



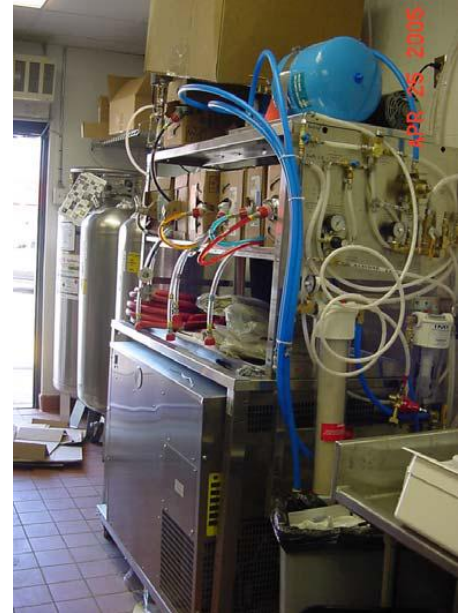
Restaurant Safety Issues



Normally, when we think of a restaurant and safety issues associated with that occupancy type, we think of ordinary construction, cooking operations and eating/drinking incidents. Incidents that fire and medical responders face typically involve these basic issues in some form or fashion. However, with the progress of foodservice, newer technologies are being used that can endanger the lives of firefighters in ways not previously seen or considered.

For example, carbonization of soft drinks is an area of great concern. Systems utilizing small-pressurized CO2 cylinders are being replaced with bulk CO2 systems. Bulk liquefied systems offer an economic benefit for restaurants in the carbonization of soft drinks. Due to the expansion ratio of liquid to gas of Carbon Dioxide, it is often more feasible to store liquid instead of gaseous CO2.

Storage of Liquefied Carbon Dioxide is accomplished through Cryogenic tanks housed inside the restaurant. Loading of this tank is performed by a series of connections from the tank through the restaurant's interior walls and ceilings to an exterior connection point. Periodically, a CO2 delivery tanker comes to the restaurant, connects to the exterior tank fill connections, and refills the interior tank.



Mixing System (foreground)
Tanks (background)



A myriad of hazards exist for firefighters on this subject — from catastrophic overpressure of these bulk systems in fire situations to leaks and spills of gaseous and liquefied products during tank refilling operations. Sudden releases of pressure from the tank and or piping systems can cause impact injuries or death.

Besides fire situations, slow leaks from these systems can create medical calls. Health concerns for exposure to carbon dioxide range from frost bite and freeze due the extreme coldness of the product to death from asphyxiation.

Buildings containing these systems should be identified and preplanned for scenarios including fires, leaks and spills and medical responses. Buildings containing these systems should also be marked and identified using Hazardous Materials Identifications systems. NFPA 704 signs and/or other means should be utilized.

Firefighting tactics should include assessment of the condition of these systems and shutdown of tanks. Stabilization of the system can include a controlled bleed-off of the product to removal by pumping off the product to a tanker. Medical responses should include health hazards created from exposure to Carbon Dioxide. Once again leaks must be contained and the scene stabilized.



Exterior NFPA 704 Sign