

SIS Services

Safety Instrumented Systems



KENEXIS

Global Leaders in Risk Analysis, Providing Unbiased Guidance in SIS Design

Safety Instrumented Systems (SIS) are flexible and effective tools for safeguarding process plants. SIS can be configured in many ways to meet a variety of process goals and performance targets. As a result, establishing a suitable design and ensuring the design is carried out are essential

SIS are the most prevalent of the engineered safeguards employed by process plants. These safeguards are required to be designed, implemented, maintained, and tested in accordance with a mechanical integrity program that is consistent with “recognized and generally accepted good engineering practice”¹.

Kenexis helps our clients to design SIS that comply with applicable standards and regulations², meet corporate and site risk analysis and tolerable risk policies, ensure the most cost-effective options are selected and deliver ongoing integrity throughout the safety lifecycle.

SIS Engineering Services:

- Safety Function Identification
- SIL Selection, using Layer of Protection Analysis (LOPA) or other methods
- SIL Verification
- Safety Requirements Specifications (SRS) Development
- Test Plan Writing
- Pre-Startup Acceptance Support

¹ Based on the OSHA Process Safety Management Regulation in the US, and similar regulations worldwide

² Such as IEC 61511 (ISA 84.01) “Functional Safety –SIS for the Process Industry Sector

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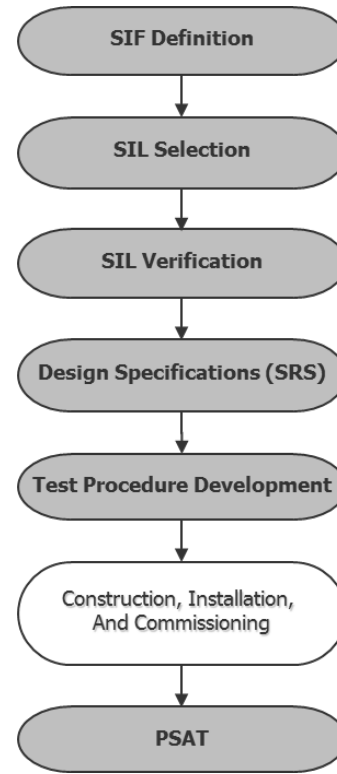
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The **KENEXIS SIS Solution™** helps to ensure appropriate design, implementation, maintenance and testing, by the development of risk-based requirements and quantitative verification of system reliability.

- ✓ Safety Integrity Level Selection
Selecting a Safety Integrity Level (SIL) is a risk analysis exercise that defines the target safety performance characteristics of each function.
- ✓ SIL Verification
After a target has been selected, achievement of this target should be verified by quantitative means. Verification includes probability of failure on demand, spurious trip rates, and other performance metrics.
- ✓ Safety Requirements Specification
The requirements developed during risk analysis and verification phases of the lifecycle must be collected and presented in a format that can be utilized for subsequent detailed design engineering.



A Practical Approach to the Design of Safety Instrumented Systems

Kenexis leverages our expertise in process hazards and instrumentation to ensure the combination of cost-effective design and compliance to tolerable risk requirements.

About Kenexis

Kenexis is an independent engineering consulting firm headquartered in Columbus, Ohio, with offices in Houston, Singapore, and Dubai. Kenexis was established in 2004, and is a privately held. Kenexis clients span the globe in many industries. Kenexis has performed engineering services for over 500 different major process industry customers in locations spanning over 20 countries.

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