



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

*P. Tadaseo*  
*Chuck 2*

JUN 15 1977

MEMORANDUM FOR DSS Assistant Directors

FROM Robert E. Heineman, Director  
Division of Systems Safety

SUBJECT TASK ACTION PLANS FOR CATEGORY A TECHNICAL  
ACTIVITIES

Attached is additional guidance on the development of Task Action Plans. Enclosure 1 is a list of TAC numbers to be used for each activity. Enclosure 2 is an expanded Standard Format, which provides additional guidance as to the material required in a Task Action Plan.

Robert E. Heineman, Director  
Division of Systems Safety

Enclosures:

1. List of TAC numbers
2. Expanded Standard Format

cc: T. Novak  
J. Kovacs  
U. Potapovs  
S. Hou  
L. Beltracchi  
J. Shapaker  
A. Szukiewicz  
A. Thadani  
F. Rosa  
I. Sihweil  
R. Bosnak  
T. Ippolito  
G. Lainas  
S. Pawlicki  
R. Fitzpatrick  
C. Graves  
D. Jeng

Category A Technical Activities

Task and TAC Numbers

<u>Task No.</u>	<u>TAC No.</u>
A-1	4469
A-8	3003
A-9	4019
A-13	4124
A-14	2178
A-18	2163
A-19	2135
A-21	2421
A-22	4584
A-23	4585
A-24	4586
A-25	2140
A-30	4587
A-31	4293
A-32	2144

Standard Format  
Category A Technical Activities  
Task Action Plan

Title: (Number; A-1, etc., Brief Title, TAC Number)

Lead Responsibility: (NRR Div., A/D, Task Manager)

1. Problem Description:

A concise statement of what is to be resolved. Include a description of the significance of the problem to safety or to the licensing process. References to source material (e.g., ACRS letters, NUREG reports, etc.) should be provided.

2. Plan for Problem Resolution:

a) Approach

Describe how the problem is to be resolved, which could include a probabilistic or reliability analysis; pre-operational, start-up or inservice testing or surveillance; development of analysis methods such as digital computer programs; evaluation or analysis by the staff, vendors, applicants or others; experimental programs; or combinations of these.

b) End Product

Identify the end products and intermediate products of the technical activity. Show how these products fit into the licensing process.

c) Tasks

Identify the tasks and sub-tasks needed to resolve the problem. For some activities, a block diagram may be needed to show the process. Each task and sub-task will be described in more detail in either Item 3, 4, 5 or 6.

3. NRR Technical Organizations Involved

a) (Division/Branch)

(1) (Task or Sub-task Title, as identified in Item 2)

(2) Scope of sub-task

(3) Manpower requirement (FY78, FY79, Total)

(NOTE: assignment, scope and manpower must be based on coordination with and concurrence of the involved branch. If unavoidable, any disagreements should be explained)

b) (Ditto for each sub-task)

4. Technical Assistance Requirements

a) Contractor (if available)

(1) Sub-task Title, as identified in Item 2

(2) Responsible Division/Branch

(3) Scope of sub-task

(4) Funding (FY78, FY79, and Total)

(NOTE: funding must be based on coordination and concurrence of the responsible Division and branch)

b) (Ditto for each sub-task)

5. Interactions with Outside Organizations

a) Organization (e.g., other government agencies, vendors, applicants or industry groups; EPRI or other research groups)

(1) (Sub-task Title, as identified in Item 2)

(2) Scope of task or sub-task

(NOTE: if action is required to initiate this sub-task with another organization outside NRR, this action should be an assigned separate sub-task)

b) (Ditto for each sub-task)

6. Assistance Requirements from Other NRC Offices

a) Office/Division/Branch

(1) Task or sub-task Title, as identified in Item 2

(2) Scope of task or sub-task

(NOTE: if action is required to initiate this sub-task with another organization outside NRR, this action should be an assigned separate sub-task)

b) (Ditto for each Task and Sub-task)

7. Schedule for Problem Resolution

a) Summary Schedule

Provide a schedule of the major tasks, including milestones and estimated completion dates

b) Task Schedule

Provide a schedule of the sub-tasks, including milestones and estimated completion dates

c) (Ditto for each Task)

8. Potential Problems

Identify the potential problems and contingencies that are foreseen and their impact on schedule or approach to the resolution.

