




Webinar Keselamatan Sistem Gas Berpaip 25 Ogos 2021

Oleh: JABATAN KAWAL SELIA KESELAMATAN





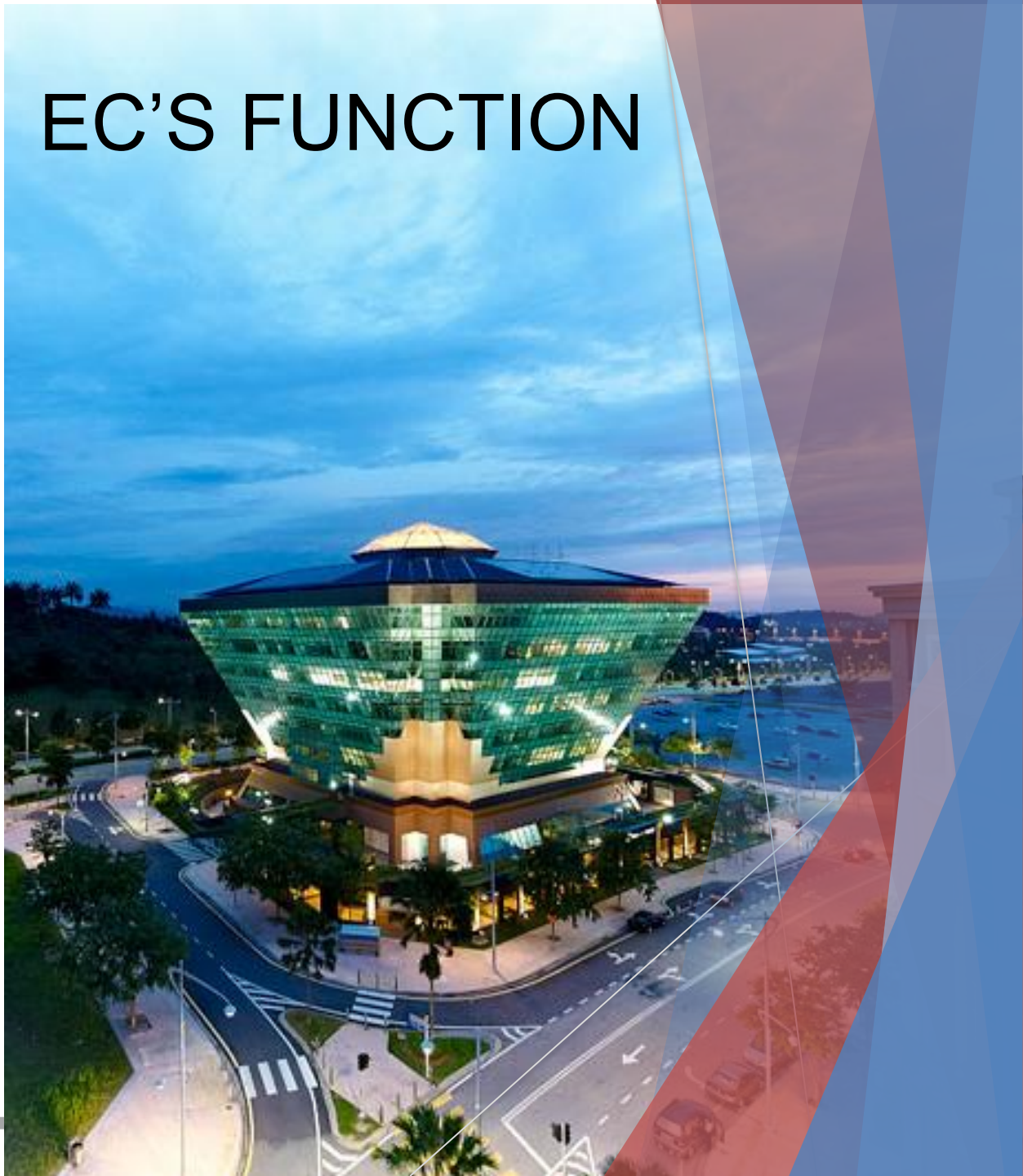
Guidelines on
**GAS PIPING SYSTEMS AT
LAUNDERETTES AND SIMILAR
INSTALLATIONS**



By:
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Electrical/Gas Development Safety Unit
Safety Regulation Department
Energy Commission

EC'S FUNCTION

Energy
Commission
(Suruhanjaya
Tenaga)



FUNCTIONS & DUTIES OF THE ENERGY COMMISSION

A statutory body (under MESTECC) responsible for regulating the energy sector, specifically the electricity and piped gas supply industries, in Peninsular Malaysia and Sabah.

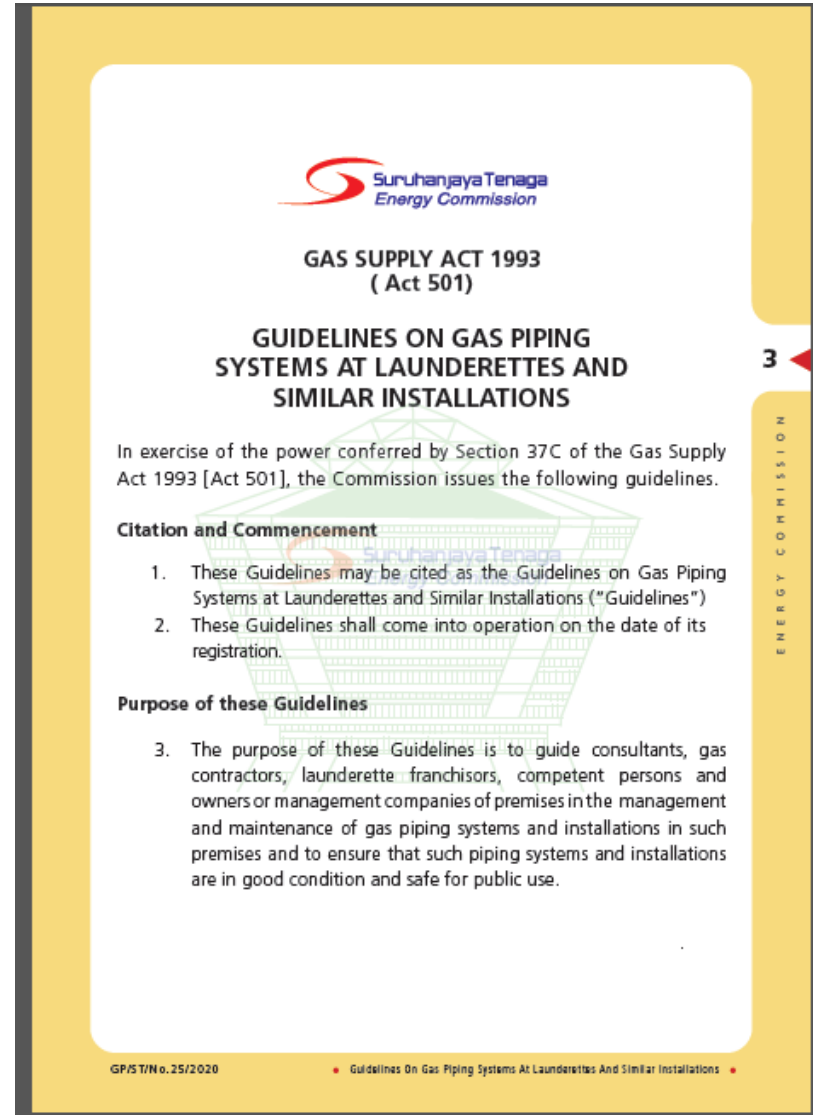
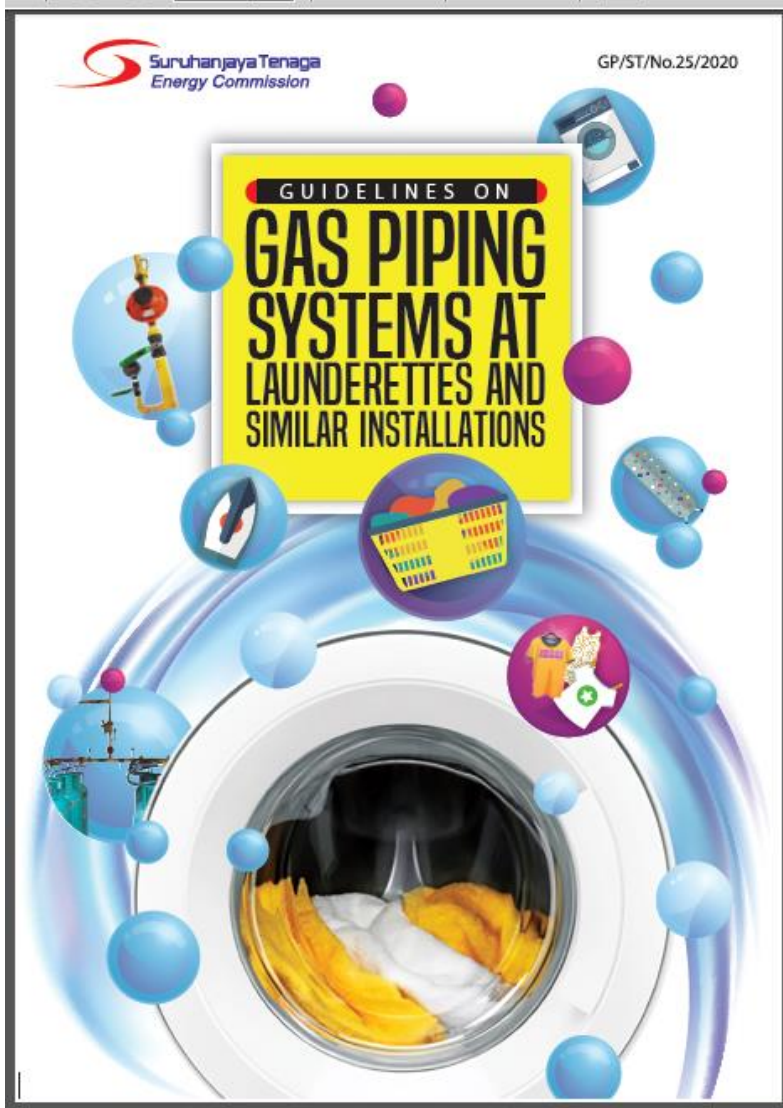
**Electricity
Supply Act
1990 [Act 447]**

