THE PETROLEUM RULES, 1937

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Previously published under the Government of India (Department of Industries & Labour) Notification No. M-826 (6), dated 23-3-1937 :—

In exercise of the powers conferred by secton 4, sub-section (2) of section 5, sub-secton (2) of section 14, sections 21 and 22 and sub-section (1) of section 29 of the Petroleum Act, 1934 (XXX of 1934), read with section 22 of the General Clauses Act, 1897 (X of 1897), the Governor General in Council is pleased to make the following rules which have been Previously published as required by sub-section (2) of section 29 of the first-mentioned Act, namely :—

RULES

CHAPTER I.

PRELIMINARY

1. *Short title and application.*—These rules may be called the Petroleum Rules, 1937.

2. *Supersession and savings.*—(1) All notifications and rules issued, and all appointments made by local Governments under the Petroleum Act, 1899, and all rules made by the Governor General in Council under section 8 of that Act are hereby superseded, but—

(i) all licences or duplicates granted or renewed and all fees imposed or levied shall be deemed to have been repectively granted, renewed, imposed or levied under these rules ; and

(ii) all approval given and all powers conferred by or under any notification or rule so superseded shall, so far as they are consistent with the Act and these rules, be deemed to have been given or conferred by or under these rules.

(2) Anything not in conformity with these rules which was permitted to be done by or under any rule in force immediately before the coming into force of these rules, and which under these rules, may be permitted by the Chief Inspctor to be done, shall be deemed to have been so permitted by the Chief Inspector, unless the Chief Inspector, after such notice of his intention as he considers. reasonable, delcares that it is not so permitted.

Comments by the Chief Inspector of Explosives :—

"So for as they are consistent with the Act and these rules should be noted.

The object of rule 2, and particularly perhaps sub-rule (2), is to regularise the position of premises already in existence when the Petroleum Rules, 1937, came into force. Many of the storage sheds and installations licensed under the Petroleum Act, 1899; do not comply with all the requirements of the new rules in regard to conditions and regulations which have been modified by the new legislation and in regard to variations in safety distances and methods of procedure sanctioned by duly authorised authorities prior to 30th March 1937.

It will be noted, however, that the permission given under sub-rule (2) is not unconditional but depends on two factors which must both be met. In the first place the deviation from the new rules must have been legal under the old petroleum rules, and in the second place such variations must fall within the discretionary powers granted to the Chief Inspector under the Petroleum Rules, 1937. For example, on the one hand, electric installations, fittings and apparatus which do not comply with rule 105 are no longer legal and sanction for their continued use is not possible as the Chief Inspector has no authority to relax the rule. On the other hand, the conditions endorsed on some of the old licence forms called for enclosures or sumps in storage and filling sheds three feet deep, whereas the new licences limit the depth to two feet; under sub-rule (2), three feet deep enclosures built under the old licences may continue to be used unless and until permission to do so is specifically withdrawn, because under rule 117 the Chief Inspector has power to alter the conditions specified in the licence.

3. *Definitions.*—In these rules, uhless there is anything repugnant in the subject or context,—

(*a*) "The Act" means the Petroleum Act, 1934 ;

(*b*) "Chief Inspector" means the Chief Inspector of Explosives in Pakistan ;

(*c*) "Conservator of the Port" includes any person acting under the authority of the officer or body of persons appointed to be Conservator of the Port under section 7 of the Ports Act, 1908 ;

(*d*) "District Authority" means—the District Magistrate ; and includes an "Additional District Magistrate ;

(*e*) "Heavy petroleum" means petroleum which has its flashing-point not below 150 degrees F.;

(f) "Inspector" means an officer authorised by the Central Government under sub-section (1) of section 13 of the Act ;

Notes and References.—The following officers have been authorised in the areas specified by Notification No. M-826 (1), dated the 22nd March 1937 as amended by Notification No. M-826 (4), dated the 15th September 1937 as amended in Pakistan :

	Officers	*Areas*
1.	The Chief Inspector, Inspector and Assistant Inspectors of Explosives.	All provinces and Capital of the Federation including Baluchistan.
2.	All District Magistrates.	Their respective districts.
3.	All Magistrates subordinate to the District Magistrate.	Their respective jurisdictions.
4.	All Police officers of rank not below that of Inspector.	The respective areas over which their authority extends.

(g) "Installation" means any premises within which any place has been specially prepared for the storage of petroleum in bulk, but does not include a well-head tank ;

(h) "Petroleum in bulk" means petroleum contained in a receptacle exceeding two hundred gallons in capacity :

(i) "Protected works" means buildings or places in which persons dwell or assemble or where any combustible material is stored and includes docks, wharves, public roads and streets, public foot-paths and public parks, but do not include any building or place which forms part of an installation. [*vide*, Ministry of Industries Notification No. S.R.O. 3 B(K) /61, dated 15th February, 1961, Published in *Gazette of Pakistan*, dated 3rd March 1961, page 119.]

Comments by the Chief Inspector of Explosives.—An office building or materials store forming part of an installation is not, therefore, a protected work in relation to the other facilities in the installation, but all the safety precautions required on the premises as a whole will, of course, have to be enforced in such buildings unless they are outside the safety distance from storage sheds, tanks, etc. containing petroleum.

(j) "Sampling Officer" means an officer authorised by the Central Govt. under sub-Section (1) of Section 14 of the Act.

Notes and References.—Sampling officers were appointed by Notification No. M-826 (2), dated the 22nd March 1937 [amended by Notifications No. M-826 and 826 (5), dated the 26th August 1937 and 15th September 1937 respectively] as amended in Pakistan:—

	Officers	*Areas*
1.	The Chief Inspector, Inspectors and Assistant Inspectors of Explosives.	All the provinces and the Capital of the Federation including Baluchistan.
2.	All District Magistrates.	Their respective districts.
3.	All Magistrates subordinate to the District Magistrates.	Their respective jurisdictions.
4.	All Police Officers of rank not below that of Inspector.	The respective areas over which their authority extends.
5.	Preventive Officers, Custom House, Karachi.	The Port of Karachi.
6.	Preventive Officers, Custom House, Chittagong.	The Port of Chittagong.

(k) "Storage shed" means a building used for the storage of petroleum otherwise than in bulk, whether it forms or does not form part of an installation, but does not include a building used for the storage of petroleum exempt from licence under sections 7, 8 or 9 of the Act ;

(l) "Testing officer" means an officer authorised by the Central Government to test petroleum under section 17 of the Act ; and

Note and References.—The following officers have been authorised to test petroleum and to grant certificates of the results of such tests by Notification No. M-826, dated the 17th March 1937, as amended by Notifications No. M-826 (6), dated the 15th September 1937, No. M-826, dated the 20th October 1937 and No. M-826, dated the 10th May 1939 as amended in Pakistan:

1. The Chief Inspector, Inspector & Assistant Inspectors of Explosives.
2. The Civil Surgeon, Chittagong.
3. The Chemical Examiner, Custom House, Karachi.
4. The Special Chemical Adviser to the Central Board of Revenue, Lahore.

(m) "Well-head tank" means a tank into which crude petroleum flowing or being pumped from a well is first discharged.

4. *Excluded petroleum.*—Nothing in these rules, except Chapter IX, applies to petroleum which has its flashing-point not below 200 degrees F.

Comments by the Chief Inspector of Explosives.—Lubricating oils, asphalt and similar petroleum products flashing at and over 200 degree F. are thus exempt from the operations of these rules. This should not be taken to mean, however, that such products can be stored in licensed psemises unless they are included in the total quantity of petroleum for which the licence is granted. A storage licence is issued and is valid only for the storage of a definite number of gallons of petroleum in the place covered by the licence, and it is certainly arguable that to-exceed that quantity, though the excess be "Excluded petroleum" is a breach of the conditions under which the licence is granted.

Petroleum of the class here in question, if stored with licensable petroleum, should be considered, in so far as the licensed quantity and safety precautions are concerned, to partake of the nature and qualities of the product with which it is kept.

CHAPTER II

Importation of Petroleum.

PART I.—GENERAL

5. *Licence for import of dangerous petroleum.*—Save as provided in sections 8, 9 and 10 of the Act, dangerous petroleum shall not be imported except under a licence granted under these rules.

Comments by the Chief inspector of Explosives.—In accordance with the rules in their new form the import licence, excepting only Form H, forms part of the storage licence, and the separate forms called for under the old rules are not now demanded. Under rule 13 every person importing dangerous petroleum has to produce his licence to the Collector of Customs before the petroleum can be landed and it is therefore essential, if the risk of incurring extensive demurrage charges owing to the consignment being detained at the port of entry is to be avoided, to take early steps to ensure that the necessary storage premises are properly approved and licensed well before a shipment is due to arrive in the country.

6. *Petroleum exempted.*—(1) Nothing in this Chapter applies to—

(*a*) dangerous petroleum, not exceeding 6 gallons in quantity which is not intended for sale ;

(*b*) dangerous petroleum contained in any fuel tank incorporated in a motor conveyance ;

(c) non-dangerous petroleum, comprised in a ship's stores and manifested as such, provided it is not of an unreasonably large amount.

(2) If any question arises as to whether any petroleum manifested as ship's stores is of an unreasonably large amount, the decision thereon of the Collector of Customs shall be final.

Comments by the Chief Inspector of Explosives.—By the definition laid down in Section 2(g) of the Act "motor conveyance" means any vehicle, vessel or aircraft for the conveyance of human beings, animals, or goods, by land, water or air, in which petroleum is used to generate the motive power, and therefore includes motor cars, buses, motor-boats, etc. See also section 9 of the Act.

(3) Nothing in rules 5 and 13 shall apply to petroleum imported by Armed Forces of Pakistan.

PART II.—IMPORTATION BY SEA

7. *Importation by sea.*—Petroleum shall not be imported by sea except into the ports of—

Karachi

Chittagong

Chalna

Khulna.

8. *Declaration by master of ship carrying petroleum or by the ship's agent.*—The master of every ship carrying petroleum shall deliver to the pilot before entering any of the ports mentioned in rule 7, a written declaration in Form A under his signature :

Provided that if, in anticipation of a ship's arrival, the agent for such ship delivers to the Conservator of the Port a written declaration as aforesaid under his signature, no such declaration need be made by the master of the ship.

Comments by the Chief Inspector of Explosives.—When making the declaration in Form A called for in this rule difficulties are not infrequently caused in connection with cargoes of non-dangerous petrolum by enetring the quantity of certified petrolem under the head of "Petroleum certified in accordance with rule II", in spite of the fact that the actual certificate in Form B relating to the petroleum cannot, for one reason or another, be delivered along with the declaration as prescribed under rule 9. In such cases, where the certificate has not preceded or arrived with the ship, the master or the agent for the vessel must be aware of the class of petroleum in question, and it would seem best to make the declaration in Form A under the head "other non-dangerous petroleum" and then to apply to the Collector of Customs for permission to land the consignment under the conditions of rule 15.

9. *Delivery of certificate.*—If the master or agent declares that any petroleum which it is intended to land at that port or at any other port in Pakistan is petroleum certified in accordance with rule 11 he shall deliver to the pilot or Conservator of the Port, as the case may be along with his declaration, the certificate relating to to such petroleum.

Comments by the Chief Inspector of Explosives.—It will be noted that once any petroleum has been declared as "certified petroleum" in Form A this form must be accompanied by a certificate in Form B signed by an authorised testing officer.

10. *Declaration and certificate to be forwarded to Collector of Customs.*—Every declaration and certificate delivered to a pilot under rules 8 and 9 shall be made over by him without delay to the Conservator of the Port, and every declaration and certificate received by the Conservator of the Port under rule 8 or rule 9 or this rule shall be forwarded by him, with all convenient despatch, to the Collector of Customs of the port.

11. *Certified petroleum.*—For the purposes of rules 9 and 156 and Form A, petroleum shall be deemed to be certified if it is accompanied by a certificate in Form B granted at the port of shipment or, subject to the approval of the Collector of Customs, in any other form containing the material particulars required by Form B, and has a flashing point not below 76° F. :

Provided that the Collector of Customs may refuse to accept any certificate, if he is not satisfied as to its genuineness.

12. *Anchorage of ships carrying petroleum.*—Every ship having petroleum on board shall be anchored at such anchorage as the Conservator of the Port shall appoint in this behalf and shall not leave such anchorage without the general or special order of the Conservator of the Port subject to such conditions as may be specified in such order. Such anchorage shall in no case be the same as that for vessels laden with explosives and shall be at such distance from the anchorage for vessels laden with explosives as to render it impossible for a fire originating at the former anchorage to affect vessels anchored at the latter.

Comments by the Chief Inspector of Explosives.—In the anxiety to keep all dangerous goods at a safe distance the precautions here indicated are often overlooked, and petroleum, explosives and other dangerous materials segregated in the same area. This is a grave mistake. Once the matter is given serious thought the greatly enhanced danger attendant upon dealing with a petroleum fire, when the position is complicated by the fact that explosives are stored in the vicinity, will be immediately apparent. Similarly the unintentional detonation of any quantity of explosives is always a serious matter, but the risk and dangers involved will be greatly augmented if, as a result of the explosion, enormous quantities of blazing petroleum are set free.

13. *Production of certificate and licence for import.*—(1) Every person desiring to import petroleum shall furnish personally or through his agent to the Collector of Customs a certificate of storage accommodation in Form C signed by the said person or his agent :

Provided that, where the importer intends to import both dangerous and non-dangerous petroleum, separate Forms shall be furnished for dangerous and non-dangerous petroleum :

Provided further that this sub-rule shall not apply where the quantity of non-dangerous petroleum to be imported by any one consignee does not exceed 500 gallons, or where the quantity of dangerous petroleum to be imported does not exceed 60 gallons.

(2) Every person desiring to import dangerous petroleum shall produce, personally or through his agent, before the Collector of Customs his licence for the import and storage of such petroleum.

Comments by the Chief Inspector of Explosives.—The object of this rule and the relevant clauses of rule 14 is to ensure that ample storage accommodation is available for the amount of material being imported. Cases have occurred in the past where owing to insufficient storage space, or to mistaken calculations as to quantity, dangerous situations have arisen from the presence of surplus petroleum for which there was no room.

In regard to sub-rule (2) rule 119 (2) is pertinent. During the period necessary for the formality of renewing a licence the form itself is not available for production before the Collector of Customs. When a shipment is received at such a time the difficulty can probably be met by applying to the Collector of Customs for permission to clear the consignment under rule 119 and supporting the request by the production of the receipt showing that the application for renewal of the Licence has been properly made.

When the shipment has been released from the Customs on production of the certificate required by sub-rule (1) of Rule 13t he petroleum cannot be sold at the port of importation or any where else other than from the licensed premises.

14. *Permission of Collector of Customs to land petroleum.*—(1) No imported petroleum shall be landed except with the permission of the Collector of Customs.

(2) If the Collector of Customs, after receiving—

(*a*) the testing officer's report on any petroleum or, in the case of petroleum of Burmese origin a certificate containing the particulars required by Form B granted by a testing officer appointed by the Government of Burma ;

(b) the certificate required by sub-rule (1) of rule 13 ; and

(c) the licence, if required by sub-rule (2) of rule 13 ;

and after making such further inquiries as he deems necessary, is satisfied that the petroleum can lawfully be imported and that there is suitable accommodation for it, he shall permit it to be landed.

(3) If the Collector of Customs is satisfied that any petroleum imported otherwise than in bulk is not intended to be stored in Pakistan, but is intended to be despatched immediately after landing to a territory which is not part of Pakistan, he may waive the requirements of rules 5 and 13 and by written order permit, subject to such conditions as he may specify, such petroleum to be landed for the purpose of immediate despatch to the territory in question.

(4) Nothing in this rule shall affect the power of the Collector of Customs to detain the petroleum under any other law or rule for the time being in force.

Comments by the Chief Inspector of Explosives.—Receptacles for petroleum are prescribed in rules 27 and 28, and non-bulk petroleum can be lawfully imported only in containers complying with these requirements. It is therefore important when ordering supplies from abroad to specify the packing laid down in rules 27 and 28, as, if the consignment is packed in any other manner, permission to import it, is liable to be refused.

15. *Landing of non-dangerous petroleum in anticipation of the testing officer's report.*—(1) Notwithstanding anyting contained in rule 14, where the consignee furnishes a gurantee to re-ship the petroleum if the testing officer's report proves unfavourable, the Collector of Customs may, in anticipation of the testing officer's report, permit any petroleum which he believes to be non-dangerous to be discharged into boats or to be landed.

(2) The permission granted under sub-rule (1) shall be subject to the condition that the boats into which the petroleum is discharged, shall remain at such place as the Conservator of the Port may appoint or that the petroleum shall be landed at a landing-place duly appointed for this purpose by him and stored in an installation licensed under these rules.

16. *Unloading of petroleum in bulk.*—Subject to the rules in Part II of Chapter III, petroleum imported in bulk shall be discharged into storage tanks on shore either directly or by means of barges or lighters specially constructed for carrying petroleum in bulk and only at such places as the Conservator of the Port may by general or special order direct.

Comments by the Chief Inspector of Explosives.—All vessels carrying petroleum in bulk other than ships importing petroleum, require to be licensed annually for the carriage of petroleum in bulk. A list showing the officers authorised for this prupose is given in the note to rule 30.

17. *Unloading of petroleum otherwise than in bulk.*—(1) Subject to the rules in Part II of Chapter III, petroleum imported otherwise than in bulk shall be landed either at jetties provided for the purpose, or in barges or lighters and only at such places as the Conservator of the Port shall direct.

(2) No petroleum contained in casks, drums or other receptacles shall be landed unless such receptacles are free from leakage and of such strength and construction as not to be liable to be broken or to leak except in case of gross carelessness or extraordinary accident :

Provided that petroleum contained in casks, durms or other receptacles which do not satisfy the requirements of this sub-rule may, subject to the rules in Part II of Chapter III and to such conditions as the Conservator of the Port may impose, be landed at a separate landing place approved for the purpose.

Comments by the Chief Inspector of Explosives.—Under rule 47 leaky tins or other receptacles may not be discharged into a vessel containing sound tins or other sound receptacles. The landing of containers under the proviso to rule 17 above therefore necessitates the provision of a separate lighter or other vessel in which to land packages not complying with sub-rule (2). The object of this restriction is, of course, to prevent the possibility of a fire caused by the accidental ignition of any petroleum escaping from an unsound container involving the whole consignment. and perhaps even spreading to the storage premises ashore.

18. *Transhipment of petroleum.*—Petroleum may be transhipped from one to another for conveyance to any other port, whether within or beyond the limits of Pakistan, subject to the rules in Part II of Chapter III.

19. *Heavy petroleum.*—(1) Nothing in rules 12 to 18 inclusive applies to heavy petroleum.

(2) Notwithstanding anything contained in the preceding rules, if the master of, or agent for, a ship produces a certificate that any petroleum on board is heavy petroleum, the Collector of Customs shall allow it to be discharged in the same manner as ordinary cargo :

Provided that the sampling officer may at any time require a sample of any of the petroleum to be delivered to him, with a view to having it tested.

Comments by the Chief Inspector of Explosives.—Many fuel and diesel oils fall within the definition of heavy petroleum and while the Collector of Customs may allow such petroleum to be discharged in the same manner as ordinary cargo. Port Authorities frequently have local port rules regulating the handling of this class of petroleum and the refuelling of vessels within port limits.

PART III—IMPORTATION BY LAND

20. *Importation by land.*—Petroleum shall not be imported by land except at points to be specified by the Central Government in this behalf and unless :—

(*a*) it is accompanied by a declaration from the consignor regarding the nature and the quantity of the petroleum;

(*b*) the importer holds such storage licence as may be required under these Rules ;

(*c*) the receptacles in which petroleum is imported conform to rule 27 of Rules ; and

(*d*) Pakistan Customs Regulations in force for the time being are complied with.

21. *Permission of Collector of Customs to release Petroleum imported by land.*

(1) No petroleum imported by land shall be landed except with the permission of the Collector of Customs.

(2) If the Collector of Customs, after receiving

(*a*) the Testing Officer's report on any petroleum in form 'G'.

(*b*) the certificate of Storage accommodation in form 'C' signed by the Consignee or his agent ;

(*c*) the licence as may be required under these Rules, and after making such further enquiries as he deems necessary, is satisfied that the Petroleum can lawfully be imported and that there is suitable accommodation for it he shall permit it to be landed.

22. *Omitted.*

23. *Omitted.*

CHAPTER III

Transport of Petroleum

PART I.—GENERAL

24. *Prevention of accidents.*—All due precautions shall be taken at all times to prevent accident by fire or explosion.

Comments by the Chief Inspector of Explosives.—This rule renders the licensee and his agent liable to punishment under Section 23 and 24 of the Petroleum Act, 1934, for committing, or permitting the continuance of, any rash or unnecessary act or for neglecting any obvious precaution, although he may not necessarily have committed a direct breach of any other rules by his negligence.

25. *Prevention of escape of petroleum.*—All due precautions shall be taken at all times to prevent any escape of petroleum during transport especially into any drain, sewer, harbour, river or water course.

Comments by the Chief Inspector of Explosives.—As in the case of rule 24 neglect of any obvious precaution will render the licensee and his agent liable to punishment under the Act even if a direct breach of any other rule is not committed.

26. *Empty receptacles.*—All empty tanks or other receptacles which have contained dangerous petroleum or which have contained non-dangerous petroleum in bulk shall, except when they are opened for the purpose of cleaning them and rendering them free from petroleum vapour, be kept securely closed unless they have been thoroughly cleaned and freed from petroleum vapour.

Comments by the Chief Inspector of Explosives.—A very small proportion—about 1-1/2 per cent.—of petroleum vapour is sufficient to render the atmosphere explosive and there is no doubt that the risk of explosion from a vessel containing the quantity of petroleum that remains after it is nominally empty is greater than that from a full or nearly full vessel in which the atmosphere is too rich to be explosive. The rule is applicable even to non-dangerous petroleum in bulk, because vessels in the open, exposed to the sun, may easily reach the flash-point temperature of the oil which will under these conditions give off an inflammable and explosive forming vapour.

27. *Receptacles for dangerous petroleum.*—(1) Dangerous petroleum, if not in bulk, shall be contained in gas-tight tinned, galvanised or otherwise externally rust-proofed sheet iron or steel receptacles which shall be fitted with well-made filling aperture and well-fitting screw plugs, or with screw caps or other caps with metal air-tight under-caps. The receptacles shall be kept in proper repair.

(2) No receptacles, other than tanks on tank-carts of a type approved in writing by the Chief Inspector, shall be of more than 65 gallon capacity excluding the air-space prescribed by sub-rule (7).

(3) The receptacles, other than tanks on tank-carts, shall be of a type approved in writing by the Chief Inspector and shall have the following thickness of metal :—

Capacity exclusive of the prescribed air-space—

	Not less than
not exceeding 2 gallons	27 B. G.
exceeding 2 but not exceeding 4 gallons	22 B. G.
exceeding 4 but not exceeding 30 gallons	18 B. G.
exceeding 30 but not exceeding 45 gallons	17 B. G.
exceeding 45 gallons	16 B. G.

Provided that the Chief Inspector may, by written order, permit the use in any particular case of receptacles having thickness of metal less than that specified in this sub-rule.

(4) Where the approval of the Chief Inspector is sought to a type of receptacle not previously approved, three copies of a detailed drawing thereof to scale be forwarded to him.

(5) The receptacles shall be so constructed and secured as not to be liable, except under circumstances of gross negligence or extraordinary accident to become defective, leaky or insecure in transit.

(6) The receptacles shall bear a stamped, embossed, painted or printed warning exhibiting in conspicuous characters the words "Petrol" or "Motor Spirit" or an equivalent warning of the dangerous nature of the petroleum.

(7) An air-space of not less than 5 per cent. of its capacity shall be left in each tank, drum or other receptacle containing dangerous petroleum.

(8) Nothing in sub-rules (1), (2), (3), (4) and (6) shall apply to receptacles in the possession of Armed Forces of Pakistan.

Comments by the Chief Inspector of Explosives.—Provided they were packed in wooden cases the use of receptacles made from a thicker metal than is prescribed in sub-rule (3) was permitted under the old rules. This practice is not now allowed. Under rules 27 and 28 it is necessary for tank-carts to be approved by the Chief Inspector, this applies in the case of non-dangerous as well as in the case of dangerous petroleum.

28. *Receptacles for non-dangerous petroleum*—(1) Non-dangerous petroleum, if not in bulk, shall be packed in air-tight tins or drums, of steel or iron or in other receptacles not easily broken or in tanks permanently fixed to carts, wagons, boats or other means of carriage, and of types approved by the Chief Inspector.

(2) An air-space of not less than 5% of its capacity shall be left in each tank, drum or receptable containing non-dangerous petroleum. ~~of a flash point below 150° F:~~

Provided that, in the case of an unberthed passenger ship to which Part IV of the Merchant Shipping Act, 1923 applies the petroleum shall be packed either in tins enclosed in outer wooden cases or in hermetically sealed iron or steel drums or, alternatively in the case of heavy petroleum, in sound well-coopered wooden casks of not more that 50 gallons capacity.

29. *Restriction on delivery and despatch of petroleum.*—(1) No person shall deliver any petroleum to any one [in Pakistan] other than the holder of a storage licence or his authorized agent or a Port Authority or railway administration.

(2) No person shall despatch any petroleum to any one in Pakistan other than the holder of a storage licence.

(3) Notwithstanding anything contained in sub-rule (2), non-dangerous petroleum not exceeding 3,000 gallons in quantity packed in sealed air-tight tins or drums of steel or iron may be despatched to a person not holding a storage licence, provided that the person despatching the petroleum has satisfied himself that prior arrangements have been made by the person to whom the petroleum is despatched for the immediate disposal in the original packages of any quantity in excess of 500 gallons.

(4) This rule shall not apply to the delivery or despatch of petroleum in quantities which are permitted by the Act or these rules to be stored without licence, or to any petroleum in the possession of the Armed Forces of Pakistan.

Comments by the Chief Inspector of Explosives.—Prior to the introduction of the Petroleum Rules, 1937, control over the despatch of petroleum was maintained by means of transport licences. In the new rules these licences have been dropped, but the licensee has been made responsible that petroleum in excess of quantities exempted from the need for a storage licence under the Act or these rules is not delivered or despatched to any one not in possession of a storage licence.

Sub-rule (3) makes provision whereby a number of small lots each consisting of 500 gallons or less of non-dangerous petroleum may be combined into one consignment not exceeding 3,000 gallons and despatched to an unlicensed agent for delivery to he consignees. In this case the agent acts as a clearing agent only and may not store the petroleum himself but must make arrangements for immediate delivery to be taken by the separate persons for whom the individual lots are intended. The responsibility for compliance with this regulation rests on the licensee consigning the petroleum. The concession does not extend to dangerous petroleum.

PART II.—TRANSPORT BY WATER.

30. *Conditions of carriage of petroleum in bulk by water.*—(1) Petroleum in bulk shall not be carried by water except in ship or other vessel licensed annually for the carriage of petroleum in bulk by an officer appointed by the Central Government in this behalf, and the petroleum shall be stored in such part of the ship or other vessel and in such manner as may be approved by general or special order by the officer so appointed after consultation with the Chief Inspector :

Provided that—

(*a*) nothing in this rule shall apply to ships importing petroleum;

(*b*) petroleum in tank-wagons may, with the permission in writing of the Chief Inspector and subject to such conditions as he may specify, be transported across a river by a recognised wagon ferry.

(2) *The licence referred to in sub-rule (1) shall be granted in such form and on payment of such fees as may be specified by the Central Government in this behalf and the licence shall remain in force for a period of 12 months.

Notes and References.—Notification No. M-826 (2), dated the 22nd December 1938 prescribed the appended Form for the grant of licences in respect of ships or other vessels for the carriage of petroleum in bulk by water and directs that fees on the following scale be payable for such licences :—

	Rs.
(a) ship or other vessel not exceeding 100 tons gross tonnage	64
(b) for every additional 50 tons gross tonnage or fraction thereof ..	8

Licence for the carriage of petroleum in bulk by water.

Name of vessel

Official No.

Gross tonnage

Name of owners

Fee Rs.

The above vessel is hereby licensed for the carriage of petroleum in bulk by water, under the rule 30 of the Petroleum Rules, 1937, subject to the provisions of these rules and the Petroleum Act, 1934.

The petroleum shall be stored only in—

(i) *the following parts* ** *of the vessels*—

_____

_____

_____

_____

_____

_____

*Inserted by Notification No. M-826 (1), dated the 22nd December 1938.

**The parts of the Vessel and the manner of storage to be specified in detail by the licensing authority in consultation with the Chief Inspector of Explosives.

(2) *the following manner, that is to say,*

_____

_____

_____

_____

This licence shall remain in force till the day ***

of 196

Issued at the day of 196

(Licensing authority appointed under rule 30 of the Petroleum Rules, 1937).

Notes and References.—This rule means, in effect, that petroleum may not be carried in a ship or other vessel in any receptacle exceeding two hundred gallons in capacity unless the vessel has been specially licensed for the purpose less than a year before, Notification No. M-826 (2), dated the 31st March 1937 as amended in Pakistan appoints the officers specified in the annexed Schedule as the officers to license under this rule ships or other vessels for the carriage of petroleum in bulk by water.

THE SCHEDULE

1. The Principal Officer, Mercantile Marine Department, Karachi.

2. The Engineer and Ship Surveyor, Narayanganj.

31. *Requirements as to construction of vessels.*—Every ship or other vessel carrying petroleum in bulk, other than a recognised wagon ferry permitted to transport tank-wagons under proviso (*b*) to rule 30, must be of steel or iron well and substantially constructed with scantlings of ample dimensions in proportion to the size of the vessel.

32. *Tank fittings on vessels.*—In petroleum tank-ships or other vessels used for the transport of petroleum other than heavy petroleum the following provisions shall apply :—

(*a*) all tanks shall be fitted with independent approved filling and suction pipes and valves or with stand-pipes with blank flanges, all pipes being

**The parts of the Vessel and the manner of storage to be specified in detail by the licensing authority in consultation with the Chief Inspector of Explosives.

***Twelve months from the date of issue of lic ence.

carried down nearly to the bottom of the tanks, and no petroleum in bulk shall be taken on board or discharged except through such pipes and valves, unless otherwise permitted by the Chief Inspector in writing ;

(*b*) all tanks shall be fitted with manholes having screwdown covers with petroleum-tight joints and, in the case of tanks intended for use with dangerous petroleum, with ventilators or relief valves of approved pattern properly protected with wire gauze of a mesh of not less than 28 to the linear inch ; and

(*c*) ventilators similarly protected shall be fitted to all spaces around tanks :

Provided that the Chief Inspector may, by order in writing, exempt from the provisions of this rule any vessel which was employed in transporting petroleum in bulk before the 1st April 1937.

Comments by the Chief Inspector of Explosives.—Rule 32 prohibits the practice of loading and discharge "over all", that is through an open tank manhole, in the case of all grades of petroleum having a flash-point below 150 degrees F. There are three main reasons for this prohibition—

(1) To prevent as far as possible the generation of static electricity,

(2) To reduce the risk of fire caused by the flash-point of the oil being below the air and deck temperature, and

(3) To minimise the possibility of an accident arising from the fact that the deck and manhole of the oil vessels are frequently exposed to the risk of fire and sparks from their own machinery and from other vessels using the neighbouring water.

33. *Self-propelled barges.*—The following conditions shall be observed in self-propelled barges transporting petroleum other than heavy petroleum :—

(*a*) the whole of the machinery shall be at the stern of the barge and shall be entirely separated from the cargo by a cofferdam consisting of two transverse petroleum-proof bulk-heads separated by a space of at least two feet six inches ;

(*b*) the barge shall be provided with a heavy wood belting; and

(*c*) suitable ventilators shall be fitted to the cargo space :

Provided that condition (*a*) shall not be applicable to any barge which was employed in transporting petroleum before the 1st April 1937.

34. *Petroleum in bulk on barges or flats.*—(1) Petroleum in bulk shall not be transported in a barge or flat unless the barge or flat—

(*a*) is self-propelled and carries at least four fire extinguishers, or

(b) is in tow of, or otherwise attended by, a steamer or tug carrying at least four fire extinguishers.

(2) The fire extinguishers referred to in sub-rule (1) shall be of a pattern approved by the officer appointed under rule 30 and shall be fitted in positions approved by him.

35. *Inflammable cargo, or passengers.*—(1) No ship or other vessel shall carry petroleum in bulk if it is carrying passengers, or any inflammable cargo other than petroleum or coal.

(2) This rule shall not apply to heavy petroleum used as fuel and carried in cellular double bottoms under engine and boiler compartments and under ordinary holds, and in peak tanks, deep tanks or bunkers of approved construction ; such

oil fuel storage tanks and installations connected therewith shall comply with the provisions of rules 228 to 243 of the Merchant Shipping (Construction and Survey of Passenger Steamers), Rules, 1935.

35-A.—*Petroleum carried as cargo in unberthed passenger ships.*—Dangerous petroleum shall not be transported as cargo by an unberthed passenger ship as defined in the Merchant Shipping Act, 1923 (XXI of 1923) :

Provided that the certifying officer referred to in section 157 of the Merchant Shipping Act, 1923 (XXI of 1923), may, in cases where he is satisfied that no other means of transporting the petroleum are available, permit dangerous petroleum in quantity not exceeding 250 gallons to be transported otherwise than in bulk by an unberthed passenger ship other than a country craft subject to—

(a) the condition that no more persons shall be carried in the ship than can with safety be accommodated in the ship's life-boats in case of accident ; and

(b) such other conditions as the certifying officer may, after consultation with the Chief Inspector. impose :

Provided further that clause (a) of the foregoing proviso shall not apply in the case of unberthed passenger ships engaged on voyages between ports situated in Pakistan or between any port or place on the Dominion of Pakistan in the course of which they do not go more than 20 miles from land.

35-B.—*Transport by country craft.*—No country craft shall carry dangerous petroleum if it is carrying passengers.

