VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

EXERCISE MANUAL

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1.0 INTRODUCTION

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1.1 EXERCISE SCHEDULE

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1.1 EXERCISE SCHEDULE

A. Controller/Observer Briefing

Date: August 30, 1988

Time: 9:00 a.m.

Location: Vermont Yankee Energy Information Center

Purpose: Controller/Observer Briefing on Scenario and Assignments

Attendees: Vermont Yankee and Yankee Atomic Controllers/Observers

B. Controller/Observer Plant Tour

Date: August 30, 1988

Time: As necessary (contact Lead Controller)

Location: Emergency Response Facilities and In-Station Areas

Purpose: Familiarize Controllers/Observers with Affected Areas

Attendees: Controllers/Observers

C. NRC Briefing

Date: To be announced

Time:

Location: Vermont Yankee Energy Information Center

Purpose: NRC Briefing and Review of Exercise Scenario

Attendees: NRC Evaluators

D. Exercise

Date: August 31, 1988

Time: 0600 hours

Location: Vermont Yankee Emergency Response Centers

Purpose: Emergency Response Preparedness Exercise

Attendees: Vermont Yankee Emergency Response Organization, Controllers/Observers, NRC Evaluators, and Yankee Atomic Engineering Support Center Staff

E. Exercise Debriefing

Date: Day of Exercise

Time: To be announced during or immediately following exercise

Location: Location to be designated by the Emergency Response Facility Controller

Purpose: Players and Controller/Observer Debriefing

Attendees: Controllers/Observers, Key Participants

F. Controller Debriefing

Date: After Exercise Player Debriefing

Time: To be announced

Location: Vermont Yankee Information Center

Purpose: Exercise Debriefing

Attendees: Exercise Coordinator and Controllers

G. Exercise Critique

Date: September 1, 1988

Time: To be announced

Location: Vermont Yankee Information Center

Purpose: Utility Self-Critique/NRC Preliminary Findings

Attendees: Vermont Yankee Management, NRC Evaluators, Exercise Controllers (Observers need not attend), and Vermont Yankee Key Participants

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1.2 PARTICIPATING CENTERS/AGENCIES

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1.2 PARTICIPATING CENTERS/AGENCIES

VERMONT YANKEE NUCLEAR POWER CORPORATION

Vermont Yankee Nuclear Power Station:

- Control Room (notification and communication functions only)
- Technical Support Center (2nd floor of Administration Building)
- Operations Support Center (1st floor of Administration Building)
- Energy Information Center (Governor Hunt House)

Vermont Yankee Training Center:

- Simulator Room (Control Room functions - 1st floor of Training Center)
- Emergency Operations Facility/Recovery Center (1st floor of Training Center)

News Media Center (Vermont Yankee Nuclear Power Corporation Offices - Brattleboro, Vermont)

YANKEE ATOMIC ELECTRIC COMPANY

Yankee Atomic Corporate Headquarters:

- Engineering Support Center

STATE OF VERMONT (Notification and Communication Only)

Vermont Emergency Management Agency:

- Emergency Operations Facility/Recovery Center (state representatives located in the State Room)
- Emergency Operating Center (Waterbury, Vermont)

STATE OF NEW HAMPSHIRE (Notification and Communication Only)

New Hampshire Emergency Management Agency:

- Emergency Operations Facility/Recovery Center (state representatives located in the State Room)
- Emergency Operating Center (Concord, New Hampshire)

STATE OF MASSACHUSETTS (Notification and Communication Only)

Massachusetts Civil Defense Agency, Massachusetts Department of Public Health:

- Emergency Operations Facility/Recovery Center (state representatives located in the State Room)
- Emergency Operating Center (Framingham, Massachusetts)

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1.3 DEFINITIONS

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ABBREVIATIONS, DEFINITIONS, AND TERMINOLOGY

1.3 DEFINITIONS

A. Abbreviations

- ACRO - Alternate Control Room Operator
- AO - Auxiliary Operator
- AOG - Advanced Off-Gas System
- APRM - Average Power Range Monitor
- ARM - Area Radiation Monitor
- C/HP - Chem/Health Physics
- CR - Control Room/Control Rod
- CRP - Control Room Panel
- CS - Core Spray
- CTP - Core Thermal Power
- DCO - Duty and Call Officer
- DW - Drywell
- EAL - Emergency Action Level
- ECCS - Emergency Core Cooling System
- ENS - Emergency Notification System
- EOF - Emergency Operations Facility
- EPZ - Emergency Planning Zone
- ESC - Engineering Support Center
- FEMA - Federal Emergency Management Agency
- FW - Feedwater

- HPCI - High Pressure Coolant Injection
- HRNG - High Range Noble Gas
- I&C - Instrumentation and Control
- LPCI - Low Pressure Coolant Injection
- MCC - Motor Control Center
- Mn Con Bk Pres - Main Condenser Back Pressure
- MPR - Mechanical Pressure Regulator
- MSIV - Main Steam Isolation Valve
- MSL - Main Steam Line
- NAS - Nuclear Alert System
- NG - Noble Gases
- NRC - Nuclear Regulatory Commission
- OP - Operating Procedure
- OSC - Operations Support Center
- OT - Operational Transient
- PASS - Post-Accident Sampling System
- PCIS - Primary Containment Isolation System
- PED - Plant Emergency Director
- POD - Pocket Dosimeter
- PVS - Plant Vent Stack
- RA - Radiological Assistant
- RCS - Reactor Coolant System
- RCIC - Reactor Core Isolation Cooling
- REMVEC - Rhode Island, Eastern Massachusetts, and Vermont Energy Control.
- RERP - Radiological Emergency Response Plan

- RHR - Residual Heat Removal
- RP - Reactor Recirculation System
- RTF - Reactor Transfer Fan
- RV - Relief Valve
- RWCU - Reactor Water Clean-Up
- Rx - Reactor
- SAE - Site Area Emergency
- SBGTS - Standby Gas Treatment System
- SJAE - Steam Jet Air Ejector
- SRM - Site Recovery Manager/Source Range Monitor
- SRV - Safety Relief Valve
- SU Trans - Start-Up Transformer
- TAG - Technical Administrative Guideline
- TS - Technical Specification
- TSC - Technical Support Center
- VY - Vermont Yankee
- VYNPC - Vermont Yankee Nuclear Power Corporation
- VYNPS - Vermont Yankee Nuclear Power Station
- WSI - Weather Services International
- YNSD - Yankee Nuclear Services Division

B. Terminology

- Alert - An emergency classification which is defined as an actual or potential substantial degradation of the level of safety of the plant.

- Controller - A member of an exercise control group. Each Controller may be assigned to one of more activities or functions for the purpose of keeping the action going according to a scenario, resolving differences (acting as an umpire), supervising and otherwise assisting as needed.

- Critique - A meeting of key participants in an exercise, usually held shortly after its conclusion, to identify weaknesses and deficiencies in emergency response capabilities .

- Emergency Action Levels - Specific instrument readings, system or event observation and/or radiological levels which initiate event classification, notification procedures, protective actions, and/or the mobilization of the emergency response organization. These are specific threshold readings or observations indicating system failures or abnormalities.

- Emergency Assistance Personnel - General term used to refer to the radiation monitoring teams, sample analysis team, and in-plant search, and rescue teams.

- Emergency Operations Facility/Recovery Center - An emergency response facility (Vermont Yankee Training Center, Brattleboro, Vermont) which evaluates off-site accident consequences and coordinates emergency response and assistance with all off-site agencies.

- o Emergency Planning Zones - The areas for which planning is recommended to assure that prompt and effective actions can be taken to protect the public in the event of an accident. The two zones are the 10-mile radius plume exposure pathway zone and the 50-mile radius ingestion exposure pathway zone.

- o Engineering Support Center - A YNSD emergency response facility (Yankee Atomic Electric Corporate Headquarters) established to provide additional engineering support to the affected site in plant assessment and recovery operations.

- o Exercise - A demonstration of the adequacy of timing and content of emergency implementing procedures, methods, and equipment.

- o Full Participation Exercise - An exercise which tests as much of the licensee, state, and local plans as is reasonably achievable without mandatory public participation.

- o General Emergency - An emergency classification which is defined as actual or imminent substantial core degradation or melting with potential for loss of containment integrity.

- o News Media Center - An emergency response facility (VYNPC Corporate Offices, Brattleboro, Vermont) is dedicated to the news media for the purpose of disseminating and coordinating information concerning accident conditions. All activities conducted within this center will be the responsibility of the Vermont Yankee Nuclear Information Director.

- o Observer - A member of an exercise control group. Each Observer may be assigned to one or more activities or functions for the purpose of evaluating, recording, and reporting the strengths and weaknesses, and making recommendations for improvement.

- o Operations Support Center - An emergency response facility (1st floor, Administration Building) established to muster skilled emergency response personnel to perform activities in the plant.

- o Protective Action - Those emergency measures taken to effectively mitigate the consequences of an accident by minimizing the radiological exposure that would likely occur if such actions were not undertaken.

- o Protective Action Guides - Projected radiological dose values to the public which warrant protective actions following an uncontrolled release of radioactive material. Protective actions would be warranted provided the reduction in the individual dose is not offset by excessive risks to individual safety in implementing such action.

- o Scenario - The hypothetical situation, from start to finish, in an exercise which is the theme or basis upon which the action or play of the exercise unfolds.

- o Site - That property within the fenced boundary of Vermont Yankee which is owned by the Vermont Yankee Nuclear Power Corporation.

- o Site Area Emergency - An emergency classification that indicates an event which involves likely or actual major failures of plant functions needed for the protection of the public.

- o Small-Scale Exercise - An exercise which tests as much of the licensee emergency plan and procedures without participation of state and local government agencies.

- o Technical Support Center - An emergency response facility (2nd floor, Administration Building) with the capability to assess and mitigate the accident using plant parameters and highly qualified technical personnel. Also, assists in accident recovery operations.

- o Unusual Event - An emergency classification that indicates a potential degradation of plant safety margins which is not likely to affect personnel on-site or the public off-site or result in radioactive releases requiring off-site monitoring.

- o Yankee Nuclear Services Division (YNSD) - A division of Yankee Atomic Electric Company. An Engineering support organization which provides emergency response support to Vermont Yankee upon request.

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1.4 REFERENCES

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1.4 REFERENCES

1. Vermont Yankee Nuclear Power Station Emergency Plan.

2. Vermont Yankee Nuclear Power Station Emergency Plan Implementing Procedures.

3. Vermont Yankee Nuclear Power Station Final Safety Analysis Report - Vermont Yankee Nuclear Power Corporation.

4. Vermont Yankee Nuclear Power Corporation - Communications Department Emergency Response Plan and Procedures.

5. Vermont Yankee Nuclear Power Station Emergency Operating Procedures.

6. Vermont Yankee Nuclear Power Station Core Damage Assessment Methodology.

7. Yankee Atomic Electric Company - Technical Administrative Guideline No. 12, Emergency Preparedness Responsibilities.

8. Martin, G. F., et al., "Report to the NRC on Guidance for Preparing Scenarios for Emergency Preparedness Exercises at Nuclear Generating Stations," March 1986, USNRC, NUREG/CR-3365.

9. Daily Weather Maps, National Weather Service, Climate Analysis Center, Washington, DC 20233.

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2.0 EXERCISE OBJECTIVES

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2.0 EXERCISE OBJECTIVES - VERMONT YANKEE

In order to demonstrate the radiological emergency response preparedness of the Vermont Yankee Nuclear Power Station, an emergency response preparedness exercise will be conducted on Wednesday, August 31, 1988. The exercise being conducted is a small-scale exercise which will involve the participation of Vermont Yankee station and corporate personnel. The State of Vermont, State of New Hampshire, Commonwealth of Massachusetts, and the local communities within the plume exposure pathway have the opportunity to participate in the exercise, if they so desire.

A set of exercise objectives for the exercise was developed to evaluate and test certain elements of the Vermont Yankee emergency preparedness program. The selected exercise objectives were based upon previous open items identified by the NRC and corrective actions taken in regard to follow-up action items identified by Vermont Yankee personnel. The exercise objectives will be used to ascertain the required input to the exercise scenario sequence of events and to establish the evaluation criteria to be used by the exercise controllers and observers. The specific exercise objectives to be demonstrated are as follows:

A. Accident Assessment

1. Demonstrate the ability of Control Room personnel to recognize emergency initiating events and properly classify the condition in accordance with pre-established emergency action levels.

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*Indicates NRC identified improvement items from the 1987 exercise.

2. Demonstrate the ability of the Control Room and TSC staff to coordinate the assessment of plant conditions and corrective actions to mitigate accident conditions.

3. Demonstrate that information concerning plant conditions can be disseminated between the Control Room and TSC in a timely manner.*

4. Demonstrate the ability of the TSC staff to initiate and coordinate corrective actions in an efficient and timely manner.*

5. Demonstrate the ability of appropriate TSC staff to participate with the Control Room and the EOF/RC in emergency classification and EAL discussions.

6. Demonstrate the ability to access data from appropriate chemistry samples in support of accident assessment activities and plant conditions.

B. Notification and Communication

1. Demonstrate that messages are transmitted in an accurate and timely manner and that messages are properly logged and documented.*

2. Demonstrate the capability to notify federal and state authorities of emergency classifications in accordance with established procedures.

3. Demonstrate that appropriate status boards are utilized to display pertinent accident information at the various emergency response facilities.

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*Indicates NRC identified improvement items from the 1987 exercise.

4. Demonstrate that adequate emergency communication systems are in place to facilitate transmittal of data between the emergency response facilities and federal and state authorities.

C. Direction and Control

1. Demonstrate the capability of key emergency response facility management personnel to direct and coordinate their respective emergency response activities in an efficient and timely manner.

D. Emergency Response Facilities

1. Demonstrate the ability of station and corporate personnel to activate and staff the emergency response facilities in a timely manner.

2. Demonstrate and test the adequacy and effectiveness of emergency response facilities, operations, and equipment.

E. Radiological Exposure Control

1. Demonstrate the ability to provide adequate radiation protection controls for on-site emergency response personnel, such as appropriate personnel dosimetry, equipment, and protective clothing.

2. Demonstrate the ability to monitor and track radiation exposure of on-site emergency response personnel.

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*Indicates NRC identified improvement items from the 1987 exercise.

F. In-Plant Corrective and Repair Actions

1. Demonstrate that on-site assistance teams can be dispatched and deployed in a timely manner.

2. Demonstrate the ability of on-site assistance teams to perform corrective maintenance on damaged plant equipment during emergency conditions.

3. Demonstrate the ability of plant personnel to trouble-shoot and evaluate problems associated with plant equipment and systems.

4. Demonstrate the ability to provide adequate administrative controls and documentation for necessary repairs of plant equipment and systems during an emergency situation.

G. Radiological Assessment

1. Demonstrate that radiological assessment personnel at the EOF can obtain radiological and meteorological data in a timely manner.

2. Demonstrate the ability to assess potential off-site radiological consequences based on plant conditions.

3. Demonstrate adequate staffing, equipment readiness check, and deployment (if necessary) of off-site monitoring teams.

4. Demonstrate the ability to project the plume trajectory and potentially affected downwind sectors utilizing the computer dose assessment model (METPAC).

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*Indicates NRC identified improvement items from the 1987 exercise.

H. Protective Action Decision-Making

1. Demonstrate the ability to implement appropriate on-site protective action measures for emergency response personnel.

2. Demonstrate the [illegible] of the protective action decision making process to [illegible] ropriate recommendations concerning off-site radiolo[illegible] uences.

I. Parallel [illegible]

1. Test and [illegible] dequacy of methods to establish and maintain ac[illegible] ntrol and personnel accountability within the protected area.

2. Demonstrate the licensee's capability for self-critique and ability to identify areas needing improvement.

J. Public Information

1. Demonstrate the ability to develop and disseminate timely accurate press releases to the public and the news media.

2. Demonstrate the ability to provide briefings for and to interface with the public and news media.

3. Demonstrate the ability to communicate and coordinate news releases between the EOF and the News Media Center.

4. Demonstrate the ability to provide rumor control.

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*Indicates NRC identified improvement items from the 1987 exercise.

The annual Radiological monitoring drill and semi-annual Health Physics drill will be included as part of this exercise. A separate Health Physics drill will be held to demonstrate the actual sample collection and analysis of in-plant chemistry samples which includes the use of the Post-Accident Sampling System (PASS).

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*Indicates NRC identif ' improvement items from the 1987 exercise.

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3.0 EXERCISE GUIDELINES AND SCOPE

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3.1 EXERCISE GUIDELINES

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3.1 EXERCISE GUIDELINES

A. Purpose

This package provides guidance for conducting the 1988 VYNPS Emergency Response Preparedness Exercise. It provides the framework for demonstrating emergency response capabilities, conducting the exercise and evaluating the results.

B. Concepts of Operations and Control of the Exercise

Vermont Yankee will supply official Controllers and Observers for each location where an emergency response action is being demonstrated. Prior to the exercise, the Controllers and Observers will be provided with appropriate maps, materials, and evaluation forms.

An Exercise Coordinator was appointed by plant management for the purpose of developing the accident time sequence and to be in overall charge of conducting the exercise. The Exercise Coordinator will be responsible for approving the objectives, the accident time sequence, and the selection and training of the Controllers/ Observers required to evaluate the effectiveness of the Vermont Yankee Emergency Preparedness Program.

Controllers for the exercise will distribute information to players on message cards, and in each facility a Controller will make judgement decisions to keep the action going in accordance with the scenario outline. The Controllers will also provide advice to Observers and resolve problems in their assigned emergency response

facility. If a crisis situation arises, an Observer will first contact the Facility Controller who will then contact the Exercise Coordinator for advice or resolution of the problem. All major requests for scenario modifications or holding periods must be cleared through the Exercise Coordinator.

Observers for the exercise will observe the players as they work in their assigned emergency response functions. Individual observers are responsible for being knowledgeable in the area of their assigned function. The Observers will critique the effectiveness of the emergency response actions during the exercise and also provide a written evaluation to the Controller for the assigned facility.

The exercise initial conditions will be provided to a Control Room operations crew, located in the simulator area, by the Control Room Simulator Controllers. The plant and reactor system parameters for the exercise will be generated by running the accident scenario on the simulator. The remaining exercise message cards and additional scenario parameters will be provided by Controllers/Observers at the times indicated by the exercise sequence of events, or when requested by the players. Other message cards may be issued to players at times required by player actions during the exercise.

As the initiating events are provided to the plant staff, they will determine the nature of the emergency and the implementation of appropriate emergency plan implementing procedures. These procedures are expected to include a determination of the emergency classification in accordance with the Vermont Yankee Emergency Plan. Notifications will be made to the appropriate federal and state authorities.

The hypothesized emergency will continue to develop based on data and information provided to the operators located in the Simulator Room. Wherever possible, operators will complete responses as if

they were actually responding to the plant events. Inconsistencies in the scenario may be intentional and required to provide a basis which tests capabilities of emergency centers to the maximum extent feasible in a limited time. Controllers have the authority to resolve or explain problems that may occur with the scenario during the exercise.

C. General Guidance for the Conduct of the Exercise

1. Simulating Emergency Response Actions

Since exercises are intended to demonstrate actual capabilities as realistically as possible, participants should act as they would during a real emergency. Wherever possible, actions should be carried out. Emergency response actions should be simulated when it is not feasible to perform an action or when the action has been previously identified as being simulated during the exercise (refer to Section 3.3). When an emergency response is to be simulated, the Controller/Observer will provide verbal or written directions on which actions are to be simulated.

Radiation Work Permits (RWPs) have not been issued for the conduct of the emergency response exercise. If scenario events direct players to areas that are actually RWP-controlled due to high radiation, surface contamination, or airborne radioactivity, players will simulate the activities they would have performed without actually entering the RWP-controlled area even if they are authorized on the RWP for some other duty.

2. Avoiding Violations of Laws

Intentional violation of laws is not justifiable during any exercise. To implement this guideline the following actions must be taken:

a. All Controllers/Observers and potential exercise participants must be specifically informed of the need to avoid intentional violation of all federal, state and local laws, regulations, ordinances, statutes and other legal restrictions. The orders of all police, sheriffs or other authorities should be followed as would normally be the case.

b. Exercise participants will not direct illegal actions to be taken by other exercise participants or members of the general public.

c. Exercise participants will not intentionally take illegal actions when being called out to participate in an exercise. Specifically, local traffic laws such as speed laws will be observed.

3. Avoiding Personnel and Property Endangerment

Participants and Evaluators will be instructed to avoid endangering property (public or private), other personnel responding to the exercise, members of the general public, animals and the environment.

4. Actions to Minimize Public Inconvenience

It is not the intent, nor is it desirable or feasible, to effectively train or test the public response during the conduct of radiological emergency exercises. Public inconvenience is to be minimized.

The actions of federal, state and local agencies and nuclear power plant operators receive continuous public notice and scrutiny; therefore, the conduct of an exercise could arouse public concern that an actual emergency is occurring. It is important that conversations that can be monitored by the public (radio, loudspeakers, etc.) be prefaced and conclude with the words, "THIS IS A DRILL; THIS IS A DRILL."

D. Emergency Response Implementation and Operations

1. Initial and Follow-Up Notification

Initial and follow-up notification of the emergency classification will be made by the plant staff in accordance with existing emergency plan implementing procedures, unless directed otherwise.

2. Control Room Operations

A Control Room emergency response crew will be positioned in the Simulator Room which is located at the Vermont Yankee Training Center in Brattleboro, Vermont. The remaining support staff normally on duty will initially be simulated until later supplemented after the ALERT by the emergency response organization. The plant and reactor system parameters will be provided to the Control Room Simulator players by the simulator control board and by Control Room Simulator Controllers in the

form of message or command cards when required. Other information, such as radiological data and meteorological data, will be provided to Control Room players as necessary. Communications between the Simulator Control Room and other emergency response facilities will utilize communications links that duplicate the emergency communications capabilities available at the Control Room or by utilizing the actual Control Room communication system for transmission (e.g., Gaitronics - PA System at the plant to make Control Room emergency announcements).

3. Technical Support Center (TSC) Operations

The TSC emergency response organization will be activated during this exercise. TSC information will come from the Control Room, located in the Simulator Area. Information that is normally accessible by TSC personnel from the plant computer will be provided by Controllers/Observers utilizing telephone communications between the simulator area and plant computer room. In addition, TSC Communicators, who would normally be assigned to the Control Room to provide TSC requested plant data, will be staged at the Simulator Area.

4. Operations Support Center (OSC) Operations

The OSC emergency response organization will be activated during this exercise. Operations Support Center responses, direction and information will be communicated with the Technical Support Center. OSC Observers will accompany all OSC teams dispatched during the exercise and will have appropriate operational and radiological data for the players. No team participating in the exercise should leave the Staging Area without an Observer/Controller.

5. Emergency Operations Facility/Recovery Center (EOF/RC) Operations

The EOF/RC emergency response organization will be activated during this exercise. Information and data will be transmitted to the EOF/RC from the TSC and Control Room (Simulator). EOF Controllers and Observers will provide other data to EOF/RC players as necessary.

6. Off-Site Monitoring Teams

Off-site monitoring teams will be fully activated and dispatched in accordance with existing procedures. Simulated data will be provided to off-site monitoring teams by the Off-Site Monitoring Team Observers/Controllers.

7. News Media Center Operations

The News Media Center will be activated and staffed during the exercise. Press releases to the general public and news media will be generated. News Media Center staff will obtain all necessary information on current status of the exercise through communications channels with the EOF/RC. Simulated press releases will be compiled and disseminated in accordance with the Vermont Yankee Communications Department Emergency Response Plan and Procedures. All press releases are to be clearly marked: THIS IS A DRILL.

8. Security Operations

All security emergency responses appropriate to the exercise scenario will be implemented in accordance with existing procedures. Access control and personnel accountability within the protected area will be demonstrated. At no time will

actual plant security procedures be violated in support of the exercise.

