NLC - The Next Linear Collider Project

Risk and Contingency Methodologies

Conceptual Design Phase Readiness
Risk/Contingency Overview

- Plans for Conceptual Design Phase Include Risk
  - Resources and Costs Allocated
- Project Tools Include Tools for Risk
  - ACCESS Database (Scoring and Analysis)
  - Baseline Contingency Calculation
- Baseline NLC Model (CD-1 Model) Has Risk Data Populated and In Use
Risk Strategy

- Treat Risk as a Major Project Attribute Like Cost, Schedule, Performance, and Reliability
- Develop and Implement a Strategic Approach to Measure, Assess, Engage, and Control All Aspects of Project Risk
- Build Risk Scoring and Contingency Calculation into the Project Database (ACCESS)
First Step: Risk Scoring Mechanism

- **Risk Evaluation Process**
  - Performed at Component/Task Level
  - Design Risk, Design Maturity, Supplier Risk, Cost Estimate Maturity, Schedule Risk Each Scored From 1 to 10
    - Modified U.S. Atlas Scoring Methodology
  - Entered Into ACCESS Database and Available for Management Review

- **Contingency Not Calculated by Risk Scorer**
  - Advantages
    - Retain Scoring Detail Lost When Contingency Calculated
    - Allow Scoring to be Minimally Influenced by the “Right” Contingency Number

- **Status**
  - ~150 High Cost Items Scored for Risk
Second Step: Contingency Calculation

•contingency generation process
  – performed at project manager level
  – algorithm runs inside ACCESS
    • high scores are emphasized; low scores de-emphasized
      – baseline algorithm is cubic
    • scoring is weighted: technical and manufacturing high (100); schedule low (20); others at 40-50

• status
  – contingency formula in place and results under evaluation
  – relative values of contingency are usable; absolute values need further validation
Risk Scoring and Contingency Goals

• Goals for the Conceptual Design Phase
  – Validate Contingency
    • Benchmark Against Other Projects
  – Expand Scoring to All NLC CD-1 Components and Tasks
  – Develop Risk Management Plan for Critical Components/Tasks
  – Monitor Changes over Time at Project, Area, and System Levels
Risk Summary

- Risk Approach Planned into Conceptual Design Phase
- U.S. Atlas-Based Risk Scoring Process Implemented in ACCESS Data Base
  - Fields Being Scored by Responsible Engineers
  - Data Analysis in Place
  - Approximately 80% of CD-1 Cost Scored
- Contingency Generated Within ACCESS from Risk Scoring Using Baseline Non-Linear Algorithm
- Proactive Risk Management Process to be Implemented in the Conceptual Design Phase