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

DEC 11 1978

Generic Task No. A-17

PROJECT: Generic Task A-17, Systems Interaction in Nuclear Power Plants

SUBJECT: SUMMARY OF MEETING WITH SANDIA LABORATORIES TO REVIEW PROGRESS
OF WORK ON THE CONTRACT EFFORT AND TO PLAN FUTURE ACTIONS

Members of the NRC staff met with representatives of Sandia Laboratories on November 30 and December 1, 1978 in Albuquerque, New Mexico to review progress of the work on the contract effort with Sandia Laboratories on systems interaction and to plan future action with regard to the effort. The significant items discussed are summarized in this meeting summary. A list of persons who attended the meeting is enclosed.

One of the items discussed was the need to define the scope of the work effort so that an early demonstration can be made of the kinds of systems interaction that will be included in the task and how the fault tree methodology will be used to identify where systems interactions are possible. We agreed to a target date of early February to complete enough work to make a demonstration of the methodology at an ACRS subcommittee meeting. We will also generate a list or catalogue of items that will be typical of the kinds of interactions that will be included in the investigation.

We discussed the need to define the top event(s) of the fault tree in order to give better definition to the task. We requested Sandia Laboratories to consider joining the three safety function statements to a top event identified as "unacceptable core damage". For the purposes of this task we will include Conditions I and II as defined by ANSI N 18.2, except that for the near-term effort we will develop the fault tree logics for plant operating modes 3 and 4. We will not postulate that Condition III and IV events occur, but we will consider systems interactions that are probable during Conditions I and II and that could be the initiators of Conditions III and IV.

We discussed the need to review the Licensee Event Reports used in the Zion Station Systems Interaction Study for the purpose of classifying these events according to the mode of operation of the plant for the events that are applicable, and classifying the events according to severity. The results of this effort will be used to confirm or deny partially our choice of limiting the near term effort to plant operating modes 3 and 4. Our choice otherwise is based on our judgment that the most productive effort will be the investigation of systems that are challenged frequently to accomplish safe shutdown on demand arising from normal plant operations and frequently occurring transients, i.e., Conditions I and II.

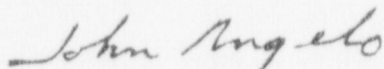
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We discussed other actions that may be of assistance in completing this task. We suggested that representatives of Sandia Laboratories should consider attending a course in plant systems given by the Office of Inspection and Enforcement, and we agreed to investigate the possibility of gaining access to a course in the very near future. We agreed to investigate also the possibility of attendance by Sandia representatives at a session on the simulator at the T/A training facility with NRC staff members.

We reviewed a list of questions and concerns raised by members of the ACRS subcommittee on plant arrangements and its consultants at the meeting on October 25, 1978, for which we felt that a response was desirable to supplement the responses given at the meeting. We believe that these responses, in addition to the responses given at the meeting, constitutes a good initial effort to establish a mutual understanding of the task or, at the least, it forms a basis for discussions at the next session with the ACRS subcommittee. We intend to report these additional responses prior to the next meeting with the ACRS subcommittee.

Sandia Laboratories presented information on the status of work now in progress on sub-tasks 5 and 6 which are the development of plant logic models and system models. The logic models under development include the three safety functions: (1) remove core decay heat, (2) reactor subcriticality function, and (3) reactor coolant system pressure boundary protection. Sandia Laboratories anticipates that separate fault trees will be developed for decay heat removal function with a loss of offsite power transient and with offsite power available. These basic logic models are preliminary in nature and considered not sufficiently developed for review by the NRR working group.



John Angelo, Task Manager
Generic Task A-17
Division of Project Management

Enclosure:
Attendance List

cc: Mr. Jack Hickman
Nuclear Fuel Cycle Safety
Research Department
Sandia Laboratories
Albuquerque, New Mexico 87185

ENCLOSURE

Attendance List

Meeting With Sandia Laboratories on

November 30 and December 1, 1978

Concerning Task A-17, Systems Interaction in Nuclear Power Plants

Sandia Laboratories:

W. R. Cramond

D. J. McCloskey

D. D. Carlson

D. L. Berry

D. J. Murphy, Jr.

J. Hickman

NRC:

G. Arlotto

D. F. Ross

J. A. Norberg

M. Taylor

H. Ornstein

R. L. Wright

J. Angelo