

Safety Management Regulations for Liquefied Petroleum Gas

Established Oct. 7, 1988
 Amended Mar. 1, 1992
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 Amended Jun. 18, 1994

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 Amended Dec. 24, 1998
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Article 1 (Purpose) These regulations are set forth to safely manage and maintain the storage and facilities of liquefied petroleum gas (hereinafter referred to as “LPG”) of Pohang University of Science and Technology (hereinafter referred to as “University”) in accordance with the provision of Article 10, Clause 1 of the Safety Control and Business of Liquefied Petroleum Gas Act (hereinafter referred to as “Act”).

Article 2 (Application Scope) ① These regulations shall apply to the faculty and staff of the University and outsiders involved in the LPG storage facility (hereinafter referred to as “storage facility”).

② The following are the storage facilities of the University:

1. Power Plant No. 1
2. Power Plant No. 2

③ For matters other than those specified in these regulations, the provisions of the Act and its Enforcement Decree and Implementation Rules shall apply *mutatis mutandis*.

Article 3 (Liability of the University) ① The University shall observe the Act to prevent gas-related accidents and follow the advice and opinion of the person responsible for safety management for adequate maintenance of the facilities.

② The University shall grant appropriate authority to the person responsible for safety management and follow the decision of the Safety Management Committee when an accident occurs.

Article 4 (Appointment of Person Responsible for Safety Management) ① To perform the duties of ensuring safety and preventing hazards concerning LPG, the University shall appoint a person responsible for safety management.

② Persons responsible for safety management shall include the safety director, the deputy safety director, and the safety manager.

③ For the eligibility and the number of persons responsible for safety management, the provision of Article 7, Clause 3 of the Act shall apply *mutatis mutandis*.

④ When a person responsible for safety management is hired, dismissed, or retires, the President of the University must immediately report to the public office responsible for the issuance of permit and rehire a replacement within 30 days in case of dismissal or retirement.

⑤ The safety management organization for the LPG of the University shall be as described in Article 6.

Article 5 (Obligation of Staff Members Concerned) Any and all faculty and staff handling LPG at the University must follow the direction and supervision of the person responsible for safety management to prevent gas-related accidents.

Article 6 (Safety Management Organization) To perform the duties of securing safety and preventing LPG-related hazard, the University shall establish and operate the following organization:

Article 7 (Duties of Person Responsible for Safety Management) ① Safety director shall be responsible for overall management of the safety-related tasks of the University.

② Deputy safety director shall directly manage the safety of gas-related facilities while assisting the safety director.

③ The safety manager shall perform the following duties:

1. The safety manager shall assist the deputy safety director (in the absence of the deputy safety director, the safety director), control and supervise any and all activities related to the safety of the storage facility, and generally manage technical matters.
2. He/She shall perform safety rounds of the facilities conduct, or supervise regular and internal inspections, and maintain records of the inspections.
3. He/She shall direct and supervise the repair workers, establish an education plan, and provide regular and special education on approval from the safety director.
4. He/She shall perform the duties directed by the safety director and the deputy safety director,

and, when an abnormal situation occurs, make a report after taking emergency actions.

5. He/She shall train workers to ensure that the storage facility is safely operated and controlled, and verify construction work or repairs. In addition, He/she shall have corrective action taken for unsafe facility or work pattern.
6. He/She shall participate in the regular inspection by a mayor or a governor and the inspection performed internally, and establish the necessary actions.

④ (Deleted)

Article 8 (Scope of Duties and Limit of Responsibility) ① The person responsible for safety management shall follow the scope of duty specified in Article 7 and perform the following duties:

1. Maintenance of safety of the gas storage facility and work process
2. Implementation of the safety management regulations pursuant to the provision of Article 10 of the Act
3. Performance of internal inspection pursuant to the provision of Article 11 of the Act and preparation and maintenance of the inspection report
4. Reporting of accidents pursuant to the provision of Article 35-2 of the Act
5. Direction and supervision necessary for safety management for the persons responsible for the storage facility

② If an accident occurs due to negligence on the part of the person responsible for safety management as specified in the Act and these regulations, such shall be processed in accordance with the decision of the Safety Management Committee.