Comments by the Chief Inspector of Explosives.—When all the petroleum has been discharged, Rule 37 requires the holds, tanks and bilges of petroleum vessels to be rendered free from inflammable vapour. In certain cases exemption to this requirement is made, but in all such cases the vessles are, until their holds, tanks, etc., have been rendered free from inflammable vapour, considered to be still carrying petroleum. The restrictions imposed by rules 35 and 36 therefore apply to these "empty" vessels; and they may not carry inflammable cargo or passengers. "Passengers" is a very wide term, and it is probable that it will be held to include labour gangs and other persons being transported on the vessel, and not necessarily only passengers in the more limited sense in which the word is used in connection with travellers by buses or railways.

36. *Restrictions as to inflammable cargo.*—(1) No steamer or tug employed in towing or otherwise attending a barge, flat or lighter carrying petroleum, other than heavy petroleum in bulk shall at the same time tow or otherwise attend any other vessel carrying an inflammable cargo other than petroleum or coal.

(2) No such steamer or tug shall carry any inflammable cargo other than petroleum or coal.

(3) All such steamers or tugs shall be fitted with efficient spark arresters.

37. *Ventilation and cleaning of holds and tanks.*—(1) Before any petroleum is discharged from a ship or vessel the holds of such vessel shall be thoroughly ventilated :

Provided that nothing in this sub-rule shall apply to any vessel carrying dangerous petroleum not exceeding 6 gallons or non-dangerous petroleum not exceeding 500 or heavy petroleum not in bulk.

(2) After all petroleum has been discharged from any such vessel the holds, tanks and bilges of the vessel shall be rendered free from inflammable vapour.

(3) Sub-rule (2) shall not apply to the tanks of a ship importing petroleum which leaves the port without delay after the discharge of cargo or remains only for the purpose of taking on board bunkers stores or ballast or for such other purposes as may be approved by the Conservator of the Port, if the tanks of every such ship are securely fastened down immediately after the discharge of the cargo.

(4) Sub-rule (2) shall not apply to barges or lighters continuously engaged in the transport of petroleum in bulk, if—

(*a*) an interval of not more than 72 hours is likely to elapse between an operation of unloading or discharging and the next loading operation ; and

(*b*) the tanks are securely fastened down immediately after unloading.

(5) Sub-rule (2) shall not apply to specially constructed steel tank motor-vessels approved by the Chief Inspector which are engaged in transport of petroleum in bulk on such rivers and on such parts thereof as may be approved by him in areas outside port limits, or by the Conservator of the Port within port limits, if the tanks of such vessels are securely fastened down immediately after unloading and the vessels depart not later than 12 hours after completion of discharge for their next place of loading.

(6) All ships or other vessels which by sub-rules (3), (4) or (5) are exempted from the application of sub-rule (2) shall, until their holds and tanks have been rendered free from inflammable vapour, comply with all the rules applicable to ships, or other vessels when carrying petroleum in bulk.

38. *Master of vessel specially responsible.*—(1) The master or other officer in charge of any ship with petroleum on board or of any vessel certified under rule 30 shall be responsible that —

(*a*) all due precautions are taken for the prevention of accident in the loading or discharge of petroleum ;

(*b*) so long as there is petroleum or inflammable vapour in a tank, all openings from the tank to the atmosphere, except the gas escape line, are kept closed and locked or otherwise fastened in a manner certified as satisfactory by the officer appointed under rule 30 ; and when it is necessary to take dips or samples, the ullage plugs or sighting ports are closed immediately this has been done ;

Provided that, subject to the provisions of clause (c), such master or officer in charge may cause the necessary openings to be opened or unlocked for the purpose of taking on board or discharging non-dangerous petroleum, for cleaning the tanks, or for other sufficient reason ;

(*c*) every person entering a tank wears a safety helmet of a description approved by the Chief Inspector, unless a Conservator of the Port or other officer appointed by the Central Government in this behalf has on payment of the fee prescribed in sub-rule (2) examined the tank with the aid of a vapour-testing instrument and has certified it to be free from dangerous vapour ;

(*d*) the vessels and any steamer or tug towing or otherwise attending on such vessel exhibits conspicuously :—

(i) from sunrise to sunset a red flag not less than three feet square with a white circular centre six inches in diameter, if dangerous petroleum is carried, and a red flag not less than three feet square if non-dangerous petroleum is carried ; and

(ii) from sunset to sunrise such warning lights as may be required by the Conservator of the Port ;

(*e*) the vessel, when carrying petroleum in bulk, at all times lies afloat unless otherwise permitted by general or special order in writing of the Chief Inspector or the Conservator of the Port ;

(*f*) the vessel, when carrying petroleum in bulk, is constantly under the control and personal supervision of a responsible person ;

(*g*) iron or steel hammers or other instruments capable of causing a spark are not used for the purpose of opening or closing the hatches or tank covers ; and

(*h*) footwear which exposes any iron or steel is not worn on the deck of any vessel while the loading or unloading of dangerous petroleum is proceeding.

(2) A fee of one hundred rupees shall be payable by the Master or other Officer in charge of the ship or vessel for each test carried out under clause (C) of Sub-rule (1).

Comments by the Chief Inspector of Explosives.—Safety Helmets.—There are many types of efficient helmets on the market and any type approved by the Board of Trade for use in gassy atmospheres will be found suitable. Helmets supplied with air from an outside source will in general, be found better suited than the types which depend for their working on the absorption of the dangerous vapours by means of replenishable absorbing materials.

Vapour Testing Instruments.—Direct reading instruments are now available for indicating the presence of inflammable vapours and have advantages over other methods of testing in not requiring any special skill or experience for their operation and in dispensing with "chemical" manipulations.

"Caution.—During an electrical storm, or rain or in lightning ridden atmospheric conditions, all operations for gas freeing should be suspended and covers replaced on all openings, till the lightning is completely stopped. A stroke of lightning may ignite an inflammable vapour in its path".

39. *Loading and unloading by night.*—(1) Where adequate electric lighting is installed and rule 105 is complied with tank-ships and barges may discharge or load *non-dangerous petroleum at any time* and tank-ships and barges which have commenced the discharge into storage tanks on shore, or loading into their own tanks, of *dangerous Petroleum* in bulk before sunset may continue the said disharge or loading.

(2) Should anything occur during discharging or loading dangerous petroleum after sunset which necessitates a repair or disconnection of the plant pipes or connections, such discharging or loading shall be discontinued until after sunrise.

(3) Save as provided by sub-rule (1), petroleum shall not be discharged or loaded or landed between the hours of sunset and sunrise.

(4) This rule shall not apply to the refuelling of aircraft by vessels certified under rule 30, subject to any conditions which the Chief Inspector may impose in this behalf.

Comments by the Chief Inspector of Explosives.—Special attention is invited to the words "and rule 105 is complied with". The extent to which electric wiring and fittings are overlooked as a possible source of the ignition of petroleum or petroleum vapours is very extraordinary. Changing a lamp with the power on, a lamp loose in its socket, a spark at a switch, a blowing fuse, a leaky or broken wire are just a few of the many causes of petroleum fires. Unless they are properly certified to be of flame and explosion proof construction all electric appliances and wiring should be looked upon as a source of fire in their relation to the presence of inflammable vapour.

40. *Loading and discharge of bulk petroleum.*—(1) The loading and discharge of petroleum in bulk shall be by armoured hose and metal pipes.

(2) All pipes and other appliances used in the landing or loading of petroleum in bulk shall be free from leakage.

(3) When a ship has finished discharging petroleum other than heavy petroleum, the pipe line shall be immediately emptied of petroleum by pumping water through the line.

(4) The Chief Inspector may, by written order, grant exemptions in any particular case from the provisions of sub-rules (1) and (3).

41. *Precautions on suspension of loading or discharge.*—When the loading or landing of petroleum has been commenced such loading or landing shall proceed with due diligence, and, if it is discontinued, the tanks and holds of the ships or other vessels concerned and all loading or discharge valves shall be closed immediately.

42. *Naked lights, fire and smoking on board a vessel prohibited.*—No fire, naked light, fuses, matches, or other appliance for producing ignition or explosion and no smoking shall be allowed on board any barge, flat or lighter carrying petroleum in bulk, or on board any such vessel used for the transport of dangerous petroleum otherwise than in bulk or for the transhipment of petroleum to or from any vessel within the limits of any port :

Provided that nothing in this rule shall prevent the use on a self-propelled barge of the machinery of propulsion.

43. *Smoking, fire and lights prohibited during loading and unloading.*—At all times during the loading or unloading of a ship or other vessel until such time as all petroleum shall have been loaded into or removed from the holds or tanks and the holds or tanks shall have been securely closed down and, in the case of landing, rendered free from inflammable vapour, there shall be no fire or artificial light or smoking on board such ship or other vessel or within 100 feet of the place where the petroleum is being loaded or landed :

Provided that this rule shall not apply to the use of lamps, cookers or other similar apparatus electric or otherwise, so designed, constructed and maintained as to be incapable of igniting inflammable vapour or, in the case of heavy petroleum, the cause of galley fires.

Provided further that this rule shall not apply to the discharging or loading of a ship, under conditions approved by the Conservator of the Port, by means of steam from her own boilers or power generated by electric motors or internal combustion engines placed in a position away from cargo holds and pump rooms or by means of electric motors so designed, constructed, and maintained as to be incapable of igniting inflammable vapour and maintained in accordance with Lloyd's or any other approved classification society's requirements.

Comments by the Chief Inspector of Explosive.—In connection with the prohibition of any fire or artificial light within 100 feet of the place of loading or discharge reference is invited to the note to rule 39. The proviso to rule 43, permitting the use of lamps, etc., so designed, constructed and maintained as to be incapable of igniting inflammable vapour, calls for certified flame and explosion proof fittings complying with British Standard Specification No. 229, and does not permit the use of ordinary electric apparatus and wiring. In effect this means that the wharves and jetties at which petroleum other than heavy petroleum, is handled, must be supplied with properly certified lighting and power arrangements.

44. *Matches.*—No person engaged in landing or loading petroleum shall carry fuses, matches, or any other appliance for producing ignition or explosion.

45. *Fire-extinguishing appliances to be ready for use.*—Vessels discharging or loading petroleum shall have adequate fire-extinguishing appliances so disposed that they can be put into immediate use, and, if the petroleum is dangerous petroleum shall have their awnings furled.

46. *Restriction on the conveyance of petroleum.*—Dangerous and non-dangerous petroleum shall not be simultaneously conveyed to the shore or to another ship on the same vessel.

Comments by the Chief Inspector of Explosives.—The effect of this rule is that petrol and other dangerous petroleum must be carried separately from other petroleum, but that ordinary non-dangerous and heavy petroleum may be handled together.

47. *Restriction as to leaky tins.*—Leaky tins or other receptacles containing petroleum shall not be discharged into a vessel containing sound tins or other sound receptacles.

Notes and References.—In this connection reference should be made to rule 17 and the note to that rule.

48. *Transport by sea of petroleum which has not been tested.*—(1) Petroleum which has been imported into any port specified in sub-rule (1) of rule 7 and which has not been tested at such port in accordance with the rules contained in Chapter IX, shall not be transported to any other port otherwise than to a port at which importation is permitted under sub-rule (1) of rule 7 and in accordance with the provisions of all the rules in Chapter II, except rule 5, when it arrives at such other port.

(2) Nothing in sub-rule (1) shall apply to petroleum of Burmese origin which is covered by a certificate in Form B granted by a testing officer appointed by the Government of Burma.

49. *Transport by sea of petroleum which has been tested.*—Petroleum which has been tested at one of the ports specified in sub-rule (1) of rule 7 and petroleum of Burmese origin which is covered by a certificate in Form B granted by a testing officer appointed by the Government of Burma, may be transported to any other port and the provisions of rules 8 to 14, 16 and 17 shall apply to such petroleum when it arrives at such other port.

50. *Omitted.*

PART III.—COASTWISE TRANSPORT OF DANGEROUS PETROLEUM OTHERWISE THAN IN BULK.

51. *Applications.*—(1) The rules in this part apply only to the transport coastwise and dangerous petroleum otherwise than in bulk.

(2) Unless otherwise expressly provided in this Part nothing contained in Part II of this Chapter, except rule 39, shall apply to any petroleum transported in accordance with this Part.

51-A. *Conditions of transport by unberthed passenger ships.*—Dangerous petroleum may be transported otherwise than in bulk by an unberthed passenger ship as defined in the Merchant Shipping Act, 1923 (XXI of 1923), not being a country craft, in accordance with the provisions of rule 35 A and rules 53 to 61 inclusive.

52. *Maximum quantity allowed to be carried.*—Dangerous petroleum may be transported otherwise than in bulk by country craft or steam or motor vessels other than unberthed passenger ships as defined in the Merchant Shipping Act, 1923, subject to the provisions of rules 53 to 62 inclusive, if the quantity of petroleum does not exceed

(*a*) in the case of country craft, the licensed carrying capacity of the vessel after taking into account the weight of the barrels or tins in which the petroleum is carried ; or

(*b*) in the case of steam or motor-vessels, 15 tons.

53. *Loading of barrels and drums.*—Barrels and drums shall be loaded with the bungs upwards.

54. *Carriage below decks.*—Dangerous petroleum shall not be carried below decks in decked vessels unless the hold is properly ventilated.

Comments by the Chief Inspector of Explosives.—"Properly ventilated" in this rule undoubtedly means that nothing less efficient than proper ventilators, half of which extend to the bottom of the hold and the other half only a short distance below the deck, must be provided. Such ventilators should be of ample size to ensure a good circulation of air through the hold and should have large cowl heads, the openings being covered with double fine brass wire gauze of a mesh not less than 28 to the linear inch.

Two main dangers are to be apprehended in connection with the carriage of dangerous petroleum under the conditions of coastwise transport; they are fire and the production of an explosive and inflammable atmosphere in the hold of the vessels. As little as 1-1/2 per cent. of petroleum vapour forms an inflammable and explosive mixture with air: the need for ample ventilation is thus obvious.

55. *Provision of bulkhead.*—In all vessels other than country craft a solid gas-tight bulkhead without openings, and in country craft a solid bulkhead without openings, shall be fitted between the hold and the after-deck where the crew are accommodated ; and in vessels fitted with a poop the bulkhead shall be placed immediately in front of the poop. In decked vessels the bulkhead shall reach up to the deck ; in all other vessels it shall reach to within six inches of the gunwhale.

Comments by the Chief Inspector of Explosives.—This rule in so far as it calls for a solid gas-tight bulkhead without openings is new. It follows the recommendations of the Board of Trade in regard to the carriage of dangerous goods in ships.

56. *Fire, lights and smoking.*—(1) No fire, naked light of any description, and no smoking, shall be allowed on any part of vessel transporting dangerous petroleum except abaft the solid bulkhead.

(2) The navigation light on any such vessel shall be carried abaft the bulkhead.

57. *Carriage of other inflammable cargo.*—No inflammable cargo other than dangerous petroleum or other petroleum products or the dunnage used for packing purposes shall be carried on a vessel transporting petroleum.

Comments by the Chief Inspector of Explosives.—"Dunnage" is defined in the dictionary as "loose wood of any kind laid in the bottom of the hold to keep the cargo out of the bilge-water, or wedged between parts of the cargo to keep them steady".

58. *Fire buckets.*—Buckets containing dry sand shall be placed at convenient points on a vessel transporting petroleum. Not less than two such buckets shall be placed on the after-deck.

59. *Construction of steam or motor-vessels.*—Steam or motor vessels not specially constructed for the carriage of petroleum shall not carry petroleum unless they are constructed only of iron or steel.

60. *Transport in steam or motor-vessels.*—On steam or motor-vessels, not specially constructed for the carriage of petroleum :—

(*a*) any petroleum shall either be carried in separate compartments which shall be gas-tight and shall be efficiently sealed, or in a hold in which there are efficient ventilators in accordance with clause (*b*), or on deck in accordance with rule 61;

(*b*) half of the ventilators provided in accordance with clause (*a*) shall extend to the bottom of the space, and the other half only a short distance, below the deck; the short ventilators shall be labelled "Outlet or to Leeward" and the long "Inlet or to Windward"; such ventilators shall have large cowl heads, the openings being covered with double fine brass wire gauze;

(*c*) dangerous petroleum shall be contained in receptacles complying with the provisions of rule 27; and

(*d*) special precautions shall be taken against smoking and the use of lights or fire of any kind while the cargo is being loaded or unloaded, or while the hatches are off, or any deck openings are uncovered; before any lights are used in a compartment which contains petroleum, precaution shall be taken to ensure that the space is clear of vapour; all empty receptacles which have contained dangerous petroleum shall be kept securely closed.

Comments by the Chief Inspector of Explosives.—The double fine brass wire gauze prescribed in sub-rule (b) should be of a mesh not less than 28 to the linear inch.

61. *Transport on deck.*—Petroleum may be carried on deck in steam or motor-vessels not specially built for the carriage of petroleum, subject to the following conditions :—

(*a*) in cargo ships dangerous petroleum shall not occupy more than 50 per cent of the open deck area and shall be so stowed as not to interfere with the navigation of the ship, or make it unseaworthy;

(*b*) in passenger ships a limited quantity of dangerous petroleum may be carried provided proper precautions are taken regarding stowage and keeping the packages away from passenger's promenade or deck space;

(*c*) the petroleum shall be protected from the direct rays of the sun by the use of a canvas awning or otherwise; and

(*d*) conspicuous notices shall be posted up drawing attention to the danger arising from smoking or striking matches near the deck cargo.

62. *Conditions of transport by country craft.*—No dangerous petroleum shall be transported in country craft except subject to the following conditions :—

(*a*) subject to the provisions of rule 27, the petroleum shall be carried—

(i) on 40/65 gallon steel barrels the screw bungs of such barrels being well-fitting and sealed; or

(ii) in 4 gallon sealed steel drums, not more than three tiers of which may be carried on any single vessel; or

(iii) in 2 gallon sealed steel tins, not more than six tiers of which may be carried on any single vessel;

(*b*) all barrels or tins shall be carefully examined and no leaky barrels or tins shall be taken on board the craft;

(*c*) no barrels, drums or tins shall be placed within four feet of the after-deck where the crew are accommodated in the case of an undecked vessel or on deck in the case of a decked vessel; and

(*d*) no passengers shall be carried on board the craft.

PART IV.—TRANSPORT ON LAND VEHICLES.

63. *Prohibition of fires and smoking.*—(1) No fire or other artificial light capable of igniting inflammable vapour shall be allowed on any vehicle containing petroleum in bulk.

(2) No person shall smoke while on or attending such a vehicle.

(3) No article or substance capable of causing fire or explosion shall be carried on such a vehicle.

Explanation.—For the purposes of this rule any tank or other receptacle which has contained petroleum and which has not been thoroughly cleaned and freed from inflammable vapour shall be deemed to contain petroleum.

64. *Filling and discharge of tanks.*—(1) Tank-wagons, lorries or carts transporting petroleum shall only be filled or discharged by means of metal pipes or armoured hose in which the armouring is electrically continuous throughout.

(2) Tanks, other than fuel tanks on vehicles, containing dangerous petroleum shall not be filled or discharged—

(i) within 100 feet of any fire, furnace or artificial light capable of igniting inflammable vapour; or

(ii) at any place where the lorry, wagon or cart is exposed to sparks:

Provided that the distance specified in clause (i) may be reduced to 30 feet when the petroleum is filled or discharged under seal and closed vapour return pipe lines are provided:

Provided further that the distance specified in clause (i) may be reduced to the figure 12 feet prescribed in the licence in Form K where the petroleum is filled, stored and discharged into a tank in any premises licensed in that Form.

Explanation.—A pipe supplying liquid to a tank is " under seal " to that tank if it is screwed to the tank or otherwise attached so that no liquid or vapour can escape into the air except through an approved vent.

Comments by the Chief Inspector of Explosives.—In sub-rule (1) "electrically continuous throughout", means that the electrical connection must be established from union to union and not only along the hose itself.

Where a storage tank is fitted with a floating roof, it is not always possible to retain the vapour lines prescribed in sub-rule (2) to the tank. Under these circumstances the requirements of the rule will be met if the vapour return lines are extended to a minimum distance of 100 feet from the vehicles and they are fitted with efficient flame arrestors.

65. *Means of extinguishing fire to be carried.*—An adequate supply of dry sand or other efficient means of extinguishing fire shall be carried in an easily accessible position on every vehicle transporting petroleum in bulk by road.

Comment by the Chief Inspector of Explosives.—Extinguishers chained and locked or otherwise semipermanently attached to the vehicle do not meet the requirements of this rule. Means of dealing with a fire must be immediately available.

66. *Prohibition as to public service vehicles.*—Petroleumshall not be transported on any public vehicles which is carrying passengers.

Comments by the Chief Inspector of Explosives.—The carriage of petroleum on buses and other vehicles carrying passengers, other than the quantity permitted under rule 82 for use only in the propulsion of the vehicles, is under this rule an offence punishable under Section 23 of the Petroleum Act, 1934, with a fine which may extend to five hundred rupees for a first offence or two thousand rupees for every subsequent offence. The rule is intended to put an immediate stop to the dangerous and undesirable practice of transporting petrol among or above the passengers inside passenger buses.

67. *Vehicles to be constantly attended.*—(1) Every vehicle while engaged in the transport of petroleum by road shall be constantly attended by at least one person:

Provided that such vehicles may be left unattended in places previously approved by the Chief Inspector.

(2) Every vehicle on which more than 1,000 gallons of petroleum is being transported by road, or which, while transporting any petroleum by road is being trailed by another vehicle, shall so long as it is in motion, be attended by at least two persons.

Comments by the Chief Inspector of Explosives.—From the wording of this rule and of rule 73 (iv) it will be observed that the restrictions imposed extend to tank wagons not only on the road but also when halting at and delivering petrol to service stations. In the past it has been a not uncommon practice for the attendant with a vehicle supplying bulk petrol to a service station to commence the delivery and then leave his wagon unattended, with the petrol discharging into the underground tank, while he concludes his business in the station office. It is also not uncommon for a trailer to be dropped at a service station, coupled up to the underground tank, the discharge started and then the trailer left in this condition while the main vehicle proceeds to make delivery elsewhere. These practices cannot be too strongly condemned. The storage of petroleum in underground tanks is just about as safe a method of storage as it is possible to conceive, but during the operation of filling such a tank from a road vehicle what danger there is, is unquestionably at a maximum. A fire involving the site of an underground tank is, experience proves, likely to do little harm; this cannot be said of a fire in the same situation involving also the contents of a tank wagon. Experience has further proved that it is possible in almost all cases of fire to uncouple the discharge hose and drive the tank wagon away before serious harm results. For this to be possible the vehicle must be constantly attended and it is within the spirit of the rule to say constantly attended by a person capable of uncoupling the hose and driving the lorry away.

The position of a trailer detached from its main vehicle is not so clear, but the question may be dealt with in several ways. As all trailers, in common with all other vehicles used for the transport of petroleum in bulk, have to be approved for use on the roads and they may not be employed in thickly populated areas without the permission of the District Authorities, the simplest way to handle the matter appears to be to make approval conditional on the trailer remaining attached to its parent vehicle all the time it is away from its garage.

The proviso to this rule is inserted to make provision for the garaging of filled tank lorries under approved conditions as regards the site of the garage and the safety distances and other safety precautions observed.

An "empty" wagon or trailer, in common with all other receptacles, will be held to contain petroleum unless it has been properly cleaned and freed from inflammable vapour.

68. *Trailers attached to vehicles transporting petroleum by road.*—(1) A trailer not exclusively used for transporting petroleum shall not be attached to any vehicle transporting petroleum.

(2) A trailer transporting petroleum shall not be attached to any vehicle other than a vehicle used for transporting petroleum, and not more than one trailer shall be so attached.

(3) A trailer shall have two axles.

(4) When a trailer is attached to a vehicle, the total quantity of petroleum transported on the trailer and the vehicle combined shall not exceed 2,000 gallons.

Provided that the Chief Inspector may, by order in writing and subject to such condition as he may deem fit to impose, raise the above limit to 3,000 gallons in the case of a tank wagon, and

(5) If a trailer transporting dangerous petroleum is attached to a vehicle transporting non-dangerous petroleum, the vehicle shall comply with all the provisions of these rules relating to vehicles transporting dangerous petroleun.

(6) A trailer other than a tank trailer shall not be attached to a tank-wagon. The capacity of a tank trailer shall not exceed 1,000 gallons, and no trailer shall be attached to a tank-wagon of greater capacity than 2,000 gallons.

(7) No trailer attached to a tank-wagon shall be employed within any thickly populated area without the permission in writing of the District Authority.

Comments by the Chief Inspector of Explosives.—To comply with rule 77 trailers require the approval of the Chief Inspector before being taken into use for the transport of bulk petroleum, and trailers for non-bulk must comply with rule 78. All lights on such vehicles must conform to the Standard laid down in rule 70; other lights are prohibited by rule 63.

Trailers carrying petroleum in tins and drums may not be attached to tank lorries and the written permission of the District Authority is necessary before a trailer may be employed in any thickly populated area. When granting such permission District Authorities are recommended to make their concurrence conditional on the trailer remaining attached to the parent lorry all the time it is away from its garage.

The principle indicated in sub-rule (5) is important. While it does not actually prohibit the carrying of two different classes of petroleum, the restrictions here imposed are of a very far reaching character and should receive careful consideration before dangerous and non-dangerous petroleum are despatched together.

69. *Tank capacity.*—In these rules the tank forming part of a tank wagon or tank trailer shall be deemed to include any number of tanks on the same chassis and any limitation herein prescribed on the capacity of a tank shall be construed so as to permit of the tank containing the amount specified under varying degrees of temperature.

Comments by the Chief Inspector of Explosives.—An air-space of not less than 5 per cent. of its capacity is usually called for when approving a tank intended for the carriage of bulk petroleum on these vehicles.

Including the weight of Petroleum the gross weight of a vehicle used for the transport of Petroleum by road shall not exceed the load carrying capacity of the road as prescribed by the Provincial Government.

70. *Employment of electric light.*—If electric lighting is employed on any vehicle, including a trailer, used in the transport of petroleum other than heavy petroleum by road, the following conditions shall be complied with :—

(i) the pressure shall not exceed sixteen volts;

(ii) the circuit shall be heavily insulated and shall be independent of the chassis, and the wiring shall be so fixed and protected as to reduce as far as possible the risk of damage;

(iii) the generator, battery, switches and fuses shall be carried in front of the fire-resisting screen and the battery shall be in an easily accessible position; and

(iv) means of cutting off the current close to the battery by a double pole switch or other suitable method shall be provided:

Provided that if the Chief Inspector is satisfied that petroleum is to be transported for a very urgent work of national importance, he may, subject to such safety conditions as he deems necessary, relax all or any of the provisions of this rule.

Comments by the Chief Inspector of Explosives.—The application of the rule is restricted to the electric lighting equipment, and the condition that the pressure shall not exceed 16 volts does not therefore preclude the use of 24 volt starters such as are sometimes fitted to the heavier type of motor lorry. The usual type of lamp supplied by a single electric wire and using the chassis of the vehicle as a return is prohibited under this rule.

To comply with sub-rule (ii) all the apparatus such as the dynamo, self starter, primary of the coil, distributor, oil gauge, petrol pump, horn, etc., as well as the battery, must be independent of and insulated from the chassis. **Only the secondary** of the coil supplying the sparking plugs may be connected to the metal work of the chassis and in that case the secondary winding must be quite separate from the primary winding. Particular attention should be paid to the connections between the parent lorry and the trailer and to the condition of any long wires such as those supplying the rear and stop lights.

This rule applies to all vehicles transporting petroleum other than heavy petroleum by road. That is, it applies equally to lorries carrying drums and tins as to tank lorries.

71. *Fuelling from vehicles.*—(1) No motor vehicle shall fill or replenish its fuel tanks with petroleum other than heavy petroleum directly from vehicles carrying petroleum in bulk.

(2) Aircraft may receive fuel by means of specially constructed tank lorries or wagons only if these are of a type approved by the Chief inspector for this purpose.

(3) During the fuelling of aircraft used for the conveyance of passengers no passenger shall be allowed to remain in the machine.

(4) No person shall be allowed to smoke within 100 feet of any aircraft while it is being, or is about to be fuelled.

(5) All aircraft engines within the distance specified in sub-rule (4) shall be stopped so long as fuelling is in progress.

(6) Nothing in sub-rules (2) and (5) shall apply to military aircraft fuelling on military aerodromes.

72. *Owner responsible for observance of rules.*—The owner of a vehicle used for the transport of petroleum who employs any person in connection with such transport, shall be responsible that all necessary measures have been taken toensure that such person is acquainted with and carries out the provisions of these rules.

73. *Precautions to be observed during filling or emptying tank-wagons.*—During the filling, discharging or emptying of any tank-wagon or trailer transporting petroleum in bulk other than heavy petroleum the following precautions shall be observed :—

(i) if the vehicle is mechanically-driven the engine shall be stopped so long as the filling, discharging or emptying is in progress and shall not be restarted until all tanks and valves have been securely closed.

Provided that this condition may be dispensed with in the case of vehicles approved under sub-rule (2) of rule 71, which are supplying aircraft;

(ii) adequate provision shall be made to prevent the accumulation of a dangerous static charge of electricity;

(iii) if the wagon is drawn by an animal or animals, they shall be removed from the wagon and the wheels securely scotched before the filling, discharging or emptying of any dangerous petroleum is begun; and

(iv) the vehicle shall be constantly attended by a competent person.

Comments by the Chief Inspector of Explosives.—The proviso to clause (i) is inserted to meet the case of fuelling units fitted with pumps driven from the lorry engine and specially designed for the rapid -re-fuelling of aircraft.

"clause (ii). : Considerable static charges may be picked up by bulk lorries, air crafts and railway tank wagons under certain conditions. The above vehicles and their piping systems with loading and discharging points when meant for Dangerous Petroleum or non-dangerous petroleum having flash points below 150°F should therefore be maintained at equal electrical potential by ensuring electrical continuity between the tank and the piping systems before any transfer of such petroleum into or out of the tank takes place. To achieve this end, a special loading cable connecting the discharging and receiving systems shall be provided and secured before covers are removed, valves are opened and hoses are connected. It shall also be seen that the joints are free from paint, ice, dirt or other insulating materials.

In connection with clause (iv) attention is invited to the note following rule 67.

74. *Composite vehicles.*—Petroleum in cans or other receptacles shall not be transported by road on any tank-wagon used for the transport of petroleum unless the wagon is so constructed as to comply with the conditions applicable to transport on wagons other than tank-wagons as well as with the conditions applicable to transport on tank wagons.

75. *Filling and dipping pipes to be kept closed.*—Except during the operations of filling or emptying a tank-wagon the filling and dipping pipes shall be kept securely closed. Where the filling pipes are not provided with a liquid seal, the covers shall be kept locked or properly sealed except during the operation of filling a tank-wagon, and the keys shall not be carried on the wagon.

76. *Filling and emptying by night.*—Except where approved electric lighting as specified in rule 105 is exclusively used, the filling, discharging and emptying of tank-wagons shall be performed between the hours of sunrise and sunset.

Note and References.—Rule 105 should be carefully studied; ordinary electric fittings are not suitable here.

77. *Approval of vehicles for transport in bulk necessary.*—(1) Petroleum in bulk shall not be transported by land except in a vehicle of a type approved in writing by the Chief Inspector.

(2) All such vehicles other than those exclusively used for the transport of heavy petroleum shall have a stamped, embossed, painted or printed warning exhibiting in conspicuous characters the words "Petrol", "Motor Spirit", "Kerosene" or an equivalent warning of the nature of the contents.

(3) Every such vehicle and its fittings shall be maintained in good condition.

Comments by the Chief Inspector of Explosives.—This rule applies to all petroleum transported by land in a receptacle exceeding 200 gallons in capacity.

No detailed specification for vehicles carrying bulk is laid down, but each case is dealt with on its merits. A typical vehicle is shown opposite page 50 Certain essential requirements applicable to mechanically driven vehicles are laid down in rule 79 and past practice in this country demands, except in the case of small tank carts the fitting of self-closing internal foot-valves to all discharge pipes where they enter the tank. These valves are in addition to the ordinary draw-off cocks and caps, and are so designed that they require to be held open to allow the contents of the tanks to be discharged.

78. *Vehicles for transport other than in bulk.*—(1) Every vehicle on which petroleum not in bulk is transported shall be strongly constructed and with sides and back of adequate height and shall be maintained in good condition.

(2) In the case of animal-drawn vehicles the requirement in sub-rule (1) regarding the sides and back of the vehicle shall not apply if the load is securely fastened to the vehicle.

(3) All receptacles shall be so packed as not to project beyond the sides or back of the vehicle.

(79) *Engines of mechanically-driven vehicles.*—(1) In every mechanically driven vehicle used for the transport by road of petroleum other than non-dangerous petroleum not in bulk or heavy petroleum:—

(*a*) the engine shall be of an internal combustion type;

(*b*) the engine fuel tank and electric batteries shall be effectively screened from the body of the vehicle by a fire-resisting shield carried up above the height of the load and down to within twelve inches of the ground; and

(*c*) the exhaust shall be wholly in front of the fire-resisting shield.

(2) If windows are provided in the fire-resisting shield they shall be fitted with wired glass.

(3) The fuel tank of every such vehicle other than an articulated vehicle may be behind the fire-resisting shield if—

(*a*) a fuel feed apparatus, placed in front of the shield, is used to lift the contents from the fuel tank; and

(*b*) the fuel tank is protected from blows by the frame or by stout steel guards and the filling hole cover is provided with a lock.

(4) The fuel tank of any vehicle may be behind the fire-resisting shield if the fuel used in the engine is heavy petroleum.

(5) A quick action cut-off valve shall be fitted to the fuel feed pipe of every such vehicle in any easily accessible position, which shall be clearly marked.

Notes and References.—Notification No. P-10 (5), dated the 5th April 1938 issued by the Chief Inspector of Explosives reads as follows :—

In exercise of the powers conferred by sub-rule (2) of rule 2 of the Petroleum Rules, 1937, it is hereby notified for general information that all mechanically driven vehicles used for the transport by road of petroleum other than non-dangerous petroleum not in bulk or heavy petroleum must comply with the requirements of rule 79 of the said Rules not later than the 1st day of January 1939.

