Gas Cylinders Rules, 2004

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Whereas a draft of the Gas Cylinders Rules, 2003 was published as required by Sec. 18 of the Explosives Act, 1884 (4 of 1884) in the Gazette of India, Extraordinary, Part II, Sec. 3, sub-sec, (i), dt. 20.10.2003, vide notification of the Government of India in the Ministry of Commerce and Industry (Department of Industrial Policy and Promotion), Number G.S.R. 822(E), dt. 20.10.2003, inviting objections and suggestions from all persons likely to be affected thereby, before the expiry of a period of forty-five days from the date of publication of the said notification in the Official Gazette; And whereas, the said Gazette was made available to the public on 20.10.2003; And, whereas objections 'and suggestions received from the public on the said draft Rules have been only considered by the Central Government; Now, therefore, in exercise of the powers conferred by Secs. 5 and 7 of the Explosives Act, 1884 (4 of 1884) and in supersession of the Gas Cylinders Rules, 1981, except in respect things done or omitted to be done before such supersession, the Central Government hereby makes the following rules, namely:

CHAPTER 1
PRELIMINARY

1. Short title and commencement :-

(1) These rules may be called the Gas Cylinders Rules, 2004.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. Definitions :-
In these rules unless the context otherwise requires,

(i) "Act" means the Explosives Act, 1884 (4 of 1884);

(ii) "Auto LPG" means liquefied petroleum gas meant for automotive fuel conforming to specification IS:14861;

(iii) "Chief Controller" means the Chief Controller of Explosives, Government of India;

(iv) "composite cylinder" means a cylinder made of resin impregnated continuous filament would over a metallic or a non-metallic liner. Composite cylinders using non-metallic liners are referred to as all-composite cylinders;

(v) "compressed gas" means any permanent gas, liquefiable gas or gas dissolved in liquid under pressure or gas mixture which in a closed gas cylinder exercises a pressure either exceeding 2.5 kgf/cm2 abs (1.5 kgf/cm2 gauge) at+15 C or a pressure exceeding 3 kgf/cm2 abs (2 kgf/cm2 gauge) at+50C or both;

Explanation.Hydrogen fluoride falls within the scope of compressed gas although its vapour pressure at 50C is 1.7 to 1.8 atmospheric gauge;

(vi) "Conservator" in relation to a port includes any person acting under the authority of the officer or body of person appointed to be Conservator of that port under S.7 of the Indian Ports Act, 1908 (15 of 1908);

(vii) "Controller" includes the Joint Chief Controller of Explosives, the Deputy Chief Controller of Explosives, the Controller of Explosives and the Deputy Controller of Explosives;

(viii) "Compressed Natural Gas (CNG)" meansmixtures of hydrocarbon gases and vapours, consisting mainly of Methane in gaseous form, which has been compressed for use as automotive fuel;

(ix) "CNG mother station'' means CNGfacilities connected with natural gas pipeline and having a compressor meant primarily to fill mobile cascades of daughter station. Such stations may also have stationary cascade for CNG dispensing to vehicles;

(x) "CNG online station" means CNG facilitiesconnected with natural gas pipeline and having a compressor primarily to fill stationary cascades for dispensing CNG to vehicles;

(xi) "CNG daughter station" means CNGfacilities not connected to natural gas pipeline. Such CNG dispensing station receives CNG through mobile cascade;

(xii) "critical temperature" means the temperature above which gas cannot be liquefied by the application of pressure alone;

(xiii) "dissolved acetylene cylinder" means a cylinder having a valve and with or without safety devices, containing a porous mass, a solvent for the storage of dissolved acetylene and at least sufficient acetylene to saturate the solvent at atmospheric pressure and at a temperature of +15C;

Explanation. Acetone or any other solvent used shall not be capable of chemical reaction with the acetylene gas or with the porous mass or with the metal of the cylinder or valve;

(xiv) "dissolved gas" means a gas which under pressure is dissolved in a fluid solvent appropriate to the particular gas as, for example, acetylene in acetone or ammonia in water;

(xv) "district authority" means

(a) a Commissioner of Police or Deputy Commissioner of Police in any town having a Commissioner of Police; and

(b) in any other place, the District Magistrate;

(xvi) "District Magistrate" includes an Additional District Magistrate, and in the States of Punjab and Haryana and in the Karaikal, Mahe and Yanam areas of the Union Territory of Pondicherry, also includes a Sub-Divisional Magistrate;

(xvii) "filling pressure" means the maximum permissible gauge pressure, converted to +15 C, at which a gas cylinder for permanent gas or gas dissolved under pressure can be filled;

[xviii) "filling ratio" means the ratio of the weight of a liquefiable gas introduced in the cylinder to the weight of the water the cylinders will hold at 15 C;

(xix) "flammable gas" means any gas which, if either a mixture of 13 per cent or less (by volume) with air forms a flammable mixture

or the flammability range with air is greater than 12 per cent regardless of the lower limit and these limits shall be determined at atmospheric temperature and pressure;

Explanation. "flammability range" means the difference between the minimum and maximum percentages by volume of the gas in mixture with air that forms a flammable mixture;

(xx) "Form" means a Form set forth in Schedule V;

(xxi) "Gas Cylinder" or "Cylinder" means any closed metal container having a volume exceeding 500 ml but not exceeding 1000 litres intended for the storage and transport of compressed gas, including any liquefied petroleum gas (LPG) container/compressed natural gas (CNG) cylinder fitted to a motor vehicle as its fuel tank but not including any other such container fitted to a special transport or undercarriage and includes a composite cylinder, however, the water capacity of cylinders used for storage of CNG, nitrogen, compressed air, etc. may exceed 1000 litres up to 2500 litres provided the diameter of such cylinder does not exceed 60 cm;

(xxii) "high pressure liquefiable gas" means a liquefiable gas having a critical temperature between -10 C and +70C;

(xxiii) "hydrostatic stretch test" means subjecting the cylinder to a hydrostatic pressure equal to the test pressure of the cylinder and recording the permanent stretch undergone by the cylinder;

(xxiv) "hydrostatic test"means the test to which a cylinder is subjected to a hydrostatic pressure equal to the test pressure of the cylinder;

(xxv) "import" means bringing into India by land, sea or air;

(xxvi) "inert gas" means a gas which is resistant to chemical action under normally encountered conditions;

(xxvii) "inspecting authority" means a person having qualifications and wide experience in the field of design, manufacture and testing of gas cylinders and recognised by the Chief Controller as authority for inspection of certification of gas cylinder;

(xxviii) "installation" means any premises wherein any place has been specially prepared for the manufacture (filling) or storage of compressed gas cylinders;

(xxix) "liquef iable gas" means a gas that may be liquefied by

pressure at -10 C but will be completely vaporised when in equilibrium with normal atmospheric pressure (760 mm Hg) at 17.5 C which value shall be increased to 30 C for toxic gases;

(xxx) "liquefied petroleum gas" means any material, which comprises predominantly of any of the following hydrocarbons or mixture of them with vapour pressure not exceeding 16.87 kg/cm2 (gauge) at 65 C : Propane (C3H8), propylene (C3H6), butane (C4H10), (n-butane and isobutane) and butylene (C4H8);

(xxxi) "low pressure liquefiable gas" means a liquefiable gas having critical temperature higher than +70 C;

(xxxii) "manufacture of gas" means filling of a cylinder with any compressed gas and also includes transfer of compressed gas from one cylinder to any other cylinder;

(xxxiii) "oxidizing gas" means a gas which gives up oxygen readily or removes hydrogen from a compound or attracts negative electrons;

(xxxiv) "permanent gas" means a gas whose critical temperature is below -10 C that is to say a gas which cannot be liquefied under any pressure at a temperature above -10 C;

(xxxv) "poisonous (toxic) gas" a gas which has a maximum allowable concentration in air for human respiration not exceeding 100 mg/m3 at 15 C and 1 kgf/cm2 absolute pressure;

(xxxvi) "Schedule" means the Schedule annexed to these rules;

(xxxvii) "tare weight" in relation to

(1) acetylene cylinder means the weight of the cylinder together with any fittings, permanently attached and includes the weight of valve, any safety device, porous mass, requisite quantity of solvent for dissolving acetylene, and the weight of acetylene gas saturating the solvent at atmospheric pressure and temperature of 15 C;

(2) liquefiable gas cylinder means the weight of the cylinder together with any fittings permanently attached thereto and includes the weight of valve;

(3) permanent gas cylinder means the weight of the cylinder together with any fittings permanently attached thereto and excludes the weight of valve;

(xxxviii) "test pressure" means the internal pressure required for the hydrostatic test or hydrostatic stretch test of the cylinder, as follows:

(1) For permanent and high pressure liquefiable gases, it should be calculated from the following:

$$Ph = \frac{200.t.Re}{1.25\ (Do-t)}$$

Where

Ph = Test pressure in kgf/cm^2

Do = Outside diameter of the cylinder in mm

t = Minimum calculated wall thickness of the cylinder shell in mm

Re = Minimum specified yield strength of the material of cylinder in kgf/mm^2, it is limited to 75 percent of the minimum value of the tensile strength in the case of normalised cylinder and 85 per cent of the minimum value of the tensile strength for quenched and tempered cylinder, provided that the value of test pressure shall not exceed 80 per cent of the yield strength

(2) For low pressure liquefiable gas One and a half times the saturated vapour pressure of the gas at 65 C or as specified in IS:8867, whichever is higher;

(xxxix) "transport means the moving of a cylinder filled with any compressed gas from one place to another;

(xl) "water capacity" means the volume of water in litres, a cylinder will hold at 15 C;

(xli) "working pressure for low pressure liquefiable gas" means the saturated vapour pressure at 65 C;

Explanation.The values of saturated vapour pressure of different gases are specified in IS:3710;

(xlii) "working pressure for permanent gas" means the internal pressure of the gas in the cylinder at a temperature of 15 C;

(xliii) "yield strength" means the stress corresponding to a permanent strain of 0.2 per cent of the original gauge length in a tensile test. For practical purpose it may be taken as a stress at which elongation first occurs in the test piece without the increase of load in a tensile test.