Article 9 (Method of Working) The person responsible for safety management shall work on site, assign tasks to other workers, perform safety checks of the gas-related facilities, execute the following matters, and maintain related records:

1. Matters determined in these regulations
2. Matters concerning the maintenance of the safety of the gas-related facilities
3. Matters concerning the safety management duties for the storage facility

Article 10 (Performance of Duties of Safety Management) ① If the person responsible for safety management is temporarily unable to perform his/her duties due to business trip, sickness, etc., the President of the University must appoint a person who shall perform the duties on his/her behalf.

② A person acting for the person responsible for safety management as described in Clause 1 shall perform the duties for a maximum period of 30 days; the deputy safety deputy director shall act for the safety director, the safety manager for the deputy safety director, and a person engaging in gas handling works at the storage facility of the University shall act for the safety manager.

Article 11 (Method of Checking) ① The safety manager shall perform daily check in accordance with the standards for facilities and technical equipment of the storage facility as specified in the attached Table #7 of the Implementation Rules of the Act to maintain and manage the facility as specified in the technical standards for the facility.

② The safety manager shall record the result of checks and report to the deputy safety director or the safety director.

Article 12 (Repair and Removal) If repair or removal of facilities is required as a result of the checks, the safety manager must report to the deputy safety director or the safety director in writing and immediately take the following corrective actions; this shall also apply to the case where such repair or removal is subcontracted:

1. Putting up safety signs or other actions for the protection of the part where repair or removal is required
2. Preparation of repair and removal work plan
3. Designation of person responsible for repair and removal works
4. In case of professional service such as explosion-proof electrical facility, an expert in that area may be contacted for service.
5. Safety actions required for repair and removal work
6. Inspection upon completion of repair and removal work and other necessary matters

Article 13 (Recording Matters Related to Checks, Repair, and Removal Works and Maintenance of Such Records) Matters related to checks, repair, and removal of gas facilities and inspection after the works and test results shall be specifically recorded using a form specified by the

safety manager; the safety director shall keep the records for three years.

Article 14 (Time and Subject of Internal Inspection) The safety manager shall perform internal inspection at six-month intervals from the date of the first internal inspection (the first internal inspection shall be conducted three months from the date when the certificate of completion inspection for the corresponding facility is granted); internal inspection may be conducted within 15 days before and after the determined specific date.

Article 15 (Outsourcing Internal Inspection) ① If internal inspection cannot be done due to the unavailability of inspection equipment or technical personnel, a request may be made to the Korea Gas Safety Corporation for inspection on behalf of the University, or another agency may be commissioned to perform inspection on approval from the related public agency.

② If the inspection result of the delegated inspection agency is acceptable, the certificate of completion inspection granted by the agency shall be kept along with the result of the internal inspection; in case of failure, corrective action shall be taken for the facility in question, and inspection shall be performed again by the agency.

Article 16 (Subject and Method of Education) ① The education shall be divided into regular and special education.

② Regular education shall be provided to persons dealing with gas at least once a month, whereas special education shall be performed for newly hired employees or other employees for whom special education is deemed necessary by the person responsible for safety management.

③ As the person responsible for education, the safety manager shall prepare and furnish education materials and data.

④ The education course shall include natural disaster instructions and drills at least once a year and the University must actively participate in and promote emergency action drills for the expected size of the disaster.

Article 17 (Matters to be Included in Education) The education must cover the following matters:

1. Purpose of the education and training course
2. Contents of the activities included in the education and training course
3. Methods and safety precautions on handling facilities and equipment, etc.
4. Properties of gas and handling methods
5. Methods of handling safety devices and various protectors, etc.
6. Matters concerning preventive measures against hazards
7. Matters concerning emergency actions and restoration
8. Other matters concerning gas safety issues

Article 18 (Preparation and Preservation of Education Records) ① The safety manager shall record and prepare the result of education using a specified form for confirmation by the participants in the education; the safety director shall retain the records for three years.