# URGENT

## SMITTAL SLIP

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INITIALS	NOTE AND RETURN
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H. Denton, DSE

→ R. Heineman, DSS

V. Stello, DOR

### REMARKS

Please review the attached draft document regarding the concept of Lead Responsibility and the responsibilities of Task Managers for generic technical projects and provide your comments to Mike Aycock by COB, Tuesday, June 21, 1977.

*Please distribute copies of  
STH Mfg to AD's & get comments  
from any who have same by  
Noon June 21. Then get  
comments to Aycock. Mine are in  
red.*

Do NOT use this form as a RECORD of approvals, concurrences, disapprovals, clearances, and similar actions

FROM (Name, office symbol or location)

E. G. Case

RET 6-17-77

PHONE

DRAFT  
MAYcock:mmt  
6-16-77

MEMORANDUM FOR: DIVISION DIRECTORS

FROM: Edson G. Case, Acting Director  
Office of Nuclear Reactor

SUBJECT: TECHNICAL ACTIVITIES PROGRAM - POLICIES RELATED TO  
THE CONCEPT OF LEAD RESPONSIBILITY AND TASK MANAGERS

Recently, we discussed the concept of "lead responsibility" and the organizational location and functions of Task Managers as they relate to our new program for the management of NRR generic technical activities. The basic policies presented in Enclosure 1 reflect the outcome of that meeting (with some further embellishment) and should be used as guidance as your divisions begin work on the individual tasks. As we gain experience with this approach, we will reevaluate these initial policies and modify them as necessary.

To provide a complete picture, the functions of the Technical Activities Steering Committee have also been provided in Enclosure 1.

Each of you has concurred in this memorandum.

Edson G. Case, Acting Director, NRR

Enclosure:  
As stated

ENCLOSURE 1

TECHNICAL ACTIVITIES STEERING COMMITTEE  
FUNCTIONS AND POLICIES  
RELATED TO  
THE CONCEPT OF LEAD  
RESPONSIBILITY AND  
TASK MANAGERS

TECHNICAL ACTIVITIES STEERING COMMITTEE FUNCTIONS

1. Assign tasks to priority categories (A, B, C or D)<sup>1/</sup> based on its review of division proposals.
2. Assign a division with "lead responsibility" (lead division) for accomplishing each task based on its review of division proposals.
3. Review and approve Task Action Plans developed by the lead division.
4. Periodically review the progress of ongoing tasks.

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<sup>1/</sup> In allocating resources to and developing schedules for the individual tasks, the following guidance related to overall NRR priorities should be utilized. This priority scheme is consistent with that used to develop the NRR budget. Priorities from highest to lowest are:

1. Operating Reactors (Does not include efforts related to generic tasks that are part of this program).
2. Safeguards (Does not include effort related to generic tasks that are part of this program.)
3. Case work (CPs and OLs)
4. Category A Tasks  
Category B Tasks
5. Other Technical Projects including Category C Tasks, Topical Reports reviews, Research Coordination and Contract Management
6. Standards
7. Training and Correspondence



#### LEAD DIVISION RESPONSIBILITIES

1. Develop Task Action Plans for assigned tasks
2. Assure accomplishment of assigned tasks on schedule
3. Assure proper coordination with other NRC offices and other NRR divisions.
4. Assign a Lead Assistant Director <sup>2/</sup> within the lead division for each Category A task.
5. Assign a Lead Branch Chief within the Lead Division for each Category B and Category C Task.
6. Assign a Task Manager for each task. The Task Manager may be from another division. If so, assignments should be made through mutual agreement between the division management of the two affected divisions.