CHAPTER 2
GENERAL PROVISIONS

3. Filling, possession, import and transport cylinders :-

(1) No person shall fill any cylinder with any compressed gas or import, possess or transport any cylinder so filled or intended to be filled with such gas unless:

(a) such cylinder and its valve have been constructed to a type and standard specified in Schedule I as amended from time to time by an order issued by the Chief Controller;

(b) the test and inspection certificates issued by the inspecting authority in respect of cylinder and its valve are made available to the Chief Controller and prior approval of the said authority is obtained.

(2) For obtaining approval under clause (b) of sub-rule (1), the following particulars shall be submitted to the Chief Controller:

(i) total number and serial numbers of the cylinders;

(ii) name and address of the manufacturers of the cylinders;

(iii) specification of the cylinders and the valves;

(iv) previous approval, if any;

(v) the test and inspection certificates in respect of the cylinders;

(vi) the test and inspection certificates pertaining to the valves fitted/to be fitted to the cylinders;

(vii) scrutiny fee as specified in Schedule V.

(3) The test and inspection certificates required to be obtained from the inspecting authority in respect of cylinders and valves inspected and certified by it in accordance with the approved design and specification or code shall give the information included in Schedule II.

(4)

(a) Any person desiring to manufacture cylinders, valves, LPG regulators attached to self-closing valves, multi-function valves and other fittings shall obtain approval from the Chief Controller and in order to seek such approval, submit the particulars set forth in Schedule III and scrutiny fee as specified in Schedule V together with design drawings and calculations duly endorsed by Inspecting Authority.

(b) For any subsequent changes in the design drawing, a fresh approval shall be obtained.

(5) Notwithstanding anything contained in sub-rule (1) cylinders of specifications not conforming to the specifications specified in Schedule I and imported into India for filling and shipment to the country of origin or supply to a foreign going vessel touching Indian port, could be filled with such gas, provided:

(a) the cylinder has passed the hydrostatic test or hydrostatic stretch test, as the case may be, within the period specified in these rules and the pressure applied during the test shall be the test pressure marked on the cylinder;

(b) the cylinder is not filled with

(i) any liquefiable gas in excess of the filling ratio specified in IS:3710 for low pressure liquefiable gases and IS:8866 for high pressure liquefiable gases;

(ii) any permanent gas at a pressure in excess of the pressure for which the cylinder is designed;

(c) a separate record of the cylinder tested and filled is maintained at the filling station;

(d) the filled cylinders are removed from the filling station and shipped off as expeditiously as possible.

4. Valves :-

(1) Valves fitted to gas cylinders shall comply in all respects with the following specifications, namely:

(a) in respect of industrial gas cylinders, IS:3224;

(b) in respect of medical gas cylinders, IS:3745;

(c) in respect of cylinders used with breathing apparatus, IS:7302 as amended from time to time;

(d) in respect of cylinders used for filling liquefied petroleum gas, IS:8776 for cylinders or water capacity not exceeding 5 litres and, IS:8737 for cylinders of water capacity exceeding 5 litres;

(e) in respect of auto LPG containers IS:15100

(f) in respect of small Refrigerant cylinders IS:12300 :

Provided that the Chief Controller may, if he is of opinion that it is necessary so to do in the public interest, permit the use of valves not conforming to any of the above specifications.

(2) Valves fitted to Carbon dioxide cylinders shall be provided in the body with a safety release consisting of softened copper disc so arranged as to burst at a pressure between 200 kg/cm2 and 220 kg/cm2.

(3) Valves for cylinders containing flammable gases not listed in IS:3224 shall have outlets provided with left handed screw threads for the pipes or other connections.

(4) All other valves shall have outlets with right-handed screw threads.

(5) The valves shall be attached to the cylinder neck by screwing and not by making any permanent attachment or inserting adapter in between.

(6) The design of spindle-operated valves shall be such that when fitted to the cylinders it shall not be possible to withdraw the spindle under normal operating conditions.

5. Safety relief devices :-

(1) Cylinders manufactured in India, if fitted with safety relief devices in their bodies, shall have such safety devices manufactured and maintained in accordance with IS:5903.

(2) Cylinders containing obnoxious or poisonous gases shall not be provided with any safety device.

Explanation.For the purpose of this sub-rule, "obnoxious or poisonous gases" include Carbon monoxide, Hydrocyanic acid, Hydrogen chloride, Hydrogen bromide, Hydrogen fluoride, Sulphur dioxide, Chlorine, Methyl bromide, Nitrogen tetraoxide, Nitrosyl chloride, Town gas, Hydrogen sulphide, Carbonyl chloride (Phosgene), Cyanogen, Cyanogen chloride, Fluorine and Carbon oxychloride.

(3) Cylinders manufactured in foreign countries, approved for use in this country, if fitted with safety relief devices shall have these devices fully maintained in accordance with the requirements of the specification to which they were originally made.

6. Marking on cylinders :-

(1) Marking generally:

(a) Every gas cylinder shall be clearly and permanently marked in accordance with following conditions by stamping, engraving or similar processes:

(i) on the shoulder of the cylinder which shall be reinforced by forging or other means, or

(ii) on such a part which is inseparably bound with the cylinder and which is not or only negligibly affected by the stresses due to the gas pressure within it.

(b) The name plate shall not be affixed to the cylinder by soldering if there is a risk of corrosion or embrittlement.

(c) In conjunction with the original marking, space shall be provided for stamping the test date obtained at the periodic inspection.

(d) Markings shall be so carried out and the letters and numerals used shall be of such shape and size that the marking is clear and easily readable and does not give place for misreading.

(2) Marking on permanent and liquefiable gas cylinders:

(a) Every cylinder shall be marked with the following markings, namely :

(i) Manufacturer's, owner's and inspector's marking and rotation number (these markings shall be registered with the Chief Controller);

(ii) specification to which the cylinder has been made;

(iii) a symbol to indicate the nature of heat treatment given to the cylinder during manufacture or after repairs;

(iv) the date of the last hydrostatic test or hydrostatic stretch test, as the case may be, with the code mark of recognised testing station where the test was carried out and the code mark shall be registered with the Chief Controller. In the case of liquefied petroleum gas cylinders, the quarter and the year of test shall be given as an additional marking in a neck or on a shoulder plate;

(v) working pressure and test pressure;

(vi) tare weight

Explanation. In the case of liquefiable gas cylinders, tare weight shall include the weight of valve fitted to the cylinder.

(vii) water capacity.

(b) All the markings, except the manufacturer's markings, which may be on the base, shall be stamped on the neck end of the cylinder. However, seamless cylinders having no foot ring or skirt shall be stamped with the manufacturer's marking on the neck end of the cylinder.

7. Markings of valve :-

Valves fitted to the cylinder shall be clearly and durably marked in accordance with the following provisions by stamping, engraving or similar processes :

(i) the specification of the valves;

(ii) year and month or quarter of manufacture;

(iii) manufacturer's symbol;

(iv) working pressure;

(v) the name or chemical symbol of the gas for which the valve is to be used;

(vi) the type of screw threads on the outlet, in case of left handed as (L.H.);

(vii) Inspector's stamp;

(viii) where dip tubes are provided, special indications shall be given by a clear and durable marking on the valve or on a badge fixed between the valve and the cylinder and the total length in millimetre of the tube shall also be indicated.

8. Identification colours :-

(1) Every person filling any cylinder with any compressed gas shall, before it is stored or despatched, see that the cylinder is painted with appropriate identification colours specified in IS:4379 for industrial cylinders and IS:3933 for medical cylinders.

(2) Cylinders used for new gases and gas mixtures for which identification colours are not provided in sub-rule (1) shall be painted with the colours indicated in the following table, namely :

Name of the gas contained	Colour of	Colour of band at neck and of

Name of the gas contained in the cylinder	Colour of the cylinder shell	Colour of band at neck end of cylinder
1	2	3
Non-flammable and non-toxic	White	
Non-flammable but toxic	White	Yellow (IS: 5 Shade No. 356)
Flammable but non-toxic other than the LPG	White	Red (IS:5 Shade No. 537)
Flammable and toxic	White	Red and Yellow (IS:5 Shade Nos. 537 & 356)
Gas mixture (not covered in IS:4379 or IS:3933)	Major gas colour	Minor gas colour with band width approximately 1/5th of the cylinder length.

Explanation.Cylinders intended for gas mixtures shall be marked with the words "Gas Mixture" or "Mixed Gas" and in addition, the cylinders shall be marked with the names (symbols, if necessary) of the components of the mixture by stamping, if the cylinders are intended for the permanent use of the particular gas mixture, or by painting, if the cylinders are intended for the casual use of the particular gas mixture.

(3) No person shall in any way interfere with or change the colour painted on a gas cylinder:

Provided that nothing in this sub-rule shall be deemed to prohibit the re-painting of a cylinder with the identification colour painted on it when it is required for the maintenance of the cylinder or when a cylinder is converted from one gas service to another gas service in accordance with these rules.

9. Labelling of cylinders :-

(1) Every cylinders shall be labelled with the name of the gas and the name and address of the person by whom the cylinder was filled with gas.

(2) A warning in the following terms shall be attached to every cylinder containing permanent or liquefiable gas, namely : "WARNING" GAS CYLINDERS RULES, 2004

(i) Do not change the colour of this cylinder,

(ii) This cylinder should not be filled with any gas other than the

one it now contains.

(iii) No flammable material should be stored in the close vicinity of this cylinder or in the same room in which it is kept.

(iv) No oil or similar lubricant should be used on the valves or other fittings of this cylinder.

(v) Please look for the next date of test, which is marked on a metal ring inserted between the valve and the neck of the cylinder, and if this date is over, do not accept the cylinder for filling.

10. Restriction on delivery or despatch of cylinders :-

(1) No person shall deliver or despatch any cylinder filled with any compressed gas to any other person in India who is not the holder of a licence to possess such compressed gas cylinders or his authorised agent unless he is exempted under these rules to possess such compressed gas cylinders without a licence.

(2) The gas cylinders delivered or despatched by a person under sub-rule (1) shall be of the type for which he is licensed and shall not exceed the quantity which the person to whom it is delivered or despatched is authorised to possess under these rules.

(3) Nothing in sub-rules (1) and (2) shall apply to the delivery or despatch of gas cylinders to the defence forces of the Union, port authorities or Railway administration.

11. Repairing of seamless gas cylinders during use :-
No person shall repair or cause to repair any leakage in the body of a seamless gas cylinder.

12. Repairing of welded or brazed cylinders :-

(1) Welded or brazed cylinder showing leaks at any place other than the welded or brazed seams shall not be repaired and shall be rendered unserviceable.