E. Exercise Termination

The exercise will be terminated by the Exercise Coordinator when all emergency response actions have been completed in accordance with the exercise time sequence and exercise objectives.

The following steps will be implemented to terminate the exercise:

1. The Exercise Coordinator will receive information from the Facility Controllers concerning the status of player actions and whether the stated facility emergency response actions and objectives have been demonstrated.

2. The Facility Controllers will be responsible to inform the Exercise Coordinator of their facility status and whether their facility emergency response actions and objectives have been satisfactorily observed.

3. Upon receiving all of the Facility Controllers status, the Exercise Coordinator will inform the Site Recovery Manager and TSC Coordinator that the Controller/Observer organization has completed their exercise observations and is ready to terminate the exercise.

4. A coordinated decision to terminate the exercise would be made between the Site Recovery Manager and the TSC Coordinator.

5. The Site Recovery Manager or TSC Coordinator will terminate the exercise.

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3.2 EXERCISE OBJECTIVES AND EXTENT OF PLAY

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3.2 EXERCISE OBJECTIVES AND EXTENT OF PLAY

	Extent of Play
A. Accident Assessment	
1. Demonstrate the ability of Control Room personnel to recognize emergency initiating events and properly classify the condition in accordance with pre-established emergency action levels.	A.1 The scenario events initiated on the simulator provides the operational and radiological data which allows personnel to demonstrate this objective by implementing Procedure A.P. 3125, Emergency Plan Classification and Action Level Scheme.
2. Demonstrate the ability of the Control Room and TSC staff to coordinate the assessment of plant conditions and corrective actions to mitigate accident conditions.	A.2 The scenario will provide technical information to players which will allow them to analyze plant conditions and propose corrective actions.
3. Demonstrate that information concerning plant conditions can be disseminated between the Control Room and TSC in a timely manner.*	A.3 Telephone communications links will be established by communicators between the simulator Control Room and the TSC in order to transmit key information and data. Exercise controllers/observers will evaluate the timeliness of information.
4. Demonstrate the ability of the TSC staff to initiate and coordinate corrective actions in an efficient and timely manner.*	A.4 The scenario provides events that will enable the TSC to coordinate in-plant corrective actions through the use of OSC personnel.

*Indicates NRC-identified improvement items from the 1987 exercise.

	Extent of Play
5. Demonstrate the ability of appropriate TSC staff to participate with Control Room and the EOF/RC in emergency classification and EAL discussions.	A.5 The scenario includes events which allow for discussion between the Control Room, TSC, and EOF staff on classification.
6. Demonstrate the ability to access data from appropriate chemistry samples in support of accident assessment activities and plant conditions.	A.6 Scenario events will require Chemistry and Health Physics technicians located at the OSC to simulate taking reactor coolant or containment air samples to assess plant conditions. Sample results will be provided by the Exercise Observers who accompany the technicians during their sampling activities. (Refer to Procedure OP-3530, "Post-Accident Sampling.")
B. Notification and Communication	
1. Demonstrate that messages are transmitted in an accurate and timely manner and that messages are properly logged and documented.*	B.1 Various communications links will be B.3 established between the emergency response B.4 facilities in order to transmit information and data. Recordkeeping and documentation will be demonstrated in accordance with Procedure OP-3504, "Emergency Communications." Communications and transfer of data between facilities will be evaluated for timeliness and completeness.
2. Demonstrate the capability to notify federal and state authorities of emergency classifications in accordance with established procedures.	B.2 Vermont Yankee staff, NRC, and state authorities shall be notified in accordance with established procedures. NRC will be notified by utilizing the NRC ENS red phone. The State authorities will be notified through the Nuclear Alert System (Orange Phone).

*Indicates NRC-identified improvement items from the 1987 exercise.

	Extent of Play
3. Demonstrate that appropriate status boards are utilized to display pertinent accident information at the various emergency response facilities.	
4. Demonstrate that adequate emergency communication systems are in place to facilitate transmittal of data between the emergency response facilities and federal and state authorities.	
C. Direction and Control	
1. Demonstrate the capability of key emergency response facility management personnel to direct and coordinate their respective emergency response activities in an efficient and timely manner.	C.1 All emergency response facilities have designated coordinators who will direct and coordinate emergency response activities in their particular area of responsibility.
D. Emergency Response Facilities	
1. Demonstrate the ability of station and corporate personnel to activate and staff the emergency response facilities in a timely manner.	D.1 Scenario data and exercise events will allow D.2 activation and operation of Vermont Yankee emergency response facilities. The Simulator Control Room, Control Room (communication functions only), TSC, OSC, EOF/RC, News Media Center and Engineering Support Center will be activated in accordance with established procedures. Designated plant and corporate emergency response personnel will participate in the exercise.
2. Demonstrate and test the adequacy and effectiveness of emergency response facilities, operations, and equipment.	

*Indicates NRC-identified improvement items from the 1987 exercise.

	Extent of Play
E. Radiological Exposure Control	
1. Demonstrate the ability to provide adequate radiation protection controls for on-site emergency response personnel, such as appropriate personnel dosimetry, equipment, and protective clothing.	E.1 Scenario events will require OSC On-Site E.2 Assistance Teams to be dispatched to investigate problems associated with plant equipment. Investigation and repair activities in the plant will require implementation of radiation protection controls which include monitoring and tracking of radiation exposure of OSC On-Site Assistance Teams. (Refer to Procedure OP-3507, "Emergency Radiation Exposure Control.")
2. Demonstrate the ability to monitor and track radiation exposure of on-site emergency response personnel.	
F. In-Plant Corrective and Repair Actions	
1. Demonstrate that On-Site Assistance Teams can be dispatched and deployed in a timely manner.	F.1 Scenario events will require OSC On-Site F.2 Assistance Teams to be dispatched F.3 to investigate problems associated with F.4 plant equipment. Equipment mockup of the postulated damaged plant equipment will be available for plant personnel to perform corrective maintenance. Plant personnel will also be given the opportunity to trouble-shoot and evaluate the problems associated with the damaged plant equipment.
2. Demonstrate the ability of On-Site Assistance Teams to perform corrective maintenance on damaged plant equipment during emergency conditions.	
3. Demonstrate the ability of plant personnel to trouble-shoot and evaluate problems associated with plant equipment and systems.	
4. Demonstrate the ability to provide adequate administrative controls and documentation for necessary repairs of plant equipment and systems during an emergency situation.	

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*Indicates NRC-identified Improvement items from the 1987 exercise.

		Extent of Play
G.	Radiological Assessment	
	1. Demonstrate that radiological assessment personnel at the EOF can obtain radiological and meteorological data in a timely manner.	G.1 Scenario events will postulate off-normal G.2 radiological levels in the drywell and G.4 increased area radiation levels in the plant. The scenario will provide information on plant conditions and in-plant radiological conditions to players which will allow them to evaluate potential off-site radiological consequences. Players will implement appropriate sections of Procedures OP-3513, "Evaluation of Off-Site Radiological Conditions" and OP-3511, "Off-Site Protective Actions Recommendations."
	2. Demonstrate the ability to assess potential off-site radiological consequences based on plant conditions.	
	3. Demonstrate adequate staffing, equipment readiness check, and deployment (if necessary) of Off-Site Monitoring Teams.	G.3 Off-Site Monitoring Teams will be assigned at the OSC. Players will implement appropriate sections of Procedure OP-3510, "Off-Site and Site Boundary Monitoring."
	4. Demonstrate the ability to protect the plume trajectory and potentially affected downwind sectors utilizing the computer dose assessment model (METPAC).	
H.	Protective Action Decision Making	
	1. Demonstrate the ability to implement appropriate on-site protective measures for emergency response personnel.	H.1 On-site protective action measures will include radiation exposure control and plant evacuation of nonessential personnel. After plant evacuation and accountability has been completed, all plant personnel and contractors not directly involved in the exercise may be allowed to return to work.

*Indicates NRC-identified improvement items from the 1987 exercise.

	Extent of Play
2. Demonstrate the adequacy of the protective action decision making process to make recommendations concerning off-site radiological consequences.	H.2 Protective action decision making will be demonstrated in accordance with Procedure OP-3511, "Off-Site Protective Actions Recommendations".
I. Parallel and Other Actions	
1. Test and evaluate the adequacy of methods to establish and maintain access control and personnel accountability within the protected area.	I.1 Security activities will be implemented in accordance with established procedures to control access to the protected area. Assembly of emergency response personnel and evacuation of contractor/visitors will be implemented in order to test personnel accountability within the protected area. However, after the plant evacuation accountability checks have been completed, contractors and visitors will be exempted from additional personnel accountability checks.
2. Demonstrate the licensee's capability for self-critique and ability to identify areas needing improvement.	I.2 Exercise critique will be conducted with exercise controllers, observers, and players. Critique items will be compiled and documented by the Exercise Coordinator.
J. Public Information	
1. Demonstrate the ability to develop and disseminate timely, accurate press releases to the public and the news media.	J.1 The News Media Center will be fully activated. J.2 Information on the simulated events occurring J.3 at the plant will be gathered, verified, incorporated into a press release, and disseminated to key players. Also, after approval this information will be discussed at the News Media Center.
2. Demonstrate the ability to provide briefings for and to interface with the public and news media.	

*Indicates NRC-identified improvement items from the 1987 exercise.

	Extent of Play
3. Demonstrate the capability to communicate and coordinate press releases between the EOF and the News Media Center.	
4. Demonstrate the ability to provide rumor control.	J.4 A hot line will be established to provide rumor control for questions concerning the simulated accident.

*Indicates NRC-identified improvement items from the 1987 exercise.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

3.3 PLAYER INSTRUCTIONS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

3.3 PLAYER INSTRUCTIONS

The Vermont Yankee Emergency Response Preparedness Exercise will be conducted during the week of August 29, 1988. The successful demonstration of emergency response capabilities will depend on player response and protocol. The following information is provided for players on the details of the exercise and instructions that players should follow during the exercise. Department heads are responsible for ensuring that personnel are trained on this information.

A. General Guidelines

1. Exercise participants include Players, Controllers, Observers, NRC Evaluators, and an Exercise Coordinator. Controllers will provide players with command and message cards to initiate emergency response actions. Observers will evaluate actions along with the NRC. Controllers, Observers, and NRC Evaluators will be identified by badges.

2. Always identify yourself by name and function to the Controllers, Observers, and Evaluators. Wear a name tag if one is provided.

3. You may ask the Controller/Observer for information such as:

   a. Initial conditions of the plant and systems including:

      o operating history of the core

- o initial coolant activity
- o general weather conditions
- o availability of systems according to the scenario

b. Area radiation data at the location of emergency teams.

c. Airborne data at the location of the plant and field survey teams after a sample has been appropriately taken.

d. Counting efficiency of all counting equipment.

e. Activity from nose swabs or skin contamination surveys.

4. You may not ask the following from the Controllers/Observers:

a. Information contained in procedures, drawings, or instructions.

b. Judgements as to which procedures should be used.

c. Data which will be made available later in the day.

d. What the Controller/Observer would do if he were a player.

e. Assistance in performing actions in this exercise.

f. Assistance in carrying out calculations.

5. Play out all actions, as much as possible, in accordance with your Emergency Plan and Procedures as if it were a real emergency. If an action or data is to be simulated, an Exercise Controller or Observer will provide Players with appropriate direction.

6. Always identify and discuss your actions to the Controllers and Observers. State your data out loud as you are recording it. For your own benefit, it is recommended that you play out your actions as much as possible, as if it were a real emergency. It is to your advantage to exercise as many appropriate response actions as possible.

7. Periodically speak out loud, identifying your key actions and decisions to the Controllers/Observers. This may seem artificial, but it will assist the evaluators and is to your benefit.

8. When you are assigned to complete a response action, be sure to be accompanied by an Exercise Controller or Observer at all times.

9. If you are in doubt about completing a response action, ask your Controller or Observer for clarification. The Controller/Observer will not prompt or coach you. Emergency response actions must not place exercise participants in any potentially hazardous situations.

10. The Controller/Observer will periodically issue messages or instructions designed to initiate response actions. You must accept these messages immediately. They are essential to the proper conduct of the exercise.

11. If the Controller intervenes in your response actions and recommends you redirect or reconsider your play actions, it is for a good reason. His direction may be essential to the overall success of the exercise for all participating groups.

12. If you disagree with your Controller or Observer, discuss your problem with him. However, Controllers/Observers final decisions must be followed.

13. Respond to questions in a timely manner.

14. Do not accept any messages/instructions from NRC Evaluators. They are required to work through your Controller/Observer if they want to initiate additional emergency conditions. However, you may answer questions directed at you by NRC Evaluators. If you do not know the answer, refer them to your lead player or Controller/ Observer.

15. You must play as if radiation levels are actually present in accordance with the information you receive. This may require you to wear protective clothing, respirators, additional dosimeters, observe emergency radiation protection practices, and to be aware of and minimize your radiation exposures.

16. Controllers/Observers/Evaluators are exempt from simulated radiation levels and other emergency conditions. Do not let this confuse you or cause you to act unwisely. However, no one is exempt from normal station radiological practices and procedures.

17. Utilize status boards and log books as much as possible to document and record your actions.

18. Always begin and end all communications with the words "THIS IS A DRILL," during the exercise so that these communications are not confused with an actual emergency.

19. Keep a list of items which you believe will improve your plans and procedures. Provide your input to your lead player or Controller/Observer immediately after the exercise. A critique will follow the exercise. Areas for improvement or weaknesses when corrected will improve the overall emergency response capability.

B. Player's Simulation List

The following describes those specific actions which do not have to be performed and can be simulated by exercise participants. All other actions are to be performed in accordance with our operating procedures. No action will be allowed which alters or affects the ongoing operation of the plant. The simulation list is as follows:

1. Scenario specific data will not be programmed into the plant process computer. This will be provided by Controllers/Observers utilizing telephone communications between the Simulator Area and plant Computer Room.

2. Sufficient number of individuals from the Vermont Yankee Emergency Organization will be prestaged at the Simulator Area.

3. Meteorological data will be simulated using a "test" file available to the Simulator Control Room Meteorological Computer System.

4. After plant evacuation accountability has been completed, plant personnel and contractors/visitors not directly involved in the exercise will be allowed to return to work, at the discretion of the TSC Coordinator.

5. The distribution of potassium iodide (KI) will be simulated.

6. Charcoal cartridges will be used as silver zeolite cartridges during off-site monitoring activities.

7. The YNSD Emergency Response Team will be prestaged in the area.

8. No emergency center evacuation will be demonstrated during the exercise.

9. Off-site monitoring teams and security boundary monitoring personnel will not wear protective clothing and/or respirators.

10. The inner gate and electrically controlled doors will not be left in the open position during this exercise.

11. Initial on-shift Chemistry and Health Physics Technicians actually in the plant will be simulated.

12. The plant Gaitronics is not available from the simulator; actual plant notifications will be made, through the Vermont Yankee plant Control Room.

13. Controllers/Observers will not be issued dosimetry unless plant access is required prior to the exercise. Security will be notified of their assigned location.

14. All decontamination actions associated with the exercise may be simulated after discussion and approval by the controller/observer.

15. The use of respiratory protection equipment may be simulated by plant personnel after discussion and approval by the controller/observer.

16. Radiation Work Permits (RWPs) have not been issued for the conduct of the emergency response exercise.

C. Simulator Control Room Information

The following describes how the Simulator Control Room emergency response activities will be integrated with the plant Control Room functions during the exercise:

1. Players reporting to the Main Control Room will be directed to an area (SS office) that will have a Controller and communications link with the simulator. All Control Room exercise communications should be directed to the Simulator Control Room.

2. All exercise Gaitronics calls to the Control Room and vice versa will be relayed or answered by the Control Room exercise controller. Channel 3 should be utilized for all exercise messages.

3. Gaitronics plant announcements will be coordinated by the Simulator Controller. They will be made by the operating crew in the plant Control Room.

4. TSC status and information communicators normally assigned to the Control Room, and a Chemistry Health Physics Technician for initial radiological and meteorological data, will be prestaged at the simulator.

5. Process computer ID data, normally accessible by TSC personnel, will be provided by a designated person in the simulator area via personnel in the plant Computer Room.

6. Personnel movement in and out of the Simulator Control Room will be limited to the exercise Controllers/Observers.

7. Communications equipment in the Simulator Control Room is the same as the plant Control Room. Commercial phone extensions are different, but auto ring down and speaker phones are operable. The orange state phone and red ENS-NRC phone will be operable. The orange phone extension is 613.

D. Player's Gamesmanship

This section contains a listing of items to improve our gamesmanship during the exercise. The listing of items applicable to all in the gamesmanship area are as follows:

1. When significant events occur or when you are about to perform a significant action, make it known.

2. Keep all messages, status boards, and problem boards accurate, up to date, timed, and dated.

3. Briefings need to be held regularly, at a minimum every 30 minutes.

4. Key players should wear badges identifying their role. Bound log books should be used in all emergency centers.

5. All announcements, including those on the Gaitronics, should state "THIS IS A DRILL."

6. Avoid simulation unless it has been specified. Use protective clothing where called for, step-off pads, etc.

E. Personnel Accountability and Participation

Plant Security will be provided with a list of exempt personnel for the exercise. All other personnel, not listed, are expected to participate as required by the Emergency Plan. The exempt list of plant personnel will include the On-Shift Security Crew, Operating Crew, and Duty Chemistry and Health Physics Technician. Security at the Training Center entrance will also limit access through the doors to exercise participants for the duration of the exercise.

F. Exercise Critiques

The following is a brief description of the critique sessions that will be held after the exercise. The critique sessions are held to determine whether the stated exercise objectives were met, verify the effectiveness of our emergency plan and procedures, and identify areas for future improvement. The specific schedule for the critique sessions will be announced at the conclusion of the exercise.

Center Critiques

This meeting will be conducted by the Controller with participants to debrief them on findings for the particular emergency center. Three critique sessions will be held:

1. SRM, EOF, and NMC
2. TSC and Simulator Control Room
3. Operations Support Center and Security

Controller Debrief

This meeting will be conducted by the Exercise Coordinator to compile all exercise comments and problems. Participation is limited to Exercise Controllers.

Exercise Critique

This meeting will be conducted by the Exercise Coordinator to present to management a summary of all major problems and deficiencies identified during the exercise. Participants include Vermont Yankee management, Exercise Controllers, key players, and NRC.

NRC Exit

Immediately following the exercise critique, the NRC will present their findings. Participants will be the same as in the exercise critique.

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3.4 PROCEDURE EXECUTION LIST

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3.4 EMERGENCY IMPLEMENTING PROCEDURES EXECUTION LIST

Procedure Number	Title
AP 3125	"Emergency Plan Classification and Action Level Scheme"
AP 3512	"Release of Public Information"
OP 3500	"Unusual Event"
OP 3501	"Alert"
OP 3502	"Site Area Emergency"
OP 3503	"General Emergency"
OP 3504	"Emergency Communications"
OP 3507	"Emergency Radiation Exposure Control"
OP 3510	"Off-Site and Site Boundary Monitoring"
OP 3511	"Off-Site Protective Actions Recommendation"
OP 3513	"Evaluation of Off-Site Radiological Conditions"
OP 3524	"Emergency Actions to Ensure Accountability and Security Response"
OP 3525	"Radiological Coordination"
OP 3530	"Post-Accident Sampling"

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3.5 EXERCISE TERMINATION CRITERIA

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3.5 EXERCISE TERMINATION CRITERIA

The exercise may be terminated under the following circumstances:

1. If all emergency response actions have been completed in accordance with the exercise time sequence and objectives (refer to Section 3.1, Part E);

2. If an actual plant emergency condition develops coincident with the exercise; and

3. If an actual off-site emergency impacts the response actions of Vermont Yankee exercise participants.

In the event that Item 2 should occur, the following actions will be taken:

1. The Shift Supervisor will contact the TSC Coordinator and inform him of the plant status. The TSC Coordinator will, in turn, contact the Site Recovery Manager and inform him of the plant status;

2. The Site Recovery Manager will immediately inform any State representatives at the EOF of the nature of the emergency;

3. Concurrent with the notification in Step 2, the Control Room will announce over the plant paging system the following statement:

"The emergency plan exercise has been terminated. I repeat. The emergency plan exercise has been terminated."

This message may be immediately followed by the appropriate emergency class announcement (if appropriate);

4. The Exercise Coordinator would be responsible for directing the actions of the Controllers/Observers; and

5. The emergency plan/procedures and notifications applicable to the event would be implemented in accordance with the nature of the emergency (if appropriate).

In the event that Item 3 should occur, the following actions should be taken:

1. The State Police, having been notified of the emergency, should open direct communications with the Vermont Yankee Control Room using the Nuclear Alert System;

2. The Shift Supervisor will notify the Control Room Controller who, in turn, will notify the Exercise Coordinator;

3. A coordinated decision would be made in conjunction with the Site Recovery Manager and/or the TSC and EOF Coordinators concerning the completion of the exercise;

4. The Exercise Coordinator would be responsible for temporarily halting the exercise until such time a decision could be made;

5. If the final decision were to cancel the exercise, then the Exercise Coordinator would be responsible for directing the activities of the evaluation team as well as for the notification of NRC;

6. If the final decision were to continue the exercise, then the Exercise Coordinator would be responsible for informing all Controllers/Observers of the projected change to the expected response action(s); and

7. The Exercise Coordinator would direct his organization as to the appropriate action required to restore the exercise sequence.

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4.0 CONTROLLER/OBSERVER INFORMATION

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4.1 CONTROLLER/OBSERVER ASSIGNMENTS

NOTE: Assignment list will be provided at the exercise briefing.

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4.2 CONTROLLER AND OBSERVER EXERCISE GUIDANCE

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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4.2 CONTROLLER AND OBSERVER EXERCISE GUIDANCE

Prior to the exercise, each Controller/Observer will be provided a package and a set of plant emergency plan implementing procedures which correspond to their assigned evaluation area. It is the responsibility of the Controller/Observer to read the contents of the package, review the procedures associated with the assignment, and then, develop a checklist of important concepts associated with the designated procedure which can be used as a reference during the exercise. In developing this checklist, an attempt should be made to categorize the concepts under the following general headings: Detection and Classification; Notification and Communication; Information Flow; Emergency Organization; Accident Assessment; Dose Assessment; and Protective Action Decision Making.

Prior to the exercise, each Controller/Observer will be requested to attend a Controllers/Observers Briefing Meeting. During this meeting, each Controller/Observer should identify any questions he/she has with the package content and/or their assignment. It is the responsibility of each Controller/Observer to ensure that he/she is familiar with the various plant locations where their assignment will require their presence. Tours will be provided as a portion of the briefing; however, these tours will be limited in their duration. It may be advisable to plan an additional tour.

Observers should familiarize themselves with their assigned Center and Controller prior to the exercise. The Controller will be responsible for directing observer activities throughout the course of the exercise. At exercise termination, each Controller is responsible for meeting with their Observers and directing their critique and documentation of their exercise comments. Each Controller will be responsible for ensuring that this documentation is provided to the Exercise Coordinator at the conclusion of the critique session. Each Controller is also responsible for providing a brief summary of their facility comments during the formal critique.

Controllers/Observers should identify themselves to players and explain their role in the exercise. Controllers/Observers should inform players that if their actions are going to deviate from standard plant or emergency procedures they should tell the Observer why. Controllers/Observers should keep a detailed time log throughout the exercise, listing all transferred data and players responses. This log and related comments should provide the time, place, and names of involved personnel.

Section 4.3 contains log sheets and evaluation forms to be used for documentation of observations.

The primary role of exercise Controllers/Observers is to evaluate the emergency responses of the players. In order to document the adequacy of

emergency response actions during the exercise, Controllers/Observers are required to complete the Emergency Exercise/Drill Observers Evaluation Form. When completing this form, Controllers/Observers should attempt to differentiate their comments into either adequate or potential deficiencies. For recognized deficiencies of personnel, equipment, etc. provide recommendations for improvement detailing corrective actions, if possible.

