TXS Self Monitoring Features and Coverage

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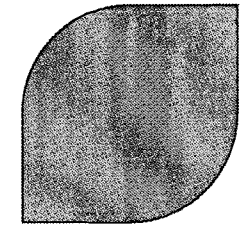
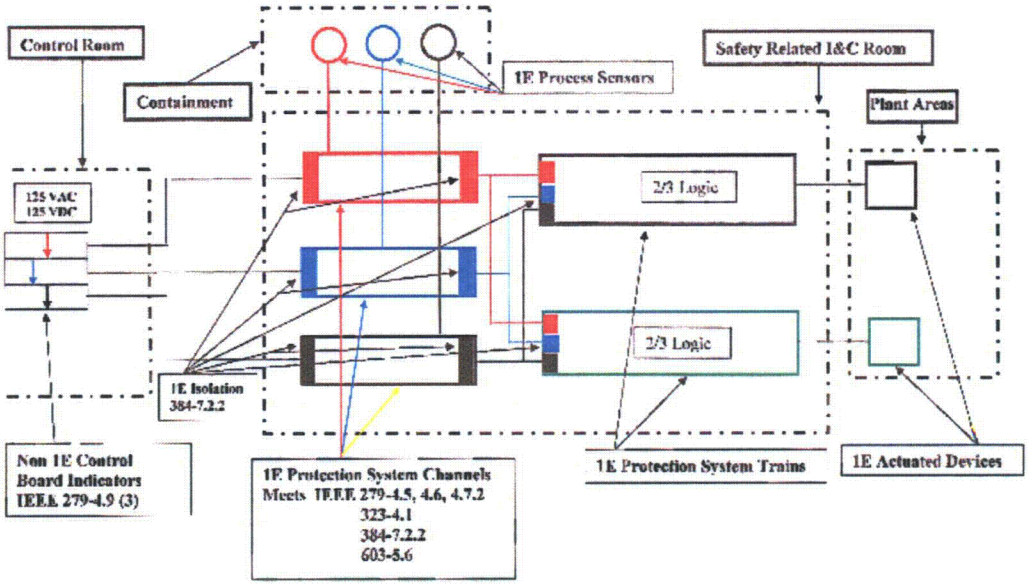
Presentation Content



- Compare and Contrast Analog v.s. Digital Protection Systems
  - Typical Current Operating Plant Protection System/Control Room Overview
  - Typical New Plant Digital Protection System/Control Room Overview
  - What are the similarities
  - What are the differences
- Details of Self Monitoring
  - What it does while the plant is on-line (scope of coverage)
  - How it tests hardware and software (depth of coverage)
  - What notification is provided for a faulty condition/how is it provided
  - What it doesn't/can't do
  - What are the surveillance tests that should be performed while shutdown
  - How is overlap testing achieved

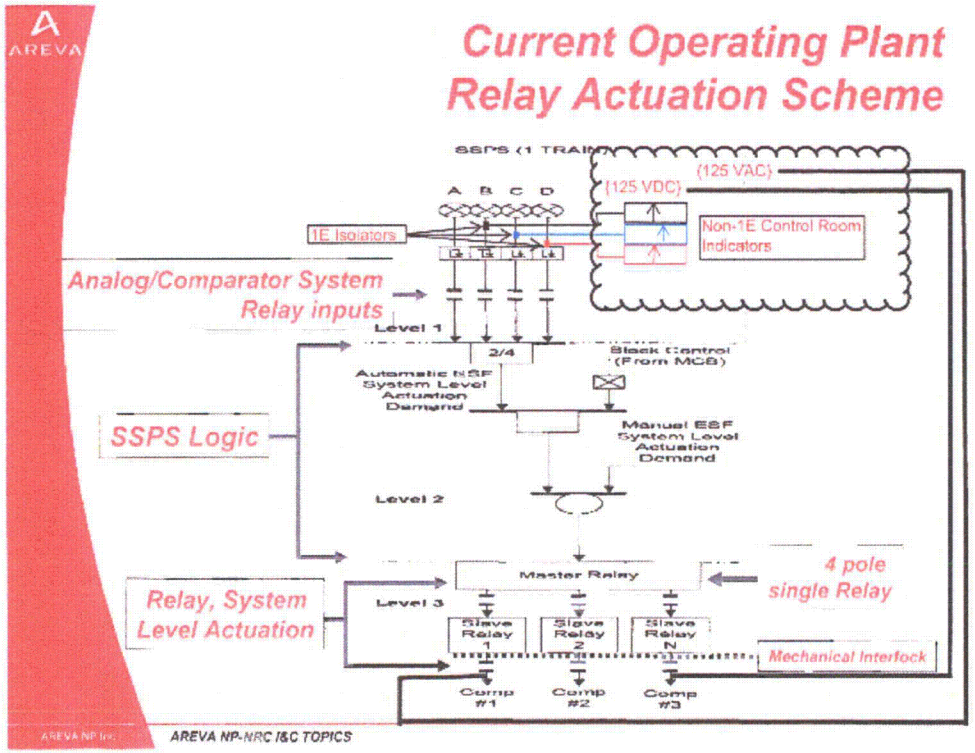
Review of Typical Analog Protection System



