

NEW EQUIPMENT FACILITY AND SAFETY SELF-ASSESSMENT

Conducting a self-review prior to purchase of equipment can assist you in identifying if the equipment will require costly room modifications to function, will produce unsafe conditions, has design flaws that do not address anticipated safety concerns, will require costly maintenance or will have substantial liability of ownership.

There are many explicitly restricted purchases on UF campus. Some relevant examples are: radiation emanating equipment, air purifying respirators, biosafety cabinets, fume hoods, gas chromatographs, electron microscopes, compressed gas cabinets, etc...A comprehensive list can be found at: <http://www.purchasing.ufl.edu/departments/directives-procedures.asp#unauthorized>. Even if your purchase requires formal review, it is prudent to consider the following questions.

The following list is not all-encompassing, it is a suggestion to get you thinking about the impact your equipment or process may have on the space and how your lab operates. If you have suggestions for additional questions to be added to this list, please email Amy Haberman – ahaberman@eng.ufl.edu.

Accessibility

1. Size of equipment – can it fit through the hallways and doors?
2. Will the path to the final location be able to withstand the load of the equipment? (i.e., elevators, floors, platforms, etc...)
3. Once placed in room will it impede on egress or block safety equipment?

Electricity

4. Power; does it require higher than 110v power? Consider voltage and amperage requirements.
5. Will it be a wet or humid process where GFCI should be in place?
6. Needs uninterrupted power supply, standby power or backup generator access

Ventilation

7. Does the equipment have a required exhaust rate it must meet (CFM)?
 - a. Does it have an internal fan?
 - b. Are you exhausting hazardous materials?
 - c. Are you exhausting flammable gases?
 - d. What by-products are produced from your process?
8. BTU output (creates additional heat load which will need to be exhausted)

Utilities

9. Chilled water
10. Vacuum
11. Air supply (what psi?)

Materials Used

12. Will the equipment require compressed gases to be connected?
13. Are you working with high pressures, flammable or toxic gases?
14. Will the equipment be in contact with combustible or flammable gases or vapors and is there a need for intrinsically safe equipment? Consider flash points, explosive limits, and ignition temperatures of the materials you are using.
15. How will materials be stored? Ensure compatibility is considered in the design of storage. Secondary containment may need to be purchased.

Hazards Produced

16. Does the equipment produce temperature extremes? If so, how will you protect equipment and users from coming into contact with it? For the sake of high heat – consider you cannot store flammable materials nearby.
17. Could the equipment produce excessive noise, greater than 90dB?
18. Will this equipment require persons to work at heights for access? Design for eliminating this need is preferred. Consider design of access points, stairways, use of aerial lifts etc...all come with additional design requirements, training and maintenance.
19. Will the materials used in conjunction with the equipment require users to handle heavy or awkward loads? You may need to consider a lifting mechanism to avoid personnel injury.

Design for Safety

20. Will the system have emergency gas shut-off capability?

21. Does the equipment have exposed points of operation? Does it meet standards for equipment guarding?
22. Is the equipment equipped with automatic shutdown mechanisms if dangerous operating conditions arise?
23. Ensure the system can be locked-out for maintenance (if hard-wired and not just a cord/plug)
24. Is the equipment equipped with an emergency stop button?
25. Is the equipment equipped with other alarms which monitor normal operating conditions and alert users if a problem is detected (either audio and/or visual?)

Other Ownership Considerations

26. What are the long term maintenance costs?
27. Does ownership imply more responsibility – could you rent vs. buy (i.e.; compressed gases/air compressors, etc...)
28. Will the equipment require costly employee training, dosimetry, PPE (fall protection, laser goggles, respirators, etc...) or other needs that are not part of the equipment purchase price, or the grant funding?
29. Decommissioning and disposal costs.