital dispensing pump (two-way) for each petroleum product sold at the station. All dispensing pumps should be covered.
- One service bay
- One wash bay
- One generation
- Offices
- One wastewater drainage system
- Fire fighting equipments

## 2. UNDERGROUND STORAGE TANKS (UST)

It is required that petroleum storage tanks and filling stations be licensed and regulated to conform with minimum standards that meet basic safety, health, operational and environmental protection.

## 3. CONSTRUCTION

- UST shall as a minimum requirement be single walled of rolled carbon steel plates welded together.
- All storage tanks at retail dispensing sites shall be placed underground.
- The tank shall have a protective coating. As a minimum requirement, the tank shall be painted with a primer, and then coated with epoxy, coal tar epoxy or similar bituminous coating. Where the water table is high, additional protective coating measures must be undertaken.
- An environmental impact assessment shall be done before construction of UST, filling stations and storage tanks is permitted.
- A site soil analysis should be done to determine the type of soil, density, resistively bearing pressure and depth of water table.

- Where aggressive soils have been encountered and where the water table is high, cathodic protection should be used for single steel walled tanks. Otherwise, secondary contained tanks, i.e., a double-walled steel tank, double walled fiberglass or jacketed steel tanks (with high density polythene or fiberglass outer wall) should be used.
- Suitable sand shall be used for both bedding and backfilling of steel tanks.
- Installed tank and pipe work shall be hydrostatically tested.
- UST to be located so that delivery trucks do not unduly block forecourt traffic.
- UST location to allow trucks to reach all fill pipes using normal hose length.
- UST location to provide a forecourt gradient that allows complete drainage of delivery truck compartments.
- UST location to allow minimum maneuvering of truck before and after delivery including ability to exit in forward direction.
- UST shall be installed to avoid traffic load and should be sufficiently protected from traffic by using barriers.
- Placement of UST under canopy should be avoided.

#### **4. ENVIRONMENTAL PROTECTION MEASURES**

- Environmental impact assessment shall be done before licensing and construction of any GFT.
- Periodic environmental audits shall be performed regularly on already existing tanks.
- Employees and public health protection measures must be assured. These must include insurance coverage for the staff and third party.
- Product testing/update laboratories is a prerequisite for establishment and operation of GFT.
- Approved drawings of a bulk storage depot/tanks shall indicate at minimum but not limited to the following:
  - Nature and quantities of the products to be stored
  - Distance between tanks
  - Distance between storage and adjoining property
  - Lighting arrangements
  - Certification by a registered engineer
  - Floating/screen roof shall be installed on the GFT and regularly checked to safeguard against unnecessary evaporation losses

## **5. FIRE FIGHTING PROTECTION**

- In addition to measures mentioned UST, fire water storage and supply shall be sufficient to give at least 6 hours of cooling water cover in case of fire.
- Fire foam system shall provide protection to fire vulnerable areas (tanks loading rack, etc.).
- Water system shall be installed around GFT to ensure safeness in case of fire outbreak.

## **6. CALIBRATION AND MAINTENANCE OF EQUIPMENTS**

- GFT must be calibrated in accordance with recommended standards.
- All calibration equipments must be proved and certified by competent firms/individuals within a recognized period of time, for instance 5 years for GFT and meters every 6 months.

## **7. WASTEWATER MANAGEMENT**

- The forecourt should be designed with drain channels to capture all wastewater from the forecourt, wash bays and service bays.
- The wash water shall be directed to a suitably designed three chamber oil interceptor to separate oil before the effluent is permitted to flow in public storm water system.
- Effluent going into the public waterways should be monitored regularly and records maintained to ensure that it does not exceed the required limits.

## **8. VAPOUR VENTS**

- UST should be fitted with appropriately sized vapour vents.
- Vents should terminate in open air in such a position that flammable vapours will not accumulate or travel to unsafe place.

## **9. FIRE FIGHTING**

- A fire master certificate should be issued for any new retail dispensing or storage facility.
- An appropriate inventory of fire extinguishers, at least two of 9 kgs of chemical powder, should be available at the site and the extinguishers shall be tested every six months.
- No smoking and no cell phone usage signs shall be significantly displayed in the forecourt.

## **10. FILL PIPES**

- All direct fill pipes should be of the same diameter as the outlet of the fuel delivery truck.
- Each tank should have its own fill pipe and the size of the fill pipe should correspond to the size of delivery truck outlets.
- At the fill point the pipe shall terminate with a tight fill adapter and a lockable fill cap.
- A spill containment device such as a stump should be fitted at the fill point to prevent spill soaking directly into backfill and contaminate the ground.
- Fill point sea caps should remain securely locked at all times to prevent unauthorized tampering with the products.
- Periodic environmental audits shall be performed as directed by Rwanda Environment Management Authority (REMA).

