

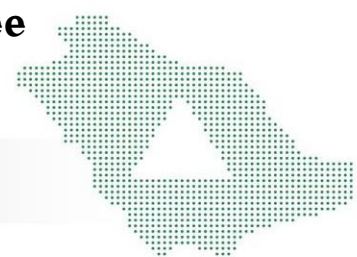


Kingdom of Saudi Arabia
Ministry of Interior
General Directorate of Civil Defense

Regulation of Safety in Petrol Station

Translated by: Faisal Refaee

2024 – 1446



Chapter 1

1st: **Definitions: The terms in this list mean:**

1. **The Law:** Civil Defense Law issued by Royal Decree No. M/10, dated 10/5/1406 H and all other relevant regulations.
2. **Petrol Station and Car Wash Regulation:** A regulation issued by a decision of the Minister of Municipal and Rural Affairs No DF / 4/5270 dated 24/8/1411 H, based on Cabinet Resolution No 104 date 10/5/1406 H and the Royal Decree No 4/B/13027 dated 6/9/1409 H, which includes all conditions related to location, design and license of petrol station and amendments made to this regulation.
3. **Safety officer:** according to Regulation of the safety specialist issued by the Minister of Interior, the chairman of the Civil Defense Council is the person appointed or assigned to be responsible for all safety and security matters. The licensee or the station tenant is responsible for safety under all conditions.
4. **Civil Defense Representative:** the authorized person or persons by the General Directorate of Civil Defense, or one of its centers to carry out inspection, forfeiture, and investigation of violations as per the rules and procedures specified in the relevant Regulation, to ensure the safety of the building, and safety of firefighting equipment, and tools.
5. **Specifications:**
 - a) Saudi Standards: issued by the Saudi Standards, Metrology, and Quality Organization, SASO.
 - b) International Standards: international specifications approved by SASO, official documents to be submitted to prove all safety rules and requirements are available in the equipment or tool and approved by SASO.



Chapter 2

General terms and conditions

2

This regulation relates to safety and firefighting conditions and requirements required by Civil Defense at petrol station and car wash.

3

The Regulation of petrol station and car wash issued by the Ministry of Municipal and Rural Affairs is the regulation that must be applied when issuing a license for these facilities. The applicant must adhere to the conditions and requirements contained in this regulation.

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According to article (20) of the Civil Defense Law, the licensee shall not be permitted to establish any new petrol station, renewing, renovating or expanding the existent station until he/she submits a technical study prepared by one of the technical offices specialized in safety and approved by the General Directorate of Civil Defense. This study explains the extent of compliance with the rules mentioned in this regulation. The relevant authorities in the municipalities shall take into account that granting and renewing licenses shall be in accordance with the rules and requirements mentioned in this regulation.

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The office that prepared the study stated in article (4) have to answer to the Civil Defense and other relevant authorities about the accuracy of the study and monitoring its implementation. The office will undertake to provide a final certificate confirming the facility compliance with the terms and conditions included in this Regulation. The office shall be considered responsible in solidarity with the facility owner for any default or neglect in this regard.

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Safety violations of this regulation shall be controlled, investigated and imposed as per Civil Defense Law and the regulations or instructions issued by the Civil Defense governing these matters.

A safety officer for the facility shall be appointed as stated in paragraph (3) of article (1) and performs the following tasks and obligations:

- a) The safety officer undertakes to conduct monthly inspections and tests every (3) months for the facility and its electrical and mechanical installations, plus the safety means and fire & alarm equipment, and to repair any malfunction or defect immediately after discovered. If the safety officer is not the tenant or licensee, he/she is not relieved of responsibility unless it is proved that performing aforementioned tasks was out of his jurisdiction and that he/ she reported the situation to the licensee or tenant who is responsible in all circumstances.
- b) The safety officer undertakes, in the event of any accident involving a high degree of risk, to close the petrol station or any of its areas that pose a danger if this is within his/ her authority or to inform the facility owner to immediately close the station until the problem is solved. Failure to do so will be considered as sever negligence that incurs criminal liability, in addition to the penalties stipulated by law.
- c) The safety officer shall assign a register called (safety and firefighting record) according to the application form prepared by Civil Defense. All pages are stamped with the seal of the relevant Civil Defense Center. All the monthly inspections and periodic tests of fire, monitoring, alarm methods, the dates, results, repair works, and other data are recorded in this register. Part of this record is dedicated to the building inspection and maintenance works and the building's electrical installations. The record is kept with the station management, therefore it is always available to the Civil Defense representative to review and impose the stipulated penalties.
- d) Safety officer may inform the relevant Civil Defense center to choose a suitable date to attend the tests. Civil Defense representative will sign the safety record as a proof of attending.