(2) In the case of cylinders having welded or brazed seam, repairing of minor defects, such as small weld cracks, pin holes, blow holes, undercuts in welding, leaks at the weld (shown in periodical hydrostatic test) may be allowed provided

(a) the defects have been removed by the grinding, chipping, gouging or other approved methods;

(b) the repairing is carried out by a certified welder at the premises

of a manufacturer of cylinders recognised by the Chief Controller under the supervision of a competent person by

(i) welding if the original seams were welded;

(ii) brazing, if the original seams were brazed;

(c) the cylinder is properly heat-treated after the repairs;

(d) the welded or brazed seams of the cylinder are radiographed if the cylinder was originally required to be radiographed after its manufacturer;

(e) after repairs and heat-treatment, the cylinder is subjected to the same pneumatic and hydrostatic test or hydrostatic stretch test as was done at the time of manufacturer.

(3) Welded or brazed cylinder, before repairing, shall be thoroughly cleaned and gasfreed or otherwise prepared for safely carrying out hot work and certified in writing, by a competent person, to have been so prepared. The certificate shall be preserved for a period of three months and produced to the Chief Controller on demand.

(4) No person shall refill any cylinder which has been repaired under sub-rule (2) with any gas unless a full report on the repairs and test carried out on the cylinder, accompanied by the repairer's certificate of testing are furnished to the Chief Controller and his permission is obtained for its refilling.

(5) Notwithstanding anything contained in sub-rule (2), no repairs shall be carried out to any dissolved acetylene gas cylinder showing leaks in its weld seam.

13. Prohibition of employment of children and intoxicated persons :-

No child under the age of eighteen years and no person who is in a state of intoxication shall be employed incharge of loading or unloading or transport of any compressed gas cylinder or in any premises licenced under these rules.

14. Prohibition of smoking, fires, lights and dangerous substances :-

(1) No person shall smoke and no fires, other than blow pipe flames for repairs, or no articles or such other substances of flammable nature or liable to spontaneous ignition or to cause or communicate fire or explosion shall be allowed at any time in proximity to a place

where any cylinder for flammable gases is being filled, stored or handled.

(2) No person in or near any place where cylinders containing flammable gases are filled, stored or handled shall have in his possession any matches, fuses, mobile phones or any other appliances for producing ignition or explosion.

15. General precautions :-

(1) Cylinders together with their valves and other fittings and the identification colours under these rules shall have always be maintained in good condition.

(2) No oil or similar lubricant shall be used on any valves or other fittings of any cylinder.

(3) Save as provided in Rule 12 and clause B-2(1)(b) of Schedule IV, no cylinder shall be subjected to any heat treatment or exposed to a high temperature or to the sum of stored with any other flammable or explosive material.

(4) Every cylinder containing compressed gas shall have its valve securely closed so as to prevent leakage. Valves fitted to the cylinders containing Liquefied Petroleum Gas and highly toxic gases like Boron trifluoride, Carbon monoxide, Fluorine, Hydrogen chloride, Cyanogen chloride, Chlorine trifluoride, Hydrogen cyanide, Hydrogen fluoride, Hydrogen sulphide, Methyl bromide, Nitrogen tetraoxide, Chlorine, Ammonia or Sulphur dioxide shall be provided with security nut on the outlet to act as a secondary means of safeguard against leakage of gas.

(5) If a leak in the valve cannot be rectified by tightening the gland nut or the spindle, the cylinder shall be removed to an open space where it is least dangerous to life and property and the filler shall be informed. In the case of LPG cylinder, the safety cap shall be fixed to arrest the leak and cylinder shall be moved to an open space.

16. Special precautions against accidents :-

(1) No person shall commit or attempt to commit any act, which may tend to cause a fire or explosion in or about any place where gas under pressure in a cylinder is stored, handled or transported.

(2) Every person storing compressed gas cylinders and every

person in charge of or engaged in the storage, handling and transport of such gas cylinders, shall at all times

(a) comply with the provisions of these rules and the conditions of any licence relating thereto;

(b) observe all precautions for the prevention of accident by fire or explosion;

(c) prevent any person from committing any act referred to in sub-rule (1).

17. Competent person to be in charge of operations :-
Every person holding or acting under a licence granted under these rules, shall, whenever cylinders are filled, loaded, unloaded, examined or tested, depute a competent and experienced person to be present and to conduct any of the said operations in accordance with provisions of these rules and the name, qualification and experience of such personnel deputed in each shift shall be furnished to the Chief Controller or Controller for considering filling permission round the clock.

18. Handling and use :-

(1) Cylinders shall be adequately supported during handling.

(2) Conveyors, trolleys and cradles of adequate strength shall, as far as possible, be used when moving the cylinders.

(3) The cylinders shall be handled carefully and not be allowed to fall upon one another or otherwise subjected to any undue shock.

(4) Sliding, dropping or playing with cylinders is prohibited.

(5) Liquefied petroleum gas cylinders and cylinders containing liquefiable gases shall always be kept in an upright position and shall be so placed that they cannot be knocked over.

(6) Cylinders used in horizontal position shall be so secured that they cannot roll.

(7) Open flames, lights, mobile phones, lighting of fires, welding and smoking shall be prohibited in close proximity to any cylinder containing flammable gases except those while in use for welding, cutting or heating.

(8) Working places shall not be classified as storage places for the purpose of licensing.

19. Restrictions on filling :-

(1) Welded cylinders shall not be used for filling any permanent or high pressure liquefiable gas or highly toxic gases like Boron trifluoride, Carbonyl chloride (Phosgene), Chlorine trifluoride, Cyanogen, Cyanogen chloride, Hydrogen cyanide, Hydrogen sulphide.

(2) No cylinder, which has once been used for storage and transporation of coal gas, carbon monoxide or methane, shall be used for filling with any other gas except mixture of these gases with inert gases.

(3) No cylinder shall be filled with any gas that is capable of combining chemically so as to endanger its serviceability.

20. Loading, unloading and transport of cylinders :-

Cylinders filled with any compressed gas shall be transported duly complying with the provisions laid down in Schedule VI and also observing the relevant provisions of other statutes as applicable.

21. Storage of cylinders :-

(1) Cylinders shall be stored in a cool, dry, well ventilated place under cover, away from boilers, open flames, steam pipes or any potential sources of heat and such place of storage shall be easily accessible.

(2) The storage room or shed shall be of fire resistant construction.

(3) Thin wall cylinders such as liquefied petroleum gas cylinders and dissolved gas cylinders shall not be stacked in a horizontal position.

(4) Cylinders containing flammable gases and toxic gases shall be kept separated from each other and from cylinders containing other types of gases by an adequate distance or by a suitable partition wall.

(5) Cylinders shall not be stored under conditions which will cause them to corrode.

(6) Cylinders shall not be stored along with any combustible material.

(7) Empty cylinders shall be segregated from the filled ones and care shall be taken that all the valves are tightly shut.

22. Electrical installations :-

In premises for filling and storing flammable gases in cylinders all electric meters, distribution boards, switches, fuses, plugs and sockets, all electric fittings, fixed lamps, portable hand lamps and motors, shall be of flame proof construction conforming to IS:2148 or such other specification as approved by the Chief Controller and shall be effectively earthed.

23. Purity of gas :-

(1) Compressed gases shall be free from impurities, which are likely to corrode the metal of the cylinder or form an explosive substance with it or cause the gases to decompose or explode.

(2) The gases shall be as dry as possible and in no instance shall the aqueous phase separate when a liquefied gas is cooled to 0 C.

(3) Before filling any cylinder with gases like carbon monoxide, coal gas, hydrogen or methane, the gas shall be free from hydrogen sulphide and other sulphurous impurities as far as practicable. The moisture shall be less than 0.02 g/m3 of gas at normal temperature and pressure.

24. Cylinder subjected to the action of fire :-

(1)

(a) A cylinder exposed to fire shall not be used unless it has undergone proper examination and hydrostatic test or hydrostatic stretch test.

(b) If deleterious structural changes in the material due to the action of heat of the fire is apprehended to have taken place, the cylinder shall have to be subjected to proper heat treatment, followed by hydrostatic test or hydrostatic stretch test, as the case may be, before the cylinder is taken into use.

(2) Dissolved acetylene cylinders, which have been damaged by fire shall be condemned and destroyed by an experienced and competent person.

25. Ownership of cylinder :-

A cylinder shall not be filled with a compressed gas and transported unless it was changed by or with the written consent of the owner of the cylinder.

26. Re-testing of cylinder :-

A cylinder for which prescribed periodical re-test has become due shall not be charged and transported until such re-test has been properly made.

27. Owners record :-

The owner of a cylinder shall keep for the life of each cylinder, a record containing the following information regarding each cylinder, namely:

(i) Cylinder manufacturer's name and the rotation number;

(ii) The specification number to which the cylinder is manufactured;

(iii) Date of original hydrostatic test or hydrostatic stretch test;

(iv) Cylinder manufacturer's test and inspection certificates;

(v) Number and date of letter of approval granted by the Chief Controller.

28. Conversion of cylinders :-

(1) Gas cylinders designed and approved for filling with a particular gas shall not be used for filling with any other gas unless specific approval is obtained from the Chief Controller except that:

(a) inert gases, oxygen and compressed air cylinders made to the same specification and design may be converted from one gas to another after fitting with appropriate valve and painting with appropriate identification colour without prior permission from Chief Controller, with approval of the cylinder owner;

(b) proper records of such conversions shall be maintained by the gas filler for examination of Chief Controller or Controller as and when needed.

(2) Any person desiring for conversion approval shall submit to Chief Controller the following:

(i) documentary evidence indicating that the cylinders have been purchased by him;

(ii) an authenticated copy of letter permitting filling of the cylinders in the past;

(iii) a statement in duplicate, showing manufacturer's serial numbers of the cylinders in ascending order;

(iv) a certificate to the effect that the cylinder(s) had not been

converted to any other gas service in the past;

(v) scrutiny fee as specified in Schedule V.

CHAPTER 3
IMPORTANT OF CYLINDERS

29. Licence for import of gas cylinders :-

No person shall import any cylinder filled or intended to be filled with any compressed gas except under and in accordance with the conditions of a licence granted under these rules and the relevant provisions of Foreign Trade (Development and Regulation) Act, 1992.

