



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

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OCT 24 1980

MEMORANDUM FOR: Chairman Ahearne
FROM: William J. Dircks
Executive Director for Operations
SUBJECT: NEW SAFETY CONCEPTS FOR FUTURE CONSTRUCTION

Your memorandum of September 11, 1980, asked to what extent we are examining new ideas or safety issues for potential new nuclear plant designs. You also wanted to know what staff resources we are placing on these questions and whether, in my opinion, that is an appropriate level of effort.

Regarding examination of safety issues, I believe much of our effort on unresolved safety issues has applicability to improving future nuclear plant design. As we resolve these issues and make assessments about the safety significance, the results can be fed into new plant designs and concepts.

Our research program provides a longer term and potentially more significant plan for evaluating new safety design concepts. In 1978, the "Plan for Research to Improve the Safety of Light-Water Nuclear Power Plants" was initiated at a modest level (approximately \$1M per year). Work was initiated on alternative containment concepts, alternative decay heat removal systems and improvements in the operator-machine interface.

After TMI the concern about improving safety led us to expand into other areas, some of which would be primarily applicable to construction of future plants. Results of this research have been provided to industry through numerous meetings, technology exchange workshops, published reports and research review group sessions. In the case of IREP, utility representatives are members of the evaluation teams. Overall in FY 1981, we estimate approximately \$8-10 million will be expended on the areas described in Attachment 1.

It would not be fair to say that NRC has a major integrated program for examining potential safety improvements to new reactor designs. Given the limited resources available to us and the lack of a clear interest by industry, however, I do not think we should expand our efforts. The results of current work to improve safety for operating reactors and plants under construction will provide insight to any vendor interested in designing a new nuclear plant. The IREP and NREP studies, the siting policy rulemaking, the degraded core rulemaking, the resolution of unresolved safety issues, and the development of safety goals should provide significant input to decision making regarding the need for safety improvements to new plant designs.

We are not foreclosing the possibility for new plants to be designed at a higher level of safety. On the contrary, we are providing constructive input and guidance to the industry. The current level of effort being spent in

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the research program for new safety concepts is reasonable. With our limited agency resources, additional effort on the part of RES or NRR focused strictly on new reactor designs would not be advisable, particularly in light of the lack of expressed interest by industry.

(Signed) William J. Dircks

William J. Dircks
Executive Director for Operations

cc: Commissioner Gilinsky
Commissioner Hendrie
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