

Human & Environmental Factors

This area demonstrates the responsibility of facility managers in regards to people, the conditions within which they work, and the impact of the business on the community and the environment.

It stresses developing and maintaining practices that support the health, safety and welfare of those in the workplace as well as complying with all ordinances dealing with health & safety.

These concepts are critical to overall employee performance and morale while ensuring their well-being.



Human & Environmental Factors

- Develop & implement practices that promote and protect:
 - Health
 - Safety
 - Security
 - The quality of work life
 - The environment
 - Organizational effectiveness
- Develop & Manage emergency preparedness procedures



Develop & Implement Practices...

- Evaluate & manage the facility's support of organizational goals & objectives
- Monitor changes in laws and regulations
- Assure the facility and its operation comply with laws & regulations
- Monitor & assure changes in the facility function & services
- Monitor changes in the people who use the facility
- Monitor information & trends about human & environmental concerns
- Provide training to maintain safe and effective use of the facility
- Direct the development and administration of environmentally-conscious programs
- Conduct due diligence studies



Develop/Manage Emergency Preparedness Procedures

- Develop Emergency Plans
- Assure employees are trained in emergency procedures
- Assure all emergency systems and procedures are tested as planned
- Assure emergency drills are conducted
- Develop disaster recovery plans



Things You Need to Know or Have

- Environmental Management Plan
- A cost effective work environment
- Risk Management
- Disaster Planning
- Security Plan
- Safety Plan
- Evacuation Plan
- Disaster Recovery



Environmental Management Plan

- Housing- buildings & systems
- Services- maintenance, housekeeping, catering, landscaping & waste disposal
- Materials- environmentally friendly



Cost Effective Work Environment

- Energy conservation & efficiency
- Water conservation
- Recycling programs
- Sound purchasing decisions
- Planning & design
- Indoor Air Quality



Risk Management Measures

- Continually evaluate risk probability
- Evaluate nature, extent & frequency of potential losses
- Research methods to reduce or eliminate risk
- Research ways to cover financial consequences of risks
- Purchase insurance policies or create contingency funds



Risk Management Threats

- Personal damage (work related illness or accident)
- Material damage (fires, storms, explosions or floods)
- Crime (fraud, theft, sabotage, violence)
- Technical problems (power outages, machine down time)
- Organizational problems (political risks, lack of funding)
- Third party damage (defective parts, environmental pollution, unlawful acts by employees)



Disaster Planning

- Organization (written plan, crisis team, crisis center)
- Contacts (Media, authorities, Insurance, Banks, Corporate)
- Communication (fall back telephone lines, call in numbers)
- Alarm procedures



Security Plan

(Legal and Internal Regulations)

- Personnel (screening & interview guidelines)
- Working Conditions (employee awareness & input)
- Fire Safety (accessibility, signage, lighting, routes, preventive measures)
- Key Management (key & access card control)
- Off-site storage (back up equipment & files)



Evacuation Planning (Components)

- Objective (why)
- Participants (who)
- Communication (means)
- Evacuation Criteria (when)
- Stages (total or partial evacuation)
- Evacuation signal
- Alarms
- Meeting Points (where)
- Instructions & Drills (how)



Disaster Recovery (Business Continuation)

- Extent of plan (automation, redundant systems, back ups)
- Information gathering (what is important)
- Priorities
- Outline of tasks
- Duties & personnel assignments
- Evaluate largest risks
- Create worst case scenarios & (then) resolutions



Questions

Direct the development and administration of environmentally-conscious programs

- At laboratory facilities, an emergency/biomedical notification sign must be posted by the responsible researcher on:
 - A. Interior walls of each laboratory
 - B. Near the site where most common spills occur
 - C. On the exterior door of each laboratory
 - D. On cabinet doors where corrosive chemicals are kept



Assure the facility & its operations comply with laws and regulations

- What is the maximum high side reach as determined by the ADA?
 - A. 48 inches
 - B. 50 inches
 - C. 52 inches
 - D. 54 inches



Monitor information & trends about human and environmental concerns.