30. Declaration by the master of ship or ships agent :-

(1) The master of every ship carrying cylinders filled with compressed gas for importation into India, or the agent for such ship, shall give, the Conservator of the Port not less than 48 hours' notice to its intended arrival at the port.

(2) The master of every ship carrying such cylinders shall deliver to the pilot, before entering any port, a written declaration under his signature in Form A: Provided that if the agent for such ship delivers to the Conservator of the port a written declaration referred to in sub-rule (1) under his signature, no such declaration shall be made by the master of the ship.

(3) Every declaration delivered to a pilot under sub-rule (2) shall be made over by him without delay to the Conservator of the Port and all declarations received by the Conservator of the Port shall be forwarded by him, with all convenient despatch, to the Commissioner of Customs of the Port.

31. Production of licence for import :-

Every person desiring, to import cylinders filled with any compressed gas or intended to be so filled shall produce personally or through his agent, before the Commissioner of Customs his licence for the import of such gas cylinders.

32. Permission of the Commissioner of Customs :-

(1) No imported cylinder shall be landed except with the permission of the Commissioner of Customs.

(2) If the Commissioner of Customs is satisfied that the gas cylinders can lawfully be imported, he shall permit it to be landed.

(3) Nothing in this rule shall affect the power of the Commissioner of Customs to detain the gas cylinders under any other law for the time being in force.

33. Importation by land :-

No gas cylinder filled with any compressed gas, shall be imported by land save with the previous sanction in each case, of the Central Government and under such conditions and restrictions as it may impose.

34. Importation by air :-

No cylinder filled with any compressed gas shall be imported by air save with the previous sanction in each case of the Director General of Civil Aviation.

CHAPTER 4
EXAMINATION AND TESTING OF CYLINDERS

35. Periodicity of examination and testing of cylinders :-

(1) No person shall fill any cylinder with any compressed gas unless the cylinder has been examined and subjected to hydrostatic test or hydrostatic stretch test, as title case may be, and other tests set forth in Schedule IV within such period as is specified in IS:8868 issued by Bureau of Indian Standards or as approved in writting by the Chief Controller.

(2) Any testing station desiring to obtain recognition for periodical testing and examination of cylinders shall provide the facilities set forth in Schedule IV and shall submit to Chief Controller the particulars of the facilities provided and scrutiny fee specified in Schedule 'V'.

36. Condemning of cylinders :-

(1) Any cylinder which fails to pass periodic examination or test or which loses in its tare weight by over 5 per cent or which for any other defect is found to be unsafe for use or after expiry of the service life of the cylinder, shall not be filled with any compressed gas and shall be destroyed by flattening it as a whole or after being cut into pieces in such a manner that the pieces cannot again be joined together by welding or otherwise to form a cylinder, under intimation to the owner of the cylinder, as specified in IS:8198.

Explanation. Service life of On-board CNG cylinders to be twenty years and Auto LPG containers made of low carbon steel to be

fifteen years unles otherwise specified in the respective codes.

(2) All markings on the cylinder shall be defaced before it is destroyed.

(3) History sheets or records of such cylinders shall be closed and kept on record for a period of one year. Reports of the details of such closed history cards or records shall be sent to the Chief Controller, in writing, on the 1st of January, April, July and October every year.

(4) A cylinder, which has been used for the generation of any gas or for any purpose other than storage, transportation and use of compressed gas shall be deemed to have been condemned and unsuitable for such use as a cylinder within the meaning of these rules.

CHAPTER 5
DISSOLVED ACETYLENE GAS CYLINDERS

37. Additional requirements for dissolved acetylene gas cylinders :-

Dissolved acetylene gas cylinder shall comply with following additional provisions, namely:

(i) The porous substance shall fill as completely as possible the cylinder into which the acetylene is compressed,

(ii) The porosity of the substance shall not exceed 92 per cent and in no case shall be less than 75 per cent.

(iii) Any solvent used shall not be capable of chemical reaction with the acetylene gas or with the porous substance or with the metal of the cylinder.

(iv) If acetone is used as a solvent it shall comply with the requirements of IS: 170, the quantity of acetone including the gas in solution shall be such that the cylinder meets the requirements of additional tests specified in IS:7312.

(v) The valves of the cylinders shall not contain more than 70 per cent copper in their composition.

(vi) The pressure in the cylinder shall not exceed 16 kgf/cm2 at a temperature of 15 C.

(vii) Every cylinder shall before being filled with porous mass be tested by hydrostatic pressure to a pressure of not less than 60

kgf/cm2. This pressure may be reduced to 53 kgf/cm2 if the cylinder is fitted with fusible plug. No cylinder which shows a permanent stretch in excess oi 7.5 percent of the total stretch suffered during hydrostatic stretch test shall be allowed.

(viii) The safety relief devices if fitted, shall operate at a pressure of 53 kgf/cm2 or at a temperature of 100 C+4 C/-2" C.

(ix) Every cylinder shall have permanently and conspicuously marked upon it or upon a brass plate soldered to it the name of the manufacturer and the words "Acetylene properly compressed into porous substance" and shall bear the following markings, namely:

(a) Serial number and identification of manufacturer;

(b) Number of the standard;

(c) Test pressure;

(d) The date of hydrostatic stretch test with code mark of the place where the test was carried out;

(e) Date of filling of porous mass;

(f) Water capacity;

(g) A symbol to indicate the nature of heat treatment;

(h) Identification of porous mass and porosity percentage;

(i) Tare weight (inclusive of valve);

(j) Inspector's official mark;

(k) Maximum gas capacity.

38. Restriction on filling of dissolved acetylene in cylinders :-

No person shall charge with acetylene any cylinder unless he is in possession of full particulars and the previous history of such cylinder and has otherwise assured himself that the cylinder complies with the requirements of these rules.

39. Examination of dissolved acetylene cylinders before filling :-

Whenever a cylinder is charged with acetylene, it shall be subjected to a thorough visual examination in accordance with IS:8433, if the history of the cylinder shows that it has not been subjected to such an examination within the previous two years and at the same time

the valves shall be removed and the condition of the porous substance at the neck of the cylinder ascertained:

Provided that this period of periodical examination shall be one year in case the cylinders are filled with loose porous mass.

40. Licence for compression of acetylene :-
The compression of the acetylene gas into a cylinder shall be carried out only in such premises as are licensed by the Chief Controller or Controller.

41. Record of dissolved acetylene cylinders :-

(1) Each firm charging acetylene in cylinders shall keep a record of every cylinder charged by it and record shall give the following information, namely:

(a) for each charge,

(i) the date of charging of the cylinder,

(ii) the empty cylinder weight without gas,

(iii) the weight of solvent charged before gas charging,

(iv) full weight of the cylinder;

(b) the dates upon which solvent has been added;

(c) the dates upon which the cylinder has been thoroughly examined as provided in Rule 39, the results of each such examination and the name of the person carrying out such examination, and in the case of cylinders first issued by the firm, the tare weight of the cylinder including porous substance and acetone or other solvent, the nature of the solvent and the maximum pressure allowed in the cylinder.

(2) The record shall be open for inspection of the Chief Controller or the Controller of Explosives.

42. Labelling of dissolved acetylene cylinders :-
A warning label attached to every dissolved acetylene cylinder shall, in addition to the particulars given in sub-rule (2) of Rule 9 bear the following additional particulars, namely:

(a) date of last filling of gas in the cylinder;

(b) weight of gas filled;

(c) full cylinder weight;

(d) the name of the company filling the gas on the last date of the filling.

CHAPTER 6
FILLING AND POSSESSION

43. Licence for filling and possession :-

(1) No person shall fill any cylinder with compressed gas and no cylinder filled with compressed gas shall be possessed by anyone except under and in accordance with the conditions of a licence granted under these rules.

(2) The licensee shall be responsible, for all operations connected with the filling and possession of cylinders in the licensed premises.

44. No licence needed for filling and possession in certain cases :-

Notwithstanding anything contained in Rule 43, no licence shall be necessary for

(a) possession of any cylinder filled with a compressed gas by a carrier or other person for the purpose of transport in accordance with the provisions of these rules;

(b) possession of cylinders filled with

(i) liquefied petroleum gas when the total quantity of gas does not exceed 100 kg at a time;

(ii) any other flammable but non-toxic gas when the total number of cylinders containing such gas does not exceed 25 or the total weight of gas does not exceed 200 kg, whichever is less, at a time;

(iii) any non-flammable non-toxic gas when the total number of such cylinders does not exceed 200 at a time;

(iv) any toxic gas when the total quantity of such cylinders does not exceed 5 at a time;

(v) acetylene gas contained in cylinders in dissolved state when the total quantity of such cylinder does not exceed 50 at a time.

45. Restriction on filling :-

No person shall fill any cylinder with any compressed gas unless such a cylinder and its valve or other fittings

(a) are of approved type and standard as per Rule 3 and has been specifically approved for filling by the Chief Controller.

(b) have passed the examination and test specified in Rule 35.

(c) conform to the provisions of rule 4, Rule 5, Rule 6, Rule 7 and Rule 8.

46. Working pressure and filling ratios :-

(1) The working or internal pressure in any cylinder charged with a permanent gas shall not exceed two-thirds of the test pressure.

(2) Cylinders charged with liquefiable gases shall not be filled in excess of the filling ratios specified in IS:3710 for low pressure liquefiable gases and IS:8866 for high pressure liquefiable gases.

47. Prior approval of specifications and plans of premises proposed to be licensed :-

(1) Every person desiring to obtain a licence to fill and store any compressed gas in any cylinder shall submit to the Chief Controller or Controller authorised by Chief Controller

(a) specifications and plans drawn to scale in triplicate clearly indicating

(i) the manner in which the provisions prescribed in these rules will be complied with,

(ii) the premises proposed to be licensed, the area of which shall be distinctly coloured or otherwise marked.

(iii) the surrounding area lying within 100 metres of the edge of all facilities which are proposed to be licensed;

(b) scrutiny fee as specified in Schedule V.

(2) If the Chief Controller or Controller after scrutiny of the specifications and plans and after making such inquiries as considered necessary, satisfied that compressed gas will be filled and stored in the premises proposed to be licensed, according to the provisions of these rules, he shall return to the applicant one copy of each of the specifications and plans signed by him conveying his sanction subject to such conditions as may be specified.

