LABORATORIES, CHEMICAL AND BIOLOGICAL

Laboratory Design: Chemical and bio-research laboratories where hazardous materials will be handled or stored shall be designed to safely accommodate the research and/or instruction to be conducted therein. They shall be designed in compliance with all applicable federal, state and local codes and regulations. They shall also be designed in compliance with all of the requirements of these Design Guidelines. All ñwetò labs, including any laboratory space containing fume hood(s), gas storage and delivery systems, or the potential for the use of hazardous materials, chemicals or gasses, shall be design to meet, at minimum, NFPA 45 Class ñBò construction requirements. All labs and/or workrooms that are equipped with natural gas delivery systems, regardless of the number of outlets, shall be equipped with an emergency shut off valve located adjacent to an exit from the area.

Break areas and office desks are to be physically segregated from laboratory spaces. (No desks in the back of the lab.)

An emergency shower and eyewash station shall be located within 10 seconds of every chemical fume hood. This must be a direct pathway with no equipment or doors blocking the path and no changes in elevation. A floor drain shall be installed near emergency showers to allow the water to drain in a controlled manner. Permanently plumbed eyewash stations shall be plumbed to a drain. Both of these measures will help facilitate the compliance requirement of weekly (eyewash) and monthly (emergency shower) required operational tests and they will reduce potential slip hazards. Emergency showers and eyewash stations shall be plumbed to the domestic water system (not the industrial water system).

At a minimum, a continuously mechanically ventilated gas cabinet is required for the following gases in cylinders that exceed a lecture-bottle sizes:

Gases that have health hazard ratings of 3 or 4.

Gases that have a health hazard rating of 2 without physiological warning properties

Pyrophoric gases.

Flammable storage cabinets will not be vented (unless it is a fume hood base cabinet designed as flammable liquid storage and it is vented with the hood.)

Proper storage areas for compressed gas cylinders will be located away from exits and the restraining brackets should accommodate the different heights of the cylinders that are planned for use in that area. Each laboratory shall be evaluated for catastrophe potential in terms of the maximum credible accdebuwñy/Duuyw/uDqdlòdabuwñy./uñdcbtñdcdebuwñy/Duu(buwñy./uñdfbuuw.qDDu.dsbtñwuu/.(d bt(

semiconductor fabrication and comparable research. These facilities must comply with all applicable codes and building safety standards.

Production, pre-manufacturing or Pilot Plant scale: Any research area that plans to run reactions larger than laboratory scale (up to 20L), or that will receive, use, or store _containers of flammable solvents shall consult with NU EHS, the NU Code Official and the State Fire Marshal before operations commence.

Emergency Showers and Eyewash: Shall be installed in all labs or areas where hazardous chemicals are used or stored. The installation shall meet the requirements of the applicable standards. Floor drains shall be installed under emergency showers. Emergency showers and eyewash stations shall be plumbed to the domestic water system (not the industrial water system).

Emergency Power Off (EPO):

Humidity Control: Humidification / humidity control capability shal fumes, solvent vapors, and fumes from radioisotope sources shall not be exhausted through a

Laser Laboratories: Spaces designed for use of Class 3b or Class 4 laser systems shall include the following engineering controls: (1) visible warning lights that are illuminated when the laser system(s) are energized; (2) baffles, partition walls, or other barriers that prevent the laser radiation from leaving the laser controlled areas (