Controllers/Observers should not allow their biases to be documented as recognized weakness or deficiencies. Comments and recommendations should be further subdivided under the general headings according to the following minor headings: Facility Activation/Organizational Control, Communications, Adherence to Plans and Procedures, Equipment Capabilities, Scenario, Training, Facility Layout, Off-Site Monitoring, Personnel Dosimetry/Exposure Control, and General Comments.

Facility Activation comments should identify: (1) the time that emergency response personnel were notified; (2) when the facility was activated; (3) when initial activities become well organized; (4) whether personnel performance follows the organized arrangements specified by plant procedures; and (5) the efficiency of methods of authority transfer. If a transfer of responsibility occurs, then the Observer should determine if all affected personnel are aware that the transfer has occurred.

Communication comments should identify: (1) personnel familiarity with emergency communications use; (2) whether sufficient communications were available to ensure a timely, efficient, and effective flow of information; (3) whether there were enough communications personnel to make use of all available equipment; (4) the adequacy of communications logs and describe the effectiveness of data transfer; (5) whether there were any problems in the design of the existing communications system (i.e., location relative to traffic flow); (6) whether there were any recognized difficulties in use of computer systems; and whether center status boards are effectively used. Observers should document their comments in this area very carefully, providing sufficient details to track any recognized deficiencies.

Plans and Procedural comments should identify: (1) whether personnel were familiar with the details of overall concepts of applicable procedures; (2) whether situations developed which required deviation from the procedure or plan; (3) whether personnel were overwhelmed with procedural requirements distracting them from performing their required emergency response function, and (4) whether the procedures adequately described the actions required to complete an assigned function.

Equipment capability comments should identify: (1) whether all necessary materials and equipment were available and functional; (2) whether emergency response personnel checked operability of equipment prior to conducting their assignment; (3) whether backup equipment was readily available when malfunctions were reported; (4) whether the available systems provide an adequate service; and (5) whether equipment malfunctions impacted the expected emergency response.

Scenario related comments should address: (1) whether sufficient information was available to ensure appropriate player response; (2) whether the scenario details deviated from actual procedural requirements; and (3) whether the scenario detail provided any prompt to the player. An additional question should be answered by Controllers/Observers concerning the adequacy of the scenario in keeping the players active and interested throughout the exercise.

Training comments should identify: (1) whether plant personnel have been provided sufficient training to handle "ad hoc" procedural deviations; and (2) whether training identifies improper procedural requirements.

Comments on facility layout deficiencies/recommendations should identify: (1) whether the available work space provided was adequate; (2) whether traffic flow hindered the response efforts; (3) whether the communications available in the work area were adequate; (4) whether the noise level hindered emergency response efforts; and (5) whether sufficient references were available to complete the job assignment.

Off-site monitoring team observers should identify: (1) the adequacy of sampling methods; (2) the adequacy of contamination control measures; (3) the adequacy of reporting and documentation measures; and (4) the effectiveness of the team in defining the plume condition and sample locations. Dose projection techniques should be evaluated in conjunction with this general category. Consideration of dose projection technique should identify: (1) the effectiveness of the system in allowing the correct interpretation of off-site conditions, and (2) the effectiveness of using the projection technique in positioning off-site teams.

Evaluation of Personnel Dosimetry/Exposure Control activities should identify: (1) the timeliness and effectiveness of dosimetry distribution; (2) the effectiveness of protective measures, such as administration of potassium iodide; (3) the adequacy of established contamination control access points; (4) the adequacy of exposure planning measures afforded in plant activities; and (5) the adequacy of decontamination and posting techniques.

The Controllers/Observers will be provided a supply of the Evaluation Forms found in the following section. All such documentation must be provided to the Controller after the exercise and prior to the plant critique.

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4.3 CONTROLLER AND OBSERVER COMMENTS

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4.3 CONTROLLER AND OBSERVER COMMENTS

As discussed in Sections 4.1 and 4.2, each Observer/Controller has been assigned specific areas of the response effort to evaluate. These observations shall be documented and discussed after the completion of the exercise. This section has been developed to assist the Observer/Controller to maintain a detailed log of events as they occur, recall their observations as they pertain to specific exercise objectives, and finally, to provide an official record of the observations for inclusion into the final exercise report.

Attachment A consists of blank pages formatted for use as a chronological log. This should assist each controller/observer in completing their respective evaluation check lists (Attachment B).

Attachment B is a check list to be used to assist in evaluating their assigned facility/area. This check list shall be submitted with Attachment C to the Controller for each location.

Attachment C is enclosed for summarizing major observations and comments. This form MUST BE submitted by each Observer/Controller to their respective Controller. Each Controller will subsequently submit these forms to the Exercise Coordinator for inclusion into the final exercise report.

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ATTACHMENT A

Vermont Yankee Nuclear Power Station
Emergency Response Exercise/Drill
Evaluator's Observations-Chronological Log

Time	Observation/Comment

Name: _____ Area Evaluated: _____

Date: _____

1898e/18.334

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ATTACHMENT A
(Continued)

Time	Observation/Comment

Name: _____ Area Evaluated: _____

Date: _____

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ATTACHMENT B

Vermont Yankee
Emergency Exercise/Drill Evaluation Check List

INSTRUCTIONS

The following evaluation check list is provided to assist the Controllers/Observers with their evaluation of the exercise/drill. The Controllers and Observers should complete the check lists for the location or emergency responses which pertain to areas which they were responsible for observing or controlling during the exercise/drill. The evaluation check list will utilize a rating scale based upon three (3) types of ratings followed by comments and suggestions as indicated below:

Rating	Symbol	Comments and Suggested Improvements
Adequate	A	May be followed by comments and suggestions for improvements, especially if rating is marginal.
Inadequate	I	Must be followed by comments, together with suggestions for improvement.
Not Observed or Not Applicable	N	No comments or suggestions are required.

If your evaluation indicates inadequate performances, please provide a description of the problem area and suggested solution for improvement as indicated on the Emergency Exercise/Drill Evaluation Form or on a separate piece of paper.

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ATTACHMENT B
(Continued)

Check lists have been provided for the following facilities/areas:

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ATTACHMENT B
(Continued)

I. CONTROL ROOM

INSTRUCTIONS

The following evaluation check list is provided to assist the Controllers/Observers with their evaluation of the exercise/drill. The Controllers and Observers should complete the check lists for the location or emergency responses which pertain to areas which they were responsible for observing or controlling during the exercise/drill. The evaluation check list will utilize a rating scale based upon three (3) types of ratings followed by comments and suggestions as indicated below:

Rating	Symbol	Comments and Suggested Improvements
Adequate	A	May be followed by comments and suggestions for improvements, especially if rating is marginal.
Inadequate	I	Must be followed by comments, together with suggestions for improvement.
Not Observed or Not Applicable	N	No comments or suggestions are required.

If your evaluation indicates inadequate performances, please provide a description of the problem area and suggested solution for improvement as indicated on the Emergency Exercise/Drill Evaluation Form or on a separate piece of paper.

Check list commences on the following page.

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ATTACHMENT B
(Continued)

I. CONTROL ROOM

	Rating	Comments
A. Accident Assessment/Emergency Classification		
1. Did the Control Room staff demonstrate the ability to recognize emergency initiating conditions and classify the events in accordance with AP-3125.	_____	Yes/No
2. Did the Control Room staff demonstrate the ability to coordinate the assessment of plant conditions and corrective actions with the Technical Support Center?	_____	Yes/No
B. Notification and Communication		
1. Did the Control Room staff demonstrate the ability to notify the plant staff of an emergency through the use of alarms and the public address system?	_____	Yes/No
2. Did the Control Room staff demonstrate the ability to notify federal and state authorities of emergency classifications in accordance with established procedures?	_____	Yes/No
3. Was information flow within the Control Room and to other appropriate emergency response facilities timely, complete, and accurate?	_____	Yes/No
4. Was adequate record keeping of events, actions and communications documented and logged by the Control Room staff?	_____	Yes/No
5. Were adequate emergency communication systems available in the Control Room to transmit data and information to other emergency response facilities?	_____	Yes/No

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ATTACHMENT B
(Continued)

	Rating	Comments
C. Activation and Response		
1. Did the Control Room staff demonstrate the ability to appropriately implement Emergency Plan Implementing Procedures and did they follow them?	_____	Yes/No
2. Was the person in charge in the Control Room clearly identifiable and was good command and control taken at the Control Room?	_____	Yes/No

Controller/Observer Name: _____

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ATTACHMENT B
(Continued)

II. TECHNICAL SUPPORT CENTER

INSTRUCTIONS

The following evaluation check list is provided to assist the Controllers/Observers with their evaluation of the exercise/drill. The Controllers and Observers should complete the check lists for the location or emergency responses which pertain to areas which you were responsible for observing or controlling during the exercise/drill. The evaluation check list will utilize a rating scale based upon three (3) types of ratings followed by comments and suggestions as indicated below:

Rating	Symbol	Comments and Suggested Improvements
Adequate	A	May be followed by comments and suggestions for improvements, especially if rating is marginal.
Inadequate	I	Must be followed by comments, together with suggestions for improvement.
Not Observed or Not Applicable	N	No comments or suggestions are required.

If your evaluation indicates inadequate performances, please provide a description of the problem area and suggested solution for improvement as indicated on the Emergency Exercise/Drill Evaluation Form or on a separate piece of paper.

Check list commences on the following page.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

II. TECHNICAL SUPPORT CENTER

	Rating	Comments
A. Accident Assessment/Emergency Classification		
1. Did the TSC staff demonstrate the ability to support the Control Room staff in identifying the cause of the incident, mitigating the consequences of that incident, and placing the plant in a stable condition?	_____	Yes/No
2. Did the TSC staff demonstrate the ability to coordinate the assessment of plant conditions and corrective actions with the Control Room?	_____	Yes/No
3. Did the TSC staff demonstrate the ability to to initiate and coordinate corrective actions in an efficient and timely manner?	_____	Yes/No
4. Did the TSC staff demonstrate the ability to direct and coordinate the taking of appropriate chemistry samples to analyze plant conditions?	_____	Yes/No
5. Did the TSC staff demonstrate the ability to participate with the Control Room and EOF/RC in emergency classification and EAL discussion.	_____	Yes/No
B. Notification and Communication		
1. Was information flow within the TSC and to other appropriate emergency response facilities timely, complete, and accurate?	_____	Yes/No

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

		Rating	Comments
2.	Was adequate record keeping of events, actions, and communications documented and logged by the TSC staff?	_____	Yes/No
3.	Were adequate emergency communications systems available in the TSC to transmit data and information to other emergency response facilities?	_____	Yes/No
4.	Was information concerning plant conditions disseminated between the Control Room and TSC performed in a timely manner?	_____	Yes/No
5.	Were status boards utilized and maintained to display pertinent accident information at the TSC?	_____	Yes/No
C.	Activation and Response		
1.	Did the TSC staff demonstrate the ability to activate and staff the TSC?	_____	Yes/No
2.	Did the TSC staff demonstrate the ability to appropriately implement Emergency Plan Implementing Procedures and did they follow them?	_____	Yes/No
3.	Were initial and continuous accountability checks of TSC and CR personnel performed?	_____	Yes/No
4.	Did the TSC Coordinator establish and coordinate access control into the Protected Area and Control Room?	_____	Yes/No

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

		Rating	Comments
5.	Did the TSC Coordinator demonstrate the ability to maintain command and control of TSC emergency response activities?	_____	Yes/No
6.	Did the TSC keep other emergency response facilities advised of the status of their activities and information which they had developed?	_____	Yes/No
7.	Was the TSC organization and initiation of activity efficient and well organized?	_____	Yes/No

Controller/Observer Name: _____

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

III. OPERATIONS SUPPORT CENTER

INSTRUCTIONS

The following evaluation check list is provided to assist the Controllers/Observers with their evaluation of the exercise/drill. The Controllers and Observers should complete the check lists for the location or emergency responses which pertain to areas which you were responsible for observing or controlling during the exercise/drill. The evaluation check list will utilize a rating scale based upon three (3) types of ratings followed by comments and suggestions as indicated below:

Rating	Symbol	Comments and Suggested Improvements
Adequate	A	May be followed by comments and suggestions for improvements, especially if rating is marginal.
Inadequate	I	Must be followed by comments, together with suggestions for improvement.
Not Observed or Not Applicable	N	No comments or suggestions are required.

If your evaluation indicates inadequate performances, please provide a description of the problem area and suggested solution for improvement as indicated on the Emergency Exercise/Drill Evaluation Form or on a separate piece of paper.

Check list commences on the following page.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

III. OPERATIONS SUPPORT CENTER

	Rating	Comments
A. Notification and Communication		
1. Was information flow within the OSC and to other appropriate emergency response facilities timely, complete, and accurate?	_____	Yes/No
2. Was adequate record keeping of events, actions, and communications documented and logged by the OSC staff?	_____	Yes/No
3. Were adequate emergency communications systems available in the OSC to transmit data and information to other emergency response facilities?	_____	Yes/No
4. Were status boards utilized and maintained to display pertinent accident information at the OSC?	_____	Yes/No
B. Activation and Response		
1. Did the OSC staff demonstrate the ability to activate and staff the OSC?	_____	Yes/No
2. Did the OSC staff demonstrate the ability to appropriately implement Emergency Plan Implementing Procedures and did they follow them?	_____	Yes/No
3. Were initial and continuous accountability checks of OSC personnel performed?	_____	Yes/No

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

		Rating	Comments
4.	Did the OSC Coordinator and OSC Coordinator's Assistant demonstrate the ability to maintain command and control of OSC emergency response activities?	_____	Yes/No
5.	Did the OSC keep other emergency response facilities advised of the status of their activities and information which they had developed?	_____	Yes/No
6.	Was the OSC organization and the initiation of activity efficient and well organized?	_____	Yes/No
7.	Did the OSC staff demonstrate the ability to provide adequate radiation protection controls for on-site emergency response personnel?	_____	Yes/No
8.	Did the OSC staff demonstrate the ability to monitor and track radiation exposure of on-site emergency response personnel?	_____	Yes/No
9.	Did the OSC staff demonstrate the ability to obtain and analyze appropriate chemistry samples as directed by the TSC?	_____	Yes/No
10.	Did the OSC staff demonstrate the ability to initiate, brief, and dispatch On-Site Assistance Teams?	_____	Yes/No
11.	Did the on-site assistance teams demonstrate the ability to perform corrective maintenance on damaged plant equipment during emergency conditions?	_____	Yes/No

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

12. Were on-site assistance teams able to trouble-shoot and evaluate problems with plant equipment and systems? _____ Yes/No

13. Were their adequate administrative controls and documentation taken to perform the necessary repairs of plant equipment and systems during an emergency situation? _____ Yes/No

Controller/Observer Name: _____

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

IV. EMERGENCY OPERATIONS FACILITY/RECOVERY CENTER

INSTRUCTIONS

The following evaluation check list is provided to assist the Controllers/Observers with their evaluation of the exercise/drill. The Controllers and Observers should complete the check lists for the location or emergency responses which pertain to areas which you were responsible for observing or controlling during the exercise/drill. The evaluation check list will utilize a rating scale based upon three (3) types of ratings followed by comments and suggestions as indicated below:

Rating	Symbol	Comments and Suggested Improvements
Adequate	A	May be followed by comments and suggestions for improvements, especially if rating is marginal.
Inadequate	I	Must be followed by comments, together with suggestions for improvement.
Not Observed or Not Applicable	N	No comments or suggestions are required.

If your evaluation indicates inadequate performances, please provide a description of the problem area and suggested solution for improvement as indicated on the Emergency Exercise/Drill Evaluation Form or on a separate piece of paper.

Check list commences on the following page.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

IV. EMERGENCY OPERATIONS FACILITY/RECOVERY CENTER

	Rating	Comments
A. Notification and Communication		
1. Was information flow within the EOF/RC and to other appropriate emergency response facilities timely, complete, and accurate?	_____	Yes/No
2. Were adequate emergency communications systems available in the EOF/RC to transmit data and information to other emergency response facilities?	_____	Yes/No
3. Was adequate record keeping of events, actions, and communications documented and logged by the EOF/RC staff?	_____	Yes/No
4. Was information concerning plant conditions disseminated between the TSC and EOF/RC performed in a timely manner?	_____	Yes/No
5. Were status boards utilized and maintained to display pertinent accident information at the EOF/RC?	_____	Yes/No
B. Activation and Response		
1. Did the EOF/RC staff demonstrate the ability to activate and staff the EOF/RC?	_____	Yes/No
2. Did the EOF/RC staff demonstrate the ability to appropriately implement Emergency Plan Implementing Procedures and did they follow them?	_____	Yes/No

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

		Rating	Comments
3.	Did the Corporate Security Force establish access control into the EOF/RC?	_____	Yes/No
4.	Did the EOF Coordinator demonstrate the ability to maintain command and control of EOF emergency response activities?	_____	Yes/No
5.	Did the EOF/RC keep other emergency response facilities advised of the status of their activities and information which they had developed?	_____	Yes/No
6.	Were the EOF/RC organization and the initiation of activity efficient and well organized?	_____	Yes/No
7.	Did the Site Recovery Manager demonstrate the ability to maintain the command and control of the overall emergency response effort and organization?	_____	Yes/No
8.	Did the Site Recovery Manager demonstrate the ability to de-escalate from the emergency phase into the recovery phase?	_____	Yes/No
9.	Were preliminary recovery plans established and discussed between the Site Recovery Manager and appropriate personnel?	_____	Yes/No

C. Radiological Assessment

1.	Was information concerning radiological and meteorological data obtained by appropriate EOF personnel in a timely manner?	_____	Yes/No
2.	Did the EOF staff demonstrate the ability to perform off-site dose assessment in accordance with Procedure OP-3513?	_____	Yes/No

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

	Rating	Comments
3. Did the EOF staff demonstrate the ability to effectively track and define the plume utilizing the computerized dose assessment model (METPAC)?	_____	Yes/No

D. Protective Action Decision-Making

1. Did the Radiological Assistant's staff demonstrate the ability to perform timely assessment of off-site radiological conditions to support the formulation of protective action recommendations?	_____	Yes/No
2. Did the EOF Coordinator obtain and provide the necessary information to the Site Recovery Manager concerning protective action recommendations in accordance with Procedure OP-3511.	_____	Yes/No
3. Did the Site Recovery Manager demonstrate the ability to make protective action recommendations to off-site authorities in accordance with Procedure OP-3511?	_____	Yes/No

Controller/Observer Name: _____

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

V. SITE AND OFF-SITE MONITORING

INSTRUCTIONS

The following evaluation check list is provided to assist the Controllers/Observers with their evaluation of the exercise/drill. The Controllers and Observers should complete the check lists for the location or emergency responses which pertain to areas which you were responsible for observing or controlling during the exercise/drill. The evaluation check list will utilize a rating scale based upon three (3) types of ratings followed by comments and suggestions as indicated below:

Rating	Symbol	Comments and Suggested Improvements
Adequate	A	May be followed by comments and suggestions for improvements, especially if rating is marginal.
Inadequate	I	Must be followed by comments, together with suggestions for improvement.
Not Observed or Not Applicable	N	No comments or suggestions are required.

If your evaluation indicates inadequate performances, please provide a description of the problem area and suggested solution for improvement as indicated on the Emergency Exercise/Drill Evaluation Form or on a separate piece of paper.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

V. SITE AND OFF-SITE MONITORING

	Rating	Comments
A. Activation and Response		
1. Did the site and off-site monitoring teams demonstrate the ability to transmit information over the radio utilizing proper units and terminology in accordance with Procedure OP-3510?	_____	Yes/No
2. Were site and off-site monitoring teams dispatched and deployed in a timely manner?	_____	Yes/No
3. Were team members familiar with the use of equipment, field monitoring procedures, and what was required of them?	_____	Yes/No
4. Were off-site monitoring teams able to determine and communicate their location in the field using appropriate maps and sample points (landmarks)?	_____	Yes/No

Controller/Observer Name: _____

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

VI. SECURITY

INSTRUCTIONS

The following evaluation check list is provided to assist the Controllers/Observers with their evaluation of the exercise/drill. The Controllers and Observers should complete the check lists for the location or emergency responses which pertain to areas which you were responsible for observing or controlling during the exercise/drill. The evaluation check list will utilize a rating scale based upon three (3) types of ratings followed by comments and suggestions as indicated below:

Rating	Symbol	Comments and Suggested Improvements
Adequate	A	May be followed by comments and suggestions for improvements, especially if rating is marginal.
Inadequate	I	Must be followed by comments, together with suggestions for improvement.
Not Observed or Not Applicable	N	No comments or suggestions are required.

If your evaluation indicates inadequate performances, please provide a description of the problem area and suggested solution for improvement as indicated on the Emergency Exercise/Drill Evaluation Form or on a separate piece of paper.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

VI. SECURITY

	Rating	Comments
A. Activation and Response		
1. Did the Security staff demonstrate the ability to perform accountability of personnel within the Protected Area in accordance with Procedures OP-3524?	_____	Yes/No
2. Were access control points established and maintained to control access at the site and the Protected Area?	_____	Yes/No
3 Did the Security staff demonstrate the ability to appropriately implement Emergency Plan Implementing Procedures and did they follow them?	_____	Yes/No

Controller/Observer Name: _____

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT P
(Continued)

VII. NEWS MEDIA CENTER

INSTRUCTIONS

The following evaluation check list is provided to assist the Controllers/Observers with their evaluation of the exercise/drill. The Controllers and Observers should complete the check lists for the location or emergency responses which pertain to areas which you were responsible for observing or controlling during the exercise/drill. The evaluation check list will utilize a rating scale based upon three (3) types of ratings followed by comments and suggestions as indicated below:

Rating	Symbol	Comments and Suggested Improvements
Adequate	A	May be followed by comments and suggestions for improvements, especially if rating is marginal.
Inadequate	I	Must be followed by comments, together with suggestions for improvement.
Not Observed or Not Applicable	N	No comments or suggestions are required.

If your evaluation indicates inadequate performances, please provide a description of the problem area and suggested solution for improvement as indicated on the Emergency Exercise/Drill Evaluation Form or on a separate piece of paper.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT B
(Continued)

VII. NEWS MEDIA CENTER

	Rating	Comments
A. Activation and Response		
1. Did the News Media staff demonstrate the ability to activate and staff the News Media Center?	_____	Yes/No
2. Was information flow between the News Media Center and EOF/RC timely, complete, and accurate?	_____	Yes/No
3. Were the News Media staff familiar with their plans and procedures and do they follow them?	_____	Yes/No
4. Did the News Media staff demonstrate the ability to provide accurate and timely information concerning the emergency to the public and the news media?	_____	Yes/No

Controller/Observer Name: _____

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT C

Emergency Exercise/Drill
Observer's Evaluation Form

Observer's Name: _____ Exercise/Drill Date: _____

Exercise/Drill Title: _____

Observer's Location: _____

Time Started: _____ Time Ended: _____

Observed:	Player	Function
	_____	_____
	_____	_____
	_____	_____

Overall Performance and Observations: (include the proper and effective use of procedures, equipment and personnel): _____

_____

_____

Recognized Deficiencies: _____

_____

_____

Comments and Recommendations (Specific): _____

_____

_____

NOTE:

Use additional pages as required.

Signature: _____ Title: _____

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

ATTACHMENT C
(Continued)

Continued on Additional Pages _____Yes _____No

Signature: _____ Title: _____

Date: _____

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1983

5.0 EXERCISE SCENARIO

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

5.1 INITIAL CONDITIONS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

5.1 INITIAL CONDITIONS

(This information will be provided to the players at the start of the exercise).

1. The Reactor is now at approximately 90% rated power. The reactor has been operating steady state for the past eight months with no recent shutdowns.

