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Generic Task No. A-7

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SUBJECT: SUMMARY OF MEETINGS HELD ON MARCH 9 AND 10, 1978 WITH REPRESENTATIVES OF THE MARK I OWNERS GROUP

On March 9, 1978 a meeting was held in Bethesda, Maryland with representatives of the Mark I Owners Group to discuss the changes in the Long Term Program (LTP) as reflected in Revision 3 to the Mark I Owners Group Program Action Plan (PAP). Subsequently, on March 10, 1978 a working group meeting was held with representatives of the Mark I Owners Group to discuss and resolve the LTP Interim Structural Acceptance Criteria (ISAC). The attendees of each of these meetings are identified in Enclosures 1 and 2.

Meeting of March 9, 1978

R. Buchholz of General Electric (GE) and R. Logue, the Chairman of the Mark I Owners Group, summarized the program development, major program milestones, and the impact of Decision Point #3 on the general task work. The slides from the March 9, 1978 meeting are provided as Enclosure 3.

see 50-321 M 4 GD

The Full Scale Test Facility (FSTF) testing program is one of the major LTP milestones. Construction of the facility has been delayed by labor and weather problems. However, this delay is not expected to impact the targeted December,1978 issuance date for the LTP Load Definition Report (LDR). The FSTF base-case testing is currently scheduled to be completed in June, 1978. The individual utilities are continuing to perform independent modifications during the course of the program, in anticipation of the LTP plant-unique analyses. The staff requested that each utility identify the current outage schedules and estimate the time required to complete their anticipated modifications.

R. Kohrs of GE discussed the task changes in Revision 3 to the PAP. The LTP plant-unique analyses are expected to be completed approximately six months following the approval of the LDR and Plant Unique Analysis Applications Guide. In the interim, a number of specific tasks have been identified which could lead to earlier modifications; e.g., differential pressure control, reduced submergence, and safety/relief valve discharge quencher devices. The staff indicated that early implementation of required modifications is desirable and that we would work with the Owners Group to provide interim evaluations on key tasks. In addition, load definition working group meetings will be held with the staff periodically to discuss the inputs to the LDR and provide early resolution of the load-related issues. The staff recommended that a preliminary draft of the LDR be submitted to help expedite the staff's review.

The LDR will contain the methodology for converting test results into plant-unique loads. In some cases, the LDR may have to be supplemented by additional testing or analyses for specific plants, should a utility alter the plant configuration subsequent to the LDR load definition. However, the LDR submittal schedule will not be contingent upon the decision-making process of the individual utilities.

Revision 3 to the PAP will probably be the last program revision prior to the issuance of the LDR. The program scope has generally stabilized and the specific load mitigation options have been identified; i.e., differential pressure control, reduced downcomer submergence, vent header deflectors, and safety/relief valve (SRV) "T" quencher discharge devices. The tasks related to the development of other load mitigation devices have been canceled. New tasks have been added to provide more detailed analyses of the structural response of the vent system and torus shell, and the 1/4 scale pool swell testing program has been modified to include test runs for plant-specific geometries. Due to the increased emphasis on the 1/4 scale pool swell program, the scope of the pool analytical model development has been reduced. The analytical model will be used to define submerged pool velocities, and the EPRI 1/12 scale 3D tests will provide the vent header impact timing. The fluid-structure interaction task has been reduced in financial scope. The Owners Group is not planning to pursue major model development for analysis of fluid-structure interaction but will attempt to define bounding analyses for such effects. The SRV pipe load mitigation study has been canceled because the pipe configurations are too plant specific. The SRV pipe loads will be addressed in the individual

plant unique analyses. An additional task has been included to address the multiple/sequential SRV discharges in the plant unique analyses, as well.

In general, the LTP tasks have had an average schedule slip of approximately 4 1/2 months in the individual task milestones. However, the overall LTP schedule has only slipped two months (i.e., October, 1978 to December, 1978) since the LTP schedule was first defined by the Owners Group. These schedule slips have occurred primarily due to delays in the issuance of reports; the testing programs have been reasonably on schedule. As a result, GE has instituted a report control system to expedite the issuance of reports. The 1/4 scale pool swell load definition testing phase is on the LDR critical path. To minimize the impact on the LDR schedule, the 1/4 scale task group will provide continuous input to the LDR development task group.