Comments by the Chief Inspector of Explosives.—Certain fundamental requirements for mechanically-driven vehicles are here laid down and it is important to remember that they also apply to vehicles carrying dangerous petroleum in tins and drums. The fire-resisting screen should be continuous from the top of the cab, or above the load, whichever is higher, down to within twelve inches of the ground with the minimum number of openings for the transmission shaft and brake fittings. A space of not less than 6 inches, which must be left clear and unobstructed except for any part of the framework of the chassis, between the load and the fire-resisting shield is usually called for when approving these vehicles under rule 77.

80. *Speed limit for vehicles.*—Without prejudice to the operation of any other provision of law for the time being in force whereby a lower limit of speed is imposed, the speed of a motor tank wagon, or a motor lorry transporting petroleum in receptacles shall not exceed 30 miles per hour if fitted with pneumatic tyres and 15 miles per hour if fitted with solid tyres.

81. *Exemptions.*—(1) If the Chief Inspector is satisfied that in respect of any class of vehicle any of the requirements of rules 68, 78 and 79 may be safely suspended or relaxed, he may authorise such suspension or relaxation for such period and under such conditions as he may think fit.

(2) Nothing in rules 68, 70, 77, 78 and 79 shall apply to vehicles and trailers in the possession of Armed Forces of Pakistan.

82. *Special provisions for motor conveyances.*—(1) Rules 63 to 80 shall not apply to the conveyance of petroleum in any motor vehicle for use only in the propulsion of such vehicle.

(2) No motor conveyance carrying passengers on hire shall carry any petroleum other than:—

(i) petroleum in the fuel tank incorporated in the conveyance, and

(ii) petroleum not exceeding 20 gallons in quantity intended to be used to generate motive power for the conveyance and kept in the manner provided in sub-section (2) of section 8 of the Act.

(3) During the filling or replenishment of the fuel tank of a vehicle licensed for conveyance of more than six passengers on hire, the driver or other person in charge of the vehicle shall not allow any passenger to remain in the vehicle.

(4) All petroleum tins carried in a vehicle carrying passengers for hire shall be securely closed and shall be carried in a specially prepared receptacle which is not accessible to passengers in the vehicle and is not on the roof.

Comments by the Chief Inspector of Explosives.—In many of the motor buses on the roads the body and chassis are so constructed that the petrol tank is under and inside the passenger accommodation—the worst possible place that could be found for it. When such tanks are being filled all the petrol vapour from the tank is discharged into the bus amongst the passengers and any spillage lies on or under the floor of the vehicle. Should anything occur under these conditions to start a fire, the greater number of any persons in the bus at the time must of necessity be burnt to death or seriously injured. To reduce this risk to the minimum sub-rule (3) has been introduced and it is the intention of the rule to encourage refuelling at the beginning and end of a run when the bus is empty and to stop the dangerous practices indicated above.

PART V.—TRANSPORT BY PIPE LINES.

83. *Application.*—The rules in this part apply only to the transport of petroleum by means of pipe lines other than those in any area in which operations for the winning of natural petroleum or natural gas or both are carried on or within the limits of refineries and installations.

84. *Casing.*—(1) An approved casing shall be put over the pipe line where it passes under any railway or public road and an approved protective casing shall be constructed round the pipe where it crosses over any railway or protected work:

Provided that the Chief Inspector may waive this rule in the case of any specified road or roads, if he is satisfied that the safety of the public is not likely be endangered thereby.

(2) The Chief Inspector may require an extra casing to be put over the pipe line where it crosses any stream, road, railway or protected work.

85. *Patrol.*—The whole of every pipe line shall be efficiently patrolled.

Comments by the Chief Inspector of Explosives.—Cases have occurred where a line has burst or started a serious leak and considerable quantities of petroleum have escaped before the flow was cut off—conditions of this nature constitute a contravention of rule 85.

86. *Prevention of excessive pressure.*—As a precaution against excessive pressure in the pipe line, an automatic by-pass relief valve and a reliable pressure gauge shall be placed on the common discharge pipe at pumping stations.

Comments by the Chief Inspector of Explosives.—To comply with these conditions it is obviously necessary that the pipe line itself should be frequently tested and the by-pass relief valve adjusted to allow an ample margin of safety in working pressures over test pressures. The usual engineering requirements in this respect are undoubtedly called for and it seems that a reserve strength of not, less than 50 per cent, in the case of metal pipes and 33-1/3 per cent. in the case of rubber flexibles can reasonably be demanded, Presumably "working pressure" will be held to include any "water hammer" effects also.

87. *Telegraph and telephone.*—A telephone or telegraph line shall be provided with connections at frequent intervals along the pipe line. One telephone or telegraph line shall suffice for a series of parallel pipe lines :

Provided that this rule shall not apply to a pipe line connecting railway siding with installations if the length of such pipe line does not exceed one mile.

Comments by the Chief Inspector of Explosives.—Read with rule 85 the intention here appears to be that it shall be possible to immediately communicate with the pumping station from any part of the pipe line.

88. *Gate valves.*—Gate valves shall be provided at reasonable intervals.

Comments by the Chief Inspector of Explosives.—"Reasonable intervals" cannot be more closely defined as much depends on local conditions. Any point where particular dangers are likely to arise from a rupture, when the contents of a long length of line may be discharged by a break in the pipe, or when the contravention of rules 24 and 25 may be in question, seems to demand the fitting of a valve.

89. *Checking of tank gauges.*—Tank gauges shall be checked between stations at frequent intervals.

CHAPTER IV

STORAGE OF PETROLEUM REQUIRING LICENCE.

90. *Licence for storage.*—Save as provided in section 7, 8 and 9 of the Act and by rule 109 no one shall store any petroleum except under a licence granted under these rules:

Provided that no licence shall be necessary for storage in a well-head tank.

91. *Precautions against fire.*—(1) No person shall smoke in any installation or storage shed.

(2) No person shall carry matches, fuses or other appliance for producing ignition or explosion in any installation or storage shed which is used for the storage of dangerous petroleum.

(3) No fire, furnace or other source of heat or light capable of igniting inflammable vapour shall be allowed in any licensed installation or storage shed save in places specially authorised by the licensing authority for the purpose.

(4) An adequate supply of dry sand or earth together with the necessary implements for its convenient application, or other efficient means of extinguishing petroleum fires, shall always be kept in every installation and in or adjacent to every storage shed.

Comments by the Chief Inspector of Explosives.—Smoking in an installation even in a boiler house, cannot be allowed without greatly increasing the risk of lighted smoking material and matches or lighters being carried into a danger area. There appears to be no reason, however, why offices, living quarters and mess rooms should not be fenced off from the danger areas and by being outside the safety zone be excluded from the licensed premises and the operation of this rule.

In sub-rule (3) the words "other source of light or heat capable of igniting inflammable vapour" being within the scope of this prohibition such articles as motor vehicles with engines running, ordinary electric motors, switches, lamps and other electric fitting including those on motor lorries, locomotives, internal combustion engines not fitted with flame-proof exhausts and ignition appliances, portable hand lamps, electric or otherwise, not specially designed for use in gassy atmospheres, magneto-electric testing appliances capable of producing a spark; unprotected electric accumulators and batteries and other potential sources of ignition.

Sub-rule (4) requires the provision of efficient means of extinguishing petroleum fires and it is only wise to provide proper places at different points in an installation, or outside a storage shed, where fire fighting appliances can be kept and to take steps to ensure that the equipment is not removed from those places, or used for any purpose whatsoever other than for dealing with a fire or for drill and test purposes. It is equally important that the equipment should not be locked away or be in any manner inaccessible; petroleum fires do not give much warning and they can spread very rapidly indeed. Fire drill should be a regular practice and every person on the premises well trained in the duties and operations which he will be called upon to perform in the event of an outbreak.

Where dry earth or sand is kept as a fire fighting aid, the need for the provision of the necessary implements of its easy application to the seat of the fire will appear obvious even to a notice, but it is amazing the number of times this very elementary precaution is overlooked. A forty gallon barrel of sand is almost impossible to handle in the event of a fire and in every case where the sand bin itself is too big or heavy to be easily lifted some utensil such as a shovel or trowel must be kept in or alongside the bin. These implements and the bins themselves may with advantage be painted with some distinguishing colour such as a bright red. Experience has shown that open-topped bins, such as were commonly met with at one time in installations and depots, allow their contents to weather and harden rapidly, to an extent that makes it difficult to use the sand or earth effectively in an emergency. For this reason it is important that sand-bins or buckets should be provided with suitable lids or covers and the contents frequently examined to ensure that they are kept in usable condition.

There are many efficient chemical fire extinguishers on the market but in most cases they only remain in efficient condition if periodically examined and recharged at regular intervals. In a licensee's own interest, and to prevent any contravention of this rule, a proper system for the inspection and maintenance of all chemical fire extinguishers should be instituted and some clear

and easily read notice attached to or painted on each apparatus showing the last date of recharging and inspection. Fire extinguishers should never be left in place uncharged. Attention is drawn, also, to the fact that many of the soda-acid operated extinguishers are designed to work at pressures of 250-300 lbs. per square inch and that there is often very little margin in the strength of the container to allow for depreciation and consequent safety. A periodical hydraulic test seems very desirable. A year or two ago tests on a considerable number of these machines installed in plants in England showed that no less than 12-½ per cent. of those examined were beyond any further possible service, in fact dangerous to operate.

92. *Supervision of operations within an installation or storage shed.*—All operations within an installation or storage shed shall be conducted under the supervision of an experienced responsible agent or supervisor.

93. *Cleanliness of installation or storage shed.*—The ground in the interior of an installation, and the protected area surrounding any storage shed or installation, shall be kept clean and free from all inflammable material, waste vegetation and rubbish.

Explanation.—In this rule "protected area" means the area necessary for the maintenance of the distances required under the conditions of the licence to be kept clear between any installation or storage shed and any protected work.

Comments by the Chief Inspector of Explosives.—The storage of uncleaned petroleum receptacles on the roads and in the protected areas in an installation or round a storage shed is prohibited by this rule. Such packages contain inflammable—and explosive—material and proper arrangements should be made for their storage.

94. *Drainage.*—(1) All enclosures surrounding tanks or buildings belonging to an installation or storage shed shall be kept drained and no water shall be allowed to accumulate in the enclosure.

(2) Where drainage is effiected by means of a pipe, the pipe shall be fitted with a valve actuated from the outside of the encolsure:

Provided that this sub-rule shall not apply to storage sheds which are not required under these rules or the terms of the licence to be provided with an enclosure wall or embankment.

(3) All valves and other openings for draining off water shall be kept closed except when water is being drained off.

(4) The nature of the drainage arrangements shall be shown in the plan submitted with the application for a licence.

Comments by the Chief Inspector of Explosives.—Prevention of outflow, by which is meant prevention of the escape of petroleum in the liquid form from the premises in which it is stored, is one of the most important safeguards demanded wherever any quantity is stored. There are many ways of dealing with the problem and the safest method of which we have knowledge to-day is undoubtedly storage in tanks sunk completely underground. Where, however, large quantities are in question there are many difficulties connected with the provision of underground storage and the familiar bund, or wall, forming a petroleum tight enclosure all round a tank erected above ground is generally adopted. Once such an enclosure is taken into use it becomes, of course, a trap for rain water equally as well as for petroleum and it is essential, if the full capacity of the enclosure is to be retained for petroleum, to make some provision for draining away the surface water. This is in general a simple enough matter but there are, nevertheless, one or two points which call for careful attention if the whole object for which the bund is provided is not to be defeated. First and foremost is the question of being able to quickly and easily close or shut off the draining arrangement under all conditions; including that of the bund being full of blazing petroleum—sub-rule (2) covers this. Secondly, as prescribed in sub-rule (3), all draining arrangements should be kept closed as permanent practice and only allowed to be open during the actual operation of drawing off water. Where it is the practice to leave the valves of such appliances open a first flow of burning petroleum would, with many designs of drain at present in use, carry the fire outside the enclosure and probably render the latter closing of the valve difficult, if not impossible. Thirdly, whatever arrangements are adopted for the draining of the enlcosure they should be simple, and effective. Such devices as a swinging flap designed to be shut by a surge of liquid are not only very liable to be rendered inoperative by rust or dirt but they do not comply with the requirements of this rule.

95. *Exclusion of unauthorised persons.*—(1) Every installation shall be surrounded by a wall or fence of at least six feet in height:

Provided that nothing in this sub-rule shall apply to an installation licensed under the rules in force immediately before these rules come into operation unless its fencing is considered by the licensing authority to be unsatisfactory:

Provided further that the Chief Inspector may waive this sub-rule in the case of an installation connected with a pump outfit and floating storage barges, under such conditions as he deems necessary.

(2) Precaution shall be taken to prevent unauthorised persons from having access to any storage shed or installation.

Comments by the Chief Inspector of Explosives.—In general this rule appears to require that any storage shed outside an installation must be kept locked or guarded when not in use and that an installation must be provided with efficient watchmen.

96. *Children.*—No person under the age of 15 years shall be employed in or allowed to enter any premises licensed under these rules.

97. *Receptacles for petroleum.*—The provisions of rules 26, 27 and 28 shall apply to petroleum stored under licence.

98. *Petroleum only to be stored.*—No installation or storage shed shall without permission in writing from the Chief Inspector be used for any purpose other than the storage and distribution of petroleum and purposes directly connected therewith.

99. *Marking of capacity of tanks.*—The capacity in gallons of every tank in an installation shall be conspicuously marked on the tank.

The " capacity " of the tank is to be calculated and marked according to the nature of the petroleum proposed to be stored therein leaving margin for air-space prescribed in the Rules. The object of this provision is to ensure that the capacity thus marked constitutes the actual licensable capacity of the tank.

100. *Consturction of tank.*—Every tank or other receptacle used for the storage of petroleum in bulk other than well-head tank shall be constructed of iron or steel properly erected and designed according to sound engineering practice and, together with all pipes and fittings shall be so constructed and maintained as to prevent any leakage of petroleum.

101. *Testing of tanks.*—(1) Storage tanks or other receptacles for the storage of petroleum in bulk other than well-head tanks, after being placed in a final position and before being brought into use, shall, unless they were in use before the 1st April 1937, be tested by water pressure by the licensee in the presence of an Engineer accepted as qualified for the purpose by the licensing authority.

(2) The water used for testing shall be free from petroleum and shall not be passed through any pipes or pumps ordinarily used for the conveyance of petroleum :

Provided that, where the licensing authority is satisfied that it is not reasonably possbile to convey water by pipes or pumps other than those ordinarily used for the conveyance of petroleum, he may permit the use of a petroleum-pipe or pump for the conveyance of water subject to such condition as he may impose.

(3) The test referred to in sub-rule (1) shall also be made before any receptacles for the storage of petroleum in bulk are brought into use after being repaired.

Comments by the Chief Inspector of Explosives.—"Tested by water pressure" is here held to mean that the tank must be filled with water at least to the height to which it is proposed to fill it with petroleum. This procedure serves the double purpose of showing up any serious leaks and of testing the stability of the tank itself and the foundations on which it is erected. The use of water, in addition to the purposes indicated above, has the advantage of being safe. Compared with air, which is sometimes proposed for the purpose, water is not compressible, and should failure of the tank occur under test no great danger is involved even if considerable pressure is being used. A similar failure in a tank under test with air pressure is capable of doing considerable damage to life and property.

It is the usual practice for the Engineer supervising the testing of tanks under this rule to issue a certificate under his own signature certifying that in his opinion, the test has been properly carried out and that the tanks or other receptacles are safe to use for the storage of the quantity of Petroleum for which they are intended. It is not necessary that this Engineer shoud be a Government official (*e.g.* a P.W.D. Enginier), but a responsible member of an Oil Companys Staff can be engaged on these duties if his standing with his own employers is regarded as satisfactory by the licensing authority. Where the premises are situated on land belonging to a Port Authority, however, it seems desirable for the test to be carried out in the presence of a Port Engineer deputed by the Port, and in this case, as also when the services of a Government Engineer are required, a fee for the Engineer's services can reasonably be charged.

The object of the restriction imposed by sub-rule (2) is to prevent the production of an explosive or inflammable atmosphere in the tank under test. It is an exceedingly difficult matter to completely free pipes or pumps that have once been used for petroleum from all inflammable and gaseous products, and many accidents have been caused by the introduction into a "clean" tank of small quantities of petroleum from the pipe lines ; as little as about one pint of petrol to a 1,000 gallons of tank capacity is sufficient to form a highly explosive mixture with the air in the tank.

102. *Earthing of tanks.*—All tanks or other receptacles for the storage of petroleum in bulk other than well-head tank or tanks for receptacles of less than 10,000 gallons capacity containing heavy petroleum, shall be electrically connected with the earth in an efficient manner by means of not less than two separate and distinct connections placed at opposite extremities of such tank or receptacle. The roof and all metal connections of such tank or receptacle shall be in efficient electrical contact with the body of such tank or receptacle.

Comments by the Chief Inspector of Explosives.—(1) It is very necessary that no metal of any sort on or about a tank be left unconnected to earth, and that all connections be well and permanently made in such a manner that the resistance of any part or fitting to the earth plate and to any other part of fitting is as little as possible; certainly less than 1 ohm. The whole of the roof stair-cases, hand rails, water drains, pipes and similar fittings are of ten unintentionally insulated from the main metal work by a coating of oil, the use of non-metallic washers in making up a joint, a coat of paint, and even by weathering and rust or dirt. Any metal work in the neighbourhood of, but electrically unconnected to, any other metal work in its vicinity, or to earth, is a possible source of an electric spark and therefore, in petroleum premises, of a fire. Electric charges may accumulate from static electricity produced by the moving and handling of petroleum or from the atmosphere. Mere differences in elevation appear under favourable conditions to be quite sufficient to induce enough electricity to produce quite substantial electric sparks, between the metal and earth or other metal with a lower charge. In these cases, though of course such conditions considerably assist the formation of a charge, the presence of a thunder storm or of thundery weather is by no means necesary ; any state of electrical strain in the air, or the pre sence of a wireless broadcasting station in the vicinity, may give rise to dangerous conditions particularly in a dry atmosphere.

2. The constructional details for lighting protective system for metallic and ferro-cement petroleum tanks should conform with the following instructions:

(i) **Air Termination.**—Copper rodhard or medium hard drawn $\frac{1}{2}$ inch in diameter, projecting at least one foot above the object on which it is fixed. It should be flattened at the lower end, soldered and double rivetted with the down conductor.

(ii) **Down Conductor.**—For tanks having base area of 1,000 sq. ft. and/or a height not exceeding 60 ft.—copper strip soft annealed $\frac{1}{4}'' \times \frac{1}{8}''$. For all other structures—copper strip, soft annealed $1'' \times \frac{1}{8}''$.

The steel reinforcement of ferro-cement tanks metallic pipes of tanks should not be bonded with the down conductor. The down conductor should follow the most direct path possible between the air termination and the earth termination. There should be no up-turn in any down conductor and the radius of any bend should be as gre at as possible. If a down conductor is required to pass through a cement concrete bed of a tank ishoulppass though an opening filled with loose earth.

(iii) **Earth terminations.**—Copper plate 2 ft. × 2 ft. ×3/16 inch. The down conductor should be soldered to the earth plate and twice rivetted or bolted with copper bolts. The plate should be buried 3 ft. below sub-soil water in two layers of 6 inch thick coke at least 6 yards away the object. It the sub-soil water emanates from a spring 50 lbs. of rock-salt solution should be put into the bed of the earth plate.

(iv) **General.**—A lightning protective system should have as few joints in it as possible. Where these are necessary they should be soldered and at least double rivetted or bolted with copper bolts to ensure mechanical as well as electrical soundness. Joints and bounds other than at testing points should be protected by an inner tenacious material. Down conductor should be sited on an outside wall and never on the inner face.

103. *Inspection of earth connections.*—(1) The connections and contacts required by rule 102 shall be inspected and tested at least once in every year by an Inspector or Assistant Inspector of Explosives in the manner prescribed by the Chief Inspector.

(2) The inspection under this rule should be carried out in the following manner :—

(i) Examine visually all joints and connections above ground to discover if any of these are loose or disconnected. The number of joints should be as few as possible but where they are necessary they should be properly soldered as well as rivetted to ensure both mechanical and electrical soundness.

(ii) The electrical resistance to earth should be tested and measured either by means of a direct reading instrument or by the procedure laid down in the " Code of Instructions for the Guidance of Public Works Officers in the Erection and Testing of Lightning Conductors".

(iii) The conditions of the connections and contacts will not be considered satisfactory unless the resistances to earth are found to be less than 10 ohms.

CAUTION :—The use of any testing instrument, capable of producing a spark, which is not so shielded as to be incapable of igniting inflammable vapours, is prohibited under Rule 91.

(3) A fee of rupees twenty, for the service, shall be payable by the licensee for the test prescribed in Rule 103 (1).In the event of the test proving unsatisfactory a fee of rupees fifteen shall be payable by the licensee for each subsequent test until the circuit is passed by the Testing Officer as satisfactory:

Provided that (1) not more than Rupees twenty shall be charged for all tests made on a circuit during any one day; and

(2) where two or more earthing circuits are connected to the same tank, fee for testing all such circuits shall not exceed the fee prescribed for testing one circuit.

The inspection under this Rule should be carried out in the following manner :—

(1) Examine visually all joints and connections above ground to discover if any of these are loose or disconnected.

(2) While testing an inividual earth connection other connection fitted on the object should be disconnected. The electrical resistance to earth should be tested and measured either by means of a direct reading instrument or by the procedure laid down in the "Code of Instructions for guidance of Public Works Officers in the erection and testing of lightning conductors". The "British Standard Code Practise C.P. 326.101 (1948)" may be consulted for further details.

(3) Earth resistance should not ordinarily exceed 1 ohm though 10 ohms is the permissible limit.

(4) The test record should be maintained in the following form :

Name of the licencee.

Licence No.

Tank No.

Date of inspection.

Resistance in ohms in each connection :

(a) First reading,

(b) Second reading,

(c) Third reading,

(d) Mean (average).

Weather report for the previous week.

Nature of the soil.

104. *Night working.*—No installation or storage shed shall be open, and no work in any installation or storage shed shall be permitted, between sunset and sunrise except where approved electric lighting as specified in rule 105 is exclusively used.

105. *Electric apparatus.*—(1) All electric wires installed at less than 15 feet from the ground in any petroleum installation or situated within 20 feet of any building or tank containing dangerous petroleum shall consist of insulated cables, enclosed in metallic coverings which shall be gas-tight, electrically and mechanically continuous throughout, and effectively earthed outside the building.

(2) No electric wire shall pass over any petroleum tank, filling, painting or storageshed.

(3) In filling, painting and storage sheds and pump rooms used for—(i) dangerous petroleum—

(a) all electric meters, distribution boards, switches, fuses, plugs and sockets shall be placed outside the building and shall be of flame-proof construction satisfying the requirements of the British Standard Specification No. 229, and the frame shall be effectively earthed;

(b) all electric fixed lamps shall be enclosed in a well glass flame-proof fitting, either double encolsed with an inner and an outer well glass or singly encolsed with substantial metal protection ; such lamps shall be installed at 12 feet where possible, but in no case less than 8 feet, above the floor level;

(c) all electric portable hand lamps of the self-contained pattern shall be of a type approved by the Chief Inspector;

(d) for the examination of cans and other containers, electric torches employing a separate battery may be used; these torches shall be fitted with substantially protected flame-proof globes and shall be supplied through a cable of cab-tyre or other suitable sheathing and properly constructed flame-proof connectors; and

(e) no single fixed lamp shall exceed 150 watts.

(ii) non-dangerous petroleum :—

(a) all electric meters, distribution boards, switches, fuses, plugs and sockets shall be encolsed in iron-clad, gas-tight cases and shall be fixed at least 5 feet above the floor level in well-ventilated positions close to the door;

(b) all electric fixed lamps shall be enclosed in a gas-tight well glass fitting provided with substantial metal protection;

(c) all electric portable hand lamps shall be fitted with substantially protected gas-tight globes and supplied through a flexible cab-tyre or other suitable sheathing and properly constructed gas-tight connectors; and

(d) no single fixed lamp shall exceed 200 watts and no hand lamp shall exceed 30 watts.

Comments by the Chief Inspector of Explosives.—Rule 105 lays down a certain minimum standard for electrical apparatus and should be read with rule 91 (3).

Electrical equipment complying with British Standard Specification No. 229 is fitted with a plate indicating that it has been approved by the Mines Department of H. M. Board of Trade for use in dangerous surroundings. The common type of electrical appatratus, however good the quality, does not comply with this regulation. The explosion proof motor, together with the same type of switch gear and other fittings, has been specially developed for service under conditions including those existing in petroleum premises, and its adoption, to a great extent, eliminates one of the worst hazards in the industry.

Electric lamps as usually fitted are by no means safe in the presence of petroleum vapours. The glowing filament of a broken bulb is capable of igniting most inflammable gases, as is also the sparking produced by vibration at the base of a lamp loosely fitting into its socket. For similar reasons electric lamps should never be changed with the current on—always see the switch is off first even if the lamp is not alight.

The use of hand lamps is, it will be noted, strictly limited and wherever possible fixed lights should be installed. No matter how well made and protected, the outer glass cover is not immune from breakage under rough treatment, and the flexible cable is always liable to damage or to be torn out of its end connections with the production of an open spark.

Electric torches and spot lights of the popular type are unsuitable for use on petroleum premises, and only equipment of this nature specially manufactured for use in gassy atmospheres should be used.

106. *Pumping.*—No internal combustion engine or electric motor shall be used for driving pumps for pumping petroleum save in a pump house specially constructed for the purpose and under such conditions as may be approved by the Chief Inspector:

Provided that this rule shall not apply where the motor, control switchgear and starting apparatus are of flame-proof construction satisfying the requirements of the British Standard Specification No. 229.

Notes and References.—*See* comments under rule 105.

107. *Posting up of rules and conditions.*—Copies of the preceding rules in this Chapter and of the conditions of the licence shall be exhibited in a conspicuous place in very licensed installation and storage shed.

Comments by the Chief Inspector of Explosives.—In some instances Local Authorities have been inclined to interpret this rule to mean that a copy of the rules and conditions of the licence must be exhibited on the pump itself in the case of premises licensed to store petroleum in connection with a pump outfit for fueling motor coveyances. The rule does not necessarily demand this and its requirements will be fully met if the papers are posted on, or in, the installation, kiosk or office. It would be very difficult to maintain the necessary documents in good condition on the exposed situations in which many pumps are sited, and it is primarily the intention that the operatives and staff on the premises be well acquainted with their duties and the liabilities devolving upon them and that they should be in a position to invite attention to the rules should the need arise.

108. *Petroleum in possession of the Armed forces of Pakistan.*—Nothing in rules 90, 95, 98, 101 and 104 shall apply to petroleum in the possession of the Armed Forces of Pakistan.

CHAPTER V

STORAGE OF PETROLEUM NOT REQUIRING LICENCE.

109. *Exemption of heavy petroleum.*—(1) Notwithstanding anything contained in these rules, it shall be permissible to store without licence, subject to the conditions of this Chapter, heavy petroleum in quantities not exceeding 10,000 gallons, which is not stored in the same installation or storage shed as other petroleum.

(2) The provisions of Chapter IV shall not apply to petroleum so permitted to be stored without licence under sub-rule (1).

(3) The exemption under sub-rule (1) above shall not apply to the storage of any kind of petroleum in any quantity in bulk stored in a tank connected with a pump outfit for fueling motor vehicles which will be licenced in Form 'K'.

Comments by the Chief Inspector of Explosives.—The concession is limited to heavy petroleum and the wording of the rule and Section 7 of the Act make it quite clear that it may not be stored with dangerous or other non-dangerous petroleum even when the quantities concerned are those exempt under the Act, or these rules, from the need for a licence. It is not permissible to store 9,500 gallons of heavy petroleum and 500 gallons of kerosene in the same godown or to have in the same unlicensed premises, say 1,000 gallons of heavy petroleum, 200 gallons of kerosene and 6 gallons of petrol. Any quantity of heavy petroleum making with other non-dangerous petroleum on the same premises a total in the aggregate of over 500 gallons must be licensed. Heavy petroleum stored in premises licensed for other petroleum will automatically be classed as the other petroleum in so far as safety distances, storage capacity and licence fees are concerned.

The provision of the rules relating to importation, transport, refining and blending and to the testing of petroleum still apply to heavy petroleum stored without a license under this rule.

110. *Storage of exempted heavy petroleum in bulk.*—(1) Heavy petroleum in bulk, if stored otherwise than under a licence, shall be stored in tank constructed of iron or steel properly erected and designed and the tank with all pipes and fittings shall be so constructed and maintained as to prevent any leakage of petroleum.

(2) All tanks of a capacity exceeding 1,000 gallons shall be surrounded by a bank or wall, or sunk in a pit, so constructed and maintained as to be able to contain without leakage the whole of the petroleum liable to be present at any one time in the tank.

(3) A distance of not less than ten feet shall be kept clear between protected works and the enclosure walls or banks.

(4) Nothing in this rule shall apply to petroleum in the possession of the Armed Forces of Pakistan.

Comments by the Chief Inspector of Explosives.—When the protected works comprise other petroleum premises the distances given in sub-rule (3) will not apply but the distances called for will, in such circumstances, be those necessitated by the conditions of the license for the other premises.

111. *Storage of exempted heavy petroleum not in bulk.*—Heavy petroleum which is not in bulk, if stored otherwise than under a licence, shall, if the quantity exceeds 500 gallons, be stored in a storage shed of which either—

(*a*) the doorways and other openings shall be built up to a height of one foot above the level of the floor; or

(*b*) the floor shall be sunk to a depth of one foot.

112. *Prior report of storage of exempted heavy petroleum.*—Every person intending to store heavy petroleum in quantity exceeding 1,000 gallons otherwise than under a licence shall send to the Chief Inspector a prior report stating the situation of the premises on which such petroleum is to be stored.

113. *Garages and hangars.*—(1) Every garage or hangar used for housing any motor conveyance containing dangerous petroleum in bulk in any tank incorporated in the conveyance, whether such petroleum is intended to be used to generate motive power for the conveyance or not, shall be constructed of uninflammable material and be effectively and safely ventilated to the open air.

(2) Every such garage or hangar shall be in charge of a competent person who shall be responsible for taking all proper precautions against fire and shall prevent unauthorised persons from having access to the building.

Comments by the Chief Inspector of Explosives.—By the definition of "petroleum in bulk" rule 113 is applicable to every garage or hanger housing any motor-car, motor-bus, motor-boat aircraft or other motor conveyance on which the petroleum tank has a capacity exceeding 200 gallons.

CHAPTER VI.

LICENCES.

114. *Application for licence.*—(1) A person wishing to obtain or to renew a licence prescribed under these rules shall submit an application in writing to the authority empowered to grant such a licence.

(2) Every application for the grant or renewal of a licence to store or to import and store petroleum shall be in Form D.

Comments by the Chief Inspector of Explosives.—Applications for licences to import and store not more than 60 gallons of paint, rubber solution and other dangerous petroleum not intended for use as a motor fuel and to store petrol in quantities not exceeding 30 two gallon tins, as well as for storage licences for kerosene, fuel oil and other no-dangerous petroleum in tins and drums in quantities of not more than 5,000 gallons, should be made to the District Magistrate. In all other cases the application should be addressed to the Chief Inspector of Explosives in Pakistan, Karachi.

Copies of Form D may be obtained from the District Magistrate, or the Chief Inspector of Explosives in Pakistan.

To save unnecessary correspondence and delay the application should be complete in the first instance. That is it should comprise—

(1) Form D properly filled in.

(2) The licence fee must be paid by treasury chalan direct to the Chief Inspector in respect of licences issued by him. (Rule 128).

(3) At least two* copies of a properly drawn scale plan of the premises showing the construction as well as all the surroundings of the premises;

+(4) A "no objection certificate" from the District Authority.

(5) The old licence.

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*Three copies are necessary when an authenticated copy of the licence is required.

+"No objection certificate" is not necessary when an application is made for the renewal of a licence.

115. *Grant of licence.*—(1) Licences for importation and storage may be granted by the licensing authorities set forth in Schedule I in the forms, for the purposes, and on payment of the fees, specified therein.

"(2A) Notwithstanding anything contained in sub-rule (2), the licensing authority may, if it is satisfied that a licence is required for specific work of national importance and for a short period, grant a licence for a period not exceeding three months but not extending beyond the 31st December, following the date on which the licence is granted: Provided that an Inspector of Explosives shall not grant such a licence without the concurrence of the Chief Inspector of Explosives if a Certificate is not obtained from the District Authority under sub-rule (3)" ; and

(2) A licence in form H may be granted for such period as the licensing authority may deem necessary subject to a maximum of twelve months. Every other licence granted or renewed under these rules shall remain in force until the 31st day of December of the year for which the licence is granted or renewed.

(3) Where the licensing authority is the Chief Inspector or an Inspector of Explosives an applicant for a new licence may apply to the District Authority for a certificate to the effect that there is no objection to the applicant receiving a licence for the site propoesed and the District Authority shall, if he sees no objection, grant such certificate to the applicant who may forward it to the Chief Inspector or an Inspector of Explosives with his application in Form D.

(4) The Chief Inspector or the Inspector of Explosives may refer an application not accompanied by a certificate granted under sub-rule (3), to the District Authority for his observations.

(5) If the District Authority, either on a reference being made to him or otherwise, intimates to the Chief Inspector or the Inspector of Explosives that any licence which has been applied for should not in his opinion be granted, such licence shall not be issued without the sanction of the Central Government.

(6) No licence in Form H shall be granted except to a person holding a licence in Form I.

(7) In the case of licence granted for storage one copy of the plan or plans of the storage premises signed in token of approval by the licensing authority shall be attached to the licence and one copy shall be filed for record in the office of the licensing authority.

Comments by the Chief Inspector of Explosives.—All applications for new licences, except those for licences in forms H, I and J, should be accompanied by the "no-objection certificate" referred to in sub-rules (3), (4) and (5) and in general, no new licence will be granted unless such certificate is forthcoming.

These certificates should be obtained from the Port Authority when they are on port land; from the Director of Civil Aviation in the case of premises situated on an aerodrome and from the District Magistrate in all other cases.