- When designing a computer workstation, what are the most important factors to be considered?
 - A. An ergonomic chair that meets the ANSI/HFES-100 standard
 - B. A height adjustable keyboard and mouse platform, an adjustable monitor, foot rest and work surface.
 - C. The work processes, the hours of operation that the workstation supports along with anthropometric data.
 - D. Position of the monitor to ensure information on the screen can only be viewed by the operator and has minimal glare.



Direct the development and administration of environmentally-conscious programs

- A clerk calls to say she spilled a full bottle of photocopier chemical on the carpet. What is the first action you should take?
 - A. Arrange for the cleaners to respond immediately
 - B. Advise the clerk to immediately evacuate the area and tell you what chemical was spilled
 - C. Arrange to shutdown the mechanical systems on the floor until the spill is cleaned up
 - D. Evacuate the entire floor until the spill is cleaned up.



Monitor changes in laws and regulations

- The primary law controlling emissions of hazardous substances into the air is:
 - A. Federal Insecticide, Fungicide and Rodenticide Act
 - B. Comprehensive Environmental Response, Compensation and Liability Act
 - C. Clean Air Act
 - D. National Pollution Discharge Elimination System



Assure the facility & its operations comply with laws and regulations

- Many facility air-conditioning units contain ozone depleting CFC refrigerants. Recent EPA regulations:
 - A. Prohibit producing CFC refrigerants R12 and R22
 - B. Prohibit purchasing CFC refrigerants R11 and R12
 - C. Prohibit producing CFC refrigerants R11 and R12
 - D. Prohibit producing CFC refrigerants R11 and R22



Wright Chemical Company

You are the vice president of facility management for the Wright Chemical Co. of New Orleans, La. You have just completed a meeting with the board of directors who have voted to accept a recommendation from the marketing department to develop a new corporate headquarters , manufacturing & distribution facility in west central Michigan.

The firm's CEO has called you into her office and has asked you to answer two questions: 'where do we go from here', and ' how quickly can we move into a new facility'? She is concerned about this board decision because the company has grown very rapidly in the last few years, sometimes in a haphazard fashion.

Indicative of this growth is the fact that even though you have the title of vice president, you are still basically a one person operation. The CEO has asked you to respond to her query by noon the next day.

Your first challenge is to outline the basic questions that need to be answered. These questions need to be articulated so you can answer her in sufficient detail at lunch tomorrow, and so she feels her investment in your position will be valuable to the Wright Co.

The primary product for the new manufacturing/distribution facility will be a chemical extracted from the bark of a tree that can be grown in the west Michigan climate. This chemical has become the centerpiece of a new cancer therapy treatment. The process is not without its problems; some of the manufacturing operation's by-products require substantial treatment before disposal.

It is anticipated by the manufacturing team that the new plant will need a minimum 80,000 square feet of space, with the new offices adding another 40,000 to the plans. In addition, the company philosophy supports a quality lifestyle for all employees, so the new facility will include a corporate fitness center, childcare facilities and ample outdoor space for recreational walks and picnic areas.



Assure the facility & its operations comply with laws and regulations (Scenario)

- Michigan has a particularly strong and articulate environmental movement. What initial step would you propose to address the possible concerns about the by-products of the chemical process?
 - A. Refer any inquiries to the legal department
 - B. Set up a meeting between the CEO and the President of the environmental coalition
 - C. Research Michigan's current codes and requirements pertaining to your particular chemical process
 - D. Set up a press conference with the public relations department to announce your move.



Monitor information & trends about human and environmental concerns. (Scenario)

- Company employees are very nervous about any potential transfers to what they perceive as a cold, dreary northern state. What strategy would you propose to begin educating employees about a possible move?
 - A. Develop a newsletter focusing entirely on the possible move and relocation
 - B. Set up a task force to meet with the CEO once a month to discuss quality of life issues
 - C. Send a delegation to western Michigan to interview people within the community and have them talk to current employees
 - D. Have someone from the Michigan Chamber of Commerce give a presentation to all employees.



