



<b>CHECKLIST: FACILITY HUMAN FACTORS ISSUES CHECKLIST</b>				
<b>CRITERIA</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>COMMENTS</b>
<b>Housekeeping / General Work Environment</b>				
1. Are work areas generally kept clean?				
2. Are adequate signs posted in cleanup and maintenance areas?				
3. Is the ambient temperature normally within comfortable bounds?				
4. Is noise maintained at a tolerable level?				
5. Is the lighting sufficient for all facility operations?				
6. Is the general environment conducive to efficient performance?				
<b>Accessibility and Availability of Controls and Equipment</b>				
1. Are adequate supplies of protective gear readily available for routine and emergency use?				
2. Is communications equipment adequate and easily accessible?				
3. Would others know that a worker is incapacitated in the process area?				
4. Are the right tools available and used when needed?				
5. Are special tools required to perform any tasks safely and efficiently?				
6. What steps are taken to identify and provide special tools?				
7. Is the whole work place arranged so that the workers can maintain a good working posture and perform a variety of movements?				
8. Are all controls accessible?				
9. Is access adequate for routine operation and maintenance of all equipment?				
<b>Component Labeling</b>				
1. Is all important equipment (vessels, pipes, valves, instruments, controls, and so on) clearly and unambiguously labeled?				
2. Does the labeling program include components (e.g. small valves) that are mentioned in the procedures even if they are not assigned an equipment number?				
3. Are plant instruments and controls clearly labeled?				
4. Are the labels accurate?				
5. Is someone responsible for maintaining and updating the labels?				
6. Are emergency exit and response signs clearly visible and easily understood?				
<b>Feedback and Displays</b>				
1. Is adequate information about normal and upset process conditions displayed in the control room?				
2. Are the controls and displays arranged logically to match the expectations of the operators?				
3. Are the displays adequately visible from all relevant working locations?				
4. Do separate displays present information in a consistent manner?				
5. Is all significant operating information displayed logically?				
6. Are related displays and controls grouped together?				
7. Is information displayed in ways the operators can understand?				
8. Are the operators provided with enough information to be able to diagnose an upset when an alarm sounds?				
9. Are the alarms displayed by priority?				
10. Are critical alarms separate from control alarms?				
11. Is an alarm summary permanently on display?				
12. Do the operators perform calculations reading displays and are these readings checked?				



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13. Do the displays provide an adequate review of the entire process as well as essential details of the individual systems?				
14. Do the displays give rapid feedback for all operational actions?				
15. Do all mimic displays (board and screen) match the actual equipment configuration?				
<b>Controls</b>				
1. Is the layout of the consoles logic, consistent and effective?				
2. Are the controls distinguishable and easy to use?				
3. Do controls violate strong expectations (color, direction of movement, etc.)?				
4. Do the control panel layouts reflect the functional aspects of the process or equipment?				
5. Does the control setup follow the normal sequence of operations?				
6. What are the consequences of operator intervention in any computer-controlled processes?				
7. Are any process variables difficult to control with the existing equipment?				
8. Does the control logic seem adequate?				
9. Is there a dedicated emergency shutdown panel and where is it located?				
<b>10. Workload and Stress Factors</b>				
11. Are the operators only in the control room or do they work in a variety of locations?				
12. Must a worker perform many manual adjustments during normal and emergency operations?				
13. Is this duration of a normal operating shift appropriate based on its impact on alertness and fatigue?				
14. How many extra hours must an operator work if his (her) relief fails to show up?				
15. How many hours do operators and maintenance personnel typically work on a shift during startup, shutdown or turnaround?				
16. Has the operator's mobility been considered in selecting the design of protective gear for certain tasks, including emergency response?				
<b>General Issues</b>				
1. Has the human-process interface ever undergone a formal human factors analysis?				
2. Is there a formal mechanism for correcting human factors deficiencies identified by the operators?				
3. Are designers made aware of human factors problems so that they can improve existing or future designs?				
4. Are means provided to allow personnel to compensate for errors?				
5. Can personnel detect an error they or someone else makes with sufficient time to correct it?				
6. Have the operators made any modifications to the displays, controls, or equipment to better suit their needs?				
7. Is the control room adequately located relative to the process?				
<b>Process Safety Information</b>				
1. Are the results of worst-case and more likely case release scenarios available? (Toxic cloud, overpressures)				
2. Are the plot plans for the process and surroundings available? Electrical classifications? Grounding requirements?				



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3. Are wind speed and wind direction data available for the site?				
4. Hazards Caused by the Location of the Process				
5. Are there hazards caused by: where the process is located in relation to where the people (non-workers) are? And the likelihood of them being there?				
6. Are there hazards caused by where the process is located in relation to where the people have to be?				
7. Are there hazards posed during egress for emergency escape?				
8. Are there hazards posed by ingress for emergency response? For fire fighting equipment?				
<b>Hazards in Responding to Emergencies</b>				
1. Are operators normally located near the controls?				
2. Are the valves/controls accessible under normal conditions? Under emergency conditions? During severe weather?				
3. Is it likely that operators will have to go through a vapor cloud to respond to an emergency?				
4. Location of Emergency Response Items and Detectors				
5. Are vapor detectors located where they are likely to detect when needed?				
6. Are fire detectors located where they are likely to detect when needed?				
7. Are monitor nozzles and deluged located where they can be effective?				
<b>Occupied Buildings</b>				
1. Are there occupied buildings in or near the process?				
2. Are occupied buildings located inside of blast zones or within the footprint of a toxic release from the process?				
3. If in a blast zone, is the building adequately constructed to withstand blast effects? Have potential risks been determined? Are there unprotected windows?				
4. If in a toxic zone, is the building under positive pressure with elevated air intakes? Are there toxic gas detectors? Do the building inhabitants have adequate personal protective equipment and training to be able to make a safe escape?				