The ISA S84 standard (Application of Safety Instrumented Systems for the Process Industry) was approved in 1996. It was written for those involved in the design, manufacture, selection, application, installation, operation, and maintenance of safety-related systems, including users, contractors, vendors, and consultants.

The ISA standard, along with the IEC 1508/1511 standards and AIChE CCPS guidelines, are performance oriented, not prescriptive. They do not tell people what logic system to use, what field device configuration to use, or how often to test a system (which is what most people really want). They merely review the overall life cycle design steps one must follow and list the performance requirements for any given system. Simply put, the greater the level of process risk, the greater the performance needed of the safety system. These standards, along with OSHA Process Safety Management requirements, also state companies must “determine and document that equipment is designed, maintained, inspected, tested, and operating in a safe manner.”

In the almost two years the document has been in use, questions continue to center on two particular areas: how to measure process risk, and how to “determine and document” system performance. This paper will provide a brief overview of the standard, focus on methods to measure process risk and determine system performance (along with their potential pitfalls), and discuss possible future work/advancements in this area.