② The safety director must inspect the education record and take actions for improvement if necessary.

Article 19 (Preventive Measures against Hazards) ① To limit unauthorized entries and exits, signs such as "Do not enter" shall be posted in the storage tank room and container storage room vulnerable to accidents; various safety devices and fire extinguishers shall be placed for full and efficient function at all times.

② Safety rules shall be posted in a conspicuous place in the storage room, and workers shall be encouraged to follow the rules.

Article 20 (Reporting System and Method in Case of Hazard) The emergency contact network and system of reporting to related agencies are described in the attached Table 1; A reporting system shall be maintained for information such as date, time and place of occurrence, actions taken, etc., continuously reported in a hazardous situation.

Article 21 (Actions to be Taken in Hazardous Emergency) ① The actions to be taken in emergency situations and the control methods are described in the attached Table 2; emergency drills shall be provided at least semiannually.

② To prepare for emergencies, a 24-hour emergency contact network shall be in place; the contact points, etc., shall be frequently checked and updated on a timely basis.

③ Facilities and equipment for emergency actions and restoration shall be maintained and managed properly so that they may be available and functional at all times.

④ The safety management organization shall act as the emergency control body where the safety director or the deputy safety director shall be the head and the safety manager shall act as the deputy head who supports and assists the head.

Article 22 (Record and Retention) Matters related to hazard preparedness education shall be recorded in a specified form of daily logs; matters on preventive inspection and other actions taken in hazard situations shall be specifically recorded in the safety checklist of the LPG storage facility by the safety manager and retained for three years.

Article 23 (Duties of Inspection equipment Manager) To effectively perform the maintenance, management, and operation of the inspection equipment the safety director or the deputy safety director shall serve as the equipment management director and the safety manager as the equipment management manager with the following duties:

1. The equipment management director shall be responsible for overall management of the tasks related to the maintenance, management, repair and safety of the inspection equipment.
2. The equipment management manager shall perform the following duties:
 - A. Matters concerning the maintenance, management, and repair (certification, correction) of the inspection equipment
 - B. Education and training on the safe use of the inspection equipment
 - C. Check the usage and condition of the inspection equipment
 - D. Check the inspection equipment list and its history
 - E. Various actions such as displaying safety principles, safety signs, operation guides, etc.
 - F. Safe use of the inspection equipment
 - G. Emergency action (repair) and reporting in case of malfunction of the inspection equipment
 - H. Arrangement and storage of the inspection equipment
 - I. Various check-ups and maintenance of records for the inspection equipment
 - J. Maintenance of records of the inspection equipment list and history card, etc.
 - K. Other matters as directed by the equipment management director with regard to the tasks related to the inspection equipment
3. (Deleted)

Article 24 (Equipment Check-up) The equipment management manager shall ensure that the inspection equipment is properly operated at all times by checking at least once a week the management and operation status and manage it so that it is readily available in case of need.

Article 25 (Certification and Correction) ① The equipment management manager shall perform certification and correction for major machinery and meters/gauges, etc., as determined by the Act.

② The internal inspection of the University shall be outsourced to and performed by the Korea Gas Safety Corporation.

③ For the test items and standards for internal inspection on the gas facilities, the standards for facilities and technical equipment specified in the attached Table #7 of the Implementation Rules of the Act shall apply *mutatis mutandis*.

Article 26 (Management and Supervision) To maintain the safety of facilities and secure safe installation of facilities, the safety manager shall determine the scope of responsibility and management methods for the installation work, based on detailed consultation with the outsiders and subcontractors entering and exiting the University and ensure that the scope and methods are observed. For other matters, he/she shall manage and supervise to ensure that the Facility Management Regulations of the University are observed.

Article 27 (Obligation and Responsibility) ① The University shall determine the obligation and responsibility of the external company based on mutual consultation when a contract is concluded with such company and ensure that the company observes the obligation and responsibility by clearly stipulating penal provisions, etc., that will apply in case of violation.

