Los Angeles City Fire Department

Training Bulletin # 61

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SCRUBBER SYSTEMS

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The purpose of this training bulletin is to provide Firefighters with the knowledge and ability to recognize buildings involved in hazardous materials processes from the street and/or roof based on the presence of scrubber systems.

1. WHAT ARE THEY? A means whereby contaminated air from various in industrial processes are cleaned and dried before being exhausted into the atmosphere. Contaminates recovered by these systems are stored at the scene in either barrels or vats for reuse, neutralization and/or disposal.

2. WHAT DO THEY TELL YOU? Recognizing a Scrubber System will tell you that you are working above or around a vat or tanks that contain vaporizing emissions of a hazardous nature. They may or may not be flammable, but they certainly are a health hazard. The following is a list of some of the chemicals for which a system might be installed:

   · Corrosives
   · Ammonia
   · Sulfur Dioxide
   · Oxides of Nitrogen
   · Acid
   · Caustics
   · Alcohol Vapors

3. GENERAL INFORMATION AND DESCRIPTION:

   - Installed under the following LAMC permits:

     A. Fire Code - Sec. 57.05.20 Industrial Processing Equipment.
     B. Mechanical Code - Sec. 95.0200 Permits required (Air Handling)

   - Inspected by Air Quality Management District.
   - Installed directly over vat or have duct work leading to the Scrubber.
   - Fiberglass ducting is generally for nonflammable corrosive vapors and metal ducting is for flammable vapors or particulates.
   - Roof ducting will show you the location of the hazard.

4. WHAT DO THEY LOOK LIKE? (See attached photos.) Scrubber Systems come in various shapes and sizes. All Scrubber Systems evacuate air, put the contaminated air through a washer unit, and then dry it before exhausting to the atmosphere. With the exception of very large Scrubber Systems, most units will be located on the roof. The very large Scrubber Systems will usually be located at ground level, outside the building, and geographically close to the vaporizing emission process.

5. TYPES OF SYSTEMS

   A. WATER WASH: Method - Particulate absorption, used for paint spraying operations.

   B. FILTRATION: Method - Charcoal Absorption used for Vapor Removal.

   C. CHEMICAL NEUTRALIZATION: Method - Chemical Absorption, used for Chlorine leaks etc.

   D. THERMAL DESTRUCTION: Method - Combustion Chambers used for Burning Hydrocarbons.

Photo #1 is of a large modern fiberglass scrubbing system.

