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# Capital Project Risk Contractor's Perspective



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# Presentation Outline

- Introduction
- Role of risk management in our “Identify, Acquire and Deliver” business model
- Project risk management process
- Risk culture
- Closure



# Introduction



# Amec Foster Wheeler Overview



- Headquartered in London
- Listed (AMFW) on LSE and NYSE
- Oil & Gas, Mining, Clean Energy and Environment & Infrastructure sectors



[amecfw.com](http://amecfw.com)

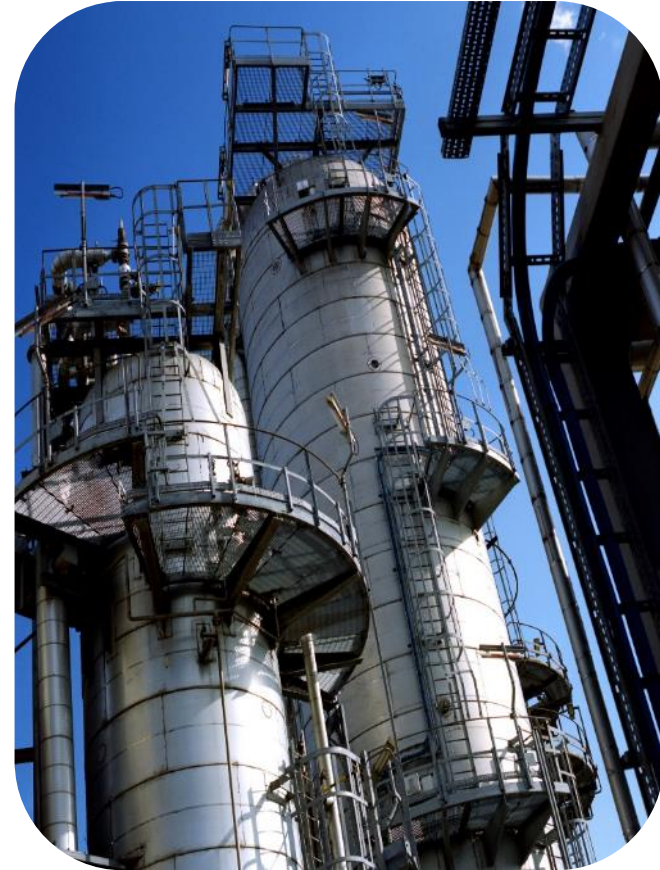


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# Al-Zour Refinery Project



- 615,000 bbl/d refinery producing low sulphur fuels
- Three trains including distillation units, ARDS and hydrotreaters
- 1,700 hectare/4,200 acre site at Mina Al-Zour, approx. 90 km south of Kuwait City
- Capital cost approx. KD4 billion