② Outsiders and workers of an external company shall take immediate action when an accident occurs, report to the safety manager to ensure that further action can be taken, and record and maintain the details of the accident.

Article 28 (Actions against Violation) If a school staff member violates these regulations, or he/she refuses to follow or perform in compliance with reasonable work directions, the safety manager may report in writing to the President of the University on the violation and refusal to perform the duties and request disciplinary action.

Article 29 (Dismissal of Person Responsible for Safety Management) The President of the University must dismiss the person responsible for safety management under any of the following cases:

1. Position change by transfer.
2. If the provisions of Articles 25 - 29 of the Regulations on Staff Personnel Management apply.

3. If his/her performance of duty is deemed inappropriate due to absence caused by disease or for other reasons.
4. If the provisions of the Act and its Enforcement Decree and Implementation Rules are violated.

Article 30 (Relation with Other Laws) Matters other than those specified in these regulations shall be determined in accordance with the applicable laws.

Addendum

These amended regulations shall take effect on March 1, 1992.

Addendum

These amended regulations shall take effect on March 1, 1994.

Addendum

These amended regulations shall take effect on June 18, 1994.

Addendum

These amended regulations shall take effect on January 1, 1997.

Addendum

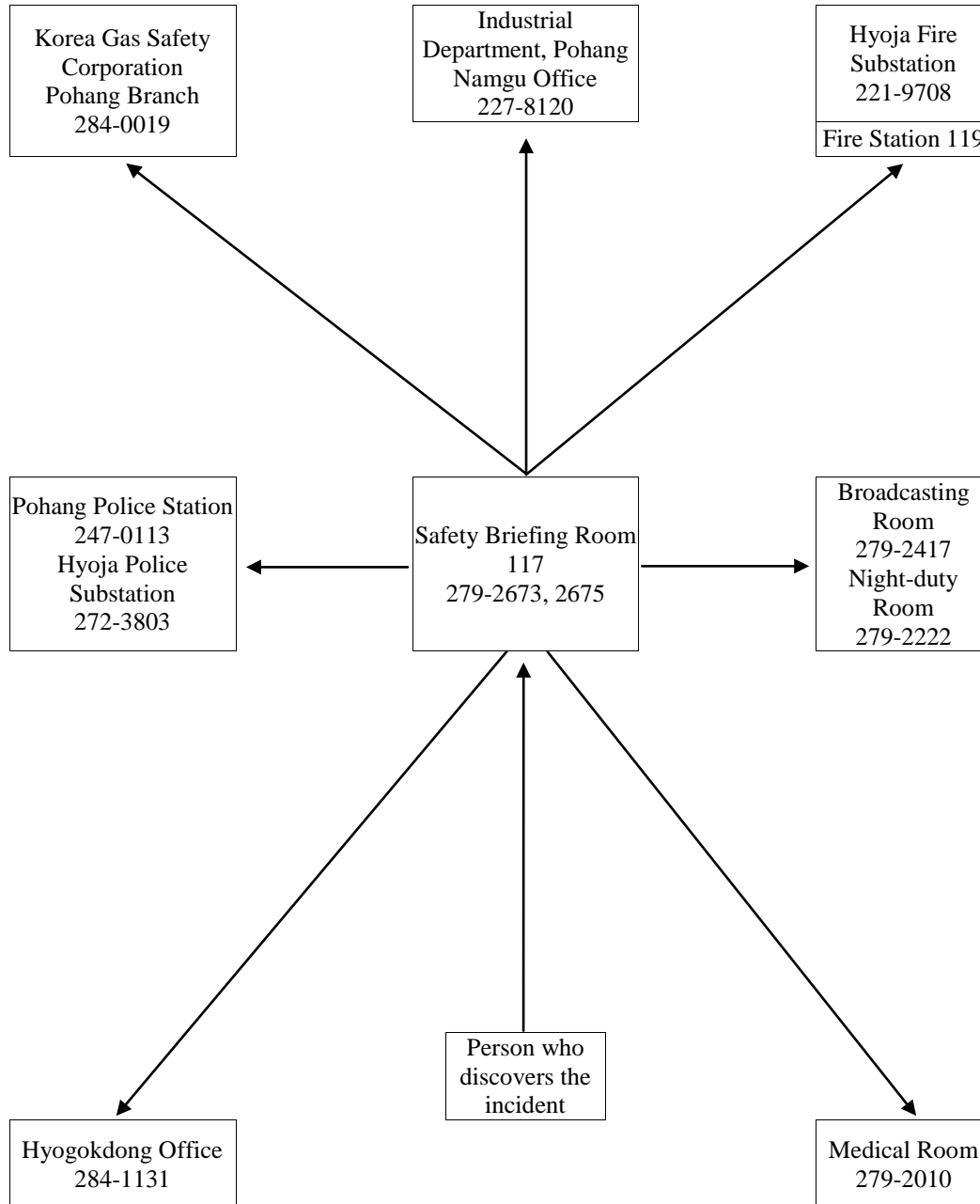
These amended regulations shall take effect on December 24, 1998.