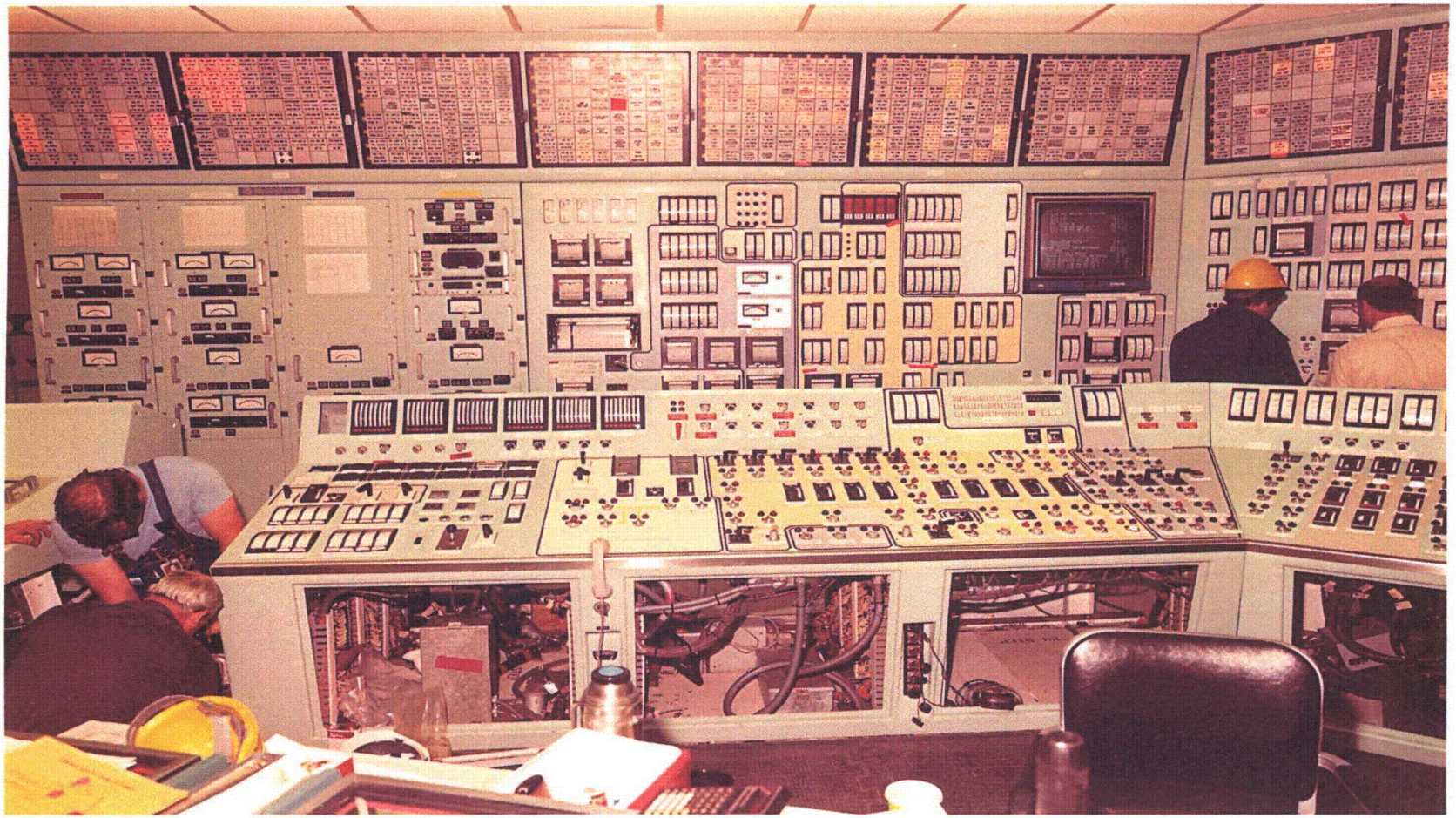
Cross Cutting Issues Overview Diagram for Operating Plant Compliance to IEEE Standards