#### LEAD ASSISTANT DIRECTOR AND LEAD BRANCH CHIEF RESPONSIBILITIES

1. Carry out lead division's responsibilities on a day-to-day basis for assigned tasks.
2. Provide technical and project direction to Task Managers for assigned tasks.

<sup>2/</sup> The functions of the Lead Assistant Director for Category A tasks can be assigned at a management level above or below the Assistant Director level, only after receiving prior approval of the Director, NRR.

#### TASK MANAGER RESPONSIBILITIES

1. Execute the task in accordance with the Task Action Plan on the approved schedule.
2. Establish and maintain the necessary coordination between NRR divisions and with other NRC offices for execution of the task.
3. Prepare an NRR staff report (NUREG Report for Category A Activities) that presents the staff evaluation and conclusions based on input from the technical organizations participating in the task.
4. Report on the status of the task periodically to the Technical Activities Steering Committee (such status reports can be initiated either by the Committee or by the lead division).

#### RESPONSIBILITIES OF PARTICIPATING DIVISIONS (Divisions with individuals participating in the task~~E~~, *including the lead Division*)

1. Accomplish task milestones on schedule.
2. Provide technical direction<sup>3/</sup> to task reviewers within the divisions through normal line management.
3. Assure Task Managers have access to all levels of line management within the division as needed to accomplish the task (Task Managers should proceed from the lower to the next higher level of management as necessary to resolve task problems).

3/ Project direction will be provided by the Task Manager and the Lead division.

*Anderson*

ROUTING AND TRANSMITTAL SLIP		ACTION
1 TO (Name, office symbol or location) <i>G. Laines ✓</i>	INITIALS	CIRCULATE
	DATE	COORDINATION
2 <i>D. Schweil</i>	INITIALS	FILE
	DATE	INFORMATION
3 <i>R. BOSNAK</i>	INITIALS	NOTE AND RETURN
	DATE	PER CONVERSATION
4	INITIALS	SEE ME
	DATE	SIGNATURE
REMARKS <p>The attached "TASK ACTION PLAN FOR THE MARK I CONTAINMENT LTP — CATEGORY "A" TECHNICAL ACTIVITY" has been prepared in accordance with the guidelines established by Mr. Case.</p> <p>Your comments are requested by COB 6/17/77.</p> <p>Thanks.</p> <p>Do NOT use this form as a RECORD of approvals, concurrences, disapprovals, clearances, and similar actions.</p>		
FROM (Name, office symbol or location) <i>John Gindert</i>	DATE <i>6/14/77</i>	PHONE <i>X 28256</i>

14 JUN 77 13 59

Title: Mark I Containment Long Term Program (LTP)

Lead Responsibility: Division of Operating Reactors

Lead Assistant Director: Darrell G. Eisenhut, Assistant Director for  
Operational Technology, DOR

Task Manager: John Guibert, DOR

1. Problem Description:

During the conduct of large scale testing of an advanced design BWR pressure-suppression containment system (Mark III), new suppression pool hydro-dynamic loads associated with a postulated loss of cooling accident (LOCA) event were identified which had not explicitly been included in the original design of the Mark I containment systems. These additional loads result from dynamic effects of drywell air and steam being rapidly forced into the suppression pool (torus) during a postulated LOCA event. Also, recent experience at operating plants has indicated that the dynamic effects of safety-relief valve (SRV) discharges to the suppression pool could be substantial.

Although the results of the Mark I containment short-term program have provided assurance that the Mark I containment system of each operating BWR facility would maintain its integrity and functional capability during a postulated LOCA event, the design margin of safety for these containment systems has been reduced from the margin believed to be present at the time the facilities were originally reviewed and licensed. Consequently, for operating Mark I BWR facilities, the need exists (1) to establish design basis LOCA loads which are acceptable for the life of the facility, and (2) to restore the original intended design safety margins for the containment system. For those Mark I BWR facilities not yet licensed for operation, the need exists (1) to establish design basis LOCA loads which are acceptable for the life of the facility, and (2) to ensure that adequate design safety margin has been provided in the design of the containment system prior to issuance of an operating license.

