Governing Energy

IV&V

Independent Verification and Validation (IV&V) is a combined third party process of verification and validation that evaluates whether a product, service or system meets its intended set of specifications. It is frequently part of a quality management process such as ISO 9000.[i] Organizations such as NASA have taken a leading role in this effort particularly with mission critical software.[ii]

The Verification process checks whether a product, service or system meets its specifications and complies with appropriate regulations during the development or manufacturing process. The Validation process assess whether or not the final product met the design specifications.

Stated another way, validation can also be expressed by the question 'are you building the right thing?' and verification by 'are you building it right?'[iii]

The construct, *A Culture of Safety*, defines operational safety as a core value. Individual and organizational behaviors in this culture emphasis safety as the top priority or Critical Success Factor (CSF).[iv] As the result of recent, high profile industrial accidents across the energy value chain, most organizations are revisiting their safety policies and associated training programs. In some instances, companies are looking to organizations with high value mission critical processes such as NASA and the U.S. nuclear submarine programs for "best practices" that may have relevance in the energy sector.

Effective November 15, 2011, the new Bureau of Safety and Environmental Enforcement (BSEE) Safety and Environmental Management Systems (SEMS) regulations require an audit.[v] As of this writing, the audit can be conducted by the organization internally and self-reported. However, forthcoming revisions to SEMS commonly referred to as SEMS II are expected to require full arms-length auditing akin to the financial audit process used by public companies.[vi]

Moreover, the SEMS audit is an audit of the management systems necessary to support safe and environmentally friend processes. It is <u>NOT</u> a review of technical products, services or systems. For some organizations, this may result in a gap in their safety program.

The implementation of IV&V may fill this gap and further assure shareholders as well as local communities and regulatory bodies of the commitment to a culture of safety. Those firms that do not currently use an IV&V or similar process may want to consider its value proposition.

When it comes to field safety, the definition of mission critical and been greatly extended. As with other organizational processes, it may be time to revisit and revise the way firms verify and validate technical processes.

How does your firm assure its operation's stakeholders that it is doing the right things, the right way?

About the Author

Dr. Scott M. Shemwell has over 30 years technical and executive management experience primarily in the energy sector. He is the author of two books and has written extensively about the field of operations management. Shemwell is also the CEO of Knowledge Ops, Inc.; a firm that focuses on providing its customers with solutions enabling operations excellence and regulatory compliance management.

End Notes

[i] http://en.wikipedia.org/wiki/IV&V
[ii] http://en.wikipedia.org/wiki/Independent_Verification_and_Validation_Facility
[iii] http://softwaretestingfundamentals.com/verification-vs-validation/
[iv] http://www.nrc.gov/about-nrc/regulatory/enforcement/safety-culture.html
[v] http://www.iadc.org/sems-toolkit/
[vi] http://www.corporatecomplianceinsights.com/sems-ii-changing-the-culture-offshore/