Separation/Isolation/Qualification

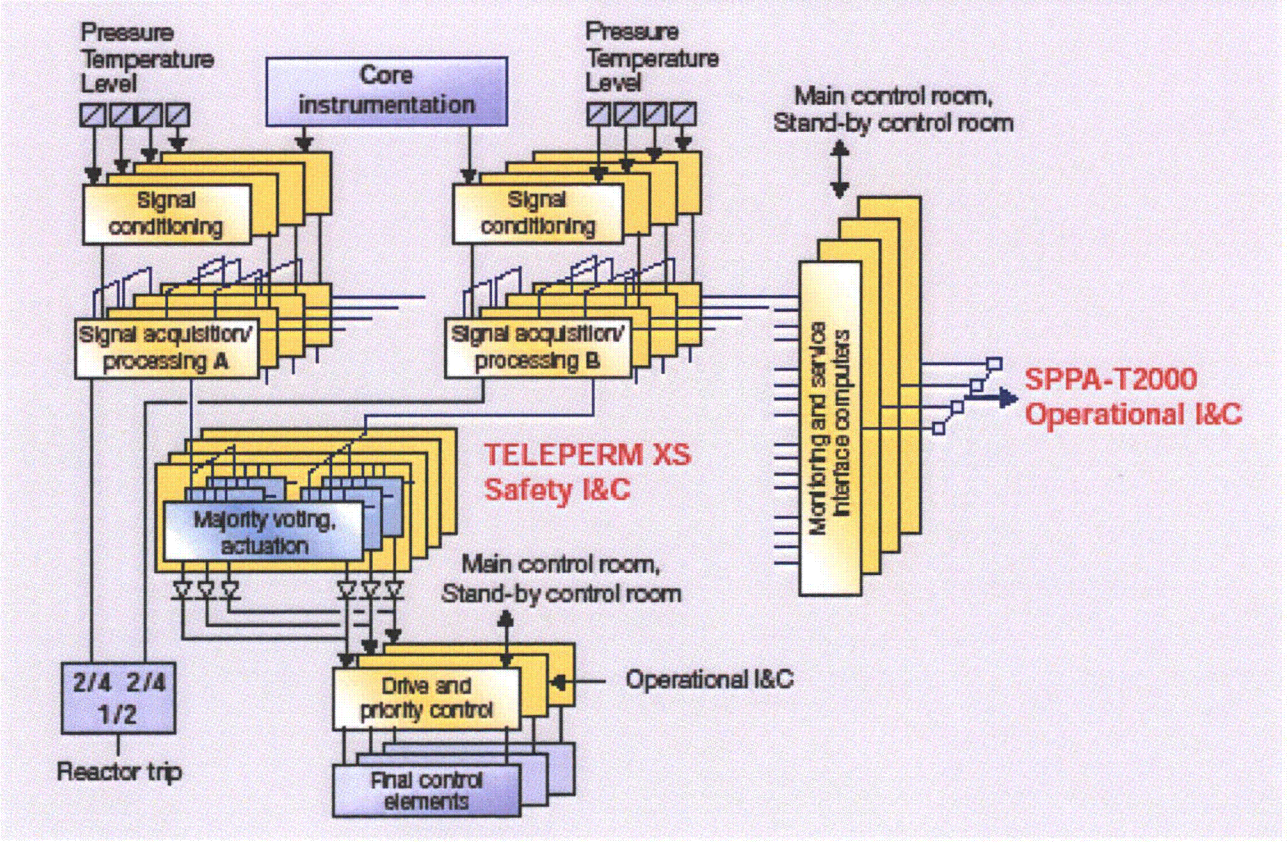
Review of Typical Analog Protection System I&C Architecture