- e) The safety officer at the petrol station must be qualified and possess the required training for this job. His appointment must be approved by the General Directorate of Civil Defense after verifying his qualification and training documents.
- f) The Safety officer at the petrol station is obligated to follow up the implementation of the requirements contained in this Regulation and to coordinate with the competent Civil Defense center to set up the intervention, evacuation, rescue and firefighting plan in emergencies and identify the procedures that must be taken by workers in the station in case of fire or danger until the arrival of Civil Defense teams.
- g) The safety officer at the petrol station is obligated to evacuate the station, shut down the pumps, and not allow cars to enter while filling the main storage tanks. All entrances and exits must be closed by chains or by any other appropriate means in addition to placing signpost to inform people that the station is closed for filling purpose.
- h) All workers at the petrol station must be trained on the fire & rescue, and ambulance in schools and national training institutes approved by the General Directorate of Civil Defense provided that the training requesting party bears the costs of such.

Chapter 3

“Safety, Prevention and Firefighting Requirements”

8

Locations

1. The municipalities shall be responsible for issuing licenses for petrol stations and other related activities within these facilities in accordance with this regulation, and after meeting the safety and firefighting requirements of Civil Defense. Safety and firefighting layouts are sent to the Civil Defense in the region to review and ensure their implementation.

2. When choosing a site for establishing a petrol station, safety distances and dimensions must be in accordance to this Regulation.
3. The petrol station may consist of two floors except buildings designated for car services, which based on the size of the site and the following:
 - a) The distance between the services and petrol tanks inlets, ventilation pipes and pumps shall not be less than (20m).
 - b) The car service areas must be separated from the fuel supply traffic, and it is not allowed to place them in the front area of the car wash and lubrication, taking into account the relationship of these buildings with station buildings in term of safety requirements and examining the site in general.
 - c) The provision of secure emergency exit.
 - d) The construction must be of reinforced concrete and the thickness of the external walls is not less than (20 cm).
 - e) Doors and windows should be fire resistant (for two hours) and open on the opposite side of the station, away from sources of danger (fuel tank inlets, pumps and ventilation pipes).
 - f) The building shall not be used for any activities that pose a threat on the petrol station. In the event there is a flame source, an automatic shutdown device is used.
 - g) The building shall be equipped with (6 Kg) powder extinguishers (ABC), the numbers should be sufficient based on the opinion of the Civil Defense representative.
 - h) The building or part of it shall not be used for storage of any kinds.
 - i) It is not allowed to use the building or any of its part for any kind of storage whatever it is.

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Fuel tanks and pumps:

The requirements contained in the Regulation must be applied on the fuel tanks and pumps, taking into account the necessary precautions measures to prevent the fuel leakage from tanks and pumps at petrol station as follows:

1. As regard with new facilities, the fuel tank is installed below ground level inside an insulated reinforced concrete chamber with openings around it for easy access and inspection from all sides and to fix any fuel leakage in timely manner.
2. For fuel tanks located underground and surrounded by sand or soft concrete, the owner of petrol station is obligated to use modern electronic means connected with the control room of the station. This is to measure the amount of fuel in the tank and detect any potential leaks.
3. Regular test and maintenance of fuel pipes and connections must be carried out.

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Electrical Requirements:

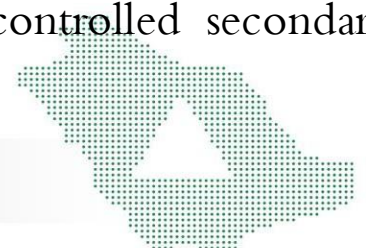
The electricity of the petrol station must be as per these Regulations as follows:

1. All electrical works should be carried out by a specialized technical entity.
2. Regular maintenance of all electrical installations, extensions and devices must be performed by a professional to repair any defect or danger in a timely manner.

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Safety and security requirements and precautions during operation:

1. **Tanker truck unloading: when unloading the fuel form the tank trucks to the petrol station tanks, the following requirements must be applied:**
 - a) Tanker trucks shall have no technical defects, to ensure that there are no leaks. The unloading process is not permitted if the truck is not equipped with a mechanically remote-controlled secondary valve and a thermal safety breaker.