Assure the facility & its operations comply with laws and regulations (Scenario)

- The Federal Government just issued guidelines on manufacturing facilities that produce chemical compounds for the health care industry. How do you respond to these new guidelines in planning this move?
 - A. Notify your legal department to monitor the lawsuits developing from these new guidelines.
 - B. Obtain a set of guidelines and distribute them to everyone on the project team
 - C. Apply for a waiver of the new guidelines by citing the fact that plans were already underway when the guidelines came out, therefore the Wright Co. should be exempt from the new guidelines
 - D. Obtain a set of the guidelines, review them with senior corporate staff members & ask for a legal opinion on the applicability to your current project.



Assure the facility & its operations comply with laws and regulations

- According to OSHA, who can be fined if an employee must wear steel-toed shoes, does not, and has an accident where his toes are crushed?
 - A. The company
 - B. The department manager
 - C. The employee and the company
 - D. The employee and his supervisor



Evaluate and manage the facility's support of organizational goals & objectives

- What factor most improves office employee productivity?
 - A. Privacy
 - B. Sound control
 - C. Windows in the office
 - D. Office appearance



Monitor and assure changes in the facility function and services

- What should you do first after receiving complaints about bad tasting water in your facility?
 - A. Check the filtration system
 - B. Call in experts to test the water
 - C. Contact the supplier
 - D. Inform occupants and ask them not to drink it.



Monitor changes in the people who use and visit the facility

- If you must know who is in your facility at all times, what type of security system is best?
 - A. Video
 - B. Push button access system
 - C. Security cards
 - D. Proximity cards



Develop Emergency Plans

- What should you do first if employees show symptoms of “sick building syndrome”?
 - A. Call an indoor air quality specialist to assess the situation
 - B. Inspect HVAC system operation
 - C. Clean HVAC system, rugs and furniture
 - D. Replace HVAC system



Assure employees are trained in emergency procedures

- A new emergency response plan has been developed. A fire drill is scheduled as part of the employee safety training. Who should you notify ahead of time?
 - A. Senior management
 - B. All managers
 - C. All employees
 - D. Emergency Response Team



Develop disaster recovery plans

- What part of a disaster plan is most critical?
 - A. Procedures to minimize losses
 - B. Knowing minimum resources needed to run the facility
 - C. Emergency internal communication procedures
 - D. Selection of alternative work sites



ANSWERS

Direct the development and administration of environmentally-conscious programs

- At laboratory facilities, an emergency/biomedical notification sign must be posted by the responsible researcher on:
 - A. Interior walls of each laboratory
 - B. Near the site where most common spills occur
 - C. On the exterior door of each laboratory-*
 - D. On cabinet doors where corrosive chemicals are kept



Assure the facility & its operations comply with laws and regulations

- What is the maximum high side reach as determined by the ADA?
 - A. 48 inches
 - B. 50 inches
 - C. 52 inches
 - D. 54 inches-*



Monitor information & trends about human and environmental concerns.

- When designing a computer workstation, what are the most important factors to be considered?
 - A. An ergonomic chair that meets the ANSI/HFES-100 standard
 - B. A height adjustable keyboard and mouse platform, an adjustable monitor, foot rest and work surface.
 - C. The work processes, the hours of operation that the workstation supports along with anthropometric data.-*
 - D. Position of the monitor to ensure information on the screen can only be viewed by the operator and has minimal glare.



Direct the development and administration of environmentally-conscious programs

- A clerk calls to say she spilled a full bottle of photocopier chemical on the carpet. What is the first action you should take?
 - A. Arrange for the cleaners to respond immediately
 - B. Advise the clerk to immediately evacuate the area and tell you what chemical was spilled-*
 - C. Arrange to shutdown the mechanical systems on the floor until the spill is cleaned up
 - D. Evacuate the entire floor until the spill is cleaned up.