(3) Prior approval specified in sub-rules (1) and (2) is not

mandatory for installation of non-toxic non-flammable gases and an applicant for such installation is at liberty to install the facilities in accordance with provisions of these rules without obtaining prior approval from Chief Controller or Controller.

48. No Objection Certificate :-

(1) An applicant for a new licence in Form 'G', for a CNG dispensing station shall apply to the District Magistrate with two copies of site plan showing the location of the premises proposed to be licensed under these rules for a certificate to the effect that there is no objection to the applicant's receiving a licence for a CNG dispensing station at the site proposed, and the District Magistrate, if satisfied, shall grant no objection certificate to the applicant who shall forward it to the Chief Controller or Controller with his application.

(2) Every certificate issued by the District Magistrate under sub-rule (1) above shall be accompanied by a copy of the plan of the proposed site duly endorsed by him under official seal.

(3) The Chief Controller or Controller may refer an application not accompanied by a certificate granted under sub-rule (1) to the District Magistrate for his observation.

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

49. Application for licence :-

A person wishing to obtain or renew a licence under these rules shall submit an application, in writing, to the Chief Controller or Controller

(a) in Form 'B' for a licence prescribed in sub-rule (1) of Rule 51; and

(b) in Form 'C', for a licence prescribed in sub-rule (2) of Rule 51.

50. Grant of licence :-

(1) A licence under these rules may be granted by the Chief Controller or Controller on payment of the fees specified in Schedule V.

(2) A licence under sub-rule (1) shall be granted if the provisions of

these rules are complied with by the applicant.

(3) Every licence granted under these rules shall be subject to the conditions specified therein.

51. Period for which licences may be granted or renewed :-

(1) A licence in Form 'D' for the import of cylinders filled or intended to be filled with compressed gas may be granted for such period as the Chief Controller may deem necessary subject to a maximum of one year.

(2) A licence in Form 'E', 'F or 'G' for filling or storage of compressed gases granted or renewed under rules shall remain in force till the 30th day of September of the year up to which the licence is granted or renewed subject to a maximum of ten years.

(3) Notwithstanding anything contained in sub-rule (2), the Chief Controller or Controller authorised by Chief Controller, where he is satisfied that a licence is required for a specific work which is not likely to last up to the 30th day of September of the year up to which the licence is granted or renewed may grant or renew a licence for such a period as is necessary.

52. Particulars of licence :-

(1) Every licence granted under, these rules shall be subject to the conditions specified therein and shall contain all the particulars, which are contained in the form specified under these rules.

(2) One copy of the plan or plans for the licensed premises signed in token of approval by the Chief Controller or Controller shall be attached to the licence, which shall form part of such a licence, and an identical copy shall be filed for record in the office of the Chief Controller or Controller.

53. Prior approval necessary for alteration in the licensed premises :-

(1) No alteration shall be carried out in the licensed premises until the plan showing such alteration has been approved in writing by the Chief Controller or Controller authorised by Chief Controller.

(2) A person wishing to carry out any alteration in the licensed premises shall submit to the Chief Controller or Controller

(a) three copies of a properly drawn plan to scale, of the licensed

premises showing in distinct colours the proposed alterations and the reason therefor;

(b) scrutiny fee as specified in Schedule V.

(3) If the Chief Controller or Controller, after scrutiny of the plan showing the proposed alteration and after making such enquiries as he deems fit, is satisfied that the proposed alteration may be carried out, he shall return to the licensee one copy of the plan signed by him and conveying his sanction subject to such condition or conditions as may be specified.

(4) The holder of the licence shall apply to the Chief Controller or Controller for the amendment of the licence as soon as the sanctioned alteration has been carried out.

(5) No additions or alterations carried out in the licensed premises sanctioned by the Chief Controller or Controller shall be brought into use unless the licence is received by the licensee duly amended.

54. Amendment of licence :-

(1) Any licence granted under these rules may be amended by the Chief Controller or Controller authorised by the Chief Controller.

(2) The fee for amendment of a licence shall be amendment fee 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.

(3) A licensee who desires to have his licence amended shall submit to the Chief Controller or Controller

(i) an application duly filled in and signed in Form 'B' if the licence has been granted in Form 'D' and in Form 'C' if the licence has been granted in Form 'E', 'F' or 'G';

(ii) the licence sought to be amended together with the approved plans attached to it;

(iii) where any alterations in the licensed premises have been carried out, three copies of the properly drawn plans showing the alterations sanctioned under Rule 53 by the Chief Controller or Controller;

(iv) fees for the amendment of the licence as specified in sub-rule

(2).

(4) The holder of a licence in Form 'E', 'F' or 'G' may, at any time before the expiry of the licence, apply to the licensing authority to transfer the licence to another person and every application for such transfer of a licence shall be accompanied with

(i) a letter signed by the holder of the licence indicating the full name and postal address of the person to whom he wishes to transfer the licence and give complete possession of the licensed premises;

(ii) the licenced sought to be transferred together with the approved plan or plans attached to it;

(iii) an application in Form 'C' duly filled and signed by the person to whom the licence is sought to be transferred;

(iv) amendment fee as specified in Schedule V.

55. Renewal of licence :-

(1) A licence may be renewed by the Chief Controller or Controller.

(2) Every licence granted in Forms 'E', 'F' and 'G' under these rules, may be renewed for a maximum period of ten years at a time where there has been no contravention of the provisions of the Act or any rules framed thereunder or of any condition of the licence so renewed.

(3) Where a licence, which has been renewed for more than one year, is surrendered before its expiry, the renewal fee paid for the unexpired portion of the licence shall be refunded to the licensee provided that no refund of renewal fee shall be made for the year during which the Chief Controller or Controller receives the renewed licence for surrender.

(4) Every application for the renewal of a licence shall be accompanied by the licence, which is to be renewed together with or without approved plans attached to the licence, and the renewal fee.

(5) Every application for the renewal of a licence shall be made so as to reach the licensing authority on or before the date on which it expires and if the application is so made, the licence shall be deemed to be in force until such date as the Chief Controller or Controller renews the licence or until an intimation that the renewal

of the licence is refused, has been communicated to the applicant.

(6) Where the renewal of a licence is refused, the fee paid shall be refunded to the licensee after deducting therefrom the proportionate fee for the period beginning from the date from which the licence was to be renewed up to the date on which renewal thereof is refused.

(7) The same fee shall be charged for the renewal of a licence for every twelve months for the grant of such renewal:

Provided that

(a) if the application with accompaniments required under sub-rule (4) is not received within the time specified in sub-rule (5) but received not later than three months the licence shall be renewed only on payment of a fee amounting to twice the fee ordinarily payable;

(b) if such an application with accompaniments is received by the Chief Controller or Controller after three months from the date of expiry but not later than one year from the date of expiry, the licence may, without prejudice to any other action that may be taken in this behalf, be renewed on payment of late fee at the rate of one year licence fee for every delay of three months or part thereof:

Provided further that in the case of an application for the renewal of a licence for a period of more than one year at a time, the fee prescribed under the first proviso, if payable, shall be paid only for the first year of renewal.

(8) No licence shall be renewed if the application for renewal is received by. the Chief Controller or Controller after one year of the date of its expiry.

56. Refusal of licence :-

The Chief Controller or Controller refusing to grant, amend, renew or transfer a licence, shall communicate the reasons thereof to the applicant.

57. Suspension and cancellation of licence :-

(1) Every licence granted under these rules shall be liable to be suspended or cancelled by an order of the licensing authority for any contravention of the provisions of the Act or rules framed

thereunder or of any condition contained in such licence, or by an order of the Central Government, if at any time the continuance of the licence in the hands of the licensee is deemed objectionable:

Provided that

(a) before suspending or cancelling a licence under this rule, the holder of the licence shall be given an opportunity of being heard;

(b) the maximum period of suspension shall not exceed three months; and

(c) the suspension of a licence shall not debar the holder of the licence from applying for its renewal in accordance with the provisions of Rule 55.

(2) Notwithstanding anything contained in sub-rule (1) an opportunity of being heard may not be given to the holder of a licence before his licence is suspended or cancelled in cases

(a) where the licence is suspended by the licensing authority as an interim measure for violation of any of the provisions of the Act or these rules, or of any condition contained in such licence or in his opinion such violation is likely to cause imminent danger to the public:

Provided that where a licence is so suspended, the licensing authority shall give the holder of the licence an opportunity of being heard before the order of suspension is confirmed;

(b) where the licence is suspended or cancelled by the Central Government, if the Government considers that in the public interest or in the interest of the security of the State such opportunity should not be given.

(3) The Chief Controller or Controller or the Central Government suspending or cancelling a licence under sub-rule (1), shall communicate the reasons thereof to the applicant except when the licence is suspended under sub-rule (2).

58. Procedure on expiration, suspension or cancellation of licence :-

A person licensed to fill or store compressed gas shall, on the expiration, suspension or cancellation of such licence, forthwith give notice to the Chief Controller or Controller of the nature and quantity of compressed gas in his possession and shall comply with

the directions which the Chief Controller or Controller may give in regard to its disposal.

59. Appeal :-

(1) An appeal shall lie with the Central Government against any order passed by the Chief Controller refusing to grant, amend or renew a licence or cancelling or suspending a licence and to the Chief Controller against any order passed by the Controller.

(2) Every appeal shall be in writing and shall be accompanied by a copy of the order appealed against and shall be presented within sixty days of the order passed.

60. Procedure on death or disability of licensee :-

If a licensee dies or becomes insolvent or mentally incapable or is otherwise disabled, the person carrying on the business or legal heir 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 during such time as may reasonably be required to allow him to make an application for a new licence or transfer of the existing licence in his own name:

Provided that nothing in this rule shall be deemed to authorise the exercise of any power under this rule by any person after the expiry of the period of the licence.

61. Loss of licence :-

Where a licence granted under these rules is lost or accidentally destroyed, a duplicate copy of the licence may be granted on submission of a copy of the plan or plans identical with those attached to the licence and on payment of a fee as specified in Schedule V.

62. 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 of the officers specified in Rule 71.

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

(a) on payment of a fee as specified in Schedule V for each authenticated copy; and

(b) on the submission of a copy of the plan identical with the approved plan attached to the licence.

63. Procedure on reports of infringement :-
The District Authority shall inform the Chief Controller or Controller of the action taken by him on any reports of infringement of the Act or of these rules, which the Chief Controller or Controller may make to him.