It is not the intention of this rule that the authority issuing the certificate should thereby incur any responsibility in respect of the safety distances, layout or other technical matters connected with the petroleum premises, but rather is the rule intended to ensure that all local interests receive full consideration, particularly in so far as traffic problems, public convenience and town planning schemes are concerned, before new petroleum premises are established in their area. The issue of the "no objection certificate" is, therefore, intended as an assurance that these aspects of petroleum storage, which are of great local importance, have been duly considered and, moreover, that the licensee may expect to enjoy undisturbed possession of his site in respect of them. This latter point, that there is another aspect of the question—the licensee's, should not be lost sight of. A modern filling station and, in a larger degree, bigger petroleum premises, cost a great deal of money to install and it is only reasonable for the licensee to expect security of tenure, once he has obtained the concurrence of the authorities to his proposals.

The relation of sub-rule (7) of the above rule to rule 130 (2) should be noted. Authenticated copies of a licence, as well as the original licence itself, require a copy of the plan or plans of the storage premises signed in token of approval by the licensing authority to be attached to them.

116. *Particulars of licence.*—Every licence granted under these rules shall be held subject to the conditions endorsed on it and shall contain all the particulars which are contained in the form prescribed for it by these rules.

117. *Power of licensing authority to alter conditions.*—(1) Notwithstanding anything contained in rule 116 the licensing authority, at the time of issuing a licence may omit, alter or add to any of the conditions specified in the prescribed form of licence.

(2) The power conferred by sub-rule (1) shall not be exercised by any licensing authority other than the Chief Inspector of Explosives.

118. *Amendment of licence.*—(1) Any licence granted under these rules may be amended by the authority granting such a licence:

Provided that the amendments shall not be inconsistent with any rule in this Chapter.

(2) A licensee who desires to have his licence amended shall submit it to the licensing authority with an application stating the nature of the amendment and the reasons therefor.

(3) The fee for the amendment of a licence shall be rupees five *plus* the amount (if any) by which the fee that would have been payable if the licence had originally been issued in the amended form exceeds the fee originally paid for the licence.

119. *Renewal of licence.*—(1) A licence may be renewed by the authority empowered to grant such a licence, provided that a licence which has been granted by the Chief Inspector may be renewed without alteration by an Inspector of Explosives duly authorised by the Chief Inspector in this behalf.

(2) Every application for the renewal of a licence shall be made so as to reach the licensing authority not less than thirty days before the date on which the licence expires, and, if the application is so made, the premises shall be held to be duly licensed until such date as the licensing authority renews the licence or until an intimation that the renewal of the licence is refused has been communicated to the applicant.

(2A) Every application under sub-rule (2) shall be accompanied by the licence which is to be renewed together with the approved plan attached thereto and the original treasury receipt showing the deposit of the correct renewal fee under the correct head of account.

(3) The same fee shall be charged for the renewal of a licence as for the grant thereof, provided that if the application for renewal is not received within the time specified in sub-rule (2), the licence shall be renewed only, on payment of double the fee ordinarily payable for the licence.

Comments by the Chief Inspector of Explosives.—Sub-rule (2) of this rule is very important and reference is invited to rules 13 (2), 14 (2), (c), 29 and 130. In the case of all licences, except licences in Form H, an application for renewal must be made, that is should reach the licensing authority, not later than the second day of December, if the privileges therein conferred are to be retained. If the application for renewal, accompanied with the prescribed fee and the licence is not made before the second day of December, the licence automatically expires at the end of the month and it becomes an offence under the Act to be in possession of petroleum on the premises, which will under these circumstances be deemed unlicensed premises.

120. *Refusal of licence.*—(1) A licensing authority refusing to grant, amend or renew a licence, shall record his reasons for such refusal in writing.

(2) A copy of the order containing the reasons for such refusal shall be given to the applicant on payment of a fee of rupees three.

121. *Suspension or cancellation of licence.*—(1) Every licence granted under these rules shall be liable to be suspended or cancelled by order of the licensing authority for any contravention of the Act or of any rule thereunder, or of any condition contained in such licence.

(2) A licensing authority suspending or cancelling a licence shall record his reasons for so doing in writing.

(3) A copy of the order containing the reasons for the suspension or cancellation of a licence shall be given to the holder of the licence on payment of a fee of rupees three.

122. *Appeals.*—(1) An appeal shall lie against any order refusing to grant, amend or renew a licence or suspending or cancelling a licence—

(*i*) to the Central Government where the order is passed by the Chief Inspector;

(*ii*) to the immediate official superior to the District Authority if the order is passed by the District Authority; and

(*iii*) to the Chief Inspector if the order is passed by an Inspector of Explosives.

(2) Every appeal shall be in writing and shall be accompanied by a copy of the order appealed against and shall be presented within 60 days of the order passed if preferred to the Central Government, and within 30 days in all other cases.

123. *Supply of rules.*—With every licence granted for the storage of petroleum, a copy of rules 90 to 107 in Chapter IV, shall be given free of charge to the licensee.

Notes and References.—See also rule 107.

124. *Certificates of safety.*—(1) Before petroleum is stored in any installation, for which a licence is being granted for the first time, a certificate shall be furnished to the licensing authority to the effect that all enclosure walls and embankments constructed in accordance with the conditions of the licence are of such a nature as to ensure safety.

(2) The certificate shall be signed by an Engineer accepted as qualified for the purpose by the licensing authority.

(3) When the licence is not granted for the first time, but is being granted for an increased quantity of petroleum, a certificate shall similarly be furnished to the licensing authority before any quantity of petroleum exceeding the amount which was admissible under the former licence is stored in the installation.

Comments by the Chief Inspector of Explosives.—A certificate of safety is only required in connection with installations, that is in connection with premises licensed in forms K and L, it is not required for the usual storage shed licensed for the keeping of petroleum, dangerous or not, in tins, drums and barrels. The certificate usually takes the following form :—

I hereby certify that the $\frac{\text{dangerous}}{\text{non-dangerous}}$ petroleum installation of.....
.....at.....has been constructed in accordance with the conditions of the licence and that in my opinion the enclosure walls and embankments are of such a nature as to ensure safety.

Signature.....

Designation .....

Place.....

Date.....

116. *Particulars of licence.*—Every licence granted under these rules shall be held subject to the conditions endorsed on it and shall contain all the particulars which are contained in the form prescribed for it by these rules.

117. *Power of licensing authority to alter conditions.*—(1) Notwithstanding anything contained in rule 116 the licensing authority, at the time of issuing a licence may omit, alter or add to any of the conditions specified in the prescribed form of licence.

(2) The power conferred by sub-rule (1) shall not be exercised by any licensing authority other than the Chief Inspector of Explosives.

118. *Amendment of licence.*—(1) Any licence granted under these rules may be amended by the authority granting such a licence:

Provided that the amendments shall not be inconsistent with any rule in this Chapter.

(2) A licensee who desires to have his licence amended shall submit it to the licensing authority with an application stating the nature of the amendment and the reasons therefor.

(3) The fee for the amendment of a licence shall be rupees five *plus* the amount (if any) by which the fee that would have been payable if the licence had originally been issued in the amended form exceeds the fee originally paid for the licence.

119. *Renewal of licence.*—(1) A licence may be renewed by the authority empowered to grant such a licence, provided that a licence which has been granted by the Chief Inspector may be renewed without alteration by an Inspector of Explosives duly authorised by the Chief Inspector in this behalf.

(2) Every application for the renewal of a licence shall be made so as to reach the licensing authority not less than thirty days before the date on which the licence expires, and, if the application is so made, the premises shall be held to be duly licensed until such date as the licensing authority renews the licence or until an intimation that the renewal of the licence is refused has been communicated to the applicant.

(2A) Every application under sub-rule (2) shall be accompanied by the licence which is to be renewed together with the approved plan attached thereto and the original treasury receipt showing the deposit of the correct renewal fee under the correct head of account.

(3) The same fee shall be charged for the renewal of a licence as for the grant thereof, provided that if the application for renewal is not received within the time specified in sub-rule (2), the licence shall be renewed only, on payment of double the fee ordinarily payable for the licence.

Comments by the Chief Inspector of Explosives.—Sub-rule (2) of this rule is very important and reference is invited to rules 13 (2), 14 (2), (c), 29 and 130. In the case of all licences, except licences in Form H, an application for renewal must be made, that is should reach the licensing authority, not later than the second day of December, if the privileges therein conferred are to be retained. If the application for renewal, accompanied with the prescribed fee and the licence is not made before the second day of December, the licence automatically expires at the end of the month and it becomes an offence under the Act to be in possession of petroleum on the premises, which will under these circumstances be deemed unlicensed premises.

120. *Refusal of licence.*—(1) A licensing authority refusing to grant, amend or renew a licence, shall record his reasons for such refusal in writing.

(2) A copy of the order containing the reasons for such refusal shall be given to the applicant on payment of a fee of rupees three.

121. *Suspension or cancellation of licence.*—(1) Every licence granted under these rules shall be liable to be suspended or cancelled by order of the licensing authority for any contravention of the Act or of any rule thereunder, or of any condition contained in such licence.

(2) A licensing authority suspending or cancelling a licence shall record his reasons for so doing in writing.

(3) A copy of the order containing the reasons for the suspension or cancellation of a licence shall be given to the holder of the licence on payment of a fee of rupees three.

122. *Appeals.*—(1) An appeal shall lie against any order refusing to grant, amend or renew a licence or suspending or cancelling a licence—

(*i*) to the Central Government where the order is passed by the Chief Inspector;

(*ii*) to the immediate official superior to the District Authority if the order is passed by the District Authority; and

(*iii*) to the Chief Inspector if the order is passed by an Inspector of Explosives.

(2) Every appeal shall be in writing and shall be accompanied by a copy of the order appealed against and shall be presented within 60 days of the order passed if preferred to the Central Government, and within 30 days in all other cases.

123. *Supply of rules.*—With every licence granted for the storage of petroleum, a copy of rules 90 to 107 in Chapter IV, shall be given free of charge to the licensee.

Notes and References.—See also rule 107.

124. *Certificates of safety.*—(1) Before petroleum is stored in any installation, for which a licence is being granted for the first time, a certificate shall be furnished to the licensing authority to the effect that all enclosure walls and embankments constructed in accordance with the conditions of the licence are of such a nature as to ensure safety.

(2) The certificate shall be signed by an Engineer accepted as qualified for the purpose by the licensing authority.

(3) When the licence is not granted for the first time, but is being granted for an increased quantity of petroleum, a certificate shall similarly be furnished to the licensing authority before any quantity of petroleum exceeding the amount which was admissible under the former licence is stored in the installation.

Comments by the Chief Inspector of Explosives.—A certificate of safety is only required in connection with installations, that is in connection with premises licensed in forms K and L, it is not required for the usual storage shed licensed for the keeping of petroleum, dangerous or not, in tins, drums and barrels. The certificate usually takes the following form :—

I hereby certify that the $\frac{\text{dangerous}}{\text{non-dangerous}}$ petroleum installation of..... .....at..... has been constructed in accordance with the conditions of the licence and that in my opinion the enclosure walls and embankments are of such a nature as to ensure safety.

Signature.....

Designation .....

Place.....

Date.....

The rules and the conditions of the licences simply lay down in general terms the safety precautions to be taken, and the Engineer issuing the certificate is required to definitely state that in his opinion the enclosure walls and embankments provided in the installation are so built and designed as to be able to meet all the demands likely to be made upon them in the event of an accident. It is very easy to visualise conditions under which the ordinary wall or bund would not be sufficient and special precautions or methods of constructions are called for; the certificate is intended to cover all considerations of this nature.

As in the case of rule 101 it is not necessary that the Engineer issuing the certificate under sub-rule (2) should be a government official, but the remarks made on this point in the note to rule 101 also apply here.

125. *Transfer of licence for storage.*—(1) The holder of a licence for the storage of petroleum may, at any time before the expiry of the licence, apply for permission to transfer his licence to another person.

(2) Such application shall be made to the licensing authority who shall, if he approves of the transfer, enter upon the licence, under his signature, an endorsement to the effect that the licence has been transferred to the person named.

(3) A fee of rupees three shall be charged on each such application.

(4) The person to whom the licence is so transferred shall enjoy the same powers and be subject to the same obligations under the licence as the original holder.

126. *Procedure on death or disability of licensee.*—(1) If a licensee dies or becomes insolvent or mentally incapable or otherwise disabled, the person carrying on the business of such licensee shall not be liable to any penalty or confiscation under the Act or these rules for exercising the powers granted to the licensee by the licence during such times may reasonably be required to allow him to make an application for a new licence in his own name for the unexpired portion of the original licence.

(2) A fee of rupees three shall be charged for a new licence for the unexpired portion of an original licence granted to any person applying for it under this rule.

127. *Loss of licence.*—Where a licence granted under these rules is lost or accidentally destroyed a duplicate may be granted on payment of a fee of rupees five.

128. *Payment of fees.*—(1) Every application under this Chapter shall be accompanied :—

(*i*) If in respect of a licence granted or to be granted by the District Authority, by the appropriate fee in cash or by cheque, and

(*ii*) if in respect of any other licence, by a Treasury receipt showing that the appropriate fee has been paid into the local Treasury under the head of account "XXXVI.—Miscellaneous Departments (Central). Miscellaneous Explosives".

(2) If an application for the grant, renewal or amendment of a licence is rejected, the fee paid shall be refunded by the District Authority, or if it has been paid into a Treasury, by that Treasury on the production of a signed order from the licensing authority directing such refund.

(3) Fees payable under any other Chapter of these rules shall be paid in cash or by cheque.

129. *Power to exempt from payment of fees.*—The Central Government may, by general or special order, grant exemption from, or reduction of any fee payable under these rules.

130. *Production of licence on demand.*—(1) Every person holding or acting under a licence granted under these rules shall produce it, or an authenticated copy of it, at the place to which the licence applies, when called upon to do so by any Inspector.

(2) Copies of any licence may, for the purposes of this rule, be authenticated free of charge by the authority which granted the licence.

Comments by the Chief Inspector of Explosives.—Authenticated copies of a licence are also very valuable to up-country licensees requiring to clear imports through the Customs at the port of entry. Application for such copies must be accompanied by a copy of the approved plan for attachment to the licence.

131. *Procedure on reports of infringements.*—The District Authority shall inform the Chief Inspector of the action taken by him on any reports of infringements or the Act or of these rules which the Chief Inspector may make to him.

131A. *Executive control over authorities.*—Every authority other than the Central Government acting under this Chapter shall perform his duties subject to the control of the Central Government:

Provided that nothing in this rule shall be deemed to affect the powers of executive control of the Chief Inspector over the officers subordinate to him.

Notes and References.—In the Department of Industries and Labour letter No. M-826, dated the 29th May 1937, the Central Government has directed that the fines realised under the Act will in the absence of any direction by the Central Legislature as to how they should be appropriated, form part of the revenues of the Province in which they are paid.

CHAPTER VII.

Refining and Blending of Petroleum.

132. *Approval of refinery.*—(1) No person shall refine or blend petroleum unless the plans showing the general arrangement of tanks, stills, fencing, gates, and all plant and buildings at the place where it is proposed to refine or blend petroleum (hereinafter in this Chapter referred to as the refinery) have been approved by the Chief Inspector.

(2) The Chief Inspector on receiving an application under sub-rule (1) may require the submission of such particulars as he may specify regarding the materials used or to be used in the construction of stills, condensing pipes and tanks, and the method of their erection.

Comments by the Chief Inspector of Explosives.—See Section 5 of the Act. Under the Petroleum Act, 1934 and these rules it is a punishable offence to mix petrol and kerosene, or kerosene and heavy petroleum, to distill petroleum with the object of separating it into different grades, to carry out any of the operations known as "upgrading" by which the quality and properties of a petroleum product are changed, whether such operations consist of chemical treatment or simple distillation, or in any other way to refine or blend petroleum, unless the premises on which such work is carried out have been approved by the Chief Inspector.

133. *Retention of plans.*—A copy of the approved plans, which shall incorporate any alterations sanctioned under rule 135 from time to time shall be kept at the refinery.

134. *Application of rules.*—Rules 135 to 147 inclusive apply only to refineries.

Notes and References.—By the definition given in rule 132 the word "refineries" as used here also includes plant for blending petroleum.

135. *Alterations.*—No alteration in a refinery involving the general arrangement of tanks, stills, any other plant and buildings or the materials used in the construction of the method of erection of the stills, condensing pipes and tanks shall be carried out without the previous sanction in writing of the Chief Inspector.

136. *Use of fire-proof materials.*—All buildings in which petroleum is handled shall be built of fire-proof meterils.

137. *Situation of storage tanks.*—No storage tank, the capacity of which exceeds 50,000 gallons, shall be situated nearer than 300 feet to any still, boiler or furnace.

138. *Size of service tanks.*—Unless specially permitted by the Chief Inspector service tanks (*i.e.*, tanks which contain fuel for boiler and still fires) shall not be larger than is necessary to conserve 24 hours fuel for the fire which they serve.

139. *Drainage.*—Suitable arrangements shall be made for the proper carrying of and fire-trapping of all drainage and possible leakage from a still or bench of stills.

140. *Fires and smoking.*—(1) No fire, furnace or source of heat or light capable of igniting inflammable vapour shall be allowed except in the firing spaces of stills or boilers.

(2) No smoking shall be allowed except in spaces or buildings specially approved for the purpose by the Chief Inspector.

141. *Supply of sand or earth.*—(1) An adequate quantity of dry sand or earth together with the necessary implements for its convenient application or other efficient means of extinguishing petrcleum fires shall always be kept readily accessible near tanks and stills.

(2) The Chief Inspector may specify the quantity of dry sand or earth which shall be deemed to be adequate for the purposes of this rule.

142. *Hydrants and hoses.*—(1) In a refinery with still capacity exceeding on an average 1,000 gallons daily, hydrants with a minimum pressure of 40 lbs. with the necessary hose, shall be provided at suitable points. Their location shall be shown in the approved plans of the refinery.

(2) All hydrants and hose shall be kept in an efficient condition.

143. *Pumping of dangerous Petroleum.*—All dangerous petroleum as it leaves the stills, with the exception of such quantities as may be pumped direct to service tanks for fuel, shall be at once pumped out of the refinery to storage tanks, and shall not be stored in the immediate neighbourhood of stills and boilers:

Provided that the Chief Inspector may permit dangerous petroleum to be disposed of otherwise.

144. *Prevention of danger from electricity.*—Adequate provision sha te made to prevent the accumulation of dangerous static charges of electricity.

Notes and References.—In this connection reference is invited to the notes following rule s, 73, 102 and 103.

145. *Plans.*—Fire walls and efficient separators for drainage shall be shown in the plans referred to in rule 132 and may be required to be erected when deemed necessary by the Chief Inspector.

146. *Reports of fires.*—The occurrence of any fire at a refinery shall be reported immediately by the person in charge of the refinery for the time being to the nearest Police Station and to the Chief Inspector.

147. *Closing of refinery.*—If a refinery is closed down, the area within the fence surrounding it shall be cleared of all petroleum having a flashing-point below 200° F. as soon as possible.

CHAPTER VIII.

TETRA ETHYL LEAD MIXTURE.

148. *Addition of tetra ethyl lead.*—Tetra ethyl lead shall not be blended with petroleum except in an equipment approved in writing by the Chief Inspector and in such proportions and under such conditions as may from time to time be determined by him.

149. *Importation, Transport and Storage.*—No person shall import, transport or store petroleum containing tetra ethyl lead unless the proportions of tetra ethyl lead have been previously determined by the Chief Inspector in accordance with rule 148.

150. *Prescription of special conditions.*—The Chief Inspector may from time to time by a written order prescribe special conditions which shall be observed during handling of leaded petroleum or cleaning or repair of storage tanks which have contained leaded petroleum.

151. *Colouration.*—Every mixture of petroleum and tetra ethyl lead shall be distinctly coloured before being supplied to the public.

152. *Marking of receptacles.*—All receptacles containing a mixture of petroleum and tetra ethyl lead in non-bulk, other than tanks on tankcarts, shall unless they are in the possession of the Armed Forces of Pakistan bear a warning in the following terms—

"*Warning*

This spirit contains lead and should be used as a motor fuel only".

CHAPTER IX.

TESTING OF PETROLEUM

153. *Drawing of samples.*—(1) In all cases the sampling officer shall personally superintend the drawing of the sample. Where the sample is drawn from an original unopened receptacle containing petroleum not in bulk the opening shall be sufficient to admit of the sample being rapidly transferred from the receptacle.

(2) Two bottles, each of the capacity of about 40-fluid ounces, shall be filled to three-quarters of their capacity with the sample and corked. The corks shall be driven home and cut off level with the neck; and melted sealing wax shall be worked into the corks and the bottles shall be efficiently sealed.

(3) In the case of petroleum imported by sea the bottles containing the sample shall, after being sealed, be labelled with the name of the ship, the name of the consignee and such other distinguishing marks as may be necessary.

154. *Forwarding and retention of samples.*—One of the bottles referred to in sub-rule (2) of rule 153 shall be preserved for reference in case of need and the other shall be forwarded to the testing officer.

155. *Procedure of delivering of samples from ship's cargo.*—(1) When the master of, or the agent for, a ship has made the declaration required by rule 8, the sampling officer shall go on board the vessel and obtain samples of all the petroleum on board which it is intended to land at the port. If the importer so desires the sampling officer shall also take samples of all the petroleum on board which it is intended to land at any other port in Pakistan:

Provided that no sample need be taken of—

(*a*) petroleum which is declared to be dangerous; or

(*b*) petroleum of Burmese origin which is covered by a certificate in Form B granted by testing officer appointed by the Government of Burma.

(2) The master shall deliver to the sampling officer, without charge, samples of every variety of petroleum comprised in the petroleum of which samples are to be taken under sub-rule (1). Such samples shall, if the sampling officer so requires, be taken from the particular receptacles indicated by him:

Provided that when the petroleum is in cases, samples may be taken as landing proceeds.

156. *Selection of samples from ship's cargo.*—The minimum number of samples to be selected of each brand of quality contained in the cargo shall be as follows :—

(*a*) of petroleum certified in accordance with rule 11—

(i) in cases—one sample for every 15,000 cases or part thereof;

(ii) in casks or drums, declared to be of uniform quality—one sample for every 120,000 gallons or part thereof;

(iii) in bulk or in tanks—one sample from each group of tanks or tank compartments certifid to be of the same brand or quality;

(*b*) of other petroleum—

(i) in cases—one sample for every 10,000 cases or part thereof;

(ii) in casks or drums, declared to be of unifrom quality—one sample for every 80,000 gallons or part thereof;

(iii) in bulk or in tanks—one sample from each tank or tank compartment.

157. *Standard Test Apparatus.*—(1) The Standard Test Apparatus and thermometers shall—

(*a*) agree in every respect with the specifications laid down in Schedule III; and

(*b*) have been tested and certified by the Board of Trade or the National Physical Laboratory, London, and marked with the year of test.

(2) The standard thermometers shall be replaced at least once in every three years.

158. *Certification of apparatus.*—(1) When any apparatus for determining the flashing-point of petroleum is submitted to the officer appointed under subsection (1) of section 15 of the Act for comparison with the Standard Test Apparatus, that officer shall examine the apparatus including the thermometers and the barometers or aneroids.

(2) No certificate shall be granted under section 16 of the Act if—

(*a*) the apparatus is in any respect outside the tolerances laid down in Schedule III to these rules or is otherwise defective; or

(*b*) any thermometer shows readings varying by more than 1° F. at temperatures of 76° F. and 120° F. as given by the Standard Test Apparatus; or

(*c*) any barometer or aneroid shows a variation of more than half an inch from the pressure given by the Standard Test Apparatus.

(3) A certificate in Form E shall be granted in respect of any apparatus which has been found to agree with the Standard Test Apparatus within the limits mentioned in sub-rule (2).

(4) A certificate granted under this rule shall be valid for a period of three years.

159. *Register of certificates.*—A register of all certificates granted under rule 158 shall be maintained in Form F by the officer appointed under sub-section (1) of section 15 of the Act.

160. *Methods of test.*—(1) The testing officer shall test the samples in the manner laid down in Schedule III to these rules.

(2) In all cases at least three samples shall be separately tested, the average of the three readings being corrected for the thermometer correction, if any, and for the barometric correction in case of dispute.

(3) If the average flashing-point is not lower than 76° F and no one test gives a flashing-point below 73° F. the whole of the petroleum represented by the samples shall be deemed to be non-dangerous petroleum.

161. *Procedure when tests show want of uniformity.*—(1) If the testing officer, after testing samples taken from a ship's cargo, considers further tests necessary to satisfy himself that none of the petroleum is dangerous, he shall report to the Collector of Customs accordingly.

(2) On receipt of a report under sub-rule (1)—

(*a*) when the consigment is imported in cases or casks or drums, the Collector of Customs shall cause the petroleum in question to be landed and stacked in lots of not more than 1,500 cases or casks or drums each, or to be discharged into boats each containing not more than 1,500 cases or casks or drums, and the sampling officer shall select and deliver to the testing officer one sample from each lot;

(*b*) when the consignment is imported in bulk, the sampling officer shall forward a second sample and the Collector of Customs may, until the receipt of the testing officer's further report, prevent the landing of any portion of the contents of the tank in question, or may permit it to be landed as provided in rule 15;

(*c*) if the petroleum has been already landed and stored under rule 15—

(i) if it is not in bulk it shall be divided into lots and samples of each lot shall be selected as provided in clause (*a*);

(ii) if it is in bulk samples shall be drawn from each separate storage tank containing the petroleum.

162. *Certificate of tests.*—(1) The testing officer shall as soon as practicable, and ordinarily within twenty-four hours after receipt of any samples make out a certificate in Form G and shall forward it in the case of samples of petroleum taken

on board a ship to the Collector of Customs and in the case in the other samples to the officer submitting the sample.

(2) The testing officer shall, at the request of any person concerned, furnish him with a certified copy of the certificate in Form G on payment of a fee of two rupees.

163. *Fees for inspection and comparison.*—(1) The fee for each inspection of the Standard Test Apparatus shall be two rupees.

(2) The fees for comparing a privately owned test apparatus with the Standard Test Apparatus shall be as follows :—

	Rs.
Able Flash Point Apparatus or Pensky-Martens Apparatus ..	45
Barometer	15
Thermometer	15

164. *Fees for testing.*—(1) The fee for testing each sample of imported petroleum shall be ten rupees:

Provided that the aggregate fees chargeable under this sub-rule shall not, in the case of any one ship, exceed Rs. 100.

(2) The fee for re-testing each sample under section 20 of the Act shall be Ten rupees. It shall be refunded if the original test is proved to be erroneous.

CHAPTER X

EXEMPTION

165. *Power to exempt.*—The Central Government may on the recommendation of the Chief Inspector of Explosives in exceptional cases, by order, grant to any person or persons exemption from all or any of the provisions of these rules on such conditions, if any, as may be specified in the order.

SCHEDULE 1.

LICENCES (*vide Rule* 115)

Article No.	Form of Licence (See Schedule (II)	Purpose for which granted	Authority empowered to grant licence	Fee
1	2	3	4	5
1	H	To import dangerous petroleum other than petroleum which can be used in an internal combustion engine, in quantity not exceeding 60 gallons at any one time.	The District Authority.	Re. 1.
2	I	To store dangerous petroleum in quantity not exceeding 60 gallons.	The District Authority.	Rs. 4.
				FOR ARTICLES 3, 4, 5, 6 AND 7.
				Non-dangerous petroleum.
3	J	To store non-dangerous petroleum otherwise than in bulk, in quantity not exceeding 5,000 gallons.	The District Authority.	(*a*) When the quantity to be stored does not exceed five hundred gallons. Rs. 12.
				(*b*) When the quantity to be stored exceeds five hundred but does not exceed one thousand gallons. Rs. 20.
4	K	To store petroleum in a tank or tanks in connection with a pump outfit for fuelling motor conveyances.	The Chief Inspector or an Inspector of Explosives authorised by the Chief Inspector of Explosives in this behalf.	(*c*) When the quantity to be stored exceeds one thousand but does not exceed five thousand gallons. Rs. 20 for the first one thousand gallons *plus* Rs. 5 for every additional one thousand gallons or part thereof.
				(*d*) When the quantity to be stored exceeds five thousand but does not exceed fifty thousand gallons. Rs. 40 for the first five thousand gallons *plus* Rs. 8 for every additional one thousand gallons or part thereof.

5	L	To import dangerous petroleum and to store petroleum in installatons.	The Chief Inspector.	(*e*) When the quantity to be stored exceeds fifty thousand gallons,	Rs. 400 for the first 50,000 gallons *plus* Rs. 50, for every additional 25,000 gallons or part thereof subject to a maximum of Rs. 750.
6	M	To import and store dangerous petroleum otherwise than in bulk and to store otherwise than in bulk (*a*) non-dangerous petroleum in quantity exceeding 5,000 gallons or (*b*) partly dangerous petroleum and partly non-dangerous petroleum.	The Chief Inspector or an Inspector oxplosives authorised by the Chief Inspector in this behalf.	*Dangerous petroleum.*	
				(*f*) When the quantity to be stored or imported and stored does not exceed five hundred gallons.	Rs. 12.
7	Special forms.	To import dangerous petroleum and to store petroleum (in cases not provided for in Articles 1, 2, 3, 4, 5 and 6.)	The Chief Inspector.	(*g*) When the quantity to be stored or imported and stored exceeds five hundred gallons.	The same fees as those laid down for storage of non-dangerous petroleum.

SCHEDULE II

FORMS

FORM A.

(*See Rule* 8).

Declaration to be made by the master of a ship carrying petroleum before entering a port or by the ship's agent.

Name of ship.....

1 Nature of petroleum	2 Total quantity carried in the ship	3 Quantity of petroleum to be landed in—name of port	4 Remarks
Dangerous petroleum which can be used in an internal combustion engine.			
Other dangerous petroleum			
Petroleum certified in accordance with rule II other than heavy petroleum . .			
Heavy petroleum			
Other non-dangerous petroleum . .			
Total . .			

Dated

Signature of Master/Agent of ship.

FORM B

(*See Rule* 11)

Certificate of imported petroleum.

Certified that $\frac{\text{Sample}}{\text{Samples}}$ of petroleum of the description given below for shipment per S. S. to $\frac{\text{has}}{\text{have}}$ been tested by me and that $\frac{\text{its}}{\text{their}}$ flashing $\frac{\text{point is}}{\text{points are}}$ as stated against the same.

Description of petroleum whether in cases, casks, drums, tanks or in bulk	Brand	No. of cases, casks, drums or tanks	Quantity	Flashing point

Port of shipment.....Name of Shipper.....

Dated the *day of* 19 .

Signature and Designation of Testing Officer.

L 393 (67) Explosin

FORM C

[See *Rule* 13]

Certificate of storage accommodation

I hereby declare that I propose to store the following consignments of dangerous / non-dangerous petroleum *ex* S.S. ... ... arriving in ... ... on or about the ... ... 19 at the storage tanks or sheds of which particulars are given in columns 1 and 2 of the statement below and I certify that the capacity shown as available in column 3 of that statement is available for the storage of the said petroleum, and that the said storage tanks and sheds are duly licensed for the storage of the petroleum in question.

Date the ... ... 19 . *Importer or Agent.*

STATEMENT

1 Storage tanks or sheds.	2 Total capacity of each storage tank or shed	3 Capacity available in each storage tank or shed	4 Capacity to be utilized by present consignment in each storage tank or shed
	Gallons	Gallons	Gallons
Total (gallons) ..			

FORM D

[See *Rule* 114 (2).]

Application for the grant/renewal of a licence to store or to import and store petroleum.

	The replies to be written in this column.
1. *Applicant's Name	
„ Profession	
„ Address	
2. Situation of the premises where petroleum is to be stored—	
Province	
District	
Town or village	
3. Petroleum proposed to be stored—	
Nature (*i.e.*, dangerous, non-dangerous or heavy petroleum)	
Quantity { In bulk	
Quantity { Not in bulk	
4. Form in which licence is required ..	
5. Do the premises fulfil all the conditions endorsed on the form?	
6. Petroleum already stored on the premises—	
Nature	
Quantity { In bulk	
Quantity { Not in bulk	
7. Dangerous petroleum proposed to be imported—	
Quantity { In bulk	
Quantity { Not in bulk	
Remarks	

Signature of the applicant :

Postal address of the applicant :

Date of application :

Note.—This application if it relates to a new installation or storage shed or if the applicant proposes any alterations in an existing installation or storage shed, must be accompanied by specifications and plans drawn to scale in duplicate. The plans should clearly indicate :—

(a) the manner in which the conditions prescribed by these rules have been complied with;

(b) the premises to be licensed, the area of which shall be distinctively coloured or otherwise defined;

(c) the surroundings and all protected works;

(d) the position and capacity of all storage tanks, storage and filling sheds and the position of all other buildings and erections forming part of the installation;

(e) the areas reserved for dangerous petroleum, heavy petroleum and non-dangerous petroleum other than heavy petroleum;

(f) tanks and other enclosures;

(g) all pumps, valves, filling and discharge points, vent pipes, etc.

*In cases where the application is made on behalf of a company, the name and address of the company and the name of the manager and/or agents should be given.

FORM E

[*See Rule* 158 (3)]

Certificate of Apparatus

..... Apparatus.

Marked No. .....

Maker's Name .....

Slide No .....

Thermometer No. ..... Oil Cup

No ..... Water Bath

Cup No .....

The above apparatus including the thermometers having been submitted for verification with the Standard Test Apparatus was compared by me on ..... and found to agree with it within the prescribed limits.

The following corrections are necessary to the thermometer and barometer or aneroid readings :—

Thermometer No .....

No .....

Barometer or Aneroid No .....

Date .....

Reference.

Signature and designation of the Officer appointed under Section 15 (1) *of the Petroleum Act*, 1934.

FORM F

[*See Rule* 159]

Register of Certificates of Apparatus

Serial No.	Place at which the apparatus is intended to be used	Number and date engraved on the apparatus	Contents of certificate	Date on which certificate will cease to be valid

FORM G

[*See Rule* 162]

Certificate of tests of petroleum

Owner.... ... ...

Marks ... ...

Test (1)

(2)

(3)

Average ... ... Thermometer

correction... ... ...

The sample is... ... ...

petroleum and (in the case of non-dangerous petroleum) as a flashing-point

of... ... ...

Place... ... ...

Date... ... ...

Testing Officer.

