

**W E L C O M E .**

**ICES – UAE**

12 January 2010 – Abu Dhabi

**Risk / Early Warning**

Inception to Completion

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## Risk / Early Warning Inception to Completion

### Overview:

- ü The *Risk / Early Warning Form*;
- ü Assessment & evaluation of risks;
- ü Communication & benefits;
- ü The *Risk Register*, and
- ü Conflict avoidance.

## Risk / Early Warning Inception to Completion

The *Risk / Early Warning Form* ..... What is it?

- ü A single Form on A4 size paper;
- ü Process for identifying, quantifying, communicating & managing potential risks/delays/conflicts/claims;
- ü It's a management tool;
- ü It's a communication vehicle;
- ü It thrives on teamwork;
- ü It's a documented path to the Risk Register;
- ü The message – Keep It Simple!

## Risk / Early Warning Inception to Completion

### Assessment:

- Consider any risk that could potentially affect the project objectives – (i.e. brainstorm & make a list)
- Decide what the risk might affect...
  - *Time*                      *Supply chain*
  - *Cost*                        *Resources*
  - *Scope*                      *Quality*
  - *Logistics*                 *Safety / Environment*

## Risk / Early Warning Inception to Completion

### Assessment - Risks can be categorized as:

- **External/Strategic/Corporate Business risk** – whatever affects our ability to meet business objectives. These high level risks are managed within the business and cannot be transferred. Such risks include project funding, organizational, political, environmental, cultural, mergers & acquisitions, infrastructure failure, utility Authorities, legislation, changes in marketplace, security, life safety, functionality and business continuity risks.
- It should be possible to mitigate, to a degree, some risks despite being outside *our* control. These are generally business risks (scope) that could jeopardize the success of the project.
- **Project/Programme/Operational risk** – includes technical, contract, design, market costs, claims, operational issues, schedules/time, resources, quality, procurement, and safety/environmental; these should be managed by the party best placed to do so. These are project risks that could jeopardize the success of the project in terms of time, cost, quality or safety.

# Risk / Early Warning Inception to Completion

## Evaluation: Qualitative & Quantitative

Qualitative estimate, (a quick approximation):

- Evaluate the probability or likelihood of *something* happening?
- Evaluate the impact or consequences of *something* happening?
- Consider impacts separately for time, cost, quality, scope, etc  
...green = low    Yellow = Medium    Red = high

Probability	Low impact	Medium impact	High impact
Hardly likely	Low risk	Low risk	Medium risk
Not likely	Low risk	Low risk	Medium risk
Maybe	Low risk	Medium risk	Medium/High risk
Likely	Low risk	Medium/High risk	High risk
Highly likely	Low risk	High risk	High risk

# Risk / Early Warning Inception to Completion

Evaluation: ... one step further ...

- Numerical probability & impact using refined ranges
- Probability x Impact = Risk Score (ie 0.9 x 0.1 = 0.09)
- highly likely (90%) x high impact (80%) = 0.72 = HIGH
- Hardly likely (10%) x devastating impact (100%) = 0.1 = HIGH ...but...
- Probability % + impact % / 2 = initial risk priority (severity)

<b>Probability</b>	<i>Risk Score = P x I</i>				
<b>90% (0.9)</b>	0.05	0.09	0.18	0.36	0.72
<b>70% (0.7)</b>	0.04	0.07	0.14	0.28	0.56
<b>50% (0.5)</b>	0.03	0.05	0.10	0.20	0.40
<b>30% (0.3)</b>	0.02	0.03	0.06	0.12	0.24
<b>10% (0.1)</b>	0.01	0.01	0.02	0.04	0.08
<b>Impact =</b>	<b>0.05</b>	<b>0.10</b>	<b>0.20</b>	<b>0.40</b>	<b>0.80</b>

## Risk / Early Warning Inception to Completion

Evaluation: ... numerical values ...

### Quantitative :

- Probability say 90% (0.9)
- Impact say 10% (0.1)
- Probability x Impact = 0.09 (Medium risk)
- if *cost impact* is AED100,000, then cost contingency:
- $0.9 \text{ (Probability)} \times \text{AED}100,000 = \text{AED}90,000.$
- if *time impact* is 100 man hours, then time contingency:
- $0.9 \text{ (Probability)} \times 100 \text{ hrs} = 90 \text{ hrs}$
- ...Thus providing a severity level and simple contingency for costs and time...

## Risk / Early Warning Inception to Completion

Evaluation: ... Mitigation & Response ...

- Consider possible options for mitigation & ownership
  - Tolerate
  - Treat
  - Transfer
  - Terminate
- What is the *residual* risk?
- Risk mitigation should be appropriate to the severity of the risk

## Risk / Early Warning Inception to Completion

### Evaluation...

- Response plan (contingency) options
- *Please refer to handout...*
- Consider *secondary* risks arising from the response plan
- The Form...