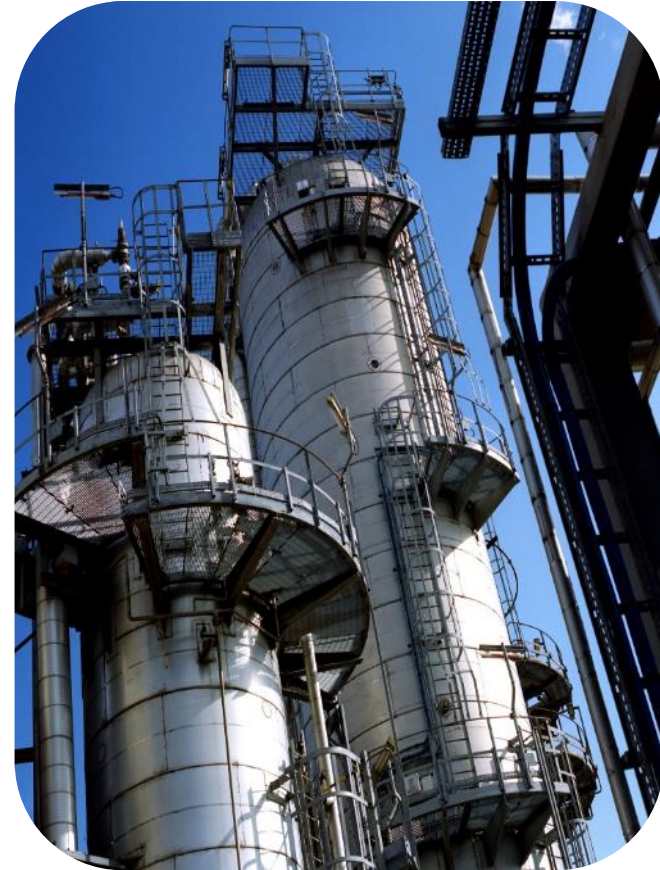




# Al-Zour Refinery Project (cont.)



- Amec Foster Wheeler retained by KNPC as PMC in December 2012
- Construction (5 project packages) by EPC Contractors:
  - Main process units
  - Support process units
  - Utilities
  - Tankage
  - Marine facilities





# Contractor Responsibilities

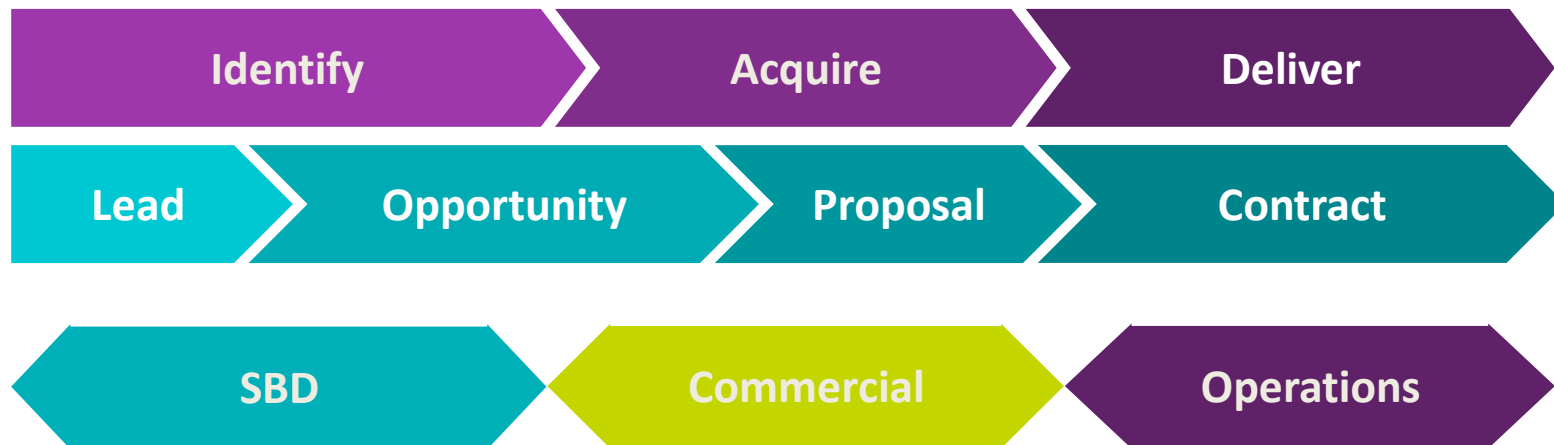
- Manage overall project execution risk
- Develop, implement and maintain project risk management plan and supporting documents
- Maintain Al-Zour project risk register
- Integrate inputs from EPC Contractor risk registers into project risk register
- Assurance for project risk management function