## **11. LICENSING PROCEDURES**

- All GFT, UST and filling stations must be licensed to operate. Any modification or alteration on the existing GFT, UST and filling stations must be licensed.
- Licensing procedure. The following are licensing procedures:
  - An application must be received and registered by the relevant authorities.
  - Plans and drawings will be checked for site location, site size, structures and traffic flow.
  - Applications will then be reviewed and approved by REMA for environmental compliance.
  - Then relevant organization will give the final approval and these are:
    - Local/Municipal Authority
    - REMA
    - Ministry with Energy Portfolio
    - MINICOM and RURA
- To keep records in a standard form so that at any time data can be obtained.
- To have “permis d’exploitation” and a trade license.

## 12. PLANNING CRITERIA FOR LOCATION OF PETROL FILLING STATIONS

- Stations should be located within a growth center or an urban area except in circumstances where it can be shown through appropriate studies that the need exists otherwise.
- Stations should be located at a minimum of 100 m from any public institution such as schools, churches, public libraries, auditoriums, hospitals, public playgrounds, etc. However, other small and medium commercial activities may be located within the specified limits.
- Distance between one petrol station and another: 150 m
- Area of land to be developed should be sufficient to allow maneuvering of vehicles within its cartilage but should not be less than 1100 m<sup>2</sup> with a minimum frontage of 9 m on the primary street.
- Filling Stations will not be allowed in any area where the traffic situation is such that it will cause obstructions in entering or leaving a station or on tight curves where visibility is not adequate.
- Vehicular access/egress/crossover should be reasonably safe with adequate approach distances especially where main roads and intersections are involved.
- Wherever possible, stations should be erected on level rather than sloping site to prevent rolling or discarded materials such as cans, drums, etc.
- When sited in shopping centers, stations should be located in an isolated area of the development as long as planning criteria are met, example, setback.
- Environmental impact on streams, lakes, ponds, aquifer, etc., will be taken into consideration. An Environmental Impact Assessment must be required from the applicant.
- Buildings are to be located a minimum of 12 m from road property boundaries to provide adequate area for maneuvering of vehicles in the service area.
- Canopies and supports over pumps and service equipment when located less than 6 m from interior residential lot lines or building or structure should be constructed of noncombustible material.
- Petrol pumps shall be located a minimum 30 m from any residential building.
- No fuel pumps or other mechanical equipment shall be installed so as to permit servicing of motor vehicles standing in a public street or highway.
- All service areas should be paved to avoid dust nuisance.

- Exterior design of the building should be compatible with adjacent development and should be such that it is not detrimental to property values in the area.
- Urban Stretches:
  - Intersection with any category of road (irrespective of carriageway width) 100m.
  - Undivided carriageway 300m
  - Divided carriageway 100m if not on same side of carriage way; 300m if on same side of carriage way
  - Minimum plot size of fuel station shall be..... 35m x 35m
  - Maximum building coverage..... 60%
  - Minimum landscaping.....10%
- Where the site adjoins the side or rear boundary of a residential lot, a solid wall 3 m in height should be constructed and maintained along that lot boundary.
- A raised curb of at least 12 cm in height should be erected along street property lines except for driveway openings so as to prevent operation of vehicles on sidewalks, and to define entrance/exit points.
- Signs should be in accordance with the Advertisement Regulations and should be located so as not to reflect the sun into the face of motorists and should be large enough so that they can be seen from a reasonable distance at a reasonable speed.
- The Investor should approach the KCC Infrastructure Department for both the regulations and approval of the location of the signage.
- Stations are to be equipped with fire-fighting and fire protection equipment installed in accordance with the Rwanda National Police (RNP), REMA and the Ministry in charge of disaster management.
- Each tank shall be vented to the atmosphere outside of buildings by means of an independent vent pipe which should not be less than 3.6 m in height or 0.6 m above the top of the nearest adjacent building.
- All volatile flammable liquid storage tanks shall be installed below ground in compliance with the requirements of the Ministry of Trade and Industry.

- Integral containers of adequate design and capacity should be provided for solid waste, such as discarded cans, bottles, etc.
- Proper facilities for storage and disposal of used and waste oil and gas must be provided.
- Waste water from the washing of motor vehicles et cetera and sewage disposal should be to the satisfaction of the REMA.
- Notice of intent to construct and operate a Petrol Filling Station should be posted on the site to enable adjacent owners within a specified radius to object if they so desire.
- Fuel should be stored in double-walled containers/tanks to minimize leakage and prevent contamination of ground water.
- A minimum distance of 10 m should be maintained between UST and dispensing pumps.
- UST should be installed at a minimum distance of 10 m from front plot boundaries.
- All vehicles should not be allowed within 2 m from the outer edge of the UST.
- Normally no access to or egress from a filling station shall be closer than 45 m to any road intersection or 75 m from the intersection of two main roads.