



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

Accession
OCT 26 1978

MEMORANDUM FOR: Bernard J. Snyder, Assistant Director for Policy
Evaluation, Office of Policy Evaluation

THRU: Roger J. Mattson, Director, Division of Systems Safety *R*

FROM: Robert L. Tedesco, Assistant Director for Plant
Systems, Division of Systems Safety

SUBJECT: NRC FIRE PROTECTION RESEARCH TEST - RELATIONSHIP TO
UCS PETITION

This is in response to your memorandum of October 6, 1978 in which you requested additional information on the results of the NRC fire protection research test conducted on September 15, 1978 at Underwriters Laboratory near Chicago, Illinois.

The features of the test were representative of cable fire protection measures that have been proposed and are under staff review for upgrading fire protection programs in operating plants. The specific fire barrier and sprinkler configuration used in the UL test were not effective enough in preventing cable damage from a flammable liquid spill fire to be acceptable by themselves for fire protection in nuclear power plants. Further, we know of no operating plants for which such protection has been accepted or installed.

We do not have any further information at this time about the UL fire test that is relevant to the Union of Concerned Scientists' contentions beyond that presented in our memorandum of September 29, 1978 to the Commissioners.

The staff plans the following further actions:

- a) An IE circular is in preparation to inform licensees of the UL test results and to indicate areas of the fire protection program that need closer consideration; namely, adequacy of floor seals or curbs around vertical cable trays to prevent penetration of spilled flammable liquids, location of sprinkler heads and detectors, and response of sprinkler heads and detectors.

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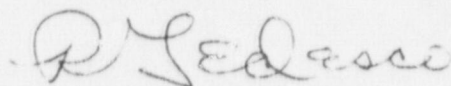
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- b) Additional testing is planned. This test at UL was one of a series of cable system fire tests requested by NRR in a User Request Memorandum dated June 1, 1978 from the Acting Director of NRR to the Director of RES. These planned tests will include fires external to cable trays and internal to cable trays; horizontal and vertical grouped trays; and automatic water sprinkler and gas flooding fire suppression systems. RES is preparing a memorandum concerning follow-up tests that may be necessary as a result of the UL test. Recommendations along these lines were discussed at a fire protection research review group meeting on September 26, 1978.
- c) The Quick Look Report is being reviewed by the staff to determine whether modifications should be made in the acceptance criteria for plant fire protection programs, namely Branch Technical Position 9.5-1 and its Appendix A.

We have reviewed the NRR responses to questions 1, 8, 18 (Enclosure 1); 1, 2 (Enclosure 2); and 7, 9, 10 (Enclosure 3) in the Commission's memorandum of June 21. The NRR responses are contained in submittals to the Commission dated July 6 and August 31, 1978. The responses to the specific questions deal with actions taken on plants since the Browns Ferry fire, the adequacy of cable separation criteria, and the effectiveness of coatings and barriers. The present information regarding the UL test does not cause us to alter our previous responses to either the specific questions of the Commission or the UCS contentions generally. As indicated in past responses, reliance is not placed upon any one measure or feature by itself for fire protection in nuclear power plants. Rather, reliance is placed upon control of ignition sources, combustibles and access to the areas; physical separation; use of flame retardants to delay or prevent fire propagation; and trained fire brigades for prompt manual suppression of fires. In upgraded systems now being reviewed for installation in operating plants, fire detection, fire barriers, and fire suppression equipment have been proposed. The UL tests were primarily directed toward understanding the performance capability

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of the proposed equipment. While the results of the UL test require further study and evaluation, we believe that the implications for operating plants are understood and no further actions beyond those discussed above are necessary. We will keep the Commission informed if there is any significant change in our understanding of the results of the UL tests.



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

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