# Risk / Early Warning Inception to Completion

## Example Form:

<b>&lt;Project Name&gt;</b> <b>Risk / Early Warning Form</b>	
Risk Identifier:	Risk Register No.:
Programme Activity:	Risk Urgency :(days)* 7, 14, 28+ (*Delete as appropriate)
<b>Risk Description:</b> <i>Include any risks to scope, resources, deliverables, time scale, critical path, quality, environment, budget etc</i>	
<b>Risk Likelihood:</b> <i>Describe and list PROBABILITY for the risk eventuating (eg Value or Low, Medium or High)</i>	
<b>Risk Impact:</b> <i>Describe and list IMPACT: additional resources required, increased capital costs, whole life costs, change to the brief, time, utility company approval, long delivery time etc (eg Value or Low, Medium or High)</i>	
<b>Recommended Preventative Action:</b> <i>Describe the mitigation actions to be taken</i>	<b>Recommended Contingency Action:</b> <i>Describe actions that should be taken as a contingency if the risk occurs, if cost allocation then indicate range verses options</i>

# Risk / Early Warning Inception to Completion

## Example Form:

<b>Supporting Documentation:</b> <i>Documents &amp; references which may help to evaluate this risk</i>
<b>Risk Status:</b> <i>In progress / Imminent / Within 2 weeks / Within 1, 2 or 3, months / more</i> (Delete as appropriate)
Signature: _____ Date: ___/___/___
<b>Please forward to _____ for review &amp; co-ordination</b>

# Risk / Early Warning Inception to Completion

## Example Form:

<b>Received by:</b> _____ (For/on behalf/The Engineer)	<b>Date:</b> ___/___/___
<b>^ Review Comments:</b> (The Engineer)	
.....	
.....	
.....	
<b>Signature:</b>	<b>Date:</b> ___/___/___
<b>Employers Representative :</b> <u>Approved</u> <u>Approved subject to comments</u> <u>Amend &amp; Resubmit</u> <u>Rejected</u>	
<b>Comments:</b> .....	
.....	
<b>Signature:</b>	<b>Date:</b> ___/___/___

## Risk / Early Warning Inception to Completion

### Communication – Meetings & Workshops

- The Risk Register
- Ensure ALL project meetings include an agenda item for “Risk Issues”
- Ensure all risks & contentious issues are processed on a Risk/EW Form
- The register should be stored in a shared area on the network
- Please refer to handout...

# Risk / Early Warning Inception to Completion

## Communication – Meetings & Workshops

Risk issues arising during the course of daily/weekly meetings :

- Please refer to handout....

...Typical example of the column headers and risk information required in order for an issue to be informatively entered onto the risk register.

...Opportunities...

Minimise uncertainty...

Manage change...better decision making...

Value management...

Accountability...

Better work planning...

# Risk / Early Warning Inception to Completion

## Communication

Benefits of using this process include:

- *Employer & Engineer/Lead Consultant receive an early warning;*
- *Project Team's pro-active assessment is made available;*
- *Project Team's estimated costs and time impacts are made available;*
- *Project Team's mitigation & contingency ideas are made available;*
- *Risk can be managed by the Team in a timely manner, and...*
- *...It satisfies basic obligations for 'advance notice' of 'likely' delay...*

## Risk / Early Warning Inception to Completion

### Communication:

*Example FIDIC 4<sup>th</sup> Ed:*

#### *6.3 Disruption of Progress*

*The Contractor shall give notice to the Engineer, with a copy to the Employer, whenever planning or execution of the Works is likely to be delayed, or disrupted unless any further drawing or instruction is issued by the Engineer within a reasonable time. The notice shall include details of the drawing or instruction required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.*

*Similarly, see 1999 Suite: CoCC 1.9, P & DB 1.9/5.1, SFoC 10.3*

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Conflict avoidance... the Form promotes:

- A non-contentious advance warning;
- Pro-active risk (event) management to avoid conflict and gain early approval;
- Part of the Risk Management Process;
- Adopting a teamwork approach to create a spirit of cooperation, trust and mutual respect.
- The alternative....

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A typical notice of delay:

Dear Sir,

The progress of the works is being delayed due to *[state reason]*. We consider this to be a relevant event under clause x.

The delay began on *[insert date]*. When it is finished, we will furnish you with our estimate of delay in the completion of the works and further supporting particulars.

You may be assured that we are using our best endeavours to prevent delay in progress and completion of the works.

This notice is issued in accordance with clause x.

Yours faithfully,

## Risk / Early Warning Inception to Completion

A typical notice of delay:

Dear Sir,

The progress of the works IS being delayed due to *[state reason]*. WE consider this to be a relevant EVENT under *clause x*.

The delay BEGAN on *[insert date]*. When it is FINISHED, we will furnish you with OUR estimate of delay in the completion of the works and further supporting particulars.

You MAY be assured that we are using our best endeavours to prevent delay in progress and completion of the works.

