



Dar Al Riyadh Insight #57

How to best use configuration management?

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.

How to best use configuration management in large complex projects?

In addition to some of the uses suggested in the previous Insight, configuration management provides a framework for strong requirements analysis ensuring both completeness as well as a strong focus on needs versus wants. It provides an element of scope discipline which is often insufficient in many large complex projects.

Configuration management strengthens technical quality control and assurance processes and can provide a necessary strong backbone in acceptance testing. Traceability of changes to project and system configurations can be useful as one considers subsequent changes to operating modes during facility operations.

Pattern recognizing AI can aid in assessing consistency of component and subsystem design across various elements of the project aiding in informed decisions regarding pre-assembly and SKU (A SKU is a unique code consisting of letters and numbers that identify characteristics about each product, such as manufacturer, brand, style, color, and size) minimization in the supply chain.

Other uses of configuration management relate to defining system boundaries to support various dynamic analyses (e.g. Pipe break); logical system or facility isolation points (isolation valve locations; safety zone changes; HVAC or radiological hazard zones); structural performance breaks (seismic class breaks; isolation foundations for dampening of various dynamic responses); location of test features. Further, configuration management aids in consistent facility document references and confirming that specified set points remain in acceptable ranges.

What are some challenges in configuration management?

Some challenges in configuration management adapted from the original System Engineering Body of Knowledge (SEBoK) include:

- Shallow visibility by not involving all affected parties in the change control process
- Poor tailoring of the configuration management process to the scale, number and diversity of systems and subsystems, and overall level of complexity



- Limited configuration management perspective by not adequately including all affected or affecting organizations in the configuration management process. These include subcontractors, suppliers and other vendors.