In addition to LOCA related loads, the Mark I containment (LTP) will also address concerns related to SRV discharge hydro-dynamic loads.

2. Plan for Problem Resolution:

The major portion of the NRC staff efforts related to the resolution of the Mark I Containment concerns will consist of review and evaluation of the results of the Mark I Containment LTP which is being conducted by the Mark I Owner's Group. As documented in Revision 1 to the "Mark I

Containment Program Action Plan" which was submitted to the NRC on February 11, 1977, the Mark I Owners Group has initiated a comprehensive testing and evaluation program to define design basis loads for the Mark I containment system and to establish structural acceptance criteria which will assure margins of safety for the containment system which are equivalent to that which is currently specified in the ASME Boiler and Pressure Vessel Code. Also included in this program is an evaluation of the need for structural modifications and/or load mitigation devices to assure adequate Mark I Containment system structural safety margins.

Key elements of the LTP are: (1) a load definition report (LDR), which will contain design basis hydro-dynamic pressure suppression loads and their possible combinations, and proper procedures as how to apply them for structural evaluation; (2) structural acceptance criteria, which will be used to assess the structural capability of each Mark I containment system to withstand the design basis loads. The criteria will be established considering current requirements and the increased knowledge gained since the original Mark I containment system design; (3) plant unique analyses - each utility will perform a unique structural evaluation of their plant by using the loads defined in the LDR, in conjunction with the approved acceptance criteria. Plant unique analyses reports will be submitted by each affected utility to the NRC for review and approval.

The Mark I Owners Group LTP commenced in June 1976 with the in-plant SRV testing at Monticello and is currently scheduled for completion in mid-1979. In order to assure an orderly program, the Mark I Owners Group has identified five key interim decision points during the progress of the program.

The NRC has initiated several confirmatory research programs related to the Mark I Long Term Program. These programs, which are discussed in further detail in Section 4 below, are designed to provide the NRC staff with an independent source of information to evaluate the results of the Mark I Owners Program and to assist in providing a basis for regulatory decisions regarding the adequacy of the Mark I containment systems.

### 3. NRR Technical Organizations Involved:

- a. Plant Systems Branch, Division of Operating Reactors. Has overall lead responsibility for design basis load definition for the Mark I Containment System. Has lead responsibility for review and approval of LOCA-related hydrodynamic loads for Mark I BWR facilities.

Manpower Estimates: One manyear FY 1977, one manyear FY 1978, one manyear FY 1979.

- b. Containment Systems Branch, Division of Systems Safety. Has lead responsibility for review and approval of SRV-related hydrodynamic loads. Has responsibility for establishing, as appropriate, "interim"

loading requirements for Mark I BWR facilities not yet licensed for operation. ("Interim" loads will be subject to confirmation by long term program results.)

Manpower Estimate: One manyear FY 1977, one manyear FY 1978, one manyear FY 1979.

- c. Engineering Branch, Division of Operating Reactors. Has lead responsibility for the review and approval of structural acceptance criteria for use in the long term program evaluation of all Mark I BWR containment systems. Has lead responsibility for review and approval of plant unique analyses for operating Mark I BWR facilities.

Manpower Estimate: Two manyears FY 1977, two manyears FY 1978, three manyears FY 1979.

- d. Structural Engineering Branch/Mechanical Engineering Branch, Division of Systems Safety. Has lead responsibility for the review and approval of plant unique analyses for Mark I BWR facilities not yet licensed for operation.

Manpower Estimate: .5 manyears FY 1977, .5 manyears FY 1978, .5 manyears FY 1979.

#### 4. Technical Assistance Requirements:

- a. Contractor: Lawrence Livermore Laboratory  
Funds Required: \$100K FY 1977, \$100K FY 1978, \$50K FY 1979.