**Gas Supply
Act 1993
[Act 501]**

**Electricity
Regulations
1994**

**Gas Supply
Regulations
1997**

PENGENALAN – BUKU GARIS PANDUAN



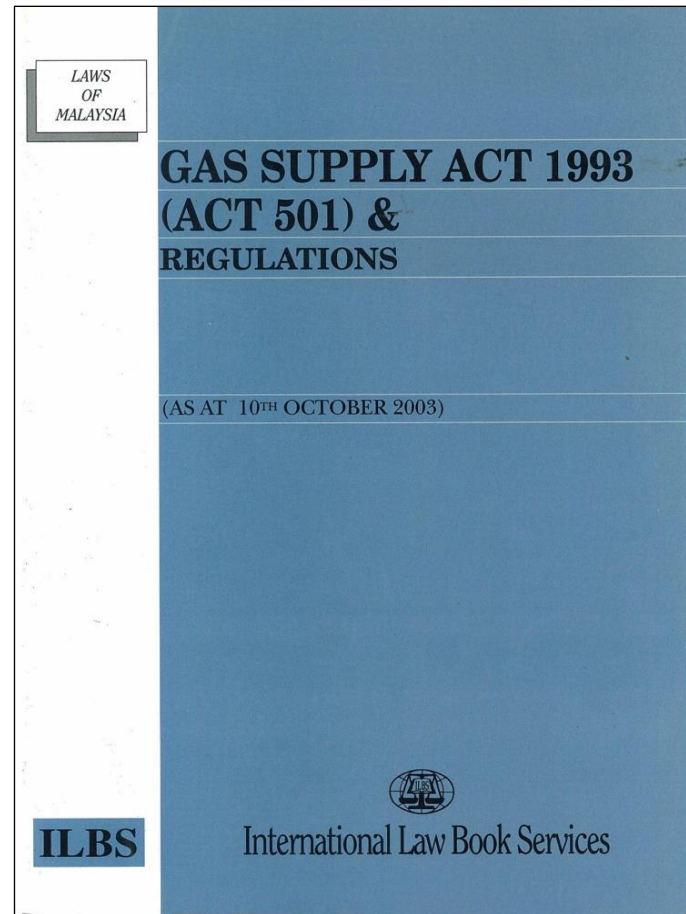
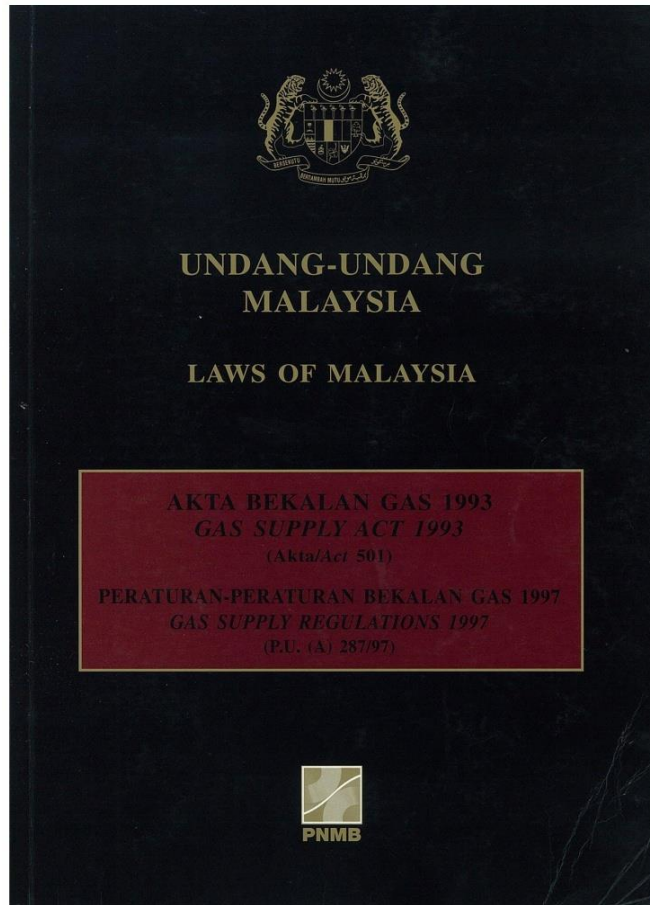
In exercise of the power – Section 37C of the GSA Act 1993

1. OBJEKTIF

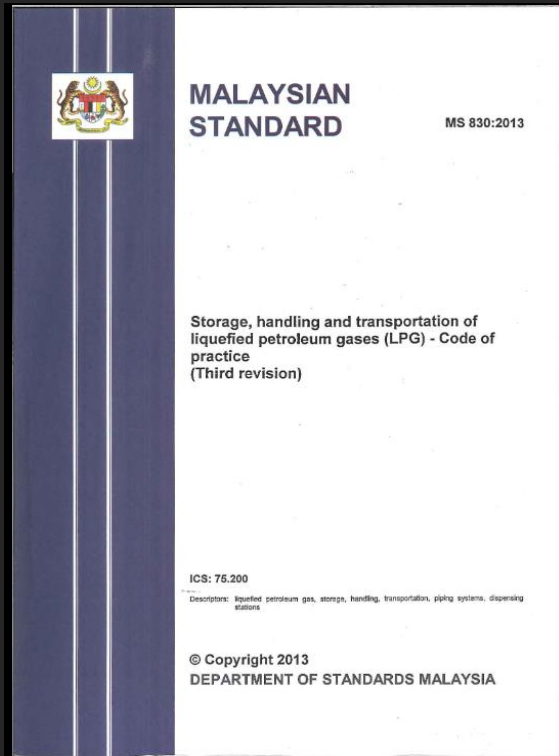
1. Memastikan pemasangan gas di premis dobi dan premis yang menggunakan pemasangan gas yang serupa dengannya mematuhi kehendak Akta dan peraturan-peraturan yang berkaitan serta piawaian Malaysian Standards MS 830 & MS 930.
2. Untuk mengurangkan risiko yang berkaitan dengan pemasangan gas di premis dobi dan premis yang menggunakan pemasangan yang serupa.



