Invited Speaker

High Performance HMI – Proof Testing in Real-World Trials

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FORMAT

20 page paper plus 45-minute presentation

KEYWORDS

High Performance HMI, Process Graphics, Operator Effectiveness, Control Room, Process Simulator

ABSTRACT

Almost all industrial processes are controlled by operators using dozens of graphic screens. The graphic designs are typically little more than P&IDs covered in hundreds of numbers. This traditional, "low performance" Human Machine Interface (HMI) paradigm is typical in all processes controlled by DCS and SCADA systems, including the water and wastewater sector. It has been shown to be lacking in providing operator situation awareness and in facilitating proper response to upsets. In many industries, poor HMIs have contributed to major accidents, including fatalities.

HMI improvement has become a hot topic. This talk will cover the basics of High Performance HMI, which provides for much improved situation awareness, improved surveillance and control, easier training, and verifiable cost savings.

Additionally, a major proof test of High Performance HMI concepts was carried out by the Electric Power Research Institute (EPRI) and PAS. The test involved a major power plant with a full-fidelity process simulator. Operators were put through various abnormal and hazardous situations using both the traditional graphics and new, high performance graphics. The details and very positive results from this thorough test can now be presented outside of the EPRI member companies, and are applicable to a wide range of processes.

About the Author:

Bill Hollifield is the Principal Consultant at PAS responsible for Alarm Management and High Performance HMI. He is a member of the ISA-18 Alarm Management committee, the ISA-101 HMI committee, the API-1167 Alarm Management committee, and is a co-author of the Electric Power Research Institute's (EPRI) Alarm Management Guidelines. Bill is also co-author of The High Performance HMI Handbook and the Alarm Management Handbook, along with many articles on these topics. Bill has international, multi-company experience in all aspects of Alarm Management and effective HMI design, with 38 years of industry experience focusing in project management, chemical production, and control systems. Bill holds a Bachelor's Degree in Mechanical Engineering from Louisiana Tech University and an MBA from the University of Houston. He's a pilot and has built his own plane (with a High Performance HMI), along with building furniture and his log home in the Ozarks.