This is a program to study hydrodynamic/structural interactions in a Mark I containment system subject to hydrodynamic loading conditions. This effort should quantify the amplification, if any, of measured loads due to the structural interactions during pool swell, SRV discharge, and chugging loading conditions.

- b. Contractor: Lawrence Livermore Laboratory  
Funds Required: \$85K FY 1977, \$75K FY 1978.

The purpose of this program is to assess containment system dynamic safety margins which are assured by the current ASME Code requirements. This program will provide information useful in the development of the long term program structural acceptance criteria and in NRC staff review of the plant unique analyses submitted by each affected utility.



- c. Contractor: Brookhaven National Laboratory  
Funds Required: \$25K FY 1977, \$120K FY 1978, \$25K FY 1979.

The purpose of this program is to obtain expert technical assistance and analytical efforts in the review of the results of the Mark I Owners LTP testing related to hydrodynamic load definition.

5. Interactions with Outside Organizations:

a. Mark I Owners Group

The Mark I Owners Group is an "ad hoc" organization of all utilities owning Mark I BWR facilities. They have engaged General Electric Company as their program manager for resolution of the Mark I Containment concerns and have designated General Electric as their primary contact with the NRC during the conduct of this program. Teledyn, Bechtel and NUTECH have been engaged as the primary consultants to the Mark I Owners Group. The majority of the technical exchanges with the NRC staff during the LTP will be made by representatives of the abovementioned organizations.

b. Individual licensees of Mark I BWR facilities.

In addition to its participation as a member of the Mark I Owners Group, each licensee of a Mark I BWR facility is involved in the primary correspondence during the conduct of the Long Term Program. Each licensee will submit a plant-unique analysis of his facility to demonstrate that it has met the objectives of the LTP.

6. Assistance Requirements from Other NRR Offices:

a. Office of Nuclear Regulatory Research, Division of Reactor Safety Research, Analysis Development Branch.

RES has funded, at the request of NRR, a major confirmatory experimental research program at Lawrence Livermore Laboratory. The program involves the construction and operation of a 1/5 scale, 90° sector of a typical Mark I BWR containment system. The purpose of this program is to obtain data regarding the magnitude and character of hydrodynamic LOCA-related loads on the Mark I containment system in order to confirm the results obtained from the testing programs sponsored by the Mark I Owners Group.

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RES has sponsored two additional research programs of possible applicability in the Mark I Containment Long Term Program:

- (1) A program is currently underway at MIT to investigate the scaling relationships for hydrodynamic phenomena due to air discharge.
- (2) A similar program is underway at UCLA to investigate scaling relationships for steam discharges.

7. Schedule for Problem Resolution

The major milestones for the Mark I Containment Long Term Program are as follows:

1. Submittal of the Long Term Program Action Plan - February 11, 1977 (complete).
2. Submittal of the Load Definition Report - August, 1978 (targeted).
3. Approval of the Structural Acceptance Criteria - October, 1978 (targeted).
4. Submittal of Plant Unique Analysis Reports - March, 1979 (targeted).
5. Structural Modifications completed/Load Mitigating devices installed - next refueling outage after submission of plant unique analysis (it is anticipated that many structural modifications and/or installation of load mitigating devices will be completed prior to submission of the plant unique analyses).

8. Potential Problems:

Since the plant unique analyses cannot commence until the loads have been adequately defined, the development of load definition report is the critical path item for the Long Term Program. A slip in the schedule for the development of the load definition report would undoubtedly adversely affect the schedule for the entire program. It appears that, within the load definition process, the full scale steam testing program is the subtask most vulnerable to a schedule slip. However, based on the current construction schedule for this testing facility, such a delay is not anticipated.



