ACRS-2665

CERTIFIED

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ACRS Subcommittee Meeting Summary/Minutes
For Severe Accidents
September 20, 1989
Bethesda, Maryland

Purpose

The ACRS Subcommittee on Severe Accidents held a meeting on September 20, 1989 in Bethesda, Maryland. The purpose of the meeting was to discuss three topics in the accident management area: (1) a proposed Generic Letter by NRR on accident management strategies to be considered in IPEs, (2) the RES accident management research program plan, and (3) the guidelines for evaluation of accident management capabilities developed by EPRI for NUMARC. A copy of the meeting agenda and selected slides from the presentation are attached. The meeting began at 8:30 a.m. and adjourned at 3:30 p.m. and was held entirely in open session. The principal attendees were as follows:

Attendees

ACRS

W. Kerr, Chairman
I. Catton, Member
F. Remick, Member
C. Siess, Member
C. Wylie, Member
P. Davis, Consultant
J. Lee, Consultant
D. Houston, Staff

NRC/Consultants

R. Palla, NRR
L. Shotkin, RES
N. Lauben, RES
T. Lee, RES
J. Han, RES
W. Luckas, BNL

NUMARC/EPRI

R. Ng
D. Modeen
R. Oehlberg
G. Boyd

DESIGNATED ORIGINAL

Certified By EMB

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Review Document

The following documents had been provided for review at this meeting:

(1) Draft of Supplement 1 to Generic Letter 88-20, "Accident Management Strategies for Consideration in the IPE Process," August 30, 1989 (Predecisional).

(2) Draft NUREG/CR-XX, "Assessment of Candidate Accident Management Strategies," W. J. Luckas, et. al. (BNL), August 1989.

(3) Draft Accident Management Research Plan, September 6, 1989 (Predecisional).

(4) Draft EPRI Report, "Guidelines for Evaluating Accident-Management Capabilities," prepared by G. Boyd (SAROS), August 1989.

Actions, Agreements and Commitments

The Subcommittee agreed to have a presentation for the Full Committee at the November 16-18, 1989 meeting in regard to the NRC Staff activities in the accident management areas. The topics to be discussed will be the proposed Generic Letter and the research plan.

Discussion

The ACRS previously discussed early draft documents in January 1989 that presented the Staff's plans for accident management regulation and research. At today's meeting, later drafts of these documents plus a NUMARC/EPRI document were the bases for discussion.

R. Palla (NRR) and L. Shotkin (RES) presented an overview and update of the NRC accident management (A/M) program. The driving force behind this program is Generic Letter 88-20, "Individual Plant Examinations (IPEs)," in which all licensees must commit to develop a framework for accident management (A/M) at their plants. The NRC program is intended

to provide guidance for the A/M framework and strategies. The research program is focused on an assessment of A/M strategies.

R. Palla (NRR), T. Lee (RES) and W. Luckas (BNL) discussed the proposed supplement to the Generic Letter and the assessment of candidate A/M strategies. R. Palla indicated that 21 strategies had been identified and could be grouped into three global categories: (1) conserving or replenishing limited resources, (2) using existing systems for innovative applications, and (3) defeating interlocks or overriding trips in emergency situations (e.g., reopening MSIV's in ATWS). He indicated that a revised draft of the proposed supplement would be ready about mid-October with the intent to have it reviewed and issued in December 1989. T. Lee discussed the elements and logic structure of the strategies. His logic was more diagnostic than symptomatic which seemed to be in conflict with the rest of the Staff's approach which emphasized the symptomatic. W. Luckas presented a listing of the 21 strategies and briefly discussed their relationship to current requirements and practices as well as possible adverse effects. The assessment of these A/M strategies will be issued as a NUREG/CR report tentatively scheduled for December 1989.

N. Lauben (RES) discussed the goals and activities of the A/M research program plan. As presented, the program plan was lacking in detail, only a general overview of what the plan hoped to accomplish was given.

R. Ng (NUMARC) and R. Oehlberg (EPRI) discussed the A/M activities supported by NUMARC that are intended to assist the licensees in the performance of their IPEs. R. Ng discussed the NUMARC Severe Accident Working Group (C. Reed, Chairman), its mission and personnel membership. R. Oehlberg discussed the guidelines developed by SAROS for evaluation of accident-management capabilities. The guidelines are best characterized as flow charts (generalized pathways) for accidents and accident-management (with success paths) and an outline for evaluating

accident management capabilities. The input to the process will come mostly from the IPE, and the answers to the bevy of questions associated with information on accident-management capabilities. These questions are to be asked at each phase of the postulated accident and are intended to be complete. NUMARC has distributed the guidelines to the utilities and requested comments by October 15, 1989. The guidelines will then be revised and trial applications will be carried out at four volunteer plants (presumably by vendor type) during the first six months of 1990. Workshops with the utilities are anticipated. Tentatively, final guidelines are expected by the end of summary 1990.

During the discussion, the Subcommittee Members and Consultants expressed various comments and concerns as follows (random order):

(1) W. Kerr indicated that the research program plan lacked definition which made it difficult to assess. He also noted that the Staff intended to make a finding that the licensees A/M capabilities met an acceptable standard and asked the Staff to define the standard. RES did not have a specific standard but felt this was stated more in terms of a goal.

(2) W. Kerr questioned why these A/M strategies were being developed by the Staff since the development of emergency operating procedures (EOPs) were being handled, with the Staff's endorsement, by the various NSSS owner's groups. During this discussion, it became clear that some EOPs extend into the accident management area.

(3) C. Siess expressed a concern that by the implementation of A/M strategies, a licensee would be operating in violation of their license and susceptible for a citation and large monetary fine. He asked if the Staff will provide relief from the license conditions and how will this be documented. Apparently, this issue is still under review.

(4) I. Catton commented, in regard to the Staff's recommendations to defeat interlocks, that they should look at the regulations and determine how their proposed strategies fit in.

(5) P. Davis questioned NUMARC on whether they had developed criteria which would indicate when a licensee had done enough A/M planning. He indicated that there would always be a residual risk. NUMARC is studying this aspect.

(6) J. Lee expressed concerns that the event-based approach is being completely replaced by the symptom-based approach. He recalled that the symptom-based approach was to be used as a last resort after efforts with an event-based assessment had failed.

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NOTE: Additional meeting details can be obtained from a transcript of this meeting available in the NRC Public Document Room, 2120 L Street, N.W., Washington, D.C. 20006, (202) 634-3273, or can be purchased from Heritage Reporting Corporation, 1220 L Street, N.W., Suite 600, Washington, D.C. 20005, (202) 628-4888.

ACRS Severe Accidents Subcommittee Meeting
September 20, 1989
Bethesda, Maryland

- Tentative Agenda -

Accident Management Topics

A.	Subcommittee Chairman Remarks	W. Kerr, ACRS	8:30 am
B.	NRC Accident Management (A/M) Regulatory and Research Program: Update	R. Barrett (NRR)/ L. Shotkins (RES)	8:45 am
C.	A/M Generic Letter Supplement 88-20 and Schedule	R. Palla (NRR)	9:30 am
	*** Break ***		10:00-10:15 am
D.	Assessment of Candidate A/M Strategies	T. Lee (RES)/ J. Lehner (BNL)	10:15 am
E.	A/M Research Program Plan	N. Lauben (RES)	11:15 am
	*** Lunch ***		12:15- 1:15 pm
F.	Guidelines for Evaluating A/M Capabilities	R. Ng (NUMARC)/ R. Oehlberg (EPRI)	1:15 pm
	*** Break ***		3:15- 3:30 pm
G.	Subcommittee Discussion and Plans for Full Committee Presentation	W. Kerr	3:30 pm
H.	Adjourn		4:00 pm

NRC ACCIDENT MANAGEMENT REGULATORY AND RESEARCH PROGRAMS: UPDATE

R. BARRETT, NRR
L. SHOTKIN, RES

ACRS SUBCOMMITTEE MEETING
SEPTEMBER 20, 1989

FUNDAMENTAL OBJECTIVE
OF
ACCIDENT MANAGEMENT PROGRAM

TO HAVE EACH NRC LICENSEE IMPLEMENT AN ACCIDENT MANAGEMENT PLAN WHICH PROVIDES A FRAMEWORK FOR:

- EVALUATING INFORMATION ON SEVERE ACCIDENTS
- PREPARING AND IMPLEMENTING SEVERE ACCIDENT OPERATING PROCEDURES AND GUIDANCE
- TRAINING OPERATORS, TECHNICAL SUPPORT STAFF, AND MANAGERS IN THE PROCEDURES/GUIDANCE