FORM H

(Article I of Schedule I)

Licence to import dangerous petroleum other than petroleum which can be used in an internal combustion engine, in quantity not exceeding 60 gallons at any one time.

No. Fee Re. 1.

Licence is hereby granted to to import dangerous petroleum other than petroleum which can be used in an internal combustion engine, not exceeding sixty gallons in quantity at any one time, at the Port of subject to the provisions of the Petroleum Act, 1934 and the rules made thereunder and to the further conditions on the back of this licence.

This licence shall remain in force till the 19 .

The 19 .

District Authority.

Conditions of licence

1. Dangerous petroleum shall be imported in gas-tight tinned, galvanised or otherwise externally rust-proofed sheet iron or steel receptacles which shall be fitted with well-made filling apertures and well-fitting screw plugs or with screw caps or other caps with metal air-tight under-caps.

2. The receptacles shall have the following thickness of metal :—

Capacity exclusive of the prescribed air-space—	Not less than—
not exceeding 2 gallons	27 B. G.
exceeding 2 but not exceeding 4 gallons	22 B. G.
exceeding 4 but not exceeding 30 gallons	18 B. G.
exceeding 30 but not exceeding 45 gallons	17 B. G.
exceeding 45 gallons	16 B. G.

3. The receptacles shall be so constructed and secured as not to be liable except under circumstances of gross negligence or extraordinary accident, to become defective, leaky or insecure in transit and shall bear a stamped, embossed, painted or printed warning exhibiting in conspicuous characters the words "Highly Inflammable" or an equivalent warning of the dangerous nature of the petroleum.

4. An air-space of not less than 5 per cent. of its capacity shall be left in each receptacle at the time of filling.

Comments by the Chief Inspector of Explosives.—Form H allows the importation of small quantities of enamels; lacquers, paints, rubber solution, solvent oil, methyl alcohol, acetone, wood naphtha, metal polish, cleaning soaps, paint removers, thinners and similar substances falling within the definition of dangerous petroleum. In accordance with the provisions of Rule 115 (6) it may only be granted to a person holding a licence in Form 1.

The importation of petrol and any quantiti es of dangerous petroleum other than petrol in excess of sixty gallons is governed by the licenses issued in Forms L & M.

FORM I.

(Article 2 of Schedule I)

Licence to store dangerous petroleum in quantity not exceeding 60 gallons.

No. Fee Rs. 4.

Licence is hereby granted to valid only for the storage of gallons of dangerous petroleum in the storage shed described below, subject to the provisions of the Petroleum Act, 1934, and the rules made thereunder and to the further conditions on the back of this licence.

This licence shall remain in force till the 31st day of December 19 .

The 19 . *District Authority.*

Description of the storage shed referred to above.

Date of renewal	Date of expiry	Signature of licensing authority

This licence is liable to be cancelled if the licensed premises when inspected are not found conforming to the description and conditions attached hereto and contravention of any of the rules and conditions under which this licence is granted is also punishable with fine which may extend to five hundred rupees for a first offence and which may extend to two thousand rupees for any subsequent offence.

Conditions of licence.

1. Dangerous petroleum shall be stored only—

   (i) in a storage shed constructed of suitable uninflammable material: the doors and windows may be of wood; or

   (ii) in a properly ventilated iron bin of a design approved by the Chief Inspector, placed on private ground in the open air.

2. The storage shed shall be adequately ventilated near the ground level and also near or in the roof. The ventilators shall be provided with two thicknesses of fine copper or other non-corroding metal wire gauze of mesh not less than 28 to the linear inch.

3. The storage shed shall not form part of, or be attached to, any building in which any person resides or works or where persons assemble for any purpose unless it is separated therefrom by a substantial floor or partition which is constructed of uninflammable material and has no openings therein.

4. The storage shed, if in any building, shall not be situated under any staircase or under any other means of exit likely to be required to be used for escape in case of fire.

5. Any two storage sheds or bins or other storage premises not more than twenty feet apart, shall be deemed to be one storage shed.

6. No alterations shall be carried out in the storage shed or bin without the previous sanction in writing of the licensing authority.

7. If the licensing authority calls upon the holder of a licence, by a notice in writing, to execute any repairs to the storage shed, which are, in the opinion of such authority, necessary for the safety of the shed, the holder of the licence shall execute the repairs within such period, not being less than one month from the date of receipt of the notice, as may be fixed by the notice.

8. Dangerous petroleum other than paints, varnishes, lacquers and similar products shall not be kept in any receptacle other than the standard petrol tins of capacity not exceeding two gallons exclusive of the prescribed air-space.

9. All empty receptacles which have contained dangerous petroleum shall, except when they are opened for the purpose of cleaning them and rendering them free from petroleum vapour, be kept securely closed unless they have been thoroughly cleaned and freed from petroleum vapour.

10. No receptacles shall be repaired on the premises and no person shall repair or cause to be repaired any receptacle in which, to his knowledge, any dangerous petroleum is or has been kept until he has taken all reasonable precautions to ensure that the receptacle has been rendered free from dangerous petroleum and any inflammable vapour.

11. Adequate precautions shall be taken at all times for the prevention of accident by fire or explosion.

12. Every care shall be taken to prevent any dangerous petroleum escaping into any drain, sewer, harbour, river or water course.

13. Adequate precautions shall be taken to prevent unauthorised persons having access to any dangerous petroleum kept and to the vessel which contains or has contained petroleum.

14. Any accident, fire, or explosion occurring within the licensed premises, which is attended with loss of human life or serious injury to person or property, shall be reported to the nearest Magistrate or to the officer-in-charge of the nearest Police Station immediately and by telegraph or telephone where such means of communication are available.

15. Free access to the licensed premises shall be given at all reasonable times to any Inspector or Sampling officer and every facility shall be afforded to such officer for ascertaining that the rules and the conditions of this licence are duly observed.

Comments by the Chief Inspector of Explosives.—Form I is introduced primarily to allow small quantities of petrol in 2-gallon tins to be kept for the convenience of motorists in a bin or small shed near petrol pump outfits and to allow garages and workshops to store up to sixty gallons of paints, lacquers, rubber solution, etc., with the minimum of inconvenience. Premises licensed under this form may not be used for the storage of drums and barrels of petrol for which proper storage sheds licensed in Form M are prescribed. Paints, etc., may of course be kept in larger packages; the restriction only applies to petrol as such.

Condition 2.—Ventilation is one of the most important factors in the safe storage of petroleum, as if ample ventilation is provided it is almost impossible for a dangerous mixture of inflammable vapour and air to be formed. Petroleum vapour is much heavier than air and the provision of ventilators near the ground level, as well as near or in the roof, is essential to prevent the accumulation of highly inflammable and explosive gas in the closed shed.

Conditions 3 and 4.—A light corrugated iron wall or floor does not comply with the requirement of a substantial floor or partition, but a proper masonry or cement structure, which would prevent a fire spreading to the main building, is called for. Condition 4 places restrictions on the location of the shed in a building and it is very necessary to ensure that means of escape will not be interfered with, should a fire take place. Notwithstanding the permission conveyed in these two conditions the shed is much safer placed in the open air, if necessary against the wall of the building, and wherever such a location is possible it is to be strongly recommended in preference to one in doors. It will be noted that an iron bin may not be placed inside a building or kiosk.

Condition 5.—In the case of sheds or bins at petrol pump outfits there appears to be no objection to the relaxation of this condition (*vide* rule 117) to allow a few tins of petrol to be kept near the office or kiosk. Where petroleum premises other than petrol pump outfits are concerned such relaxation cannot however be recommended. Very dangerous conditions would exist if even such a small petrol store as is here in question was attached to a kerosene oil godown licensed in Form J and both the stores formed part of, or were attached to, another building. Adjoining premises of this nature would require to observe a safety distance all round them of 20 to 40 feet depending upon the quantity stored and to be licensed in Form M.

Condition 8.—This condition is specially worded to prevent the use of these small storage facilities as filling and decanting sheds. They are not intended for this purpose and the conditions under which storage is allowed are not safe if this restriction is not enforced. There is a very great deal of difference in risk between keeping a few filled, but tightly closed, receptacles in a room, and handling open packages in the same confined space. In the latter case considerable quantities of highly inflammable and explosive vapour are produced and the liability to a serious accident greatly increased.

Conditions 9 and 10.—All over the world accidents frequently occur as a result of handling and repairing " empty " receptacles, and too much care cannot be exercised when packages that have contained petroleum are concerned. Merely leaving a receptacle open will not as a rule render it free from danger; it is necessary to thoroughly wash and steam it before it can be safely repaired. Alternatively small vessels such as a 2-gallon tin may be filled with earth or sand during repair and this material afterwards removed by washing out with water. The inside of an " empty " receptacle should never be examined by the aid of a match or other light capable of igniting petroleum vapour.

Condition 13.—In most cases this condition requires that the store or bin must be kept locked.

FORM J.

(Article 3 of Schedule I)

Licence to store non-dangerous petroleum, otherwise than in bulk, in quantity not exceeding 5,000 *gallons*

No.

Fee Rs.

Licence is hereby granted to valid only for the storage of gallons of non-dangerous petroleum in the storage shed described below, subject to the provisions of the Petroleum Act, 1934, and the rules made thereunder and to the further conditions on the backof this licence.

This licence shall remain in force till the 31st day of December 19 .

The 19 .

District Authority.

Description and location of the storage shed referred to above.

Date of renewal	Date of expiry	Signature of licensing authority

This licence is liable to be cancelled if the licensed premises when inspected are not found conforming to the description and conditions attached hereto and contravention of any of the rules and conditions under which this licence is granted is also punishable with fine which may extend to five hundred rupees for a first offence and which may extend to two thousand rupees for any subsequent offence.

Conditions of licence.

1. The petroleum shall be stored only in the storage shed which shall be constructed of suitable uninflammable materials, but the beams, rafters, columns, windows and doors may be of wood. The building shall rest on foundation walls, the walls and floors being suitably finished to form a sump or enclosure not more than 2 feet in depth and capable of receiving and retaining, in cases of accident or emergency, a volume not less than the maximum quantity of petroleum allowed in the building.

2. The storage shed shall not form part of, or be attached to, any building in which any person resides or works or where persons assemble for any purpose unless it is separated therefrom by a substantial floor or partition which is constructed of uninflammable material and has no openings in it.

3. The storage shed, if in any building, shall not be situated under any staircase or under any other means of exit likely to be required to be used for escape in case of fire.

4. No alterations shall be carried out in the storage shed without the previous sanction in writing of the licensing authority.

5. If the licensing authority calls upon the holder of a licence, by a notice in writing, to execute any repairs to the storage shed, which may, in the opinion of such authority, be necessary for the safety of the shed, the holder of the licence shall execute the repairs within such period, not being less than one month from the date of receipt of the notice, as may be fixed by the notice.

6. Any two storage sheds not more than 15 feet apart shall be deemed to be one storage shed.

7. Non-dangerous petroleum shall be packed in air-tight tins or drums of steel or iron or in other receptacles not easily broken.

8. The drum or other receptacle containing petroleum shall only be opened in the licensed premises and for the time necessary for drawing off the petroleum, and during such drawing off every reasonable precaution shall be adopted for preventing the escape of petroleum or the vapour therefrom.

9. Adequate precautions shall be taken to prevent unauthorised persons having access to any petroleum kept and to any receptacles which contain or have contained petroleum.

10. Adequate precautions shall be taken at all times for the prevention of accident by fire or explosion.

11. Every care shall be taken to prevent any petroleum escaping into any drain, sewer, harbour, river or watercourse.

12. Any accident, fire or explosion occurring within the licensed premises, which attended with loss of human life or serious injury to person or property, shall be reported to the nearest Magistrate or to the officer-in-Charge of the nearest Police Station immediately and by telegraph or telephone where such means of communication are available.

13. Free access to the licensed premises shall be given at all reasonable times to any Inspector or Sampling Officer and every facility shall be afforded to such officer for ascertaining that the rules and conditions of this licence are duly observed.

Comments by the Chief Inspector of Explosives.—In the light of rule 109 it will be obvious that Form J licences are chiefly designed to cover the storage of grades of petroleum such as kerosene. No safety distances are prescribed by this form but very important restrictions are imposed in conditions 2 and 3. Kerosene is frequently stored under these licences in very congested areas and often in a room forming part of a many-storied building housing a considerable number of people. Under these circumstances a substantial masonry or cement partition or floor (*e.g.*, the ceiling of the godown) is called for; light sheet iron walls and ceillings will not meet the co nditions of the licence. It will be noticed also that the concession in respect of wooden beams, rafters, columns, etc., allowed in condition 1 is limited by condition 2, when the storag shed forms part of, or is attached to, another building. Condition 6 lays down that adjoining premises shall be treated as one storage shed and, if the sum of the quantity stored in the two buildings exceeds 5,000 gallons, a licence in Form J cannot be granted but the conditions of Form M come into force.

FORM K

(Article 4 of Schedule I)

Licence to store petroleum in a tank or tanks in connection with a pump outfit for fuelling motor conveyances

No.

Fee Rs.

Licence is hereby granted to valid only for the storage of gallons of petroleum in a tank (tanks) in the licensed premises described below and shown on the plan hereto attached subject to the provisions of the Petroleum Act, 1934, and the rules made thereunder and to the further conditions on the back of this licence.

* This licence shall be renewable for years in the absence of contravention of the provisions of the Petroleum Act, 1934, or of the rules framed thereunder or of any condition of this licence.

*Not applicable to portable kerbside outfits.

This licence shall remain in force till the 31st day of December 19 .

Licensing Authority.

The 19
Plan No. , dated

Description of the licensed premises referred to above.

The licensed premises are situated and consist of a gas-tight tank (tanks) of a capacity of gallons sunk underground.

Date of renewal	Date of expiry	Signature of licensing authority

This licence is liable to be cancelled if the licensed premises when inspected are not found conforming to the description and conditions attached hereto and contravention of any of the rules and conditions under which this licence is granted is also punishable with fine which may extend to five hundred rupees for a first offence and which may extend to two thousand rupees for any subsequent offence.

Conditions of licence

1. The petroleum shall be stored in one or more gas-tight metal tanks of a capacity of gallons sunk completely underground in the position shown on the plan attached hereto and each placed in a masonry or concrete pit, the tank being packed round with sand, earth or clay so that no air-space is left between the tank and the masonry or concrete pit and the tank is not visible. Such masonry or concrete pit shall not be obligatory if the tank is a welded one tested up to a pressure of 3 lbs. per square inch and is buried and is on private, leased or rented land away from public traffic. The space over the buried tanks must not be used for any purpose.

2. There shall be no openings in any tank other than those necessary for the introduction or removal of the petroleum or for ventilating or dipping the tank. The filling and dipping pipes shall be carried down nearly to the bottom of the tank.

3. Every tank shall be fitted with a vent pipe leading into the open air. The vent pipe shall be securely supported and shall be not less than 12 feet in height. The upper opening shall be covered with fine copper or other non-corroding metal wire gauze of mesh not less than 28 to the linear inch and fitted with a hood or the upper opening shall be fitted with an inlet valve and an exhaust valve.

4. After the 1st April 1937, no pump or tank shall be erected inside a building and, if prior to that date any tank is installed inside a building, it shall only be filled from a tank-wagon through an underground filling pipe having a filling point in the open air at a distance of not less than 12 feet from the building.

5. No alteration of the premises including the position of a pump or tank and no replacement of a tank shall be effected except with the previous sanction in writing of the licensing authority. All alterations sanctioned under this condition shall be shown on an amended plan to be attached to this licence.

6. If the licensing authority calls upon the holder of a licence by a notice in writing to execute any repairs to the licensed premises which are, in the opinion of such authority, necessary for the safety of the premises, the holder of the licence shall execute the repairs within such period, not being less than one month from the date of receipt of the notice, as may be fixed by the notice.

7. Every tank, before being repaired, shall be cleared of all petroleum and of all inflammable vapours. When a tank in position is open for cleaning or repairs no electric or other lamps, electric cables or electric fans shall be brought near the manhole of the tank until the tank has been certified in writing to be "gas free" by a qualified Chemist or Engineer. (The inside of the tank may be lighted by the use of mirrors.)

8. The petroleum shall enter a tank "under seal" and shall not be supplied to the tank between the hours of sunset and sunrise except by a motor tank-wagon of a type approved by the Chief Inspector for the purpose and with the approval in writing of the licensing authority.

Note.—A pipe supplying liquid to a tank is "under-seal" to that tank if it is screwed to the tank or otherwise attached so that no liquid or vapour can escape into the air except through the vent pipe fitted to the tank as required by condition 3.

9. No artificial light capable of igniting inflammable vapour shall at any time be present in the immediate vicinity of the tank-wagon during the transfer of the petroleum to the tank and no person engaged in such transfer shall smoke. When the underground tank is filled with petroleum from barrels no such light shall be allowed within a distance of 30 feet from the barrels.

10. No petroleum shall be removed from a tank except by means of the pump or pumps at the position marked on the plan hereto attached. Every pump shall together with its connections and fittings be so constructed and maintained as to be gas and petroleum-tight. The pipe connections between the tank and a pump shall be placed underground.

"Comments by the Chief Inspector of Explosives."

"In the event of a leakage in a pump connections and fittings, the masonry pipe trench on which the pump is mounted, can be a source of danger. It is, therefore, necessary that the mouth of the trench at the base of the pump should always be kept filled with sand."

11. For the purpose of charging the tanks of motor vehicles the petroleum shall only be supplied by being—

(*a*) pumped through strong metal piping by means of approved pumps into above ground measuring tanks of a capacity not exceeding 30 gallons, fixed in approved positions, and run thence through sound hose, fitted with a secure self-closing cock and nozzle, into the tanks of motor vehicles, or

(*b*) pumped through strong metal piping by means of approved pumps into an above ground service tank of approved capacity, fixed in an approved position, and run thence through strong metal piping into measuring tanks of a capacity not exceeding 30 gallons fixed in approved positions and thence through sound hose, fitted with a secure self-closing cock and nozzle into the tanks of motor vehicles, or

(*c*) pumped by means of approved measuring pumps, fixed in approved positions, through sound hose fitted with a secure tap and nozzle, into the tanks of motor vehicles.

12. Petroleum may be supplied to a motor vehicle between the hours of sunset and sunrise from the pump provided that (i) lights other than the electric lights of the vehicle receiving the petroleum are extinguished, (ii) the pump and the vehicle are illuminated by electric light or failing this by some other form of lighting and (iii) no light capable of igniting inflammable vapour is situated or brought within twelve feet of the pump or vehicle receiving the petroleum.

13. (*a*) Petroleum shall not be placed in any motor vehicle while the engine is running and, where the vehicle is licensed for the conveyance of more than six passengers on hire, while any passenger remains in the vehicle, and

(*b*) Persons in and engaged in connection with any motor vehicle shall not be permitted to smoke while it is being refuelled.

14. Except when absolutely necessary for the purposes of condition 7 or for testing the accuracy of the pump's discharge by means of a standard capacity measure, petroleum shall not be filled from the tank or pump into any receptacle other than the fuel tank of a motor vehicle.

15. This licence shall be held to cover the use of a portable kerbside pump outfit for a period of not more than one month in the place of the licensed permanent outfit in the event of the latter being out of order, provided notice in writing is given to the licensing authority before the portable pump is taken into use, and the conditions of this licence which apply to a portable pump are observed. No petroleum shall be allowed above ground (except that actually in the pump) in any case where the underground tanks can be used in connection with the portable pump by making a temporary connection from the portable pump to the underground tank.

16. In cases where portable pumps, are used not more than two barrels of petroleum in reserve shall be kept within 20 feet of the pump or on public property nearby.

17. A licensee who stores dangerous petroleum intended for sale may stock in a building within the licensed premises not more than 6 gallons of dangerous petroleum in securely closed two-gallon standard tins, and shall , if so required by the District Authority, stock at least 2 gallons.

18. Adequate precautions shall be taken to prevent unauthorised persons from having access to the petroleum or to the vessels which contain or have contained petroleum.

"*Comments by the Chief Inspector of Explosives.*"

"Quite frequently Petrol Pump sites are used as parking places for public lorries and passengers inside the buses or waiting for buses keep on smoking. This is obviously a potential source of danger to public safety. It is, therefore, considered necessary that, wherever such possibility exists, the Pump site should be adequately fenced as required under Rule 95."

19. Every person managing or employed on or in connection with the licensed premises shall abstain from any act whatever which tends to cause fire or explosion and which is not reasonably necessary and to the best of his ability, shall prevent any other person from doing such act.

20. Every care shall be taken to prevent any petroleum escaping into any drain or sewer.

21. The licensee shall provide for each pump, whether kerbside or portable, a minimum of two tins or drums of dry sand which shall be kept ready for extinguishing fires.

22. Any accident, fire or explosion occurring within the licensed premises, which is attended with loss of human life or serious injury to person or property, shall be reported to the nearest Magistrate or to the Officer-in-charge of the nearest Police Station immediately and by telegraph or telephone where such means of communication are available.

23. Free access to the licensed premises shall be given at all reasonable times to any Inspector or Sampling Officer and every facility shall be afforded to such officer for ascertaining that the rules and the conditions of this licence are duly observed.

24. Electrically operated pumps must comply with the following conditions, namely :—

(*a*) the motor, switch gear and all wiring on the pump casing shall be of flame proof construction satisfying the requirements of B.S.S. No. 229; and

(*b*) a double poled switch shall be provided in an immediately accessible position not less than 12 feet from the pump and must be so connected as to be capable of completely isolating the pump from the electric supply.

25. (*a*) The licensee shall keep records and accounts of all petroleum in stock and of sales or issues thereof. The accounts shall clearly indicate date-wise the opening balance, receipts, sales, closing balance and meter numbers. Separate account shall be maintained for different categories of petroleum.

(*b*) The licensee shall exhibit his stock book and records to any officer authorised under section 13 of the Petroleum Act, 1934, whenever such an Officer calls upon him to do so.

26. Before petroleum is stored in the premises, the licensee shall send to the licensing authority a report in writing to the effect that the premises have been built according to the approved plan.

Comments by the Chief Inspector of Explosives.—The storage of petrol in an underground tank is probably the safest known method of storage. Cases are on record where, although the surrounding premises were on fire and the heat was to intense that parts of the petrol pump itself were melted, the underground tank and its contents emerged unscathed.

To encourage the erection of filling stations designed to prevent any obstruction to traffic and allowing motor vehicles to be off the public road while their tanks are being filled, provisio is made for this licence to be endorsed as renewable for a period of years where " drive in " facilities are provided.

Condition 1.—When the tank is placed close to a building or row of shops, or near any important drain or sewer, to minimise any danger of leakage from the tank finding its way under the buildings or into the drain a masonry or concrete pit will usually be asked for, even if the tank is buried on private, leased or rented land.

Condition 2.—The dangerous practice of filling a tank through an open manhole is a punishable offence under this condition.

The filling and dipping pipes are carried down nearly to the bottom of the tank, where they are always dipping in the petrol, as a precaution against any accidental flash back reaching the inside of the tank and thus causing a fire or an explosion and except for the vent pipe, which is closed with a flame-proof gauze, these two pipes are the only inlet to the tank permitted to be opened while the tank is in use.

Condition 4.—While these underground tanks offer the safest method of storage, very real dangers are present during the operation of filling the tank at which time a considerable quantity of petrol is present above ground, either in the tank-wagon, or in barrels. An escape of vapour or any spillage of petroleum can become quite a serious matter if it occurs within the confines of a building or shop and a number of fires have been caused in this manner in the past. From the 1st of April 1937, therefore, the practice of erecting a pump or tank inside a building has been prohibited.

Condition 8.—This restriction applies also to filling the tank from barrels. Petrol may not be poured into the tank through an open funnel but proper appliances, screwed into the barrel and on to the tank filling pipe and so constructed as to prevent the escape of any liquid or vapour except through the vent pipe fitted to the tank, must be used for transferring petroleum from any receptacles to the underground tank.

Condition 9.—Under the very best conditions filling an underground tank from barrels is an unsatisfactory method and the risk in so doing is considerably greater than that present when the operation is carried out from a road tank-wagon or even a tank-cart. Condition 9 places a very serious responsibility on a licensee filling his tank from barrels or drums and it is necessary for him to see that no fires, lights, smoking or other form of artificial light capable of igniting the vapour are present in any shops or buildings, or on the road or other surroundings of the installation, within 30 feet of the barrels.

The fact that the tank contents may be replenished by supplies brought to the site in barrels or drums does not authorise the licensee to convert his installation, or the public road, into storage premises for several hundred gallons of dangerous petroleum in packages, even for a limited time. The drums must be taken from the vehicle in which they are delivered only as fast as they can be discharged into the tank and empties must be removed immediately. This procedure, while keeping the transaction within the definition of "to transport", also greatly reduces the danger of an accidental fire involving the whole consignment and endangering neighbouring property.

Condition 11.—Electrically operated pumps must comply with the following, among other, conditions before they can be approved for use :—

(1) The motor, switch gear and all wiring, etc., on the pump casing must be of flame-proof construction satisfying the requirements of British Standard Specification No. 229.

(2) A double-poled switch must be provided in an immediately accessible position not less than 12 feet from the pump and must be so connected as to be capable of completely isolating the pump from the electric supply.

Condition 12.—Proviso (iii) to this condition limits proviso (ii) in so far as lights other than specially approved flame-proof lamps are concerned. The combination of (ii) and (iii) has the effect of only allowing refueling at night when lighting is provided, but lays down also that all ordinary forms of light, whether electric or otherwise, must not be within 12 feet of the pump or the vehicle receiving the petroleum.

Condition 13.—The display of "no smoking" and "switch off the engine" notices is not obligatory under the rules. Nevertheless, in view of the responsibility of the licensee under this condition of his licence some means of inviting his customers' attention to this regulation seems a wise precaution.

Condition 14.—Many requests have been made for the relaxation of this condition, but the obvious risks attendant upon converting an open pump site, or worse the public road, into a filling shed are sufficient explanation for the retention of this prohibition. There is nothing to prevent the holder of a pump licence also having a licence in Form I to keep up to 30 two-gallon tins of petrol on his site in a proper storage shed or bin. Filled tins, so kept, must, of course, be obtained from the main installation: they may not, under any circumstances, be refilled from the petrol pump licensed under Form K.

Condition 18.—Clearly makes the licensee, and any of his employees on the premises, responsible for doing his best to prevent any other person, whether a member of the public, an official, or motorist, refuelling his vehicle at the pump, from committing any act liable to cause an accident.

FORM L

(Article 5 of Schedule I.)

Licence to import dangerous petroleum and to store petroleum in installations.

No.

Fee Rs.

Licence is hereby granted to valid only for the importation of gallons of dangerous petroleum and for the storage of *gallons of petroleum in the place described below and shown on the plan attached hereto subject to the provisions of the Petroleum Act, 1934, and the rules made thereunder and to the further conditions on the back of this licence.

This licence shall remain in force till the 31st day of December 19 .

	Gallons.
*Dangerous petroleum in bulk	
Dangerous petrolum otherwise than in bulk	
Non-dangerous petroleum in bulk	
Non-dangerous petroleum otherwise than in bulk	
Total ..	

The 19 *Chief Inspector of Explosives in Pakistan.*

Plan No. , dated .

Description of the place referred to above.

Date of renewal	Date of expiry	Signature of licensing authority

This licence is liable to be cancelled if the licensed premises when inspected are not found conforming to the description and conditions attached hereto and contravention of any of the rules and conditions under which this licence is granted is also punishable with fine which may extend to five hundered rupees for a first offence and which may extend to two thousand rupees for any subsequent offence.

L 393 (66) Explosive

Conditions of licence

1. Petroleum shall be kept only in the storage tanks and storage and filling sheds or other approved places within the installation specified for the purpose on the plan attached hereto.

2. (i) The tank or tanks shall be supported on an approved foundation and shall be surrounded by a wall or embankment of substantial construction, or shall be partially sunk in an excavation. The enclosure thus formed shall contain only one of the following classes of petroleum, shall be of dimensions sufficient to contain the quantity of petroleum specified under the class to be stored and shall be so constructed and maintained as to prevent the escape therefrom of any petroleum in the form of liquid, whether under the action of fire or otherwise—

(*a*) *Dangerous petroleum*—10 per cent. more petroleum than the tank or tanks are capable of containing;

(*b*) *Non-dangerous petroleum other than heavy petroleum*—the amount of petroleum the tank or tanks are capable of containing;

(*c*) *Heavy petroleum*—the amount of petroleum the largest tank in the enclosure is capable of containing :

Provided that heavy petroleum may be stored in the same enclosure as non-dangerous petroleum other than heavy petroleum if the dimension under (*b*) above is observed.

(ii) Except for the necessary pipes and valves the space within an enclosure and not occupied by the tank or tanks, shall be kept entirely clear and unoccupied. Alternatively gas-tight metal tanks may be sunk completely underground the tanks being packed round with sand, earth or clay, so that no air-space is left below ground level and the tank is not visible. Tanks so buried shall not be required to maintain the safety distances laid down in condition 8 but the space over the buried tanks must not be used for any purpose. The filling and dipping pipes in an underground tank shall be carried down to the bottom of the tank.

3. All tanks shall be fitted with a vent pipe leading into the open air, the open end being covered with fine copper or other non-corroding metal wire gauze of mesh not less than 28 to the linear inch, and fitted with a hood or the tank shall be fitted with an approved relief valve or other approved means for preventing dangerous internal or external pressures being produced.

4. Cast iron valves are not permitted on any tank and all valves in an installation must be permanently marked in a manner clearly indicating the direction of opening and shutting the valve.

5. Pumps shall be placed only in positions shown on the plan attached hereto and they shall together with all connections and fittings be so constructed and maintained as to prevent leakage of petroleum.

6. Storage or filling sheds shall be constructed of suitable uninflammable material. The building shall rest on foundation walls and shall be surrounded by a wall or embankment of substantial construction or the walls and floor shall be suitably finished to form a sump or enclosure not more than two feet deep. A combination of these methods is permissible. The enclosure or sump thus formed shall be of sufficient capacity to contain the total quantity of petroleum liable at any time to be present in the building and shall be so constructed and maintained as to prevent the escape therefrom of any petroleum in the form of liquid whether

under the action of fire or otherwise. In the case of dangerous petroleum or partly dangerous petroleum the enclosure or sump shall be capable of receiving and retaining a volume not less than 5 per cent. in excess of the maximum quantity allowed in the building. The sumps and enclosure must be kept clean and free from any accumulation of inflammable liquids.

7. Every storage or filling shed in which dangerous petroleum is stored or filled shall be adequately ventilated near the ground level immediately above any walls constructed to prevent any leakage of petroleum and also near or in the roof. The ventilators shall be provided with two thicknesses of fine copper or other non-corroding metal wire gauze of mesh not less than 28 to the linear inch.

8. (*a*) A distance of not less than 100 feet shall be kept clear between (i) a storage tank and any other storage tank, (ii) between a storage tank and a storage or filling shed, the distance being measured between the nearest points of the perimeters of the storage tanks or storage or filling sheds, as the case may be.

(*b*) A distance of not less than 150 feet shall be kept clear between any storage tank or storage or filling shed and any protected work.

(*c*) Notwithstanding anything contained in clause (*a*) or clause (*b*)—

(i) Where the quantity of dangerous petroleum or partly dangerous and partly non-dangerous petroleum not in bulk to be stored in a storage shed does not exceed 50,000 gallons, the following reduced distances may be kept clear between the shed or enclosure wall and (A) any other building forming part of the installation, (B) any protected work, or (C) any storage tank containing non-dangerous petroleum having a capacity not exceeding 50,000 gallons :—

	Feet
Not exceeding 1,000 gallons	20
Exceeding 1,000 gallons but not exceeding 10,000 gallons	30
Exceeding 10,000 gallons but not exceeding 20,000 gallons	40
Exceeding 20,000 gallons but not exceeding 30,000 gallons	50
Exceeding 30,000 gallons but not exceeding 40,000 gallons	60
Exceeding 40,000 gallons but not exceeding 50,000 gallons	70

(ii) When a storage tank containing non-dangerous petroleum has a capacity not exceeding 100,000 gallons, a distance of not less than 50 feet may be kept clear between it and (A) another such tank of similar or less capacity, or (B) a storage or filling shed containing non-dangerous petroleum.

Such a storage tank and storage or filling shed may where the total quantity stored does not exceed 200,000 gallons, keep a distance of not less than 50 feet clear between the enclosure wall or embankment and any protected works.

(iii) When a storage tank containing non-dangerous petroleum has a capacity not exceeding 50,000 gallons, a distance of—

(*a*) for horizontal tanks, not less than one-third

(*b*) for perpendicular tanks, not less than one-half

the height of the tank may be kept clear between it and (A) another such tank or (B) a storage or filling shed wherein non-dangerous petroleum is stored in quantity not exceeding 50,000 gallons.

Such a storage tank and storage or filling shed may, where the total quantity stored does not exceed 100,000 gallons, keep a distance of not less than 20 feet clear between the enclosure wall or embankment and any protected works.

(iv) In the case of heavy petroleum a distance of not less than 20 feet may be kept clear between a storage tank and (A) another such tank or (B) a storage or filling shed containing such petroleum and a distance of not less than 50 feet shall be kept clear between such storage tank or filling or storage shed and any protected works. When the total quantity stored in such storage tank and storage or filling shed does not exceed 100,000 gallons, half the distances given in clause (iii) for the like quantity of non-dangerous petroleum other than heavy petroleum may be observed.

9. The distances specified in condition 8 may be reduced by the licensing authority in cases where screen walls are provided or other special precautions taken or where there are special circumstances that, in his opinion, warrant the alteration.

10. Notwithstanding anything herein to the contrary when petroleum is stored in an installation at or near wells, pumping stations or refineries, the concessions in clause (*c*) of condition 8 shall not apply and no storage tank, the capacity of which exceeds 50,000 gallons, or storage or filling shed shall be placed nearer than 300 feet to any still, boiler, furnace or fire. In such an installation all tanks shall be situated in a compact area (*a*) under a single control, (*b*) enclosed or capable of being enclosed by one continuous fence, (*c*) on which there shall be no protected works.

11. No alterations shall be carried out in the installation without the previous sanction in writing of the licensing authority. Such alterations so sanctioned shall be shown on an amended plan to be attached to this licence.

