Functional

Creating safety for high-end technology solutions

When designing machinery, planning a new plant, or optimizing existing facilities, all reasonably foreseeable hazards have to be identified and evaluated in a HAZOP (Hazard and Operability) and/or risk assessment. By doing this, potential threats are minimized with the help of a safe mechanical design and additional technical measures.

One of these additional technical measures is functional safety.

Functional safety is defined as the absence of unacceptable risks due to hazards caused by the malfunctioning of electrical, pneumatic, hydraulic or electronic systems. Hazards caused by malfunctions in electrical, pneumatic, hydraulic or electronic systems may include:

- Errors in specification
- Implementation or realization errors
- Failure during operations
- Reasonably foreseeable operational errors
- Reasonably foreseeable misuse

VALIDATION

EVALUATION

IMPLEMENTATION

DESIGN

ANALYSIS

There are ISO and IEC standards that share a risk-based approach to establishing functional safety systems and assessing safety risks over the lifecycle of the product.

safety

Moderation of HAZOP or Risk assessment and PL/SIL Assignment

Functional safety evaluation

Validation of safety relevant loops

Discussions with notified body

Safety inspection on-site

Advisory activity of safety relevant standards and regulations

SUPPORT TASKS FOR MACHINERY AND PROCESS SAFETY

FUNCTIONAL SAFETY LIFECYCLE
In order to prevent an accident, the design, engineering, manufacturing, assembly, and start-up have to be documented and verified in line with international and local regulations and with recognized technical rules.

At ANDRITZ, this applies to paper, board, tissue or pulp making and finishing machines, for example, boiler and exhaust gas cleanings systems, machinery and plants for steel forming and treatment systems, machinery for the feed and food processing industries, hydropower plants, and safety functions in control systems.

Meeting requirements and reducing potential risks to a minimum is the overall goal that must be achieved. Moreover, functional safety does not deal with hardware alone. It focuses on software solutions and ensures that safety-critical processes are controlled better, faster, and more easily. Functional safety covers the entire lifecycle of a machine or product to ensure that it has a long-term und sustainable impact on the plant's performance.

There are several consequences when safety is neglected. Besides financial and legal damage, a company can tarnish its reputation. ANDRITZ Automation attaches extremely high importance to the functional safety of its products, offering high-end technologies that are also safe to own and operate.

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