1. ACCIDENT MANAGEMENT FRAMEWORK

- PRINCIPAL MILESTONES

- DEFINE FRAMEWORK CONCEPT AND ELEMENTS	SECY-89-012
- REVIEW NUMARC/EPRI GUIDELINES FOR A/M	IN PROGRESS
- DEMONSTRATE GUIDELINES (INDUSTRY)	1989-1990
- PRESENT IMPLEMENTATION PLAN TO COMMISSION	SUMMER 1990
- ISSUE GENERIC LETTER ON ACCIDENT MANAGEMENT	FALL 1990

- ASSOCIATED ACTIVITIES

  - RES PROJECT ON FRAMEWORK (INEL)

    - FURTHER DEFINITION OF ATTRIBUTES
    - GUIDANCE ON IMPLEMENTATION

  - OBSERVATION OF INDUSTRY PROGRAMS

    - NORTHEAST UTILITIES CORPORATE SUPPORT
    - INPO CASUALTY CONTROL DRILLS
    - EMERGENCY PREPAREDNESS EXERCISES

2. ACCIDENT MANAGEMENT STRATEGIES

• IDENTIFY AND EVALUATE "LESSONS LEARNED"	FALL 1989
• ISSUE SUPPLEMENT TO IPE GL 88-20	FALL 1989
• EVALUATE ADVANCED STRATEGIES (RES)	ONGOING
• ISSUE ADDITIONAL STRATEGY GUIDANCE	AS NEEDED

RESEARCH ACTIVITIES

- REPORT BY BNL/PNL ON "ASSESSMENT OF CANDIDATE ACCIDENT MANAGEMENT STRATEGIES" (DRAFT NUREG/CR DOCUMENT)

- ACCIDENT MANAGEMENT RESEARCH PLAN (DRAFT NUREG DOCUMENT)

- INTERNATIONAL COORDINATION

  - GERMAN/US YEARLY MEETING
  - CSNI PWG-2
  - IAEA COORDINATED RESEARCH PROGRAM

- UPDATE ON SPECIFIC PROJECTS

  - DEPRESSURIZATION
  - REACTIVITY ACCIDENTS
  - INFORMATION NEEDS
  - A/M PROGRAM FRAMEWORK

NRR STAFF PRESENTATION TO THE ACRS

SUBJECT: Generic Letter Supplement on Accident Management Strategies

DATE: September 20, 1989

PRESENTER: Robert L. Palla, Jr.

PRESENTER'S TITLE/BRANCH/DIV:
Senior Reliability & Risk Analyst
Risk Applications Branch
Division of Radiation Protection
and Emergency Preparedness
Office of Nuclear Reactor Regulation

PRESENTER'S NRC TEL. NO.:

492-1076

SUBCOMMITTEE: Severe Accidents

ACCIDENT MANAGEMENT STRATEGIES

° 21 STRATEGIES FOR FURTHER ENHANCING EMERGENCY OPERATING PROCEDURES ARE IDENTIFIED IN SECY-89-012

- STRATEGIES FALL INTO 3 GLOBAL CATEGORIES
  1. CONSERVING OR REPLENISHING LIMITED RESOURCES
  2. USING EXISTING SYSTEMS FOR INNOVATIVE APPLICATIONS
  3. DEFEATING INTERLOCKS OR OVERRIDING TRIPS IN EMERGENCY SITUATIONS (E.G., REOPENING MSIV'S IN ATWS)

° THESE STRATEGIES ARE BEING FURTHER EVALUATED FOR POTENTIAL "DOWNSIDES" AND FOR FEASIBILITY (RES)

° EVALUATION WILL BE PUBLISHED AS A NUREG/CR

° GENERIC LETTER SUPPLEMENT WILL PROVIDE STRATEGIES AND NUREG/CR TO UTILITIES FOR THEIR CONSIDERATION DURING THE PERIOD WHEN THE IPE IS BEING PERFORMED

GENERIC LETTER SUPPLEMENT

° THIS LETTER DOES:

- TRANSMIT PRA INSIGHTS WITH AN EVALUATION OF THEIR BENEFITS AND POTENTIAL ADVERSE EFFECTS (NUREG/CR)

- REQUEST THAT LICENSEES EVALUATE A/M STRATEGIES IN CONJUNCTION WITH THEIR IPE

° THIS LETTER DOES NOT:

- REQUEST ANY INFORMATION ABOUT CURRENT OR PROPOSED ACCIDENT MANAGEMENT PROCEDURES (BEYOND WHAT GENERIC LETTER 88-20 REQUESTS)

- IMPLY A REQUIREMENT TO IMPLEMENT ANY OF THE STRATEGIES

September 5, 1989

ACCIDENT MANAGEMENT GENERIC LETTER SUPPLEMENT SCHEDULE

4/21 - First meeting with contractors regarding A/M strategies

6/15 - Request to brief CRGR into concurrence

6/19 - Draft strategy evaluations to key reviewers

6/28&29- Meeting with contractors and key reviewers

7/21 - Revised evaluations for initial strategies

8/14 - Revised evaluations for remaining strategies

8/28 - Draft NUREG/CR to PRA Review Committee

9/7 - TTC staff review meeting

9/11 - PRA Review Committee Meeting

9/20 - ACRS Subcommittee Meeting

10/16 - Revised package to ACRS and CRGR

10/16 - Package into concurrence (Generic Letter and Draft NUREG/CR)

10/31 - Complete concurrence

11/3 - ACRS meeting

11/13 - CRGR meeting

11/20 - Camera-ready copy

12/4 - Publish NUREG/CR

12/4 - Issue Generic Letter

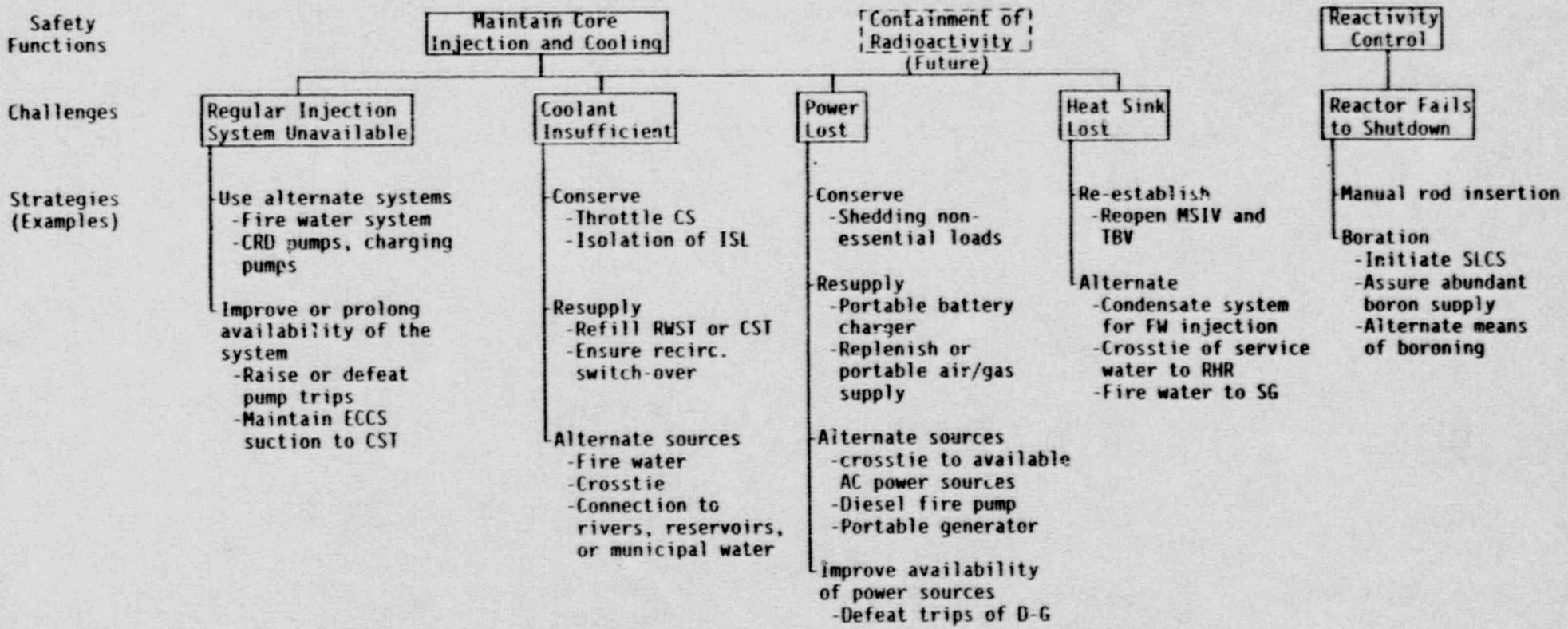
CANDIDATE ACCIDENT MANAGEMENT STRATEGIES

T. LEE, NRC/RES
W. LUCKAS, BNL

ELEMENTS OF A/M STRATEGIES

- MAXIMUM USE OF EXISTING FACILITIES.
- PREVENTION AS WELL AS MITIGATION.
- MAY GO AGAINST CONVENTIONAL PRACTICES; CAREFUL STUDIES AND PREPLANNING NEEDED.
- WILL REQUIRE ADDITIONAL PROCEDURES AND TRAINING; ADDITIONAL RESPONSIBILITY FOR OPERATING STAFF.
- SAFETY OBJECTIVES OF INDIVIDUAL STRATEGIES ARE BETTER ILLUSTRATED IN THE ATTACHED LOGIC DIAGRAM.