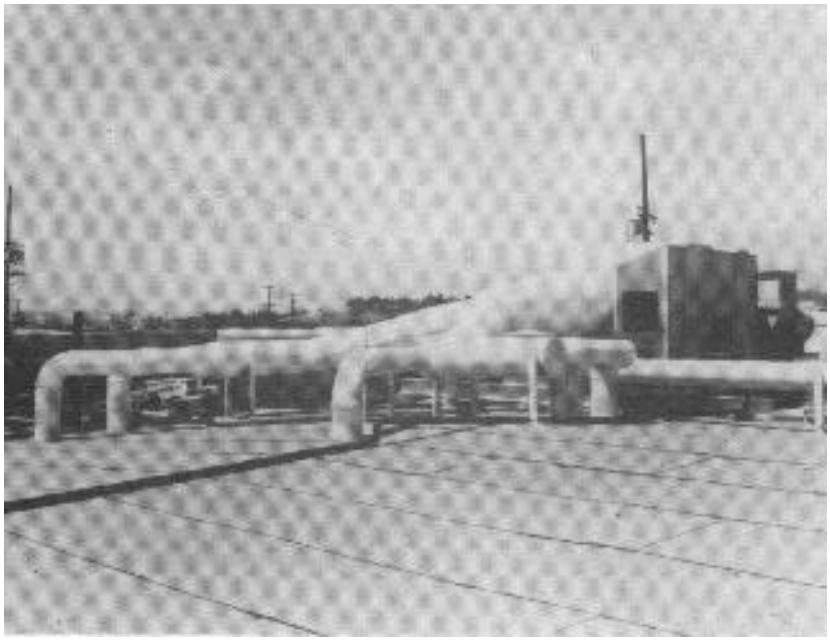
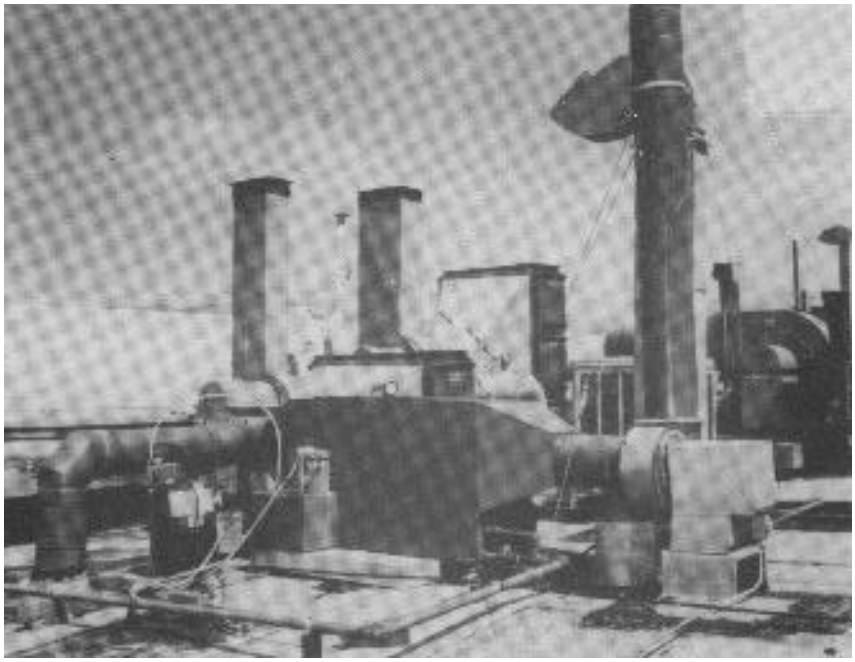
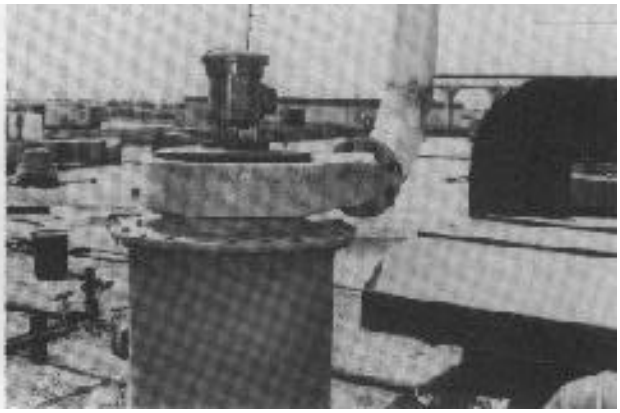


Photo #2 is of a smaller, localized scrubbing system utilizing P.V.C. (plastic) fume duct work.



Photos #3 and #4 are of a older design scrubbing system that are mounted directly over the vat or tanks of vaporizing emissions.



CONCLUSIONS

A. Finding a Scrubber System during prefire planning or fire fighting operations will alert Firefighters to the possibility of greater than normal hazards in the air of smoke, if a fire should occur.

B. Many of the larger Scrubber Systems are visible from the street. Under fire fighting conditions, the ventilation team will probably be the first to discover it and they should communicate their findings immediately to the Incident Commander. Fire fighting strategy and tactics may have to be altered to minimize hazardous exposure to our personnel.

C. Firefighters should be AWARE that when entering buildings equipped with Scrubber Systems, they stand the chance of being exposed to hazardous or toxic substances as well as the possibility of encountering hazardous waste stored in improperly marked drums. Proper protective equipment is a must.