2. Power was reduced for a rod sequence exchange which has been completed.

3. The SJAE discharge release rate has been trending up for the past month. Last SJAE discharge release rate for previous day, 25,000 uCi/sec. The most recent sample taken (0750, yesterday) of the Reactor Coolant System total iodine concentration was 2.0E-3 uCi/ml.

4. Drywell floor drain sump flow as of 0000 midnight was 2.0 gpm and has slowly been increasing. Drywell equipment drain sump flow as of 0000, midnight was 1.0 gpm and is steady.

5. Shift order instructions:

   a. Closely monitor drywell leakage. Surveillance should be completed as soon as practical.

   b. Consult with the Reactor Engineering Supervisor for any control rod pattern changes or reactor power reductions because of suspected fuel leak.

c. Power reduction rate of <1%. CTP/minute is recommended, if necessary.

6. All other power generating equipment is operating, and all safety system equipment is operable.

7. The following on-site meteorological conditions exist at 0600:

Wind Speed, mph (upper/lower)	9.1/5.2
Wind Direction, degrees (upper/lower)	359/356
Delta Temperature, ^{o}F (upper/lower)	-1.1/-0.8
Ambient Temperature, ^{o}F	60.3
Precipitation, inches	0.0

8. Synoptic (regional) meteorological conditions:

Mostly sunny with northerly winds today. High temperatures in the mid 70's, with a slight chance of some afternoon showers.

As a strong high pressure system moves further east, strong winds will give way to light variable conditions.

TABLE 5.1-1

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	159 inches
Reactor Pressure	992 psig
Reactor Power - APRM (average)	88%
Core Plate Differential Pressure	17.7 psid
Total Core Flow	44 mil lbs/hr
Main Steam Line Flow - Total	5.6 mil lbs/hr
Main Steam Line Radiation	150 mR/hr
Condenser Hotwell Level	52%
Condenser Vacuum	2.2 inches Hg
Condensate Storage Tank Level	65%
Reactor Coolant Temperature	525°F
Recirc Drive Flow (average)	27,000 gpm
Feedwater Flow	5.5 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches H_2O
Drywell Pressure	1.83 psig
Drywell Temperature	136°F
Torus Water Level	1.16 ft
Torus Temperature	88°F
Drywell/Torus O_2 Concentration	2.75%
HR Containment Monitors	2.0 R/hr
Containment Gas/Part	2,000/1,500 cpm
Reactor Building Vent Monitors Gas/Part	150/1,500 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	140 mR/hr
Stack Gas I/II	20/20 cpm
High Range Noble Gas	<0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

5.2 NARRATIVE SUMMARY

VERMONT YANKEE
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

5.2 Narrative Summary

The scenario begins at 0600 with the simulator reactor running at approximately 90% power. The reactor has been operating in a steady state for the past eight months with no recent shutdowns. The reactor is operating at 90% power because of a rod sequence exchange and a fuel pin leak as evidenced by elevated Steam Jet Air Ejector (SJAE) discharge release rates. A slight increase in drywell leakage has been observed over the past few days. Shift orders have instructed the operations crew to closely monitor the drywell leakage. The operations crew has also been advised to check with the Reactor Engineering staff before performing any control rod pattern changes or reactor power reductions because of the suspected fuel leak.

At 0615, Simulator Control Room indications show increased drywell floor drain sump leakage. An alarm is received in the Control Room for the drywell floor drain sump. Operators checking the drywell floor drain sump integrators will find that the drywell leakage has increased to approximately 6 gpm. The Shift Supervisor should declare (approximately 0630) an UNUSUAL EVENT based upon AP-3125, (COOLANT INVENTORY) due to reactor coolant temperature above 212°F and unidentified sump leakage greater than 5 gpm. The Shift Supervisor may begin a controlled power reduction at this time.

At 0745, a failure of the main turbine Mechanical Pressure Regulator (MPR) occurs. This causes the turbine bypass valves to open fully which rapidly increases vessel steam flow. With the high steam outflow, the reactor vessel pressure decreases which results in a reactor vessel water level swell. The reactor vessel water level swell

reaches the high water level setpoint. The turbine trips on high reactor level causing the reactor to scram. The feed pumps, HPCI, and RCIC also trip.

With the turbine bypass valves fully open, reactor pressure continues to decrease until low steam line pressure or high steam line flow initiates MSIV closure and Group 1 isolation. The closure of the MSIVs causes a pressure increase and attendant level shrink. Reactor low water level will initiate Group 2, 3, 4, and 5 isolation. At this time, it is postulated that additional fuel cladding perforations occur due to the pressure transient and thermal stress.

The Shift Supervisor should initiate the appropriate notifications concerning the reactor scram and plant conditions. The Control Room staff will also initiate actions to stabilize the plant. This will include controlling pressure by cycling the relief valves or by operating the HPCI and RCIC Systems; resetting the group isolations; and cooling down the plant. Plant personnel may also investigate the reason for the MPR failure.

Near 0800, an area radiation monitor annunciator alarm is received in the Control Room. The containment gas/particulate monitors are indicating increased radioactivity in the drywell.

By 0830, the torus catwalk area radiation monitor is alarming. The containment gas/particulate monitors are also alarming, and the containment high-range monitors are slightly elevated. An "ALERT" should be declared (approximately 0900) based upon AP-3125, (RADIOLOGICAL CONDITIONS) due to unexpected area radiation levels 1,000 times normal which could require off-site impact assessment.

Following the ALERT, TSC, OSC, and EOF/RC will be activated and staffed. Notifications should be made to the NRC, and Yankee Nuclear Services Division.

At 1015, a significant packing leak from a valve located in the drywell occurs. A high drywell pressure alarm is received which initiates a Primary Containment Isolation System (PCIS) of Groups 2, 3, and 4 isolation. The containment high-range radiation monitors have increased to 1,500 R/hr. Annunciator "high" area radiation monitors are also being received in the Control Room. Coincident with the high drywell pressure signal, not all of the automatic plant systems and equipment actuate. One of the RHR pumps of the ECCS does not start due to a 4 kV breaker problem. One of the diesel generators also does not start due to a clogged starting air filter.

A SITE AREA EMERGENCY should be declared (approximately 1030) based upon AP-3125, (FUEL DAMAGE) due to the containment radiation monitors reading greater than 1,000 R/hr.

By 1100, plant personnel will be looking for the source of the drywell leakage. It is anticipated that personnel will be dispatched to electrically backseat valves in accordance with plant procedures.

On-site assistance teams should also be requested to investigate the problems associated with the RHR pump and diesel generator. Equipment mockup of a 4 kV breaker and an electrical relay used for backseating will be available for plant personnel to work with and to perform the necessary repairs.

By 1215, teams should be in the process of electrically backseating the appropriate valves. The other teams investigating the RHR pump and diesel generator will discover the problems associated with the 4 kV breaker and starting air filter, respectively.

By 1345, the faulty valve has been successfully backseated, and the leakage into the drywell has been stopped. The problems associated with the RHR pump and diesel generator have also been repaired by the on-site assistance teams.

By 1400, Control Room indications show that plant conditions are stabilizing, and drywell pressure and temperature are decreasing.

At 1415, the exercise will be terminated.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

5.3 SCENARIO TIME LINE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

5.4 DETAILED SEQUENCE OF EVENTS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

5.4 DETAILED SEQUENCE OF EVENTS

Clock Time	Scenario Time	Event/Action	Message	Command
Prior to 0600	00:00	EXPECTED CONTROL ROOM (CR) ACTIONS WILL BE IMPLEMENTED BY AN EXERCISE OPERATIONS CREW (INCLUDING SUFFICIENT NUMBER OF PRESTAGED INDIVIDUALS FROM THE VERMONT YANKEE EMERGENCY ORGANIZATION) LOCATED IN THE SIMULATOR COMPLEX IN THE CORPORATE TRAINING CENTER. OPERATIONAL CONTROL ROOM DATA WILL BE PROVIDED BY THE SIMULATOR INSTRUMENTATION RESPONSES. IN CASES WHERE SPECIFIC INFORMATION NOT MONITORED BY THE SIMULATOR IS REQUIRED, IT WILL BE ISSUED BY CONTROLLERS/OBSERVERS ON MESSAGE CARDS. IN THE EVENT THAT A SIMULATOR MALFUNCTION OCCURS, THE EXERCISE WILL BE CONDUCTED USING INFORMATION DEVELOPED FROM SECTION 8.0 AND SECTION 9.0.		

Clock Time	Scenario Time	Event/Action	Message	Command
Prior to 0600 (Cont'd)	00:00	The Simulator CR Controller issues initial conditions to the simulator CR players. Guidelines for use of Gaitronics and the plant evacuation alarm are provided to players.	SCR-M-1	SCR-C-1
		Initiating messages are also provided to all emergency centers and facility staffs upon subsequent activations. Operational and radiological data will be available to the TSC via TSC communicators who normally respond to the CR prestaged in the simulator. Security will be provided a list of Controllers/ Observers and nonparticipants who will not have to be accounted for during the exercise.	CR-M-1A TSC-M-1 TSC-M-2A TSC-M-2B OSC-M-1 EOF/RC-M-1 ESC-M-1 STATE-M-1	
0600	00:00	Simulator is put into operation. Reactor power is at 90 percent power. The reactor has been operating steady state for the past eight months with no recent shutdowns.		

Clock Time	Scenario Time	Event/Action	Message	Command
0600 (Cont'd)	00:00	The reactor is operating at 90 percent power because a rod sequence exchange and fuel pin leak. Elevated Steam Jet Ejector (SJAE) discharge release rates were provided as initial conditions.		
		Also, a slight increase in drywell leakage has been observed for the past few days. The drywell floor drain leakage was calculated at midnight to be at 2.0 gpm and has slowly been increasing.	SCR-M-2	
		Shift orders have instructed the operations crew to closely monitor the drywell leakage.		
		The operations crew has also been advised to check with the Reactor Engineering staff before performing any control rod pattern changes or reactor power reductions because of the suspected fuel leak.	SCR-M-3	
0605	00:05	Control Room indications show increased drywell floor drain sump leakage.		

Clock Time	Scenario Time	Event/Action	Message	Command
0615	00:15	The floor drain pumping alarm is received on the Control Room panel. Operators may wait until floor drain pump stops before implementing procedure on, "Drywell Floor Drain Sump Surveillance."		
0620	00:20	Operators checking the drywell sump integrators and completing the procedure will find that the drywell floor drain leakage has increased to approximately 6 gpm.		
0630	00:30	The Shift Supervisor should declare an UNUSUAL EVENT based upon the following EAL: AP-3125, "COOLANT INVENTORY - Reactor coolant temperature above 212°F and unidentified sump leakage greater than 5 gpm." The SS/PED should initiate Procedure OP-3500, Unusual Event and refer to Appendix I, the SS/PED checklist. The plant is in 24-hour Limiting Condition of Operation (LCO). Operators may dispatch other plant personnel (auxiliary operators or security force) to perform plant		

Clock Time	Scenario Time	Event/Action	Message	Command
0630 (Cont'd)	00:30	inspections/tours associated with the drywell leakage and other plant activities.		
		FOR EXERCISE PURPOSES, EARLY IN-STATION ACTIONS WILL BE SIMULATED AND PERFORMED BY CONTROLLERS.		SCR-C-2
		The SS/PED may call Reactor Engineer at home (simulated) to verify rate at which power would be decreased.		
		Operators may begin a controlled power reduction, a controlled plant shutdown, or a manual scram. A MANUAL SCRAM WILL BE CONTROLLED AT THIS TIME.		SCR-C-3
		Load Dispatcher will be informed of the change in reactor power.		
		The SS/PED should announce the Unusual Event over the Plant Paging System. This activity will be performed by players in the Simulator CR, and simultaneously performed by a Controller directed member of the operating shift crew in the actual Control Room.		

Clock Time	Scenario Time	Event/Action	Message	Command
0630 (Cold)	00:30	The SS/PED should notify Vermont, New Hampshire, and Massachusetts State Police Agencies using the Nuclear Alert System (orange phone) and provide the appropriate message to each agency.		
		The SS/PED should notify the Security Shift Supervisor to start the emergency call-in method.		
		The SS/PED should notify the NRC on the red phone and maintain communications until relieved by the TSC.		
		The Security Shift Supervisor should notify New England Hydro Power Station of the Unusual Event. THIS CALL WILL BE SIMULATED.		SEC-C-1
		The Primary and Secondary Duty and Call Officers (DCOs) should report to the plant after notification of the Unusual Event Status.		
		The DCOs should contact the SS/PED to be advised of the situation. Responsibility for TSC and		

Clock Time	Scenario Time	Event/Action	Message	Command
0630 (Cont'd)	00:30	EOF Coordinator assignments would be discussed, as appropriate. The TSC Coordinator should assume the overall supervision and coordination of the on-site emergency response activities. This will include escalating the emergency classification as conditions warrant. Activation of the Technical Support Center (TSC) is optional at the Unusual Event.		
0645	00:45	IF AN UNUSUAL EVENT HAS NOT BEEN DECLARED BY THE SS/PED, HE WILL BE DIRECTED TO DO SO AT THIS TIME.		SCR-C-4
0700	01:00	The SS/PED may request RHR chemistry sample and a drywell air sample be taken for shutdown cooling.	SCR-M-4	
0745	01:45	Failure of the main turbine Mechanical Pressure Regulator (MPR) occurs. This causes the turbine bypass valves to open fully which rapidly increases vessel steam flow.		

Clock Time	Scenario Time	Event/Action	Message	Command
0745 (Cont'd)	01:45	With the high steam outflow, the reactor vessel pressure decreases which results in a reactor vessel water level swell. The reactor vessel water level swell reaches the high water level setpoint. The turbine trips on high reactor level, causing the reactor to scram. The feed pumps, HPCI, and RCIC also trip. Operators will initiate SCRAM procedure. Reactor low water level will initiate Group 2, 3, 4, and 5 isolation. At this time, additional fuel cladding perforations occur due to the pressure transient and thermal stress.		
0800	02:00	The SS/PED should initiate notifications concerning the reactor scram and plant conditions.		

Clock Time	Scenario Time	Event/Action	Message	Command
0800 (Cont'd)	02:00	An area radiation monitor annunciator alarm is received on the Control Room panel. The containment gas particulate monitors are indicating increased radioactivity in the drywell. The SS/PED may evaluate EALs on radiological condition due to some higher radiation monitor readings and more potential fuel perforations.		
0815	0?:15	The Control Room personnel shou'd have reactor pressure under control and will be working to stabilize all plant conditions. The SS/PED may request additional chemistry drywell samples. Control Room Personnel may send an AO or request I&C to investigate the MPR failure. The SS/PED may consider activation of TSC and OSC to support necessary in-plant actions.	OSC-M-2	

Clock Time	Scenario Time	Event/Action	Message	Command
0830	02:30	The torus catwalk area radiation monitor is alarming. The SS/PED may evacuate the Reactor Building. By this time, the gas/particulate monitors are also alarming and the containment high-range monitors are slightly elevated.		
0845	02:45	Chemistry samples have been analyzed and indicate high drywell activity (if requested). The torus catwalk area radiation monitor is off-scale high.		
0900	03:00	The SS/PED or TSC Coordinator should declare an ALERT based upon the following EAL: AP-3125, "RADIOLOGICAL CONDITIONS - Unexpected area radiation levels 1,000 times normal which could require off-site impact assessment." The SS/PED directs the operations staff to initiate Procedure OP-3501, "Alert."		

Clock Time	Scenario Time	Event/Action	Message	Command
0900 (Cont'd)	03:00	An Alert announcement should be made over the plant page instructing emergency personnel to report to their assigned emergency response facilities, and other personnel, contractors, and visitors return to the Governor Hunt House Information Center and wait for further information. At this time, the Technical Support Center (TSC), Operations Support Center (OSC), and the Emergency Operations Facility/ Recovery Center (EOF/RC) should be activated and staffed. The SS/PED should notify the Vermont, New Hampshire, and Massachusetts State Police Agencies of the escalation to the Alert emergency classification. The NRC should be notified of the escalation to the Alert. The Security Shift Supervisor should initiate the emergency call-in method for the Alert classification.		

Clock Time	Scenario Time	Event/Action	Message	Command
0900 (Cont'd)	03:00	The Security Shift Supervisor should notify Yankee Nuclear Services Division (YNSD) Security and activate YNSD personnel group paging system. Upon YNSD notification, the Engineering Support Center (ESC) is activated. The Security Shift Supervisor should notify the New England Hydro Power Station in Vernon of the escalation to the Alert status. This call will be simulated. The TSC Coordinator should notify REMVEC of the Alert status and plant conditions.		
0905	03:05	The Security Shift Supervisor should ensure that an accountability of personnel has been completed in accordance with procedures SP-0906, "Emergency Procedures" and OP-3524, "Emergency Actions to Ensure Accountability and Security Response."		

Clock Time	Scenario Time	Event/Action	Message	Command
0905 (Cont'd)	03:05	The TSC Coordinator should respond, activate, and staff the TSC in accordance with Appendix III of OP-3501, "Alert."		
		TSC staff representing the following departments should assemble at the TSC following the declaration of an Alert:		
		1. Instrument and Control Supervisor		
		2. Radiation Protection Supervisor or designated alternate		
		3. Reactor and Computer Supervisor		
		4. Operations Supervisor		
		5. Maintenance Supervisor		
		6. Engineering Support Supervisor		
		7. GE Resident Engineer (as necessary)		

Clock Time	Scenario Time	Event/Action	Message	Command
0905 (Cont'd)	03:05	8. Plant Services Supervisor		
		9. Other staff personnel to fulfill the functions of the TSC (i.e., Status Board Keepers, Communicators, Switchboard Operators, etc.).		
0910	03:10	The Emergency Operations Facility (EOF) Coordinator should activate and staff the EOF/RC in accordance with Appendix IV of OP-3501, "Alert."		
		The emergency response staff that reports to the EOF/RC includes the following:		
		1. Site Recovery Manager and designated corporate staff		
		2. EOF Coordinator		
		3. Purchasing Supervisor		
		4. Public Information Liaison		
		5. Additional trained plant staff members to assume the following tag board assignments:		

Clock Time	Scenario Time	Event/Action	Message	Command
0910 (Cont'd)	03:10	- EOF Coordinator's Assistant		
		- Radiological Assistant		
		- Manpower and Planning Assistant		
		- Communications Assistant		
		- Radiological Coordinator		
		- Personnel and Equipment Monitoring Team		

6. Corporate Security Force

The Operations Support Center (OSC) Coordinator (assigned by the TSC Coordinator) should activate and staff the OSC in accordance with Appendix VII of OP-3501, "Alert."

The plant staff that reports to the OSC includes the following:

1. Radiation Protection and Chemistry Assistants and Technicians

Clock Time	Scenario Time	Event/Action	Message	Command
0910 (Cont'd)	03:10	2. Control Instrument Specialist		
		3. Maintenance Staff		
		4. Status Board Caretaker		
		5. Other personnel as required.		
		The Site Recovery Manager (SRM) and staff should report to the EOF/RC and implement the procedural steps listed in Appendix VIII of OP-3501, "Alert."		
		Chemistry/Health Physics Technicians from the OSC may be dispatched to perform dose rate radiation surveys, air sampling, and contamination surveys of the plant.		
0920	03:20	IF AN ALERT HAS NOT BEEN DECLARED BY THE SS/PED, HE WILL BE DIRECTED TO DO SO AT THIS TIME.		SCR-C-5
1000	04:00	The Reactor Building vent exhaust monitor has been increasing and may be exceeding 140 mR/hr, from shine.		

Clock Time	Scenario Time	Event/Action	Message	Command
1000 (Cont'd)	04:00	The SRM or TSC Coordinator may declare a SITE AREA EMERGENCY based upon the following EAL: AP-3125, "FUEL DAMAGE - Reactor Building ventilation radiation monitor reading greater than 140 mR/hr."		
1015	04:15	A significant packing leak from a valve located in the drywell occurs (simulator operator inserts casualty).		
		A high drywell pressure alarm is received which initiates a Primary Containment Isolation System (PCIS) of Groups 2, 3, and 4.		
		The B diesel generator did not start as a result of the high drywell pressure signal due to a clogged starting air filter.		
		The containment high-range radiation monitors have increased to 1,500 R/hr. Annunciator high area radiation monitor indication in Control Room.		
		The D RHR pump of the ECCS did not start as a result of the high drywell pressure signal due to a 4 kV breaker problem.		

Clock Time	Scenario Time	Event/Action	Message	Command
1015 (Cont'd)	04:15	The Control Room Personnel should have notified the TSC. The TSC Coordinator should send an AO to investigate the pump problem.	OSC-M-3	
1030	04:30	The SRM should declare a SITE AREA EMERGENCY based upon the following EAL: AP-3125, "FUEL DAMAGE - Containment radiation monitors reading greater than 1,000 R/hr." If present, the SRM should inform the State representatives of Vermont, New Hampshire, and Massachusetts located at the EOF/RC and contact each State's EOCs via the Nuclear Alert System to inform them of the escalation to the Site Area Emergency. The SS/PED will also be directed to make the appropriate plant announcement concerning the escalation to the Site Area Emergency. Upgraded notifications should also be made to YNSD and the NRC.		

Clock Time	Scenario Time	Event/Action	Message	Command
1030 (Cont'd)	04:30	The Control Room personnel should have notified the TSC of problems with the B diesel generator. The TSC Coordinator should send a maintenance person to investigate the diesel generator problem. On-site assistance teams, under TSC Coordinator's direction, should electrically backseat the appropriate valves in accordance with the High Drywell Pressure Procedure, OT 3111.	OSC-M-4A, 4B	
1045	04:45	IF A SITE AREA EMERGENCY HAS NOT BEEN DECLARED BY THE SRM, HE WILL BE DIRECTED TO DO SO AT THIS TIME.		EOF-C-1
		On-site assistance team reporting to Diesel Generator Room will be able to troubleshoot, discuss problem, and discuss repair method for replacement of the air filter.	OSC-M-5	
1105	05:05	IF NOT ALREADY DONE, THE TSC COORDINATOR WILL BE DIRECTED TO DISPATCH ON-SITE ASSISTANCE TEAMS TO B DIESEL GENERATOR, D RHR PUMP, AND 4 KV PUMP BREAKER IN SWITCHGEAR ROOM.		TSC-C-1 TSC-C-2A TSC-C-2B

Clock Time	Scenario Time	Event/Action	Message	Command
1115	05:15	On-Site assistance team reports to Switchgear Room. Equipment mockup of a 4 kV breaker will be available for plant personnel to work on and perform the necessary repairs.	OSC-M-6	
		The ESC should be assisting at this time in technical problem solving. Also, the ESC meteorologist should be providing a specialized weather forecast.	ESC-M-1	
		IF NOT ALREADY DONE, THE TSC COORDINATOR WILL BE DIRECTED TO IMPLEMENT THE STEP IN HIGH DRYWELL PRESSURE PROCEDURE CALLING FOR BACKSEATING VALVES.		TSC-C-3
1130	05:30	The Control Room personnel will be trying to control drywell pressure. The packing leak will remain a function of Reactor Coolant System pressure until either the correct drywell valve is backseated or pressure is drastically reduced.		

Clock Time	Scenario Time	Event/Action	Message	Command
1200*	06:00	After replacement of air filter on B diesel generator and initiation of post maintenance operability test, the diesel is declared operable.		
1215	06:15	The EOF Dose Assessment Personnel should be doing radiological off-site consequence assessments, based upon potential containment failure. A weather forecast is available.	EOF-M-1	
		The on-site assistance teams should be in the process of electrically backseating the drywell valves.		
1300	07:00	The ESC has reviewed the latest NWS forecast and has updated meteorological information for the site.	ESC-M-2	
		An updated weather forecast is available from NWS.	EOF-M-2	

* NOTE: Due to the interactive nature of the exercise, the occurrence and duration of the event is approximate.