64. Executive control over authorities :-
Every authority, other than the Central Government, acting under this chapter shall perform its duties subject to the control of the Central Government :

Provided that nothing in these rules shall be deemed to affect the powers of executive control of the Chief Controller over the officers subordinate to him.

65. Licence fee and other than licence fee :-

(1) The Central Government may, by notification in the Official Gazette, revise the fees as specified in Schedule V from time to time.

(2) All fees payable under these rules shall be paid through crossed demand draft drawn on any Bank in favour of the Chief Controller of Explosives or Controller of Explosives or Department of Explosive payable at respective places as the case may be.

CHAPTER 7
title missing

66. Power to exempt :-
If the Chief Controller is satisfied that in respect of any cylinder or any mode of conveyance, any of the requirements of these rules may be safely suspended or modified, he may, by written order, authorise such suspension or modification for such period and under such condition as he may think fit and such order may be revoked at any time.

CHAPTER 8
ACCIDENTS AND INQUIRIES

67. Notice of accidents :-

(1) The notice of an accident required to be given under sub-sec. (1) of Section 8 of the Explosives Act, 1884 shall be given forthwith

(a) to the Chief Controller or Controller under whose jurisdiction the area falls by Fax, E-mail or telegram (Telegraphic Address Explosives, Nagpur, E-mail explosives@explosives.gov.in) followed by a letter giving particulars of the occurrence within 24 hours;

(b) to the District Magistrate concerned; and

(c) to the officer-in-charge of the nearest Police Station by the quickest route.

(2) Pending the visit of the Chief Controller or Controller or until instruction is received from the Chief Controller or Controller that he does not wish to make any further investigation or inquiry, all wreckage and debris shall be left untouched except insofar as its removal may be necessary for the rescue of the persons injured and recovery of the bodies of any persons killed by the accident or i n the case of railway or road for the restoration of through communication or traffic.

68. Inquiry into accidents :-

(1) Whenever a District Magistrate or a Commissioner of Police or a Magistrate subordinate to a District Magistrate (hereinafter in this rule referred to as the Magistrate) holds an inquiry under sub-sec. (1) of Section 9 of the Explosives Act, 1884 , he shall adjourn such an inquiry unless the Chief Controller or Controller or an officer nominated by him is present to watch the proceedings or the Magistrate has received written information from the Chief Controller or Controller that he does not wish to send a representative.

(2) The Magistrate shall, at least fourteen days before holding an adjourned inquiry, send to the Chief Controller or Controller notice in writing of the time and place of holding the adjourned inquiry.

(3) Where an accident has been attended with loss of human life, the Magistrate may before the inquiry is adjourned under sub-rule (1) take evidence to identify the bodies and may order the internment thereof.

(4) The Chief Controller or Controller or his representative shall be at liberty at any such inquiry to examine any witness.

(5) Where evidence is given at an enquiry of any neglect as having caused or contributed to the explosion or accident or of any defect in or about or in connection with any installation or any vehicle

appearing to the Magistrate to require a remedy and the Chief Controller or Controller or the officer nominated by him is not present at the enquiry, the Magistrate shall send to the Chief Controller notice in writing of the neglect or defect.

69. Inquiry into more serious accidents :-

(1) Whenever an inquiry is held under Section 9A of the Explosives Act, 1884 , the person holding such inquiry shall hold the same in open Court in such manner and under such conditions as they have think most effectual for ascertaining the' causes and circumstances of the accident, and enabling them to make the report under this rule:

Provided that where the Central Government so directs, the inquiry may be held in camera.

(2) Persons attending as witnesses before the enquiry Court shall be allowed such expenses as would be allowed to witnesses for attending before a civil Court subordinate to the High Court having jurisdiction in the place where the inquiry is held and in case of any dispute as to the amount to be allowed, the question shall be referred to the local Magis- trate, who, on a request made by the enquiry officer, shall ascertain and certify the proper amount of such expenses.

(3) All expenses incured in or about an inquiry or investigation under sub-rule (2) of Rule 69 shall not be deemed to be part of the expenses of the Department of Explosives in executing the provisions of the Act.

CHAPTER 9
POWERS

70. Dangerous practices :-

(1) If in any matter which is not provided for by any express provision of, or condition of a licence granted under these rules, the Controller finds any compressed gas filling station or a storage place, where a cylinder is being filled or possessed, or any part thereof or anything or practice therein or connected therewith or with the handling or transport of compressed gas cylinders, dangerous or defective, so as, in his opinion, to tend to endanger the public safety or the bodily safety to any person, such Controller may by an order in writing require the occupier of such filling station or storage place or the owner of the cylinder to remedy the

same within such time as may be specified in the order, and the said occupier shall carry out the orders within the specified time.

(2) Where the occupier or owner objects to an order made under sub-rule (1), he may appeal to the Chief Controller within the time specified in the order for compliance with it.

(3) Every appeal preferred under sub-rule (2) shall be in writing and shall be accompanied by a copy of the order appealed against and shall be made within a period of thirty days from the date of the order appealed against.

(4) If the occupier or owner fails to comply with an order made under sub-rule (1) within the time specified in it or, where an appeal is preferred under sub-rule (2), fails to comply with the order of the Chief Controller thereon within the time fixed in such order, he shall be deemed to have committed a breach of this rule.

71. Powers of inspection, search, seizure, detention and removal :-

(1) Any of the officers, specified in the first column of the Table below, may exercise the powers specified in sub-sec. (1) of Section 7 of the Explosives Act, 1884 in the area specified in the corresponding entry in the second column of that Table.

TABLE

Officers		Area
1.	The Chief Controller or Controller	The whole of India
2.	All District Magistrates	Their respective Districts
3.	All Magistrates subordinate to the District Magistrate	Their respective jurisdiction
4.	The Commissioner of Police and all Police Officers of rank not below that of an Inspector	In Presidency town or their suburbs
5.	All Police Officers of rank not below that of Sub-Inspector.	The respective area over which their authority extends:

Provided that the powers of removal and destruction under clause (d) of sub-sec. (1) of Section 7 of the Explosives Act, 1884 shall not be exercised by any Magistrate or Police Officer except under and in accordance with the instructions of the Chief Controller or Controller.

(2) Every facility shall be afforded to the officer specified in sub-

rule (1) to ascertain that these rules are being duly observed.

72. Protection of action taken in good faith :-

(1) No suit, prosecution or other legal proceeding shall lie against the Central Government or Chief Controller or Controller for anything which is in good faith done or intended to be done in pursuance of these rules.

(2) No suit or other legal proceeding shall lie against the Central Government or Chief Controller or Controller for any damage caused or likely to be caused by anything which is in good faith done or intended to be done in pursuance of these rules.

73. Repeal and Savings :-

(1) The Gas Cylinder Rules, 1981 is hereby repealed.

(2) Notwithstanding such repeal

(a) all licences granted or renewed under the said rules and all fees imposed or levied shall be deemed to have been granted, renewed or imposed or levied, as the case may be, under the corresponding provisions of these rules, and

(b) all approvals given and all powers conferred by or under any notification or rule 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.

SCHEDULE 1
TYPES AND STANDARDS OF CYLINDERS AND VALVES

SCHEDULE 1

[See Rule 3(1)]

TYPES AND STANDARDS OF CYLINDERS AND VALVES

A. CYLINDERS AND CONTAINERS

1. INDIAN ORIGIN

(a) Cylinders Welded low carbon steel cylinders for low pressure liquefiable gases manufactured to IS:3196 Part 1, Part 2 and Part 4, IS:7142, auto LPG containers to IS:14899, DA cylinders to IS:7312 certified by Bureau of Indian Standards. Seamless steel cylinders manufactured to IS:7285 by Bharat Pumps and Compressors Limited, Naini, Allahabad, Everest Kanto Cylinders Limited,

Mumbai/(rnanufacturing unit at Tarapur and Aurangabad, Maharashtra) and Maruti Koatsu Cylinders Limited, Halol, Gujarat certified by BIS or any other inspection authority approved by Chief Controller.

(b) Containers Tonne containers manufactured to BS:1500, ASME Section VIII Division 1, IS:2825 by Asco Industrial Corporation, New Delhi, Indian Sugar and General Engg. Corporation, Yamunagar, Anup Engineering Ltd., Ahmedabad, Kosan Metal Products Pvt. Ltd., Mumbai, Meenakshi Associated Pvt. Ltd., Surajpur Distt. Ghaziabad, Titanium Equipment and Anode Manufacturing Co. Ltd., Chennai, Expo Gas Containers Ltd., Mumbai and certified by an inspection authority approved by Chief Controller.

2. AUSTRIAN ORIGIN

(a) Cylinders conforming to BS:5045:Part 1:1982 for Halon-1301 and FM 200 gas service as per approved drawings manufactured by Worthington Heiser Cylinders Gmbh, Austria Inspected and certified by Bureau Veritas.

(b) Cylinders conforming to BS:5045:Part 1:1982 for permanent and liquefiable gases as per approved drawings, manufactured by Worthington Heiser Cylinders Gmbh, Austria inspected and certified by Bureau Veritas.

(c) Seamless steel cylinders for CNG gas on-board service to NZS:5454-1989 specification, having working pressure 200 Bar and test pressure 335 Bar manufactured by Worthington Cylinders GmbH, Austria certified by Bureau Veritas as per approved drawings.

3. ARGENTINA ORIGIN

Seamless steel cylinders for CNG gas on-board service to NZS:5454-1989 having working pressure 200 Bar and test pressure 335 Bar manufactured by Argentoil S.A., Argentina certified by Bureau Veritas as per approved drawing.

4. CHINESE ORIGIN

Seamless steel cylinders for high pressure gas cylinders conforming to IS:7285 specification manufactured by Beijing Tiatnhai Industry Co. Ltd., Beijing, China inspected and certified by Boiler and Pressure Container Safety Supervisory Bureau of Labour Department R.C.C. as per approved drawings.

5. ITALIAN ORIGIN

(a) Seamless steel cylinders for permanent gases (Air/Oxygen) conforming to BS:5045:Part 1:1982 manufactured by Faber Industries S.p.A., Italyinspected and certified by Lloyd's as per approved drawings.

(b) Seamless steel cylinders for compressed and liquefiable gass conforming to DOT:3AA specification having water capacity 80.0 Ltrs. and 120 Ltrs. working pressure 79 Bar and test pressure 132 Bar, manufactured by Faber Industries

S.p.A., Italy inspected and certified by Lloyd's as per approved drawings.