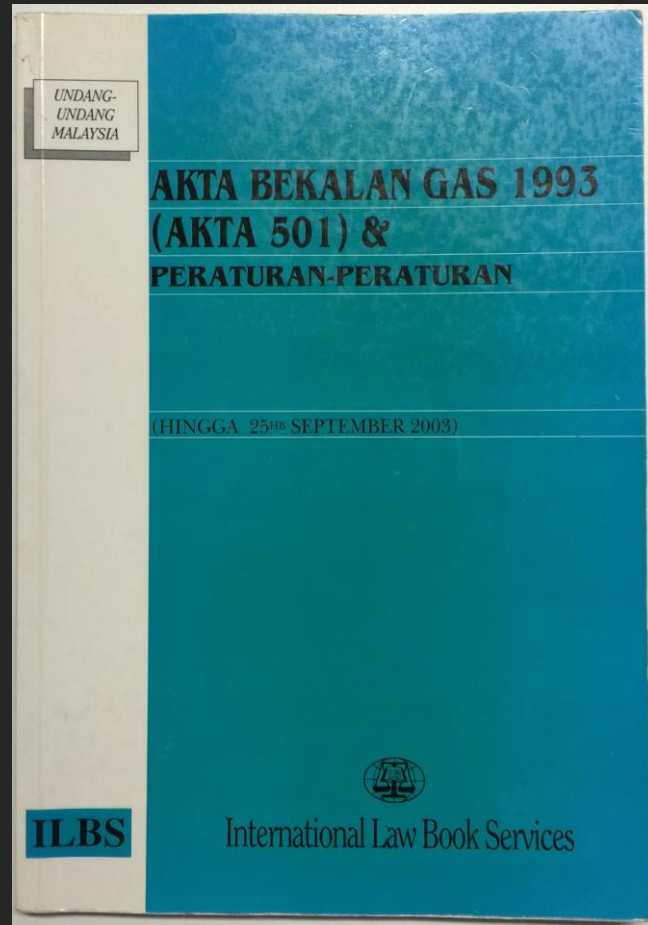
KESELAMATAN PENGENDALIAN DAN PENGOPERASIAN SISTEM
PEPASANGAN GAS DAN PERKAKAS GAS.