12. If the licensing authority calls upon the holder of a licence, by a notice in writing, to execute any repairs to the licensed premises, which are, in the opinion of such authority, necessary for the safety of the premises, the holder of the licence shall execute the repairs within such period, not being less than one month from the date of receipt of the notice, as may be fixed by the notice.

13. The responsible agent or supervisor referred to in Rule 92 shall not allow any person to enter a tank, which has contained petroleum, unless—

(*a*) such person wears a safety helmet of a description approved by the Chief Inspector, or

(*b*) (i) the responsible agent or supervisor has certified in writing as the result of an examination of the tank by himself or by some other competent person, that the atmosphere in the tank is fit for persons to enter, and

(ii) at least one safety helmet of a pattern approved by the Chief Inspector shall have been kept ready for instant use at the manhole of the tank which is being cleaned or repaired.

14. No work, involving the use of fire, welding or hot rivetting, shall be performed in or on any tank until the tank has been certified in the manner laid down in clause (*b*) of condition 13 to be free from petroleum vapour. When any water is pumped into or withdrawn from the tank no further work of the above description shall be done until the tank has been re-tested and a fresh certificate issued. When a tank is open for cleaning or repairs no lamps of any description either ordinary or electric, electric torches, electric cables or fans other than of a flameproof type satisfying the requirements of the British Standard Specification No. 229 shall be brought near the tank.

15. No person shall repair or cause to be repaired any receptacle or pipe in which, to his knowledge, any petroleum is or has been kept until he has taken all reasonable precautions to ensure that the receptacle or pipe has been rendered free from petroleum and any inflammable vapour :

Provided that this condition shall not be deemed to prohibit the usual soldering operations connected with the filling and despatching of petroleum receptacles.

16. All empty receptacles which have contained dangerous petroleum shall, except when they are opened for the purpose of cleaning them and rendering them free from petroleum vapour, be kept securely closed unless they have been thoroughly cleaned and freed from petroleum and inflammable vapour.

17. (a) Adequate precautions shall be taken at all times for the prevention of accident by fire or explosion.

(b) Wherever so specified by the Chief Inspector storage tank shall be fitted with approved fire foam attachments which shall be maintained in proper orders at all times.

18. Every care shall be taken to prevent any petroleum escaping into any drain, sewer, harbour, river or water course and enclosures or sumps must not be permanently connected with any drain or sewer.

19. Any accident, fire or explosion occurring within the area specified in the licence, which is attended with loss of human life or serious injury to person or property shall be reported to the nearest Magistrate or to the Officer-in-charge of the nearest Police Station immediately and by telegraph or telephone where such means of communication are available.

20. Free access to the licensed premises shall be given at all reasonable times to any Inspector or Sampling Officer and every facility shall be afforded to such officer for ascertaining that the rules and the conditions of this licence are duly observed.

Comments by the Chief Inspector of Explosives.—Condition 1.—It will be noticed that the effect of this condition is to allow storage only in the places clearly marked on the plan of the premises as approved for the purpose and that the practice of keeping filled receptacles and uncleaned "empty" packages between buildings and on other unauthorised open spaces in an installation is specifically forbidden. Where the safety distances prescribed in Condition 8 can be observed, and local conditions permit, and when necessary precautions against outflow are taken, there can be no objection to the storage of packed petroleum in the open air, but it is laid down here that such places must be approved and must be clearly indicated on the plan forming a part of the licence.

Condition 2.—Interesting departures from past practice are permitted by this regulation in its new form. Most important of these are perhaps the prmission given to enclose more than one tank in a single enclosure and the reduction in the size of that enclosure allowed in the case of the heavier grades of petroleum.

Efficient protection against the outflow of petroleum in the event of an accident or a fire is of the first importance, and particular attention is invited to the fact that the licence requires all enclosures provided for this purpose to be so constructed and *maintained* as to prevent the escape of any petroleum in the form of liquid whether under the action of fire or otherwise. Climatic conditions in the country are very severe on the usual form of wall or embankment and it is strongly recommended that frequent and regular inspection of these features of the installation be made by a responsible member of the licensee's staff.

Condition 4.—The restriction on the use of cast iron valves has been introduced as a result of their unsatisfactory behaviour when subjected to conditions imposing any unusual demand upon them. Many installations built before April 1937 will not comply with this condition, but under Rule 2 (2) existing cast iron valves need not be replaced unless the notice referred to in the rule has been received.

Condition 5.—When deciding on the site for a pump or pump house due regard should be paid to the possibility of its requiring to be used for handling petroleum while a fire is raging in the installation. For this reason they are not allowed in tank enclosures and should be sufficiently removed from any tanks or other storage to ensure that they can be easily worked under the worst combination of circumstances local conditions allow to be visualised.

Condition 8.—The fundamental distances called for under this licence are, for large installations, 100 feet between tanks and other facilities in the premises, and 150 feet from any dwellings, factories or other buildings in which person dwell or assemble, other petroleum premises, etc., and public roads or other places declared to be protected works. These distances are reduced to 20 feet betwee ntanks and other facilities and 50 feet from protected works in the case of heavy petroleum.

It will be noticed that the reduced distances allowed under clause (c) (i) of this condition apply only to storage sheds and not to filling sheds. Filling sheds offer one of the biggest hazards in any installation, here "loose" petroleum is handled and necessarily exposed to the air to a greater degree than anywhere else. The question of reduced distances in the case of these buildings is, therefore, left for consideration in the light of the general layout of the depot and the working conditions to be adopted.

For smaller premises the distances laid down in clause (c) (ii), (iii) and (iv) are prescribed, but the concession are limited to non-dangerous petroleum and the distances from protected works are measured from the enclosure walls or embankments and not from the tanks and sheds themselves as in the case of the larger depots.

Condition 9.—The authority to reduce distances is only conferred where there are special precautions being taken or where there are special circumstances warranting the alteration. It seems clear that it is not intended this rule should operate to condone breaches of the law or to rectify situations which have arisen owing to the neglect or lack of foresight of the licensee. It is amazing in what a large number of cases licensees overlook the fact that it is incumbent on them to see that the safety distances round their premises are not invaded and either to acquire control of the land necessary to maintain them, or to enter into a mutual agreement with the owner of the land that no "protected works" will be erected on the land within the safety zone.

Conditions 13 and 14.—The responsible agent or supervisor issuing the certificate under Condition 13 (b) (i) should, in his own interests, retain on record a copy of his certificate. It seems very desirable to limit the number of persons in the tank to those actually authorised to carry on the work and the following form, slightly adapted from one published in the Industrial Safety Bulletin and in which permission is only given to certain named persons to enter, has much to commend it. If necessary the form could be printed in the local language and the man in charge of the working group entering the tank should have his copy with him, as it is his only authority to enter.

SAFETY FIRST.

Tank.....was inspected at.....on.....and is certified to be :

Isolated and sealed from every source of vapour or petroleum and is free from danger.....

Men may enter, only for the purpose of.....

.....

.....

They must wear :—

.....

.....

Examiner.

MEN TO BE EMPLOYED.

IN CASE OF DOUBT LEAVE THE TANK AND REPORT.

Permission is hereby given to.....on.....to enter the above tank, in the terms mentioned.

.....

Manager.

Records of accidents reveal that at the time of freeing a tank from petroleum and petroleum vapour the occurrence of an explosion or fire, while not common, is by no means so rare as one would at first expect. The conditions prevailing at this time appear to be peculiarly favourable to the production of static electricity. Drops of water falling through petroleum vapour, either from a hose or from condensed steam from a steam jet, or a jet of steam discharging against an insulated roof support, all seem possible causes of a fire or explosion. The proper earthing of all appliances, including even a steam hose, seems very desirable.

Condition 15.—The proviso to this condition does not authorise the repair of uncleaned "empty" receptacles but is only intended to permit the closing of vessels being filled for storage or despatch.

Conditions 17 and 18.—Reference is invited to the notes to Rules 91 and 94.

FORM M.

(Article 6 of Schedule 1.)

Licence to import and store dangerous petroleum otherwise than in bulk (a) *non-dangerous petroleum in quantity exceeding* 5,000 *gallons, or* (b) *partly dangerous petroleum and partly non-dangerous petroleum.*

Fee Rs.

No.

Licence is hereby granted to valid only for the importation of gallons of dangerous petroleum and for the storage of gallons of dangerous petroleum and gallons of non-dangerous petroleum in the storage shed described below and shown on the plan attached hereto, subject to the provisions of the Petroleum Act, 1934, and the rules made thereunder and to the further conditions on the back of this licence.

This licence shall remain in force till the 31st day of December 19 .

The.....19 .

Licensing Authority.

Plan No. , dated

Description of the storage shed referred to above.

Date of renewal	Date of expiry	Signature of licensing authority

This licence is liable to be cancelled if the licensed premises when inspected are not found conforming to the description and conditions attached hereto and contravention of any of the rules and conditions under which this licence is granted is also punishable with fine which may extend to five hundred rupees for a first offence and which may extend to two thousand rupees for any subsequent offence.

6. The following distances shall be kept clear at all times between protected works and a storage shed or an enclosure wall used for the storage of non-dangerous petroleum only :—

Quantity to be stored	*Distances to be kept clear*
	Feet.
Exceeding 5,000 gallons but not exceeding 10,000 gallons . . .	15
Exceeding 10,000 gallons but not exceeding 50,000 gallons	20
Exceeding 50,000 gallons	30

7. The distances specified in conditions 5 and 6 may be reduced by the licensing authority in cases where screen walls are provided or other special precautions taken or where there are special circumstances that, in his opinion, warrant the reduction.

8. Drums or other receptacles containing petroleum shall only be opened in the licensed premises and for the time necessary for drawing off the petroleum, and during such drawing off every reasonable precaution shall be adopted for preventing the escape of petroleum or the vapour therefrom.

9. All empty receptacles which have contained dangerous petroleum shall, except when they are opened for the purpose of cleaning them and rendering them free from petroleum vapour, be kept securely closed unless they have been thoroughly cleaned and freed from petroleum and inflammable vapour.

10. No person shall repair or cause to be repaired any receptacle in which, to his knowledge any petroleum is or has been kept until he has taken all reasonable precautions to ensure that the receptacle has been rendered free from petroleum and any inflammable vapour :

Provided that this condition shall not be deemed to prohibit the usual soldering operations connected with the filling and despatching of petroleum receptacles when such operations are conducted in an approved place outside the storage shed.

11. Adequate precautions shall be taken at all times for the prevention of accident by fire or explosion.

12. Every care shall be taken to prevent any petroleum escaping into any drain, sewer, harbour, river or water course.

13. Adequate precaution shall be taken to prevent unauthorised persons having access to any petroleum kept and to any receptacles which contain or have contained petroleum.

14. Any accident, fire or explosion occurring within the licensed premises, which is attended with loss of human life or serious injury to person or property shall be reported to the nearest Magistrate or to the Officer-in-charge of the nearest Police Station immediately and by telegraph or telephone where such means of communication are available.

15. Free access to the licensed premises shall be given at all reasonable times to any Inspector or Sampling Officer and every facility shall be afforded to such officer for ascertaining that the rules and the conditions of this licence are duly observed.

Comments by the Chief Inspector of Explosives.—These storage premises must be detached from other buildings and if any dangerous petroleum is stored in them must be built wholly of uninflammable materials and be efficiently ventilated by means of flame proof ventilators. It will be noted from the head of the form that premises licensed for only one kind of petroleum cannot be used to store both kinds of petroleum until the licence has been returned to the Chief Inspector and amended to allow such storage.

This licence can be granted for any quantity of dangerous petroleum and is the only purely non-bulk licence allowing the storage of petrol in other than the standard two gallon tins.

Condition 1.—It will be observed that the sump or enclosure may not be more than 2 feet deep. The object of the restriction is two fold. It is intended to prevent congestion on the working floor and the collection of large quantities of petroleum vapour which being heavier than air will accumulate in the sump. When very large storage sheds are in question and efficient ventilation extending to the bottom of the enclosure is installed relaxation of the 2 foot limit can be considered.

Condition 8—Neither dangerous nor non-dangerous petroleum may be kept on the premises in open vessels.

Condition 10.—Soldering operations may not be carried out in storage sheds licensed in Form M. A special approved place quite separate from the storage shed must be provided for such operation.

SCHEDULE III

METHODS OF TESTING PETROLEUM

Determination of Flashing-Point

(*See Rules* 157 *and* 60)

I. Apparatus to be used.

The flashing-point of petroleum and petroleum mixtures which are fluid at 50°F. and which flash not above 120° F. shall be determined by the Abel apparatus as hereinafter defined.

The flashing-point of petroleum and petroleum mixtures which are solid at 50 degree F. and which flash not above 120 degree F. shall be determined by the Abel apparatus, the test being modified as hereinafter described.

The flashing-point of petroleum and petroleum mixtures which flash above 120 degree F. shall be determined by the Pensky-Martens apparatus as hereinafter defined.

II. Preparing the samples for test

About ten fluid ounces of the sample, sufficient for three tests, should be transferred from the bottle into which the sample has been drawn to a pint flask or bottle, which should be immersed in water artificially cooled until a thermometer introduced into the sample, indicates a temperature not exceeding 50 degree F.

III. (I) Abel apparatus

The apparatus to be employed shall be the Abel petroleum testing apparatus modified by having an oil cup provided with a stirrer. It shall be constructed to the dimensions herein specified within the limits of accuracy prescribed by the tolerances set forth below.

Oil Cup.—The oil cup consists of a cylindrical vessel open at the top and fitted on the outside with a flat circular flange projecting at right angles.

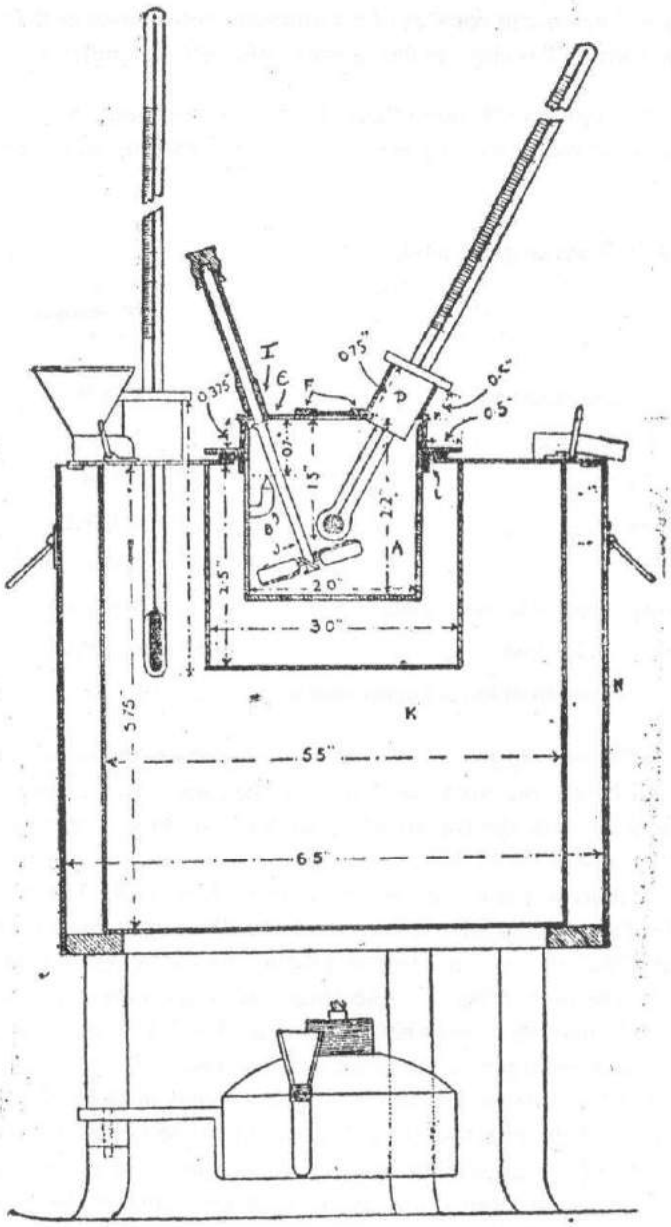
Within the cup, fixed through the wall and silver soldered or brazed in place, there is a gauge consisting of a piece of wire bent upwards and terminating in a point.

Material.—Brass or gun-metal.

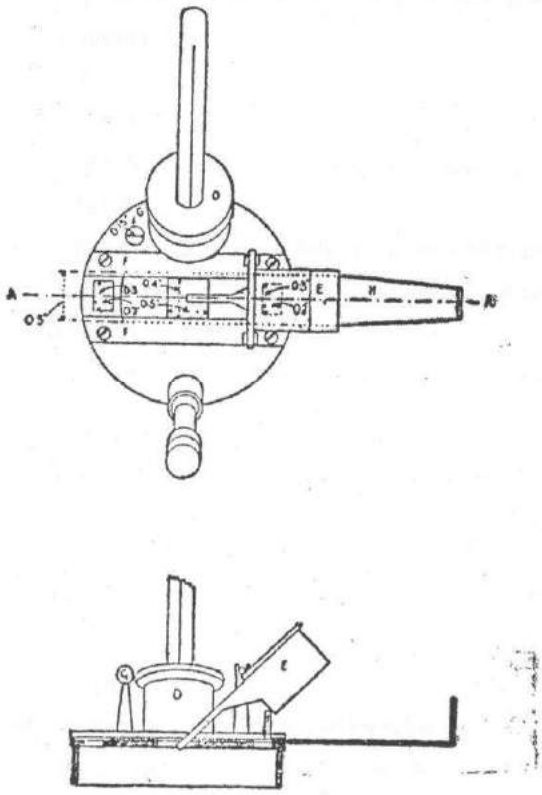
	Dimension	Tolerance. in.
Cup, wall and bottom thickness	17 I.W.G.	—
Cup, internal diameter	2 in.	± 0.05
Cup, internal depth	2·2 in.	± 0.05
Flange, thickness	17 I.W.G.	—
Flange, width	0.5 in.	±0.05
Flange distance of upper side from top edge of cup	0·375 in.	±0.05
Gauge, thickness, not less than	10 I.W.G.	—
Gauge, distance of point from level of upper edge of cup ..	0.7 in.	±0·005

Cover.—The cup is provided with a close-fitting cover with a downwarde projecting rim barely reaching the flange on the cup. The downward projecting rim is made solid with the top or silver soldered or brazed in place. Upon the cover are mounted a thermometer socket, trunnions to support an oil test-lamp a pair of guides in which a slide moves, and a white bead. The top of the cover is pierced by three rectangular holes symmetrically placed on a diameter, one in the centre and the other two as close as practicable to the inner sides of the cover rim and opposite each other. These three holes are covered or uncovered by means of a slide moving in suitably disposed guides. The slide has two perforations, one corresponding in all particulars to the centre hole in the cover and the other to one of the holes at the side. The movement of the slide is restricted by suitable stops, and its length and the disposition of the holes are such, that at the outer extremity of the movement of the slide, the holes in the cover are simultaneously just completely opened and at the inner extremity of the movement of the slide they are completely closed.

The trunnions supporting the test lamp are fixed on the top of the guides and the lamp is mounted in the trunnions so that it is free to oscillate. The lamp is provided with a jet to contain a wick and is so arranged that when the slide is moved so as to uncover the holes, the oscillating lamp is caught by a pin fixed in the slide and tilted over the central hole in such a way that the lower edge of the cover bisects the circle formed by the bore of the jet when in the lowest position. The flame then occupies a central position within the hole in both directions.



ABEL FLASH-POINT APPARATUS.



SECTION ON AA.

COVER OF ABEL FLASH-POINT APPARATUS.

(SLIDE OPEN.)

A suitably mounted gas-jet may be substituted for the lamp.

	Dimension	Tolerance. in.
Cover, thickness	0.05 in.	±0·015
Cover, central hole, length (in direction of slide)	0·5 in.	±0.005
Cover, central hole, width	0.4 in.	±0·005
Cover, peripheral holes, length (in direction of slide) ..	0.2 in.	±0·005
Cover, peripheral holes, width	0.3 in.	±0·005
Slide, thickness	20 I.W.G.	—
Slide, width of upper surface	0.5 in.	±0·01 (excess only)
Lamp, overall length of jet	Approx. 0.6 in.	To suit the requirements for the position of the jet when tilted.
Lamp, bore of jet at end	0.0625 in.	±0.005
Bead, diameter	0.15 in.	±0·01
Thermometer Socket :		
Internal diameter	0·6 in.	±0.01
Length of short side measured from under surface of cover ..	Approx. 0.5 in.	—
Length of long side measured from under surface of cover ..	Approx. 0.75 in.	—
Distance of centre of socket from centre of cover measured on the under side	Approx. 0·7 in.	—
These dimensions are subject to the correct placing of the thermometer when in position	—	—
Vertical depth of lowest part of thermometer below centre of under side of cover	1.5 in.	±0·1

The thermometer socket is in the form of a split tube, mounted on a diameter at right angles to the diameter through the centre of the holes, and fitted at such an angle as to bring the bulb of the thermometer, when in place, vertically below the centre of the cover and at the correct distance from it.

A white bead, the dimensions of which represent the size of test flame to be used, is mounted in a visible position on the cover.

Materials.—All parts excepting bead, brass or gun-metal. Bead, ivory or other suitable material.

Cover fitted with stirrer.—Provision may be made in the cover for the reception of a stirrer which projects into the oil cup, for use with viscous materials only.

A bush is mounted on the cover in a position diametrically opposite the thermometer mounting, and its length is such and it is set at such an angle that the stirrer rod clears the oil-level gauge and the blades operate below the level of, and without fouling, thermometer bulb. The bush is placed as near as practicable to the outer edge of the cover.

	Dimension	Tolerance. in.
Stem, length, overall	4 in.	±0·1
Stem, length, lower end to point of attachment of blades ..	Approx. 0,1 in.	—
Stem, length, lower end to upper surface of collar	1.9 in.	±0·1
Stem, length, upper surface of collar to lower end of thread ..	2 in.	±0·1
Stem, diameter	Approx. 0.125 in.	—
Stem, diameter of collar	Approx. 0.25 in.	—
Stem, thread	7 B.A.	—
Blades, thickness	17. I.W.G.	—
Blades, length excluding root	0.5 in.	±0
Blades, breath (all corners of blades rounded)	0·3125 in.	±0.01
Blades, angle	Approx. 45 degree	—
Sleeve, length	To suit stem giving free rotation with no appreciable vertical play when screwed home.	
Diameter of bore	Sliding fit on stem.	—
Diameter of collar	Approx. 0.25 in.	—

The stirrer consists of a round stem having four blades or vanes silver soldered in place at one end. A collar is fixed on the stem so that when the stem is inserted into the bush from below, it is arrested at a position such that the correct length protrudes into the oil cup. The top end of the stem is reduced and screwed.

A long sleeve having an internally screwed, knurled knob soldered to its upper end, is passed over the upper end of the stem and screwed home. The length of the sleeves is such that a flat-faced collar at its lower end just comes into contact with the upper end of the bush, leaving the stirrer free to rotate without appreciable vertical play.

A flat-headed cylindrical plug is provided for insertion in the bush when the stirrer is not in use.

Material.—Brass or gun-metal.

Heating vessel.—The heating vessel or bath consists of two flat-bottomed cylindrical copper vessels placed coaxially one inside the other and soldered at their tops to a flat copper ring, greater in outside diameter than the larger vessel and of smaller inside diameter than the smaller vessel. The space between the two vessles is thus totally enclosed and is used as a water jacket.

	Dimension.	Tolerance in.
Inner vessel, thickness	24 I.W.G.	—
Inner vessel, internal diameter	3 in.	±0.05
Inner vessel, internal depth	2·5 in.	±0.05
Outer vessel, thickness, not less than	24. I.W.G.	—

	Dimension	Tolerance in.
Outer vessel, internal diameter	5.5 in.	±0.1
Outer vessel, internal depth	5·75 in.	±0.1
Top plate, thickness, not less than	20 I.W.G.	—
Top plate, outer flange projection	0.375 in.	±0.1
Top plate, diameter of central hole	To suit ebonite or fibre ring. Clearance not to exceed 0.1 in.	
Ebonite or fibre ring, internal diameter	Easy fit on oil cup.	—
Ebonite or fibre ring, external diameter of flange	2.75 in.	±0.02
Ebonite or fibre ring, overall depth of spigot	0·25 in.	±0.02
Ebonite or fibre ring, thickness, flange and spigot	0·08 in.	±0.005
Ebonite or fibre ring, screws, C.S.	8 B.A. x 0·15 in.	—
Thermometer socket, internal diameter	0.6 in.	±0·01
Thermometer socket, height from top of plate	0.75 in.	±0.05

An ebonite or fibre ring of right-angle section is fitted into the hole in the centre of the flat ring forming the top of the bath and, when the apparatus is in use, the oil cup fits into, and its flange rests upon, this ebonite or fibre ring so that the oil cup is centrally disposed within the heating vessel. The ebonite or fibre ring is secured in place by means of six small screws having their heads sunk below the surface of the ring, to avoid metallic contact between the bath and the oil cup.

A splite socket, similar to that on the cover of the oil cup, but set vertically, allows a thermometer to be inserted into the water-space. A funnel and overflow pipe also communicate with the water-space through the top plate and two loop handles are provided thereon.

The bath rests upon a cast-iron tripod stand, to the ring of which is attached a cylindrical copper jacket not less than 24 I. W. G. flanged inwards at the top, and of such dimensions that the bath, while resting firmly on the iron ring, just touches with its outward projecting flange the inward-turned flange of the jacket. Two handles are provided on the outer jacket.

Diameter of the outer jacket 6.5 inches × 0.1 inch.

Spirit lamp.—A spirit lamp is provided for raising the temperature of the water bath, but any other suitable means may be employed for this purpose.

Thermometers.—Two thermometers are provided, the one for ascertaining the temperature of the bath, the other for determining the flashing-point.

OIL CUP THERMOMETER

Type	Mercury in glass, nitrogen filled, graduated on the stem enamel back
Length	Approximately 9 inches.
Stem	Diameter 0·24 to 0·28 inch.
Bulb	Spherical; made of normal glass approved by the Board of Trade. Diameter, 0.35 inch ± 0.05 inch.
Range	50 to 150°F. with expansion chamber. Distance from the bottom of the bulb to the 50° line, 2·75 inches to 3·15 inches. Distance froms the 50° line to the 150° line, not less than 4.75 inches.
Immersion ..	A swelling is made in the stem to ensure that the thermometer shall be fixed in its brass collar so that the distance from the top collar to the bottom of the bulb is 2.4° inches ± 0·05 inch.
Graduation ..	Scale graduated in 1° F. divisions Every 5° and every 10° to be indicated by longer lines. Figured at every 10° in full.
Marking	"Abel Oil Cup": Identification number, "Fahrenheit": maker's or vendor's name or trade mark.

WATER BATH THERMOMETER

Type	Mercury in glass, nitrogen filled, graduated on the stem, enamel back.
Length	Approximately 9 inches.
Stem	Diameter, 0.24 to 0·28 inch.
Bulb	Cylindrical, made of a normal glass approved by the Board of Trade Length, approximately 0·8 inch. Diameter, not to exceed the diameter of the stem.
Range	90° to 190° F. with expansion chamber. Distance from the bottom of the bulb to the 90° line, 3.95 inches to 4.35 inches. Distance from the 90 line to the 190 line, not less than 3.55 inches.
Immersion ..	A swelling is made in the stem to ensure that the thermometer shall be fixed in its brass collar so that the distance from the top of the collar to the bottom of the bulb is 3.5 inches ± 0.1 inch.
Graduation ..	Scale graduated in 1°F. divisions. Every 5° and 10° to be indicated by longer lines. Figures at every 10° in full.
Marking	"Abel Water Bath": Identification number, "Fahrenheit": maker's or vendor's name or trade mark.

The brass collar of the thermometer is in each case of the following dimensions :—

Outside diameter—push fit in socket

Thickness of tube—22 I. W. G.

Thickness of flange—0. I inch ±0.001 inch.

III. (II) METHOD.

(1) *For petroleum flashing below 90°F.*

The test apparatus shall be placed for use in a position where it is not exposed to currents of air or draughts.

The heating vessel or water-bath shall be filled by pouring water into the funnel until it begins to flow out at the spout of the vessel. The temperature of the water at the beginning of the test shall be 130° F., and no heat shall be applied to the water-bath during the test. When a test has been completed and it is desired to make another test the water-bath shall be again raised to 130° F., which may conveniently be done while the petroleum cup is being emptied, cooled and refilled with a fresh sample to be tested. The next test is then proceeded with.

If an oil test-lamp is being used it shall be prepared by fitting it with a piece of flat plaited candle-wick and filling it with colza or rape oil up to the lower edge of the opening of the spout or wick tube. The lamp shall be trimmed so that when lighted it gives a flame of about 0.15 of an inch diameter, and this size of flame, which is represented by the projecting white bead on the cover of the oil-cup is readily maintained by simple manipulation from time to time with a small wire trimmer. A gas test flame may be employed, and if so, the size of the jet of flame shall be adjusted to the size laid down above.

The bath having been raised to the proper temperature, the cup shall be placed on a level surface in a good light, and the oil to be tested shall be poured into it, until the level of the liquid just reaches the point of the gauge which is fixed in the cup. Before a test is begun the temperature of the oil shall be determined and shall be brought to approximately 60° F. The cover, with the slide closed, shall then be put on to the cup and pressed down so that its edge rests on the rim of the cup, and the cup shall be so placed into the bath or heating vessel, every care being taken to avoid wetting the sides of the cup with the oil. The thermometer in the lid of the cup has been adjusted so as to have the correct immersion when the brass collar of the thermometer is properly seated, and its position shall not in any circumstances be altered. When the cup has been placed in the proper position, the scale of the thermometer faces the operator.

The test-lamp shall then be placed in position upon the lid of the cup. When the temperature has reached 66°F. the operation of testing shall be begun, the test flame being applied once for every rise of one degree, in the following manner :—

The slide shall be slowly drawn open while a metronome, set at 75 to 80 beats per minute, beats three times and shall be closed during the fourth beat. A pendulum of 24 inches effective length may be used in place of the metronome, counting one beat from one extremity of the swing to the other.

The barometric pressure shall be observed and recorded. No corrections shall be made except in case of dispute, when the flashing-point figure shall be corrected according to the following rule:—

For each inch (25.4 mm.) below 29.92 in. (760 mm.) barometric reading add 1.6° F. to the flashing-point.

For each inch (25.4 mm.) above 29.92 in. (760 mm.) barometric reading subtract 1.6° F. from the flashing-point.

(2) *For petroleum flashing between 90°F. and 120° F.*

The air-chamber which surrounds the oil-cup shall be filled with cold water at a depth of 1.5 inches, and the heating vessel or water-bath filled as usual, but also with cold water. The lamp shall then be placed under the apparatus and kept there during the entire operation, and the temperature of the oil raised at the rate of 2° F. to 2.25° F. per minute, the testing being carried out as laid down in the previous section, except that the test flame shall first be applied when the temperature has reached 80° F.

(3) *For solid petroleum mixtures.*

Solid petroleum mixtures are to be tested in the Abel apparatus in the following manner :—

The solid mixture must be cut into cylinders 1.5 inch long and 0.25 inch in diameter by means of a cork borer or other similar cutter having the correct internal diameter. These cylinders are to be placed in the petroleum cup of the testing apparatus in a vertical position in such number as will completely fill the cup. The cylinders must be in contact with one another, but must not be so tightly packed as to be deformed in shape.

Five or six of the cylinders in the centre of the cup must be shortened to 0.5 inch to allow space for the thermometer bulb.

The air bath of the testing apparatus must be filled to a depth of 1.5 inch with water. The water bath must then be raised to, and maintained at, a temperature of about 80° F.

The cup must then be placed in the air bath, and the temperature of the sample must be allowed to rise until the thermometer in the oil-cup shows 75° F., when the test flame must be applied.

If no flash is obtained, this temperature must be maintained constant in the oil-cup for one hour, at the expiration of which time the test flame must again be applied.

If a flash is obtained, the solid mixture will be subject to the provisions of the Petroleum Act, 1934.

NOTE.—It may, in many cases, save time in testing samples of petroleum mixtures to apply the test flame after the sample has been a few minutes in the cup and while still at the temperature of the room in which the test is being carried out, provided that this temperature is below 76 degree F. If a flash is obtained by this means, it is unnecessary (for the purpose of the Petroleum Act) to proceed with the test at a higher temperature.

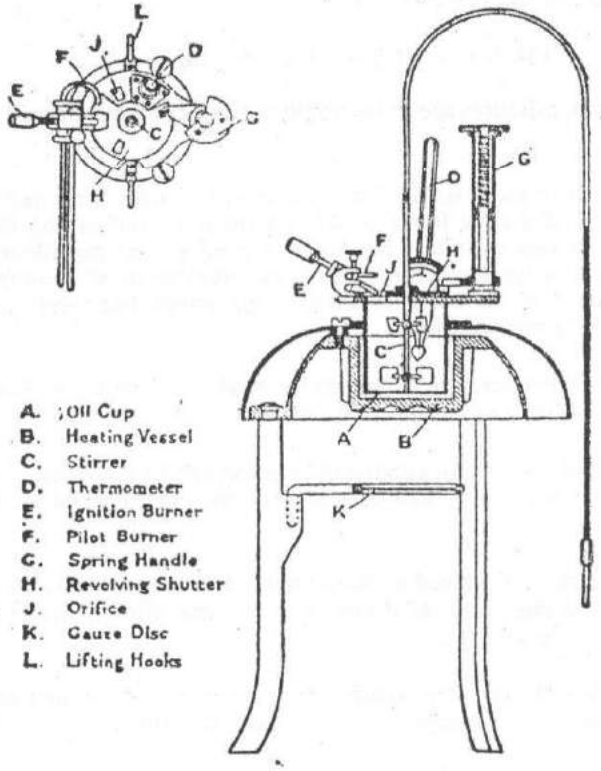
IV. (I) THE PENSKY-MARTENS APPRATUS.

The standard Pensky-Martens Closed Tester shall be used for determining the flashing-point of all petroleum products having a flashing-point above 120°F.

Every instrument shall be marked with the letters I.P.T., an identification number (on the cup, cover and top plate) and the name of the maker or vendor, such stamping implying a guarantee that the instrument complies with the requirements specified below.

