

Report No. RDA-MR-127300-001.

Period Covered: June 27 through July 30, 1983

Name of Program: Severe Accident Mitigation Systems

Contract Number: NRC-03-83-092

Start Date: June 27, 1983

Completion: 27 months

#### SECTION A: Overall Summary of Project Status

**Technical:** In this first month of operation, active work has begun on Tasks 1-5. (Task 6 is done only on specific assignments). At NRC request, the first specific plant type to be studied is the Mark II BWR, as exemplified by the Limerick plant. We have been requested to make a special rapid response on our study of this type plant by January 1, 1984. Collection of data and reports is well underway, and the Limerick containment system has been visited. Besides the work on Limerick, present effort is directed at revisions and completion of the master plan for the project.

**Financial:** As of July 30, 1983, funds expended amounted to \$ 31,202 (6.5% of total). Funds obligated amounted to \$ 58,349 (12.1% of total).

#### SECTION B: Technical Status by Tasks

**Task 1. Survey of Containment System.** a. Efforts completed: A working outline of the final topical report has been developed, and a substantial portion of the source documents located and ordered. About third are already on hand. The significant failure modes of Type II containments have been identified, and mitigation requirements set out.  
b. Problems or delays: None.  
c. Summary to date: Data collection well underway, assessment just beginning.  
d. Plans for next period: Finish assessment of Type II containments, complete source collection.

**Task 2. Survey of Mitigation Systems.** a. Efforts completed: Tabulation of mitigation concepts applicable to Mark II containments has been completed, and collection has begun of a complete list of all known suggestions for mitigation systems or components as a special assignment.  
b. Problems or delays: None.  
c. Summary to date: Information collection underway.  
d. Plans for next period: Continue collection and assessment of mitigation literature.

**Task 3: Design and Feasibility.** Efforts completed: Preliminary assessment of feasibility has been made for several Type II mitigation concepts. These are to be given

a rough costing and then subjected to preliminary Value/Impact analysis before final selection.

b. Problems or delays: None.

c. Summary to date: Several Type II mitigation concepts are undergoing evaluation; others will be added.

d. Plans for next period: Complete preliminary designs and assessments, and begin final design of selected version.

Task 4: Value/Impact Analysis. a. Efforts completed: Collection of source documents for Value/Impact evaluation is under way. Previous Commission statements and action in the field has been reviewed including the PNL Value/Impact Handbook under development for RSR Division.

b. Problems or delays: None.

c. Summary to date: Methodology for Value/Impact analysis of mitigation conceptual designs is being formulated, based on prior work in the field and the specific requirements of this task.

d. Plans for next period: A working procedure for assessment will be put into preliminary operation for examination of Type II mitigation schemes. This procedure will be discussed with NRC before final adoption.

Task 5: Licensing Strategy Development. a. Efforts completed: Collection and review is under way of suitable documents, reports, and prior action of the NRC, especially SECY 1-A and 1-B, and NUREG 0933.

b. Problems and delays: None.

c. Summary to date: Background and criteria under development.

Task 6: Consultation and Special Assignments. No effort assigned by NRC to this task so far.