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ROUTING AND TRANSMITTAL SLIP		ACTION	
1 TO (Name, office symbol or location) G. Laines ✓	INITIALS	CIRCULATE	
	DATE	COORDINATION	
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FROM (Name, office symbol or location) John Gilbert		DATE 6/14/77	
		PHONE X 28256	

D-61

14 JUN 77 11:59

-PS-C3B-D33-

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~~SECRET~~  
DOR-30

Anderson

Title: Mark II Containment

Category: See Basis for Lead Responsibility

Lead Division: DSS

Description of Activity:

The Mark II Containment, like the Mark I Containment, is a pressure-suppression pool type containment. The fundamental hydrodynamic phenomena are similar for both types of containments. No facilities with a Mark II containment are presently operating, therefore the DOR effort is limited to a monitoring of DSS activities. Such monitoring is necessary since Mark II facilities will soon commence operation.

Basis for Categorization:

See Basis for Lead Responsibility

Basis for Lead Responsibility:

DSS (Containment Systems Branch) has been assigned the lead responsibility for this activity in the past and should continue. DSS should assign the appropriate Category and other aspects.

Manpower Estimates:

Over the past six months DOR has expended 0 technical professional manyears and DSS 1.32 technical professional manyears on this issue. We estimate that .05 manyears of DOR technical effort is required for the remainder of FY 1977, .1 manyears for FY 1978 and 1.0 manyears for FY 1979.

Technical Assistance/RES Support Estimate:

See Basis for Lead Responsibility

Current Status (continued)

CSB is providing technical assistance to Operating Reactors in evaluating relief valve loads for plants with Mark I containments. CSB and SEB have under review the GE analytical model to determine vent clearing loads via test data. For plants with Mark II and III type containments, CSB is requesting additional information on a generic basis from GE.



Summary Sheet  
Technical Safety Activity

Title: Determination of LOCA and Relief Valve Pool Dynamic Loads  
for Water Suppression Containments

TAC #: 3002, 3003, 2285, and 2271 Div/Branch: DSS/CSB

Ref:

Problem Definition

Containment structures located in and above the suppression pool could be subject to pool dynamic loadings during the blowdown phase of a LOCA. These loads result primarily from pool swell in the vertical plane.

Operation of BWR primary system pressure relief valves can result in loads on the suppression pool retaining structures or structures located with the pool. These loads result from:

1. initial vent clearing of a relief valve pipe, and
2. steam quenching due to locally high pool temperatures.

Category: A

T/A FIM #: A3098

Plans for Resolution

*To be determined with preparation of TASC Action Plan.*  
CSB will continue to follow and comment on the GE pool dynamics test program. CSB will also evaluate the responses to the standard letters from each BWR plant.

Schedule

Continuing

CSB will follow and evaluate to determine validity of analytical models to predict S/R valve induced pool dynamic loads by direct comparison with available test data.

January 1978

Current Status

CSB is following the testing being performed by GE to determine pool dynamic loads for Mark III, Mark I and II containment designs.

Title: Determination of LOCA and Relief Valve Pool Dynamic Loads for Water Suppression Containments

Priority: Category A

These loads were identified over the past 1-1/2 years as being significant. They were not considered in the design of Mark I's and Mark II types of containments. An extensive analytical and test program is now in progress to quantify these loads and determine if modifications will be needed. Testing and analysis is also in progress for the Mark III types of containment. The first plant of this type is now scheduled to be submitted for an OL review in December 1977.

Assignment: DSS/CSB

Manhours: 3300

This concern is applicable to BWRs being reviewed for CPs, OLs, and also operating Mark I BWRs. The technical expertise to monitor the GE test programs and analytical effort is available in DSS/CSB and SEB.



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

*Enclosure*  
*Chuck 2*

JUN 15 1977

MEMORANDUM FOR DSS Assistant Directors

FROM Robert E. Heineman, Director  
Division of Systems Safety

SUBJECT TASK ACTION PLANS FOR CATEGORY A TECHNICAL  
ACTIVITIES

Attached is additional guidance on the development of Task Action Plans. Enclosure 1 is a list of TAC numbers to be used for each activity. Enclosure 2 is an expanded Standard Format, which provides additional guidance as to the material required in a Task Action Plan.

