

Control Options Matrix (COM) Worksheet

Organisation :		Operation :	
Hazard:		Analyst :	Date :
Options (tick)	Examples	Description	
Engineer (Energy Mgt.) <input type="checkbox"/> Limit Energy <input type="checkbox"/> Substitute Safer Form <input type="checkbox"/> Prevent Buildup <input type="checkbox"/> Prevent Release <input type="checkbox"/> Provide Slow Release <input type="checkbox"/> Rechannel/Separate in Time/Space <input type="checkbox"/> Provide Special Maint. of Controls	Lower voltages, small amount of explosives, reduce speeds, reduce heights Use air power, less hazards chemicals, more stable explosives/chemicals Use automatic cutoffs, blowout panels, limit momentum, governors Containment, double/triple containment Use pressure relief valves, energy absorbing materials Automatic procedures, diverters, barriers, distance Special procedures, special checks/audits		
Guard <input type="checkbox"/> On Source <input type="checkbox"/> Barrier Between <input type="checkbox"/> On Human or Object <input type="checkbox"/> Raise Threshold	Fire suppression systems, energy absorbing systems (crash walls, etc.) Revetments, walls, distance Personal protective equipment, energy absorbing materials Acclimatization, over-design, reinforcement, physical conditioning		
Improve Task Design <input type="checkbox"/> Sequence of Event <input type="checkbox"/> Timing (within/between tasks) <input type="checkbox"/> Man-Machine Interface/Ergonomics <input type="checkbox"/> Simplify Tasks <input type="checkbox"/> Reduce Task Loads (physical, mental, emotional) <input type="checkbox"/> Backout Options	Put tough tasks first before fatigue, don't schedule several tough tasks in a row Allow sufficient time to perform, to practice. Allow adequate time between tasks Assure equipment fits the people and effective ergonomic design Provide job aids, reduce steps, provides tools Set weight limits, automate mental calculations, monitor tasks, avoid excessive stress, provide breaks, vacations, spread risk among many Establish points where process reversal is possible when hazard is detected		
Limit Exposure <input type="checkbox"/> Number of People or Items <input type="checkbox"/> Time <input type="checkbox"/> Iterations	Only expose essential personnel and things Minimize the time of exposure – Don't bring the explosives until the last minute Don't do it as often		
Selection of Personnel <input type="checkbox"/> Mental Criteria <input type="checkbox"/> Emotional Criteria <input type="checkbox"/> Physical Criteria <input type="checkbox"/> Experience	Essential basic intelligence, and essential skills and proficiency Essential stability and maturity Essential strength, motor skills, endurance, size Demonstrated performance abilities		
Train and Educate <input type="checkbox"/> Core Tasks (especially critical tasks) <input type="checkbox"/> Leader Tasks <input type="checkbox"/> Emergency Contingency Tasks <input type="checkbox"/> Safety Tasks <input type="checkbox"/> Rehearsals	Define critical minimum abilities, train, test and score Define essential leader tasks and standards, train, test and score Define, assign, train, verify ability Hazard ID, risk controls, maintenance of standards Validate processes, validate skills, verify interfaces		
Warn <input type="checkbox"/> Signs/Color Coding <input type="checkbox"/> Audio/Visual Alarms <input type="checkbox"/> Briefings	Warning signs, instruction signs, traffic signs Bells, flares, flashing lights, klaxons, whistles Refresher warnings, demonstrate hazards, refresh training		
Motivate <input type="checkbox"/> Measurable Standards <input type="checkbox"/> Essential Accountability <input type="checkbox"/> Positive/negative Incentives <input type="checkbox"/> Competition <input type="checkbox"/> Demonstrations of effects	Define minimum acceptable risk controls Check performance at an essential level of frequency and detail Meaningful individual and group rewards, punishment Healthy individual and group competition on a fair basis Graphic, dynamic, but tasteful demonstrations of effects of unsafe acts		
Reduce Effects <input type="checkbox"/> Emergency Equipment <input type="checkbox"/> Rescue Capabilities <input type="checkbox"/> Emergency Medical Care <input type="checkbox"/> Emergency Damage Control Procedures <input type="checkbox"/> Backups/Redundant Capabilities	Fire extinguishers, first aid materials, spill containment materials A rescue squad, rescue equipment, helicopter rescue Trained first aid personnel, medical facilities Emergency responses for anticipated contingencies, coordination agencies Alternate ways to continue the mission if primaries are lost		
Rehabilitate <input type="checkbox"/> Personnel <input type="checkbox"/> Facilities/equipment <input type="checkbox"/> Mission Capabilities	Rehabilitation services restore confidence Get key elements back in service Focus on restoration of the mission		