

# GENERAL ELECTRIC

NUCLEAR POWER  
SYSTEMS DIVISION

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May 1, 1981

U.S. Nuclear Regulatory Commission  
Division of Human Factors Safety  
Office of Nuclear Reactor Regulation  
Washington, D.C. 20555

Attention: Richard W. Froelich

Gentlemen:

SUBJECT: COMMENTS ON "STAFF SUPPLEMENT TO THE DRAFT REPORT ON  
HUMAN ENGINEERING GUIDE TO CONTROL ROOM EVALUATION,"  
NUREG-0659



This letter provides General Electric's comments on NUREG-0659. These comments have been restricted to general comments to aid in the formulation of NUREG-0700.

The Introduction to NUREG-0659 states that NUREG-0700 will contain staff developed evaluation criteria. We feel it is essential that the industry be given the opportunity to comment on these evaluation criteria and on the entire guidelines of NUREG-0700 prior to final publication. NUREG-0700 will contain not only evaluation criteria but also recommendations on review report contents and other items which may have a significant impact upon expedient and efficient compliance.

In Sections 2.2 and 2.5.2 of Part IV, "Systems Review," it is stated that the Human Factors review should address operator participation or manipulation of system controls during normal operations, anticipated operational occurrences, and postulated emergency conditions. For normal operations (e.g., startup, shutdown, and refueling) we believe that adequate definition of potential Human Factors improvements are provided through the use of checklists, operator interview comments, and review of LERs. The task analysis, however, should be restricted to the Safety Analysis Report Chapter 15 events, using the plant emergency procedures as guidance in the analysis.

A definition of human error is needed because the scope for evaluation of human error is not clearly specified. Human error cannot be conclusively identified nor evaluated in its many possible forms; therefore, some boundary conditions need to be established upon which human error analyses can be reasonably achieved.

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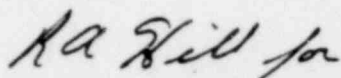
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In specifying Human Factors Engineering requirements for the Technical Support Center and the Emergency Operations Facility these requirements should be commensurate with the degrees of safety provided by these facilities. Because these facilities offer no direct plant control but play a support role during an emergency they should not require task analyses.

Appendix B, "Systems/Operations Analysis Techniques," is much too general and by this generality suggests more analytical effort than is consonant with the goal of accomplishing control room improvements as rapidly as possible. Much of the vagueness stems from the uncertainties associated with functional allocation, processing capabilities, and verification of functions with respect to humans. Appendix B would be more useful if condensed to a tangible example of analysis technique.

It is hoped that these comments will aid in the preparation of the control room design review guidelines. If you have any questions regarding these comments please contact Mr. R. A. Hill (408) 925-5388 of my staff.

Very truly yours,



R. H. Buchholz, Manager  
BWR Systems Licensing  
Safety and Licensing Operation

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cc: L.S. Gifford  
G.R. Mullee