- b) the amount of fuel in the tanker truck and station tank must be measured to ensure that tank can take all amount discharged.
- c) Tanker truck must be within the petrol station boundaries.
- d) The truck must be parked in such a way as to allow rapid driving to exit in an emergency.
- e) The truck must be in the parking brake position and provided with wheels stoppers to prevent from moving.
- f) The unloading process must be handled up by the truck driver and the station operator.
- g) If there is a possibility of splashing of liquid fuel, the unloading process must be stop immediately to inspect the ventilation pipes/tubes.
- h) Static electricity must be released from the truck tanker in a secure method before starting the unloading process. This can be done by attaching the hanging metal chains to the grounding system of the petrol station. Another method to get rid of the static electricity is to use a plastic-coated metal fuel discharge hose, which is designed to be securely attached to the valve of the tank and the inlet of the storage tank of the station in order to prevent any leaks.
- i) Cars are not permitted to drive within five meters from the truck tanker parking area. Warning sings should be placed for this purpose.
- j) Closure of the site to the public during deliveries and until the truck tanker leaves.
- k) The area adjacent to the ventilation pipes must be inspected to detect the possible source of ignition and to control any possible danger.

2. Filling up the car tank:

when filling up the car tank, the following requirements shall be applied:

- a) Before filling the car's tank, the engine must be turned off. Car that has two engines shall not be supplied with fuel until they have been shut down.

- b) Smoking is prohibited in the petrol station.
- c) the discharge nozzle must be inserted well into the car's tank.
- d) Care must be taken not to spill fuel.
- e) The discharge hose must not be bent or pulled while the car tank is being filled.
- f) The driver should not fill the car tank by himself except at the selfservice station.
- g) It must be ensured that the fuel car tank cover is closed after filling.

3. Filling up the motorcycle fuel tank:

When filling up the motorcycles fuel tank, the following requirements should be taken:

- a) Turn off the bike engine.
- b) Do not fill the tank while the driver is sitting on it.
- c) The
- d) 3. The filling must be done on a slow rate and take care to avoid fuel splashing.
- e) 4.The discharge nozzle must suite the bike tank inlet.
- f) It must be ensured that the bike fuel tank cover is closed.
- g) It is preferable to allocate an independent fuel pump to supply motorcycles and to install it in a convenient location at the station.
- h) The customer should not fill the vehicle's tank of any type by himself except at the self-service station.

4. Filling up the portable gas can:

As a general rule fuel is discharged directedly from the pump into the vehicle's tank but not into the portable gas cans unless it is necessary and after gaining the approval of the station's operator, subject to the following precautions:

- a) Glass cans and other breakable cans must not be used.
- b) Gas cans must be marked, tightly closed and not exceeds 20 litres.
- c) The cans of other produces should not be filled with fuel before they are well cleaned.

- d) Always fill the can manually; never use the trigger lock on the nozzle to avoid fuel spilling.
- e) Make sure there is no leak outside the gas can and close it well after filling.

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Fire alarm and suppression system:

a) Fire alarm:

An appropriate fire alarm system shall be installed in the gas station as well as methods of calling fire brigade. The relevant Civil Defense center should be coordinated in this regard.

b) Fire safety precautions:

1. Placing warning signs to ban smoking in the gas station and monitor its implementation.
2. Using fuel for cleaning purpose is prohibited.
3. Splashed fuel must be removed immediately.
4. When filling an RV tank with fuel, extreme precautions must be taken such as turning off stove and disconnecting power to the appliances.
5. The causes of fire and flammable materials must not be present in the gas station as well as cutting, welding and other activities that may generate a spark or electric arc, plus any conditions that may cause selfignition.

c) Fire extinguishing equipment:

1. Fuel station buildings and facilities must be equipped with manual fire extinguishers, as the Civil Defense deems appropriate.
2. A sufficient number of sand filled buckets should be available throughout gas station to be placed in a convenient, easy accessible location. At least two buckets should be placed in each fuel pump area, near the fuel tank and the car service area.
3. A dry chemical powder fire extinguisher (12kg) is placed near fuel tank inlet, and another one should be placed near the power generator.

4. The minimum number of fire extinguisher required to protect and secure fuel pumps are as follows:

Number of fuel pumps	Dry powder fire extinguisher (12 kg)	Foam fire extinguishing (10 gallon)	Foam fire extinguishing (34 gallon)
1-3	3	2	-
4-7	9	2	1
8-11	13	3	2
12-15	17	5	3
16-20	20	7	4

5. Foam fire cabinet with at least one hose and foam unit containing a mixer and (18 gallon) foam tank at (3%) concentration.