Clock Time	Scenario Time	Event/Action	Message	Command
1335*	07:35	The affected RHR pump has been tested and declared operable.		
		REQUEST A WEATHER FORECAST UPDATE FROM ESC AT THIS TIME.		EOF-C-2
1345*	07:45	The faulty valve has been successfully backseated and the leakage into the drywell has been stopped.		
1400	08:00	Control Room indications show that plant conditions are stabilizing and drywell pressure and temperature are decreasing.		
1415	08:15	The exercise can be terminated at this time.		

* NOTE: Due to the interactive nature of the exercise, the occurrence and duration of the event is approximate.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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6.0 EXERCISE MESSAGES

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

6.1 COMMAND CARDS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-1
TO:	Shift Supervisor	CLOCK TIME:	Prior to 0600
LOCATION:	Simulator Control Room	SCENARIO TIME:	0 minute

PARTICIPANT MESSAGE
THIS IS A DRILL

Communications systems that are available in the Control Room have been duplicated in the Simulator Control Room Area EXCEPT for Gaitronics and the plant evacuation alarm.

Please use the Gaitronics/Plant Evacuation Alarm in the Simulator Control Room to complete the required PA announcements. An Exercise Controller will then direct a member of the shift operating crew at the plant to repeat the announcements from the Main Control Room.

VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-2
TO:	Shift Supervisor	CLOCK TIME:	0630
LOCATION:	Simulator Control Room	SCENARIO TIME:	30 minutes

PARTICIPANT MESSAGE
THIS IS A DRILL

Early in-station actions will be simulated and information requested at this time will be provided by controllers.

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SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-3
TO:	Shift Supervisor	CLOCK TIME:	0630 or when needed
LOCATION:	Simulator Control Room	SCENARIO TIME:	30 minutes

PARTICIPANT MESSAGE
THIS IS A DRILL

FOR EXERCISE PURPOSES, DO NOT MANUALLY SCRAM THE REACTOR AT THIS TIME.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO COMMAND CARD

FROM:	Security Controller	COMMAND NO.:	SEC-C-1
TO:	Security Supervisor	CLOCK TIME:	0630 or when needed
LOCATION:	Security Gatehouse	SCENARIO TIME:	30 minutes

PARTICIPANT MESSAGE
THIS IS A DRILL

FOR EXERCISE PURPOSES, communications with New England Hydro Power Station in Vernon will be simulated.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-4
TO:	Shift Supervisor	CLOCK TIME:	0645
LOCATION:	Simulator Control Room	SCENARIO TIME:	45 minutes

PARTICIPANT MESSAGE
THIS IS A DRILL

DECLARE AN UNUSUAL EVENT BASED UPON AP-3125, COOLANT INVENTORY, DUE TO REACTOR COOLANT TEMPERATURE ABOVE 212°F AND UNIDENTIFIED SUMP LEAKAGE GREATER THAN 5 GPM.

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-5
TO:	Shift Supervisor/Plant Emergency Director	CLOCK TIME:	0920
LOCATION:	Simulator Control Room	SCENARIO TIME:	3:20

PARTICIPANT MESSAGE
THIS IS A DRILL

DECLARE AN ALERT BASED UPON AP-3125, RADIOLOGICAL CONDITIONS, DUE TO UNEXPECTED AREA RADIATION LEVELS 1,000 TIMES NORMAL WHICH COULD REQUIRE OFF-SITE IMPACT ASSESSMENT.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO COMMAND CARD

FROM:	EOF/RC Controller	COMMAND NO.:	EOF-C-1
TO:	Site Recovery Manager	CLOCK TIME:	1045
LOCATION:	EOF/RC	SCENARIO TIME:	04:45

PARTICIPANT MESSAGE
THIS IS A DRILL

DECLARE A SITE AREA EMERGENCY BASED UPON AP-3125, FUEL DAMAGE, DUE TO CONTAINMENT RADIATION MONITORS READING GREATER THAN 1,000 R/HR.

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1988

SCENARIO COMMAND CARD

FROM:	TSC Controller	COMMAND NO.:	TSC-C-1
TO:	TSC Coordinator	CLOCK TIME:	1105
LOCATION:	TSC	SCENARIO TIME:	05:05

PARTICIPANT MESSAGE
THIS IS A DRILL

The B diesel generator did not start as a result of the high drywell pressure signal. Investigate the problem!

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO COMMAND CARD

FROM:	TSC Controller	COMMAND NO.:	TSC-C-2A
TO:	TSC Coordinator	CLOCK TIME:	1105
LOCATION:	TSC	SCENARIO TIME:	05:05

PARTICIPANT MESSAGE
THIS IS A DRILL

The D-RHR pump of the ECCS did not start with the high drywell pressure signal. Investigate the problem!

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPARE NESS EXERCISE
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SCENARIO COMMAND CARD

FROM:	TSC Controller	COMMAND NO.:	TSC-C-2B
TO:	TSC Coordinator	CLOCK TIME:	1105 or as necessary
LOCATION:	TSC	SCENARIO TIME:	05:05

PARTICIPANT MESSAGE
THIS IS A DRILL

Results of visual inspection of the affected pump (D-RHR pump) appear normal. Investigate the 4 kV breaker in the Switchgear Room.

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO COMMAND CARD

FROM:	TSC Controller	COMMAND NO.:	TSC-C-3
TO:	TSC Coordinator	CLOCK TIME:	1115
LOCATION:	TSC	SCENARIO TIME:	05:15

PARTICIPANT MESSAGE
THIS IS A DRILL

Implement Procedure OT-3111, "High Drywell Pressure," by coordinating the electrical backseat of the appropriate valves.

VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO COMMAND CARD

FROM:	EOF/RC Controller	COMMAND NO.:	EOF-C-2
TO:	Radiological Assistant	CLOCK TIME:	1335
LOCATION:	EOF/RA-Dose Assessment Area	SCENARIO TIME:	07:35

PARTICIPANT MESSAGE
THIS IS A DRILL

REQUEST A WEATHER FORECAST FROM ESC AT THIS TIME.

VERMONT YANKEE NUCLEAR POWER STATION

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1988

6.2 MESSAGE CARDS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	Simulator CR Controller	MESSAGE NO.:	SCR-M-1
TO:	Shift Supervisor	CLOCK TIME:	Prior to 0600
LOCATION:	Simulator Control Room	SCENARIO TIME:	00:00

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

6.2 INITIAL CONDITIONS

(This information will be provided to the players at the start of the exercise).

1. The Reactor is now at approximately 90% rated power. The reactor has been operating steady state for the past eight months with no recent shutdowns.

2. Power was reduced for a rod sequence exchange which has been completed.

3. The SJAE discharge release rate has been trending up for the past month. Last SJAE discharge release rate for previous day, 25,000 uCi/sec. The most recent sample taken (0750, yesterday) of the Reactor Coolant System total iodine concentration was 2.0E-3 uCi/ml.

4. Drywell floor drain sump flow as of 0000 midnight was 2.0 gpm and has slowly been increasing. Drywell equipment drain sump flow as of 0000, midnight was 1.0 gpm and is steady.

5. Shift order instructions:

   a. Closely monitor drywell leakage. Surveillance should be completed as soon as practical.

b. Consult with the Reactor Engineering Supervisor for any control rod pattern changes or reactor power reductions, because of suspected fuel leak.

c. Power reduction rate of <1%. CTP/minute is recommended, if necessary.

6. All other power generating equipment is operating, and all safety system equipment is operable.

7. The following on-site meteorological conditions exist at 0600:

Wind Speed, mph (upper/lower)	9.1/5.2
Wind Direction, degrees (upper/lower)	359/356
Delta Temperature, ^{o}F (upper/lower)	-1.1/-0.8
Ambient Temperature, ^{o}F	60.3
Precipitation, inches	0.0

8. Synoptic (regional) meteorological conditions:

Mostly sunny with northerly winds today. High temperatures in the mid 70's, with a slight chance of some afternoon showers.

As a strong high pressure system moves further east, strong winds will give way to light variable conditions.

TABLE 6.2-1

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	159 inches
Reactor Pressure	992 psig
Reactor Power - APRM (average)	88%
Core Plate Differential Pressure	17.7 psid
Total Core Flow	44 mil lbs/hr
Main Steam Line Flow - Total	5.6 mil lbs/hr
Main Steam Line Radiation	150 mR/hr
Condenser Hotwell Level	52%
Condenser Vacuum	2.2 inches Hg
Condensate Storage Tank Level	65%
Reactor Coolant Temperature	525°F
Recirc Drive Flow (average)	27,000 gpm
Feedwater Flow	5.5 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches H_2O
Drywell Pressure	1.83 psig
Drywell Temperature	136°F
Torus Water Level	1.16 ft
Torus Temperature	88°F
Drywell/Torus O_2 Concentration	2.75%
HR Containment Monitors	2.0 R/hr
Containment Gas/Part	2,000/1,500 cpm
Reactor Building Vent Monitors Gas/Part	150/1,500 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	140 mR/hr
Stack Gas I/II	20/20 cpm
High Range Noble Gas	<0.1 mR/hr

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1988

SCENARIO MESSAGE CARDS

FROM:	Control Room Controller	MESSAGE NO.:	CR-M-1A
TO:	Control Room Communicator	CLOCK TIME:	Prior to 0600
LOCATION:	Control Room	SCENARIO TIME:	00:00

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

6.2 INITIAL CONDITIONS

(This information will be pro ided to the playcrs at the start of the exercise).

1. The Reactor is now at approximately 90% rated power. The reactor has been operating steady state for the past eight months with no recent shutdowns.

2. Power was reduced for a rod sequence exchange which has been completed.

3. The SJAE discharge release rate has been trending up for the past month. Last SJAE discharge release rate for previous day, 25,000 uCi/sec. The most recent sample taken (0750, yesterday) of the Reactor Coolant System total iodine concentration was 2.0E-3 uCi/ml.

4. Drywell floor drain sump flow as of 0000 midnight was 2.0 gpm and has slowly been increasing. Drywell equipment drain sump flow as of 0000, midnight was 1.0 gpm and is steady.

5. Shift order instructions:

   a. Closely monitor drywell leakage. Surveillance should be completed as soon as practical.

b. Consult with the Reactor Engineering Supervisor for any control rod pattern changes or reactor power reductions, because of suspected fuel leak.

c. Power reduction rate of <1%. CTP/minute is recommended, if necessary.

6. All other power generating equipment is operating, and all safety system equipment is operable.

7. The following on-site meteorological conditions exist at 0600:

Wind Speed, mph (upper/lower)	9.1/5.2
Wind Direction, degrees (upper/lower)	359/356
Delta Temperature, ^{o}F (upper/lower)	-1.1/-0.8
Ambient Temperature, ^{o}F	60.3
Precipitation, inches	0.0

8. Synoptic (regional) meteorological conditions:

Mostly sunny with northerly winds today. High temperatures in the mid 70's, with a slight chance of some afternoon showers.

As a strong high pressure system moves further east, strong winds will give way to light variable conditions.

TABLE 6.2-1

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	159 inches
Reactor Pressure	992 psig
Reactor Power - APRM (average)	88%
Core Plate Differential Pressure	17.7 psid
Total Core Flow	44 mil lbs/hr
Main Steam Line Flow - Total	5.6 mil lbs/hr
Main Steam Line Radiation	150 mR/hr
Condenser Hotwell Level	52%
Condenser Vacuum	2.2 inches Hg
Condensate Storage Tank Level	65%
Reactor Coolant Temperature	525°F
Recirc Drive Flow (average)	27,000 gpm
Feedwater Flow	5.5 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches H_2O
Drywell Pressure	1.83 psig
Drywell Temperature	136°F
Torus Water Level	1.16 ft
Torus Temperature	88°F
Drywell/Torus O_2 Concentration	2.75%
HR Containment Monitors	2.0 R/hr
Containment Gas/Part	2,000/1,500 cpm
Reactor Building Vent Monitors Gas/Part	150/1,500 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	140 mR/hr
Stack Gas I/II	20/20 cpm
High Range Noble Gas	<0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	TSC Controller	MESSAGE NO.:	TSC-M-1
TO:	TSC Coordinator	CLOCK TIME:	Upon TSC Activation
LOCATION:	TSC	SCENARIO TIME:	

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

6.2 INITIAL CONDITIONS

(This information will be provided to the players at the start of the exercise).

1. The Reactor is now at approximately 90% rated power. The reactor has been operating steady state for the past eight months with no recent shutdowns.

2. Power was reduced for a rod sequence exchange which has been completed.

3. The SJAE discharge release rate has been trending up for the past month. Last SJAE discharge release rate for previous day, 25,000 uCi/sec. The most recent sample taken (0750, yesterday) of the Reactor Coolant System total iodine concentration was 2.0E-3 uCi/ml.

4. Drywell floor drain sump flow as of 0000 midnight was 2.0 gpm and has slowly been increasing. Drywell equipment drain sump flow as of 0000, midnight was 1.0 gpm and is steady.

5. Shift order instructions:

   a. Closely monitor drywell leakage. Surveillance should be completed as soon as practical.

b. Consult with the Reactor Engineering Supervisor for any control rod pattern changes or reactor power reductions, because of suspected fuel leak.

c. Power reduction rate of <1%. CTP/minute is recommended, if necessary.

6. All other power generating equipment is operating, and all safety system equipment is operable.

7. The following on-site meteorological conditions exist at 0600:

Wind Speed, mph (upper/lower)	9.1/5.2
Wind Direction, degrees (upper/lower)	359/356
Delta Temperature, ^{o}F (upper/lower)	-1.1/-0.8
Ambient Temperature, ^{o}F	60.3
Precipitation, inches	0.0

8. Synoptic (regional) meteorological conditions:

Mostly sunny with northerly winds today. High temperatures in the mid 70's, with a slight chance of some afternoon showers.

As a strong high pressure system moves further east, strong winds will give way to light variable conditions.

TABLE 6.2-1

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	159 inches
Reactor Pressure	992 psig
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Core Plate Differential Pressure	17.7 psid
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Main Steam Line Flow - Total	5.6 mil lbs/hr
Main Steam Line Radiation	150 mR/hr
Condenser Hotwell Level	52%
Condenser Vacuum	2.2 inches Hg
Condensate Storage Tank Level	65%
Reactor Coolant Temperature	525°F
Recirc Drive Flow (average)	27,000 gpm
Feedwater Flow	5.5 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches H_2O
Drywell Pressure	1.83 psig
Drywell Temperature	136°F
Torus Water Level	1.16 ft
Torus Temperature	88°F
Drywell/Torus O_2 Concentration	2.75%
HR Containment Monitors	2.0 R/hr
Containment Gas/Part	2,000/1,500 cpm
Reactor Building Vent Monitors Gas/Part	150/1,500 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	140 mR/hr
Stack Gas I/II	20/20 cpm
High Range Noble Gas	<0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	TSC Controller	MESSAGE NO.:	TSC-M-2A
TO:	TSC Coordinator	CLOCK TIME:	Upon Assignment of Data Recorder
LOCATION:	TSC	SCENARIO TIME:	

PARTICIPANT MESSAGE

THIS IS A DRILL

To obtain plant computer parameters that are normally available to TSC staff, use the Controller/Observer telephone in the Plant Computer Room to request the information from the Simulator Computer Room.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	TSC Controller	MESSAGE NO.:	TSC-M-2B
TO:	TSC Coordinator	CLOCK TIME:	Upon Assignment of Communicators
LOCATION:	TSC	SCENARIO TIME:	

PARTICIPANT MESSAGE

THIS IS A DRILL

After assigning your TSC Communicators to the Control Room, the prestaged TSC Communicators at the Simulator Control Room will be made available.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	OSC Controller	MESSAGE NO.:	OSC-M-1
TO:	OSC Coordinator	CLOCK TIME:	Upon OSC Activation
LOCATION:	OSC	SCENARIO TIME:	

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

6.2 INITIAL CONDITIONS

(This information will be provided to the players at the start of the exercise).

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2. Power was reduced for a rod sequence exchange which has been completed.

3. The SJAE discharge release rate has been trending up for the past month. Last SJAE discharge release rate for previous day, 25,000 uCi/sec. The most recent sample taken (0750, yesterday) of the Reactor Coolant System total iodine concentration was 2.0E-3 uCi/ml.

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5. Shift order instructions:

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b. Consult with the Reactor Engineering Supervisor for any control rod pattern changes or reactor power reductions, because of suspected fuel leak.

c. Power reduction rate of <1%. CTP/minute is recommended, if necessary.

6. All other power generating equipment is operating, and all safety system equipment is operable.

7. The following on-site meteorological conditions exist at 0600:

Wind Speed, mph (upper/lower)	9.1/5.2
Wind Direction, degrees (upper/lower)	359/356
Delta Temperature, ^{o}F (upper/lower)	-1.1/-0.8
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8. Synoptic (regional) meteorological conditions:

Mostly sunny with northerly winds today. High temperatures in the mid 70's, with a slight chance of some afternoon showers.

As a strong high pressure system moves further east, strong winds will give way to light variable conditions.

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Reactor Coolant Temperature	525°F
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Reactor Building Differential Pressure	-0.75 inches H_2O
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Stack Gas I/II	20/20 cpm
High Range Noble Gas	<0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	EOF/RC Controller	MESSAGE NO.:	EOF/RC-M-1
TO:	Site Recovery Manager/ EOF Coordinator	CLOCK TIME:	Upon Activation
LOCATION:	EOF/RC	SCENARIO TIME:	

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

6.2 INITIAL CONDITIONS

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b. Consult with the Reactor Engineering Supervisor for any control rod pattern changes or reactor power reductions, because of suspected fuel leak.

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6. All other power generating equipment is operating, and all safety system equipment is operable.

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Wind Speed, mph (upper/lower)	9.1/5.2
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VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	ESC Controller	MESSAGE NO.:	ESC-M-1
TO:	ESC Director	CLOCK TIME:	Upon Activation
LOCATION:	Engineering Support Center	SCENARIO TIME:	_____

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

6.2 INITIAL CONDITIONS

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VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	EOF State Observer	MESSAGE NO.:	STATE-M-.
TO:	State Representative	CLOCK TIME:	Upon Arrival at EOF/RC
LOCATION:	EOF/RC	SCENARIO TIME:	

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

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VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	Simulator Controller	MESSAGE NO.:	SCR-M-2
TO:	Operator	CLOCK TIME:	Completion of Initial Briefing
LOCATION:	Simulator Control Room	SCENARIO TIME:	Prior to 0600

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial drywell leakage conditions, see attached pages.

ATTACHMENT 1

DATE: _____

DRYWELL FLOOR DRAIN SUMP SURVEILLANCE

	0000 - 0800		0800 - 1600		1600 - 2400	
	INTEGRATOR	TIME	INTEGRATOR	TIME	INTEGRATOR	TIME
Current						
Previous						
Change						
Rate	gpm		gpm		gpm	

DRYWELL EQUIPMENT DRAIN SUMP SURVEILLANCE

	0000 - 0800		0800 - 1600		1600 - 2400	
	INTEGRATOR	TIME	INTEGRATOR	TIME	INTEGRATOR	TIME
Current						
Previous						
Change						
Rate	gpm		gpm		gpm	

RO			
SS			

ACTIONS:

1. Notify the Shift Supervisor of leakage from either sump increases by 2 gpm above normal in any 8 hour period. Shift Supervisor take action to determine cause.

2. Initiate an orderly shutdown and be in the cold shutdown condition within 24 hours if either of the following occur:

   a. Drywell floor drain leakage exceeds 5gpm.

   b. Total drywell sump leakage exceeds 25 gpm.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	Simulator CR Controller	MESSAGE NO.:	SCR-M-3
TO:	Shift Supervisor	CLOCK TIME:	Prior to 0600
LOCATION:	Simulator	SCENARIO TIME:	00:00

PARTICIPANT MESSAGE

THIS IS A DRILL

Please be advised that Reactor Engineering is concerned with fuel integrity. They suspect a fuel leak. The operation crews have been requested to notify Reactor Engineering before performing any control rod pattern changes or reactor power reductions.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	Simulator CR Controller	MESSAGE NO.:	SCR-M-4
TO:	SS/Plant Emergency Director	CLOCK TIME:	Upon Request of Chemistry Air Sample Approximately 0700
LOCATION:	Simulator Control Room	SCENARIO TIME:	1:00

PARTICIPANT MESSAGE

THIS IS A DRILL

A routine RCS chemistry sample and a RHR System chemistry sample can be taken and a gross analysis completed in approximately one hour and two hours, respectively.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	OSC Team Controller	MESSAGE NO.:	OSC-M-2
TO:	AO or I&C Investigating MPR Failure	CLOCK TIME:	0815 or as needed
LOCATION:	Turbine Building	SCENARIO TIME:	02:15

PARTICIPANT MESSAGE

THIS IS A DRILL

The technician performing troubleshooting:

- Physical verification of the front standard reveals that the rotating bushing is not moving.
- Actual research of spare parts for a replacement is expected.
- All paper work should be completed, not simulated!

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	OSC Team Controller	MESSAGE NO.:	OSC-M-3
TO:	AO or On-Site Assistance Team	CLOCK TIME:	1015 or as needed
LOCATION:	RHR Pump Corner Room	SCENARIO TIME:	04:15

PARTICIPANT MESSAGE

THIS IS A DRILL

The AO checks/inspects the affected RHR pump. Nothing unusual is observed.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	OSC Team Controller	MESSAGE NO.:	OSC-M-4A
TO:	AO or On-Site Assistance Team	CLOCK TIME:	1030
LOCATION:	Diesel Generator Room	SCENARIO TIME:	04:30

PARTICIPANT MESSAGE

THIS IS A DRILL

The diesel generator is turning over very slowly.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	OSC Team Controller	MESSAGE NO.:	OSC-M-4B
TO:	AO or Mechanic	CLOCK TIME:	1030
LOCATION:	Diesel Generator Room	SCENARIO TIME:	04:30

PARTICIPANT MESSAGE

THIS IS A DRILL

Visual inspection of diesel generator as observed.

NOTE: Differential pressure of 120 pounds of the P1-3-1B gauge monitoring Dallinger air filter.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	OSC Team Controller	MESSAGE NO.:	OSC-M-5
TO:	On-Site Assistance Team	CLOCK TIME:	1045 or as Needed
LOCATION:	Diesel Generator Room	SCENARIO TIME:	04:45

PARTICIPANT MESSAGE

THIS IS A DRILL

Get the appropriate tools from your shop and parts from stores, etc.

Discuss the repair effort with Controller.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	OSC Team Controller	MESSAGE NO.:	OSC-M-6
TO:	On-Site Assistance Team (DRHR Pump)	CLOCK TIME:	1115
LOCATION:	Switchgear Room	SCENARIO TIME:	05:15

PARTICIPANT MESSAGE

THIS IS A DRILL

The breaker repair team:

- Use 4 kV magna blast breaker, located in the southeast corner, marked: "FOR TRAINING ONLY."

The breaker will be plugged into the breaker test source.

- Troubleshoot and report findings.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	ESC Controller	MESSAGE NO.:	ESC-M-1
TO:	ESC Meteorologist	CLOCK TIME:	1115 or As Requested
LOCATION:	ESC Yankee Atomic Electric Co.	SCENARIO TIME:	05:15

PARTICIPANT MESSAGE

THIS IS A DRILL

For the data form, see attached page.

