



## Dar Al Riyadh Insight #91

### Event Contingency vs. Cost Contingency

***Dar Al Riyadh Insights reflect the knowledge and experience of our Board, executives and staff in leading and providing PMC, design and construction management services. Dar Al Riyadh believes in the importance of broadly sharing knowledge with our clients and staff to improve project outcomes for the benefit of the Kingdom of Saudi Arabia.***

There is a tendency in many programs/projects for either the owner or engineer/contractor to use a singular contingency amount (say 10 percent) applied to the most likely cost. This does not reflect the inherent differences between cost contingency and event contingency. Combining cost and risk event contingency in a singular Monte Carlo simulation results in a lower overall contingency for the project.

Cost contingency is not covered further in this Executive Insight, but a few key points are worth noting:

- Most likely costs tend to be optimistic.
- Estimate quality is improved by considering lowest likely cost, most likely cost, and highest likely cost and providing all three “thought out” values into the Monte Carlo analysis.
- High probability risk events (say greater than 90 percent) should be treated as actual costs and included in the cost contingency analysis instead of an event contingency analysis. They should be maintained, however, by the risk manager and actively tracked and managed.
- Common underlying assumptions (cost of steel for example) should be tested for sensitivity on overall contingency levels. These correlating assumptions should be actively tracked throughout the project.

As contrasted with cost contingency, event contingency reflects the included budget amounts required to cover the potential cost associated with either a singular risk event or a combination of risk events that a project may face.

In developing an event risk management strategy, it is useful to begin by considering the unmitigated exposure for individual risk events. Often this will represent the maximum exposure an engineer/contractor may experience, but examples abound where these assumed maximum exposures were far less than actually experienced. Therefore, caution is required.

Examples of some (likely) maximum exposures from unmitigated risks include:

- Maximum schedule liquidated damages (LDs).
  - Either limited by contract or provider’s assessment of maximum possible schedule delay (examples of significant delays well beyond those

assumed include the \$57 million LD on Washington State SR 99, the Big Bertha project).

- Maximum rework cost associated with a variety or performance or supply issues.
- Maximum plant (project deliverable) performance risks and associated LDs.
  - Associated with operating and technical performance of the plant, including reduced output and any revenue loss risks assumed.
  - From an owner's perspective, these represent retained risks from a financing perspective such as what one sees in traffic and revenue shortfalls in public private partnerships (PPPs).
- Maximum warranty costs associated with poor project performance.
- Maximum exposure to unpaid change orders.

By understanding the maximum unmitigated exposures of the various event risks, an appropriate management and mitigation strategy can be developed. It is the mitigated event risks (and costs of mitigation included in the base cost estimate) that is used when calculating the event risk contingency to be provided.