LOGIC STRUCTURE OF A/M STRATEGIES



ASSESSMENT OF CANDIDATE ACCIDENT MANAGEMENT STRATEGIES

PRESENTED TO

ACRS

SUBCOMMITTEE ON SEVERE ACCIDENTS

SEPTEMBER 20, 1989

BETHESDA, MD

PRESENTED BY: W.J. LUCKAS (BNL)

CONTRIBUTORS: J.R. LEHNER AND J.J. VANDENKIEBOOM (BNL)
R. TOKARZ AND W.B. SCOTT (PNL)

REACTOR COOLANT INVENTORY MAINTENANCE

- REFILL RWST WITH BORATED WATER, OR CST WITH CONDENSATE.
- REDUCE CONTAINMENT SPRAY FLOW RATE TO CONSERVE WATER FOR CORE INJECTION.
- ASSURE APPROPRIATE RECIRCULATION SWITCH-OVER AND MANUAL INTERVENTION UPON FAILURE OF AUTOMATIC SWITCHOVER.
- ENABLE EARLY DETECTION, ISOLATION, OR OTHERWISE MITIGATE THE EFFECTS OF AN INTERFACING SYSTEMS LOCA.
- EXTEND ECCS AVAILABILITY BY SWITCHING PUMP SUCTION.
- USE OF CRD PUMPS (BWR) OR CHARGING PUMPS (PWR) FOR CORE INJECTION.
- USE OF ALTERNATE INJECTION (e.g., HYDRO TEST PUMP) WHEN RCP SEAL COOLING IS LOST.

DECAY HEAT REMOVAL

- USE OF CONDENSATE, OR STARTUP FEEDWATER PUMPS FOR STEAM GENERATOR INJECTION.
- REOPEN MSIVs AND TURBINE BYPASS VALVES TO REGAIN THE CONDENSER AS A HEAT SINK.
- USE OF DIESEL-DRIVEN FIRE WATER PUMP FOR CONTAINMENT SPRAYS, BWR CORE INJECTION, OR PWR STEAM GENERATOR INJECTION.
- EXTEND RCIC AVAILABILITY BY TRIP FUNCTION CHANGE OR OVERRIDE.
- ENABLE EMERGENCY CONNECTION OF RIVERS, RESERVOIRS OR MUNICIPAL WATER SYSTEMS TO SERVICE WATER OR FEEDWATER SYSTEMS.
- ENABLE (EMERGENCY) CROSSTIE OF SERVICE WATER TO THE RHR SYSTEM (BWR) OR FEED-WATER (PWR).

REACTIVITY CONTROL

- ENSURE ABUNDANT SUPPLY OF BORATED MAKE-UP FOR LONG-TERM ACCIDENT CONTROL.

- INITIATE SLCS IN CASE OF POTENTIAL CORE DAMAGE AND GUARD AGAINST BORON DILUTION WHEN CORE INJECTION IS RESTORED.

SUPPORT SYSTEMS RELATED: ELECTRIC POWER, AIR/NITROGEN

- CONSERVE BATTERY CAPACITY BY SHEDDING NON-ESSENTIAL LOADS.
- USE OF PORTABLE BATTERY CHARGERS OR OTHER POWER SOURCES TO RECHARGE STATION BATTERIES.
- USE OF DIESEL GENERATOR OR GAS TURBINE GENERATOR TO DRIVE CRD PUMPS FOR CORE INJECTION.
- ENABLE EMERGENCY CROSSTIE OF AC POWER BETWEEN TWO UNITS OR TO ONSITE GAS TURBINE GENERATOR.
- ENABLE EMERGENCY BYPASS OF PROTECTIVE TRIPS FOR DIESEL GENERATORS AND INJECTION PUMPS.
- ENABLE EMERGENCY REPLENISHMENT OF AIR SUPPLY, FOR SAFETY RELATED AIR OPERATED COMPONENTS.

USE OF CONDENSATE OR STARTUP FEEDWATER PUMPS FOR STEAM GENERATOR INJECTION (PWR)

- MAY BE ACCOMPLISHED BY REDUCING STEAM GENERATOR PRESSURE, OPENING FEEDWATER ISOLATION VALVES, AND ACTIVATING CONDENSATE OR STARTUP PUMPS
- MAY HELP IN SITUATIONS WHERE MAIN AND AUXILIARY FEEDWATER PUMPS ARE UNAVAILABLE, BUT NORMAL AC POWER IS STILL AVAILABLE
- THESE ARE LOW HEAD AND, IN THE CASE OF THE STARTUP PUMPS, LOW VOLUME PUMPS
- MOST OF THE PLANT EOPs EXAMINED CONTAINED STEPS FOR SG INJECTION VIA CONDENSATE PUMPS
- CONCERNS: REESTABLISHING FEEDWATER TO A HOT, DRY SG CAN RESULT IN EXCESSIVE THERMAL STRESSES

REOPEN MSIVs AND TURBINE BYPASS VALVES TO REGAIN MAIN CONDENSER AS HEAT SINK (BWR AND PWR)

- MAY BE ACCOMPLISHED BY MAINTAINING CONDENSER VACCUUM, EQUALIZING PRESSURE ON BOTH SIDES OF MSIVs IN MSLs, DRAINING AND WARMING MSLs AND CLEARING AND RESETTING ISOLATION SIGNAL

- MAY BE HELPFUL FOR THOSE SITUATIONS WHERE THE MAIN CONDENSER IS AVAILABLE (i.e., CIRCULATING WATER AND VACUUM PUMPS ARE AVAILABLE), AND THE CIRCUMSTANCES WHICH CAUSED ISOLATION ARE CORRECTED OR CAN BE TOLERATED

- SEVERAL OF THE BWR AND PWR EOPs EXAMINED CONTAINED PROCEDURAL STEPS FOR REOPENING MSIVs and TBVs

- CONCERNS:

  - MANY COMPLICATED STEPS INVOLVED
  - AUTOMATIC ISOLATION CAPABILITY LOST DURING REST OF ACCIDENT
  - POSSIBLE CONDENSER FAILURE

NRC ACCIDENT MANAGEMENT RESEARCH PROGRAM PLAN

G.N. LAUBEN, RES

ACRS SUBCOMMITTEE MEETING
SEPTEMBER 20, 1989

GOALS OF A/M RESEARCH PROGRAM

(1) TO ASSURE THAT RESEARCH PROGRAMS RELATED TO ACCIDENT MANAGEMENT PROVIDE INFORMATION ON SEVERE ACCIDENT CHARACTERIZATION THAT WILL ENABLE EVALUATION OF THE EFFECTIVENESS OF A WIDE RANGE OF CREDIBLE ACTIONS

(2) TO ESTABLISH THOSE ATTRIBUTES OF A PLANT SEVERE ACCIDENT MANAGEMENT PROGRAM WHICH ASSURE EFFECTIVE RESPONSE TO CREDIBLE SEVERE ACCIDENTS (FRAMEWORK)