WEATHER FORECAST FOR SITE: VERMONT YANKEE

Date of Forecast: _____
Time of Forecast: 1000

Current Site Meteorology (as of 0930):

	Wind Speed	Wind Direction	Delta-Temperature	Stability	Precipitation
Lower	10.7 mph	360 deg from	-1.8 °F	A	0.00 in/15 min
Upper	14.6 mph	3 deg from	-2.2 °F	C	

Forecast Site Meteorology:

	Time		Wind Speed	Wind Direction	Delta-Temperature	Stability	Precipitation
A.	1000-1100	Lower	9 mph	360 deg from	-- °F	A	0.00in/15 min
		Upper	14 mph	360 deg from	-- °F	C	
B.	1100-1200	Lower	9 mph	360 deg from	-- °F	A	0.00in/15 min
		Upper	14 mph	360 deg from	-- °F	C	
C.	1200-1300	Lower	7 mph	25 deg from	-- °F	A	0.01in/15 min
		Upper	10 mph	25 deg from	-- °F	C	

National Weather Service Forecast for site region:

Mostly sunny with northerly winds today. High temperatures in the mid 70's, with a slight chance for an afternoon shower.

As a strong high pressure moves further east, strong winds will give way to light variable conditions.

Special Weather Statements:

Winds predominantly from the north. Very unstable conditions due to thermal buoyancy close to surface. Ground level release will be well mixed. Elevated releases may be fumigated down to ground. Chance for an afternoon light shower.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	EOF/RA Controller	MESSAGE NO.:	EOF-M-1
TO:	Radiological Assistant	CLOCK TIME:	As Requested (Approximately 1215)
LOCATION:	EOF/Dose Assessment Area	SCENARIO TIME:	06:15

PARTICIPANT MESSAGE

THIS IS A DRILL

06:00-12:00 - General Area Forecast

Mostly sunny with northerly winds today. High temperatures in the mid 70's, with a slight chance for an afternoon shower.

As a strong high pressure moves further east, strong winds will give way to light variable conditions.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	ESC Controller	MESSAGE NO.:	ESC-M-2
TO:	ESC Meteorologist	CLOCK TIME:	1300 or As Requested
LOCATION:	ESC Yankee Atomic Electric Co.	SCENARIO TIME:	07:00

PARTICIPANT MESSAGE

THIS IS A DRILL

For the data form, see attached page.

WEATHER FORECAST FOR SITE: VERMONT YANKEE

Date of Forecast: _____
Time of Forecast: 1200

Current Site Meteorology (as of 1130):

	Wind Speed	Wind Direction	Delta-Temperature	Stability	Precipitation
Lower	7.0 mph	7 deg from	-2.1 °F	A	0.00 in/15 min
Upper	8.8 mph	9 deg from	-2.4 °F	C	

Forecast Site Meteorology:

	Time		Wind Speed	Wind Direction	Delta-Temperature	Stability	Precipitation
A.	1200	Lower	7 mph	20 deg from	-- °F	A	0.01in/15 min
	1300	Upper	9 mph	20 deg from	-- °F	A	
B.	1300	Lower	7 mph	25 deg from	-- °F	A	0.01in/15 min
	1400	Upper	9 mph	25 deg from	-- °F	A	
C.	1400	Lower	7 mph	25 deg from	-- °F	A	0.01in/15 min
	1500	Upper	9 mph	25 deg from	-- °F	A	

National Weather Service Forecast for site region:

Mostly sunny with northerly winds today. High temperatures in the mid 70's, with a slight chance for an afternoon shower.

As a strong high pressure moves further east, strong winds will give way to light variable conditions.

Special Weather Statements:

Winds shifting towards NNE, strong incoming solar radiation resulting in very unstable conditions near surface. Chance for a light shower.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

SCENARIO MESSAGE CARDS

FROM:	EOF/RA Controller	MESSAGE NO.:	EOF-M-2
TO:	Radiological Assistant	CLOCK TIME:	As Requested (Approximately 1300)
LOCATION:	EOF/Dose Assessment Area	SCENARIO TIME:	07:00

PARTICIPANT MESSAGE

THIS IS A DRILL

12:00-18:00 - General Area Forecast

Mostly clear this afternoon and tonight. Low temperature this evening in the high 50's, winds northerly 5-10 mph. Tomorrow sunny, clear, high near 80.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

7.0 STATION EVENT DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

7.1 EVENTS SUMMARY

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

7.1 EVENTS SUMMARY

The following information and supplementary material are provided for those observers having in-plant control assignments so as to further ensure the proper development of the scenario. The information provided in this section assumes that the "players," who are dispatched to perform repair, rescue, or other activities, will take certain actions in response to the scenario. The controller/observer must be cognizant of the actions of those players to which assignment is given and provide information regarding the results of the players actions as appropriate. The information provided in this section does not preclude the possibility that the observer will be required to provide additional information to the players.

Miniscenario	Approximate Time	Event	Location
7.2.1	0745	Plant Damage Assessment o Mechanical Pressure Regulator (MPR) Failure	Turbine Bldg.
7.2.2	1015	High Drywell Pressure Control o Electrically Backseat Drywell Valves	Reactor Bldg. Lower Level
7.2.3	1015	Plant Damage Assessment o RHR Pump Inspection and Breaker Repair	RHR Pump Corner Room and 4 kV Switchgear Room

7.1 EVENTS SUMMARY (Cont'd)

Miniscenario	Approximate Time	Event	Location
7.2.4	1015	Plant Damage Assessment o Diesel Generator B Investigation	Diesel Room

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

7.2 EVENT MINISCENARIOS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE

7.2.1 Miniscenario - Mechanical Pressure Regulator (MPR) Failure

I. General Description

The MPR fails downscale causing all of the bypass valves to ramp open. Reactor pressure drops, level swells and trips the feed pumps, HPCI, RCIC, and the turbine, resulting in a reactor scram.

II. Descriptions of Player Responses/Observations/Corrective Actions

The Control Room may send an AO or request I&C to investigate the problem with the MPR. The MPR valve is located in the Turbine Building on the main turbine front standard. The technicians will perform troubleshooting research to narrow down potential causes and make recommendations to department supervisors.

If actual physical verification of the front standard is performed and the rotating bushing is inspected, it will be found to be not moving. The technicians will then have to research spare parts for a replacement and perform the repairs (refer to Message Card OSC-M-2).

III. Event Closeout

After the technicians diagnose the problem, replace the rotating bushing and appropriate surveillance has been completed along with all paperwork has been completed, Control Room personnel will then be able to operate the turbine.

NOTE: If an investigation is initiated prior to TSC or OSC activation, a controller will simulate action in Message Card OSC-M-2.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE

7.2.2 Miniscenario - Electrically Backseat Drywell Valves (OT 3111)

I. General Description

At approximately 1015, significant packing leakage occurs. A high drywell pressure alarm is received, as a result of the high drywell pressure signal. An automatic actuation signal fails to start the affected RHR Pump and Emergency Diesel Generator B. The high drywell pressure will also cause primary containment isolation of Groups II, III, and IV. The drywell pressure response is indicative of a loss of coolant inside of primary containment.

II. Descriptions of Player Responses/Observations/Corrective Actions

Upon receipt of the high drywell pressure signal, Control Room personnel will verify the validity and implement the appropriate procedures including OT 3111, "High Drywell Pressure." Step 7 of the follow-up actions will require Control Room personnel, via the TSC/OSC, to have a team of maintenance electricians dispatched to electrically backseat the valves listed. Due to the increased area radiation level in the Reactor Building, a C/HP technician may be dispatched to ascertain radiological conditions in the areas of the MCCs that house the breakers for the valves specified in Step 7.

a. It is expected that the OSC team will enter the Reactor Building via the north Reactor Building entrance. The team will not actually electrically backseat the valves outlined; however, they should go to all the appropriate breaker locations and verbally describe all the actions that would be required to accomplish the requirements of OT 3111.

b. In addition, opposite MCC 89A, the limitorque test stand will be set up and functional. The repair team will demonstrate how they would electrically backseat the valve in an emergency situation.

c. Once the OSC team has completed the backseating, the simulator operator will stop the drywell leakage in containment.

III. Event Closeout

When the OSC team has backseated all the valves required and the simulator operator has stopped the leak, Control Room personnel will see drywell pressure, temperatures, and possibly radiation levels begin to trend downward.

The OSC observer should notify the OSC facility controller when the leaking valve, determined by the controller, has been backseated.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE

7.2.3 Miniscenario - RHR Pump Inspection and Breaker Repair

I. General Description

Upon receipt of the high drywell pressure signal, Control Room operators receive indication that the RHR pump has tripped (panel alarm and amber breaker light on the RHR pump). Any attempts to restart the affected pump are unsuccessful.

II. Descriptions of Player Responses/Observations/Corrective Actions

Since the simulator control panel shows indication that the RHR pump has tripped, an OSC team will probably be requested to investigate the RHR pump breaker located in the 4 kV Switchgear Room. In addition, an AO may be dispatched to the affected RHR pump Corner Room to perform a visual inspection of the affected pump. Since there are elevated radiation levels in the Reactor Building, a C/HP technician may be dispatched with the AO.

a. When the AO reaches the RHR pump Corner Room to perform a visual inspection, he finds nothing out of the ordinary (refer to Message Card OSC-M-3) and will report his findings to the OSC.

b. When the breaker repair team inspects the RHR pump breaker in the Switchgear Room, they will encounter the 4 kV magnablast breaker, located in the southeast corner, marked "FOR TRAINING ONLY." The breaker will be plugged into the breaker test source, its closing springs discharged, and its spring charging motor internally disabled. The breaker repair team will troubleshoot the charging circuit and report their findings (refer to Message Card OSC-M-6).

The team will probably be directed to obtain the needed parts from stores and effect the needed repairs. Approximately 1335, the OSC team should have repaired the failed motor and concluded that the RHR pump breaker has been repaired.

III. Event Closeout

When the TSC is informed of the completion of the repairs on the RHR pump breaker, they will relay this information to the Control Room. Operators in the Control Room may decide to start the RHR pump without further incident relative to the breaker closing circuit.

The OSC observer should notify the OSC facility controller as soon as practical after the pump breaker has been repaired.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE

7.2.4 Miniscenario - Diesel Generator B Investigation

I. General Description

When the drywell high pressure signal is received, Control Room operators receive indications that the B diesel generator failed to start as it should have. Any subsequent attempts to start the diesel will be unsuccessful.

II. Descriptions of Player Responses/Observations/Corrective Actions

The Control Room may request (via the OSC and/or TSC) that an AO or electrician be dispatched to the B Diesel Room to investigate the cause of the failure to start.

a. In addition to a visual inspection, the investigator may be requested to attempt to start the diesel locally. If at any time, he performs an action that would normally initiate a diesel start, he will be made aware that there seems to be no source of starting air (refer to Message Card OSC-M-4A and 4B).

b. When the AO reports his findings, which is a differential pressure of 120 pounds of the PI-3-1B gauge monitoring the Dollinger air filter, a team of maintenance mechanics may be dispatched to the B Diesel Room. They will ascertain the cause of the failure to start is a clogged filter in the air start line (refer to Message Card OSC-M-5). The mechanics will have to get the appropriate tools from their shop and parts from stores, etc., and complete the repair effort.

III. Event Closeout

After the mechanics fix the filter and report it, the simulator operator will remove the malfunction and make the B diesel operable. Control Room personnel will then be able to operate that diesel.

The OSC observer should notify the OSC facility controller as soon as practical after the filter has been fixed.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

8.0 OPERATIONAL DATA

NOTE: The operational data is highly dependent on operator actions taken in response to the conditions presented within the scenario. The data reflects plant conditions assuming certain basic operator response actions being taken. The operational data was taken from the plant simulator.

8.0 OPERATIONAL DATA

Item	Panel	Inst ID	Description	Units	Scenario Time (hr:min) / Clock Time (hr:min)								
					00:00 / 06:00	00:15 / 06:15	00:30 / 06:30	00:45 / 06:45	01:00 / 07:00	01:15 / 07:15	01:30 / 07:30	01:45 / 07:45	02:00 / 08:00
1	9-3	FT-23-108-1	HPCI Flow	kgpm	0	0	0	0	0	0	0	0	0
2	9-3	FI-10-139A	RHR A Flow	kgpm	0	0	0	0	0	0	6	6	6
3	9-3	FI-10-139B	RHR B Flow	kgpm	0	0	0	0	0	0	0	0	0
4	9-3	FI-10-50A	CS A Flow	kgpm	0	0	0	0	0	0	0	0	0
5	9-3	FI-10-50B	CS B Flow	kgpm	0	0	0	0	0	0	0	0	0
6	9-3	PI-16-19-12A/B	Drywell Pressure	psia	15	15	15	15	15	15	15	15	15
7	9-4	FI-13-91	RCIC Flow	gpm	0	0	0	0	0	0	0	0	0
8	9-4	FI-12-141A+B	RWCU Flow	gpm	120	120	120	120	120	120	120	120	120
9	9-4		DW Equip Sump Sum	gal	*	29	29	29	59	59	59	59	59
10	9-4		DW Floor Sump Sum	gal	*	32	32	65	65	98	98	65	65
11	9-4	2-165A/B	Rx Coolant Temp -	deg F	525	525	525	520	515	515	510	515	545
12	9-4	2-3-92A	Recirc A Drive Flow	kgpm	27	27	25.5	21	17	14	11.5	7	7.5
13	9-4	2-3-92B	Recirc B Drive Flow	kgpm	27	27	25.5	21	17	14	11.5	7	7.5
14	9-5	7-46A	APRM/IRM A	%	88	88	80	70	60	55	50	44	0
15	9-5	7-46B	APRM/IRM B	%	88	88	80	70	60	55	50	44	0
16	9-5	7-46C	APRM/IRM C	%	88	88	80	70	60	55	50	44	0
17	9-5	7-46D	APRM/IRM D	%	88	88	80	70	60	55	50	44	0
18	9-5	7-46E	APRM/IRM E	%	88	88	80	70	60	55	50	44	0
19	9-5	7-46F	APRM/IRM F	%	88	88	80	70	60	55	50	44	0
20	9-5	7-43A	SRM A	cps	3.4E+05	3.4E+05	3.4E+05	2.0E+05	1.0E+05	1.0E+05	8.0E+04	7.0E+04	1.2E+01
21	9-5	7-43B	SRM B	cps	3.4E+05	3.4E+05	3.4E+05	2.0E+05	1.0E+05	1.0E+05	8.0E+04	7.0E+04	1.2E+01
22	9-5	7-43C	SRM C	cps	3.4E+05	3.4E+05	3.4E+05	2.0E+05	1.0E+05	1.0E+05	8.0E+04	7.0E+04	1.2E+01
23	9-5	7-43D	SRM D	cps	3.4E+05	3.4E+05	3.4E+05	2.0E+05	1.0E+05	1.0E+05	8.0E+04	7.0E+04	1.2E+01
24	9-5	6-3-95	Core Flow	mlb/hr	44	44	41.5	34	28	25	22	18	5
25	9-5	6-3-95	Core DP	psid	17.7	17.7	16.6	12.3	9.4	8	6.9	6.5	3.3
26	9-5	FI-3-310	CRD Flow	gpm	47	47	47	47	47	47	47	47	24
27	9-5		CR Position	in/out	out	out	out	out	out	out	out	out	in
28	9-5	6-96	Feedwater Flow	mlb/hr	5.5	5.5	5	4.4	3.8	3.4	2.9	2.6	0
29	9-5	6-96	Narrow Range Level	inches	159	159	159	160	160	160	160	160	181
30	9-5	6-97	Main Steam Flow	mlb/hr	5.6	5.6	5.1	4.5	3.9	3.5	3	2.6	0
31	9-5	6-97	Wide Range Press.	psig	990	990	990	988	982	980	978	976	1000
32	9-5	6-98	Wide Range Level	inches	150	150	151	152	152	152	152	152	173
33	9-5	6-98	Narrow Range Press.	psig	992	992	980	972	962	956	950	950	1010
34	9-6	LI-107-5	CST Level	%	65	65	65	63	63	63	63	63	63
35	9-6	LI-111-1	Hotwell Level N	%	53	53	57	60	60	60	60	60	60
36	9-6	LI-111-2	Hotwell Level S	%	51	51	55	58	58	58	58	58	62
37	9-7	PI-101-20	Condenser Vacuum	in Hg	2.2	2.2	2.2	2.1	2.8	2.8	3	3.2	12
38	9-8		D/G A Bkr Light	gr/red	green	green	green	green	green	green	green	green	green
39	9-8		D/G B Bkr Light	gr/red	green	green	green	green	green	green	green	green	green
40	9-25	TIS-16-19-45	Torus Temp.	deg F	88	88	88	89	88	88	89	89	90
41	9-25	LI-46A/B	Torus Level	feet	1.16	1.16	1.16	1.16	1.16	1.16	1.15	1.15	0.97
42	9-25	TR-16-19-44	Torus Pressure	psia	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
43	9-25	TR-16-19-44	Drywell Pressure	psia	16	16	16	16	16	16	16	16	16
44	9-25	PR-1-156-3	DW/Torus DP	psid	1.83	1.83	1.83	1.83	1.83	1.83	1.79	1.79	1.79
45	9-25	TR-16-19-45	Drywell Temp.	deg F	136	136	136	136	136	136	136	136	136
46	9-25	PR-1-156-3	Drywell Pressure	psig	1.83	1.83	1.83	1.83	1.83	1.83	1.8	1.8	1.8
47	9-26	PI-1-125-3A/B	Rx Bldg DP	in H2O	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.7
48	9-26	FI-1-125-1A+B	SGTS Flow	cfm	0	0	0	0	0	0	0	0	2900
49	CAD		DW/Torus O2 Conc.	%	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.88

Legend: DS downscale UP upscale PTL pull to lock
* Value will be provided at the start of the exercise.

8.0 OPERATIONAL DATA (Cont'd)

Item	Panel	Inst ID	Description	Units	Scenario Time (hr:min) / Clock Time (hr:min)							
					02:15 / 08:15	02:30 / 08:30	02:45 / 08:45	03:00 / 09:00	03:15 / 09:15	03:30 / 09:30	03:45 / 09:45	04:00 / 10:00
1	9-3	FT-23-108-1	HPCI Flow	kgpm	4.2	4.2	4.2	4.2	4.2	4.2	0	0
2	9-3	FI-10-139A	RHR A Flow	kgpm	6	6	6	6	6	6	6	6
3	9-3	FI-10-139B	RHR B Flow	kgpm	0	0	0	6	6	6	6	6
4	9-3	FI-10-50A	CS A Flow	kgpm	0	0	0	0	0	0	0	0
5	9-3	FI-10-50B	CS B Flow	kgpm	0	0	0	0	0	0	0	0
6	9-3	PI-16-19-12A/B	Drywell Pressure	psia	15	15	15	15	15	15	15	15
7	9-4	FI-13-91	RCIC Flow	gpm	0	0	440	400	400	400	400	400
8	9-4	FI-12-141A+B	RWCU Flow	gpm	120	130	130	130	130	130	130	130
9	9-4		DW Equip Sump Sum	gal	59	59	59	59	59	59	59	59
10	9-4		DW Floor Sump Sum	gal	65	65	65	65	65	65	65	65
11	9-4	2-165A/B	Rx Coolant Temp	deg F	535	520	500	480	460	430	400	425
12	9-4	2-3-92A	Recirc A Drive Flow	kgpm	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
13	9-4	2-3-92B	Recirc B Drive Flow	kgpm	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
14	9-5	7-46A	APRM/IRM A	%	0	0	0	0	0	0	0	0
15	9-5	7-46B	APRM/IRM B	%	0	0	0	0	0	0	0	0
16	9-5	7-46C	APRM/IRM C	%	0	0	0	0	0	0	0	0
17	9-5	7-46D	APRM/IRM D	%	0	0	0	0	0	0	0	0
18	9-5	7-46E	APRM/IRM E	%	0	0	0	0	0	0	0	0
19	9-5	7-46F	APRM/IRM F	%	0	0	0	0	0	0	0	0
20	9-5	7-43A	SRM A	cps	5.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
21	9-5	7-43B	SRM B	cps	5.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
22	9-5	7-43C	SRM C	cps	5.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
23	9-5	7-43D	SRM D	cps	5.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
24	9-5	6-3-95	Core Flow	mlb/hr	6	6	6	5.5	5.5	5.5	5.5	5.5
25	9-5	6-3-95	Core DP	psid	3.3	3.3	3.3	3.4	3.4	3.3	3.3	3.3
26	9-5	FI-3-310	CRD Flow	gpm	49	49	50	50	50	50	50	50
27	9-5		CR Position	in/out	in	in	in	in	in	in	in	in
28	9-5	6-96	Feedwater Flow	mlb/hr	0	0	0	0	0	0	0	0
29	9-5	6-96	Narrow Range Level	inches	157	157	152	161	163	166	166	166
30	9-5	6-97	Main Steam Flow	mlb/hr	0	0	0	0	0	0	0	0
31	9-5	6-97	Wide Range Press.	psig	980	860	700	580	480	355	350	340
32	9-5	6-98	Wide Range Level	inches	150	150	155	155	157	158	170	166
33	9-5	6-98	Narrow Range Press.	psig	952	DS	DS	DS	DS	DS	DS	DS
34	9-6	LI-107-5	CST Level	%	63	63	63	62	62	60	60	60
35	9-6	LI-111-1	Hotwell Level N	%	60	60	60	58	58	60	60	60
26	9-6	LI-111-2	Hotwell Level S	%	62	62	62	57	57	58	53	53
37	9-7	PI-101-29	Condenser Vacuum	in Hg	17	22	23	27	27.5	28	28	29
38	9-8		D/G A Bkr Light	gr/red	green	green	green	green	green	green	green	green
39	9-8		D/G B Bkr Light	gr/red	green	green	green	green	green	green	green	green
40	9-25	TIS-16-19-48	Torus Temp.	deg F	94	97	98	101	104	105	105	104
41	9-25	LI-46A/B	Torus Level	feet	0.98	1	1.03	1.06	1.08	1.11	1.42	1.39
42	9-25	TR-16-19-44	Torus Pressure	psia	14	14	14	14	14.2	14.5	16	17
43	9-25	TR-16-19-44	Drywell Pressure	psia	16	16	16	16	16	16	18	19
44	9-25	PR-1-156-3	DW/Torus DP	psid	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79
45	9-25	TR-16-19-45	Drywell Temp.	deg F	135	135	135	135	133	132	133	133
46	9-25	PR-1-156-3	Drywell Pressure	psig	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
47	9-26	PI-1-125-3A/B	Rx Bldg DP	in H20	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
48	9-26	FI-1-125-1A+B	SGTS Flow	cfm	2900	2900	2900	2900	2900	2900	2900	2900
49	CAN		DW/Torus O2 Conc.	%	2.88	2.88	2.88	2.88	2.88	2.98	2.59	2.5

