

NRC-PDR



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

AUG 8 1979

MEMORANDUM FOR: D. Crutchfield, Acting Chief, Technical Support Branch, NRR  
FROM: G. Lainas, Chief, Plant Systems Branch, DOR  
SUBJECT: REVIEW OF DRAFT RES WORK SCOPES ON IMPROVED REACTOR SAFETY

As per your request of July 16, 1979, the enclosed comments on the technical content of the draft scopes on "Status Monitoring of Engineered Safety Features" and "Improvements in Reactor Instrumentation" are provided.

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Enclosure:  
As stated

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COMMENTS ON  
STATUS MONITORING OF ENGINEERED  
SAFETY FEATURES

A. Article I - Statement of Work, A. Background

1. General Comments

- a. The existance of FRANTIC appears to be irrelevant to what is supposed to be done. The contractor should be free to develop and use his own codes.
  - b. A central point, which is often missed, is that Regulatory Guide 1.47 calls for indication at the systems level. The provision of valve position indicators and other individual component trip indications results in burdening the operator with a lot of detailed information; however, attention should be paid to eliminating unnecessary (to the operator) information (e.g., his standby systems are not running). Emphasis should be placed on the development of systems-level status indication (e.g., system is available or inoperative, the system is in standby or is running).
2. Paragraph 3 - The statement that "The techniques presently used to establish allowed outage times and component surveillance test intervals are largely based on engineering accessments and historical experience" is overstated. See GESSAR or Zimmer FSAR Appendix 6A for examples of how GE approaches this problem based on system performance goals. Change paragraph 3 as required.
3. Paragraph 4 - As previously stated, there are too many indicators now. In order to give "greater attention" "to the human factors that influence the operator's ability to make proper decisions," it is suggested that emphasis be placed on providing more systems level indication and less minor component information (that is more suitable for maintenance technicians and not suitable for plant operators).

B. Article I - Statement of Work, B. Objective

1. This section does not agree with the background. The objectives, according to the Background are:
  - a. To identify those systems which are important to safety; and
  - b. For the systems which are identified:
    - I. Identify the significant causes for failures; and
    - II. Provide suitable status indication which is capable of recognizing the causitive agents.

2. An objective of this research should be to apply the best possible methods to the problem of identifying contributions to risk, not to identify new methods. We have a problem in identifying specific risks, this is applied research. We do not see a need to develop additional techniques for problem solution. (See second paragraph of "Background").

C. Article I - Statement of Work, C. Scope of Work

1. Task 2 should also identify the reasons for failure and determine how such failures could be detected before the system is needed. (e.g., One does not often put a tag in the control room saying, "I forgot to re-open a valve!!").
2. Task 4 should identify and assess advantages and disadvantages but a quantitative assessment is no more realizable today than when WASH 1400 was published.

D. Article I - Statement of Work, E. Report Requirements

It is suggested that a draft task report be provided for our review and comment prior to final publication.

COMMENTS ON  
"IMPROVEMENTS IN REACTOR INSTRUMENTATION"

A. Article I - Statement of Work, A. Background

1. General Comments

- a. The present background is an invitation to re-invent the wheel. The statements in the background, as a group, says that we are not sure the protection systems (and IEEE 279) are good enough.
  - b. The background is too broadly stated and should be made more specific.
2. Regulatory Guide 1.97 is no longer operative. Per memorandum dated July 12, 1979 from H. Denton to R. Minogue, Regulatory Guide is in the process of being revised. Accordingly, the subject RFP should not be issued until the revision of Regulatory Guide 1.97 has been completed.

B. Article I - Statement of Work, C. Scope of Work

1. Task 1 should not be limited to those sequences which dominate the probability of core melt and expected risk. The task should cover both dominant probabilities and dominant risks. (Either domination should be examined).

C. Article I - Statement of Work, E. Report Requirements

It is suggested that a draft task report be provided for our review and comment prior to final publication.