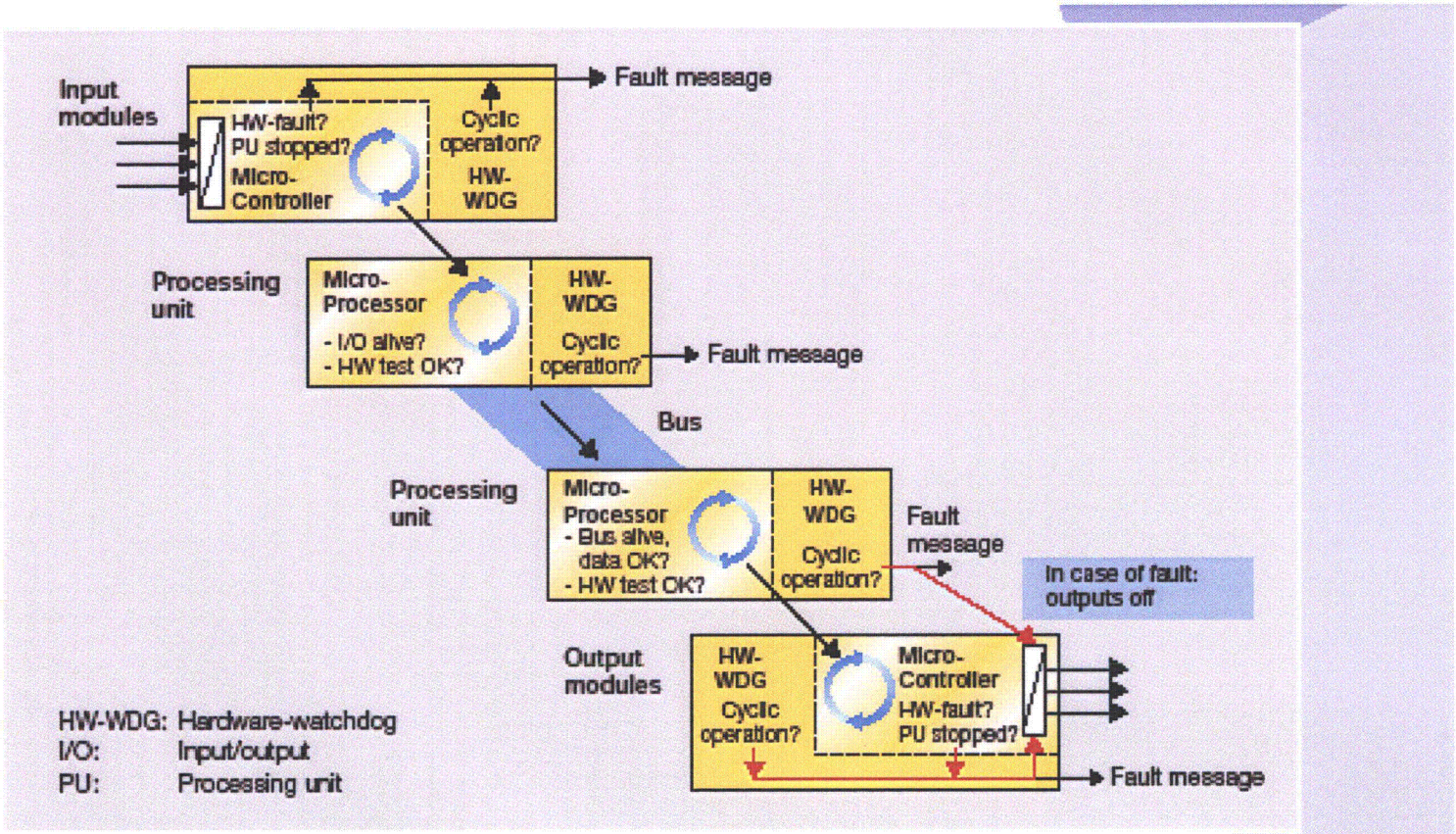
Typical Analog Based Operating Plant Control Room