(3) TO PROVIDE A DETAILED ASSESSMENT OF CANDIDATE SEVERE ACCIDENT MANAGEMENT STRATEGIES THAT MAY BE USED BY LICENSEES

(4) TO PROVIDE GUIDANCE FOR NRC ASSESSMENT OF THE CAPABILITIES OF FUNCTIONAL PLANT SEVERE ACCIDENT MANAGEMENT PROGRAMS

NRC SEVERE ACCIDENT PROGRAM

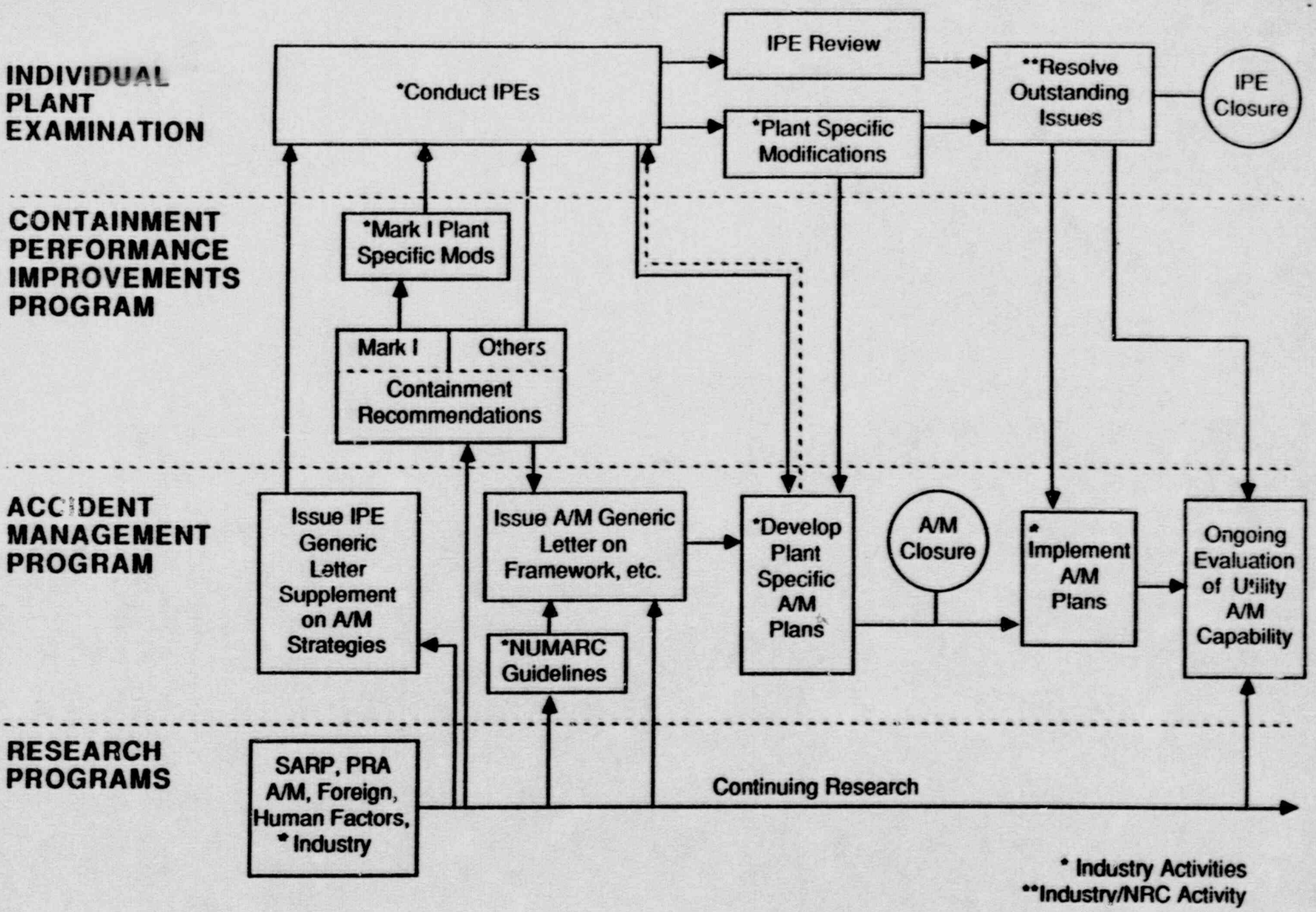


TABLE 1 A/M RESEARCH PROGRAM PLAN, FY 90-94

	90	91	92	93	94
I. DIRECT SUPPORT FOR REGULATORY ACTIVITIES					
A. SUPPLEMENT TO IPE GENERIC LETTER	———				
B. A/M GENERIC LETTER ON FRAMEWORK	———	———			
C. AUDIT GUIDANCE	———	———	———		
II. EVALUATE A/M STRATEGIES					
A. PRIMARY DEPRESSURIZATION	———				
B. ADDING WATER TO DAMAGED CORE	———	———	———		
C. IN-VESSEL STRATEGIES		———	———	———	
D. EX-VESSEL STRATEGIES		———	———	———	
E. DEPRESSURIZATION STRATEGIES	———	———	———	———	———
F. NATURAL CIRCULATION *	———	———			
III. EVALUATE UNCERTAINITIES					
A. ASSESS STRATEGIES AND UNCERTAINTIES*	———	———			
B. IN-VESSEL UNCERTAINITIES	———	———	———	———	———
C. A/M FOLLOW-ON TO NUREG-1150 *	———	———			
IV. IMPLEMENTATION AND AUDIT					
A. A/M PLANT EXERCISES	———	———	———	———	———
B. FRAMEWORK EVALUATION *		———	———	———	
C. IMPLEMENTATION CRITERIA *			———	———	
D. A/M ANALYSIS AIDS	———	———	———	———	———

*Contract selection process not complete

U. S. NUCLEAR INDUSTRY ACTIVITIES

FOR

DEVELOPMENT OF ACCIDENT MANAGEMENT PROGRAMS

PRESENTED TO

THE ACRS SEVERE ACCIDENTS SUBCOMMITTEE

BY

RAYMOND N. NG, MANAGER

TECHNICAL DIVISION

NUCLEAR MANAGEMENT AND RESOURCES COUNCIL

SEPTEMBER 20, 1989

NUMARC
SEVERE ACCIDENT WORKING GROUP
MISSION STATEMENT

TO COORDINATE INDUSTRY ACTIVITIES AND SERVE AS THE FOCAL POINT FOR INDUSTRY/NRC INTERACTIONS IN ATTAINING RESOLUTION AND CLOSURE OF THE SEVERE ACCIDENT ISSUE, INCLUDING:

- INDUSTRY RESPONSE AND IMPLEMENTATION OF THE NRC'S GENERIC LETTER ON IPES
- DEFINITION, DEVELOPMENT AND IMPLEMENTATION OF SEVERE ACCIDENT MANAGEMENT PROGRAMS
- CONSIDERATION OF THE NEED FOR INDIVIDUAL PLANT EVALUATIONS OF EXTERNAL EVENTS; AND THE DEVELOPMENT AND IMPLEMENTATION OF APPROPRIATE METHODOLOGIES, IF NECESSARY

THE WORKING GROUP WILL ALSO FOCUS ON INDUSTRY/NRC DIALOGUE AND DEVELOP INDUSTRY POSITIONS, AS NECESSARY, FOR: CONTAINMENT PERFORMANCE, SAFETY GOAL IMPLEMENTATION, AND SOURCE TERM RESEARCH.

SEVERE ACCIDENT ISSUES
INDUSTRY ACCIDENT MANAGEMENT APPROACH

- USE IPE RESULTS AND OTHER INFORMATION (E.G. IDCOR, EPRI, NRC) AND UNDERSTANDINGS AS A GUIDE FOR INTEGRATED DEVELOPMENT OF PLANT-SPECIFIC ACCIDENT MANAGEMENT PROGRAMS

- FULLY UTILIZE RESOURCES AVAILABLE TO PLANT STAFF, E.G.:

  - SUPPLEMENTAL TECHNICAL STAFF TRAINING

  - NON-SAFETY RELATED EQUIPMENT UTILIZATION

  - RECOVERY OF FAILED EQUIPMENT

SEVERE ACCIDENT ISSUES
ACCIDENT MANAGEMENT

- NRC GENERIC ACCIDENT MANAGEMENT STRATEGIES TO BE EVALUATED AT THE SAME TIME AS IPE INSIGHTS

- SCOPE OF ACCIDENT MANAGEMENT TO INCLUDE ONLY THOSE ACTIONS TAKEN AND/OR PREPARATIONS TO SUPPORT ACTIONS TAKEN DURING THE COURSE OF SEVERE ACCIDENTS BY THE PLANT STAFF

- GUIDELINES WHICH PROVIDE A METHODOLOGY FOR EVALUATION OF A UTILITY'S ACCIDENT MANAGEMENT CAPABILITIES AND IDENTIFICATION OF FURTHER POSSIBLE PROCEDURAL AND/OR HARDWARE ENHANCEMENTS

- EACH UTILITY TO DEVELOP OWN DECISION CRITERIA FOR IMPLEMENTATION OF ACCIDENT MANAGEMENT ENHANCEMENTS

- TECHNICAL GUIDANCE AND/OR METHODOLOGY FOR HANDLING SPECIFIC ACCIDENT STATES BEING DEVELOPED, AS APPROPRIATE, SEPARATE FROM THE NUMARC ACCIDENT MANAGEMENT GUIDELINES

- IDENTIFY LEAD PROJECTS FOR EARLY IMPLEMENTATION OF ACCIDENT MANAGEMENT PROGRAMS AND OBTAIN NRC COMMITMENT FOR PROMPT REVIEW

NUMARC ACCIDENT MANAGEMENT DEVELOPMENT

o	Preparation Of Draft NUMARC Guidelines for Evaluation Of Accident Management Capabilities	Completed
o	SAWG And AHAC Review Of Guidelines	Completed
o	Issue Guidelines For Broad Industry And Staff Review	Completed
o	Initiate Pilot Demonstrations Of Guidelines	Jan 90
o	Issue Final NUMARC Guidelines For Industry Use	Aug 90

EPRI/NPD

Guidelines for Evaluation of Accident Management Capabilities

ACRS Meeting
Washington, D.C.
September 20, 1989

Richard Oehlberg
EPRI Safety Performance Program

Gary Boyd
SAROS

Safety Technology Dept.

