

1957

3/7/57

TO: R. T. SCHOMER - LYNCHBURG AED  
FROM: T.C.ENGELDER AND G.R.THOMAS - LMFRE - LYNCHBURG AED  
CUST: USAEC  
SUBJ: MEETING WITH HAZARDS EVALUATION COMMITTEE

FILE: 600-0046-26-06  
DATE: MARCH 7, 1957

The purpose of this meeting was to acquaint the Reactor Hazards Evaluation Committee with the status and scope of the first phase of LMFRE design and to discuss certain aspects of the required Preliminary Hazards Report.

Present at the meeting were:

C. Beck	AEC
C. Luke	AEC
W. H. Pennington	AEC
T. C. Engelder	B&W
G. R. Thomas	B&W

The meeting was opened by a general discussion of the requirements for choosing a site during Phase I. The scope of the preliminary design was outlined to the committee and the committee was asked if they thought we could pick a site based on the preliminary design and hazards study. Dr. Beck stated that we should definitely be able to choose a site from work in Phase I.

The next item discussed was the relative importance of various items such as maximum credible incident, population density, and containment.

Dr. Beck asserted that the maximum credible incident should be based on the possible malfunctions of the plant or personnel and not upon acts of sabotage. He pointed out that a saboteur could certainly create a highly dangerous and destructive incident whether at a reactor plant or elsewhere. The final report, he said, should contain an analysis of the hazards due to sabotage or other acts of violence and recommended emergency procedures but it would not be necessary for the preliminary report.

In relation to containment, the committee felt that a containment building served to reduce both the probability of a hazard to the public as well as the magnitude of the hazard. In this connection, it was pointed out by Dr. Beck that if we assume a leakage rate for the containment building it should be a rate which can be easily guaranteed after construction. Undue leakage from the building due to such violations as jumping a door interlock is the responsibility of the operating organization and is not a concern of the Hazards Evaluation Committee. Such incidents need not be considered in the preliminary hazards evaluation since they are not considered a plant or personnel malfunction.

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In an effort to establish the committee's feelings on certain items, the following questions were asked by the writers:

- Q. In evaluating a reactor hazard, can credit be taken for the removal and storage of fission products?
- A. Yes, if it can be guaranteed that the chemical processing plant will remove the fission products to the level predicted. In general however, if uncertainty does exist, it would be wise to assume no removal.
- Q. How does the presence of Po-210 and Pu-239 influence site selection?
- A. Only insofar as their effects are included in the calculation of hazards to the population. There are no preconceived notions as to exclusion of the site due to the presence of these materials.
- Q. What are the committee's feelings on transient experiments?
- A. If the dynamics of the system can be investigated by the application of less violent methods such as those recently reported by Bethe then it would be desirable. However, this does not preclude the practice of transient experiments nor does the conducting of such experiments demand maximum exclusion such as Arco. This situation requires, as does the previous question, an analysis of the hazards to the surrounding population.

There are a number of methods of hazards analysis. On questioning, the committee agreed that the method of J. J. Fitzgerald (Knolls) was satisfactory.

The last part of the discussion was devoted to a general description of the various sites investigated to date. No conclusions were reached on this subject except that the number of sites might be narrowed down by comparison and evaluation on other bases before the detailed hazards evaluation was initiated.

After the meeting the writers spent a short time with Messrs. Luke and Pennington in order to describe the system according to our present thinking.

gpc

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