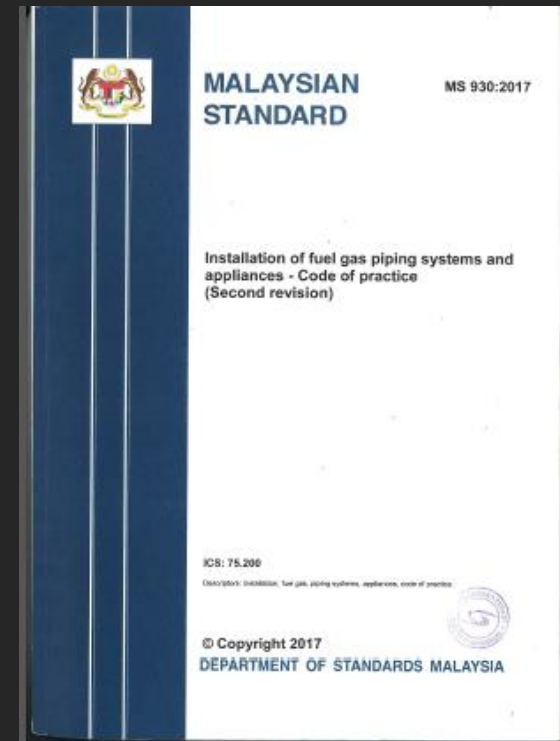
MAIN REFERENCES



**MS 830
(LPG storage)**



**Gas Supply
Act & Regulations**



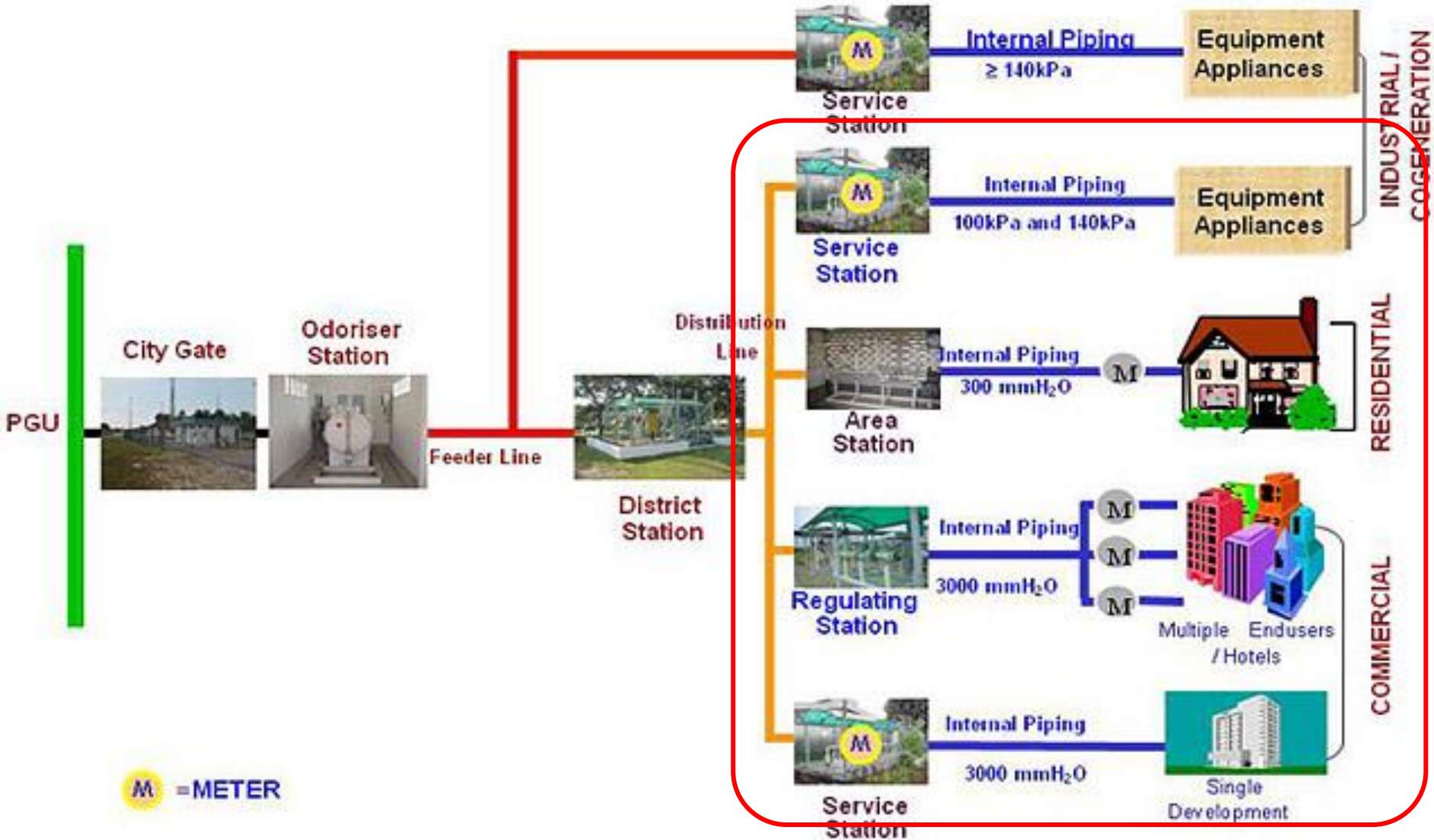
**MS 930
(Piping)**

GAS SUPPLY CONCEPT

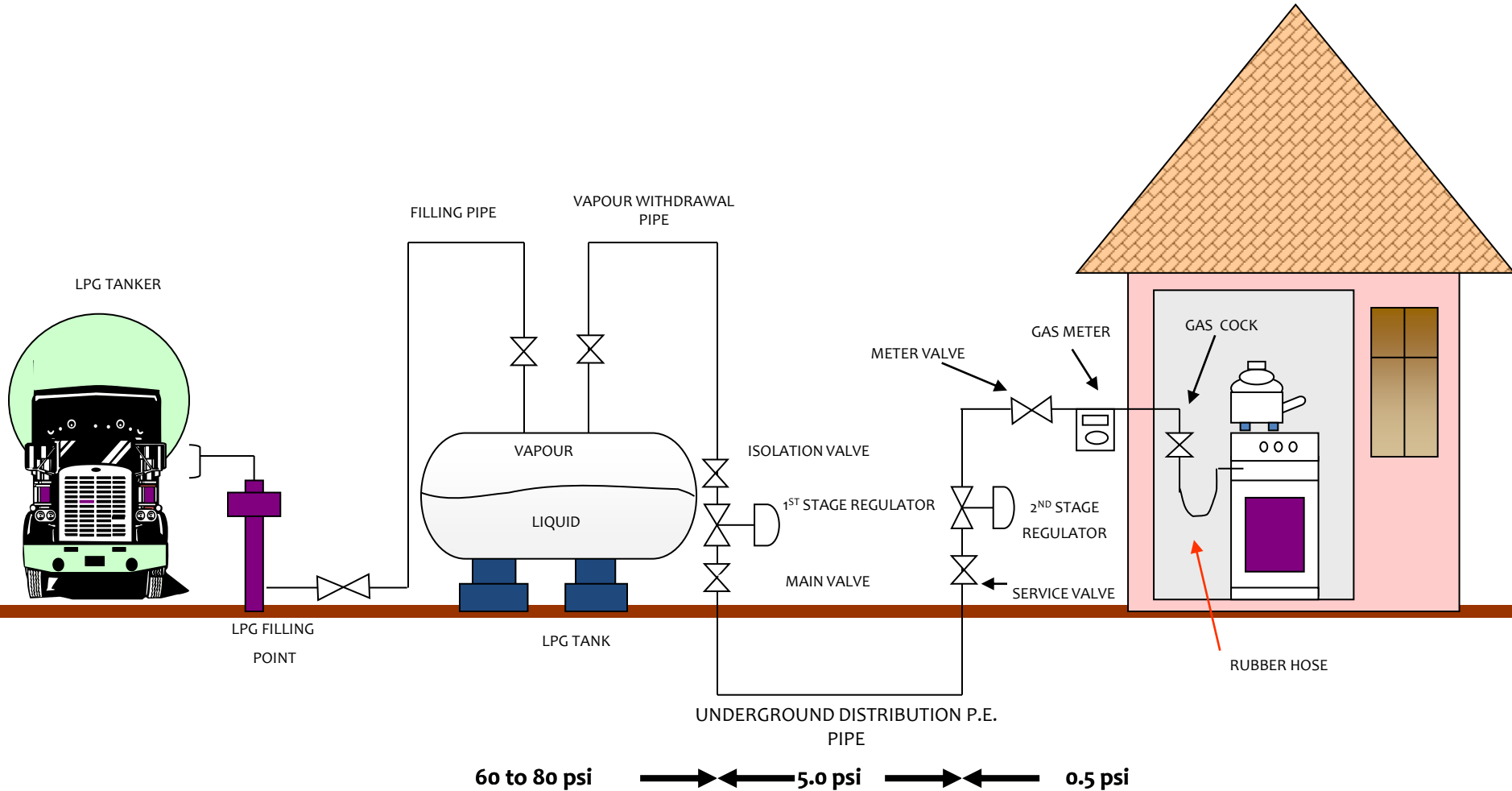
Energy
Commission
(Suruhanjaya
Tenaga)



SUPPLY OF NATURAL GAS BY PIPING SYSTEM



LIQUEFIED PETROLEUM GAS (LPG) SUPPLY SYSTEM (Bulk Tank System)



LIQUEFIED PETROLEUM GAS (LPG) SUPPLY SYSTEM (WITH MANIFOLDED CYLINDERS STORAGE)