Legend: DS downscale UP upscale PTL pull to lock

8.0 OPERATIONAL DATA (Cont'd)

Item	Panel	Inst ID	Description	Units	Scenario Time (hr:min) / Clock Time (hr:min)								
					04:15 / 10:15	04:30 / 10:30	04:45 / 10:45	05:00 / 11:00	05:15 / 11:15	05:30 / 11:30	05:45 / 11:45	06:00 / 12:00	06:15 / 12:15
1	9-3	FT-23-108-1	HPCI Flow	kgpm	0	0	0	0	0	0	0	0	0
2	9-3	FI-10-139A	RHR A Flow	kgpm	6	6	6	6	6	6	6	6	6
3	9-3	FI-10-139B	RHR B Flow	kgpm	6	6	6	6	6	6	6	6	6
4	9-3	FI-10-50A	CS A Flow	kgpm	PTL	PTL	PTL	PTL	PTL	PTL	PTL	PTL	PTL
5	9-3	FI-10-50B	CS B Flow	kgpm	PTL	PTL	PTL	PTL	PTL	PTL	PTL	PTL	PTL
6	9-3	PI-16-19-12A/B	Drywell Pressure	psia	20	21	21	21	21	21	21	21	21
7	9-4	FI-13-91	RCIC Flow	gpm	400	400	400	400	400	400	400	400	400
8	9-4	FI-12-141A+B	RWCU Flow	gpm	130	130	130	130	130	130	130	130	130
9	9-4		DW Equip Sump Sum	gal	59	59	59	59	59	59	59	59	59
10	9-4		DW Floor Sump Sum	gal	65	65	65	65	65	65	65	65	65
11	9-4	2-165A/B	Rx Coolant Temp	deg F	430	420	410	400	390	380	370	360	350
12	9-4	2-3-92A	Recirc A Drive Flow	kgpm	0	0	0	0	0	0	0	0	0
13	9-4	2-3-92B	Recirc B Drive Flow	kgpm	0	0	0	0	0	0	0	0	0
14	9-5	7-46A	APRM/IRM A	%	0	0	0	0	0	0	0	0	0
15	9-5	7-46B	APRM/IRM B	%	0	0	0	0	0	0	0	0	0
16	9-5	7-46C	APRM/IRM C	%	0	0	0	0	0	0	0	0	0
17	9-5	7-46D	APRM/IRM D	%	0	0	0	0	0	0	0	0	0
18	9-5	7-46E	APRM/IRM E	%	0	0	0	0	0	0	0	0	0
19	9-5	7-46F	APRM/IRM F	%	0	0	0	0	0	0	0	0	0
20	9-5	7-43A	SRM A	cps	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
21	9-5	7-43B	SRM B	cps	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
22	9-5	7-43C	SRM C	cps	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
23	9-5	7-43D	SRM D	cps	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
24	9-5	6-3-95	Core Flow	mlb/hr	0	0	0	0	0	0	0	0	0
25	9-5	6-3-95	Core DP	psid	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
26	9-5	FI-3-310	CRD Flow	gpm	0	0	0	0	0	0	0	0	0
27	9-5		CR Position	in/out	in	in	in	in	in	in	in	in	in
28	9-5	6-96	Feedwater Flow	mlb/hr	0	0	0	0	0	0	0	0	0
29	9-5	6-96	Narrow Range Level	inches	185	178	165	167	163	161	161	161	161
30	9-5	6-97	Main Steam Flow	mlb/hr	0	0	0	0	0	0	0	0	0
31	9-5	6-97	Wide Range Press.	psig	355	325	290	260	235	210	190	165	150
32	9-5	6-98	Wide Range Level	inches	165	163	161	159	157	155	155	155	155
33	9-5	6-98	Narrow Range Press.	psig	DS	DS	DS	DS	DS	DS	DS	DS	DS
34	9-6	LI-107-5	CST Level	%	60	60	60	60	60	60	60	60	60
35	9-6	LI-111-1	Hotwell Level N	%	60	60	60	60	60	60	60	60	60
26	9-6	LI-111-2	Hotwell Level S	%	53	53	53	53	53	52	52	52	52
37	9-7	PI-101-29	Condenser Vacuum	in Hg	29	30	30	30	30	30	30	30	30
38	9-8		D/G A Bkr Light	gr/red	green	green	green	green	green	green	green	green	green
39	9-8		D/G B Bkr Light	gr/red	red	red	red	red	red	red	red	green	green
40	9-25	TIS-16-19-48	Torus Temp.	deg F	104	106	107	109	111	111	110	110	109
41	9-25	LI-46A/B	Torus Level	feet	1.43	1.47	1.49	1.53	1.54	1.53	1.52	1.51	1.5
42	9-25	TR-16-19-44	Torus Pressure	psia	18.5	19	19	19	19.2	19.2	19.2	19.2	19.2
43	9-25	TR-16-19-44	Drywell Pressure	psia	21.5	22	22	22	22.2	22.2	22.2	22.4	22.4
44	9-25	PR-1-156-3	DW/Torus DP	psid	2.25	2.3	2.35	2.38	2.38	2.38	2.38	2.38	2.38
45	9-25	TR-16-19-45	Drywell Temp.	deg F	200	203	205	205	206	206	206	206	206
46	9-25	PR-1-156-3	Drywell Pressure	psig	UP	UP	UP	UP	UP	UP	UP	UP	UP
47	9-26	PI-1-125-3A/B	Rx Bldg DP	in H20	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
48	9-26	FI-1-125-1A+B	SGTS Flow	cfm	2900	2900	2900	2900	2900	2900	2900	2900	2900
49	CAD		DW/Torus O2 Conc.	%	2.42	2.41	2.42	2.42	2.43	2.43	2.43	2.43	2.43

8.0 OPERATIONAL DATA (Cont'd)

Item	Panel	Inst ID	Description	Units	Scenario Time (hr:min)	06:30	06:45	07:00	08:00	08:15
			Clock Time (hr:min)			12:30	12:45	13:00	14:00	14:15
1	9-3	FT-23-108-1	HPCI Flow	kgpm		0	0	0	0	0
2	9-3	FI-10-139A	RHR A Flow	kgpm		6	6	6	6	6
3	9-3	FI-10-139B	RHR B Flow	kgpm		6	6	6	6	6
4	9-3	FI 10-50A	CS A Flow	kgpm		PTL	PTL	PTL	PTL	PTL
5	9-3	FI-10-50B	CS B Flow	kgpm		PTL	PTL	PTL	PTL	PTL
6	9-3	PI-16-19-12A/B	Drywell Pressure	psia		21	21	21	20	19
7	9-4	FI-13-91	RCIC Flow	gpm		400	400	400	400	400
8	9-4	FI-12-141A+B	RWCU Flow	gpm		130	130	130	130	130
9	9-4		DW Equip Sump Sum	gal		59	59	59	59	59
10	9-4		DW Floor Sump Sum	gal		65	65	65	65	65
11	9-4	2-165A/B	Rx Coolant Temp	deg F		340	330	320	280	280
12	9-4	2-3-92A	Recirc A Drive Flow	kgpm		0	0	0	0	0
13	9-4	2-3-92B	Recirc B Drive Flow	kgpm		0	0	0	0	0
14	9-5	7-46A	APRM/IRM A	%		0	0	0	0	0
15	9-5	7-46B	APRM/IRM B	%		0	0	0	0	0
16	9-5	7-46C	APRM/IRM C	%		0	0	0	0	0
17	9-5	7-46D	APRM/IRM D	%		0	0	0	0	0
18	9-5	7-46E	APRM/IRM E	%		0	0	0	0	0
19	9-5	7-46F	APRM/IRM F	%		0	0	0	0	0
20	9-5	7-43A	SRM A	cps		4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
21	9-5	7-43B	SRM B	cps		4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
22	9-5	7-43C	SRM C	cps		4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
23	9-5	7-43D	SRM D	cps		4.0E+00	4.0E+00	4.0E+00	4.0E+00	4.0E+00
24	9-5	6-3-95	Core Flow	mlb/hr		0	0	0	0	0
25	9-5	6-3-95	Core DP	psid		0.6	0.6	0.6	0.6	0.6
26	9-5	FI-3-310	CRD Flow	gpm		0	0	0	50	50
27	9-5		CR Position	in/out		in	in	in	in	in
28	9-5	6-96	Feedwater Flow	mlb/hr		0	0	0	0	0
29	9-5	6-96	Narrow Range Level	inches		161	161	161	161	161
30	9-5	6-97	Main Steam Flow	mlb/hr		0	0	0	0	0
31	9-5	6-97	Wide Range Press.	psig		130	120	105	90	90
32	9-5	6-98	Wide Range Level	inches		155	155	155	155	155
33	9-5	6-98	Narrow Range Press.	psig		DS	DS	DS	DS	DS
34	9-6	LI-107-5	CST Level	%		60	60	60	60	60
35	9-6	LI-111-1	Hotwell Level N	%		60	60	60	60	60
26	9-6	LI-111-2	Hotwell Level S	%		52	52	52	52	52
37	9-7	PI-101-29	Condenser Vacuum	in Hg		30	30	30	30	30
38	9-8		D/G A Bkr Light	gr/red		green	green	green	green	green
39	9-8		D/G B Bkr Light	gr/red		green	green	green	green	green
40	9-25	TIS-16-19-48	Torus Temp.	deg F		109	108	108	107	107
41	9-25	LI-46A/B	Torus Level	feet		1.49	1.48	1.48	1.29	1.1
42	9-25	TR-16-19-44	Torus Pressure	psia		19.2	19.2	19.5	19	19
43	9-25	TR-16-19-44	Drywell Pressure	psia		22.4	22.5	22.5	21.5	20
44	9-25	PR-1-156-3	DW/Torus DP	psid		2.38	2.38	2.35	1.2	0.2
45	9-25	TR-16-19-45	Drywell Temp.	deg F		206	206	206	202	197
46	9-25	PR-1-156-3	Drywell Pressure	psig		UP	UP	UP	UP	UP
47	9-26	PI-1-125-3A/B	Rx Bldg DP	in H20		-0.7	-0.7	-0.7	-0.7	-0.7
48	9-26	FI-1-125-1A+B	SGTS Flow	cfm		2900	2900	2900	2900	2900
49	CAD		DW/Torus O2 Conc.	%		2.43	2.43	2.43	2.43	2.43

Legend: DS downscale UP upscale PTL pull to lock

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.0 RADIOLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.1 AREA RADIATION MONITORS

9.1 AREA RADIATION MONITORS

(mR/hr unless noted otherwise)

Clock Time	Scenario Time	RB Suppression Chamber Catwalk (232')	RB North Personnel Access (252')	RB South Equipment RR Access (252')	RB Neutron Monitor Tip Withdrawal (252')	RB Reactor Personnel Access Hatch (252') - Drywell
0600	0	10	10	0.2	5	300
0615	15	10	10	0.3	5	300
0630	30	10	10	0.3	5	300
0645	45	10	10	0.3	5	300
0700	1:00	10	10	0.3	5	250
0715	1:15	10	10	0.3	5	250
0730	1:30	10	10	0.3	5	250
0745	1:45	10	10	0.6	6	250
0800	2:00	100	60	4	40	1000
0815	2:15	450	150	3	35	4000
0830	2:30	3000	400	4	20	8000
0845	2:45	OSH ($>10^4$)	800	6	20	8000
0900	3:00	OSH	OSH ($>10^3$)	8	25	8000
0915	3:15	OSH	OSH	10	30	8000
0930	3:30	OSH	OSH	10	30	8000
0945	3:45	OSH	OSH	15	40	8000
1000	4:00	OSH	OSH	20	50	9000
1015	4:15	OSH	OSH	600	2000	OSH ($>10^4$)
1030	4:30	OSH	OSH	700	2000	OSH
1045	4:45	OSH	OSH	800	2000	OSH
1100	5:00	OSH	OSH	OSH ($>10^3$)	2000	OSH
1115	5:15	OSH	OSH	OSH	2000	OSH
1130	5:30	OSH	OSH	OSH	2000	OSH
1145	5:45	OSH	OSH	OSH	2000	OSH
1215	6:15	OSH	OSH	OSH	2000	OSH
1245	6:45	OSH	OSH	OSH	2000	OSH
1315	7:15	OSH	OSH	OSH	2000	OSH
1345	7:45	OSH	OSH	OSH	2000	OSH
1400	8:00	OSH	OSH	OSH	2000	OSH
1415	8:15	OSH	OSH	OSH	2000	OSH

OSH = Offscale High

9.1 AREA RADIATION MONITORS

(mR/hr unless noted otherwise)

Clock Time	Scenario Time	RB Control Rod Drive Repair (252')	RB Elevator Entrance (280')	RB Elevator Entrance (303')	RB Reactor Water Cleanup (303')
0600	0	15	8	2.2	3
0615	15	15	8	2.5	4
0630	30	15	8	2.5	4
0645	45	15	8	2.5	4
0700	1:00	15	8	2.5	4
0715	1:15	15	8	2.5	4
0730	1:30	15	7	2.5	4
0745	1:45	15	7	2.5	4
0800	2:00	40	120	5	4
0815	2:15	200	500	25	5
0830	2:30	600	1500	70	10
0845	2:45	1000	1800	100	15
0900	3:00	1500	2500	150	25
0915	3:15	2000	3000	200	30
0930	3:30	2000	3000	250	35
0945	3:45	2000	3000	300	35
1000	4:00	2500	3000	350	40
1015	4:15	3200	3000	400	50
1030	4:30	3200	3000	400	50
1045	4:45	3200	3000	400	55
1100	5:00	3200	3000	400	55
1115	5:15	3500	3000	400	55
1130	5:30	3500	3000	400	60
1145	5:45	3500	3000	400	60
1215	6:15	3500	3000	400	60
1245	6:45	3500	3000	400	60
1315	7:15	3500	3000	400	60
1345	7:45	3500	3000	400	60
1400	8:00	3500	3000	400	65
1415	8:15	3500	3000	400	65

9.1 AREA RADIATION MONITORS

(mR/hr unless noted otherwise)

Clock Time	Scenario Time	RB Elevator Entrance (318')	RB Reactor Water Cleanup (318')	RB Spent Fuel Storage Pool (345')	RB Elevator Entrance (345')	RB Refueling Area West (345')
0600	0	4	5	10	3	4
0615	15	4.5	5	10	3.5	4
0630	30	4.5	5	10	3.5	4
0645	45	4.5	5	10	3.5	4
0700	1:00	4.5	4.5	10	3	4
0715	1:15	4.5	4.5	10	3	4
0730	1:30	4	4	10	2.5	4
0745	1:45	4	3.5	10	2.5	4
0800	2:00	6	110	10	8	6
0815	2:15	30	800	10	50	30
0830	2:30	90	1500	10	150	80
0845	2:45	120	2000	15	200	100
0900	3:00	180	2500	15	250	200
0915	3:15	220	3000	20	400	250
0930	3:30	240	3500	20	400	300
0945	3:45	270	4500	25	450	350
1000	4:00	300	5500	25	500	400
1015	4:15	350	5500	30	600	500
1030	5:15	375	2500	30	650	500
1045	4:45	400	500	30	650	400
1100	5:00	450	250	30	700	600
1115	5:15	450	150	30	700	600
1130	5:30	500	100	35	700	600
1145	5:45	500	90	35	700	600
1215	6:15	500	90	35	700	600
1245	6:45	500	90	35	700	600
1230	5:30	500	90	35	700	600
1345	7:45	500	80	35	700	600
1400	8:00	500	6000	35	700	600
1415	8:15	500	6000	35	700	600

9.1 AREA RADIATION MONITORS

(mR/hr unless noted otherwise)

Clock Time	Scenario Time	RB New Fuel Storage Vault (318')	Fuel Pool Monitor (345') West	Fuel Pool Monitor (345') East	TB Moisture Separator Area (228')	TB Condensate Demineralizer Area (232')
0600	0	1	10	10	150	0.3
0615	15	1	10	10	150	0.3
0630	30	1	10	10	150	0.3
0645	45	1	10	10	150	0.3
0700	1:00	1	10	10	150	0.3
0715	1:15	1	10	10	150	0.3
0730	1:30	1	10	10	120	0.25
0745	1:45	1	5	5	120	0.25
0800	2:00	25	6	6	100	0.25
0815	2:15	20	25	20	80	0.25
0830	2:30	60	60	60	60	0.2
0845	2:45	OSH ($>10^2$)	100	100	60	0.2
0900	3:00	OSH	120	150	50	0.18
0915	3:15	OSH	150	200	40	0.18
0930	3:30	OSH	150	200	35	0.15
0945	3:45	OSH	160	220	30	0.15
1000	4:00	OSH	180	250	25	0.15
1015	4:15	OSH	250	300	25	0.15
1030	4:30	OSH	300	300	25	0.15
1045	4:45	OSH	320	300	18	0.15
1100	5:00	OSH	350	400	15	0.15
1115	5:15	OSH	400	400	12	0.15
1130	5:30	OSH	400	400	10	0.15
1145	5:45	OSH	400	400	10	0.15
1215	6:15	OSH	400	400	10	0.15
1245	6:45	OSH	400	400	10	0.15
1315	7:15	OSH	400	400	10	0.15
1345	7:45	OSH	450	400	10	0.15
1400	8:00	OSH	450	350	10	0.15
1415	8:15	OSH	450	350	10	0.15

OSH = Offscale High

1904e/4.386

9.1 AREA RADIATION MONITORS

(mR/hr unless noted otherwise)

Clock Time	Scenario Time	TB North Personnel Access (248')	TB Main Steam Stop Valve Area (248')	TB Steam Inlet (272')	TB Railroad Rear Gate (252')	TB Decontamination
0600	0	3	400	200	0.02	0.2
0615	15	2.5	400	200	0.02	0.2
0630	30	2.5	400	200	0.02	0.2
0645	45	2.5	400	200	0.02	0.2
0700	1:00	2.5	400	200	0.02	0.2
0715	1:15	2.5	350	180	0.01	0.2
0730	1:30	2.5	300	150	0.01	0.2
0745	1:45	2.5	280	150	0.01	0.2
0800	2:00	2.5	280	150	0.01	0.2
0815	2:15	2.5	220	100	0.01	0.18
0830	2:30	2	180	100	0.01	0.18
0845	2:45	2	170	90	0.01	0.18
0900	3:00	2	150	80	0.01	0.18
0915	3:15	1.8	150	70	0.01	0.18
0930	3:30	1.8	140	60	0.01	0.15
0945	3:45	1.8	130	55	0.01	0.15
1000	4:00	1.8	120	50	0.01	0.15
1015	4:15	1.8	100	45	0.01	0.15
1030	4:30	1.8	100	40	0.01	0.15
1045	4:45	1.5	90	40	0.01	0.15
1100	5:00	1.5	70	35	0.01	0.15
1115	5:15	1.5	70	35	0.01	0.15
1130	5:30	1.5	65	30	0.01	0.15
1145	5:45	1.5	60	30	0.01	0.15
1215	6:15	1.5	60	30	0.01	0.15
1245	6:45	1.5	60	30	0.01	0.15
1315	7:15	1.5	60	30	0.01	0.15
1345	7:45	1.5	55	30	0.01	0.15
1400	8:00	1.5	55	25	0.01	0.15
1415	8:15	1.5	55	25	0.01	0.15

9.1 AREA RADIATION MONITORS

(mR/hr unless noted otherwise)

Clock Time	Scenario Time	Radwaste Pump and Tank Area (230')	Radwaste Recirculation Pump Room (255')	Radwaste (255') Operating Area	Control Room Viewing Gallery
0600	0	1.5	1	1.5	0.15
0615	15	1.5	1	1.5	0.15
0630	30	1.5	1	1.5	0.15
0645	45	1.5	1	1.5	0.15
0700	1:00	1.5	1	1.5	0.15
0715	1:15	1.5	1	1.5	0.15
0730	1:30	1.5	1	1.2	0.15
0745	1:45	1.5	1	1.2	0.15
0800	2:00	1.5	1	1.2	0.15
0815	2:15	1.5	1	1.2	0.15
0830	2:30	1.5	1	1.2	0.15
0845	2:45	1.5	1	1.2	0.12
0900	3:00	1.5	1	1.2	0.12
0915	3:15	1.5	1	1.2	0.12
0930	3:30	1.5	1	1.2	0.12
0945	3:45	1.5	1	1.2	0.12
1000	4:00	1.5	1	1.2	0.12
1015	4:15	1.5	1	1.2	0.12
1030	4:30	1.5	1	1.2	0.12
1045	4:45	1.5	1	1.2	0.12
1100	5:00	1.5	1	1.2	0.12
1115	5:15	1.5	1	1.2	0.12
1130	5:30	1.5	1	1.2	0.12
1145	5:45	1.5	1	1.2	0.12
1215	6:15	1.5	1	1.2	0.12
1245	6:45	1.5	1	1.2	0.12
1315	7:15	1.5	1	1.2	0.12
1345	7:45	1.5	1	1.2	0.12
1400	8:00	1.5	1	1.2	0.12
1415	8:15	1.5	1	1.2	0.12

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.2 PROCESS MONITORS

9.2 PROCESS MONITORS

Clock Time	Scenario Time	Containment Monitors Gas (cpm)	Containment Monitors Part (cpm)	High-Range Containment Monitors A (R/hr)	High-Range Containment Monitors B (R/hr)	RB Vent Monitors Gas (cpm)	RB Vent Monitors Part (cpm)	Main Steam Lines (mR/hr)
0600	0:00	2000	1500	2	2	150	1500	150
0615	0:15	2000	1500	2	2	150	1500	150
0630	0:30	2000	1500	2	2	150	1500	150
0645	0:45	2000	1500	2	2	150	1500	150
0700	1:00	1500	1500	2	2	150	1500	150
0715	1:15	1500	1500	2	2	150	1500	130
0730	1:30	1500	1000	2	2	150	1500	100
0745	1:45	500000	50000	3	3	700	6000	60
0800	2:00	400000	150000	30	30	7000	60000	50
0815	2:15	600000	400000	100	100	7000	60000	40
0830	2:30	OSH(>10^6)	800000	100	100	7000	60000	35
0845	2:45	OSH	OSH(>10^6)	300	200	7000	60000	30
0900	3:00	OSH	OSH	400	400	7000	70000	25
0915	3:15	OSH	OSH	400	400	7000	70000	20
0930	3:30	OSH	OSH	450	475	7000	70000	20
0945	3:45	OSH	OSH	525	550	7000	70000	20
1000	4:00	OSH	OSH	625	600	7000	70000	20
1015	4:15	OSH	OSH	1500	1500	7000	70000	15
1030	4:30	OSH	OSH	1500	1500	8000	70000	12
1045	4:45	OSH	OSH	1500	1500	8000	70000	10
1100	5:00	OSH	OSH	1500	1500	8000	80000	8
1115	5:15	OSH	OSH	1500	1500	8000	80000	7
1130	5:30	OSH	OSH	1500	1500	8000	80000	7
1145	5:45	OSH	OSH	1500	1500	8000	80000	6
1215	6:15	OSH	OSH	1500	1500	8000	80000	5
1245	6:45	OSH	OSH	1500	1500	8000	80000	4
1315	7:15	OSH	OSH	1500	1500	8000	80000	4
1345	7:45	OSH	OSH	1500	1500	8000	80000	4
1400	8:00	OSH	OSH	1500	1500	8000	80000	4
1415	8:15	OSH	OSH	1500	1500	8000	80000	4

OSH = off-scale high

9.2 PROCESS MONITORS
(Continued)

Clock Time	Scenario Time	RB Vent Exhaust Plenum North (mR/hr)	RB Vent Exhaust Plenum South (mR/hr)	SJAE Monitor (mR/hr)	Stack Gas I (cpm)	Stack Gas II (cpm)	High-Range Noble Gas Stack Gas (mR/hr)
0600	0	1.5	1.5	140	20	20	<.1
0615	0:15	1.5	1.5	160	20	20	<.1
0630	0:30	1.5	1.5	160	20	20	<.1
0645	0:45	1.5	1.5	160	20	20	<.1
0700	1:00	1.5	1.5	160	20	20	<.1
0715	1:15	1.5	1.5	140	20	20	<.1
0730	1:30	1.5	1.5	120	20	30	<.1
0745	1:45	6	6	100	20	20	<.1
0800	2:00	20	20	D/S	20	20	<.1
0815	2:15	80	60	D/S	20	20	<.1
0830	2:30	80	80	D/S	20	20	<.1
0845	2:45	100	100	D/S	20	20	<.1
0900	3:00	100	100	D/S	20	20	<.1
0915	3:15	100	100	D/S	20	20	<.1
0930	3:30	100	100	D/S	20	20	<.1
0945	3:45	125	125	D/S	20	20	<.1
1000	4:00	150	150	D/S	20	20	<.1
1015	4:15	150	150	D/S	20	20	<.1
1030	4:30	150	150	D/S	20	20	<.1
1045	4:45	100	100	D/S	20	20	<.1
1100	5:00	100	100	D/S	20	20	<.1
1115	5:15	90	90	D/S	20	20	<.1
1130	5:30	90	90	D/S	20	20	<.1
1145	5:45	90	90	D/S	20	20	<.1
1215	6:15	90	90	D/S	20	20	<.1
1245	6:45	90	90	D/S	20	20	<.1
1315	7:15	90	90	D/S	20	20	<.1
1345	7:45	90	90	D/S	20	20	<.1
1400	8:00	80	70	D/S	20	20	<.1
1415	8:15	200	200	D/S	20	20	<.1

D/S = Downscale reading

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.3 IN-PLANT RADIATION LEVELS

TABLE 9.3-1

Reactor Building Refuel Deck, Elevation 345'
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 12	ARM 14	ARM 16	ARM 34	ARM 35	Zone I	Zone II	Zone III	Zone IV
0600	0	3	4	10	10	10	15	5	2	2
0700	1:00	3	4	10	10	10	15	5	2	2
0715	1:15	3	4	10	10	10	15	5	2	2
0730	1:30	2.5	4	10	10	10	15	5	2	2
0745	1:45	2.5	4	10	10	10	15	5	2	2
0800	2:00	8.0	6	10	10	10	15	5	5	5
0815	2:15	50	30	20	10	25	40	15	30	40
0830	2:30	150	80	60	10	60	100	30	60	80
0845	2:45	200	100	100	15	100	160	60	80	100
0900	3:00	250	200	120	15	150	210	100	100	150
0915	3:15	400	250	150	20	200	300	150	120	200
0930	3:30	400	300	150	20	200	300	150	120	200
0945	3:45	450	350	160	25	220	300	150	120	250
1000	4:00	500	400	180	25	250	300	150	120	250
1015	4:15	600	500	250	30	300	400	200	180	350
1030	4:30	650	500	300	30	300	450	320	300	400
1045	4:45	650	500	320	35	350	500	320	300	400
1100	5:00	700	600	350	35	400	500	320	300	400
1130	5:30	700	600	400	35	400	500	320	300	400
1200	6:00	700	600	400	35	400	500	320	300	400
1230	6:30	700	600	400	35	400	500	320	300	400
1300	7:00	700	600	400	35	450	500	320	300	400
1315	7:15	700	600	350	35	450	480	320	300	400
1330	7:30	700	600	350	35	450	480	320	300	400
1415	8:15	700	600	350	35	450	480	320	300	400

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 2K-10K dpm/100 cm^2 in all zones.

