UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

NOV 4 1968

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LOSS OF ALL REDUNDANT DIESEL GENERATORS, CONNECTICUT YANKEE, HADDAM NECK PLANT, DOCKET #50-213

During the October 29 meeting with the applicant concerning their recent loss of offsite power we learned that all three diesel generators suffered a common mode failure during the subsequent heat removal operations.

When the power loss occurred, the diesels started, synchronized and accepted loads, as designed. However, when the operator intentionally (and properly) attempted to reduce load by tripping a charging pump which had fulfilled its function, two of the three diesels also tripped for reasons as yet unexplained. The remaining diesel immediately succumbed to the overload.

This incident, in my opinion, adds considerable weight to our recent statements in favor of independence within emergency power systems. If one dismisses as being incredible the possibility of two independent, random failures causing the initial trips, the only reasonable explanation is that the trips resulted from a single common cause which affected both diesel generators via a common link. Whether the link was electrical, mechanical, operational or something else is beside the point. The point is that a truly independent system would have lost only one generator and not all three.

The incident also brings out the fallacy of a mechanistic approach in support of non-independent systems. Specifically, our previous staff analyses uncovered only one potential single failure; the failure of a service water pump to shed when required. Obviously there was at least one other potential fault which could involve all three generators. It did, and summarily negated our original conclusion that all faults had been considered.

Independent systems require no such analyses. Once independence is established it becomes unnecessary to consider, as a special case, each and every possible (single) failure mode. Independence is itself an absolute defense against all such failure modes, whether or not they are known to the designer beforehand.

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This memorandum is not a recommendation to backfit Connecticut Yankee. It is intended only as one more supporting argument in favor of independence among emergency a.c. power supplies and the respective buses.

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RT-1052
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