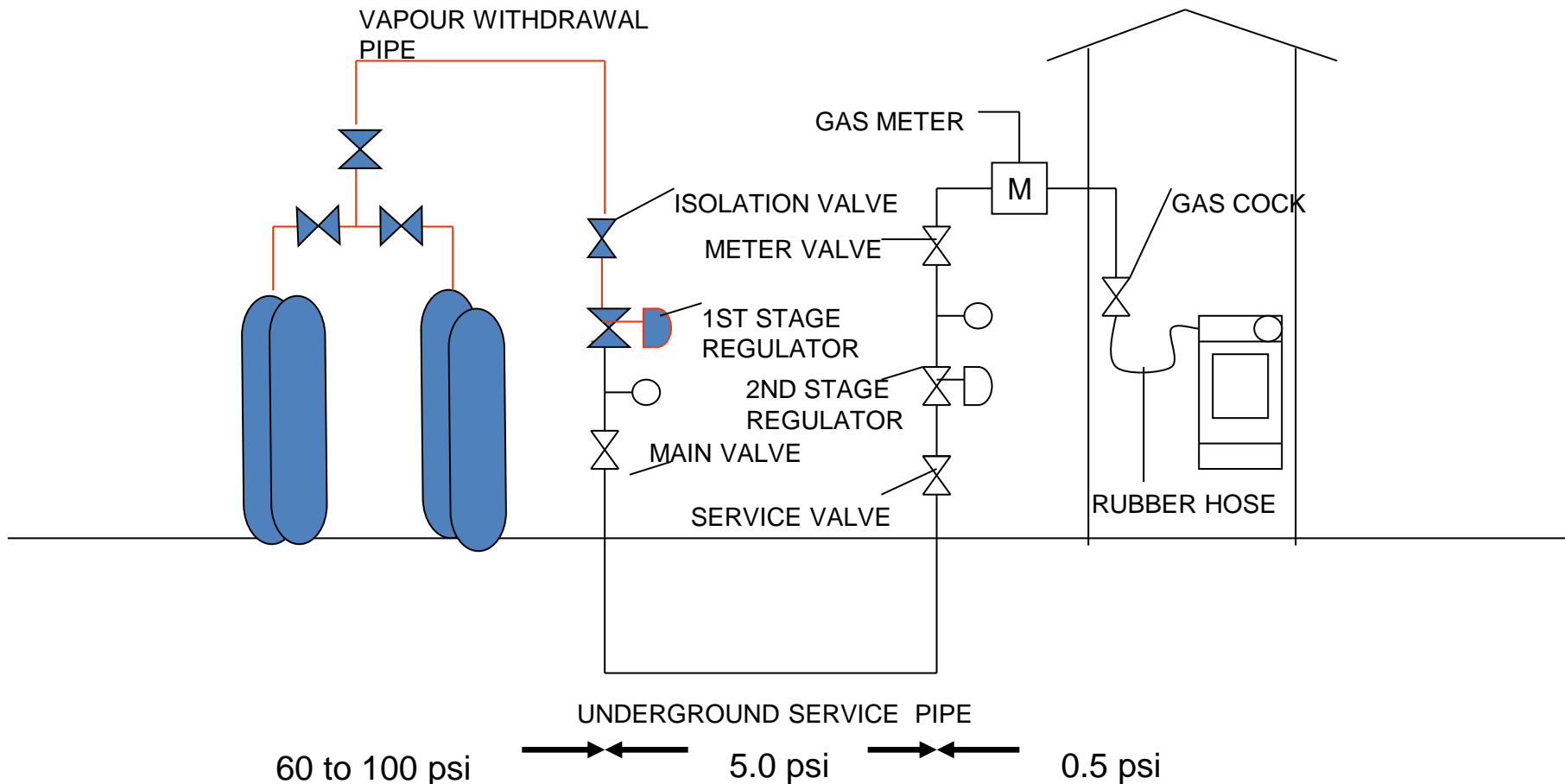


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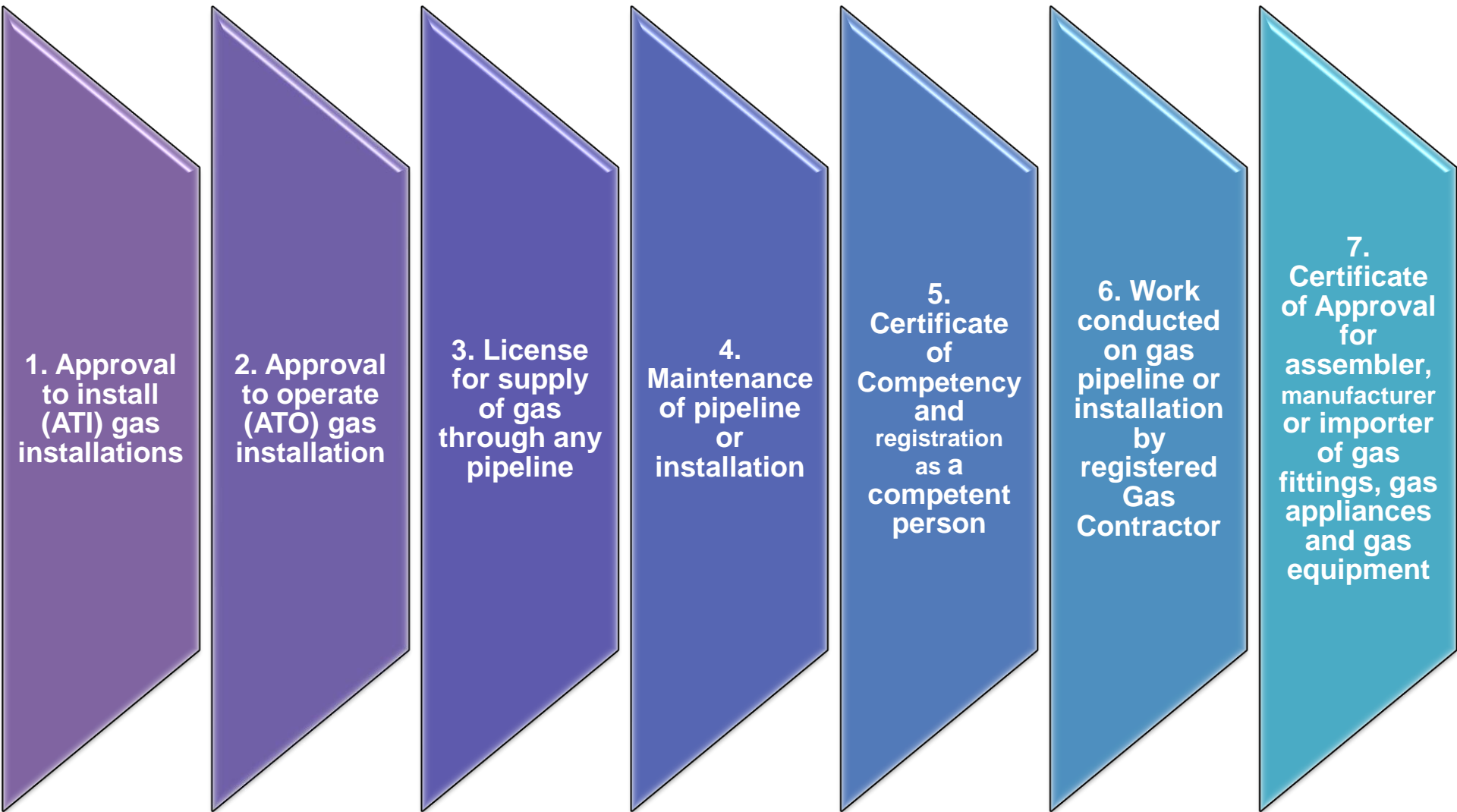
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- 6.0 Technical Requirements
- 7.0 Typical Layout Diagram for Launderette
- 8.0 Compliant and Non-Compliant Installations
- 9.0 Effect of Contravention or Non-Compliance
- 10.0 Contact Information

5.0 Regulatory Requirements

- 1.0 Work - carried out by contractor register with EC
- 2.0 The installation – ATI
(Regulation 15, GSR1997)
- 3.0 Installation Completed – Form B
(Regulation 17, GSR1997)
- 3.0 Installation tested – Form C
(Sub-regulation 18(2), GSR1997)
- 4.0 Before commissioning - Installation – ATO
(Sub-regulation), GSR1997)
- 5.0 The Installation – Apply for License
(Section 11, GSA 1993)

**By Gas
Contractor**

GOVERNING MECHANISM



KELULUSAN UNTUK MENGENDALI (Approval To Operate - ATO)

Keperluan:

- Apabila siap sesuatu kerja pada pemasangan gas yang baru. Hantar Borang B (PERAKUAN SIAP) dan Borang C (PERAKUAN UJIAN).

GUIDELINES ON GAS PIPING SYSTEMS AT LAUNDERETTES AND SIMILAR INSTALLATIONS

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- 8.0 Compliant and Non-Compliant Installations
- 9.0 Effect of Contravention or Non-Compliance
- 10.0 Contact Information

6.0 Technical Requirements

6.1 Installation Requirements

6.2 Piping requirements

6.3 LPG Storage Requirements

6.4 Maintenance Requirements

6.5 Other Requirements

6.0 Technical Requirements

6.1 Installation Requirements

- ❑ **By gas contractor register with ST**
- ❑ **Comply with MS 830 and MS 930**
- ❑ **Hoses shall not be used to connect a gas appliance to LPG cylinder, **exception** for premises utilising NOT MORE than two (2) appliances which are manned at all times during operation.**
- ❑ **LPG cylinders not exceed two number , one cylinder to one appliance**
- ❑ **LPG storage in used not more than 12 unit of 50 kg LPG cylinder**
- ❑ **Gas Detector shall be connected with safety alarm and link to an automatic shut-off device.**

Gas detector connected to safety Alarm



6.0 Technical Requirements

6.2 Piping Requirements

- ❑ Fulfill by gas contractor
- ❑ **Piping Material** - Carbon steel complying with ASTM A 106 or **API 5L Grade B**
- ❑ Min, **Sch 40** of API 5L Grade B – seamless pipe
- ❑ Piping shall not be contact with any substance or material may create spark
- ❑ Installations shall comply – Table 13 Sec 14 MS 830:2013.

Electrical Equipment classified area

Table 13 . MS 830:2013

MS 830-2013

ATTACHMENT 1

Table 13. Electrical Equipment Classified Areas

Location	Burning Velocity, (m/s)	Area Classification
Storage containers other than cylinders	a) Within 1.5 m in all directions from the container connections or shell.	Zone 1
	b) Beyond 1.5 m but within 4.5 m in all directions from the container connections or shell.	Zone 2
Relief valve discharge	a) Within direct path of discharge	Fixed electrical equipment shall not be installed
	b) Within 1.5 m in all directions from point of discharge.	Zone 1
	c) Beyond 1.5 m but within 4.5 m in all directions from point of discharge	Zone 2
Gauge vent openings	a) Within 1.5 m in all directions from point of discharge	Zone 1
	b) Beyond 1.5 m within 4.5 m in all directions from point of discharge	Zone 2
Tank vehicle loading and unloading (see note 1)	a) Within 1.5 m in all directions from a point where connections are regularly made or disconnected for product transfer.	Zone 1
	b) Beyond 1.5 m but within 4.5 m in all directions from a point where connections are regularly made or disconnected and within the cylindrical volume between the horizontal equator of the sphere and ground (see Figure 11)	Zone 2
Pumps, compressors, gas-air mixers and vaporisers (other than direct fired):	a) Within 1.5 m in all directions.	Zone 1
	i) Outdoors in open air, at or aboveground level	b) Beyond 1.5 m but within 4.5 m in all directions from the equipment and within the cylindrical volume between the horizontal equator of the sphere and ground (see Figure 11)

6.0 Technical Requirements

6.3 LPG Storage Requirements

- Fulfill by gas contractor / owner
- Shall not be located** at main entrance and basement of any building
- Shall be located at area with adequate ventilation
- Have emergency shut-off valve equipped with pullout cable
- Shall be a Zone 2 area
- Shall be **protect with 4-hour fire-rated wall**

