

HIGHLY INTEGRATED CONTROL ROOMS - HUMAN FACTORS TWG #5

PROBLEM STATEMENT:

Existing Human Factors Engineering review guidance, regulatory positions, and acceptance criteria could be modified or developed, as needed, to facilitate consistent and efficient licensing of new digital Human-System Interface technology at operating and new reactors and certain fuel facilities.

Statement 1

Minimum Inventory. Review existing NRC regulatory positions and acceptance criteria, and make necessary changes, to better define of minimum inventory of alarms, controls, and displays needed to implement the emergency operating procedures and bring the plant to a safe condition; eliminate any inconsistencies in the use of minimum inventory that exist in current NRC guidance; and review a process to develop a plant-specific minimum Inventory of alarms, displays and controls.

Statement 2

Computerized Procedures and Soft Controls. Review existing NRC regulatory guidance, positions, and acceptance criteria, and make necessary changes, to facilitate consistent and efficient licensing of computerized procedures and soft controls in highly integrated control rooms. Develop guidance and acceptance criteria, if necessary, to minimize the impact of degraded digital instrumentation and controls associated with computerized procedures and soft controls on human performance.

Statement 3

Role of Personnel. Review existing NRC regulatory guidance, positions, and acceptance criteria, and make necessary changes, to accommodate changes to personnel roles and responsibilities that may result from implementing a highly integrated control room (e.g., greater automation and knowledge-based systems that digital instrumentation and controls would facilitate).

Statement 4

Safety Parameter Display System. Review existing NRC regulatory guidance, positions, and acceptance criteria, and make necessary changes, to determine the need to revise 50.34 (f)(iv) and associated guidance relative to safety parameter display consoles to ensure consistent understanding of the term "console."

DELIVERABLES:

- a. A listing of regulatory guidance documents, industry standards, and regulations (if needed) that should be revised.

- b. Interim guidance describing or clarifying the current regulatory guidance and acceptance criteria on each of the identified problem areas will be developed.
- c. Final guidance, acceptance criteria, and regulations (if needed) addressing each of the problem areas will be developed.
- d. Update the Standard Review Plan guidance to provide acceptable regulatory and licensing criteria for new reactors, modernized LWRs, and fuel facilities.