The Pensky-Martens Tester shall include the following major parts :—

Cup.—The cup of the standard Pensky-Martens Tester shall be made of brass and shall satisfy the following dimensional specifications :—



THE PENSKY-MARTENS CLOSED TESTER.

Dimensions	Inches.	Inches.
Inside diameter below filling mark	2.000	±0.050
Difference, inside and outside diameters below filling mark	0.125	±0.010
Inside height	2.200	±0.050
Thickness of bottom	0.095	±0.025
Distance from rim to filling mark	0.860	±0.015
Distance lower surface flange to bottom of cup	1.795	±0.015

The inside of the cup may be turned to a slightly larger diameter above the filling mark and the outside may be tapered above the flange, but the wall thickness at the upper edge shall be not less than 0.04 in. The flange should be approximately 0.5 in. wide and approximately 0.125 in. thick. It shall be equipped with devices for locating the postion of the lid on the cup and the cup centrally in the stove. A handle, attached permanently to the flange of the cup, is a desirable accessory.

NOTE.—If the bottom of the cup is affixed it shall be brazed or hard soldered.

Stirring device.—The lid shall be equipped with a stirring device consisting of a vertical steel shaft, not less than 0.1 in. nor more than 0.125 in. in diameter, mounted in the centre of the cup, carrying two two-bladed brass propellers, and provided with any convenient means for operating. The blades of both propellers shall be approximately 0.3 in. wide and shall be set at an angle of approximately 45°. The smaller (upper) propeller shall have an over-all diameter of approximately 0.75 in. The larger (lower) propeller shall have an over-all diameter between 1.25 and 1.75 in. The thickness of the propeller blades shall be not less than 0.048 in. nor more than 0.08 in., which limits correspond respectively to No. 18 and 14 S.W.G. The propeller blades shall be brased or hard soldered to collars on the vertical shaft and the collars shall have horizontal and vertical dimensions not greater than 0.4 in.

The plane of the centre of the upper 'propeller shall be 0.4 in. below the level of the rim of the cup. The plane of the centre of the lower propeller shall be 2.0 in. below the level of the rim of the cup. The level of the rim of the cup is in effect the level of the plane part of the portion of the lower surface of the lid inside the rim

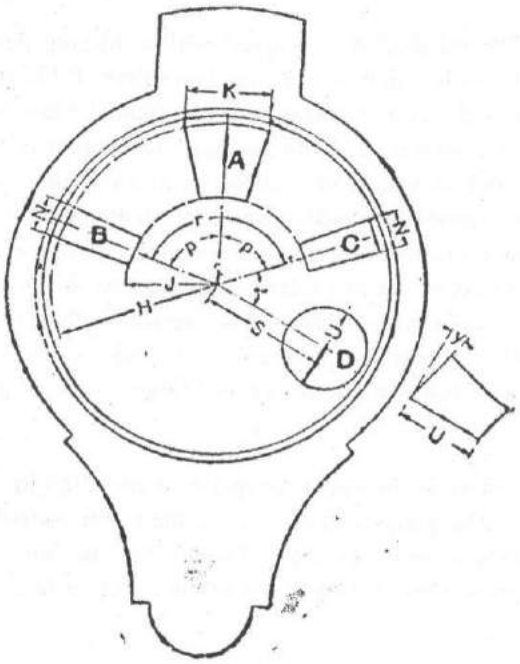
Cover proper.—The cover proper shall be of brass and shall have a rim projecting downward almost to the flange of the cup and fitting the outside of the cup closely. The thickness of the cover, measured just inside the rim, shall be not less than 0.03 in. nor more than 0.08 in. There shall be a proper locating device engaging with a corresponding locating device on the flange of the cup.

There shall be four openings in the cover.

Opening A is an area defined by arcs of two concentric circles and the intersected lengths of two radii. The radius of the outer circle shall be not less than 0.94 in. nor more than 0.97 in. The chord of the arc of the outer circle shall be not less than 0.5 in. nor more than 0.54 in.

Openings B and C are equal areas, each of the same general form as opening A but of approximately half the (angular) width. The radii of the defining inner and outer circles shall be within the limits specified for the radii of the two circles ,

arcs of which partially define opening A. The chord of the outer arc for opening B or opening C shall be not less than 0.19 in. nor more than 0.22 in. The sum of the areas of openings B and C shall be not less than 75 percent nor more than 100 percent of the area of opening A.



H Minimum 0.94 in., maximum 0.97 in.
J Minimum 0.53 in., maximum 0.56 in.
K Minimum 0.50 in., maximum 0.54 in.
N Minimum 0.19 in., maximum 0.22 in.
S Approximately 0.75 in.
U Approximately 0.5 in.
Angles p Equal.
Angle r Minimum 135°, maximum 140°.
Angle t Minimum 50°, maximum 60°.
Angle y Minimum 10° maximum 15°.

COVER OF PENSKY-MARTENS TESTER.

Openings B and C shall be equally distant from opening A, and radii drawn through each of thier centres shall be at an angle of not less than 135° nor more than 140°.

Openings A, B and C need not conform exactly to the shape of geometrical figures bounded by arcs of two concentric circles and intersected length of radii., Their boundaries must, however, fall on or between the lines indicated by the limiting values of the dimensional specification of the preceding text.

Opening D is a split tube to grip the thermometer collar. It shall be set at an angle of not less than 10° nor more than 15° from the perpendicular. It centre is approximately 0.75 in. from the centre of the lid and on a radius at an angle of not less than 50° nor more than 60° from the radius passing through the opening C. Its height shall be such that, when a standard thermometer is in position, the bottom of the bulb shall be 1.5 in., ±0.1 in., below the level of the rim of the cup (which corresponds to the lower surface of the portion of the lid inside the rim).

Shutter.—The lid shall be equipped with a brass shutter, approximately 0.1 in thick, operating on the plane of the upper surface of the lid. The shutter shall be so shaped and mounted that it rotates on the surface of the lid about an axis normal to the lid, and through its centre, between two stops so placed that when in one extreme position the openings A, B and C of the lid are completely closed and when in the other extreme position these openings are completely opened.

Flame exposure device.—The tip of the flame jet shall have an orifice 0.027 in to 0.03 in. diameter. The flame-exposure device shall be equipped with an operating mechanism which, when the shutter is in the "open" position, depresses the tip so that the centre of the orifice is between the plane of the under and upper surfaces of the lid proper, at a point on a radius passing through the centre of the larger opening A and approximately 0.1 in. from the outer edge of the opening.

The test flame shall be approximately spherical and shall be regulated to be of the same mean diameter as a bead 0.16 in. in diameter of some suitable material mounted on the lid.

The mechanism operating the shutter should be of the spring type and constructed so that when at rest the shutter shall completely close the three openings. When operated to the other extreme the three openings in the lid shall be fully open and the tip of the exposure tube shall be fully depressed.

NOTE.—A pilot flame for automatic relighting of the test flame should be provided.

Where gas is not available, an oil burner shall be used as the test flame, the position of which shall correspond with that of the gas flame previously specified.

Stove.—Heat shall be supplied to the cup by means of a properly designed stove which is equivalent to an air bath. This stove shall consist of (1) an air bath and (2) a top plate on which the flange of the cup rests.

Air bath.—The air bath shall have a cylindrical interior 1.625 in. to 1.66 in deep and a diameter not less than 0.125 in. nor more than 0.156 in. greater than the outside diameter of the cup, with the minimum clearance of 0.05 in. The air bath shall be a flame-heated metal casting.

NOTE.—The casting shall be so designed and used that the temperature of bottom and and walls is approximately the same. On this account it should be not less than 0·25 in. thick. The apparatus shall be designed so that products of combustion of the flame cannot come into contact with any part of the cup.

Top plate.—The top plate shall be of metal. The total distance from the upper surface of the plate to the bottom of the air bath shall exceed the distance from the under-surface of the flange to the bottom of the cup by not less than 0.063 in. nor more than 0.125 in.

The top plate shall be mounted with an air gap between it and the air bath. The top plate may be attached to the air bath by means of three screws and spacing bushings. The spacing bushings should be of proper thickness to define the air gap which shall be not less than 0.125 in. nor more than 0.187 in. The spacing bushings shall be not more than 0.375 in. in diameter.

Thermometers.—A low range thermometer shall be used with the Standard Pensky-Martens Tester for determining the flashing-point above 120° F. The thermometer shall comply with the specification given below.

The thermometers shall conform to the following general specification :—

Type.—Mercury in glass, except where otherwise stated. Engraved stem. Nitrogen filled.

Stem.—The stem shall be made of lead glass or other suitable glass. Enamel back.

Bulb.—The bulb shall be made of a suitable thermometric glass approved by the National Physicsl Laboratory. At present these glasses are :—

	Identification mark	Approved for temperatures upto
Normal glass made by James Powell and Sons, Ltd.	Single blue stripe	350°C.*
Normal glass made by Frank Tomey and Co., Ltd.	Two blue stripes	350°C.*
Normal glass. Jena 111 made by Schotta and Genossen	Purple stripe	350°C.*
Normal glass, Gege Eff. mde by Glaswerk Guxtav Fischer	Blue and a red stripe	350°C.
Corning Borosilicate made by Corning Glass Co.	..	450°C.
Jena 59 111 made by Schott and Genossen	..	450°C.
Jena 2954 111 made by Schott and Genossen	Single black stripe	450°C.

Expansion and contraction chambers.—No contraction chamber shall be above the immersion line and no enlargement of the bore shall be within 10 mm. of the immersion line or of any part of the scale.

*May be used up to 400 degree C. if a careful examination of the zero is made perio dically.

A swelling to be provided to ensure the location of the thermometer coller at the corre ct point.

Graduation and figuring.—The graduation lines shall be clearly etched, and of uniform thickness not exceeding 0.15 mm. The lines shall all be at right angles to the axis of the thermometer. When thermometer is viewed from the front and in a vertical position the lines shall all finish on a line parallel to the axis on the left hand side. Certain of the graduation lines shall be extended on the right hand side but the shortest graduations shall not extend across the bore. When the diameter of the tube permits the figures shall be upright when the thermometer is viewed from the front and in a vertical position, and should preferably be placed so that they would be intersected by the line to which they refer if it were extended.

Marking.—In addition to the special markings given in the table, each thermometer shall be marked with an identification number, and the marker's, or vendor's name or trade mark :—

Name and special marking.	"I. P. T. P. M.—Low."
Dimensions—Stem, diameter	6—7 mm.*
Bulb, shape	Round.
Bulb, length	
Bulb diameter	8 mm. max.
Overall length, ±5 mm	275 mm.
Length of graduated portion	150-180 mm.
Distance, bottom of bulb to 20° mark	70-85 mm.
Range	20° F. to 230° F.
Graduation	1° F.
Longer lines at each	5°F. and 10° F.
Figured at each	10° F.
Expansion chamber	Required.
Immersiod	2.2 in.
Top finish	Glass ring.

Each thermometer shall be mounted securely in a thermometer collar so that from the under-side of this collar to the bottom of the bulb the distance is 2.1 in. (±0.05 in.). The thermometer collar shall have an outside diameter of 0.5 in., ±0.002 in., and a flange 0.1 in., ±0.01 in., in thickness. The cement used to fasten the thermometer into the collar shall be of such a nature that it will withstand the action of oil up to the highest temperature at which the thermometer is used.

Drying of the sample.

If gas oil or fuel oil is being tested the sample shall be dried by the following method :—

One hundred grams of well-dried granular calcium chloride is placed in a dry wide-mouth stoppered glass bottle.

Two hundred and fifty millilitres † of the oil is then poured upon the calcium chloride. The stopper is secured in position by tying. The bottle is then well-shaken and is stood in a vessel of water, the level of the water being up to about one-third of the height of the oil in the bottle. The water is next raised to a tem-

* A swelling to be provided to ensure the location of the thermometer collar at the correct point.

† If a smaller quantity of oil is to be dried the amount of calcium chloride must be adjuste d in proportion.

perature of 50°C. (120°F.), and is maintained at this temperature for a period of seven hours, the bottle and its contents being well-shaken up at intervals of about an hour. At the end of this treatment the bottle and its contents are allowed to cool to atmospheric temperature ; the bottle is then opened and sufficient of the oil for test filtered through paper on a Buchner funnel.

IV. (II) METHOD.

All parts of the cup and its accesories shall be thoroughly clean and dry before starting the test. Particular care should be taken to avoid the presence of any gasoline or naphtha used to clean the apparatus after a previous test.

The cup shall be filled with the oil to be tested up to the level indicated by the filling mark.

The lid shall be placed on the cup and the latter set in the stove. Care should be taken to have the locating devices properly engaged. The thermometer shall be inserted.

The test flame shall be lighted and adjusted so that it is of the size of a bead 0.16 in. in diameter.

Heat shall be supplied at such a rate that the temperature read on the thermometer increases not less than 9 or more than 11 degrees per minute. The stirrer shall be turned at a rate of approximately 60 revolutions per minute.

Application of the test flame shall be made at each temperature reading which is a multiple of 2° F. up to 220°F. For the temperature range above 220°F., application shall be made at each temperature reading which is a multiple of 5°F. the first application of the test flame shall be made at a temperature at least 50°F. below the actual flashing-point. Application of the test flame shall be made by operating the device controlling the shutter and test flame burner so that the flame is lowered in one-half second, left in its lowered position for one second, and quickly raised to its high position. Stirring shall be discontinued during the application of the test flame.

The flashing-point is taken as the temperature read on the thermometer at the time of the flame application that causes a distinct flash in the interior of the cup. The true flash must not be confused with the bluish halo that sometimes surrounds the test flame for the applications preceding the one that causes the actual flash.

The barometric pressure shall be observed and recorded. No corrections shall be made except in case of dispute, when the flashing point figure shall be corrected according to the following rule :—

For each inch (25.4 mm.) below 29.92 in. (760 mm.) barometric reading add 1.6°F. to the flashing-point.

For each inch (25.4 mm.) above 29.92 in. (760 mm.) barometric reading subtract 1.6°F. from the flashing-point.

V. THE FLASHING-POINT.

If is flash takes place at any temperature below 76°F. the temperature at which it occurs is noted. Two fresh portions of the sample are then to be successively tested in a similar manner and the results recorded. If no greater difference than

two degrees Fahrenheit exists between any two of the three recorded results and if in no instance the flash has taken place within eight degrees Fahrenheit of the temperature at which the testing was commenced, the average of the three readings gives the flashing-point recorded by that particular instrument, but without either apparatus correction or thermometer correction. In the event of there being a greater difference than two degrees Fahrenheit between any two of the readings, or if the flash has occurred within eight degrees of the temperature at which the testing was commenced, the series of tests is to be rejected and a fresh series of three similarly obtained.

If, however, a flash has occurred at or below 64°F. when the test was applied in the manner above described, the next test shall be commenced 10°F. lower than the temperature at which the flash had been previously obtained, and this procedure shall be continued until the results of three consecutive tests do not show a greater difference than two degrees Fahrenheit and until a flash has not occurred in any of the three tests within eight degrees Fahrenheit of the temperature at which the test was commenced. Provided always that if at the commencement of the series of tests a flash has occurred on the first application of the test flame at 66°F. and if a flash has also occurred on the first application of the flame in each of the three successive tests in which the test flame is first applied at 66°F. as above directed, the testing officer shall certify that the petroleum has a flashing-point below 67°F. and the sample shall be reported as "dangerous petroleum".

If a temperature of 76°F. has been reached without a flash occurring the application of the test flame is to be continued at every degree rise of temperature until a temperature of 89°F. has been reached. If no flash occurs up to this point the test shall be continued on a fresh sample as in Section III (II) (2) above.

If no flash occurs up to 120° F., the flashing-point shall be determined by the Pensky-Martens apparatus and method, as described above.

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PART II

Statutory Notifications containing Rules and Orders issued by all Ministries and Divisions of the Government of Pakistan and their Attached and Subordinate Offices and the Supreme Court of Pakistan

GOVERNMENT OF PAKISTAN

MINISTRY OF INDUSTRIES AND PRODUCTION

NOTIFICATION

Islamabad, the 2nd December, 2010

S.R.O. 139(KE)/2010 :

In exercise of the powers conferred by Section 4, sub-section (2) of Section 5, sub-section (2) of Section 14, Sections 21 and 22 and sub-section (1) of Section 29 of the Petroleum Act, 1934 (XXX of 1934), the Federal Government is pleased to make the following rules, the same having been previously published *vide* Notification No. S.R.O. 104(KE)/2010, dated the 2nd August, 2010, as required under sub-section (2) of Section 29 of the said Act, namely:-

In the aforesaid Rules,-

(1) in rule 30, in sub-rule (2), for the figures "500" and "100", the figures "5000" and "1000" shall be substituted respectively;

(2) in rule 77,-

(a) for the marginal note, the following shall be substituted, namely:-

Price : Rs. 30.50

"License for vehicle to transport petroleum, compressed natural gas, liquefied petroleum gas, liquefied natural gas, industrial compressed gases in bulk.-"; and

(b) for sub-rules (1), (1A), (1B) and (1C), the following shall be substituted, namely:-

"(1) The petroleum including compressed Natural Gas, Liquefied Petroleum Gas, Liquefied Natural Gas, Industrial Compressed Gases shall not be transported by road without license granted by Chief Inspector of Explosives or Inspector of Explosives authorized by Chief Inspector of Explosives. After physical inspection of vehicle and scrutiny of requisite particulars which shall be furnished together with an original treasury receipt duly paid according to S. Nos. 12, 13, 14 and the corresponding entries relating thereto in column (5) of Schedule-I:

Provided that this rule shall not be apply to the tank or cylinder fitted in the vehicle for fueling.";

(3) after rule 98, the following new rule shall be inserted, namely:-

"98A. Approval of ancillary facilities.- The pump premises, for approval of ancillary facilities, shall conform to the minimum standards as laid down in Schedule IV to these rules.";

(4) in rule 103,-

(a) in sub-rule (3), for the word "hundred", occurring twice, the word "thousand" shall be substituted; and

(b) for the word "fifty", the words "seven hundred and fifty" shall be substituted;

(5) in rule 114, after sub-rule (2), the following new sub-rule shall be added, namely:-

"(3) Scrutiny fee of five hundred rupees (not refundable) shall be payable with each such application for grant or renewal of a license."

(6) in rule 118, in sub-rule (3), for the words "twenty five rupees" the words "equal to license fee" shall be substituted;

(7) in rule 119, after sub-rule (3) the following new sub-rule shall be added, namely:-

"(4) Fresh license, in lieu of the expired license, shall be granted only on payment of three times the fee ordinarily payable for the license plus fee, equal to the license fee, for each year or part thereof which the license remained expired.";

(8) in rule 120, in sub-rule (2), for the word "twenty-five", the words "five hundred" shall be substituted;

(9) in rule 121, in sub-rule (3), for the word "twenty-five" the words "five hundred" shall be substituted;

(10) in rule 122, after sub-rule (2), the following new sub-rule shall be added, namely:-

"(3) Every such appeal shall be accompanied by a scrutiny fee of three thousand rupees (non-refundable), if preferred to Chief Inspector, and five thousand rupees if preferred to the Federal Government. No such fee is required for the appeal specified in clause (ii) of sub-rule (1).";

(11) in rule 125, for sub-rule (3), the following shall be substituted, namely:-

"(3) A fee of ten thousand rupees or equal to the license fee, whichever is higher, shall be charged on each such application.";

(12) in rule 126, in sub-rule (2), for the words "equal to the license fee" the words "of ten thousand rupees" shall be substituted;

(13) in rule 127, for the words "of fifteen rupees," the words "equal to license fee" shall be substituted;

(14) in rule 130, for sub-rule (2), the following shall be substituted, namely:-

"(2) Copies of any license may, for the purpose of this rule, be authenticated by the licensing authority on payment of one thousand rupees for each authentication. Duplicate authenticated copy may be issued on payment of five hundred rupees for each license.";

(15) in rule 132, after sub-rule (2), the following new sub-rule shall be added, namely:-

"(3) In addition to the storage fee, a scrutiny fee of twenty-five thousand rupees (not refundable) shall be charged for each such application.";

(16) in rule 162, in sub-rule (2), for the word "twenty-five", the words "one thousand" shall be substituted;

(17) in rule 163,-

(a) in sub-rule (1), for the word "twenty five" the words "one thousand" shall be substituted; and

(b) in sub-rule (2), for the figures "200", "50" and "50", the figures "2000", "1000" and "1000" shall be substituted respectively;

(18) in rule 164,-

(a) in sub-rule (1),-

(i) for the word "hundred", the word "thousand" shall be substituted; and

(ii) in the proviso, for the figure "1000", the figure "5000" shall be substituted; and

(b) in sub-rule (2), for the word "hundred", the word "thousand" shall be substituted;

(19) for Schedule I, the following shall be substituted, namely:-

"Schedule-I

[*See* rule 77(1) and 115]

Article No.	Form of License	Purpose for which granted	Authority empowered to grant license	Fee
(1)	(2)	(3)	(4)	(5)
1	**Form H, See Schedule-II**	To import dangerous petroleum other than petroleum which can be used in an internal combustion not exceeding 270 liters at any one time.	The District Authority	Rs. 5,000/-
2	**Form I, See Schedule-II**	To store dangerous petroleum other than petroleum which can be used in an internal combustion not exceeding 270 liters at any one time.	The District Authority	Rs. 5,000/-
3	**Form J, See Schedule-II**	To store non-dangerous petroleum (Kerosene Oil, light diesel oil) other than petroleum which can be used in vehicle for fuel otherwise than bulk, in quantity not exceeding 10,000 liters (in drums).	The District Authority	Rs. 5,000/-

Article No.	Form of License	Purpose for which granted	Authority empowered to grant license	Fee
(1)	(2)	(3)	(4)	(5)
4	**Form K, See Schedule-II**	To store petroleum in a tank or tanks in connection with a dispensing unit for fuelling motor conveyances.	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	(i) Fee for storage/ dispensing of Dangerous Petroleum products Facility is Rs. 5,000/- (ii) Fee for storage/ dispensing of Heavy petroleum products (High speed Diesel Oil) facility is Rs. 5,000/-
5	**Form L, See Schedule-II**	To import dangerous petroleum and to store petroleum in installations (Bulk Depots and in industries for self consumption).	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	(i) Fee for the storag of Dangerous Petroleum products (Petrol, solvent oil etc.) is Rs. 15,000/- (ii) Fee for the storage of Non dangerous petroleum (Kerosene Oil, Light Diesel Oil) Non-dangerous petroleum products Having the flash point above 76F° and below 129F° is Rs. 15,000/- (iii) Fee for storage of heavy petroleum product (High Speed Diesel Oil, Furnace Oil etc) Heavy petroleum having the flash point 129F° and below 200F° Rs. 15,000/-

Article No.	Form of License	Purpose for which granted	Authority empowered to grant license	Fee
(1)	(2)	(3)	(4)	(5)
6	**Form M, See Schedule-II**	To import and store dangerous petroleum otherwise than in bulk and to store otherwise than in bulk (a) non-dangerous petroleum in quantity exceeding 25,000 liters or (b) partly dangerous petroleum and partly non-dangerous petroleum.	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	Rs. 5,000/-
7	**Special Form**	To import dangerous petroleum and to store petroleum (in cases not provided for in Articles 1, 2, 3, 4, 5, and 6.)	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	Rs. 5,000/-
8	**Form B-I**	To manufacture/store/ sale and dispense compressed natural gas in connection with dispensing unit for fueling motor conveyances only.	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	Rs. 20,000/-
9	**Form N**	To store and sal liquefied petroleum gas in a tank or tanks & dispense liquefied petroleum gas in connection with a dispensing unit for fueling motor conveyances.	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	Rs. 20,000/-
10	**Form O**	To import/store/sale liquefied petroleum gas in installation (Plants) for filling in cylinders.	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	Rs. 25,000/-

Article No.	Form of License	Purpose for which granted	Authority empowered to grant license	Fee
(1)	(2)	(3)	(4)	(5)
11	**Form P**	To store liquefied petroleum gas of quantity exceeding to100 liters for self use in industries and other places.	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	Rs. 5,000/-
12	**Form Q**	License to transport petroleum product in bulk on land by mechanically pro-pelled vehicle.	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	Rs. 1,000/-
13	**Form R**	License to transport liquefied petroleum gas in bulk on Land by mechanically pro-pelled vehicle.	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	Rs. 5,000/-
14	**Form S, See Schedule-II**	License to transport compressed natural gas in bulk on Lan by mechanical propelled Vehicle. (Compressed natural gas storage cylinder mounted in vehicle for fueling are exempted).	The Chief Inspector or an Inspector of Explosives authorized by the Chief Inspector of Explosives in this behalf.	Rs. 10,000/-" ;

(20) **in Schedule-II,-**

(a) after Form B, the following new Form shall be inserted, namely:-

"FORM 'B-I
(Article 8 of schedule I)

LICENSE TO MANUFACTURE/STORE/SALE & DISPENSE COMPRESSED NATURAL GAS INCONNECTION WITH DISPENSING UNIT FOR FUELING MOTOR CONVEYANCES ONLY.

No: **Fee**

Licence is hereby, granted to _____,
To manufacture/store/sale & dispense compressed natural gas in connection with dispensing unit for fueling motor conveyances only at the premises described below and shown in the plan attached here to subject to the provisions of the Petroleum Act, 1934 and the Petroleum Rules, 1937. Safety and Mineral Gas Rules, 1960, made there under and to the further conditions prescribed on the back of this Licence.

Total capacity of gas storage units at S.T.P is-cubic meter of gas or --------- water liters capacity of cylinders/tanks (s).

This Licence shall remain in force till the 31st day of December.

_____
Licencing Authority
Chief Inspector of Explosive in Pakistan

The:
Plan No. Dated:

Description of the licensed premises referred to above. _____.

Date of renewal	Date of expiry	Signature of licensing authority

This Licence is liable to be canceled if the Licence premises when inspected is not found confirming to the description and condition attached here to and contravention of any of the rules and conditions under which this Licence is granted is also punishable with fine which may extended to fifteen thousand rupees or with simple imprisonment which may extended to one month or with both for a first offence and fine which may extended to twenty-five thousand rupees or with simple imprisonment which may extended to three months or with for any subsequent offence.

CONDITIONS OF LICENCE

1. All design, specifications, standards and construction of Gas tanks, Cylinders, Compressor and Fuelling Station shall fulfill the requirements of Code of practice issued by the Pakistan Standard Institution or any other Code approved by the Chief Inspector.

2. Tanks, cylinders gas holders and regulating equipments used at the premises shall be located outdoors unless otherwise specially approved.

3. A group of gas cylinders shall be linked by piping to from a single gas storage unit.

4. CNG Storage unit (s) shall be at least three (3) meters away from footpath and five (5) meters away from CNG or Petroleum filling point.

5. CNG Storage unit (s) shall be provided with security fence at least 1 meter away from the cylinder banks.

6. Every CNG storage unit including manifold group of cylinders or bulk storage tank shall be provided with suitable pressure gauge.

7. Where more than one CNG units are installed, the separating distance between the units shall not be less than two (2) meters.

8. CNG dispensing point shall be at least 4.5 meters away from footpath or public place three (3) meters away from the nearest petroleum dispensing unit and 2 meters from any opening into a building.

9. Every CNG system shall be fitted with a device to prevent the cylinder being charged with a pressure greater than the cylinder test pressure.

10. CNG storage unit (s) shall be provided with isolating valves and master shut-off valve.

11. Emergency and isolating shutoff valve shall be provided near CNG refueling bays in easy accessible position. Each flexible hose for refueling vehicle(s) shall be provided with shut-off valve.

12. Compressor room shall be ventilated properly at lower level.

13. Natural gas shall not be vented to the atmosphere unless the vent is led to a safe point of discharge.

14. The inlet gas line to a CNG compressor shall be provided with a non-return valve to prevent back flow in the event of compressor malfunction.

15. An effective drying system shall be provided to ensure that moisture is absorbed from the gas prior to its compression.

16. All electrical wiring, equipment within hazardous area shall comply with the requirements of BS 4683, BS 229 and BS 4137.

17. Gas detector operated cut-out switch shall be fitted to the electrical system of compressor to switch off the unit automatically in the event of a major gas leak.

18. A licensing shall not make any alteration, addition or extension of his works without prior approval in writing of the licensing authority.

19. If the licensing authority calls upon the holder of a licence by a notice, in writhing execute any repairs of the equipment etc. which are in the opinion of such authority, necessary for the safety of the premises, then holder of the licence shall execute the repairs within such period, not being less than one month from the date of receipt of the notice, as may be fixed by the notice.

20. The premises shall be posted prominently at the entrances of compressor room.

21. A "NO SMOKING" sign shall be posted prominently at the entrance of compressor room.

22. There shall be no smoking within six (6) meters of the vehicle.

23. Filling instruction shall be posted in a conspicuous place adjacent to the dispensing hose.

24. Any accident involving loss of life or serious injury or severe damaged to property shall be immediately reported to the Chief Inspector of Explosive and the nearest Police Station by the quickest means of number shall be furnished with the report.

25. Free access to the licensed premises shall be given at all reasonable times to the Chief Inspector of Explosives or Office authorized in this behalf for ascertaining that rules and conditions of the licence are duly observed."; and

(b) after Form M, the following new Forms shall be added, namely:

"FORM N

[Article 9 of Schedule I]

TO STORE AND SALE LIQUEFIED PETROLEUM GAS IN A TANK OR TANKS & DISPENSE LIQUEFIED PETROLEUM GAS IN CONNECTION WITH A DISPENSING UNIT FOR FUELING MOTOR CONVEYANCES.

License No. _____ Fee Rs. _____

License is hereby granted to _____ valid for storage of _____kilograms of liquefied petroleum gas in _____ numbers pressure vessels in the premises described below and dispensing of liquefied petroleum gas as automotive fuel to motor vehicles, subject to the provisions of the Petroleum Act 1934 and the made their under.

The license shall remain in force up to 31st December_____ the _____ (Date if Issue).

Chief Inspector of Explosives

DESCRIPTION OF LOCATION AND FACILITIES OF THE LICENSED PREMISES

The licensed premises, the layout, boundaries and other particulars of which are shown in the attached approved plan No. _____dated _____are situated at (address)_____ and consists of:-

(i) Storage vessels_____
(Identification number and water capacity) (Specify whether aboveground, mounded or underground).

ii) Number of dispensers_____ make_____

iii) other facilities _____

SPACE FOR ENDORSEMENT OF RENEWALS

Date of Renewal	Date of Expiry	Signature and Office Stamp of the Licensing Authority

The license shall be renewable without any concession in fee for one year in the absence of contravention of the provisions of the Petroleum Act 1934 and the rules made their under, or of any of the conditions of the license.

This license is liable to be cancelled if the licensed premises are not found confirming to the description and conditions attached hereto and for contravention of any of the rules and conditions under whlch this license is granted. The holder of this license is also liable for punishment under Petroleum Act 1934 for the contraventions of the provisions of the said Act and the rules framed there under.

CONDITIONS

1. The licensed premises shall conform to the description of location and facilities and to the approved plan, as mentioned on the body of the license.

2. The licensed premises shall be used only for the purpose it is licensed for.

3. Liquefied petroleum gas shall be stored only in one or more pressure vessels installed aboveground, underground or aboveground covered with earth (mound) as per provisions of these rules.

4. Liquefied petroleum gas storage vessel, dispenser, pumps compressor, piping and other fittings shall be of a design suitable for commercial propane.

5. Storage vessels shall not be installed within any building or shed.

6. A hard stand for parking the tank-truck for the purpose of unloading liquefied petroleum gas into the storage vessels shall be provided as per rules.

7. The facilities and equipments of the licensed premises shall meet the safety distance requirements as specified in the rules/standards in matter.

8. Liquefied petroleum gas shall be dispensed only into those cylinders used as fuel tanks of motor vehicles, which are duly approved by the Chief Inspector, and have passed the periodic statutory tests under Gas Cylinders Rules, conducted by a testing station recognized by the Chief Inspector.

9. The type of the dispenser used for dispensing liquefied petroleum gas shall conform to a specification approved by the Chief Inspector.

   (a) It shall be provided with an excess flow valve, a remote operated shut-off valve and pipe shear provision in the liquid inlet pipe.

   (b) The dispenser shall be installed on a firm foundation and protected against physical damage.

   (c) A breakaway device with excess flow valves or quick action cut-off valves on both sides of the breakaway device conforming to Underwriters Laboratory USA, specification no. 567 or equivalent shall be provided on the delivery line from the dispenser before the connection of the hose so as to prevent spillage of liquefied

petroleum gas from both sides of the breakaway point in the event of its breakage.

10. The design pressure of the hose for delivery of liquefied petroleum gas by dispenser to motor vehicles shall be minimum thirty two kilograms per square centimeter with a safety factor of five and shall be tested at one and half times the design pressure at an interval not exceeding every one year. The hose shall be mechanically and electrically continuous. The length of the hose shall not exceed five meters and fifty centimeters.

11. The dispensing nozzle at the end of the hose shall be self sealing type of twenty two millimeters nominal size and suitable for matching with filling connection of cylinders fitted to vehicles as fuel tanks, as specified in Australian Specification AS-1425 or equivalent standard approved by the Chief Inspector.

12. Clearly identified switches or circuit breakers shall be provided at easily accessible location minimum six meters away from dispenser to cut-off the power supply in the event of fire, accident or other emergency. The switches or circuit breakers shall be visible from the point of dispensing liquefied petroleum gas to motor vehicles.

13. Pump used for pumping liquefied petroleum gas shall be of either centrifugal submersible or positive displacement type. Positive displacement pump shall be provided with bye-pass to prevent over-pressure.

14. Hazardous area classification for the dispenser shall be as under :-

(a) Entire space with in the dispenser enclosure cabinet and forty six centimeters horizontally from the exterior of enclosure cabinet and up to an elevation of one hundred and twenty one centimeters above dispenser base and the entire pit or open space beneath the dispenser shall be Division-1.

(b) Up to forty six centimeters vertically above the surrounding ground level and horizontally beyond forty six centimeters up to six meters on all sides of the dispenser enclosure cabinet shall be Division-2.

