Digital I&C

NRC Commission Briefing

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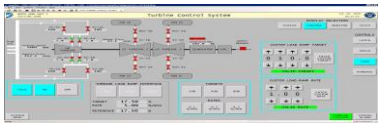
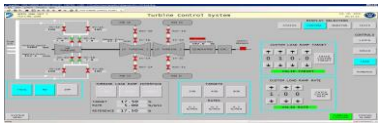
Dominion Energy

Digital I&C Project Drivers

- Obsolescence
- Single point vulnerability elimination
- Equipment Reliability
- Operational Efficiency
- Innovation
- Cost reductions





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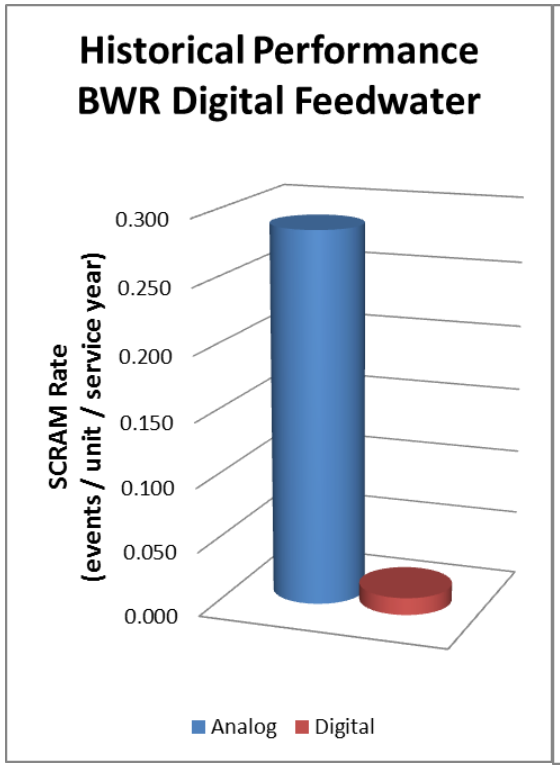
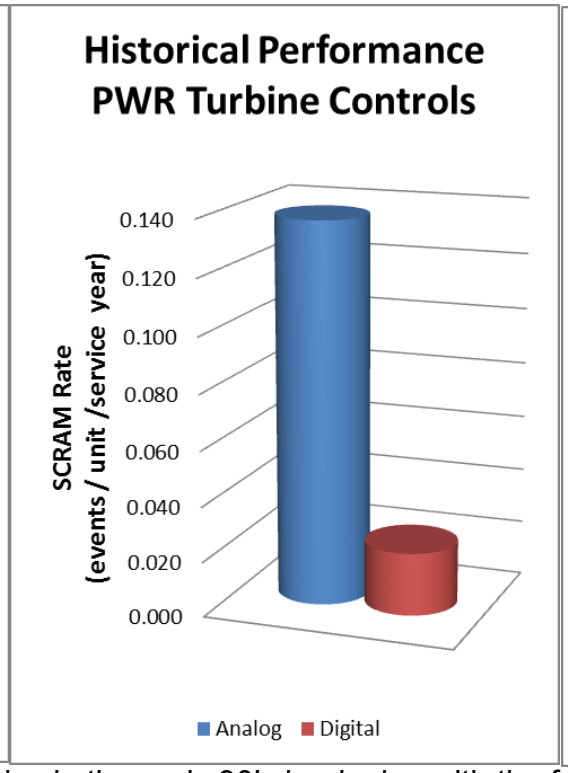
Benefits

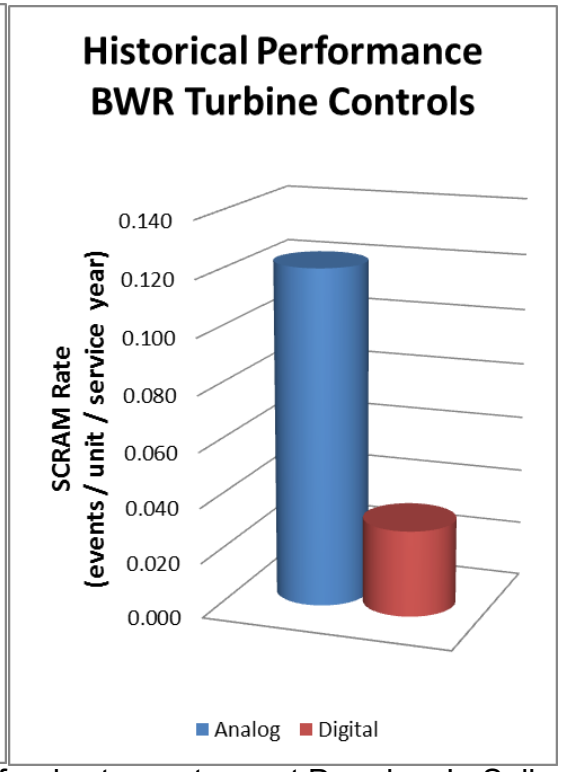
- Maintenance - dramatically improved reliability (MTBF) and reduced maintenance
- Engineering - equipment diagnostics, higher accuracy, and simplified fault detection
- Operations - greatly enhanced Operator interface and vision into the plant
- Commonality – Common platforms for Protection and Control minimize maintenance and training

Digital Upgrades–

Tangible Performance Improvements







- Exelon began installing digital upgrades in the early 90's beginning with the feedwater systems at Dresden, LaSalle, Quad Cities and Limerick
- Turbine controls were upgraded beginning in 2004 at Byron, Braidwood, Dresden, LaSalle, Quad Cities and Limerick and continue across the balance of the fleet
- 500+ "unit years" of operating experience conclusively demonstrates a significant reduction in initiating events

Ongoing Projects

- A number of Digital I&C replacement projects are ongoing across the industry.
- Issuance of RIS 2002-22 Supplement 1 has facilitated many of these projects
- Examples:
  - Emergency Diesel Generator Controls
  - Radiation Monitors
  - Rod Control
  - Safety-related Chiller Controls

Risks and Challenges

- No Large Safety-Related DI&C Upgrades (RPS/ESFAS) Currently Planned or In-Progress
- Why?
  - Regulatory uncertainty
  - Cybersecurity Compliance
  - Cost

Needs/Next Steps

- NEI 96-07, Appendix D approval
- BTP 7-19 revision approval
- Implement Standard Digital Engineering Process and SDP interfacing procedure (NISP-EN-04)
- Collaboratively work with the staff on the IAP modernization plans

A predictable regulatory path based on reasonable assurance of adequate protection.

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