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Task Action Plan A-8

Docket Nos.: 50-358, 50-352/353, 50-367, 50-373/374, 50-387/388, 50-410, 50-322, 50-397



MEMORANDUM FOR: Karl Kniel, Chief
Generic Issues Branch
Division of Safety Technology

FROM: C. J. Anderson, A-8 Task Manager
Generic Issues Branch, DST

APPLICANT: Members of the Mark II Owners Group

SUBJECT: MEETING WITH MARK II OWNERS TO DISCUSS THE LONG TERM PROGRAM CHUGGING LOAD SPECIFICATION (December 10, 1980)

The purpose of this meeting was to discuss the status of the generic improved chugging load model. A list of the meeting attendees is attached.

Several different load methodologies have been investigated by the Mark II owners for an improved chugging load specification. Earlier discussions on this topic indicated that either spectal variations in the chugging sources from vent to vent or the effects of vent desynchronization would be included in the long term improved model. Current thinking on the part of the owners is to refine the chugging model to account for both of these effects. The work required to develop and justify these refinements in the model is significant. This additional work will result in a delay in final documentation of the model to June 1980.

The staff expressed concern with this significant delay in the Mark II owners program. The reason for the delay and the length of the delay are under review by NRC management. We requested that the owners provide additional justification for the delay which is two months beyond the anticipated resolution of this USI.

We also requested that alternatives to the delay be investigated. One alternative is the development of a simplified load with limited refinements based on current state of the art knowledge of the chugging phenomena. Excessive load refinements will inevitably lead to a protracted staff review.

The staff discussed modifications to our review schedule for the Mark II Long Term Program resulting from the delay in the Mark II Owners program. We plan to review the other subtasks (i.e., condensation oscillations, lateral loads and pool swell loads) in the generic long term program on a schedule consistent with the scheduled April 1981 completion date. The improved chugging subtasks will be identified as an open issue in the NRC Long Term Program (LTP) NUREG. The chugging subtask will be addressed at a later time in a supplement to the LTP NUREG.

The Mark II owners indicated that they plan to discuss the details of the improved chugging loads program in the next NRC/Mark II owners meeting currently scheduled for late February 1981. The staff requested that a draft of the improved chugging model report be available for NRC review by the end of March 1981.

The staff transmitted questions related to the LTP lateral load definition to the Mark II Owners. A copy of these questions is attached. They stated that they plan to provide a written response to these questions by mid January 1981.

The topic of input mass and energy release rates for pool swell analyses was also discussed. The staff stated that they planned to provide additional criteria in the LTP to assure that the short term subcooled inventory associated with recirculation line breaks is properly taken into account. Discussions with representatives of the lead plants indicate that this issue was properly addressed by them.

Clifford Anderson
A-8 Task Manager
Generic Issues Branch
Division of Safety Technology

Enclosures: As stated

cc: A-8 Internal Distribution List
A-8 External Distribution List

MARK II OG/NRC MEETING
12/10/80
Bethesda

Cliff Anderson, NRC/DST/GIB
Farouk Eltawila, NRC/DST/CSB
R. H. Scanlan, BNL/Princeton University
John R. Lehner, BNL
Ain Sonin, MIT (for BNL)
G. K. Kleinstein
W. M. Davis, GE
H. Chau, Long Island Lighting Company
J. S. Abel, Commonwealth Edison
J. E. Metcalf, S&W
Larry Steinert, GE
Dale Roth, PP&L
D. M. O'Conner, BECHTEL
H. W. Vollmer, Philadelphia Electric Company
Ed Fredenburg, WPPSS
M. Hershey, Burns & Roe

QUESTIONS ON MARK II SINGLE-VENT LATERAL LOADS

1. Fig. 3-1 appears to be inconsistent with Figs. 5-3 and 6-3, apparently because the abscissas are ambiguously identified and the origin of the data points in Fig. 3-1 is most obvious. Please submit clarified versions of these figures identifying which abscissa refer to the (acceleration?) response period and which to the deduced applied load period. Also, identify where the various points in Fig. 3-1 originated from in Fig. 5-3 and 6-3 or elsewhere.

2. In the Ref. 1 data base, the acceleration response period and the deduced applied load period appear to be essentially the same, i.e. the structure is load following during the load application (c.f. Figs. 5-3 and 3-1). The structural model is linear, and one might expect that the applied and response loads would be linearly related. Why, then, is the highest Ref. 1 point 26% above the GE DLF in Fig. 5-3, but only 16% above it in Fig. 3-1?

3. We do not understand the "parametric normalization" that is referred to in NEDE-24794-P. For example, we find on p. 5-4: "The pool temperature dependency previously reported for reference test 1 does not appear to persist when the latter data is normalized to the 4T test conditions".

   We do not see how a dependency on temperature can disappear just by normalization. (Indeed, Figs. 5-6 and 5-8, for example, appear to us to still indicate a temperature effect).

   Please explain what precisely the "parametric normalization" implies regarding the data interpretation, and explain how you deduce a lack of temperature dependency in data where such a dependency was previously reported.

4. Submit your lateral load specification for downcomers with a 23 inch diameter.