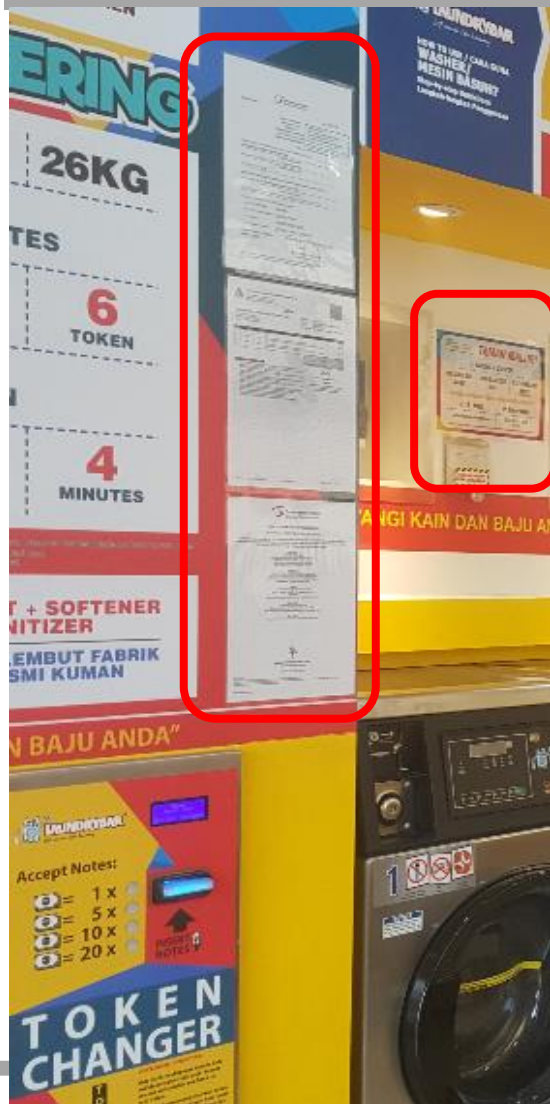
6.0 Technical Requirements

6.5 Other Requirements

- ❑ Fulfill by owner of the piping system
- ❑ All **LPG cylinder** used shall be assigned for **commercial** used
- ❑ Adequate warning and evacuation sign shall display at premises to facilitate the public
- ❑ **Contact number of responsible person** and other emergency contact number shall be displayed

6.0 Technical Requirements

6.5 Other Requirements



GUIDELINES ON GAS PIPING SYSTEMS AT LAUNDERETTES AND SIMILAR INSTALLATIONS

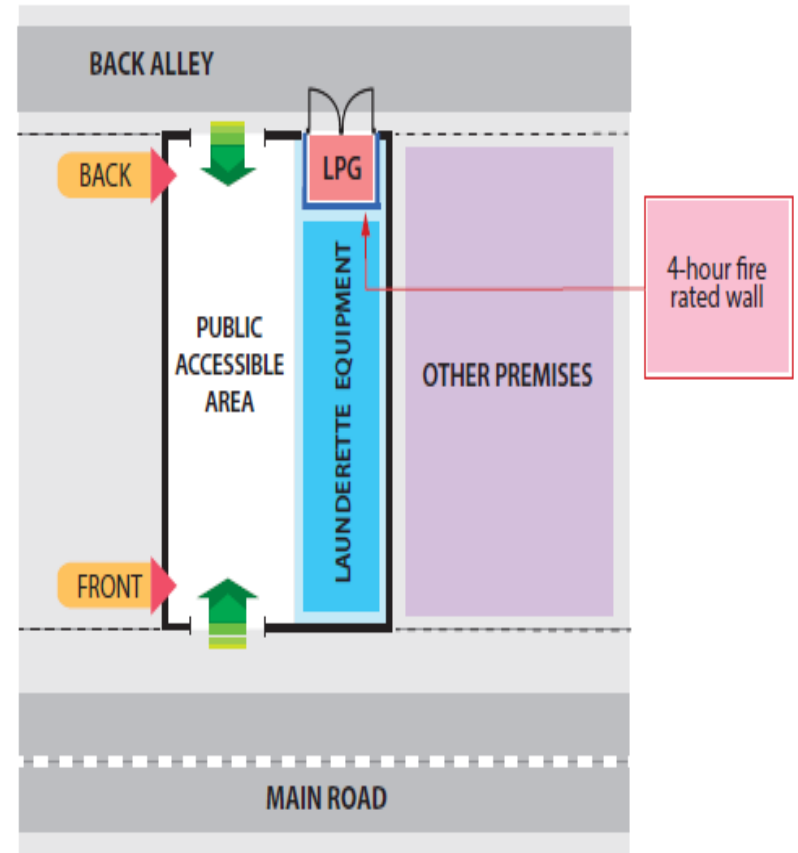
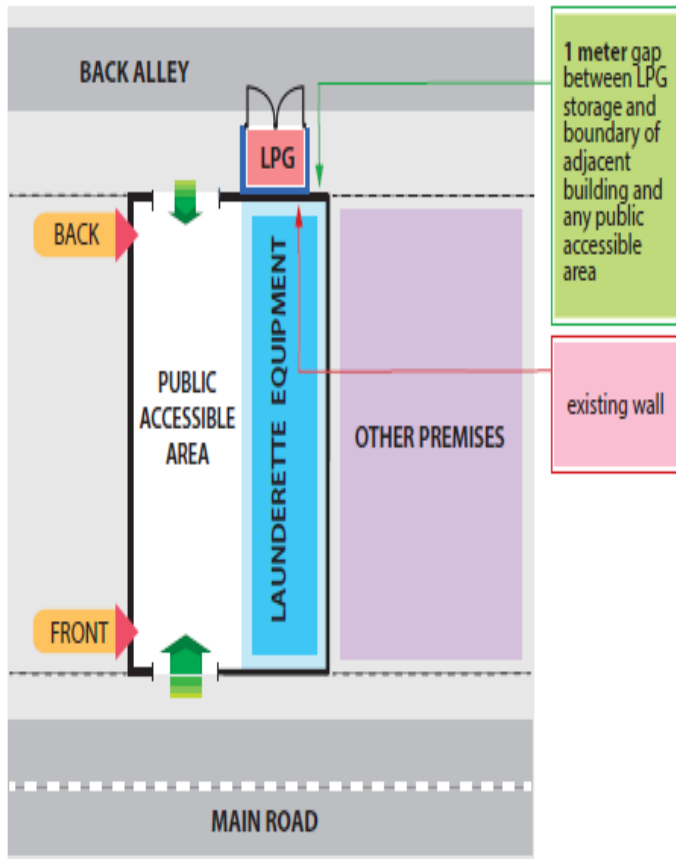
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Launderettes Layout Plan