(c) Seamless steel cylinders for CNG gas on-board service to NZS:5454-1989 having working pressure 200 Bar and test pressure 335 Bar manufactured by Faber Industries, S.p.A. Italy, certified by Lloyd's as per approved drawings.

6. SPAIN ORIGIN

Seamless steel cylinders for FM-200 gas service conforming to BS:5045 Part I manufactured by Productos Tubulares, S.A., inspected and certified by Lloyd's, as per approved drawings.

7. JAPAN ORIGIN

Steel cylinders manufactured by Showa Koatsu Kogyo Co. Ltd. inspected and certified by company's own Inspector or KHK or Lloyd's or Bureau Veritas conforming to specifications DOT:3AA:1800 and above, JIS:B:8241 relating to Manganese Steel for permanent gases and DOT:3A/DOT:3AA for liquefiable gases as per approved drawings.

8. POLISH ORIGIN

Auto LPG containers manufactured by Stako, Poland made to ECE-R-67-01 specification, inspected and certified by Institute by Transport Technical Supervision as per approved drawings.

9. U.K. ORIGIN

(a) Aluminium alloy cylinders conforming to BS:5045:Pt. 3 or EN equivalent specification manufactured by Luxfur Gas Cylinders, UK inspected and certified by Lloyd's or British Inspecting Engineers Ltd. as per approved drawings.

(b) Seamless steel cylinders for permanent and Liquefiable gases conforming to BS:5045:Part I manufactured by UEF Chesterfield Cylinders, UK inspected and certified by Lloyd's or Bureau Veritas or British Inspecting Engineering Ltd., or any other appropriate authority as per approved drawings.

(c) Seamless steel cylinders for permanent and liquefiable gases conforming to DOT:3T specification manufactured by UEF Chesterfield Cylinders UD inspected and certified by British Inspecting Engineers Ltd., as per approved drawings.

(d) Seamless steel cylinders for FM-200 gas service conforming to DOT:4BA:500 specification manufactured by Fike Protection and Systems, U.K., having water capacity 650 pounds, filling ratio 1.04 super pressurised with Nitrogen at 19.72 Bar as per approved drawing.

(e) Seamless steel cylinders for CNG gas on-board service to BS:5045-1982 Part I having working pressure 200 Bar and test pressure 344 Bar manufactured by UEF Chesterfield Cylinder, Derbyshire, UK certified by British Inspection Engineers

Limited as per approved drawings.

10. USA Origin

(a) Steel cylinders inspected and certified by appropriate authority, coforming to specifications DOT:3A/3AA for permanent and liquefiable gases manufactured by

(1) Norris Cylinder Co.,

(2) Taylor Wharton Co.,

(3) Worthington Cylinder Co.,

(4) Norristi Industries,

(5) Harris Burg Steel Co., and

(6) Pressed Steel Tank Co., as per approved drawings.

(b) Aluminium alloy cylinders conforming to DOT:3AL Specification manufactured by Luxfer Gas Cylinders, USA inspected and certified by authorised Testing Inc., or Arrowhead Inc. as per approved drawings.

11. GERMAN ORIGIN

Seamless steel cylinders for permanent and liquefiable gas service conforming to BIS:5045/1/CM/S ad DOT:3AA manufactured by Mannesmann Cylinders Systems Gmbh, Germany inspected and certified by Lloyd's or TUV or any other authority as per approved drawings.

B. VALVES

1. Indian origin

LPG valves and regulators manufactured to IS:8776, IS:8737, IS:9798, multifunction valve to IS:15100, valves in respect of medical gas cylinder to IS:3745 and valves in respect of cylinders used with breathing apparatus to IS:7302, certified by Bureau of Indian Standards and approved by the Chief Controller.

Valves in respect of industrial gas cylinder including CNG manufactured to IS:3224 and certified by BIS or an inspection agency approved by Chief Controller. 2. Italian origin CNG valve Model 119, 198/1, 120, VAL-B-305, VAL-B-323, VAL-B-315 manufactured by Emer s.r.l., Italy inspected and certified by Bureau Veritas.

Multi-function valve Model MULTIVAL VOLA BRC EUROPA manufactured by M.T.M. s.r.l., Italy, Model No. Emer s.r.l. tipo E-67-01, EMER LANDI RENZO

manufactured by Emer, s.r.l., Italy, Model MV-305 manufactured by Lovato S.p.A., Italy. Model OMVL, Tomesetto Achile, Borel GPL Grenoble, G.M.S. manufactured by Tomesetto Achile, Italy to specification ECE- R-67-01 with set pressure 2.2 MPa as per approved drawings.

SCHEDULE 2

SCHEDULE 2

[See Rule 3(2)]

SCHEDULE 2

[See Rule 3(2)]

(A) The test and inspection certificates to be obtained from the Inspecting Authority in respect of cylinders manufactured in accordance with the approved design and specification or Code shall include the following particulars, namely:

1. Place and date of inspection

2. Gas cylinders for..... gas.

3. Manufactured by.....

4. Location at.....

5. Manufactured for.....

6. Location for.....

7. Quantity.....

8. Serial Nos. from..... to.....inclusive

9. Specification to which the cylinders are manufactured.....

10. Size.....mm. Outside diameter mm.....long

11. Minimum wall thickness.....

12. Neck and threading as per.....specification.

13. Process of manufacture (whether spun type, or billet pierced or welded)

14. Method of heat treatment.....

15. Design working pressure in kg/cm2 at 15 C or 65 C as the case may be

16. Hydrostatic test/hydrostatic stretch test pressure in kg/cm2

17. Record of Hydrostatic test/Hydrostatic stretch test with date of test, in respect of each cylinder.....

18. Pneumatic test pressure in kg/cm2.....

19. Result of pneumatic test.....

20. Tare weight and water capacity of each cylinder.....

21. Record of chemical analysis and physical properties of the steel used in the manufacture of cylinders.....

22. Manufacturer's identification marks.....

23. Inspector's mark.....

24. Markings stamped on the shoulder of the cylinders.....

25. Dated signature with stamp of the inspecting authority.....

(B) The test and inspection certificates to be obtained from the Inspecting Authority in respect of valves manufactured in accordance with the approved design and specification or Code shall include the following particulars, namely :

1. Manufactured by.....

2. Location at.....

3. Manufactured for.....

4. Location at.....

5. Quantity.....

6. Specification.....

7. Results of inspection

(a) Valve inlet connection.....

(b) Valve outlet connection.....

(c) Valve outlet number.....

(d) Hydraulic Pressure Test.....

(e) Pneumatic Proof Test.....

(f) Tensile strength.....

(g) Elongation per cent.....

(h) Impact strength.....

(i) Quantity offered for inspection.....

(j) Quantity passed.....

(k) Quantity rejected and reasons for rejection.....

8. Date and signature with stamp of the inspecting authority.....

SCHEDULE 3

Particulars to be submitted by person desiring to fabricate cylinder, valves and other fittings

SCHEDULE 3

[See Rule 3(3)]

Particulars to be submitted by person desiring to fabricate cylinder, valves and other fittings.

1. Applicant's name and full address with telephone No.(s), and E-mail address.

2. Whether the applicant has manufactured any pressure vessel/cylinder/container/valve, if yes

(i) Date from which such container/valves were manufactured.

(ii) For whom the container/valves were fabricated and their approximate numbers.

(iii) Details of the containers/valves manufactured.

3. Specification/Codes proposed to be adopted for the manufacture of cylinder/containers/valves.

4. Organisational set up of the applicant with specific reference to qualifications and experience of the personnel engaged in the manufacture of cylinder/container/valves.

5. Organisational set up of the inspecting personnel engaged by the applicant.

6. Process of manufacture of cylinders/containers/valves, beginning with raw material and ending with the finished cylinder/containers/valves.

7. Quality control checks/tests carried out at each stage of manufacture of cylinders/container/valves.

8. (i) Details of the equipment installed for chemical analysis and mechanical tests, (ii) Details of templates/gauges provided to check/test.

(iii) Steps taken to check the accuracy of testing and checking equipment and frequency of such checking.

9. Equipment available for carrying out non-destructive examination such as Gama Ray/X-ray equipment, viewer, etc. for radiographic examination, ultrasonic flaw detector, equipment for dye penetration and magnetic particle tests, etc.

10. List of machinery provided for manufacturing cylinders/containers/valves.

11. Name and address of the independent inspecting authority.

12. Records and certificates of tests:

(i) Pro forma of records for various tests carried out by the inspecting and certifying organisation, and

(ii) Pro forma of test and inspection certificate issued by the independent inspecting authority.

13. Whether the manufacturing unit has been certified under ISO or equivalent certification

(if so, documentary evidence thereof to be attached).

14. List of relevant codes, specifications and technical literature available.

Signature.....

Name and designation

Date :

Place :

SCHEDULE 4
SCHEDULE 4

[See Rule 35]

SCHEDULE 4

[See Rule 35]

A. FACILITIES REQUIRED FOR CYLINDER TESTING STATIONS

1. Management:

1.1 General Requirements. Personnel, equipments, inspection procedures, recording and organisation shall be adequate and test station will be operated with safe operating conditions. The procedures and testing shall ensure that cylinders, which fail to meet the requirements and intent of these rules, are not returned into normal service. All personnel shall fully recognize their individual responsibilities and that the minimum inspectional requirement shall not be lowered for any reason whatsoever.

1.2 Manager.The manager responsible for the working of the test station shall be properly qualified; his qualifications shall include training on the dangers associated with gas cylinders, purpose of inspection, test methods, equipment, test requirements, and recording of test results, and he shall have appropriate technical qualification in Mechanical or Chemical Engineering. He shall also be conversant with the codes, specifications and/or regulations applying to the cylinders for which the test station is approved.

1.3 Supervisor.The Supervisor shall possess the following qualifications, namely

(i) have at least two years' experience in the examination of gas cylinder; (ii) be at least 21 years of age;

(iii) be conversant with these rules, codes, specifications and/or regulations applying to the cylinders for which the test station is approved.

1.4 Operator.Personnel conducting inspections and tests shall have qualifications and experience suitable for the work on which they are engaged. They shall be trained to understand the dangers associated with gas cylinders and the purpose and method of inspection.

