



Wood-Leaver and Associates, Inc.

2-X-83-172

PR-50 (16)  
(48 FR 16014)



July 8, 1983

Secretary of the Commission  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Sir:

Please find enclosed our comments, suggestions, and recommendations on Nuclear Regulatory Commission 10 CFR Part 50, Proposed Commission Policy Statement on Severe Accidents and Related Views on Nuclear Reactor Regulation.

Very truly yours,

*David E Leaver*

David E. Leaver  
Vice-President,  
Wood-Leaver and Associates, Inc.

Enclosure

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add: Roger G. Mattox, P-1102A

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Acknowledged by mail.....

The following comments indicate an overall concern that the Proposed Commission Policy Statement on Severe Accidents and Related Views on Nuclear Reactor Regulation is vague and would therefore not necessarily be effective in utilizing the positive aspects of PRA, despite the statement's intention to do so. In summary we recommend that statement include a clear definition of the need for a program to define the use of PRA in the regulatory process to determine risk reduction and cost effectiveness from design options. Further we recommend that the scope of the program be more specifically defined in the Policy Statement. The program would further be enhanced by a clear statement of the weaknesses of PRA and also be a statement describing its application to the design process.

1. The Policy Statement allows for broad use of PRA in regulatory decisions without tying this use to compliance with numerical safety goals. This is believed by WLA to be a positive step since such use has been demonstrated in the past and in general, when tempered with understanding of the limitations of PRA, will be of benefit to both the NRC and the industry.
2. The Policy Statement describes a three step process for severe accident decisions for operating plants and other plants which do not fall under standard plant rulemaking. The three steps include use of PRA to estimate relative importance of accident sequences, estimates of safety benefits of plant modifications, and use of "engineering and policy judgment, supplemented by PRA where appropriate" to make decisions on whether reductions in risk are necessary.

The following comments are offered on this three step process:

- (a) Severe accident decisions will have a very significant economic impact on the industry and the ratepaying public. Therefore the decision process must be well understood by the NRC staff and the industry. However, as presently written, the decision process is vague and does not provide any guidance on how these decisions will be made. For example, the phrase "engineering and policy judgment, supplemented by PRA where appropriate" appears to make the decision very arbitrary. If the Commission's intent is that the decision process be defined through R&D, trial implementation or some other means, this should be stated. Otherwise, a clearer definition of the process should be included in the Policy Statement.
- (b) Existing PRAs have demonstrated that there are significant differences in relative importance of accident sequences from plant to plant due to NSSS design, BOP design, site factors, and other considerations. Also, a number of PRAs have not considered all the factors which are relevant in severe accident analysis. Therefore, basing judgments on relative accident sequence

importance for a specific plant on an ensemble of 13 existing PRAs will result in incorrect conclusions for many plants and thus result in much wasted effort and dollars for both the NRC and the utility involved. The cost of limited plant specific PRA work is believed to be small compared with the benefits gained in terms of the increased understanding of plant specific design and operation features which contribute the most to risk. Thus it is suggested that the Commission reconsider the use of the "existing ensemble of available PRAs" for estimating relative importance of accident sequences.

(c) It is unclear if the use of PRA is intended in step (2), i.e. to determine the safety benefit of backfits. This should be clarified and if the intent is to use PRA, some guidance should be developed on how this is to be done.

3. Section III states that the Commission will require the performance of a PRA that is as complete as practical for standardized design in CP applications. This, in effect, requires that the PRA and associated reliability engineering programs be performed earlier in the design and regulatory process than is now the case. Performing a PRA and an associated reliability engineering program early in the design process in such a manner as to truly influence the design is a difficult process not only because of the lack of detail design information but also because acceptance may be slow since PRA has not traditionally been used in this way. The Commission should consider the need for development work which would produce demonstrated guidelines on how such a PRA should be performed and how it can be integrated into the design process.

4. Section IX states that filtered-vented containment should be provided in future CP application if it yields "cost effective reduction in risk." This is a strong statement which will require significant analysis to evaluate. It is suggested that the Commission develop an approach for determining the reduction in risk and for answering the question of what is cost effective.

5. The Commission research program discussed in Section VII should include some work to define the characteristics of the uncertainty analysis necessary in a PRA. In particular, it is suggested that uncertainty analysis should be done to support decision making with the PRA and that this be the starting point of any work done to determine what characteristics are necessary.
6. The Policy Statement refers to the weaknesses of PRA in many different places in many different ways. The statement should define clearly and precisely these weaknesses. In this way areas can be defined where NRC responsiveness to the insights of PRA is appropriate. Further the industry might choose to spend R&D efforts accordingly.
7. The Policy Statement says that the use of the Safety Goal will be resolved in two years. However no guidance is provided as to the questions which must be answered or the decisions which must be made (i.e. The weaknesses of PRA must all be resolved.)