

## **SUPPLEMENTARY PAPER ON TECHNICAL GUIDANCE NOTE FOR USE OF LIQUIFIED OR COMPRESSED FLAMMABLE GAS IN FACTORY PREMISES**

### **Introduction:**

This supplementary paper has been developed by the RSC to address and ensure workers safety against flammable compressed and liquified gas cylinder storing and accounting within the production process of industries. As an explosion hazard for using such cannisters require proper maintenance with passive fire protection and needed proximity from surrounding occupancies.

### **Background:**

The storage or use of liquefied or compressed flammable gas cylinders shall be prohibited within the factory building according to the RSC, Accord and Alliance Guidelines. NFPA 30 standard has also been referred by the RSC, Accord and Alliance Guidelines for standard installation, remediation, and maintenance process. Later, two technical guidance notes have been proposed by Accord as an inclusion to undertake inspection focusing a compliant storage of gas cannisters within the factory premises.

### **Standard requirement:**

The RSC Technical Guidelines (Standard) Section 3.4.2.1.11 prohibits the storage or use of liquefied or compressed flammable gas (LPG/CNG) cylinders within the factory building.

### **Alternate solution:**

LPG/CNG cylinders may be used within the factory premises if the LPG/ CNG storage meets all implementation guidance according to this supplementary paper; specified for factories up to 31 May 2020 and starting from 1st June 2020.

### **Implementation guidance:**

#### **Factories up to 31st May 2020**

The room within the factory building housing only gas canisters shall be enclosed in a 2-hour fire resistant, non-combustible construction, inclusive of providing fire doors and protection of all openings, penetrations & ducts to maintain the 2-hour fire resistance / fire separation.

No further remediation requirement will be needed for those factories where LPG/ CNG cylinders have been identified and remediated under the implementation guidance up to 31st May 2020 and verified by Accord or the RSC. These factories will be monitored through followup inspections to ensure continued compliance.



**Factories from 1st June 2020**

1. The storage building must be at least 3 meters away from any other buildings and boundaries.
2. The exterior walls of the building must have a fire resistance rating of 3 hours using noncombustible construction.
3. Doors and other openings in the exterior walls must be protected with suitable closing devices having a fire protection rating of 3 hours.
4. The building is to be used for no other purpose than the storage of LPG/CNG cylinders.
5. The building must be mechanically ventilated to control the accumulation of flammable vapors.
6. The installations must be approved and accepted by the requirements of the AHJ, Gas supply company regulations, manufacturers/supplier's instructions/guidance, Chief Inspector of Boiler (CIOB) and Chief Inspector of Explosives Bangladesh (CIEB).

**General Safety Guidance:**

1. Storage rooms for cylinders keep in dry, cool, and well-ventilated condition.
2. Cylinders kept away from electrical connections, sources of ignition, combustible waste material, incompatibles, excessive heat, continuous dampness, salt or other corrosive chemicals, and any areas that may subject them to damage & cylinder bottom protected from ground to prevent rusting.
3. The cylinder storage area permanently posted with the names of the gases stored in the cylinders and have the contents & precautionary labeling clearly marked on the exteriors
4. Charged or full cylinders labeled and stored away from empty cylinders.
5. All compressed gas cylinders have safety pressure relief valves. Cylinder valves always closed, except when the valve is in use & using wrenches or other tools for opening and closing valves prohibited
6. All compressed gas cylinders subjected to periodic hydrostatic testing and interior inspection by suppliers. All compressed gas cylinders regularly inspected for corrosion, pitting, cuts, gouges, digs, bulges, neck defect sand general distortion.
7. Compressed gas cylinders always moved by a suitable hand truck. procedures established when a compressed gas cylinder leak cannot be remedied by simply tightening the valve.

**The procedures should include:**

- (a) Attach tag to the cylinder stating it is unserviceable.
- (b) Remove cylinder to a well-ventilated outdoor location.
- (c) Place an appropriate sign on a flammable or toxic gas cylinder warning of these hazards.
- (d) Notify the gas supplier and follow his/her instructions regarding the return of the cylinder.



**Inspection Procedure:**

Inspection will be conducted according to the RSC Initial & follow up inspection protocol.

**Procedure of preparing CAP & inspection report:**

Procedure of preparing CAP & inspection report will be completed according to the RSC CAP development and reporting protocol.

**Report publishing timeline:**

10 working days.

**References:**

1. Gas storage rules-1995.
2. BNBC-2006.
3. Technical Guidance Notes (Use of Liquified or Compressed Flammable Gas in Factory Premises).
4. RSC Technical Guidelines (Standard)
5. Accord Building Standard V1.1
6. KEMI (Follow OSHA-Occupational safety & Health Administration-USA standard).

**Disclaimer:**

The RSC shall in no way be held responsible for any of the mistakes or omissions by the installation & maintenance of consultant / contractor in discharging his professional duties. The factory is responsible to ensure installation & maintenance of the system following the checklist & guidance provided by the RSC and in accordance with the local codes & laws.