The schedule for the column buckling tests is contingent upon an NRC concurrence in the column buckling scaling analyses. The Owners Group does not require a formal evaluation; rather a simple agreement in approach is required to continue with the column buckling tests.

As a result of our letter to the Mark I Owners Group, dated January 25, 1978, concerning acceptable methods for defining load combinations, the Owners Group is going to abandon the SRSS (i.e, square-root of the sum of the squares) approach and pursue an SRSS (i.e., structural response statistical superposition) technique utlizing a cumulative distribution function (CDF). The details for this task are currently being developed. The schedule for completion should be available in about a month. The major milestone for this task will be the definition of an acceptable CDF, which will require interrelating the service levels, load confidence levels, and the probability of non-exceedance.

In response to previous questions raised by a number of utilities concerning the staff's request for additional information on suppression pool temperature transients, the basis for the assumptions in the analyses were discussed. The majority of the assumptions for these analyses are based on the temperature limits imposed by the plant Technical Specifications. The critical assumption concerns the operator response time for initiating a reactor scram once the suppression pool temperature reaches 110°F. The Owners Group argued that an assumed operator response time was a violation of the Technical Specification requirement and that the operator would be preparing to accomplish the scram before the limit was reached. The staff indicated that without specific procedural requirements or a correlation to the rate of pool temperature rise, the operator response should be assumed to begin at 110°F and take 10 minutes to complete. However, the staff specified that the assumptions contained in our request for additional information are guidelines, and other assumptions can be used if there is sufficient justification (e.g., operating experience) to support them.

At the conclusion of the first day's meeting, G. Lainas indicated that there is a proposed staff position, which has not yet received staff management approval, that would require that all ramshead SRV discharge devices be replaced by quencher type SRV discharge devices. This position was primarily the result of the relative magnitude of the threshold temperature limits anticipated for the two discharge devices. The staff will continue to advise the Mark I Owners Group of any further developments in this position, as they arise.

Meeting of March 10, 1978

On March 10, 1978 a working group meeting was held with representatives of the Mark I Owners Group and their structural analysis consultants to discuss and resolve the LTP Interim Structural Acceptance Criteria (ISAC) submitted on February 10, 1978.

Specific sections of the ISAC were discussed and text changes were agreed to by the participants. All of these changes are identified in the modified ISAC provided as Enclosure 4. The staff requested that the Owners Group identify those documents that constitute the interim Plant Unique Analysis Applications Guide (PUAAG). The Owners Group indicated that the Teledyne report TR 2278(c), submitted as part of the Short Term Program, and the ISAC constitute a draft PUAAG. However, revisions have already been made to TR 2278(c). The staff requested that an updated version of the report be submitted as soon as practical. W. Cooper of Teledyne indicated that more revisions to the report are planned. The Owners Group will advise us when a new submittal can be made.

The staff expressed continued reservations regarding the criteria for excluding certain analyses (Figure 1, Note 1 of Enclosure 4). However, the staff agreed to the proposed change to the criteria, on the basis that specific concerns would be addressed for the specific application of the criteria in each plant-unique analysis.

The results of some of the vent header impact testing indicate that some local "dishing" may occur, but without a loss of function. However, lacking the test results, the group could not agree to any exceptions to the criteria for buckling. Consequently, exceptions to the buckling criteria will not be addressed in the present ISAC. These criteria will be pursued later when the tests have been completed.

To clarify the acceptance criteria, W. Cooper of Teledyne and N. Edwards of NUTECH proposed definitions for operability and functionality. The staff requested that these definitions be included in the ISAC introduction, as applicable to all loading combinations. A definition for essential systems and components will be included in the revision to TR 2278(b).

MAY 0 1 1978



At the conclusion of the meeting, the staff requested that the modified ISAC, including some further clarifications to be worked out by K. Wichman and N. Edwards,be resubmitted to the staff. The Owners Group estimated that a resubmittal should be completed in approximately two weeks.

C. Grimes

C. I. Grimes
Plant Systems Branch
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Enclosures:
As stated

MAY 01 1978

cc w/enclosure: Docket File (1 ea.)
NRC PDR (1 ea.)
L PDR (1 ea)
ORB-2 Reading File
ORB-2 Subject File
ORB-3 Reading File
ORB-3 Subject File
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