



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SEP 1 1983

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MEMORANDUM FOR: R. Wayne Houston, Assistant Director  
for Reactor Safety  
Division of Systems Integration

FROM: Dennis L. Ziemann, Acting Deputy Director  
Division of Human Factors Safety

SUBJECT: REVIEW OF GESSAR II DESIGN IMPROVEMENTS

Your memorandum of August 1, 1983, discussed the staff review of the PRA submitted by GE for GESSAR II and requested lists of questions, issues, studies, analyses, and substantive design alternatives pursued with GE in the review of GESSAR II. PSRB and HFEB are the only DHFS branches who participated in the GESSAR II review. The PSRB review probably would not provide any new insight for the PRA review. HFEB reviewed the GESSAR II control room which is an advanced control room with an SPDS. The alternative of a conventional control room and no SPDS were not explored with GE because the CP/ML Rule requires a control room that reflects state-of-the-art human factors principles and a safety parameter display console. GESSAR II Amendment 9, Section 18.2, "Systems Analysis," may be of use to you in reviewing the PRA. The purpose of the systems analysis was to identify operator tasks and control room display and control needs.

You also asked that we identify additional questions that have not yet been pursued with GE. There are no questions or issues not previously raised with GE that DHFS is presently considering raising. However, as the result of a conversation between Jack Rosenthal and Voss Moore, I will mention several human factors areas involving advanced technology. These include alarm prioritization, computer process/CRT displayed procedures, disturbance analysis, computer management of data and information for the operating supervision and staff, and artificial intelligence. These areas were not raised with GE because they are in the research and developmental phase and go beyond present NRC requirements.

*Dennis L. Ziemann*  
Dennis L. Ziemann, Acting Deputy Director  
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