



Portland General Electric Company

April 15, 1981

Trojan Nuclear Plant  
Docket 50-344  
License NPF-1

Director of Nuclear Reactor Regulation  
Attention: Mr. R. W. Froehlich  
Division of Human Factors Safety  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555



Dear Sir:

We have reviewed NUREG-0659, Staff Supplement to the Human Engineering Guide to Control Room Evaluation Draft Report, and have discussed our comments with Mr. Richard Froelich of your office.

Our most general and important comment is that we are unclear as to the meaning of and scope for the "systems review" described in Section IV of that document. This systems review is designed to involve the "total-man-machine" configuration. We are concerned that these activities, if not properly defined, could lead to an unproductive use of technical manpower and resources to address the review of existing control rooms, such as the Trojan Nuclear Plant. We therefore request that you clarify in your meetings on this subject and in NUREG-0700 the scope of this systems review and the evaluation criteria; and, to this end, request that NUREG-0700 be offered for review and comment by appropriate industry organizations prior to being published.

Until those clarifications are reached, we are proceeding on the basis of our conversation with your Mr. Richard Froelich. Our understanding is that these guidelines are intended to be for our use in defining which instruments, indications, or controls should be added, restructured or changed, and which should be deleted in order to support necessary operational requirements and procedures, both in normal operating modes and in emergencies.

A045  
s  
1/1

8104210 361

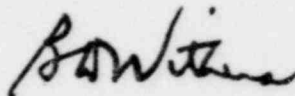
P

Portland General Electric Company

Director of Nuclear Reactor Regulation  
April 15, 1981  
Page two

Additional specific comments are attached for your consideration. Should you require further information regarding these comments please contact us.

Sincerely,



Bart D. Withers  
Vice President  
Nuclear

Attachment

c: Mr. Lynn Frank, Director  
State of Oregon  
Department of Energy

TROJAN NUCLEAR POWER PLANT  
Docket No. 50-344  
License No. NPF-1  
Comments on NUREG-0659

1. The Operating Events analysis outlined in Section 2.5.2 would appear to be largely generic within the specific reactor type. Similar analyses in response to NUREG-0660 Items I.C.1 and I.C.9 are being done generically for Westinghouse plants through the Westinghouse Owner's Group. The analysis of possible sequences of multiple failures is a major effort, at the current state of the art, as evidenced by the continued unresolved status of NRC Generic Task A-17, "Systems Interaction in Nuclear Plants".

The scope of this study is sufficiently complex that it does not seem appropriate or cost effective for all licensees to expend considerable resources repeating the same type of study. An alternative approach would be for the NRC to complete a human factors review of a typical nuclear plant (similar to the WASH-1400 approach), the results of which would provide the basis for determining the depth to which individual licensee evaluations are needed. It is likely that many of the same sort of deficiencies will be found in all operating plant control rooms, and there will be no need to duplicate efforts.

2. The objective of Task Performance Verification is to examine the adequacy of the existing instrumentation to support required operator tasks. Guidelines that will be in NUREG-0700 for good human engineering practice are to be used, but it is implied these guidelines may be separate from, and additional to, those used for the component level control room survey. This should be clarified in NUREG-0700. Specifically, what "interface qualities" will be set forth in NUREG-0700 that cannot be addressed during the component level survey?
3. The guidelines state that walk-throughs should be performed on mock-ups and should not be attempted in the Control Room during actual operations. It is felt that some walk-throughs should be performed in the Control Room since this would ensure that walk-throughs on the mock-up accurately reflect actual control room conditions and are representative of plant operations. If walk-throughs cannot be done during normal operations, then this would become a shutdown item. For Trojan, this would mean a walk-through delay until the 1982 refueling outage.
4. The staff guidance on verifying the effectiveness of a backfit is nonexistent: see responses to Questions 2.E. 3.1.g, 3.1.h, and 3.5.b. It is generally implied that the NRC views the validation of backfits as beyond the scope of its review. However, Page IV-22 suggests it may view changes that meet the NUREG-0700 Section 6 human factor guidelines, currently under development as sufficient to close out an identified Human Engineering Deficiency. This should be clarified. Furthermore, Page IV-22 correctly notes that all proposed changes should be evaluated to verify that they do not introduce worse problems than they cure. Additional guidance on how this essential step is to be achieved should be provided. In addition,

it is not clear if Appendix B is a description of suggested analysis techniques as stated in Section 4, or the required method of systems review. It is felt that the guidelines of Appendix B, while appropriate to the initial design of a control room, are not appropriate for a design review of an existing plant. Little or no significant improvement in safety is expected to result from implementing the details of systems, functional, and task analysis outlined in this document.

5. It is not clear, regarding staffing of the review team, what is meant by the "systems analysis" discipline and by a "member who is experienced in the analysis of complex systems". Also, it should be established to what extent use of consultants is an acceptable substitute for in-house expertise.
6. Performance of a detailed "Systems Review" for frequently used systems governed by normal operating procedures could be unproductive. It seems that any significant safety deficiencies should have been or will be identified by operator interviews and surveys of operational experiences. General deficiencies will be identified in a normal human engineering survey of the Control Room, and a systems analysis would be unnecessarily redundant.
7. The NRC audit process is not well defined and thus does not lend itself to public comments. Specifically, the evaluation criteria to be used by the NRC are not included and apparently will not be available for comment before appearing in final form.
8. The guidelines for control room equipment spacing of Section 6.1.1.8 should serve as recommended separation distances and not as absolute requirements.
9. It is not clear what is meant by the distinction on Page IV-17 between Items 1 and 3: The "insufficient" interface feature in Item 1 is apparently distinguished from the features in Item 3 that "do not meet human factors engineering standards". The meaning of the term "insufficient" should be clarified if it is intended to be distinct from the general category 3 items.