Robert E. Heineman, Director  
Division of Systems Safety

Enclosures:

1. List of TAC numbers
2. Expanded Standard Format

cc: T. Novak  
J. Kovacs  
U. Potapovs  
S. Hou  
L. Beltracchi  
J. Shapaker  
A. Szukiewicz  
A. Thadani  
F. Rosa  
I. Sihweil  
R. Bosnak  
T. Ippolito  
G. Lainas  
S. Pawlicki  
R. Fitzpatrick  
C. Graves  
D. Jeng

Category A Technical Activities

Task and TAC Numbers

<u>Task No.</u>	<u>TAC No.</u>
A-1	4469
A-8	3003
A-9	4019
A-13	4124
A-14	2178
A-18	2163
A-19	2135
A-21	2421
A-22	4584
A-23	4585
A-24	4586
A-25	2140
A-30	4587
A-31	4293
A-32	2144

Standard Format  
Category A Technical Activities  
Task Action Plan

Title: (Number; A-1, etc., Brief Title, TAC Number)

Lead Responsibility: (NRR Div., A/D, Task Manager)

1. Problem Description:

A concise statement of what is to be resolved. Include a description of the significance of the problem to safety or to the licensing process. References to source material (e.g., ACRS letters, NUREG reports, etc.) should be provided.

2. Plan for Problem Resolution:

a) Approach

Describe how the problem is to be resolved, which could include a probabilistic or reliability analysis; pre-operational, start-up or inservice testing or surveillance; development of analysis methods such as digital computer programs; evaluation or analysis by the staff, vendors, applicants or others; experimental programs; or combinations of these.

b) End Product

Identify the end products and intermediate products of the technical activity. Show how these products fit into the licensing process.

c) Tasks

Identify the tasks and sub-tasks needed to resolve the problem. For some activities, a block diagram may be needed to show the process. Each task and sub-task will be described in more detail in either Item 3, 4, 5 or 6.

3. NRR Technical Organizations Involved

a) (Division/Branch)

(1) (Task or Sub-task Title, as identified in Item 2)

(2) Scope of sub-task

(3) Manpower requirement (FY78, FY79, Total)

(NOTE: assignment, scope and manpower must be based on coordination with and concurrence of the involved branch. If unavoidable, any disagreements should be explained)

b) (Ditto for each sub-task)

4. Technical Assistance Requirements

a) Contractor (if available)

(1) Sub-task Title, as identified in Item 2

(2) Responsible Division/Branch

(3) Scope of sub-task

(4) Funding (FY78, FY79, and Total)

(NOTE: funding must be based on coordination and concurrence of the responsible Division and branch)

b) (Ditto for each sub-task)

5. Interactions with Outside Organizations

a) Organization (e.g., other government agencies, vendors, applicants or industry groups; EPRI or other research groups)

(1) (Sub-task Title, as identified in Item 2)

(2) Scope of task or sub-task

(NOTE: if action is required to initiate this sub-task with another organization outside NRR, this action should be an assigned separate sub-task)

b) (Ditto for each sub-task)

6. Assistance Requirements from Other NRC Offices

a) Office/Division/Branch

(1) Task or sub-task Title, as identified in Item 2

(2) Scope of task or sub-task

(NOTE: if action is required to initiate this sub-task with another organization outside NRR, this action should be an assigned separate sub-task)

b) (Ditto for each Task and Sub-task)

7. Schedule for Problem Resolution

a) Summary Schedule

Provide a schedule of the major tasks, including milestones and estimated completion dates

b) Task Schedule

Provide a schedule of the sub-tasks, including milestones and estimated completion dates

c) (Ditto for each Task)

8. Potential Problems

Identify the potential problems and contingencies that are foreseen and their impact on schedule or approach to the resolution.