

Appendix 12.2

University of Alaska Anchorage Facilities planning and construction

Project risk management typical events worksheet		
Risk event	Impact/Consequence	Potential risk event response strategies
Inclement weather.	Reduces productivity or stops job due to unsafe working conditions and/or workforce reduction due to road conditions.	<ol style="list-style-type: none"> 1. If possible, plan project to occur during optimum weather conditions – Risk Avoidance. 2. Include cost in project budget for temporary weather enclosures to protect workers – Risk Mitigation. 3. Include schedule contingency if work must occur during period when weather is likely to cause delays – Risk Mitigation. 4. Include cost contingency for overtime to offset productivity loss – Risk Mitigation.
Inexperienced contractor.	Potential problems in quality, cost and schedule compliance.	<ol style="list-style-type: none"> 1. Investigate qualifications of contractors/suppliers and be selective in who is allowed to bid – Risk Avoidance. 2. Bid evaluation should include experience and quality of proposed management team – Risk Avoidance. 3. Consider alliance contractors for highly complex or critical projects – Risk Avoidance.
Labor availability.	Schedule delays and/or premium cost for overtime or wage incentives to attract sufficient labor.	<ol style="list-style-type: none"> 1. Use firm price, Guaranteed Maximum Price (GMP) or shared risk/reward pricing to limit exposure due to labor premium – Risk Transference. 2. Consider adjusting project schedule when labor is more plentiful – Risk Avoidance. 3. Include additional contingency in cost estimate and/or schedule – Risk Mitigation.
Unexpected field conditions.	Additional scope or rework causes increased cost and schedule delays.	<ol style="list-style-type: none"> 1. Make field walk-downs to check for conditions not shown or inconsistent with drawings – Risk Avoidance. 2. Perform exploratory digging to accurately locate underground utilities – Risk Avoidance. 3. Check condition and suitability of existing equipment or material to be reused as part of a project. Examples include existing cables, motors, pumps, etc. – Risk Avoidance.

Project risk management typical events worksheet		
Presence of hazardous materials.	Presence of asbestos, lead paint or other hazardous materials may create health concerns among workforce, delay work, and increase cost.	<ol style="list-style-type: none"> 1. Arrange for sampling of work areas if there is any doubt as to presence of hazardous materials – Risk Avoidance. 2. Protect, clean and/or abate hazardous material in work areas prior to entry by work force – Risk Avoidance. 3. Have plans and resources ready on site to respond to emergency situations and concerns of work force if hazardous materials are released or found unexpectedly – Risk Mitigation.
Interferences with other contractors or plant operations.	Delays in schedule and claims for inefficiencies from contractors.	<ol style="list-style-type: none"> 1. Use general contractor to coordinate work activities of multiple specialty contractors – Risk Transference. 2. Discuss construction plans with plant operations and maintenance – Risk Avoidance. 3. Investigate other planned construction activity on site to determine possible work interferences and pursue resolution – Risk Avoidance. 4. Conduct coordination meetings – Risk Avoidance.
Late material/equipment deliveries.	Results in claims from installing contractor, inefficient use of resources and possible production loss.	<ol style="list-style-type: none"> 1. For critical material/equipment, use penalties in contract for late delivery – Risk Transference. 2. Require regular vendor status reports – Risk Avoidance. 3. Visit vendor fabrication facility to verify progress – Risk Avoidance. 4. Develop alternate construction plan to maintain productivity and schedule compliance in the event of late deliveries – Risk Mitigation.
Scope not well defined.	Exposure to additional cost for extra work or inflated bids to cover undefined work.	<ol style="list-style-type: none"> 1. Complete design and develop project delivery plan before initiating contract procurement – Risk Avoidance. 2. Use alliance contractor to jointly develop scope, cost and schedule requirements for project – Risk Avoidance.
Inaccurate cost estimate.	Project budget inadequate to cover intended scope.	<ol style="list-style-type: none"> 1. Obtain estimates or budgetary quotes from contractors and vendors – Risk Avoidance. 2. Obtain firm price proposals to well defined scope of work – Risk Transference. 3. Utilize alliance contractor with shared risk/reward or GMP – Risk Transference. 4. Utilize cost contingency commensurate with the identified risk – Risk Mitigation.
Compressed schedule.	Additional cost for overtime, inefficiencies and unexpected	<ol style="list-style-type: none"> 1. Obtain input from contractors, past similar projects and experience of others to establish realistic schedule – Risk Avoidance.

Project risk management typical events worksheet		
	production loss from extending outage.	<ol style="list-style-type: none"> 2. Encourage alternative proposals from contractors that offer potential to reduce schedule and/or cost – Risk Avoidance. 3. Use alliance contractor to develop work plan and schedule for complex projects – Risk Avoidance.
Permits.	Potential delay of start of field construction and/or result in project cost overruns or failure of the project entirely.	<ol style="list-style-type: none"> 1. Obtain input from, management, contractors, past similar projects and experience of others to identify required federal, state and local permits as early as possible in the project planning phase – Risk Avoidance. 2. Ensure need dates and ownership for obtaining each permit is clearly identified – Risk Avoidance.
Contractor not motivated to control cost.	Budget not adhered to. Cost spirals out of control.	<ol style="list-style-type: none"> 1. Structure commercial arrangements to ensure contractor has significant financial interests in meeting project goals. Examples include: <ol style="list-style-type: none"> a. Target Price with shared risk/reward – Risk Transference. b. Firm Price to well defined scope and schedule requirements – Risk Transference. c. GMP with shared reward – Risk Transference.
Unproven technology or construction method used.	<p>Project does not achieve goals in one or more of the following:</p> <ol style="list-style-type: none"> 1. Technical performance. 2. Schedule. 3. Cost. 	<ol style="list-style-type: none"> 1. Research technologies and/or design approach – Risk Avoidance. 2. Seek independent expert opinion(s) on technology or construction methods – Risk Avoidance. 3. Pre-qualify vendors/contractors based on experience on similar projects – Risk Avoidance. 4. Encourage proven alternatives from vendors/contractors by using performance based specifications – Risk Avoidance.
Quality issues with completed work.	May require significant rework. Unit availability and/or project design goals negatively impacted.	<ol style="list-style-type: none"> 1. Prepare quality control plans – Risk Avoidance. 2. Perform vendor/contractor surveillance as appropriate – Risk Avoidance. 3. Specify industry standard or specialized testing as appropriate in the contract – Risk Avoidance.
Design documents not completed on schedule.	Potential delay of start of field construction and/or result in project cost overruns.	<ol style="list-style-type: none"> 1. Ensure project is well defined and design activities are started as early as practical – Risk Avoidance. 2. Prioritize design documents completion schedule to minimize impact on schedule – Risk Avoidance. 3. Identify and remove barriers to design completion – Risk Avoidance.

Project risk management typical events worksheet

		4. Add additional design resources if practical – Risk Mitigation.
Significant change in project scope.	Potential increase project duration, resources and costs.	<ol style="list-style-type: none">1. Ensure project scope is well defined during project planning phase – Risk Avoidance.2. Prevent unnecessary scope changes – Risk Avoidance.
Loss of key project team member.	Delays in completion of project activities and decrease in project management effectiveness.	<ol style="list-style-type: none">1. Have firm commitment on team member participation in the project – Risk Avoidance.2. Have contingency plans for replacement of key team members – Risk Mitigation.3. Ensure team members are capable of assuming each other duties to the extent possible – Risk Mitigation.