Monitor changes in laws and regulations

- The primary law controlling emissions of hazardous substances into the air is:
 - A. Federal Insecticide, Fungicide and Rodenticide Act
 - B. Comprehensive Environmental Response, Compensation and Liability Act
 - C. Clean Air Act-*
 - D. National Pollution Discharge Elimination System



Assure the facility & its operations comply with laws and regulations

- Many facility air-conditioning units contain ozone depleting CFC refrigerants. Recent EPA regulations:
 - A. Prohibit producing CFC refrigerants R12 and R22
 - B. Prohibit purchasing CFC refrigerants R11 and R12
 - C. Prohibit producing CFC refrigerants R11 and R12-*
 - D. Prohibit producing CFC refrigerants R11 and R22



Assure the facility & its operations comply with laws and regulations (Scenario)

- Michigan has a particularly strong and articulate environmental movement. What initial step would you propose to address the possible concerns about the by-products of the chemical process?
 - A. Refer any inquiries to the legal department
 - B. Set up a meeting between the CEO and the President of the environmental coalition
 - C. Research Michigan's current codes and requirements pertaining to your particular chemical process-*
 - D. Set up a press conference with the public relations department to announce your move.



Monitor information & trends about human and environmental concerns. (Scenario)

- Company employees are very nervous about any potential transfers to what they perceive as a cold, dreary northern state. What strategy would you propose to begin educating employees about a possible move?
 - A. **Develop a newsletter focusing entirely on the possible move and relocation***
 - B. Set up a task force to meet with the CEO once a month to discuss quality of life issues
 - C. Send a delegation to western Michigan to interview people within the community and have them talk to current employees
 - D. Have someone from the Michigan Chamber of Commerce give a presentation to all employees.



Assure the facility & its operations comply with laws and regulations (Scenario)

- The Federal Government just issued guidelines on manufacturing facilities that produce chemical compounds for the health care industry. How do you respond to these new guidelines in planning this move?
 - A. Notify your legal department to monitor the lawsuits developing from these new guidelines.
 - B. Obtain a set of guidelines and distribute them to everyone on the project team
 - C. Apply for a waiver of the new guidelines by citing the fact that plans were already underway when the guidelines came out, therefore the Wright Co. should be exempt from the new guidelines
 - D. Obtain a set of the guidelines, review them with senior corporate staff members & ask for a legal opinion on the applicability to your current project.-*



Assure the facility & its operations comply with laws and regulations

- According to OSHA, who can be fined if an employee must wear steel-toed shoes, does not, and has an accident where his toes are crushed?
 - A. The company
 - B. The department manager
 - C. The employee and the company
 - D. The employee and his supervisor-*



Evaluate and manage the facility's support of organizational goals & objectives

- What factor most improves office employee productivity?
 - A. Privacy
 - B. Sound control-*
 - C. Windows in the office
 - D. Office appearance



Monitor and assure changes in the facility function and services

- What should you do first after receiving complaints about bad tasting water in your facility?
 - A. Check the filtration system
 - B. Call in experts to test the water-*
 - C. Contact the supplier
 - D. Inform occupants and ask them not to drink it.



Monitor changes in the people who use and visit the facility

- If you must know who is in your facility at all times, what type of security system is best?
 - A. Video
 - B. Push button access system
 - C. Security cards
 - D. Proximity cards-*



Develop Emergency Plans

- What should you do first if employees show symptoms of “sick building syndrome”?
 - A. Call an indoor air quality specialist to assess the situation-*
 - B. Inspect HVAC system operation
 - C. Clean HVAC system, rugs and furniture
 - D. Replace HVAC system



Assure employees are trained in emergency procedures

- A new emergency response plan has been developed. A fire drill is scheduled as part of the employee safety training. Who should you notify ahead of time?
 - A. Senior management
 - B. All managers
 - C. All employees
 - D. Emergency Response Team-*



Develop disaster recovery plans

- What part of a disaster plan is most critical?
 - A. Procedures to minimize losses-*
 - B. Knowing minimum resources needed to run the facility
 - C. Emergency internal communication procedures
 - D. Selection of alternative work sites

