



**OPERATIONS**

# Effective Alarm Management for Dynamic and Vessel Control Systems

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- What is an alarm?

A mechanism for informing an operator of an abnormal process condition for which an operator action is required.

# Alarm Management

- processes and practices for:
  - determining, and
  - documenting,
  - designing,
  - monitoring,
  - maintaining alarm messages

# Alarm History

- Poor alarm management has been identified as one of the major causal factors.
- basic alarm management started during WWII
- In 1979 the Three Mile Island nuclear power plant accident had poor alarm displays as a contributing factor.

# Early Specifications

- process industry has developed guidelines and standards over the past 30+ years
- 1960 the Instrument Society of America released *ISA\_RP18 Specifications and Guides for the Use of General Purpose Annunciators*.
- latest evolution of this document is ANSI/ISA-18.2-2009
- Abnormal Situation Management Consortium was formed in 1994. The consortium's purpose was to study a number of plant incidents where alarms had been identified as a causal factor.

# Alarm Management Process

- Develop Alarm Philosophy
- Rationalization and Documentation
- Operating System Data Collection
- Control and Maintain the System

# Alarm Analysis

- Frequency

- Develop Alarm Philosophy
- Rationalization and Documentation
- Operating System Data Collection









Thr1 Mod31 Failure (8147)  
Thr1 Mod32 Failure (8148)