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# GENERAL ELECTRIC

## NUCLEAR ENERGY PROJECTS DIVISION

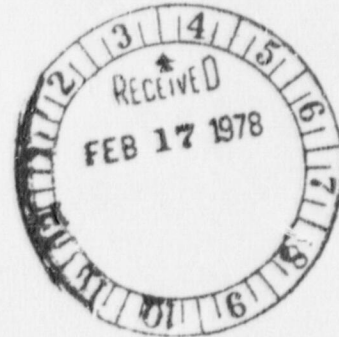
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Hdqtrs. PDR

February 16, 1978

MFN-069-78

U. S. Nuclear Regulatory Commission  
Division of Reactor Safety Research  
Office of Nuclear Regulatory Research  
Washington D. C. 20555



Attention: Mr. S. Levine, Director  
Nuclear Regulatory Research (RES)

Gentlemen:

SUBJECT: DRAFT OF NRC REPORT TO CONGRESS ON SAFETY IMPROVEMENT  
RESEARCH

General Electric appreciates the opportunity to review and comment on the draft NUREG report which is being prepared by RES for the Congress.

As a general comment on the goals of the program, it appears to GE that these goals should not be aimed at development of new or improved safety systems, but rather at resolving fundamental technical issues so that clearly defined criteria can be generated for the use by vendors to judge improvements and changes in system designs. Design improvements are more appropriately in the province of a vendor -- not a regulatory agency. In the present licensing atmosphere, vendors are reluctant to invest resources in this area of work because there is no confidence that the results would be acceptable for licensing purposes. The generation of stable and technically strong criteria would provide a significantly greater incentive for them to engage in such efforts. Present opinion within industry is that the results of a cost benefit analysis favors further quantification of presently known conservatism in approved designs and models. Illustrative of this point is, if the NRC rather than exploring the advantages or disadvantages of a particular design change, e.g., a bunkered system issued a set of criteria against which such design changes could be measured, this would allow a vendor to look at several options to satisfy the criteria. one of which could be the bunkered system. The decision as to which particular design is the best for a particular plant should be left to the vendor and his

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design team. The task of the regulatory body is to assure that the criteria are satisfied. It is obvious that research programs will be needed by NRC to establish such criteria. However, the goal of these programs should be the establishment of clear and stable criteria, not the generation of system design changes.

The following comments are separated in two major areas, the first are general on the context and format of the report and the second more specific to the programs.

#### Format and Content

1. An overview of the entire program should be provided in the introduction which explains briefly the present status of the program (Section 2.3) and the direction for the future. In addition, the entire program needs to be placed in context, particularly for a member of the general public reading the report. It should be explained that the purpose of the program is to increase present knowledge and explore various alternatives which have the potential to increase plant safety. There should be no doubt in a reader's mind that the programs are not needed to ensure the safety of present-day nuclear power plants.
2. A matrix should be presented depicting the budgeted support for each program and comparing the cost benefit of each program as seen by the NRC against the long range objectives of the entire program. A schedule should be shown for the start and completion of each program. Such a matrix is a useful measuring tool and guide for the reader of the report.
3. In each major area addressed (Section 3) the value impact is discussed. It was noted that only judgment was used to estimate the costs of implementation of any change. There is a need for a program to develop a methodology to compare the costs involved with the risk reduction which could be achieved. This program would provide the tool to judge which areas have the greatest potential return on the resource investment. This methodology could then provide the direction for future efforts of the vendors and the NRC and could also provide a means for quantifying the goals of the Safety Research Program. In addition, with such a methodology it becomes less difficult to compare the benefits of improving present designs with the development of a new design.

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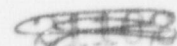
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4. There is significant duplication of information between the body of the report and the appendices which should be eliminated to produce a shorter and crisper reading report.

Comments on Programs

1. Certain areas GE considers more important than others in that they are judged to have the potential to yield the most significant returns with regards to increased safety. Reviewing the suggestions from the meeting of January 10, 1978, the following topics are considered the most fruitful for further study:
  - a) Alleviation of routine radioactive emissions.
  - b) Implementing vented containment concepts.
  - c) Increasing plant availability.
  - d) Reducing occupational doses.
  - e) Continue realistic modeling efforts and develop a systematic program to compare best estimate and evaluation models with experiments.
  - f) Improved quantification of risk so that adequate conservatism can be defined and assessed.
  - g) Improving operator training.
  - h) Review of hardware design for simplification and optimization of the safety systems.
  - i) Improving seismic design capability.
2. GE recommends the following areas should also be considered for further study:
  - a) Development of methods for realistically combining two or more dynamic loads.
  - b) Increased knowledge of the capability of the pressure suppression concept.
  - c) Increased fuel safety research and testing.

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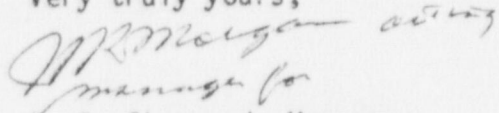
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3. The report needs to be clarified as to the differences between the PWR and the BWR design. In Section 3.2.2, (Advanced ECCS Systems Concepts) the application of check valves or flow restrictors in cold legs can only apply to the PWR. In Section 4.4.1 the including of accumulators in the BWR ECC System is incorrect.

Again, we thank you for the opportunity to comment on the draft report. If we can be of further assistance please contact A. J. Levine of my staff (408) 925-3217 .

Very truly yours,



G. G. Sherwood, Manager  
Safety and Licensing Operation

GGs:at/124-127

cc: LS Gifford/Bethesda

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