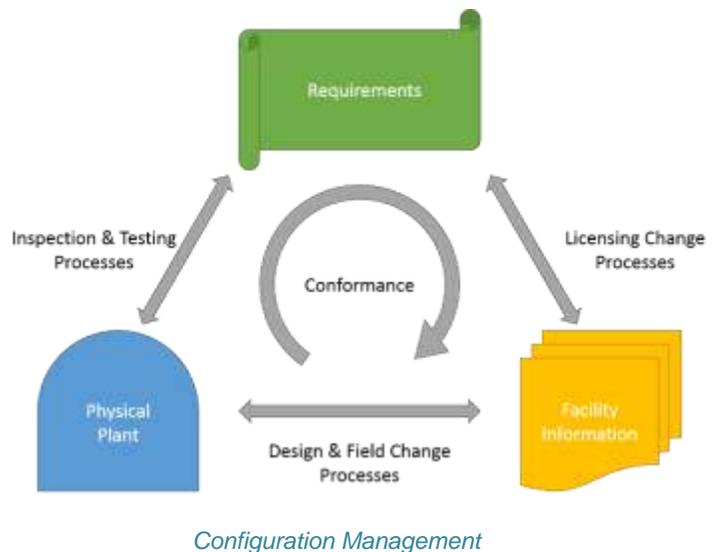


Looking to Data for \$8 Billion in Nuclear Plant Operational Savings

A recent EPRI study estimated opportunity savings of \$8 billion for the 100 operating U.S. nuclear power plants by implementing data-centric configuration management information systems.

Managing and maintaining the diverse pieces of information that relate to the physical configuration of a nuclear power plant is no simple task. Implementing an advanced configuration management information system (CMIS), however, could provide significant operational and economic benefits. A recent EPRI study estimated opportunity savings of \$8 billion for the 100 operating U.S. nuclear power plants over the next 20 years by implementing a data-centric CMIS, and more than \$1 billion for the four U.S. new nuclear plants under construction over their projected 80-year life. Through savings associated with more efficient data retrieval, reduced data errors, and increased workflow efficiencies, EPRI calculated a probable economic payback of 3.3 years for a new build and 5 years for an operating plant.

An integrated CMIS encompasses data and information for all phases of the plant life cycle, including licensing, design, procurement, construction, testing, operations, maintenance, and decommissioning. A CMIS that is not data-centric requires plant staff to find the data in a document or siloed database and then verify that it is accurate and updated. Before the data can be used, users frequently must resolve document revisions, resolve naming discrepancies, assure consistency with the design basis, and assure compliance with licensing commitments. EPRI has found that plant staff spend 30-40% of their time searching and validating information in multiple documents, which reduces confidence that technical data needed to make decisions is readily available to evaluate a given design or licensing issue.



The premise of data-centric configuration management is that decisions are made on data, not documents. Documents are still maintained as the record of the source of the data, but to support effective decision-making, data is centralized, accurate, change-controlled, and easily retrievable. A typical nuclear plant has approximately 300,000 controlled documents and millions of historical plant records. Moving to a modern data-centric, object-relationship database can add another 250,000 equipment records per unit that also must be change-controlled.

The challenge is identifying the data needed to support the testing, inspection, engineering, maintenance, and operating processes that maintain the plant in conformance with the design basis. Software tools have emerged to assist the document-centric plant transition to more “intelligent” information. These tools reduce the cross-referencing time compared to a manual search by searching documents based on established rules and identifying equipment tag numbers and document references that can be related to the document for faster identification and retrieval.

EPRI Report 3002003126, *Data-Centric Configuration Management for Efficiency and Cost Reduction*, and the associated investment model software will be available on www.epri.com at the end of December. For more information, contact Ken Barry at 704.595.2540 or kbarry@epri.com.