Please indicate your responsibilities by circling one of the following:

Facility Manager     O&M Professional

Labs21 2012 Annual Conference
Symposium: Sustaining Your High-Tech Facility with Properly Trained Professionals

Participant

Thank you for taking part in today’s symposium and in responding to these questions.

I²SL and its partner, Laney College of Oakland CA, are asking that you indicate your opinion regarding each area of the course work identified by I²SL in today’s symposium. This sheet is to be collected by I²SL at the conclusion of the symposium. It will provide us a record of your opinions regarding the course work. You are not expected to sign this sheet.

Your opinion is one of many that will be taken under consideration in the near future to validate all or part of the proposed coursework presented in this symposium. Your opinions, along with those of others, will be evaluated and analyzed by I²SL and Laney College in determining the appropriate level of course work and whether a certification program for laboratory and related high technology facility operations and maintenance professionals and facility managers should be created.

With regard to the course work being proposed, please provide your responses using the following simple code:

0    No opinion
1    Yes, the topic should be addressed and included in certification IN SOME DETAIL
2    Yes, the topic should be included, BUT ONLY IN SUMMARY
3    No, the topic is not essential for a certification

PLEASE PROVIDE YOUR RESPONSES TO ONE OF THE I²SL OR LANEY COLLEGE SYMPOSIUM FACILITATORS!

Thank You

Phil Wirdzek, I²SL President and Executive Director
Barbara Widhalm, NSF Project Manager, Laney College
1) What characteristics differentiate a high technology facility such as a lab, data center, cleanroom or hospital from traditional building types?
   - Common objectives
   - Complexity of codes, standards and regulations
   - Sub-categories for labs, data centers, cleanrooms and hospitals
   - Use and design layout
   - Purposes of engineered systems
   - Health and Safety
   - Security

2) Environmental Health and Safety (EH&S)
   - History
   - Issues and concerns (energy, water, IAQ, etc)
   - Organizations
     - AIHA
     - ASHRAE
     - AALAS
     - Other AHJ
   - Codes and Standards Review
   - Log out/tag out procedures and policies

3) Chemical/Biological/Radiological?
   - What are they
   - Importance to each facility type
   - Hazard + Exposure = Risk
   - Storage and storage types
   - Areas of increased risk
   - Personal protection

4 and 5) Risk Management through Engineered Systems
   - Air supply management
     - Fans, ducts, dampers, filters, room discharge
     - Differential pressure
     - Equipment access and roof equipment
     - Design features for risk minimization
       - services corridors
       - chases
       - interstitial
     - CFD modeling
     - Energy and resource implications
     - O&M and PM responsibilities
   - Air exhaust management
     - Hoods
     - Cabinets
     - Thermal capture
     - VAV vs constant volume system
     - Manifolding vs single fan exhausts
     - Mixed vs segregated exhaust systems
     - Exhaust stacks and discharge
     - CFD modeling
     - Energy and resource implications
     - O&M and PM responsibilities

Rating and Comments
6) Building Management Systems
   - EMCS, DDC, BACnet, etc
   - Central plan vs distributed capability/responsibility
   - Purposes and limitations
   - Opportunities
   - O&M and PM responsibilities

7) Energy Management in High Technology Facilities
   Why a concern for energy
   - Metering and billing considerations (steam, gas, electric)
   - Energy profiles
     o Labs
     o Data centers
     o Cleanrooms
     o Hospitals
   - Energy intensity and user equipment
   - Transformers,
   - Specialized systems
   - EH&S trade-offs
   - Efficiency strategies
     o New facilities
     o Older facilities
   - O&M and PM responsibilities with supply systems

8) Water Management
   - Why concern for water supply
   - Energy and water nexus
   - Metered supply and billing considerations
   - Water for process operations
   - Water quality - why, when and where
   - Pre-treatment and distribution systems
   - Waste water storage and on-site treatment systems
   - O&M and PM responsibilities for each

9 - 14) Other Supplied Services
   - Lighting
     o Task and ambient
     o Shading systems and daylighting
     o Control strategies
   - Gasses
     o Tanks storage and security
     o Maintenance and management
     o AHJ
   - Vacuum systems
     o Pump and motors
     o Distribution systems
   - Refrigeration
     o Centralized systems and walk-ins
     o Shared refrigeration units
     o Energy Star and lab refrigerators
   - Storage and types
     o Biological, chemical, radiological
   - O&M and PM for each by system
15) Waste Streams
- Liquids other than waste water
- Hood exhaust and plumes
- Solids
- Hazardous materials
- Storage
- Disposal equipment, systems and processes
- O&M and PM for each

16) The Vivarium
- Facility uniqueness, layout and environments
- Chain-of-custody
- Staging and holding pens
- Experimentation and animal housing
- Hazard identification and access
- Disposal, cremation, digestion
- Energy and water profiles
- Security
- O&M and PM responsibilities

17) Recycling
- Beyond traditional paper, cans and bottles
- Storage and management
- Equipment re-use and gifting
- Plastics, glassware, protective clothing
- Trends
- O&M and PM responsibilities

18) IT
- Computational science objectives and international collaborative
- Trends
- Closets, rooms, buildings
- Networks and equipment
- Integration of science and building BMS
- Energy and management
- O&M and PM responsibilities

19) Metering
- Trends, distributing knowledge to users
- Dashboards and control
- From energy to IAQ
- Benefits to facility owner(s) and user(s)
- O&M and PM responsibilities

20) Relations and negotiations
- Managing up, new priorities/new skills
- Working with
  - Users
  - Neighbors and communities
  - AHJ
- Increasing awareness for responsibilities
21) Sustainability
  - Objectives
  - Setting goals
  - Supporting organizations and networking
  - Environmental Management System
  - 6 Sigma and others
I²SL and Laney also request replies to the following:

A. If these topic areas (as prioritized by you in your rating) were assembled into coursework leading to a certificate (e.g. at a community college), would you be interested in seeking the certificate (if you are an operator) or would you encourage your operations staff to seek the certificate (if you are a building owner/manager)

No opinion  Yes  No

B. If these topic areas were assembled into coursework that leads to an industry certification exam, would you seek certification? (Circle One)

No opinion  Yes  No

C. Have you taken or required staff to take any professional development specifically oriented toward high-tech facility operations or management? (Circle One)

Yes  No

  o If yes, where?
    ▪ In-house (check)
    ▪ Professional association (which ____________________________)
    ▪ An educational institution (which ____________________________ and name the program ____________________________).
    ▪ Estimated cost to you or to your staff for these trainings? $__________

  o Was it adequate? ______________

  o What, if anything, was missing? ________________________________

D. Would your employer or union encourage you to seek an industry certification for high-tech facilities?? (Circle One)

Not Known  Yes  No

E. Would your employer or union encourage you to take professional development coursework in high-tech facility operations at a community college? (circle one)

Not Known  Yes  No

F. If certified, what increase would you expect in your earnings? (Circle One)

Not Known  10%  25%  More