Nature of the Accident Management Program Guidelines

- Outline **minimum content** and general steps
- Identify **desirable attributes** of steps
- Provide **examples** to illustrate how steps ***may*** be implemented
- Outline **potential pitfalls** in implementing steps
- **NOT prescriptive** of specific implementation approach

EPRI/NPD

Proposed Industry Accident Management Approach

NUMARC Guidelines for the Evaluation of Accident Management Capabilities

Accident Management Assessment

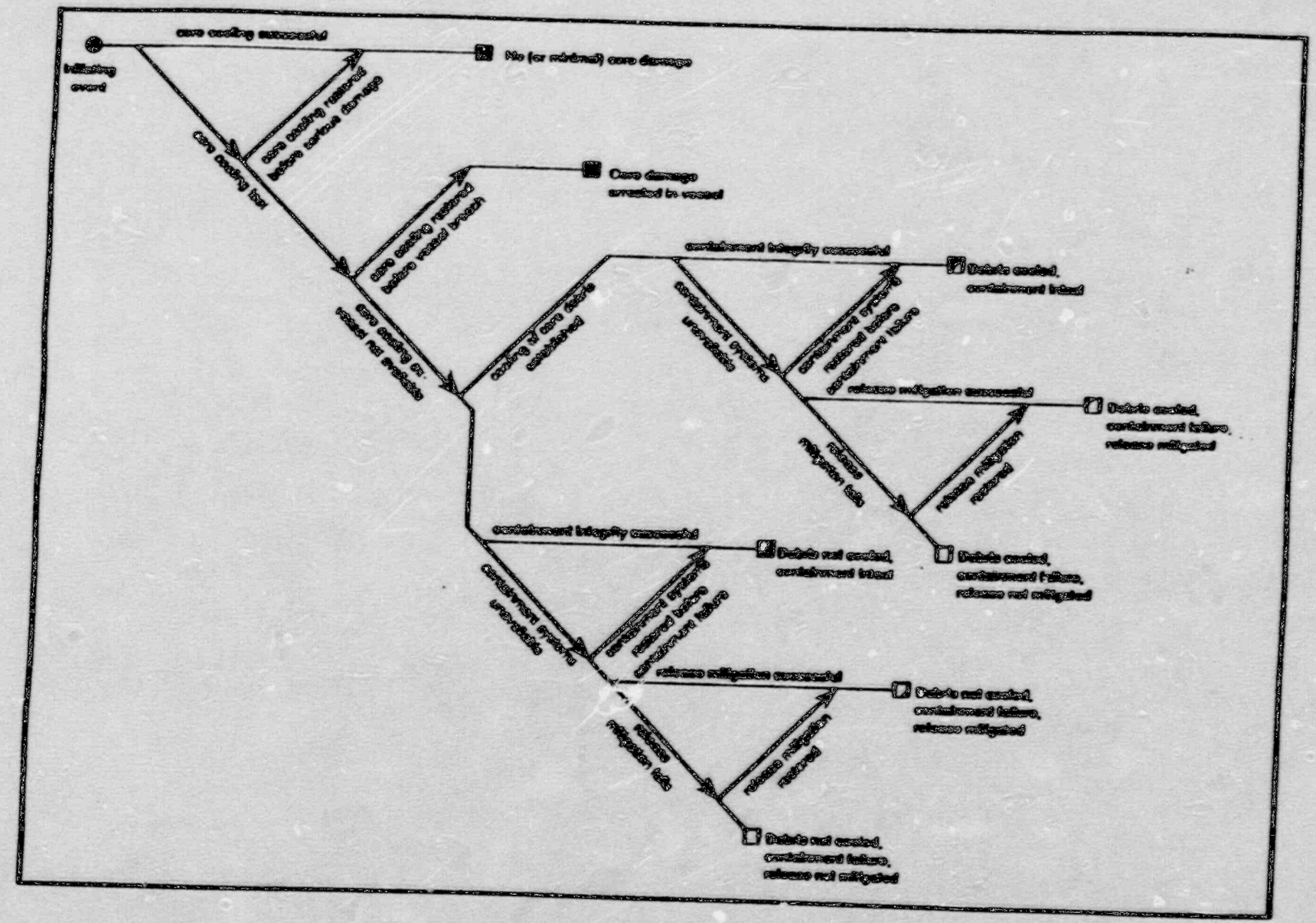
1. Utility writes/plans utility/plant-specific Evaluation of Accident Management Capabilities

2. Utility/plant specific Evaluation of Accident Management Capabilities (Assessment implemented)

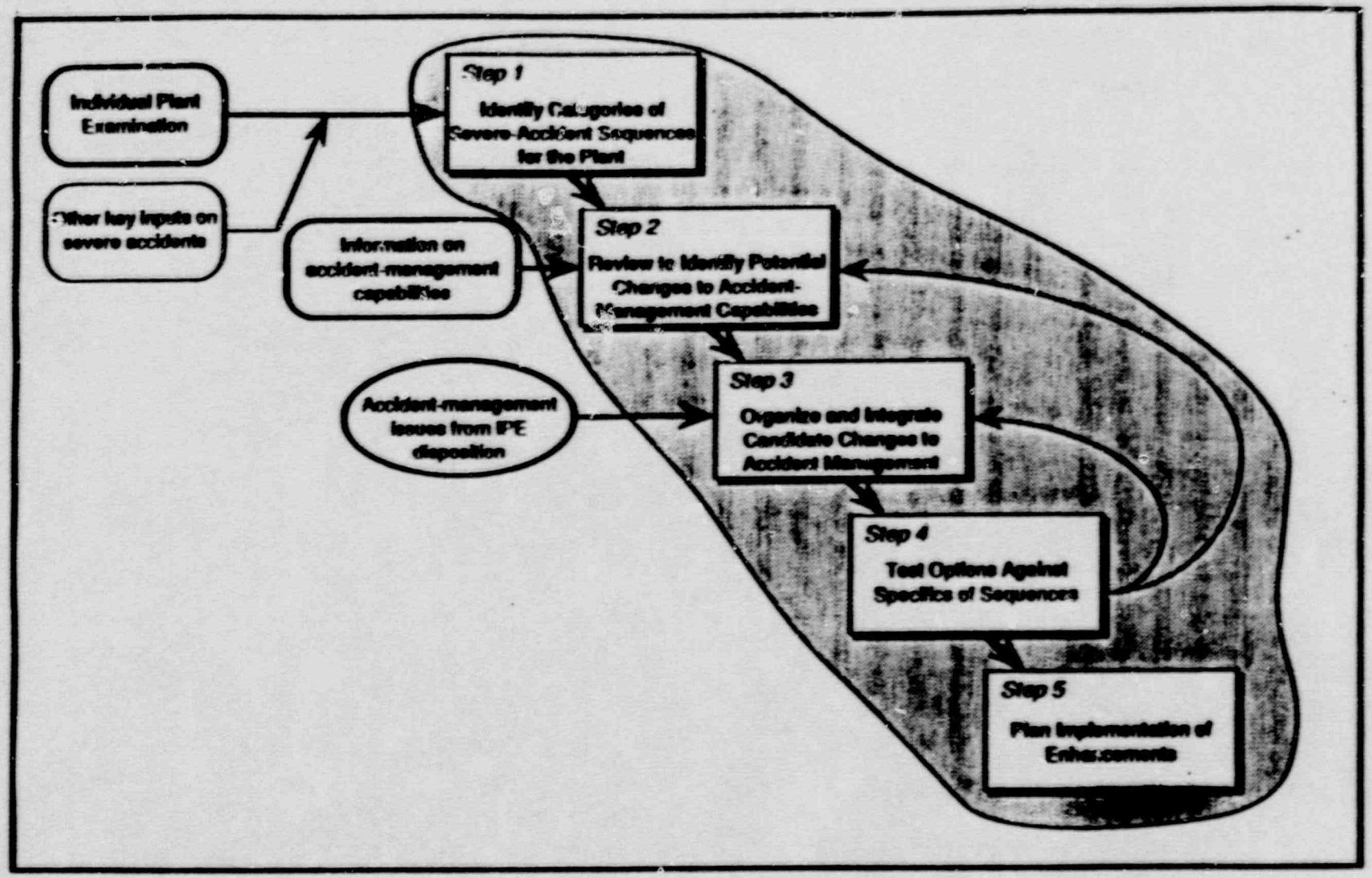
Accident Management Program (List of Enhancement Options to be implemented)

Safety Technology Dept.

