Walk-in Freezers

Incident Details
A student received freezer burns on all 10 fingers after spending up to 5 hours sorting samples in a -20 degree walk in freezer. On further investigation the following were identified:

- The student had only been working with UQ for 5 months and this was the first laboratory task in their project.
- The student was not given any instruction as to working in and around the freezer (including the location of appropriate PPE).
- The student was working within the -20 degree freezer with the external door closed to prevent loss of temperature.
- Other personnel in the area were not aware there was someone working in the freezer.
- It was accepted practice to work in the freezer with the door closed.

Additional Information
The University of Queensland uses a wide range of cooling equipment including walk-in fridges and freezers. There is potential for injury or fatality to occur due to exposure to the cold and being unable to exit the fridge/freezer.

Injuries and fatalities have occurred when workers have been trapped in walk in freezers.  
http://www.fentons.co.uk/newsroom/case-studies/young-man-left-traumatised-after-being-locked-unconscious-in-freezer/

Considerations for Prevention
Exposure to cold can result in many types of injury including hypothermia and frostbite. Injuries can range from mild inconvenience to fatality depending on the duration and temperature of the exposure.

The major hazards working in walk-in fridges and freezers are:
1. Exposure to the cold
2. Working in isolation

Controls
Hazards must be controlled using the risk control hierarchy.
Eliminate the need to spend extended periods in the freezer.
Substitute walk-in freezers with upright or deep freezers that do not require personnel to expose their entire body to the cold temperature or work in isolation.
Engineer:
Ensure walk in freezers have emergency alarm buttons and internal door opening mechanisms that are appropriately maintained.
Procedures and PPE:
Ensure good housekeeping, stacking and storage practices in the fridge/freezer.
Ensure appropriate communications systems are in place and practiced (man down alarms, buddy system).
Ensure appropriate PPE is made available, in good condition, and used by personnel having to enter the freezer.

Some examples of control measures:

- Arrange for work that may be done in the freezer to be completed in the laboratory using items such as a "cold plate cooler" or a portable freezer. Dry ice and crushed ice can also be used to keep samples cold in the laboratory.
- Work in cold rooms or walk-in freezers should be restricted to as short a period a time as possible. If extended periods of work in cold rooms are required (>5-10 minutes) then suitable clothing must be worn ensuring minimal skin is exposed to the cold, e.g. thermal / fleece jumper, gloves, hat, etc. Clothing should be selected to suit the temperature and duration of activity.
- Work in cold rooms or walk-in freezers outside of normal hours should not be undertaken unless a second person in the immediate vicinity of the cold room or walk-in freezer has been informed and will search for the person in the event that they do not report in at a prearranged interval.
- Try always to work with a buddy. There is safety in numbers and an immediate support system in the event of an emergency.
- Tell someone, your supervisor or another co-worker, that you are going to work in the walk-in freezer and when you will return. If you are going to be in the freezer for an extended period, timed checks are advised. Do not forget to report back to that contact person at the agreed upon time(s)!
- You should be aware that mobile phones might not work well in the walk-in freezer. Before relying on this as a communications device, check to see if it will work in that space. Remember that frozen batteries might disable the phone.
- Fitting alarms within walk-in cold rooms, which allow persons trapped inside to summon assistance; and internal door opening mechanisms, which are checked on a regular basis and lubricated as necessary.
- Liquid nitrogen or dry ice must not be used or stored inside cold rooms or walk-in freezers.
- Pregnant employees should not work in cold rooms or walk-in freezers for any period of time. Prolonged exposure to cold temperatures can damage the unborn child.

Training and awareness:
Workers and supervisors involved with work in walk-in cold rooms or freezers should be informed about the adverse effects of exposure to cold. Prior to working in walk-in cold rooms or freezers supervisors must ensure all workers are aware of the proper clothing habits, safe work practices, and emergency procedures.

References
General Procedures for Walk-in Freezers
http://safety.eas.ualberta.ca/?p=83

Canadian Centre for Occupational Health and Safety: Cold Environments - Health Effects and First Aid
http://www.ccohs.ca/oshanswers/phys_agents/cold_health.html

Safe operation of cold storage facilities

Could this happen anywhere your staff, students or you are working?
This alert is a reminder for you and your work unit to consider the effectiveness of your local safety management system in preventing an incident like this from occurring at a workplace.

Contact for Additional Information
For further information, contact your local Work Health and Safety Manager/Coordinator, or the UQ OHS Division:
Phone: +61 7 336-52365
Email: ohs@uq.edu.au