

5 questions to ask when reassessing a nuclear power plant's operating margins

When an incident, an inspection or an audit triggers a finding or corrective action at a nuclear facility, that doesn't always spell trouble.

HOLDEN, MA, USA, August 29, 2013 /EINPresswire.com/ -- When an incident, an inspection or an audit triggers a finding or corrective action at a nuclear facility, that doesn't always spell trouble. The reality is—with the right approach— assessing the situation can lead to wider operating margins and prevent unnecessary expense.

Margin, or the difference between how a system is capable of operating and the designed operation in the plant's licensing basis, is a critical tool in safely and cost-effectively operating any nuclear plant. Understanding margins is also an important element in managing plant operations and future capital investment. A past operability investigation and analysis may bring to light margins within a given system that can be leveraged to streamline operation and save on maintenance. These cost savings may justify the required overhead of license amendments and engineering change documentation. However, until margins are identified, these opportunities for plant improvement remain hidden.

Approaching this analysis the right way can mean the difference between eventually rolling out a costly solution and walking away with knowledge that will save you time and money. Here's what to ask when circumstances call for analysis, according to experts at [Alden](#):

Is the analysis related to a capital project or a concern over existing operations?

While analysis and/or testing can often be the best approach when there is a concern over margin associated with current operations, all implications for operations and maintenance need to be carefully considered. Capital projects that already require license amendments and engineering change documentation are excellent opportunities to incorporate updates to the analysis portion of the design basis analysis or equipment performance data and realize all

existing and new margin associated with the engineering change. Analysis or testing conducted in support of proving past operability to address a regulatory concern may demonstrate margin, but the overhead associated with directly incorporating that margin into the design basis may be too high.

Do we know what we have?

When dealing with internal systems, it may not always be clear or documented what the operating margin actually is. Understanding what you've got to work with within the system in question provides a baseline and can help identify where additional margin may already exist. Related systems may also offer additional margin to work with. Part of uncovering the true capability of a system may involve testing. While it's natural to worry about what testing might uncover, in reality, testing is the one way to prove conclusively what the margins in a system are.

Where can we be strategic?

The area of concern that's been identified by an event or incident might not be the only—or the best—place to look for solutions. It's a good place to start, but your analysis should then move outward to related components or systems. Rather than running expensive tests on an entire system, it's best to identify key areas to examine. Being strategic about where to focus your investigation means considering the cost of analysis or testing, the limitations of the plant's licensing basis, and the estimated costs of implementing any potential changes or retrofits, including the overhead associated with changes to the license basis.

How can we leverage technology appropriately?

When it comes to technology, a lot has changed since the original design and margin analyses for most existing nuclear facilities. Now, with sophisticated computer modeling and physical testing that reliably translate complex phenomena into simpler settings for testing and analysis, it's not necessary to test a whole system in actual field conditions. Individual components can be run through a battery of computational models to expand performance characterization from manufacturer's data. Physical tests and scale models can be used in laboratory settings to obtain targeted data and highly accurate results using computerized data acquisition systems capable of monitoring a wide array of parameters. Sometimes, however, a clever updated approach using the original licensing basis tools can be the approach that resolves the issue most efficiently.

How can this save money?

Plant managers and operators want to maintain their licensing basis if at all possible, and ensure they maintain their regulatory commitments. When facing regulatory questions about margin, a sharp-eyed analysis provides more than just a solution to a specific problem. Having strong data that shows exactly how systems are operating can be a critical factor in avoiding unnecessary safety-related changes. And if retrofitting is needed or planned, completing thorough margin assessments will provide the knowledge needed to most effectively target a facility's capital investments.

About Alden

Alden (Alden Research Laboratory, Inc.) is an internationally acclaimed leader in solving flow-related engineering and environmental problems. For more than four decades, the company has provided engineering, field and laboratory technical assessments of cooling water and safety related systems and components for the nuclear power industry, as well as a transfer of knowledge to regulatory agencies. Alden provides engineering, physical and computational flow modeling along with environmental, flow meter calibration, and field services. Founded in 1894, Alden is the longest continuously operating flow modeling laboratory in the United States. Learn more at www.aldenlab.com.

David Schowalter

Alden

508 829 6000

[email us here](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/165381921>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2023 Newsmatics Inc. All Right Reserved.