Richard Oehlberg
9/10/89

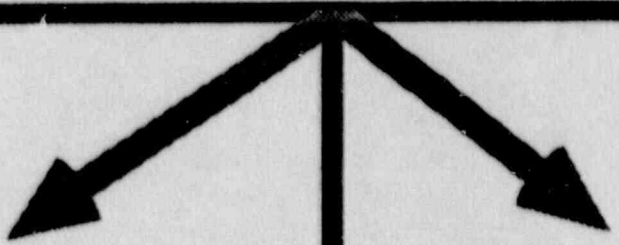


Generalized Pathways for Accidents and Accident Management

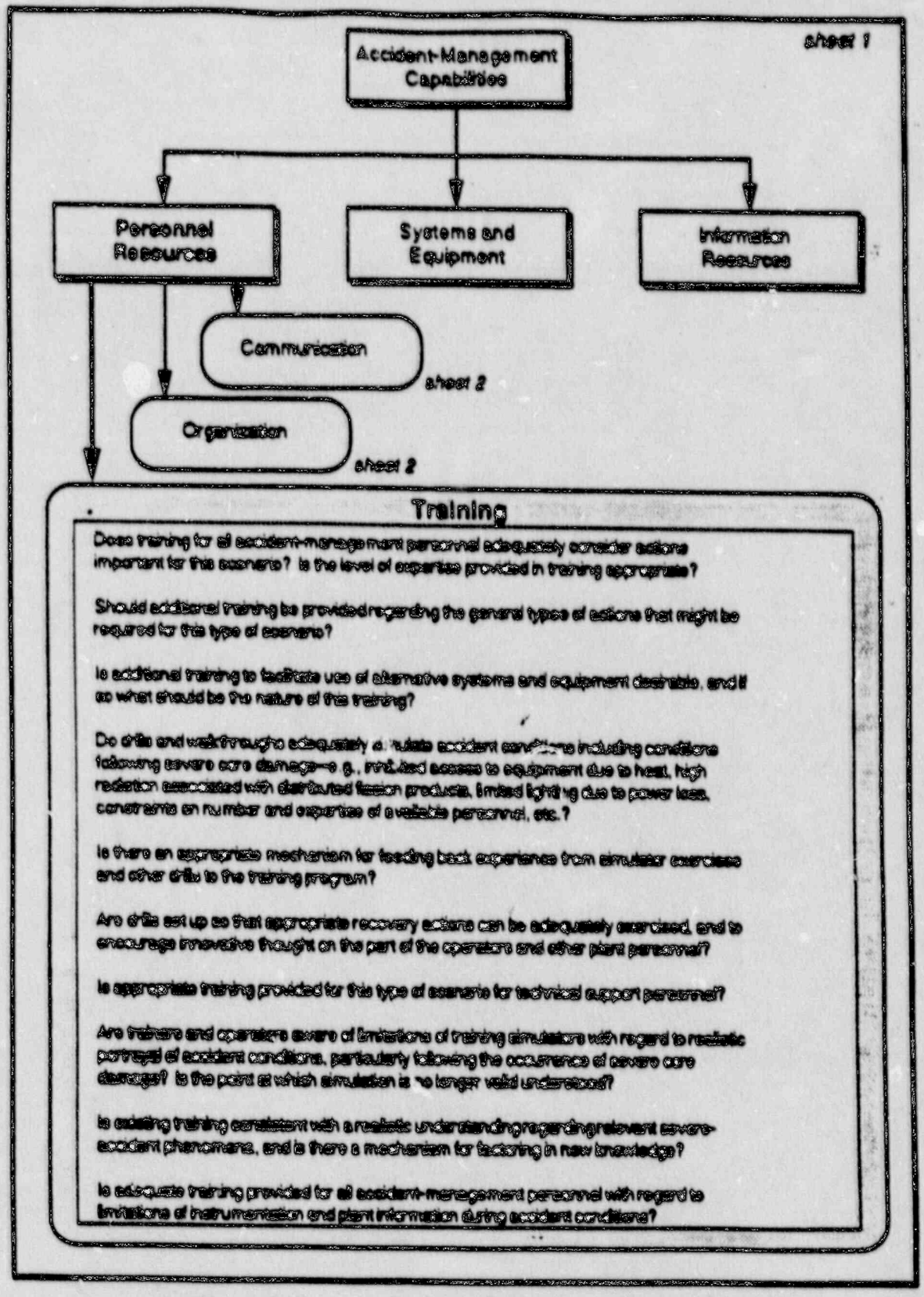


Outline of a Process for Evaluating Accident-Management Capabilities

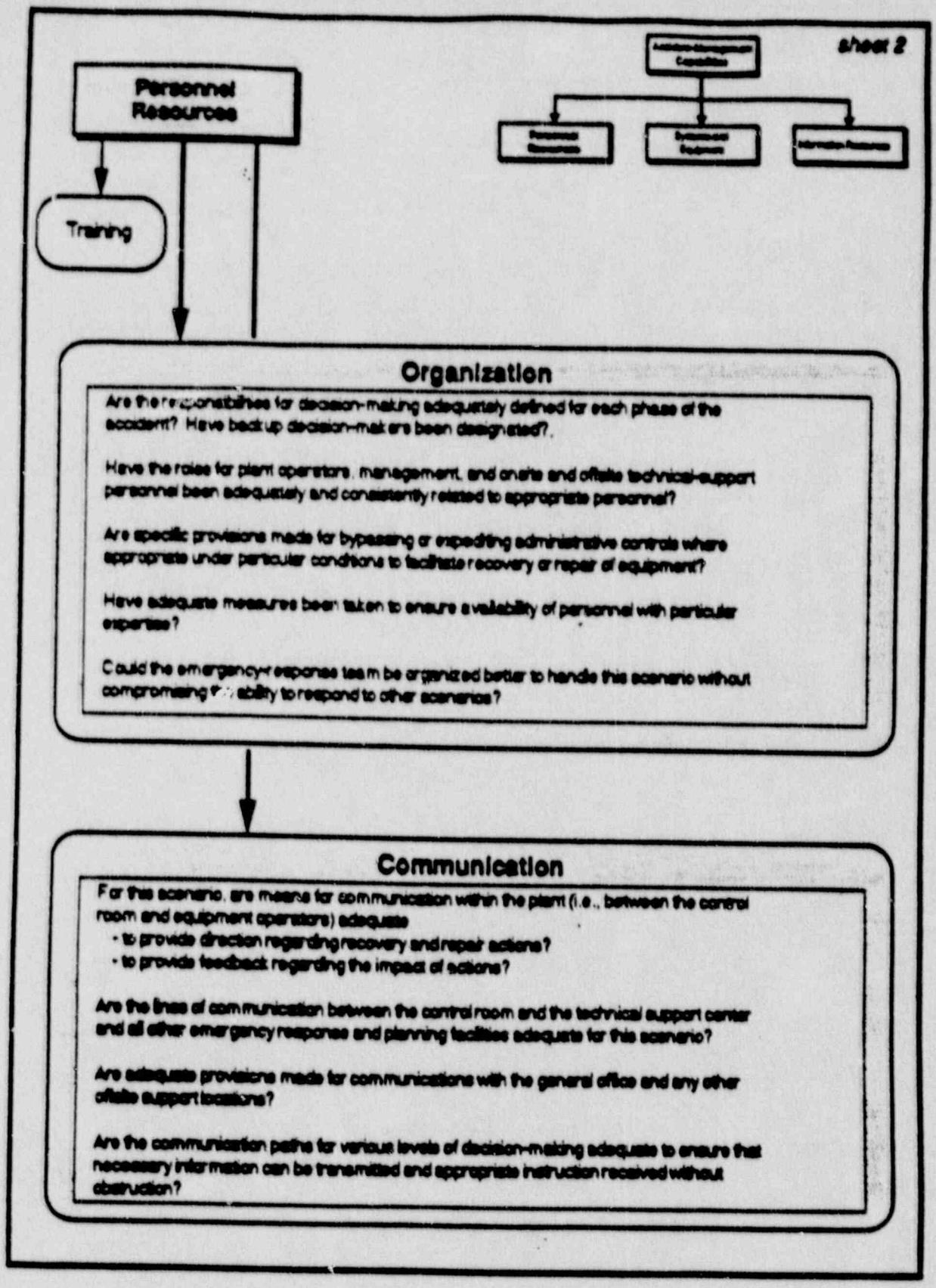
Accident Management Capabilities



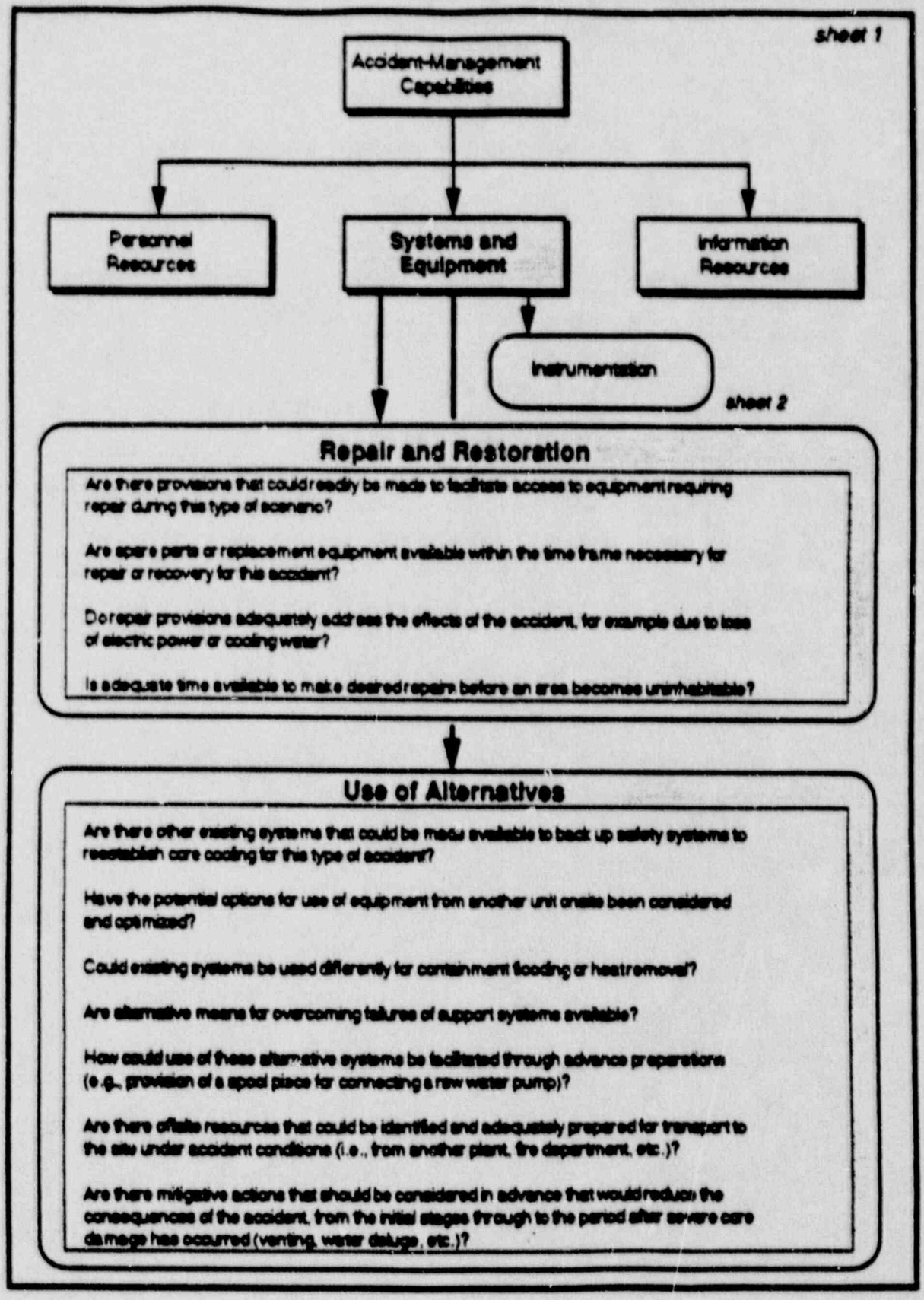