2. Equipment

2.1 Type of equipment.The test station shall have adequate equipment to carry out inspection and testing of cylinders as required under these rules. It shall contain

(i) One set of these rules, codes, specifications and/or regulations applying to the cylinders, which the test station is authorised to test. All these rules, codes, specifications and/or regulations shall be maintained with all current amendments.

(ii) Hydrostatic test apparatus comprising pressurizing equipment, pressure gauge and volumetric measuring equipment in accordance with IS:5844-Hydrostatic stretch testing of compressed gas cylinders. The apparatus shall be equipped with at least two 15 cm diameter (minimum) working pressure gauges.

(iii) Non-destructive testing facilities like ultrasonic flaw detection, acoustic emission techniques, etc. for detection of stress corrosion cracks developed during the service.

(iv) Dead-weight pressure gauge tester of appropriate pressure range or a master pressure gauge of 15 cm minimum diameter covering the appropriate pressure range.

(v) Horoscope, extra-low voltage lamps to permit adequate internal viewing of cylinders and other lamps necessary for close examination of external surfaces.

(vi) Straightedges, templates, miscellaneous tool and gauges for measurement, (vii) Weighing equipment, where applicable.

(viii) One set of standard test weights for the weighing machine, stamped by the relevant statutory authority.

(ix) Adequate cylinder handling equipment. (x) Adequate cylinder draining equipment, (xi) Facilities for internal drying of cylinders, (xii) Marking and stamping equipment.

2.2 Accuracy.The accuracy of equipment shall be as follows:

(i) Hydrostatic test apparatus in accordance with IS:5844. Volumetric equipment shall be capable of measuring a permanent change in volume of the cylinder under test of the order of 1/20,000 of its total capacity.

(ii) Weighing equipment error not greater than 0.1 per cent, (iii) Working pressure gauge error not greater than 1 per cent of the pressure.

(iv) Master pressure gauge error not greater than 0.25 per cent of the full-scale deflection.

2.3 Calibration.Calibration of equipment shall be carried out at periods not exceeding the following

(i) Working pressure gauge 1 month.

(ii) Master pressure gauge 6 months.

(iii) Weighing equipment checked by test weight daily when in service, (iv) Test weights 2 years.

3. Working conditions. Working conditions for the test stations shall be conducive to accurate and safe inspection and testing of gas cylinders. The test station shall comply with the following conditions:

(i) It shall have good lighting to permit ready external examination of gas cylinders, preferably including natural lighting.

(ii) It shall have adequate ventilation to remove residual gases from cylinders, (iii) It shall provide sufficient space to permit safe working, (iv) It shall be maintained in a clean dry condition.

4. Quality management system. The quality management system of a cylinder testing station for seamless steel/composite cylinder shall be got duly certified under ISO Standards from Bureau of Indian Standards or any other internationally reputed agency.

B. TESTING OF CYLINDERS

1. Condition of cylinders for test. Cylinders forwarded to the test station for testing shall have first been emptied of their contents and then labelled as 'empty'. Irrespective of this label all cylinders other than cylinders at the manufacturers works shall be presumed to contain gas under pressure and the following precautions shall accordingly be observed:

(i) The cylinder contents shall be related in a safe manner keeping in mind dangers associated with the nature of the gas in the cylinder. Cylinders, which contain or may have been contaminated by poisonous or obnoxious substances,

shall be emptied only by test stations properly equipped and experienced to handle the particular gas/substance. Such cylinders shall be clearly labelled that they have been contaminated.

(ii) The valve shall be opened and if no gas escapes and the port is not visibly blocked, a charge of low-pressure nitrogen or other inert gas shall be blown into the valve outlet. Discharge of gas after removal of the nitrogen supply indicates that the cylinder is empty. When no gas discharges the valves shall be treated as "obstructed". Where a cylinder has contained poisonous or obnoxious substances, and the valve is suspected of being obstructed, the gas shall be released within an approved appliance and the valves shall be removed in such a manner that the gas escapes without danger to the operator.

(iii) Should the valve be obstructed the contents of the cylinder shall be released in safe manner as stated in (i) above/Work on cylinders containing combustible gases shall be carried out in the open air.

2. Inspection of cylinders before carrying out hydrostatic I hydrostatic stretch test.

(1) Prior to carrying out hydrostatic/hydrostatic stretch test, every cylinder shall be thoroughly cleaned by steam cleaning or washing out with approved solvents. Where the interior of the cylinder is affected by rust or other foreign matter it shall be cleaned by one of the following methods, namely:

(a) Approved blasting, rotary wire brushing;

(b) Burn out treatment carried out in a furnace at a temperature not exceeding 300 C for a period by steam cleaning or washing with approved solvents.

(2) The cylinders after cleaning shall be visually examined externally and as far as practicable internally for surface defect in accordance with the IS:5845, IS:8451 or IS:13258 as the case may be, or any other Code approved in writing by the Chief Controller.

3. Hydrostatic/hydrostatic stretch test/proof pressure test.

(1) For cylinders used for permanent gases, high pressure liquefiable gases and all toxic and corrosive gases:

(i) The cylinders shall be subjected to hydrostatic stretch test in accordance with IS:5844. The test pressure applied to the cylinder shall be retained for a period of not less than 30 seconds.

(ii) The permanent stretch suffered by the cylinder due to application of test pressure shall not exceed the following limits, namely:

(a) In the case of cylinder below 20 litres water capacity for non-corrosive gases	10% of the total stretch suffered during the test
(b) In other cases	10% of the total stretch suffered during the test or 1/5000th of the original volume of the

(b) In other cases	cylinder, whichever is less.

(iii) Any reduction in pressure noticed during the retention of 30 seconds or any leakage, visible bulge or deformation should be treated as case of failure in the test.

(2) For cylinders for low pressure non-corrosive liquefiable gases:

(i) The cylinder shall be subjected to hydrostatic test in accordance with IS:5844 by non-jacket method except that the volumetric changes during the test need not be measured.

(ii) The test pressure shall be retained for a period of not less than 30 seconds. Any reduction in pressure noticed during this retention period or any leakage, visible bulge or deformation shall be treated as case of failure in the test.

(3) As soon as the test is completed, the cylinder shall be thoroughly dried internally and shall be clearly stamped on the neck and with marks and figures indicating the person by whom the test has been carried out and the date of test. Code mark of the person by whom the test has been carried out shall be registered with the Chief Controller.

4. Any cylinder which.fails to pass periodic examination or test or which loses in its tare weight by over 5 per cent or which for any other defect is found to be unsafe for use and which cannot be repaired in accordance with Rules 11 & 12 shall be reported to the owner of the cylinder and shall be destroyed by rendering the cylinder unusable as provided under Rule 36.

5. Records of test. Full record of cylinders examined and tested at any testing station shall be maintained giving the following particulars, namely:

(a) Name of the manufacturer and the owner of the cylinder.

(b) Rotation Number.

(c) The specification to which the cylinder conforms.

(d) Date of original hydrostatic/hydrostatic stretch test.

(e) Test reports and certificates furnished by the manufacturer, if available.

(f) Test pressure.

(g) Maximum working pressure,

(h) Water capacity.

(i) Tare weight.

(j) Variation, if any, in the tare weight marked on the cylinder and actual tare weight.

(k) Condition of cylinder shell.

(l) Name of gas.

(m) Type of valve fitted, and

(n) Remarks, if any.

SCHEDULE 5

All fees shall be paid in the manner prescribed in sub-rule (2) of R.65

SCHEDULE 6

TRANSPORT OF CYLINDERS

SCHEDULE 6

[See Rule 20]

TRANSPORT OF CYLINDERS

(1) Transport of cylinders by vehicles.

(a) Cylinders filled with any compressed gas shall not be transported by a bicycle or any other two-wheeled mechanically propelled vehicle.

(b) Cylinders shall be so transported as not to project in the horizontal plane beyond the sides or ends of the vehicle by which they are transported.

(c) There shall be no sharp projections on the inside of the vehicle.

(d) Cylinders shall be adequately secured to prevent their falling-off the vehicle and being subjected to rough handling, excessive shocks or local stresses.

(e) Cylinders transported in vehicles shall be blocked or braced and be so secured to prevent movement, striking each other or falling down.

(f) Cylinders filled with any compressed gas shall not be transported along with any other article of a highly flammable or corrosive nature.

(2) Restriction on transport.

(a) Cylinders containing flammable gases shall not be transported along with the cylinders containing any other type of compressed gas.

(b) Cylinders containing toxic or corrosive gas shall not be transported along with foodstuffs.

Notwithstanding anything contained in clause (a) above, DA cylinders not exceeding 25 in numbers may be transported along with non-toxic non-flammable gases taking due precautions.

3. Loading and unloading for transport.

(a) No lifting magnet shall be used in loading or unloading of cylinders filled with any compressed gas.

(b) Where any such operation is carried on by means of a crane or a fork-lift truck, a proper cradle with chains or wire rope slings shall be used.

4. Protection of valves during transport.

(a) Every cylinder containing compressed gas shall, when transported, have its valve protected against damage in the manner provided in sub-rules (b) and (c) unless it is securely packed in a box or crate.

(b) Where the design of the cylinder does not provide for the valve lying wholly below the level of the body of the cylinder, a stout metal cap, metal cover or a protective metal ring or grill of a design approved by the Chief Controller shall be provided, the design being such that the cap or cover or ring or grill is nowhere in close proximity to any part of the valve or valve body.

(c) Where metal caps or metal covers are provided, to protect valves fitted to cylinder other than those containing highly toxic gases like Hydrogen cyanide, Phosgene, Cyanogen, Cyanogen chloride, it shall be provided with a vent of such size so as to prevent any gas pressure inside the cap or covers.

(d) Cylinders containing highly toxic gases like Hydrogen cyanide, Phosgene, Cyanogen, Cyanogen chloride gases, shall have their valves protected with gas-tight metal caps or covers.

(e) Nothing in sub-rules (a), (b) and (c) shall apply to cylinders containing oxygen or nitrous oxide for medical purpose having water capacity not exceeding 5 litres.

5. Leaky cylinders.

(a) No person shall tender or transport any leaky cylinder.

(b) Any cylinder containing a flammable or toxic gas, which develops a leak during transport shall promptly be removed to an isolated open place away from any source of ignition and the person responsible for transporation shall immediately contact the filler or the consignor as the case may be, for necessary advice.