15. All metallic liquefied petroleum gas piping shall be rated for Propane and designed to American Standard ASME-B-31.3 with minimum design pressure of thirty two kilograms per square centimeters with a factor of safety of four . The materials of pipe shall be low carbon or alloy steel conforming to American Standard ASTM-SA-333, grade, 6, or SA-106, Grade-B-Schedule 80; or API-5L or equivalent. The pipeline shall be tested at one and half times of the design pressure, if hydro-tested. Joints of pipeline above forty millimeters diameter shall be welded or flanged.

Threaded or screwed connection shall not be provided except for special fittings like excess flow valve, pump connection upto fifty millimeters diameter.

16. No addition or alteration in the licensed premises shall be carried out without prior sanction of the licensing authority.

17. No person shall enter or cause to repair or repair either by the use of fire, welding, hot riveting or brazing any vessel used for the storage of flammable gas unless it has been thoroughly cleaned and gas-freed or otherwise prepared for safely carrying out such hot work and certified in writing, by a competent person, to have been so prepared. Where the vessel has been certified as gas free, the certificate shall be preserved by the licensee for a period of not less than six months and produced to the Chief Inspector, on demand.

18. The operation of the licensed premises shall be under the supervision of a person having knowledge of the equipments, used in the premises and trained in handling compressed gas, and other operators shall be conversant with the hazards associated with the compressed gas and fire fighting operations.

19. Liquefied petroleum gas shall not be removed from the vessel except by means of transfer facilities shown in the approved plan attached to the license.

20. Smoking, naked lights, lamps source of fire or any other stimulant capable of igniting flammable vapors shall not be allowed inside the premises.

21. The vessel shall not be filled between the hours of sunset and sunrise, except in such manner and under such other condition or conditions as are specifically endorsed on the license by the licensing authority.

22. All electrical equipment such as motors switches, starters, etc, used for transfer of liquefied petroleum gas shall be of flameproof construction conforming to standard/type approved by Chief Inspector.

23. Every person managing or employed on or in connection with license premises shall abstain from any act whatsoever which tends to cause fire or explosion and which is not reasonably necessary and to the best of his ability, shall prevent any other person from doing such act.

24. At least two numbers of nine kilograms capacity dry chemical type fire-extinguishers shall be provided near the tank-truck unloading area and one number similar extinguisher shall be provided near each

dispenser and transfer pump location. In dispensing station having aboveground liquefied petroleum gas storage vessels, hydrants with minimum water pressure of seven kilograms per square centimeters shall be provided at convenient positions for all-round coverage of liquefied petroleum gas storage vessels, and handling area and water sprinklers with a spray density of ten liters per minute per square meter shall be provided. The fire water pump shall be preferably diesel engine driven, with capacity to deliver water at the rate and pressure specified above. The minimum fire water storage at the premises shall be needed for fighting fire at least for one hour.

25. During the period of unloading of liquefied petroleum gas from tank-truck to the storage vessels dispensing operation to vehicles shall not be carried out.

26. The emergency telephone numbers of local fire service, police and the principal marketing company, and emergency instructions shall be conspicuously displayed in the licensed premises.

27. All valves on the vessel and pipelines in the premises must be permanently marked in a manner clearly indicating the direction of opening and closing.

28. If the licensing authority calls upon the holder of a license by a notice in writing to execute any repairs in the licensed premises which are, in the opinion of such authority, necessary for the safety of the premises, the holder of the license shall execute the repairs within such period as may be specified in the notice.

29. Any accident, fire or explosion within the licensed premises which is attended with loss of life or serious injury to person or property shall be immediately reported to the nearest Judicial Magistrate or to the officer-in-charge of the nearest police station and to the Chief Inspector of Explosives by telephone/fax.

30. Free access to the licensed premises shall be given at all reasonable times to any of the officers specified in rule in the matter, and every facility shall be afforded to such officer for ascertaining that the rules and the conditions of this license are duly observed.

FORM 'O'

[Article 10 of Schedule I]

Licence to import/store/sale liquefied petroleum gas in installation (Plants) for filling in cylinders.

No. ..... Fee Rs. .....

License is hereby granted to.....valid only for import/store/sale liquefied petroleum gas in installation (Plants) for filling in cylinders for the storage of .....water liters liquefied petroleum gas in the place described below and shown on the plan attached hereto subject to the provisions of the petroleum Act, 1934 and the rules made there under and to the further condition on the back of this license.

This license shall remain in force till the 31st day or December 20 .....

Sr. No.	Nature of Petroleum to be stored/imported	Quantity of petroleum (In liters)
1.	Liquefied petroleum gas in bulk.	
2.	Liquefied petroleum gas not in bulk.	
	Total	

Chief Inspector of Explosives

Plan No. .....dated .....

Description of the place referred to above

.....

.....

.....

Date of renewal	Date of expiry	Signature of licensing authority

This license is liable to be cancelled if the licensed premises, when inspected, are not found conforming in the description approved plan by Department of Explosives and conditions attached hereto and contravention of any of the rules and conditions under which this is granted is also punishable with fine may extend to ten thousand rupees for a first offence and may extend to twenty thousand rupees for any subsequent offence.

CONDITIONS

1. The licensed premises shall not be used for any purpose other than storage and transfer of compressed gas and purposes directly connected therewith.

2. The compressed gas shall be stored only in one or more vessels of capacity.....cubic meters.....Kg. and in position shown in the approved plan attached hereto.

3. Every vessel shall be outside any building and shall be supported on well designed foundations.

4. The storage vessel shall at all times maintain from any other facility, building, boundary, fencing or protected works the distances specified rules/standards in the matter.

5. A suitable hard stand for parking of the vehicle during loading or unloading of any compressed gas shall be provided. The following minimum safety distances shall be provided between the centre of the hard stand and the storage vessel or boundary line of installation; as well as between the loading or unloading points and storage vessel or boundary line of installation, -

   i) as per rules/standards in the matter, as the case may be, in case of refinery, terminal and cylinder filling plants for flammable liquefied gases;

   ii) four meters and fifty centimeters in case of non-corrosive, non-toxic and non-flammable gases; and

   iii) nine meters in all other cases.

6. All fitments of the vessel shall be well maintained.

7. No alteration of the position of the vessel and no replacement of the vessel shall be effected except the previous sanction, in writing, of the licensing authority. All alterations so sanctioned under this condition shall be shown on an amended plan to be attached to the license.

8. If the licensing authority calls upon the holder of a license by a notice in writing to execute any repairs in the licensed premises which are, in the opinion of such authority, necessary for the safety of the premises, the holder of the license shall execute the repairs within such period of as may be specified in the notice.

9. Every vessel before being repaired or exhumed shall be made free of compressed gas and thoroughly cleaned. When a vessel is opened for cleaning or repairs, no lamp of any description either ordinary of electric, electric cables or fans and no articles, appliances or equipment capable of igniting flammable, vapors shall be brought near the vessel.

10. No person shall cause to repair or repair either by the use of fire, welding, hot riveting or brazing any vessel used for the storage of flammable gas unless it has been thoroughly cleaned and gas-freed or otherwise prepared for safely carrying out such hot work and certified in writing, by a competent person, to have been so prepared. Where the vessel has been certified as gas-free, the certificate shall be preserved by the licensee for a period of not less than three months and produced to the Chief Inspector, on demand.

11. No person shall enter any vessel used for the storage of a toxic or corrosive gas unless he is adequately protected by means of clothing, gas masks and such other protective equipment.

12. Compressed gas shall enter the vessel through sound pipes having no leaks at any place.

13. The vessel shall not be filled between the hours of sunset and sunrise, except in such manner and under such other condition or conditions as are specifically endorsed on the license by the licensing authority.

14. No artificial light capable of igniting flammable vapors shall at any time be present within 9 meters of the vehicle and the loading or unloading points during the transfer of the compressed gas and no person engaged in such transfer shall smoke.

15. No compressed gas shall be removed from the vessel except by means of transfer facilities marked in the plan attached hereto.

16. All electrical equipment such as motors switches, starters, etc., used for transfer of flammable compressed gas shall be of flameproof construction conforming to approved specifications.

17. Every person managing or employed on or in connection with the licensed premises shall abstain from any act whatsoever which tends to cause fire or explosion and which is not reasonably necessary and to the best of his ability, shall prevent any other person from doing such act.

18. The licensee shall provide for each licensed premises a minimum of two portable foam types or dry chemical type fire extinguishers of 9 Kgs. capacity each, which shall be kept ready at convenient location for immediate use in the event of any fire.

19. Except for necessary pipes and valves and approved electric lights the space within the licensed premises shall be kept entirely clear and unoccupied.

20. All valves in the premises must be permanently marked in a manner clearly indicating the direction of opening and shutting the valve.

21. Any accident, fire or explosion within the licensed premises which is attended with loss of life or serious injury to person or property shall be immediately reported to the nearest Judicial Magistrate or to the officer in-charge of the nearest police station and by telephone to the Chief Inspector of Explosives.

22. Free access to the licensed premises shall be given at all reasonable times to any of the Inspector of Explosives and every facility shall be afforded to such officer for ascertaining that the rules and the conditions of this license are duly observed.

(ii) All metal pipes shall be flexible pipes shall be tested once every 6 months by a competent engineer holding license to ascertain fitness and compliance with the requirement of strength laid down above.

(iii) (a) A complete and permanent record of such testing shall be maintained in the licensed premises.

(b) The date of the last test shall be recorded on the pipes and pipe section concerned in a distinctive manner.

23. The license shall not deliver from the licensed premises:-

(a) Petroleum in bulk to any vessel used in the carriage of petroleum in bulk by water; and

(b) Any petroleum in bulk shall be delivered to any vehicle used for the transport of petroleum in bulk by road unless such vehicle is licensed by the Chief Inspector.

FORM 'P'

[Article 11 of Schedule I]

LICENCE TO STORE LIQUEFIED PETROLEUM GAS OF QUANTITY EXCEEDING TO 100 LITERS FOR SELF USE IN INDUSTRIES AND OTHER PLACES.

No. ..... Fee Rs. .....

License is hereby granted to.....valid only for store liquefied petroleum gas of quantity exceeding to 100 liters for self use in industries and other places for the storage of .....water liters liquefied petroleum gas in the place described below and shown on the plan attached hereto subject to the provisions of the Petroleum Act, 1934 and the rules made there under and to the further condition on the back of this license.

This license shall remain in force till the 31st day or December 20 .....

Sr. No.	Nature of Petroleum to be stored/imported	Quantity of petroleum (In liters)
1.	Liquefied petroleum gas in bulk	

Chief Inspector of Explosives

Plan No. .....dated .....

Description of the place referred to above

.....

.....

.....

Date of renewal	Date of expiry	Signature of licensing authority

This license is liable to be cancelled if the licensed premises, when inspected, are not found conforming in the description approved plan by Department of Explosives and conditions attached hereto and contravention of any of the rules and conditions under which this is granted is also punishable with fine may extend to ten thousand rupees for a first offence and may extend to twenty thousand rupees for any subsequent offence.

CONDITIONS

1. The licensed premises shall not be used for any purpose other than storage and transfer of compressed gas and purposes directly connected therewith.

2. The compressed gas shall be stored only in one or more vessels of capacity.....cubic meters.....Kg. and in position shown in the approved plan attached hereto.

3. Every vessel shall be outside any building and shall be supported on well designed foundations.

4. The storage vessel shall at all times maintain from any other facility, building, boundary, fencing or protected works the distances specified rules/standards in the matter.

5. A suitable hard stand for parking of the vehicle during loading or unloading of any compressed gas shall be provided. The following minimum safety distances shall be provided between the centre of the hard stand and the storage vessel or boundary line of installation; as well as between the loading or unloading points and storage vessel or boundary line of installation,-

   i) as per rules/standards in the matter, as the case may be, in case of refinery, terminal and cylinder filling plants for flammable liquefied gases;

   ii) four meters and fifty centimeters in case of non-corrosive, non-toxic and non-flammable gases; and

   iii) nine meters in all other cases.

6. All fitments of the vessel shall be well maintained.

7. No alteration of the position of the vessel and no replacement of the vessel shall be effected except with the previous sanction, in writing, of the licensing authority. All alterations so sanctioned under this condition shall be shown on an amended plan to be attached to the license.

8. If the licensing authority calls upon the holder of a license by a notice in writing to execute any repairs in the licensed premises which are, in the opinion of such authority, necessary for the safety of the premises, the holder of the license shall execute the repairs within such period as may be specified in the notice.

9. Every vessel before being repaired or exhumed shall be made free of compressed gas and thoroughly cleaned. When a vessel is opened for cleaning or repairs, no lamp of any description either ordinary or electric, electric cables or fans and no articles, appliances or equipment capable of igniting flammable, vapors shall be brought near the vessel.

10. No person shall cause to repair or repair either by the use of fire, welding, hot riveting or brazing any vessel used for the storage of flammable gas unless it has been thoroughly cleaned and gas-freed or otherwise prepared for safely carrying out such hot work and certified in writing, by a competent person, to have been so prepared. Where the vessel has been certified as gas-free, the certificate shall be preserved by the licensee for a period of not less than three months and produced to the Chief Inspector, on demand.

11. No person shall enter any vessel used for the storage of a toxic or corrosive gas unless he is adequately protected by means of clothing, gas masks and such other protective equipment.

12. Compressed gas shall enter the vessel through sound pipes having no leaks at any place.

13. The vessel shall not be filled between the hours of sunset and sunrise, except in such manner and under such other condition or conditions as are specifically endorsed on the license by the licensing authority.

14. No artificial light capable of igniting flammable vapors shall at any time be present within 9 meters of the vehicle and the loading or unloading points during the transfer of the compressed gas and no person engaged in such transfer shall smoke.

15. No compressed gas shall be removed from the vessel except by means of transfer facilities marked in the plan attached hereto.

16. All electrical equipment such as motors switches, starters, etc., used for transfer of flammable compressed gas shall be of flameproof construction conforming to approved specifications.

17. Every person managing or employed on or in connection with the licensed premises shall abstain from any act whatsoever which tends to cause fire or explosion and which is not reasonably necessary and to the best of his ability, shall prevent any other person from doing such act.

18. The licensee shall provided for each licensed premises a minimum of two portable foam types or dry chemical type fire extinguishers of 9 Kgs. capacity each, which shall be kept ready at convenient location for immediate use in the event of any fire.

19. Except for necessary pipes and valves and approved electric lights the space within the licensed premises shall be kept entirely clear and unoccupied.

20. All valves in the premises must be permanently marked in a manner clearly indicating the direction of opening and shutting the valve.

21. Any accident, fire or explosion within the licensed premises which is attended with loss of life or serious injury to person or property shall be immediately reported to the nearest Judicial Magistrate or to the officer in charge of the nearest police station and by telephone to the Chief Inspector of Explosives.

22. Free access to the licensed premises shall be given at all reasonable times to any of the Inspector of Explosives and every facility shall be afforded to such officer for ascertaining that the rules and the conditions of this license are duly observed.

(ii) All metal pipes shall be flexible pipes shall be tested once every 6 months by a competent engineer holding license to ascertain fitness and compliance with the requirement of strength laid down above.

(iii) (a) A complete and permanent record of such testing shall be maintained in the licensed premises.

(b) The date of the last test shall be recorded on the pipes and pipe sections concerned in a distinctive manner.

23. The license shall not deliver from the licensed premises:-

(a) Petroleum in bulk to any vessel used in the carriage of petroleum in bulk by water; and

(b) Any petroleum in bulk shall be delivered to any vehicle used for the transport of petroleum in bulk by road unless such vehicle is licensed by the Chief Inspector.

FORM 'Q'

[Article 12 of Schedule I]

LICENSE TO TRANSPORT PETROLEUM PRODUCT IN BULK ON LAND BY MECHANICALLY PROPELLED VEHICLE

License No. ..... Fee Rs. .....

License is hereby granted to .....to transport petroleum in bulk on land by the vehicle as described below subject to the provisions of the Petroleum Act, 1934, and the rules made there under and to the further conditions of this license.

This license shall remain valid up to the .....day of .....20.....

Date of issue .....

Licensing Authority

DESCRIPTION OF VEHICLE

(a) Make and model .....

(b) Engine number .....

(c) Chassis number .....

(d) Registration number .....

(e) Name of the registered owner .....

(f) Name of carriage contractor .....

(g) Total number of compartments .....

(h) Capacity of each compartment .....

(i) Class(es) of petroleum authorized to be carried in the vehicle .....

This license is liable to be cancelled if the licensed premises when inspected are not found conforming to the description and conditions attached hereto and contravention any of the rules and conditions, under which this license is granted, is also punishable with fine which may extend to five hundred rupees for a first offence and which may extend to two thousand rupees for any subsequent offence.

CONDITIONS OF LICENSE

1. The license or its authenticated copy shall at all times be kept in the licensed vehicle and produced on demand by an Inspection Officer.

2. Only reasonable persons who are conversant with the conditions of this license shall be employed for driving the licensed vehicle or attending to it.

3. The licensed vehicle shall be constantly attended to by a responsible person and by at least two persons while it is transporting petroleum;

   Provided that the licensed vehicle, if its tanks and compartments are empty, be left un-attended in a place approved for the purpose, in writing by the Chief Inspector.

4. The licensed vehicle shall at all times carry,

   (a) A portable fire-extinguisher of capacity not less than 9 liters and suitable for extinguishing oil fires; the extinguisher shall be kept unlocked at an easily accessible position which shall be away from the discharge faucets of the vehicle;

   (b) A separated oil-tight and electrically continuous hose with coupling to match the discharge faucet of the licensed vehicle and the inlet pipe into which the petroleum carried in the vehicle is to be unloaded; and

   (c) A flexible cable for electrical bonding; the cable shall be at least 5 meters long and shall have at each end a suitable clamp or clip.

5. The licensed vehicle shall not be loaded or unloaded except in a place approved for the purpose, in writing, by the Chief Inspector.

   Provided that the licensed vehicle may be unloaded at any other place with all due precautions and under adequate supervision if such unloading is necessitated due to an accident or breakdown.

6. Petroleum carried in the licensed vehicle shall not be directly transferred into any container or into the fuel tank of any motor conveyance or an internal combustion engine.

7. The licensed vehicle shall not be loaded if any tank or compartment, pipe, valve emergency discharge control of any safety fitting become leaky, defective or otherwise insecure until necessary reapers have been carried out satisfactorily and in the event of any leak in the tanks or compartments, until the leak is thoroughly repaired and all the tanks or compartment's are tested hydrostatically to a pressure of 0.316 kg/sq.cm. for a duration of not less than one hour and found satisfactory.

8. Before petroleum is loaded into or unloaded from the licensed vehicle;

   (a) its engine shall be stopped and the battery shall be isolated by a proper switch or otherwise;

(b) its wheel shall be secured by brakes or by scotching and in the case of animal drawn vehicles, animal shall be unhitched and removed;

(c) A reasonable persons shall be in attendance and remain so until load or from which it is to be unloaded or loaded;

(d) The correct filling or discharge hose shall be selected and connected by oil tight coupling at both ends; and

(e) A reasonable person shall be in attendance and remain so until loading or unloading is over and the tanks and compartments have been sealed.

9. Except when called upon by traffic signals or required by an Inspector of Explosives or a Sampling Officer, the licensed vehicle shall not stop on any road, congested area or a place, which is not, a place approved in writing under these rules for the loading, unloading or stabling of such vehicle.

10. No smoking and no fire or artificial light or any article capable igniting inflammable vapor shall be allowed on the licensed vehicle.

11. The licensed vehicle shall not be used for carrying passenger or any article other than petroleum.

12. The licensed vehicle shall not be allowed to be repaired welding, soldering, brazing or hot riveting until its tanks. Compartment's pipe and valve have been thoroughly cleaned and examined by a competent person and certified by him in writing to be free from inflammable vapor or oil.

13. No alteration in the licensed vehicle or its safety fitting shall be carried out without the previous sanction in writing of the licensing authority. Such alteration so sanctioned shall be endorsed on this license by an amendment.

14. Every facility shall be given at all reasonable times to any Inspector or Sampling Officer for ascertaining that the rules and the conditions of this license are duly observed or for drawing samples.

15. Causing loss of human life or serious injury to person or property shall be immediately reported to the nearest Magistrate or to the Officer-in-charge of the nearest Police Station and by telegraph/fax or telephone to the Chief Inspector of Explosives (Telegraphic address, "Explosives, Rawalpindi").

FORM 'R'

[Article 13 of Schedule I]

LICENCE TO TRANSPORT LIQUEFIED PETROLEUM GAS IN BULK ON LAND BY MECHANICALLY PROPELLED VEHICLE.

License No._____ Fee Rs._____

License is hereby granted to _____ _____ to transport liquefied petroleum gas by the vehicle as described below subject to the provisions of the Petroleum Act 1934 the rules made there under and to the further conditions of this license.

This license will remain valid up to the 31st day of December ---------- (year)

Date of Issue: Chief Inspector of Explosives

Approved Plan No. _____ Dated _____

DESCRIPTION OF THE VEHICLE

Make and Model _____ Engine Number _____

Chassis Number _____Registration Number _____

Name of the registered owner _____

Chemical name of the liquefied petroleum gas to be carried in the Vehicle _____

Authorized carrying capacity of the container _____

ENDORSEMENT OF RENEWALS

Date of Renewal	Date of Expiry	Signature and office Stamp of the Licensing Authority

This license is liable to be cancelled if the licensed vehicle is not found conforming to the description of approved plan by Department of Explosives No. _____ dated _____ and conditions attached thereto, and contravention of any of the rules and conditions under which this license is granted and the holder of this license is also punishable with fine which may extend to thirty thousand rupees.

CONDITIONS

1. The license or its authenticated copy shall at all times be kept in the licensed vehicle and produced on demand by an Inspector.

2. Only responsible persons who are conversant with the conditions of this license shall be employed for driving the licensed vehicle or attending to it.

3. The licensed vehicle shall be constantly attended to by a responsible person and by at least two persons while it is transporting liquefied petroleum gas.

   Provided that the licensed vehicle may, if empty, be kept unattended in a place approved for the purpose, in writing, by the Chief Inspector.

4. The licensed vehicle shall at all times carry -

   (a) at least two portable fire extinguishers of capacity not less than 9 liters and suitable for extinguishing chemical fire;

   (b) a strong flexible cable for electrical bonding in case of vehicle used for transportation of flammable liquefied petroleum gas; the cable shall be at least 5 meters long and shall have at each end a suitable clamp or clip.

5. The licensed vehicle shall not be loaded or unloaded except in a place which is approved within the premises licensed for the purpose under the rules by the Chief Inspector.

6. No vehicle shall discharge any liquefied petroleum gas directly; into any process vessel in operation or vehicles fuel tank.

7. The licensed vehicle shall not be loaded if any of the fitments including vessel becomes leaky, defective or otherwise insecure.

8. Before liquefied petroleum gas is loaded into or unloaded from the licensed vehicle -

   (a) its engine shall be stopped and the battery shall be isolated by a proper switch or otherwise;

   (b) its wheels shall be secured by brakes or by scotching;

   (c) its chassis shall be electrically bonded by a cable with the pipe into or from which it is to be loaded or unloaded, in case of vehicle used for transportation of flammable gas;

   (d) the correct filling or discharge pipe connections are made at both ends;

   (e) a responsible person shall be in attendance and remain so until loading or unloading is over and the vehicle has been sealed.

9. Except when called upon by traffic signals or required by the licensing authority or any other officer entrusted with the job of enforcing the rules, the licensed vehicle shall not stop on any road, congested area or a place which is not a place situated within the premises licensed under the rules for the loading and unloading of vehicle.

10. No smoking and no fire or artificial light or any article capable of igniting flammable vapors shall be allowed on the licensed vehicle used for the transportation of any flammable gas.

11. The licensed vehicle shall not be used for carrying passengers.

12. The licensed vehicle shall not be allowed to be repaired.

Provided that replacement by any of the fitments of the pressure vessel may be done without involving any hot work.

13. No alteration in the licensed vehicle or its safety fittings shall be carried out without previous sanction in writing of the licensing authority. Such alteration so sanctioned shall be endorsed on the license by an amendment.

14. Every facility shall be given at all reasonable times to any Inspector for ascertaining that the rules and the conditions of this license are duly observed.

15. Any accident, fire or explosion occurring in the licensed vehicle, which is attended with loss of human life or serious injury to person or property shall be immediately reported to the nearest magistrate or to the officer in-charge of the nearest police station having jurisdiction and by telephone or by fax to the Chief Inspector of Explosives.

16. Liquefied petroleum gas shall not pass through congested or/and busy city roads as far as possible.

17. The maximum speed limit shall be restricted to 25KM/hrs.

18. The word "DANGER" shall conspicuously be written on the back of the tanker in red color with signs of danger.

19. A red flag of adequate size shall be installed on the drivers cab.

20. A report about satisfactory performance to the tanker along with details of problems/difficulties faced in their operation, if any shall be furnished to this office on monthly basis.

FORM 'S'

[Article 14 of Schedule I]

LICENSE TO TRANSPORT COMPRESSED NATURAL GAS IN BULK ON LAND BY MECHANICAL PROPELLED VEHICLE. (COMPRESSED NATURAL GAS STORAGE CYLINDER MOUNTED IN VEHICLE FOR FUELING ARE EXEMPTED).

License No._____ Fee Rs._____

License is hereby granted to _____ to transport compressed natural gas by the vehicle as described below subject to the provisions of the Petroleum Act 1934 the rules made there under and to the further conditions of this license.

This license will remain valid up to the 31st day of December_____(year)

Date of Issue: Chief Inspector of Explosives

Approved Plan No. _____ Dated _____

DESCRIPTION OF THE VEHICLE

Make and Model _____ Engine Number _____

Chassis Number _____Registration Number _____

Name of the registered owner _____

Chemical name of the compressed natural gas to be carried in the Vehicle _____

Authorized carrying capacity of the container _____

ENDORSEMENT OF RENEWALS

Date of Renewal	Date of Expiry	Signature and office Stamp of the Licensing Authority

This license is liable to be cancelled if the licensed vehicle is not found conforming to the description of approved plan by Department of Explosives No. _____ dated _____ and conditions attached thereto, and contravention of any of the rules and conditions under which this license is granted and the holder of this license is also punishable with fine which may extend to thirty thousand rupees.

CONDITIONS

1. The license or its authenticated copy shall at all times be kept in the licensed vehicle and produced on demand by an Inspector.

2. Only responsible persons who are conversant with the conditions of this license shall be employed for driving the licensed vehicle or attending to it.

3. The licensed vehicle shall be constantly attended to by a responsible person and by at least two persons while it is transporting compressed natural gas.

   Provided that the licensed vehicle may, if empty, be kept unattended in a place approved for the purpose, in writing, by the Chief Inspector.

4. The licensed vehicle shall at all times carry -

   (a) at least two portable fire extinguishers of capacity not less than 9 liters and suitable for extinguishing chemical fires;

   (b) a strong flexible cable for electrical bonding in case of vehicle used for transportation of flammable compressed natural gas; the cable shall be at least 5 meters long and shall have at each end a suitable clamp or clip.

13. No alteration in the licensed vehicle or its safety fittings shall be carried out without previous sanction in writing of the licensing authority. Such alteration so sanctioned shall be endorsed on the license by an amendment.

14. Every facility shall be given at all reasonable times to any Inspector for ascertaining that the rules and the conditions of this license are duly observed.

15. Any accident, fire or explosion occurring in the licensed vehicle, which is attended with loss of human life or serious injury to person or property shall be immediately reported to the nearest magistrate or to the officer-in-charge of the nearest police station having jurisdiction and by telephone or by fax to the Chief Inspector of Explosives.

16. Compressed natural gas shall not pass through congested or/and busy city roads as far as possible.

17. The maximum speed limit shall be restricted to 25KM/hrs.

18. The word "DANGER" shall conspicuously be written on the back of the tanker in red color with signs of danger.

19. A red flag of adequate size shall be installed on the drivers cab.

20. A report about satisfactory performance to the tanker along with details of problems/difficulties faced in their operation, if any shall be furnished to this office on monthly basis"; and

(21) after Schedule-III, the following new Schedule shall be added, namely:

"SCHEDULE-IV

[See rule 98 A]

(i) Shops may be allowed where petrol pumps, compressed natural gas stations and Liquefied Petroleum Gas Automotives fuel stations are located on highways and main roads.

(ii) The dimensions of plot for petrol pump, compressed natural gas station, liquefied petroleum gas, Automotive fuel station for shop shall meet the all safety distance requirements and isolation distances as mentioned in the relevant rules and regulations.

(iii) Shop shall be at least 10 meters away from petroleum storage tanks or Liquefied gas storage tanks gas kits and all dispensing units.

(iv) All other ancillary facilities other than shop shall be at least 5 meter away from petroleum storage tanks or liquefied gas storage tanks, gas kits and all dispensing units.

(v) Area of shop shall not be more than 15% of total covered area excluding canopy at the petrol pump premises, liquefied petroleum gas fuel stations, compressed natural gas stations. A separate fee of rupees thirty per square feet shall be charged for any additional area of shop.

(vi) Entrance to shop shall be kept clear at all times.

(vii) There shall be no opening from adjacent premises to a shop.

(viii) Shop shall not be opened at any petrol pump, compressed natural gas station, liquefied petroleum gas, Automotive fuel station without prior approval in writing of the Chief Inspector of Explosives.

(ix) Roof of the shop shall not be used for any other purpose.

(x) Heaters, burners or any appliance likely to cause spark shall not be used in site a shop, however a micro-wave oven may be used.

(xi) Seating arrangement for customers shall not be provided inside a shop.

(xii) Only packed food items, cold drinks, souvenirs and medicines shall be stored. In case of other items permission of the Chief Inspector shall be obtained in writing.

(xiii) At least two fire extinguishers of 10 Kg. each shall be provided exclusively for shop.

(xiv) A separate fee per year or part thereof shall be paid for every ancillary facility, as specified below, which is not directly connected with the storage and distribution of petroleum, compressed natural gas, liquefied petroleum gas through dispensers.

Ancillary Facility

1.	Fee for shop	15,000/-
2.	Fee for kit conversion shop	10,000/-
3.	Fee for vehicle wash/service station	10,000/-
4.	Fee for tyre puncture shop	5,000/-
5.	Fee for Lube or service station	5,000/-
6.	Fee for Public Call Office, Fax, ATM Facilities.	5,000/-"

[No. F. 11(51)/2003/)OPS-Exp.].

MUHAMMAD SHAHID,
Deputy Secretary.

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KARACHI, FRIDAY, FEBRUARY 17, 2012

PART II

Statutory Notifications containing Rules and Orders issued by all Ministries and Divisions of the Government of Pakistan and their Attached and Subordinate Offices and the Supreme Court of Pakistan

GOVERNMENT OF PAKISTAN

MINISTRY OF INDUSTRIES

NOTIFICATION

Islamabad, the 15th February, 2012

S.R.O. 27 (KE)/2012:

In exercise of the powers conferred by section 4, sub-section (2) of section 5, sub-section (2) of section 14, sections 21 and 22 and sub-section (1) of section 29 of the Petroleum Act, 1934 (XXX of 1934), the Federal Government is pleased to make the following rules, the same having been previously published *vide* Notification No. S.R.O. 125 (KE)/2011 dated the 23rd December, 2011, as required under sub-section (2) of section 29 of the said Act, namely :-

In the aforesaid Rules :-

(a) in rule 114, sub-rule (3) shall be omitted;

(b) in rule 118, in sub-rule (3), for the words "equal to license fee" the words "two hundred and fifty rupees" shall be substituted;

Price Rs. 2.00

(c) in rule 119, in sub-rule (4), for the word "three" the word "two" shall be substituted;

(d) in rule 125, in sub-rule (3), for the words and commas " of ten thousand rupees or equal to license fee, whichever is higher," the words "equal to license fee shall substituted;

(e) in rule 127, for the words "equal to license fee" the words "two hundred and fifty rupees" shall be substituted;

(f) in rule 130, in sub-rule (2), for the words "one thousand" the words "two hundred and fifty" shall be substituted;

(g) in Schedule I, column (1),

(i) against article 4, in column(5), for the figure "5,000" occurring twice the figure "3,000" shall be substituted and ;

(ii) against article 8, in column (5), for the figure "20,000" the figure "10,000" shall be substituted;

(h) in Schedule-IV,

(i) in clause v, for the word "thirty" the word "twenty" shall be substituted;

(ii) under the heading "Ancillary Facility,"

(a) in entry 1, for the figure "15,000" the figure "7,500" shall be substituted;

(b) in entry 2 for the figure "10,000" the figure "3,000" shall be substituted ;

(c) in entry 3, for the figure "10,000" the figure "1,000" shall be substituted; and

(d) entry 4, 5 and 6 shall be omitted.

The above mentioned amendments in Petroleum Rules, 1937 shall be applicable with effect from 2nd December 2011.

F. No. 3(5)/2011-Ops-Exp.

QUTUBUDDIN,
Section Officer.

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PART II

Statutory Notifications containing Rules and Orders issued by all Ministries and Divisions of the Government of Pakistan and their Attached and Subordinate Offices and the Supreme Court of Pakistan

GOVERNMENT OF PAKISTAN

MINISTRY OF INDUSTRIES AND PRODUCTION

NOTIFICATION

Islamabad, the 8th January, 2016

S.R.O. 9(KE)/2016 :

In exercise of the powers conferred by Section 4 and sub-section (1) of Section 29 of the Petroleum Act, 1934 (XXX of 1934), the Federal Government is pleased to amend the Petroleum Rules, 1937, the same having been previously published *vide* Notification No. S.R.O. 109 (KE)/2015, dated the 15th December, 2015, as required under sub-section (2) of Section 29 of the said Act, namely :-

In the aforesaid Rules, in Schedule-IV,-

1. in Serial No. (v), after the word "shop", occurring twice, the words "at ground level" shall be inserted;

2. in Serial No. (ix), after the word "purpose", the words "except with the prior permission of the Chief Inspector" shall be added; and

Price : Rs. 2.00

3 for Serial No. (x), the following shall be substituted, namely

"(x) Heaters, burners or any appliance likely to cause spar shall not be used inside a shop. However, an electric oven or a micr ave oven may be used with the prior approval of Chief Inspecto

[No. 3(29)/2015-IID-III].

ABDUL RAZZAK MI AL,
Depu ecretary.

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