- **Systems and Equipment**
  - Restoration and Repair
  - Instrumentation
  - Use of Alternatives
- **Information Resources**
  - Procedures and Guidance
  - Technical Information
  - Process Information
- **Personnel Resources**
  - Training
  - Organization
  - Communication



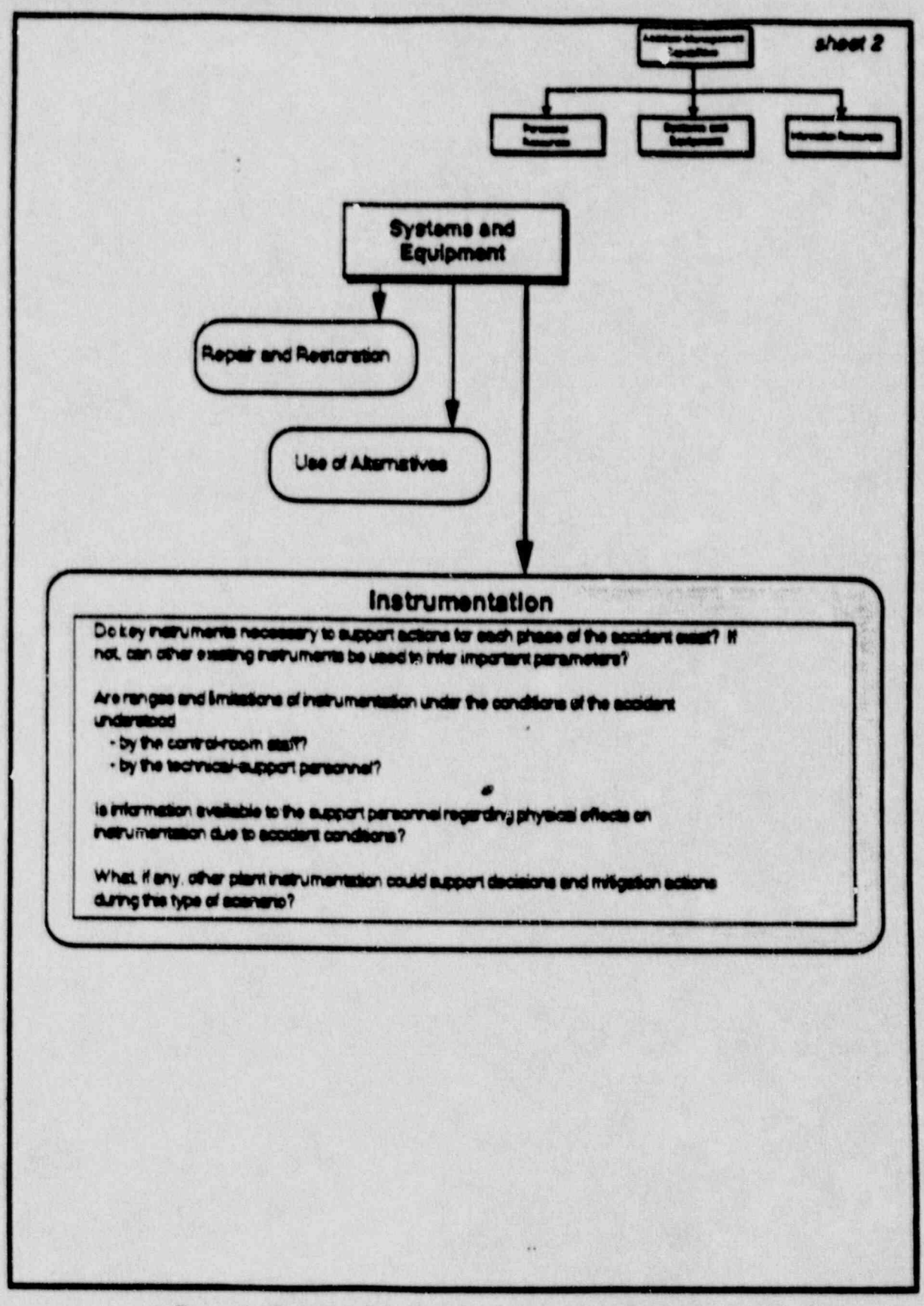
Example Question Structure Relating to Personnel Resources