This NOTICE is issued in accordance with *clause x*.

Yours faithfully,

cc: The Employer and EVERYONE else under the sun!

# Risk / Early Warning Inception to Completion

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<b>Employers Representative :</b> <u>Approved</u> <u>Approved subject to comments</u> <u>Amend &amp; Resubmit</u> <u>Rejected</u>	
<b>Comments:</b> ..... .....	
<b>Signature:</b>	<b>Date:</b> ___/___/___

## Risk / Early Warning Inception to Completion

### Supporting Documentation:

#### Records, Records, Records !!!

- Records of records: in/out logs, distribute, track, response;
  - Monitoring records: resources, measurements, programme;
  - Conformity records: inspection, testing, defects;
  - Event records: instructions/variations, notices, delays, additions;
  - Costs records: planned and unplanned costs;
  - Contemporaneous records: site diary, submittal registers, photos.
- 
- Always keep a separate file for each risk event;
  - Maintain an index showing chronology including links;
  - Regularly obtain impacted & look-ahead programmes.

## Risk / Early Warning Inception to Completion

Supporting Documentation:      Records, Records, Records !!!

- Cause and Effect, link for each disrupted activity (Time / Money)
- Tender and contract documentation
- Letters
- Minutes of Meetings
- Deficiencies, corrective action
- Conflicts in plans/specification
- Adverse Weather conditions
- Signed sheets by the Consultant's representative confirming operative/plant utilisation records
- Site Diaries/Daily Activity Report
- Weekly & Monthly reports works performed as referenced on programme
- Allocation Sheets – ganger/foremen sheets describing place, nature and time of works

## Risk / Early Warning Inception to Completion

Supporting Documentation :      Records, Records, Records !!!

- Labour Time Sheets – including overtime records
- Records of activity Actual v Planned progress for all CPOW's on weekly/monthly basis
- CPOW's revised to take account of variations with Actual v Planned progress on weekly/monthly basis
- Resource records by Trade on weekly/Monthly basis Actual Versus Planned
- Records showing progress for each Trade (measured against KPI's)
- CVI's
- RFI's
- Register of Technical Queries and Site Instructions
- Approvals e.g. work methods, drawings
- Inspections
- Programme and progress
- As-built programmes and Record Drawings
- Out of sequence working

## Risk / Early Warning Inception to Completion

Supporting Documentation :      Records, Records, Records !!!

- Site Progress Photographs and/or video (dating facility essential)
- QA records
- Dayworks
- Payment applications and certifications
- Materials orders and invoices
- Working with other Contractors where not envisaged i.e. interference of operations
- Records for return visits to single visit activities or abortive visits
- Records of Additional resources and supervision brought to site
- Drawing Registers
- Planned and Actual value of work – graphical and tabular monthly
- Tender Labour costs by trade – verification
- Tender production outputs – verification
- Actual Labour costs by trade – verification
- Variations - break down of Labour Costs
- Actual Cost of Variations

## Risk / Early Warning Inception to Completion

Supporting Documentation :      Records, Records, Records !!!

- Records of Contractor's remedial work/defect labour costs
- Records of unavailable work-faces – areas of CPOW not available with resource breakdown
- Contractor inefficiency admitted e.g. NCR's, remedial works, poor subcontractors, – labour costs
- Record of Acceleration measures (agreed or otherwise)
- Original Cash Flow v Value (Monthly Certificate less variations)
- Records for un-provided attendances by Employer
- Contractor Deliverables – contractual requirements submitted as a minimum
- Detailed records of sub-contractors activities and submittals

## Risk / Early Warning Inception to Completion

Manage the Risk / Early Warning process:

- It is an ongoing process for the life of the project;
- Keep track of the identified risks;
- Risks change as the project matures;
- New risks develop others disappear;
- Good risk monitoring and control processes provide information that assists with making effective decisions in advance of the risks occurring;

## Risk / Early Warning Inception to Completion

### Summary (1 of 2):

- **Assess** : Consider potential uncertainties that could affect the project; (Brainstorm, Delphi, interview, SWOT, assumption, circulate...)
- **Evaluate**: probability & impact of potential uncertainties;
- **Allocate a priority rating**; (Consider time to impact and sensitivity);
- Consider mitigation measures;
- Consider '*residual*' risks arising;
- Consider contingency plans;
- Consider '*secondary*' risks arising, and...

## Risk / Early Warning Inception to Completion

...and finally.... Summary (2 of 2):

- Log the risk...
- Communicate the risk... share the knowledge;
- Hold bi-weekly risk management meetings;
- Collate all supporting documentation;
- Re-evaluate?
- Monitor and manage the risk;
- Use as part of the Risk Management Process;
- Avoid disputes, conflict & misunderstandings;
- Adopt a teamwork approach... working together!

Risk / Early Warning  
Inception to Completion

The End

Thank You

2010

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