

# **Nuclear use of I&C Equipment Certified for Commercial Safety Use**

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# We should make more use of commercial equipment

- New technology will first appear in commercial markets
  - There is a larger market
  - Developing only for nuclear risks marketing dead-end
  - Exception, nuclear specific functions and equipment
- Many needed technologies already exist
  - Network field devices
  - Wireless & battery powered field devices
  - Intelligent field devices
  - Multivariable transmitters
  - Industrial network protocols
  - Modern F. L, and T sensors



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# Commercial industry now has certification processes for safety systems & equipment

- Based upon IEC 61508, UL 1998 and others
- Examples
  - Rosemount Pressure and temperature transmitters
  - Siemens AS-I limit switches, position sensors, light curtains, logic
  - Green Hills RTOS
  - Phoenix Contract relays
  - Yokogawa ProSafe PLC, EJX pressure transmitters
  - ABB Metcon PT
  - Samson 3730 positioner
  - Triconix Trident PLC
  - Emerson Delta V logic solver, Fieldvue valve controller
  - Maxcon air operated valves
  - ADS Tech single board computer
  - Wind River RTOS
  - Honeywell SafetyManager PLC
  - Allen-Bradley GuardPLC
  - Schmersal limit switches
  - Ominfler annunciators
- We should have ways to take advantage of this work

# This will take some work

- Understand the commercial certifications
  - How should and how can commercial certification be supplemented for nuclear?
- Certification of the certifiers
- Responsibility for defect reporting to industry
- Traceability between certified and delivered items

Problem: This could greatly benefit the industry as a whole, but is any single is likely to profit from such work?