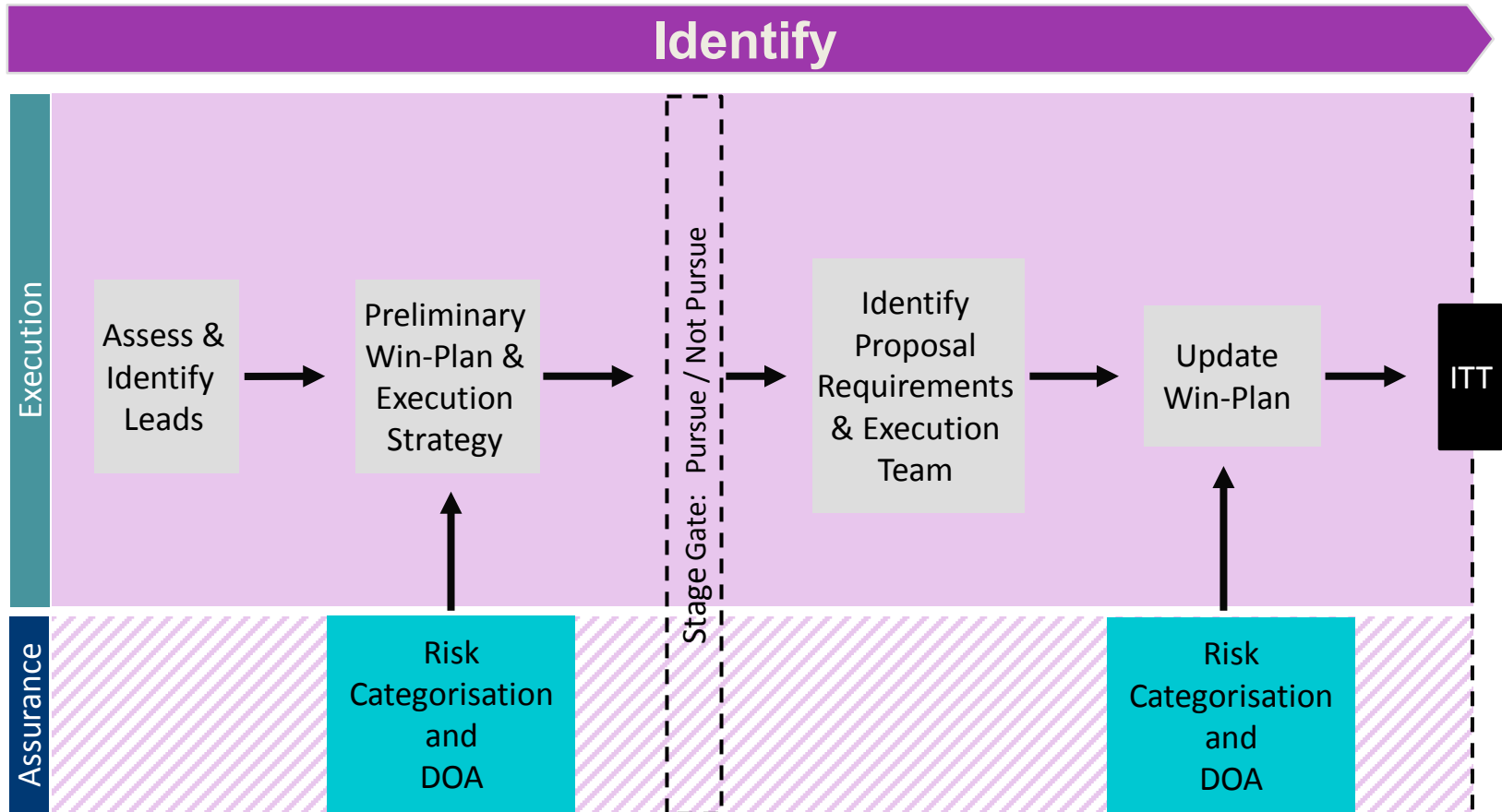
# Identify, Acquire and Deliver



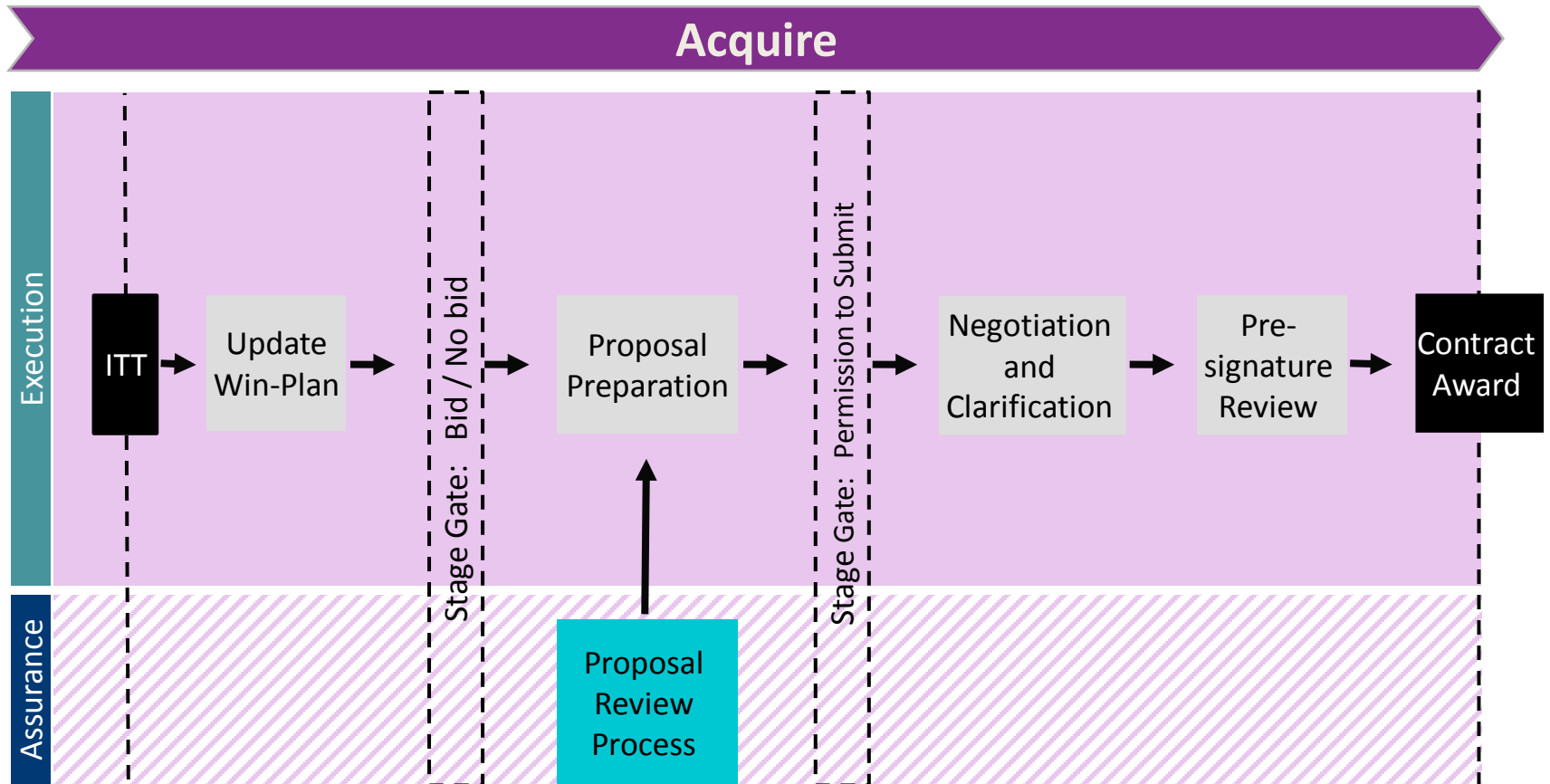
# Identify, Acquire and Deliver



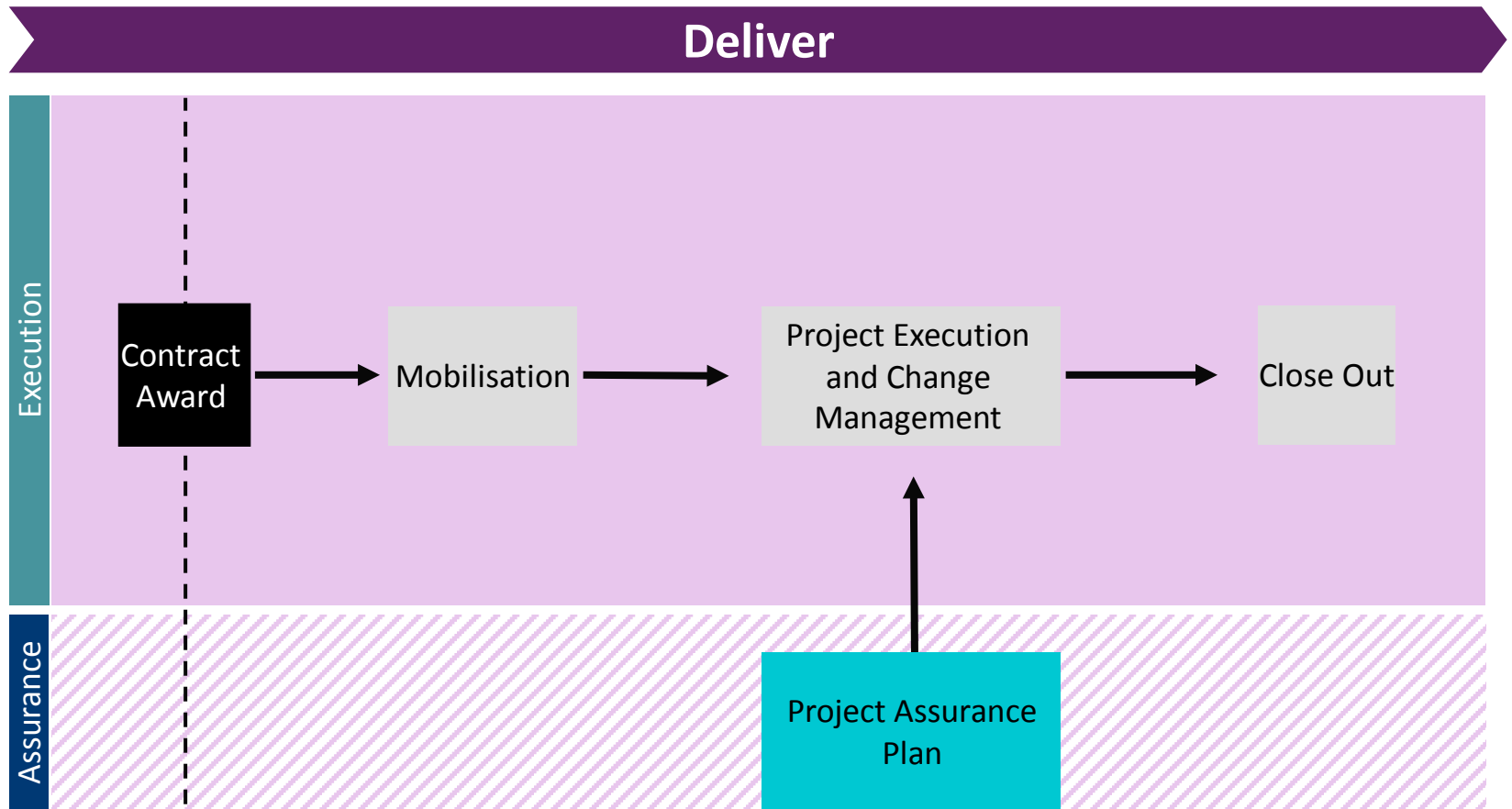
# Identify



# Acquire



# Deliver

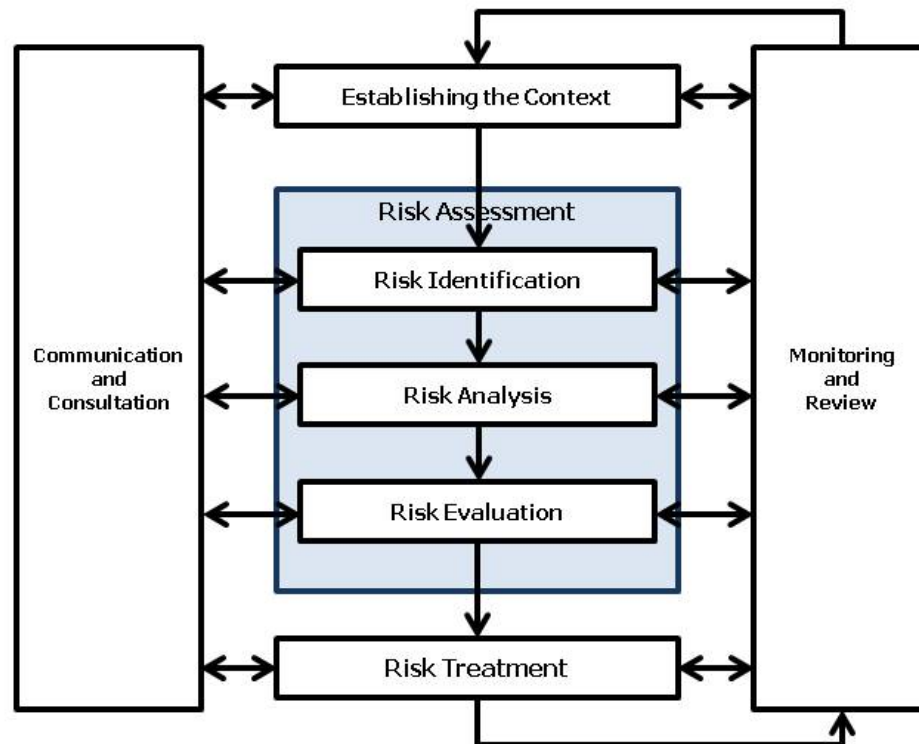




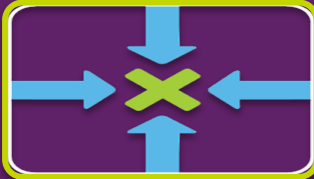
# Project Execution Risk Management



# Risk Management Process



# Establishing the Context



## External

- PEST Analysis
- Key Trends and Drivers of Change
- External Stakeholder Relationships



## Internal

- Organisational Structure
- People, Processes and Technology



## Risk Management Process

- Governance
- Scoping
- Methodology
- Supporting Activities



## Risk Criteria

- Define likelihood, consequence and level of risk
- Define level of risk acceptability
- Stakeholder input

# Risk Identification

- Process of finding, recognizing and recording project risks
- Comprehensive identification is critical to capture risks for analysis and evaluation steps
- Includes all project risks, even those not under control of the Contractor
- Aligned with overall project scope, nature of risks and organisational capabilities of Contractor





# Risk Identification (cont.)

- Risk identification approaches include:
  - Systematic team approaches using a structured set of prompts or questions (risk workshops)
  - Individual interviews with project team members
  - Expert peer group review
- Needs relevant, up-to-date information and SMEs within Contractor



# Risk Analysis



- Used to develop an understanding of project risks
- Input to risk evaluation step
- Considers:
  - Causes and sources of risk
  - Positive and negative consequences
  - Likelihoods
  - Presence and effectiveness of existing project controls





# Risk Analysis (cont.)

- Confidence level and sensitivity to assumptions
- Key is accurately defining the risk event, risk description, risk cause and risk outcome
- Risk analysis approach:
  - Likelihood-consequence diagram (LCD)



