



HFE ITEMS IN PROCESS DESIGN SAFETY CHECKLIST	
CRITERIA	DESCRIBE REPNSE
1. Are there any special design considerations associated with the handling and storage of these materials?	
2. Have any relevant alternative operating conditions been identified?	
3. Have layout considerations which may be necessary to assure a safe plant design been identified and documented?	
4. Have equipment items and bypasses needed for safe startup / shutdown / maintenance been included?	
5. Has the necessary design information been included such as: maximum and minimum duties?	
6. Will unwanted hazardous reactions or decompositions occur because of a mechanical failure or loss of utility (e.g., pump trip, loss of agitation such as agitator trip or loss of impeller blade(s), material overcharges, solvent undercharges, overheating, overcooling, unwanted precipitations, failure of upstream and/or downstream equipment, etc.)	
7. Are transient conditions identified?	
8. Can combustible or explosive mixtures of process fluids or dust occur within equipment because of normal or abnormal process conditions, including air leakage into the system and/or release and accumulation of dissolved or chemically-bound oxygen, and are protection provisions required (e.g., explosion suppression equipment, blast gates, etc.)?	
9. Have any Client safety aspects been identified and referenced (e.g., Process Safety Manuals, recommended practices, etc.)?	
10. If there are runaway conditions present, have the cause(s), consequences, and preventive measures been identified (e.g., loss of cooling, misreactants, contaminants, local hot spots, loss of purge, etc.)?	