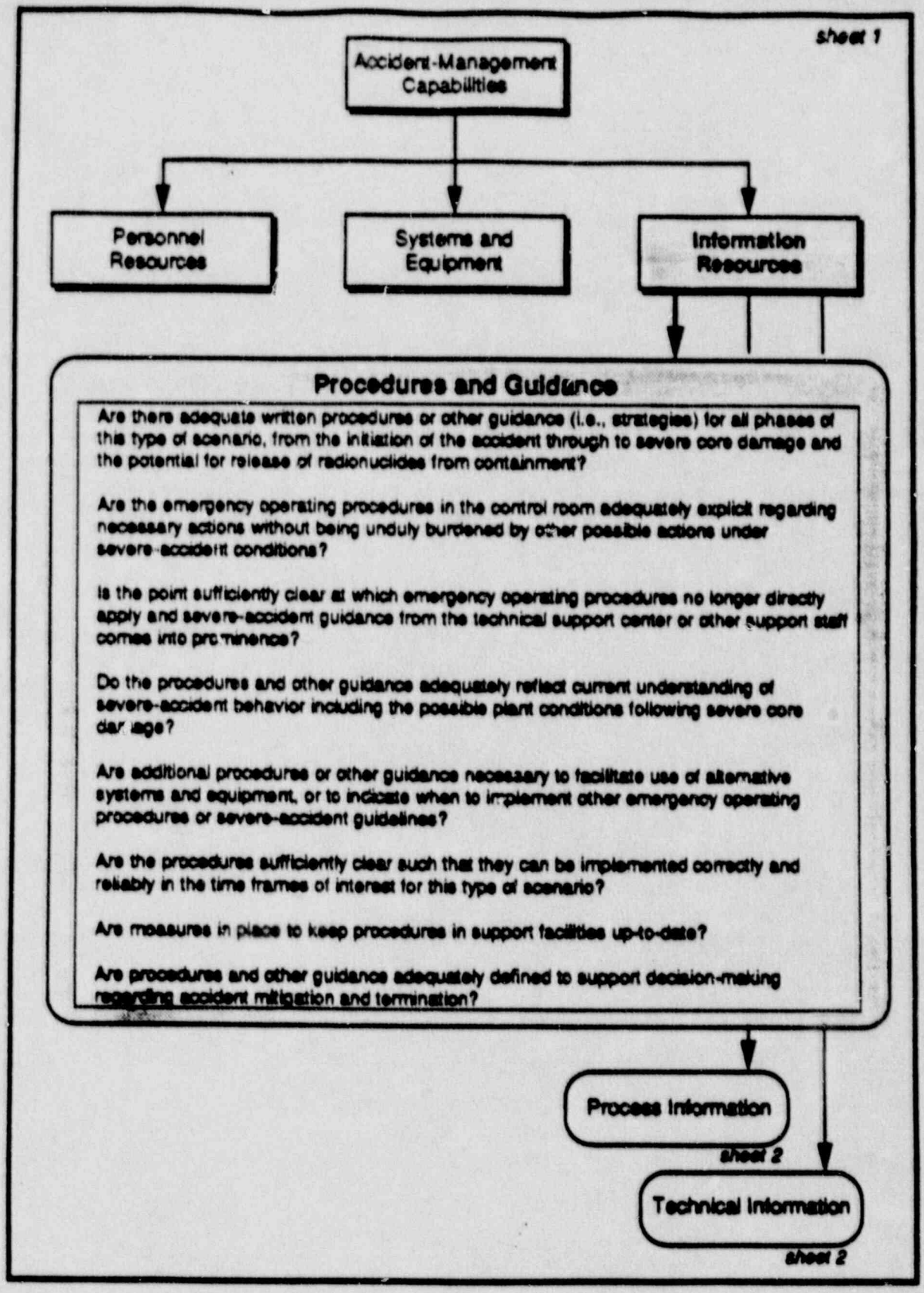
Example Question Structure Relating to Personnel Resources (continued)



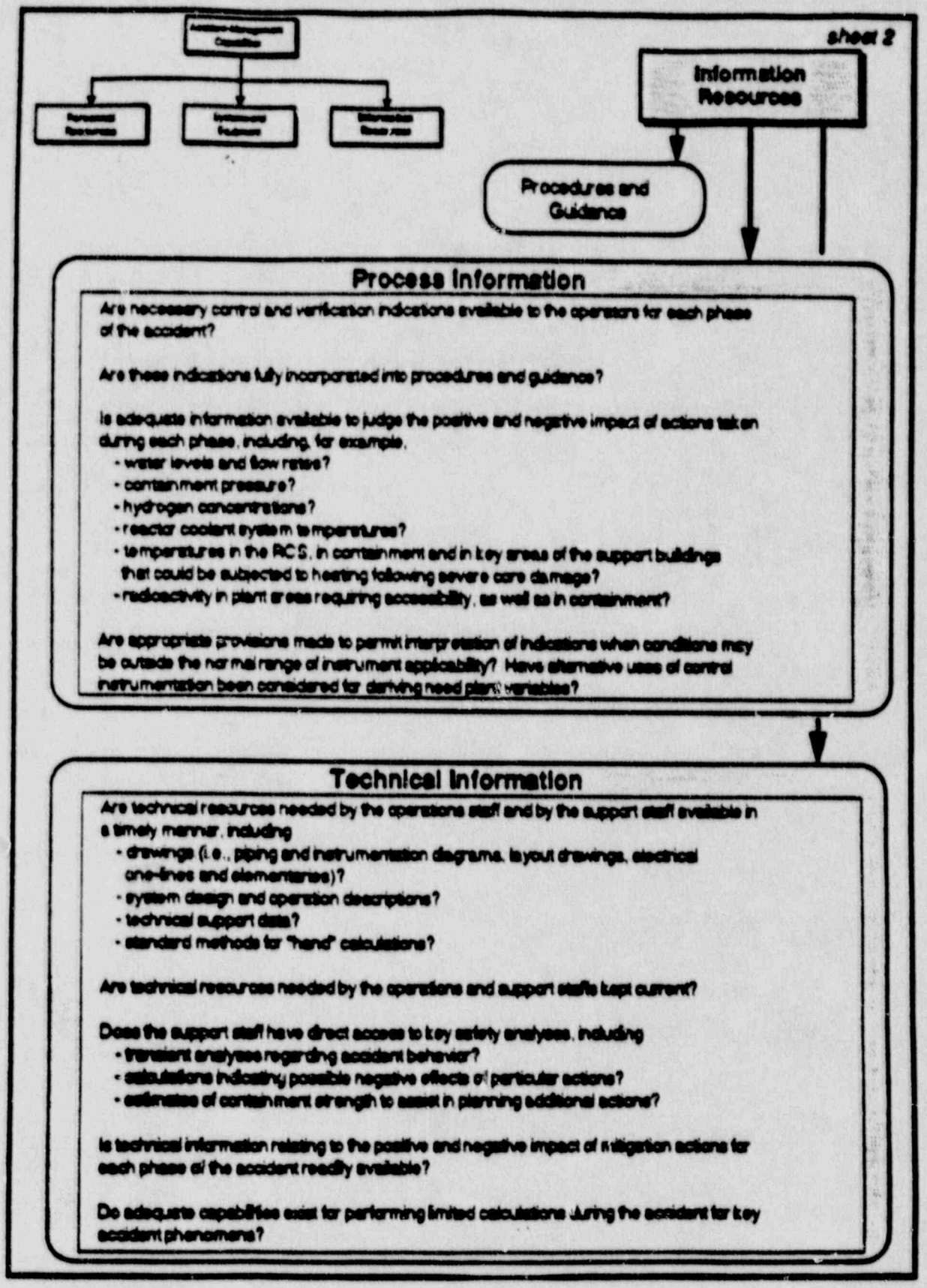
Example Question Structure for Systems and Equipment



Example Question Structure for Systems and Equipment (continued)



Example Structure for Questions Regarding Information Resources



Example Structure for Questions Regarding Information Resources (continued)

SUMMARY

- Guidelines issued in DRAFT form
- Feedback from industry at large facilitated
- **Trial applications** to provide important feedback for final guidelines