Addendum

These amended regulations shall take effect on June 1, 2001.

(Attached Table #1)

Emergency Contact Network for External Agencies



(Attachment: Table #2)

Emergency Response and Control Manual

1. How to summon emergency assistance
 - A. Notification of fire or disaster: If a disaster occurs or a fire in the neighborhood is discovered, quickly request rescue assistance and immediately notify the safety director and the safety manager, etc., in the order as determined in the emergency contact network.
 - B. Evacuation: If a gathering is deemed dangerous given the nature of the disaster that occurred, signal the danger continuously while evacuating.
 - C. Emergency safety device: If the operation has to be stopped because a disaster occurs or a fire is discovered in the neighborhood, stop the operation immediately as soon as an order is given by the safety director or the person responsible for the corresponding work.
 - D. Emergency response at the disaster site: In case of a disaster or fire in the neighborhood, follow the orders given by the safety management organization system.
2. Emergency response to hazardous incidents
 - A. General response actions
 - (1) Install warning signboards and flags surrounding the gas-hazardous area and keep the area clear.
 - (2) Check for gas leaks with test equipment.
 - (3) In case of leaks of toxic gas, wear protectors such as gas mask, etc. and workers should keep their back against the wind.
 - (4) When spraying water, cover the leak area with a straw bag so that the water is absorbed well.
 - (5) Move an injured person quickly to a safe place, and request the dispatch of an ambulance.
 - B. Specific response actions
 - (1) In case of gas leaks from the tank itself or from a pipe
 - Turn the emergency shut-down device and shut off the valve; operation must be stopped.
 - Use lead cap, rubber sheet, or lead packing to cover the leak area or insert them into the area to stop the leak; any additional leaks must be checked with a leak detector.
 - Flammable materials must immediately be removed.
 - In case of a fire, use a fire extinguisher to contain the fire and spray water to the neighboring tanks to prevent temperature rise.
 - (2) In case of gas leaks from a container joint section
 - Shut off the container valve and stop using it.
 - Use lead cap, rubber sheet, or lead packing to cover the leak area or insert them into the area to stop the leak; any further leak must be checked with a leak detector.
 - In case of leak from the valve-connecting part, the valve shall be tightened with a spanner, with the leak area placed in the upper position; any further leak must be checked using a gas leak detector.
 - Flammable materials must be immediately removed.
 - Maintain good ventilation to limit the concentration of flammable (combustible) gas.
 - In case of a fire, use a fire extinguisher to contain the fire and immediately move any containers likely to be exposed to flame
 - (3) In case of gas leak from pipe
 - Shut off the valve and stop using it.
 - Use lead cap, rubber sheet, or lead packing to cover the leak area and prevent further leaks.
 - Naked flames, oils and other flammable materials must immediately be removed.
3. Training for emergency response

The safety director shall establish a training plan and conduct emergency action drills for expected natural disasters in the course of education.