

Improving console decision making and capturing expertise at the same time

Technique from Department of Defense shows promise for console operator skill acquisition and retention

Dayton, Ohio, September 2, 2014 – Dr. Gary Klein, noted author and expert in real time decision making, recently completed a pilot project on use of the ShadowBox technique to speed transfer of knowledge from expert to novice console operators. The project, which has origins in research conducted for the Defense Advanced Research Projects Administration and was funded by the Center for Operator Performance, developed training scenarios that run on a tablet PC. Novices are given screen shots that progress through a plant event and are later asked a series of questions. Explanations of both correct and incorrect answers to those questions from expert operators are provided to the student. The training has time constraints, ambiguity, traps to highlight imperfect understanding, and feedback on trainee performance.

One way to help trainees develop expertise is to let them see the world through the eyes of experts. This approach enables the trainee to shadow the thinking of the experts. The use of actual scenarios provides a means to capture the knowledge of expert operators in context. The use of a tablet platform for presenting the exercises eliminates the need for a facilitator and associated scheduling issues.

A second study is being undertaken to build upon the success of the pilot. The follow-on will answer four key questions: (1) Can the same problem solving skill be adapted to different process equipment, (2) how valuable are the scenarios for operators on units other than those for which they were developed, (3) how would ShadowBox fit into the overall plant training toolkit, and (4) can ShadowBox be integrated with high fidelity simulator training?

The two scenarios developed for a fluid catalytic cracking unit were presented at the May 2014 meeting of the Center for Operator Performance, which 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.

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