



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

AUG 24 1978

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Mike T. J.

MEMORANDUM FOR: R. J. Mattson, Director, Division of Systems Safety, NRR  
V. Stello, Director, Division of Operating Reactors, DOR

FROM: R. L. Tedesco, Assistant Director for Plant Systems, DSS  
D. G. Eisenhut, Assistant Director for Systems and Projects, DOR

SUBJECT: PROPOSED STAFF POSITION ON THE USE OF SRV QUENCHER DEVICES  
INSTEAD OF RAMSHEAD DEVICES FOR MARK I & II PLANTS

In accordance with Milestone 310 of Task Action Plan A-39, our review of the BWR suppression pool temperature limit during a safety/relief valve operation using ramshead discharge devices has been completed. The results of this review effort, which are described in the enclosed discussion paper, indicate that quencher type SRV discharge devices have safely performed during operation, and are definitely preferable to devices using a ramshead design. This applies to the Mark I, II, and III plants; however, the Mark III plants all plan to use the quencher type device. While we have not completed A-39, as a task, the review has progressed to where it is apparent that regardless of the outcome, the action will always involve the use of a quencher type device rather than the ramshead. Thus it is expedient now to set forth this recommendation to applicants and licensees.

Our recommendation, which is to require the use of quencher type discharge devices, is based primarily on test data which showed that the quencher's design results in (1) superior performance over the ramshead in the steam quenching mode, e.g., quencher does minimize the pool temperature concerns and (2) a reduction in the hydrodynamic loads on the containment structures. In addition, if ATWS becomes a design basis event, the quencher discharge device will improve the capability of the plant to mitigate its consequences. It also follows that it is unlikely that an adequate data base can be developed to support a design basis suppression pool temperature limit for the ramshead type device which would provide an equivalent margin of safety vs. that provided by a quencher type device.

Discussions have been held with the Mark I and II Owners' Group about the improved performance aspects of the quencher vis a vis the ramshead device, and they have indicated that consideration was being given to replace the ramshead discharge devices with the quencher design. There are only a few of the Mark I Owners who have indicated any intention to pursue the continued use of the ramshead type device. In view of this potential action by the utilities, an interim position has been developed for operating plants and is described in detail in the enclosed discussion paper. Accordingly, we request your approval of our recommendation that all SRV discharge devices for Mark I and II type plants be required to have the quencher design.

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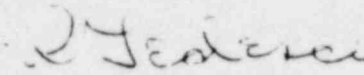
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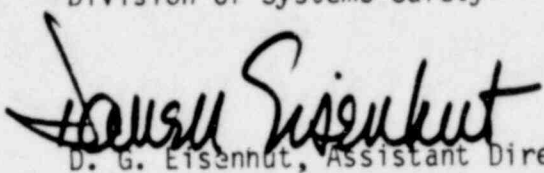
Multiple Addressees

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We estimate the installation of quencher type devices in either the Mark I or Mark II type plants will run in the order of \$100-200 K each.

  
R. L. Tedesco, Assistant Director  
for Plant Systems  
Division of Systems Safety

  
D. G. Eisenhower, Assistant Director  
for Systems and Projects  
Division of Operating Reactors

Enclosure:  
As stated

cc: S. H. Hanauer  
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