

New event detection tool 90% faster than traditional

Research by Center for Operator Performance shows potential to prevent incidents from occurring

Dayton Ohio, July 21, 2014 - Dr. Michael Baldea and graduate student Ray C. Wang of the University of Texas at Austin beat the average detection time in the Tennessee Eastman Challenge Process by over 90% using their centroid analysis tool. The Tennessee Eastman Process is a benchmark problem that is broadly used to evaluate new strategies for improving chemical plant operations. Of the twenty faults considered, the centroid approach detected six faults in less than 30 minutes each. Additionally, it detected three hard to detect faults that were either missed or signaled far too late by 12 other techniques published in the literature. The results were presented at the May 2014 meeting of the Center for Operator Performance, which funded the tool's development, hosted at Wright State University in Dayton, Ohio.

The technique has been successfully applied to detection of surge in a large, multistage compressor, where analysis of past surges identified an event signature hours before surge onset. It is currently undergoing testing for other faults. The goal is to create a tool that will help operators identify problems before they occur. Mark Nixon of Emerson Process Management and member of Automation Hall of Fame said, "Being able to detect and visualize faults before they occur is very important. The methods being worked on by the COP are very promising. We look forward to testing these techniques on a wide range of applications. "

The Center for Operator Performance is a collaboration of operating companies and DCS suppliers that researches operator performance issues. For more information on the technique or how to become involved in the Center, we invite you to attend our November 2014 meeting in Austin, Texas.

Contact:

Tom Kindervater
Center for Operator Performance
7087 Corporate Way
Dayton, Ohio
513-713-3847
Email: tkindervater@operatorperformance.org
www.operatorperformance.org

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