TYPE A - LPG STORAGE PLACED OUTSIDE OF LAUNDERETTE PREMISES

TYPE B - LPG STORAGE PLACED INSIDE OF LAUNDERETTE PREMISES



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Compliant



(5.6) - ATO / LICENCE SHALL BE DISPLAY AT A VISIBLE AND SUITABLE LOCATION WITHIN PREMISES

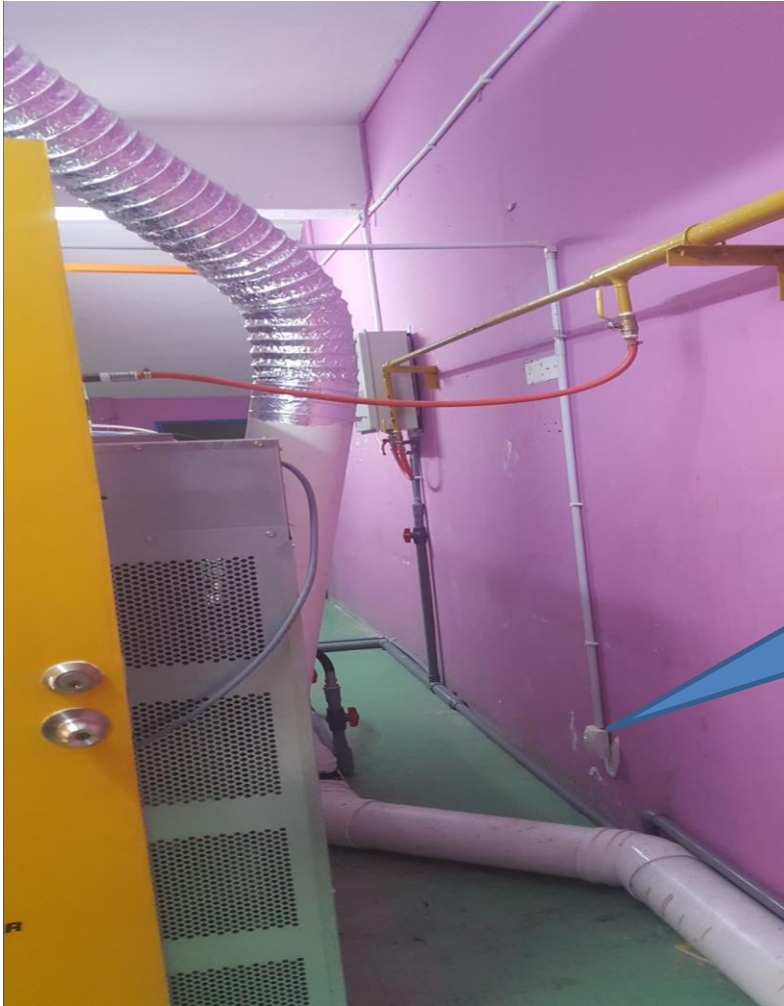
CONTACT NUMBER FOR EMERGENCY PURPOSED

Compliant



[6.1 (f)] - SAFETY ALARM CONNECTED FROM GAS DETECTOR AND LINKED TO AN AUTOMATIC SHUT-OFF DEVICE

Compliant



[6.1 (e)] - GAS
DETECTOR SHALL BE
INSTALLED WITHIN
VICINITY OF ALL GAS
APPLIANCE

Compliant

- [6.1 (e)] - GAS DETECTOR SHALL BE INSTALLED WITHIN VICINITY OF ALL GAS APPLIANCE

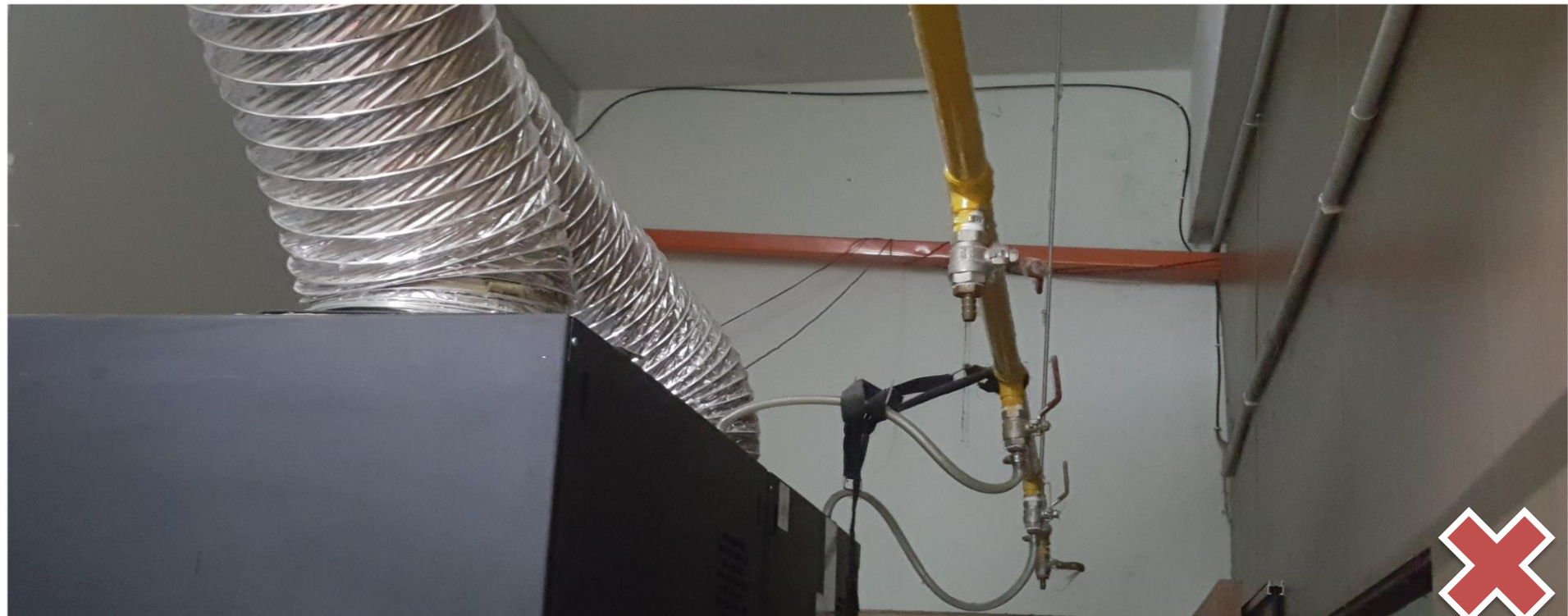


Compliant

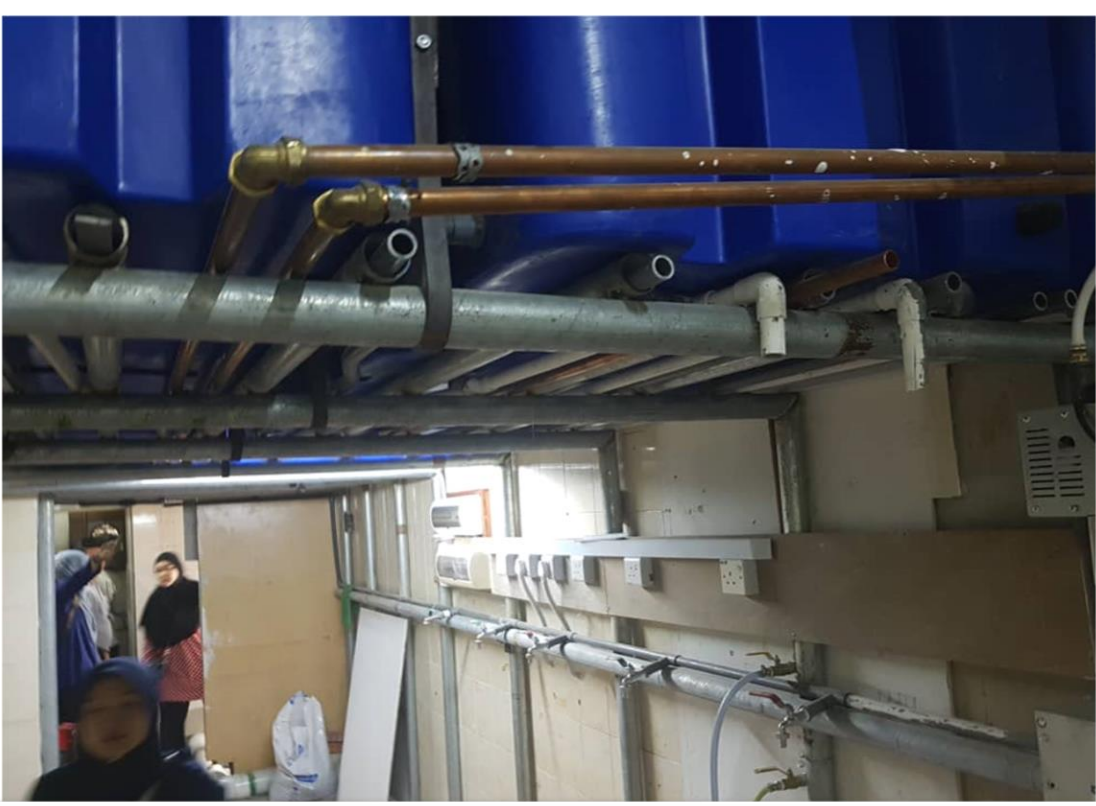
LPG STORAGE



Non-Compliant



Non-Compliant



Non-Compliant



Non-Compliant



Non-Compliant

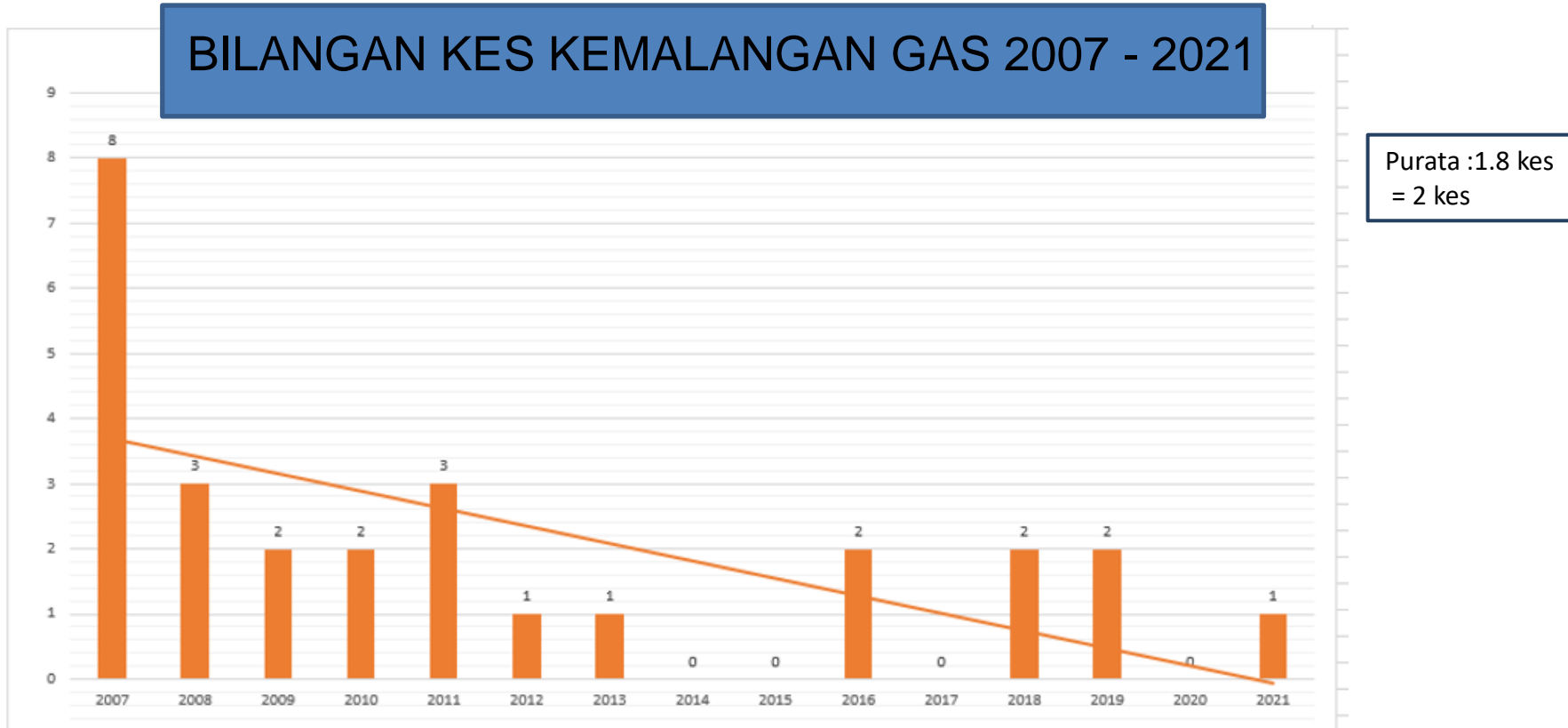


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1. BILANGAN KES KEMALANGAN GAS 2007 - 2021



Jumlah kes sehingga kini adalah sebanyak 27, melibatkan 20 kecederaan dan 4 mangsa maut.