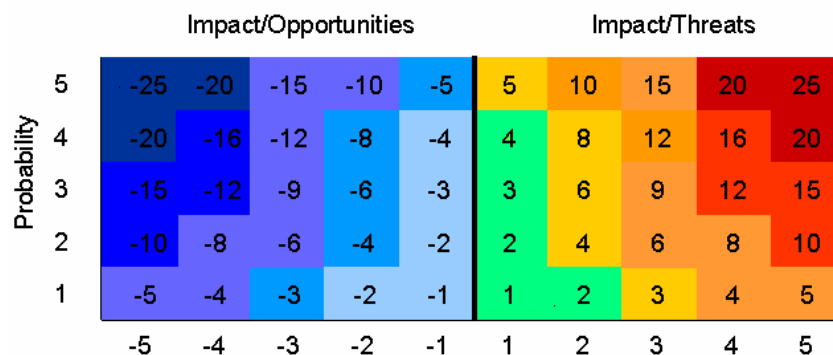
# Risk Evaluation



- Purpose is to assist in decision making about risk treatment and priority
- Comparison of estimated levels of risk with risk criteria, taking into account client's risk appetite
- Determines risk significance and acceptability cut-off

# Risk Evaluation (cont.)

- Takes into account legal, ethical and other project requirements
- Divides project risks into certain bands using a risk matrix



## Opportunities

Very High  
High  
Medium  
Low  
Very Low



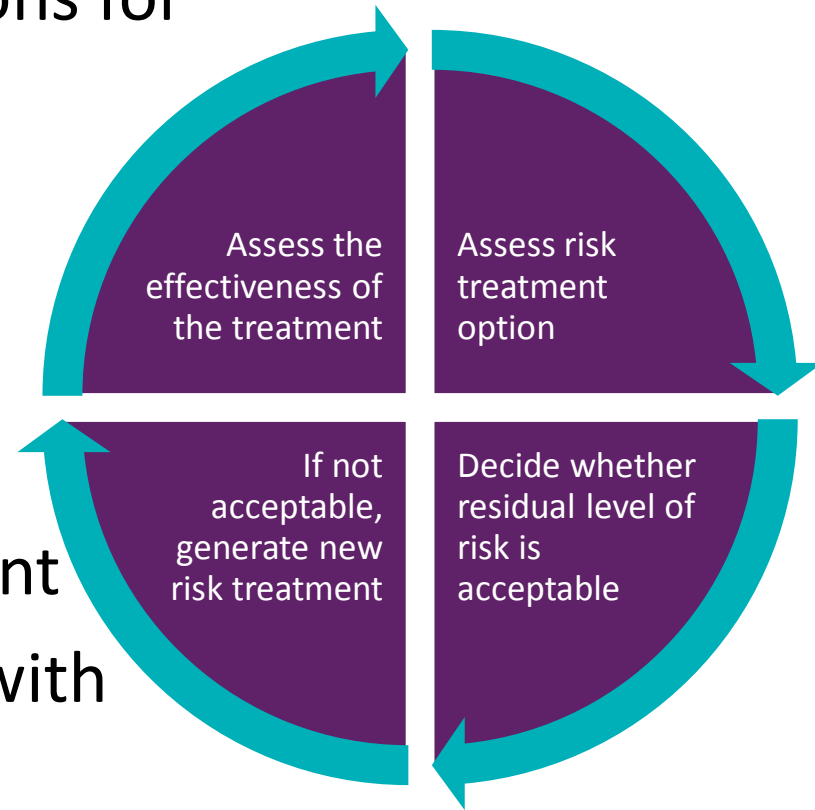
## Threats

Very High  
High  
Medium  
Low  
Very Low



# Risk Treatment Plan

- Selection of one or more options for modifying risks
  - Avoid: discontinue activity
  - Transfer: risk financing
  - Manage: reduce risk level
  - Accept: residual acceptable
- Input from Contractor and client
- Output is risk treatment plan with priorities for action