Note:

If the number of fuel pumps exceeds (20), add (2) dry powder fire extinguishers (12 KG) to previous table and add (1) foam extinguisher (10 galloon) for each (5) fuel pumps and less.

d) Fire water sources and fire hydrants:

1. Precautions must be taken to secure pressurized fire water from fire hydrants or a water tank with a capacity of not less than thirty thousand gallons installed to supply fire water and equipped with a self-prpared fire pump with a capacity of (500 gallons per minute) with pressure of not less than (7 bounds) per square inch on the fire outlet valve. This pump is located in an isolated room at least 20 meters from the fuel pump area or the unloading area and is provided with ventilation methods.
2. The number of fire hydrants is estimated/determined by Civil Defense and according to the size of the petrol station and the multiplicity of its businesses. Th type and dimeter of fire hydrants are similar to the ones used by Saudi Civil Defense centres. They msut be provide with two fire valves on each sides. The distance between fire hydrants and pumping and uploading area shall not be less than (15 meters) and not more than (30 meters) in all cases.

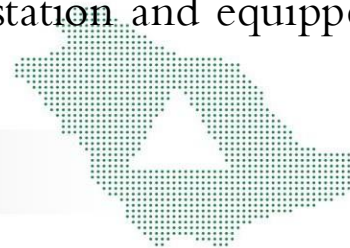
3. The size of fire water tank must be sufficient and appropriate with the size of the petrol station.
4. Fire hoses must be provided and equipped with ejectors, keys, couplings and other necessary equipment to be placed in a cabinet near each fire valve as per the following table:

Type	Number required
Hoses (30 meters) long and diameter 1.5 inch.	(4)
Water Spray nozzle diameter (1.5 inch), equipped with gun	(4)
Wye connection with one inlet (2.5 inch) and 2 outlets (1.5 inch).	(2)
Siamese Connection with 2 inlets (1.5 inch) and 1 outlet (2.5 inch)	(2)
Hose key (2.5 inch)	(2)
Hose key (1.5 inch)	(2)

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Safety of Workers

1. The workers at the fuel station must be trained on the correct way to use the safety and firefighting equipment and coordinate in this regard with the Civil Defense in the city or region.
2. The workers at the fuel station must wear appropriate protective clothing and equipment such as (gloves, safety goggles, ESD shoes).
3. Take off the fuel-contaminated clothing immediately and carefully clean the affected area.
4. Loose and torn clothes are not allowed during work.
5. A first aid kit must be provided at the petrol station and equipped with the necessary medical items.



measures and procedures workers in the petrol station must take in emergency:

1. All activities at the gas station must be stopped immediately (fuel supply, lubrication, and maintenance) and vehicles must be removed from the station and not allowed to access.
2. Immediately notify Civil Defense and other emergency services.
3. Initial fire encounter must be carried out by trained workers until the arrival of firefighters.
4. When Civil Defense arrives, it must be provided with all information about the accident.
5. Workers at the gas station must be made aware of these measures and procedures and trained how to implement them.

Instruction Signs

1. Warning and instruction reflective signs must be made in Arabic and English. They should be placed in prominent locations at the gas station, including the following phrases:
 - Petroleum spirit highly flammable
 - No smoking
 - Switch off engine
 - No entry “ fuel unloading”
2. A tag is installed on each fuel tank showing capacity and type.
3. A sign is placed on the electricity room with the words "Danger – No Entry for Non-Specialists" and a sign on the generator room "The secondary generator room – danger – no entry for non-specialists".
4. The fuel station safety and security plans should be written in Arabic.
5. The emergency switch that disconnects power to the petrol station must be marked.



6. Instruction signs should be placed stating the steps to be taken in an emergency.
7. Signs of emergency contact numbers must be placed in prominent locations.
8. Instruction signs for the operation of electrical works must be installed.
9. Signs indicating services at the petrol station must be placed such as (gas station-lubrication center- carwash- oil change, maintenance, etc.
10. Fuel station entrance and exit signs must be placed.

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Self-Service Station and Hanging Gas Pumps:

All standards, conditions and requirement contained in this regulation shall be applied in this type of station. Monitoring and supervision must be carried out by qualified and trained persons to address any risk that may occur.

