

EXSYS Case Study



Control Panel Layout Design Aid

An Engineering Company

A knowledge automation system has been built that aids in the design of control panels. The system is also useful in performing human-factors engineering evaluations of proposed design changes to existing panels. The benefits extend well beyond initial design. The system ensures an optimized control panel layout, which results in fewer costly operator errors, and consequently, in safer plant operation. It can also evaluate future retrofits in the context of the existing database model and compare design alternatives, ensure consistency of color, and other plant specific guidelines.

The knowledge automation system incorporates human-factors design guides and checklists, as well as specialized knowledge about the display of information, the operation of controls, operator decision-making, and the complex interactions between operators and the processes they oversee.

The system interfaces directly with a 3-D CAD system. Proposed designs are entered graphically into the CAD system, through a relational database. The flexible user interface accesses the database allowing the knowledge automation system to evaluate the design. The system examines component specifications and proposed layouts, generates reports, determines the adequacy of the proposed designs, and recommends any necessary changes. The benefits are improved quality and accuracy of the design process without expensive iterative analyses.