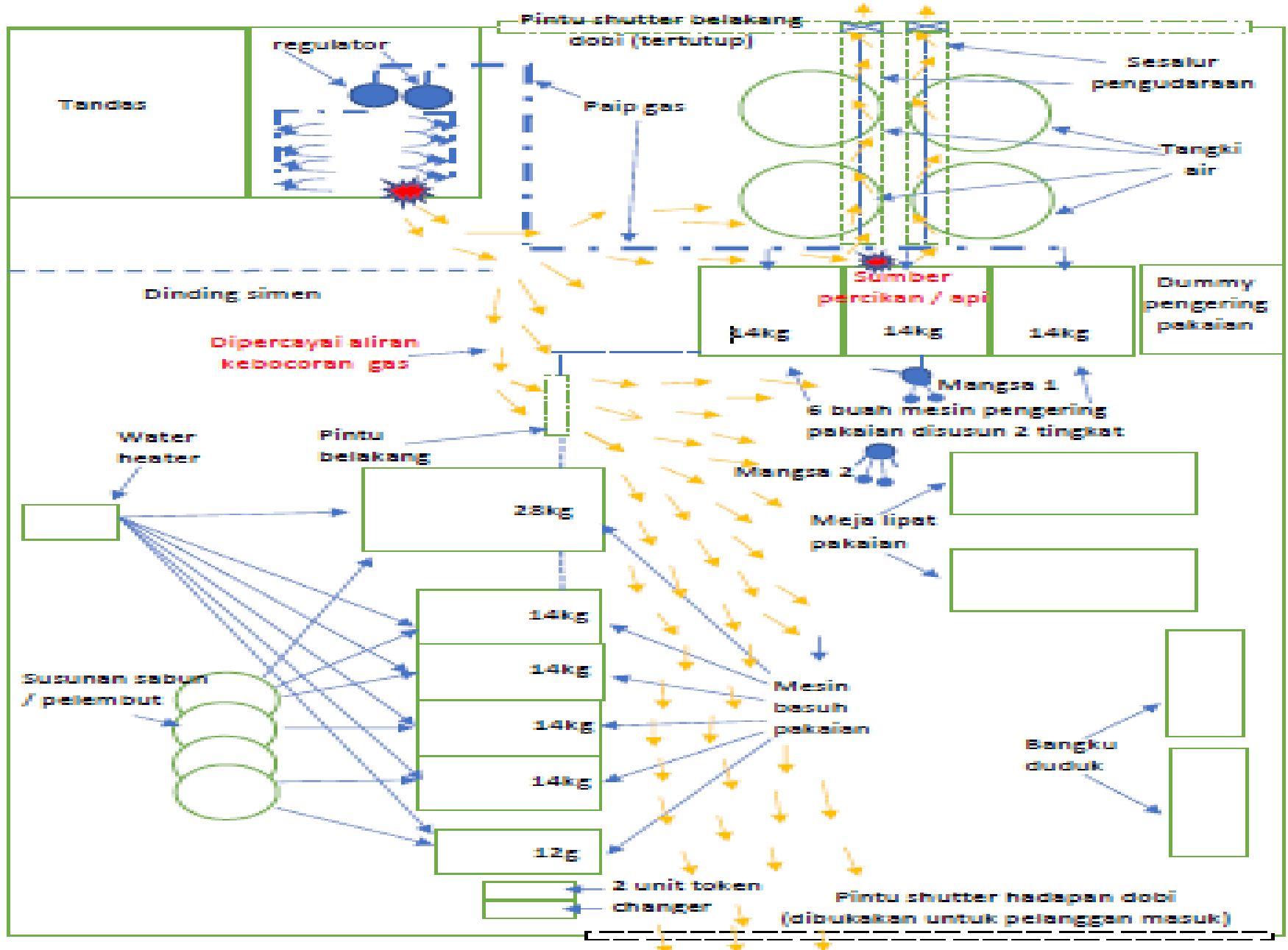


KES KEMALANGAN GAS - MAUT DI DOBI LAYAN DIRI KLANG

Jenis Kejadian	Kemalangan maut/tidak maut
Tarikh	4/10/2018,
Tempat Kejadian	Bandar Putera 2, 41200 Klang Selangor
Butiran Mangsa	Seorang lelaki dewasa (bapa) berumur 42 tahun dan seorang remaja perempuan (anak) berumur 14 tahun
Kecederaan mangsa	kedua-dua mangsa melecur seluruh badan kecuali rambut
Ringkasan kes	Kes kemalangan letupan gas telah berlaku di kedai dobi layan diri dan mencederakan dua orang mangsa. Mangsa adalah pelanggan kedai dobi layan diri tersebut telah mendapat kemalangan ketika menggunakan mesin pengering baju.



Lakaran Dobi Layan Diri dan Paip Gas Laundrybar, Bandar Putra 2, Klang



OFFENCE

SECTION 37c ,GAS SUPPLY ACT 1993:

FAILURE TO COMPLY WITH GUIDELINE

Section 31 ABG - Fine not exceeding **RM100,000.00**, in the case of a continuing offence to a fine not exceeding **RM2,000.00/day or part of a day** during which the offence continues after conviction.

Safety is a way of life and **NOT**
something that you are forced to do



THANK YOU
TERIMA KASIH