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Operations Management

Recent Equipment Qualification Activity

IEEE SUBCOMMITTEE ON QUALIFICATION

IEEE/NPEC/SC 2 Meeting 11-1

Presented by Frank W. Kloer, P.E.

06/15-17/11

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Avantis Eurotherm Foxboro IMServ InFusion SimSci-Esscor Skelta Triconex Wonderware

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Recent Products subjected to Nuclear Qualification

Safety Video Display Unit (1E VDU)

- Model 5900N SVDU Server
- Model 5910N SVDU Monitor (Rack-mount)
- Model 5920N SVDU Monitor (Panel-mount)

Priority Logic Module (PLM)

- Model 3900N Priority Logic Module
- QNX Version 6

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Qualification Basis

EPRI TR-107330 (Hybrid)

IEEE 323 - 2003

USNRC R.G. 1.180, Revision 1

IEEE 1012 1998

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Safety Video Display Unit (1E VDU)

SVDU Server 5900N

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Safety Video Display Unit (1E VDU)

SVDU Monitor 5920N

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Safety Video Display Unit (1E VDU)

- MPU - single-board has 4 GB ECC DDR2 RAM
- Contains two 32 GB SSD SATA SLC hard drives
- Redundant Power Supplies
- Redundant fiber-optic 100 Mbps Ethernet connectivity
- 40° F to 122° F (4.4° C to 50° C), ambient
- Five triaxial Operating Basis Earthquake (OBEs) of 9.8 G peak @ 5% damping, one triaxial Safe Shutdown Earthquake (SSE) of 14 G peak @ 5% damping
- ESD - 8 kV contact, 15 kV air discharge per IEC 61000-4-2
- EMC – USNRC R.G. 1.180, Rev. 1

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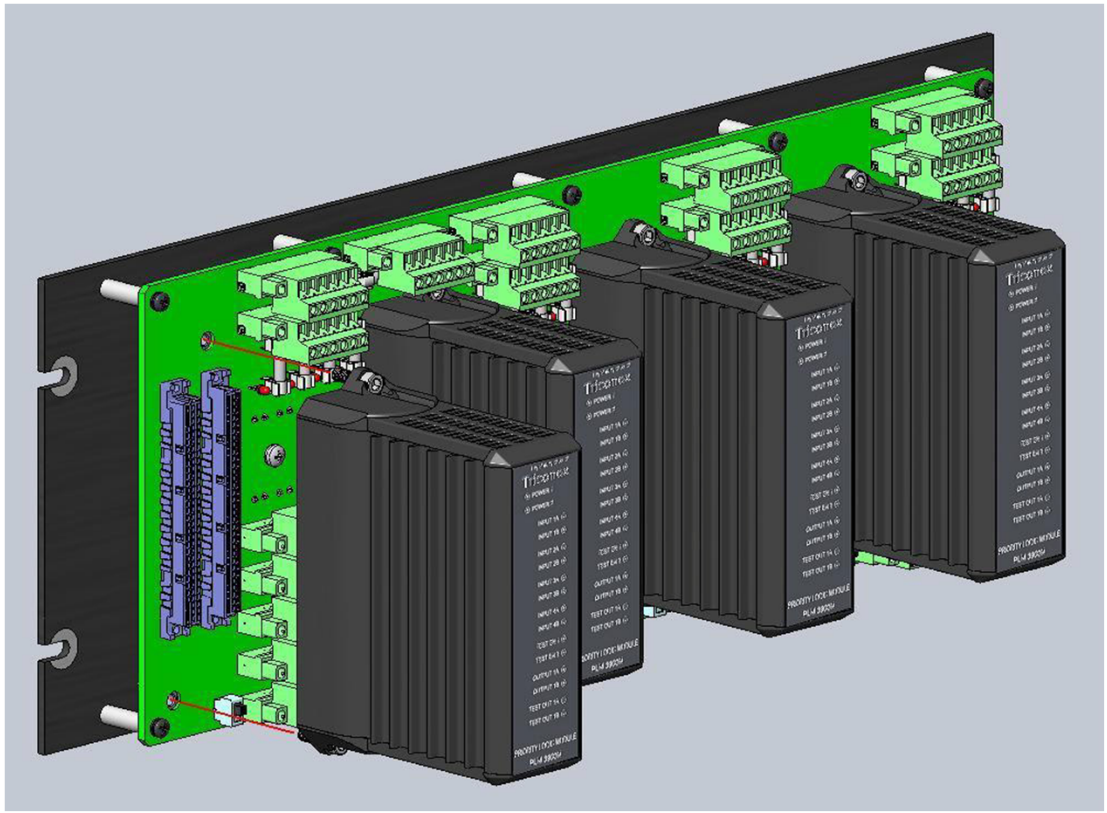
Priority Logic Module



PLM 3900N

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Priority Logic Module

- Inputs
  - — Four pairs (A and B) of prioritized Inputs
  - — 24 VDC; with a minimum of 50 mA wetting current under all conditions
- Outputs
  - — One pair of Switch Outputs (A and B) to the actuating deviceMPU - single-board has 4 GB ECC DDR2 RAM
  - — One pair of Test Switch Outputs (A and B)

- Field Programmable Gate Array (FPGA) processing (For safety and security reasons, the FPGA application logic cannot be reprogrammed in the field.)
- 40° F to 140° F (4.4° C to 60° C), ambient
- Five triaxial Operating Basis Earthquake (OBEs) of 9.8 G peak @ 5% damping, one triaxial Safe Shutdown Earthquake (SSE) of 14 G peak @ 5% damping
- ESD - 8 kV contact, 15 kV air discharge per IEC 61000-4-2
- EMC – USNRC R.G. 1.180, Rev. 1

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