Overview of Basic TXS Digital Protection System Architecture

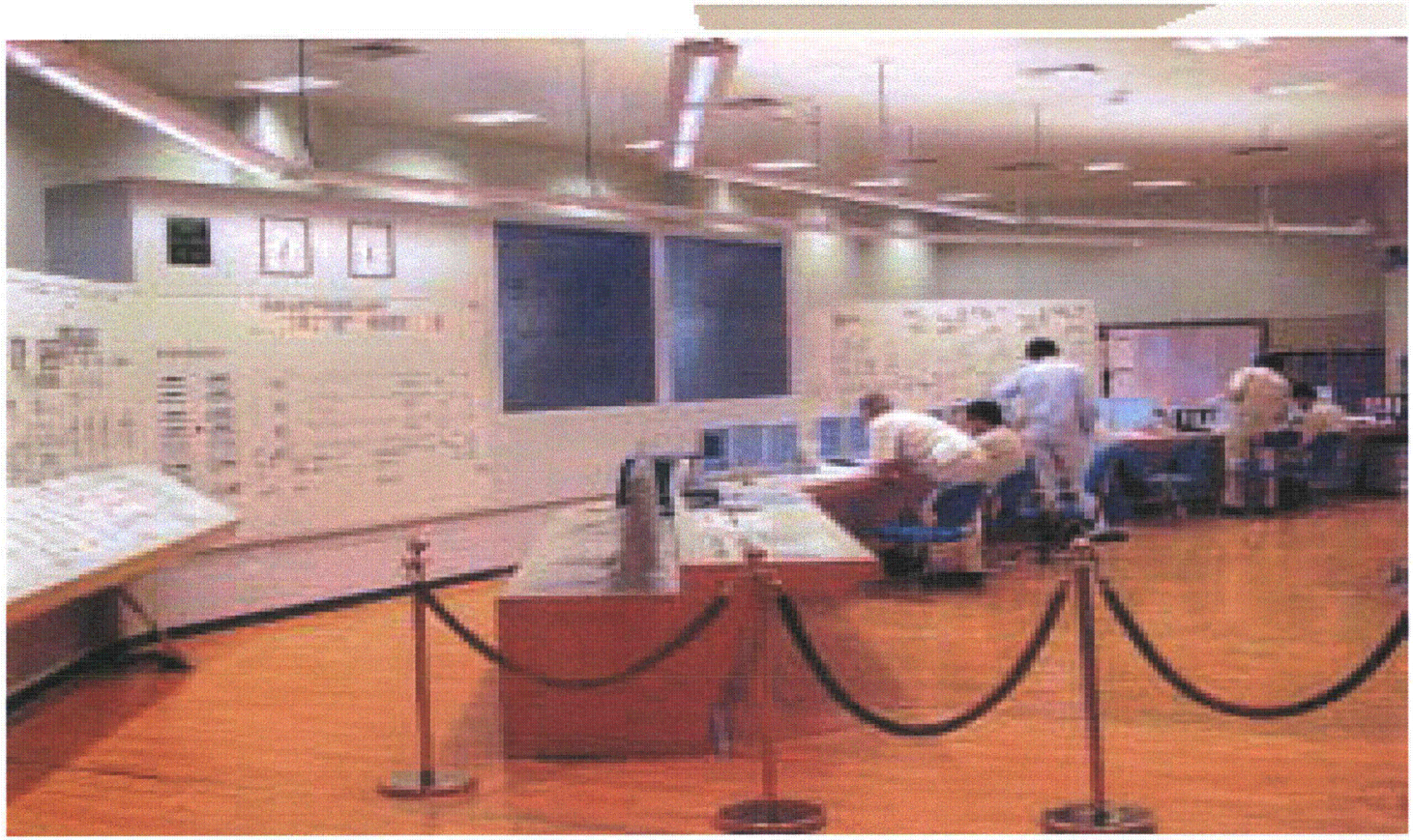


Overview of Self Testing



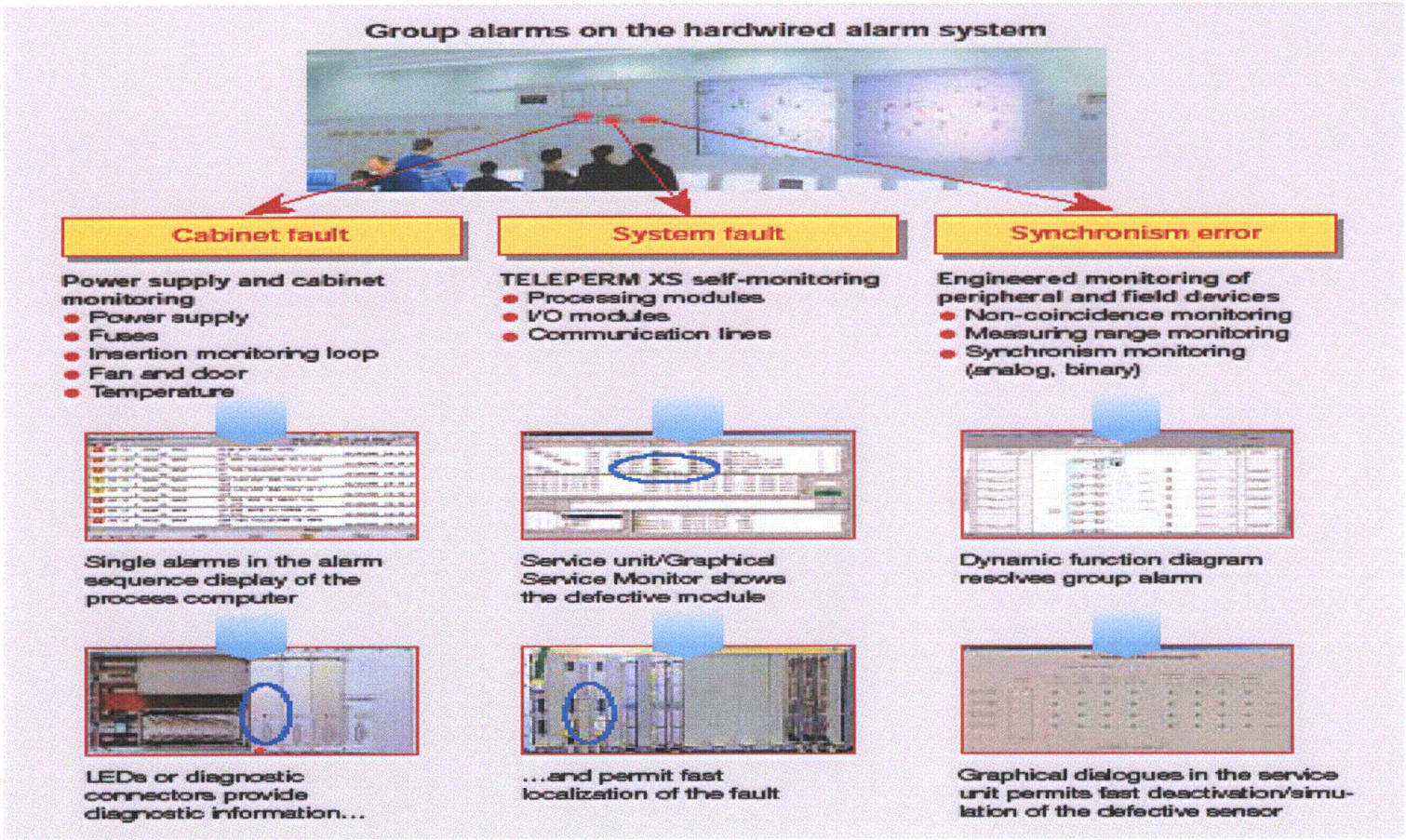
Self-monitoring concept using cyclic self-test, hardware watchdog and continuous monitoring of communication.

New Plant Digital Control Room



Tianwan, main control room.

New Plant Digital Control Room

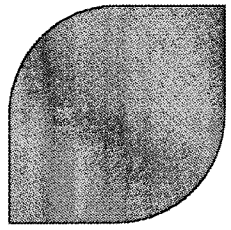


Fault annunciation and troubleshooting with TELEPERM XS.

Overview of self tests

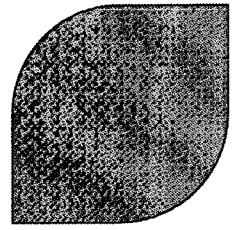
Exception Handler - CPU Exceptions

Exception Handler – FPU Exceptions



Exception Handler – Hardware Exceptions

Error Messages - Overview



Error Flags - Overview

Communication Monitoring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