# Risk Treatment Plan (cont.)

- Purpose is to document how the chosen treatment options will be implemented
- Would include:
  - Options analysis, including benefits
  - RACI matrix
  - Proposed Contractor actions
  - Contractor resource requirements, including contingencies



# Risk Treatment Plan (cont.)



- Contractor performance measures and constraints
- Contractor reporting and monitoring requirements
- Schedule
- Dialogue with client
- Residual level of risk clearly documented and communicated to client

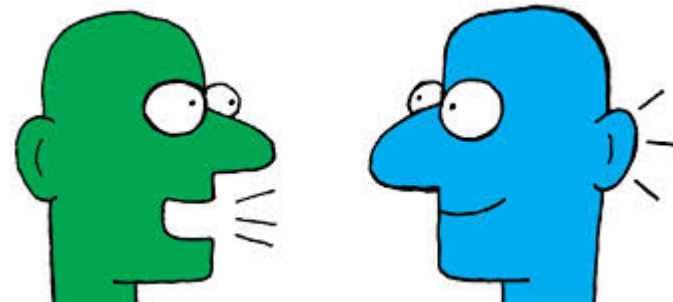




# Risk Communication and Consultation Plan



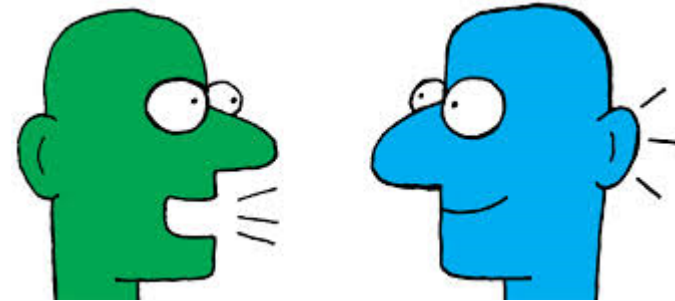
- Needs to take place throughout process
- Plan should be developed at an early stage by Contractor
- Helps client understand the basis on which risk decisions are made



# Risk Communication and Consultation Plan (cont.)



- Consultative approach recommended:
  - Helps establish the correct context
  - Considers stakeholder interests, including differing opinions
  - Ensures project risks are adequately identified
  - Brings together various areas of expertise
  - Secures endorsement and support for Contractor risk treatment plans
  - Enhances project change management process
  - Supports appropriate external and internal communications





# Risk Monitoring and Review

- Involves regular checking and surveillance by Contractor
- Periodic or *ad hoc* (for a particular purpose)
- Benefits:
  - Ensures Contractor's risk controls are effective and efficient
  - Provides information to improve project risk management process
  - Lessons learned input



# Risk Monitoring and Review (cont.)



- Detection of changes in Contractor's external and internal context
- Identifies emerging project risks
- Implementation of risk management process tracked through KPIs
- Records kept and reported by Contractor to client





# Key Risk Documentation

- Project Risk Management Plan
  - Procedures, Instructions and Forms (PIFs)
- Project Risk Register
- Monthly and Quarterly Project Risk Management Reports
  - Top Ten Risks
  - KPIs
  - Contractor Performance Summary
- Slide decks from risk workshops



# Risk Culture





# Risk Culture – ABC Model



# Effective Risk Culture



# Closure



# Conclusions



- For Amec Foster Wheeler, effective risk management for capital projects is applied across the proposal/project lifecycle.
- Risk management process must be embedded in both corporate and capital project management strategies; not a bolt-on activity.



# Conclusions (cont.)



- Risk management targets cultural and behavioural change by focusing on people and the way they approach and manage all aspects of uncertainty.
- Risk culture is important but documented risk management system (ISO 31000) is critical.



# Conclusions (cont.)

- Risk management software is a useful tool for large capital projects with multiple EPC contractors, but must also involve the application of a practical, hands-on, common-sense process.





# Take Home...



# Contact Information



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Thanks For Your Attention