1910e/20.601

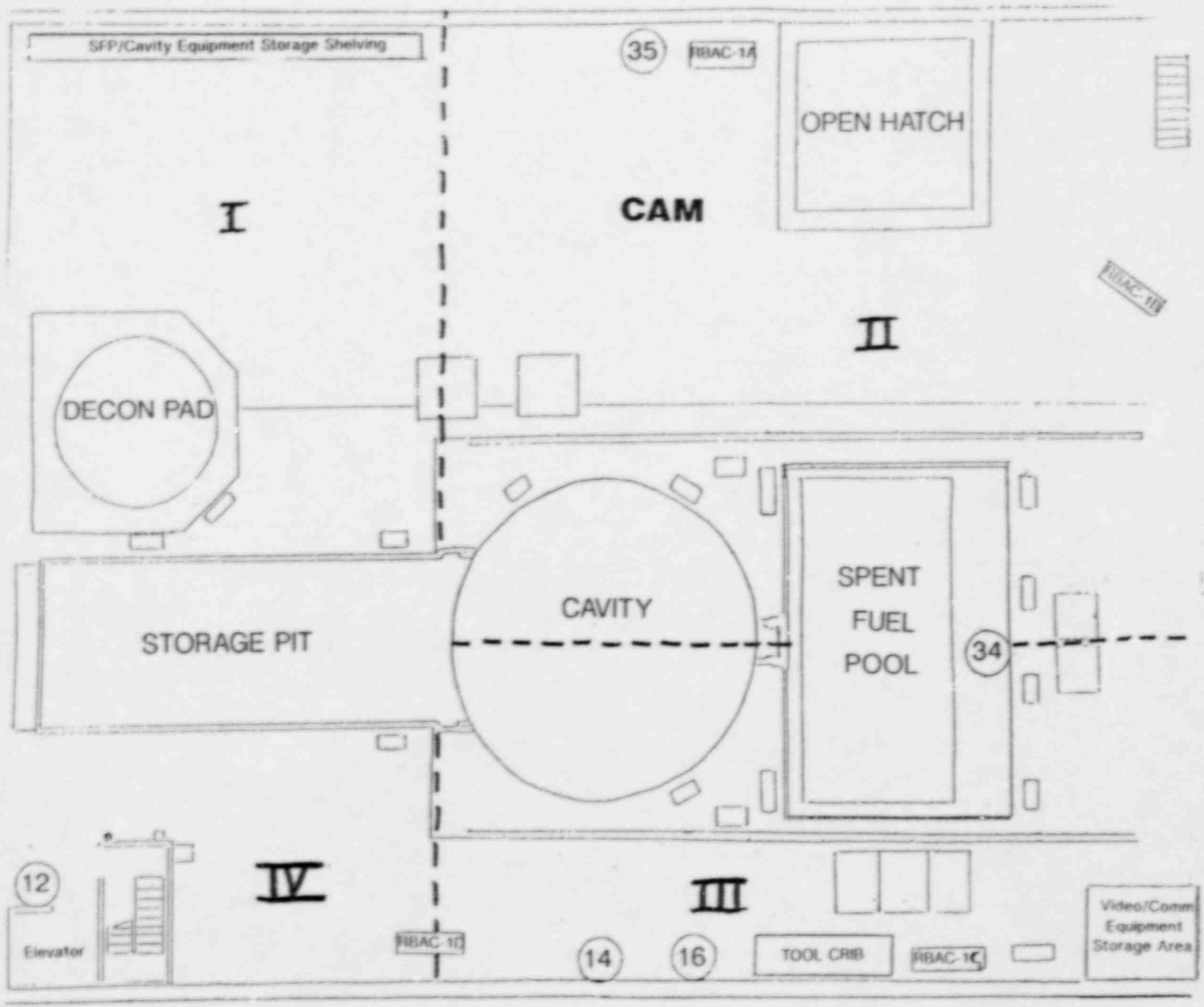


FIGURE 9.3-1
Rx. BDLG. El. 345'

(12) Rea.Bldg. Elev. Entrance
(14) Rea.Bldg. West Refueling Area
(16) Fuel Pool-West Monitor
(34) Spent Fuel Pool Monitor
(35) Fuel Pool-East Monitor

REACTOR BUILDING EL. 345'

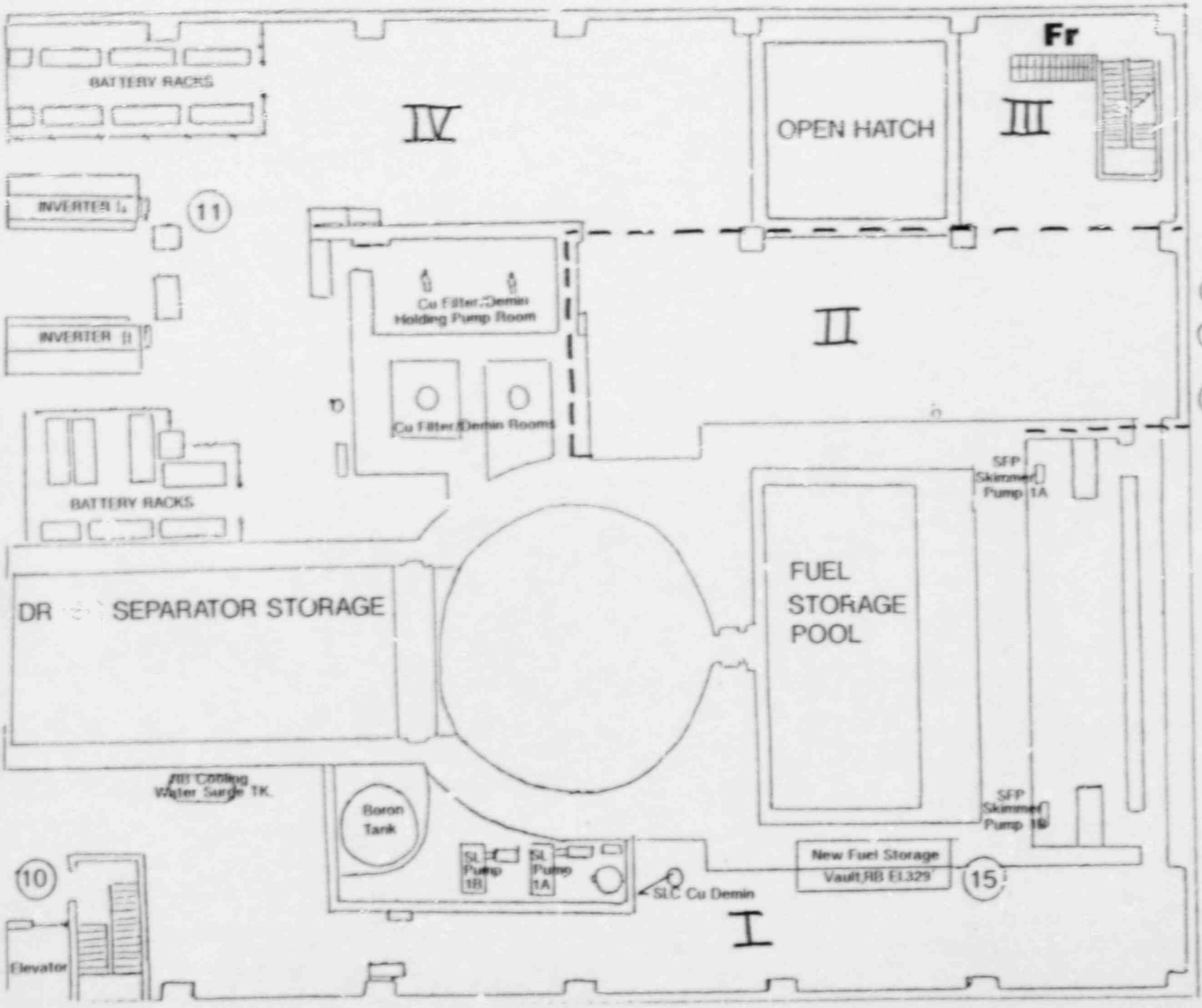
TABLE 9.3-2

Reactor Building, Elevation 318'
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 10	ARM 11	ARM 15	Zone I	Zone II	Zone III	Zone IV
0600	0	4	5	1	2	5	1	2
0700	1:00	4.5	4.5	1	2	5	1	2
0715	1:15	4.5	4.5	1	2	5	1	2
0730	1:30	4.5	4	1	2	5	1	2
0745	1:45	4	3.5	1	2	5	1	2
0800	2:00	6	110	25	10	80	20	50
0815	2:15	30	800	20	20	320	80	200
0830	2:30	90	1500	60	50	350	150	400
0845	2:45	120	2000	>100	80	350	200	500
0900	3:00	180	2500	>100	100	400	200	630
0915	3:15	220	3000	>100	180	450	200	750
0930	3:30	240	3500	>100	180	450	200	750
0945	3:45	270	4500	>100	180	450	200	900
1000	4:00	300	5500	>100	200	500	200	1000
1015	4:15	350	5500	>100	230	550	250	1000
1030	4:30	375	2500	>100	240	550	250	600
1045	4:45	400	500	>100	300	550	250	200
1100	5:00	450	250	>100	300	550	250	200
1130	5:30	500	100	>100	300	550	250	200
1200	6:00	500	90	>100	300	550	250	200
1230	6:30	500	90	>100	300	550	250	200
1300	7:00	500	80	>100	300	550	250	200
1315	7:15	500	90	>100	300	550	250	200
1330	7:30	500	90	>100	300	550	250	200
1400	8:00	500	6000	>100	300	550	250	800
1415	8:15	500	6000	>100	300	550	250	800

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm^2 in all zones.

REACTOR BUILDING EL. 318'



E
N
S
W

(10) Reactor Bldg. Elev. Entrance
(11) Reactor Bldg. Reactor Water Cleanup Area
(15) Reactor Bldg. New Fuel Vault

FIGURE 9.3-2
RX. BLDG. EL. 318'

TABLE 9.3-3

Reactor Building, Elevation 303'
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 8	ARM 9	Zone I	Zone II	Zone III	Zone IV
0600	0	2	3	40	2	2	1
0700	1:00	2.5	4	40	2	2	1
0715	1:15	2.5	4	40	2	2	1
0730	1:30	2.5	4	40	2	2	1
0745	1:45	2	4	40	2	2	1
0800	2:00	5	4	40	4	8	6
0815	2:15	25	4	60	30	40	15
0830	2:30	70	10	80	55	100	20
0845	2:45	100	15	100	80	140	30
0900	3:00	150	25	100	115	200	40
0915	3:15	200	30	150	140	280	50
0930	3:30	250	35	150	140	300	50
0945	3:45	300	35	200	140	300	50
1000	4:00	350	40	200	140	300	50
1015	4:15	400	50	300	200	380	70
1030	4:30	400	50	350	230	400	80
1045	4:45	400	55	350	230	400	80
1100	5:00	400	55	350	230	400	80
1130	5:30	400	60	350	230	400	80
1200	6:00	400	60	350	230	400	80
1230	6:30	400	60	350	230	400	80
1300	7:00	400	60	350	230	400	80
1315	7:15	400	60	350	230	400	80
1330	7:30	400	60	350	230	400	80
1400	8:00	400	65	350	230	400	80
1415	8:15	400	65	350	230	400	80

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm^2 in all zones.

1910e/20.601

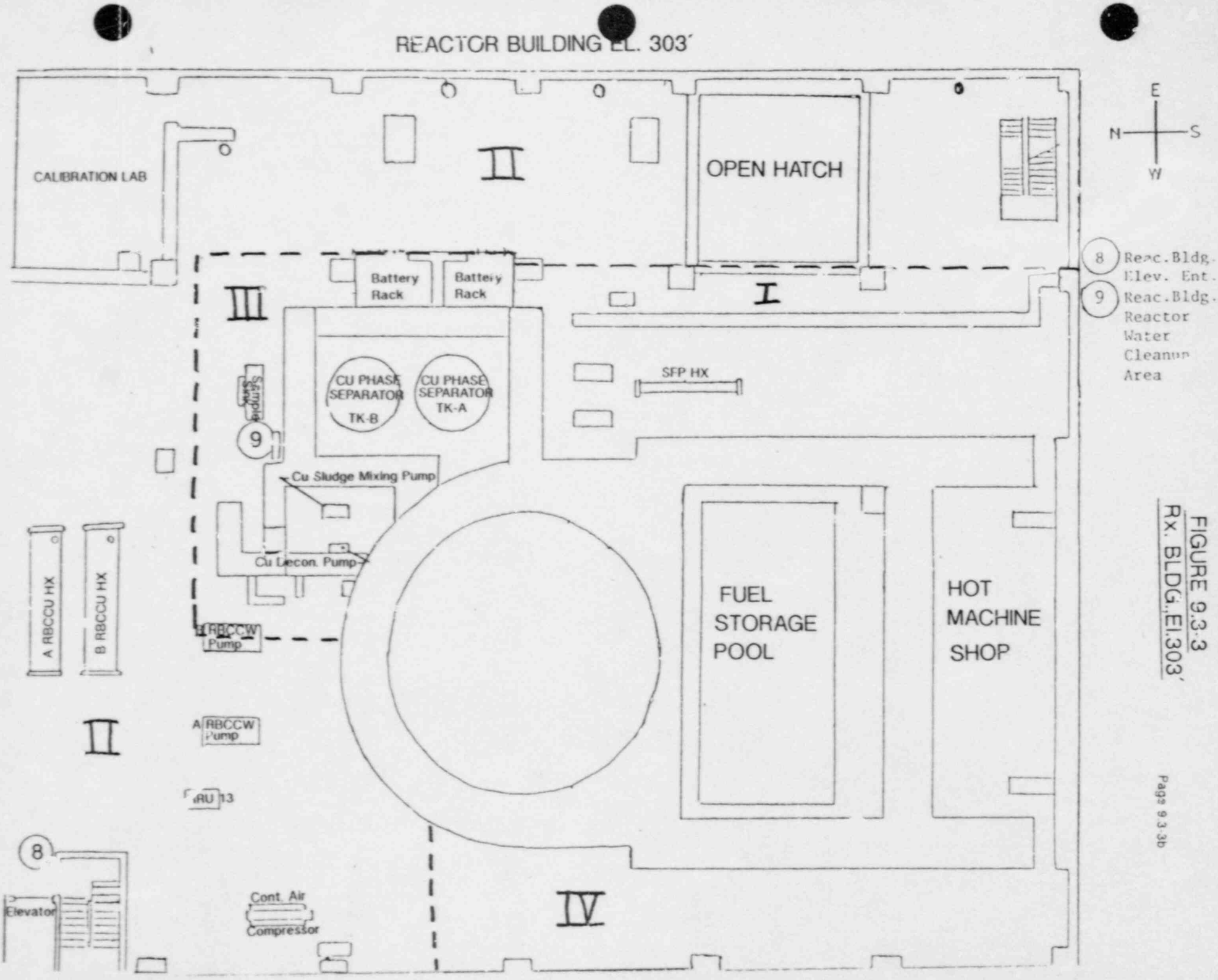


FIGURE 9.3-3
Rx. BLDG. El. 303'

TABLE 9.3-4

Reactor Building, Elevation 280'
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 6	RB Vent North ARM 31	RB Vent South ARM 32	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI	Zone VII
0600	0	8	1.5	1.5	1	2	2	1	75	8	1
0700	1:00	8	1.5	1.5	1	2	2	1	75	8	1
0715	1:15	8	1.5	1.5	1	2	3	2	75	8	2
0730	1:30	7	1.5	1.5	1	2	3	2	75	8	2
0745	1:45	7	6	6	5	4	5	4	80	10	4
0800	2:00	120	20	20	15	10	30	10	240	100	70
0815	2:15	500	80	60	60	40	100	50	800	400	300
0830	2:30	1500	80	80	70	80	300	150	2500	1200	800
0845	2:45	1800	100	100	80	120	360	180	3200	1600	900
0900	3:00	2500	100	100	90	170	360	250	4000	2200	1200
0915	3:15	3000	100	100	90	230	360	300	4000	2200	1200
0930	3:30	3000	100	100	90	230	400	320	4000	2200	1200
0945	3:45	3000	125	125	100	230	500	340	4000	2200	1200
1000	4:00	3000	150	150	120	280	600	340	5000	2800	1200
1015	4:15	3000	150	150	120	320	600	340	5500	3000	1550
1030	4:30	3000	150	150	120	370	600	340	6000	3000	1550
1045	4:45	3000	100	100	120	370	600	340	6000	3000	1550
1100	5:00	3000	100	100	120	370	600	340	6000	3000	1550
1130	5:30	3000	90	90	120	370	600	340	6000	3000	1550
1200	6:00	3000	90	90	120	370	600	340	6000	3000	1550
1230	6:30	3000	90	90	120	370	600	340	6000	3000	1550
1300	7:00	3000	90	90	120	370	600	340	6000	3000	1550
1315	7:15	3000	80	70	120	370	600	340	6000	3000	1500
1330	7:30	3000	90	90	120	370	600	340	6000	3000	1550
1400	8:00	3000	80	70	120	370	600	340	6000	3000	1550
1415	8:15	3000	200	200	120	370	600	340	6000	3000	1550

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm^2 in all zones.

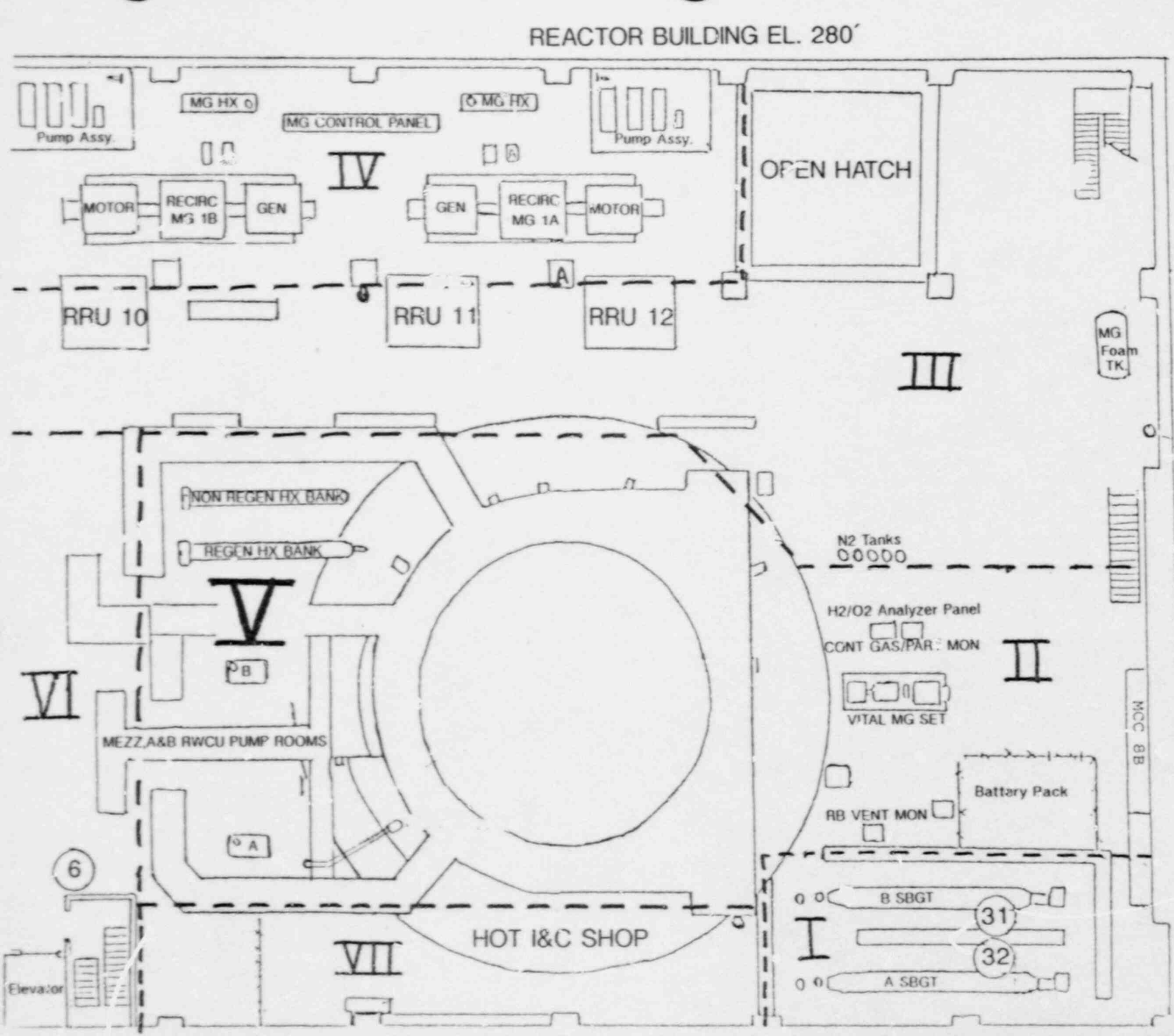


FIGURE 9.3-4
Rx. BLDG. El. 280

TABLE 9.3-5

Reactor Building, Elevation 252'
(mR/hr. unless otherwise noted)

Clock Time	Scenario Time	ARM 2	ARM 3	ARM 4	ARM 5	ARM 7	RM-14-29*	RM-14-30*	Zone I (South)	Zone II (South)	Zone III (South)	Zone IV (South)	Zone V (South)	Zone VII (South)	Zone II & VI (North)
0600	0	10	0.2	5	300	15	100	200	15	14	2	1	2	2	2
0700	1:00	10	0.3	5	250	15	100	200	15	14	3	2	3	3	2
0715	1:15	10	0.3	5	250	15	150	200	15	14	6	3	6	6	3
0730	1:30	10	0.3	5	250	15	150	200	15	14	6	3	6	6	3
0745	1:45	10	0.6	6	250	15	150	200	15	14	6	3	6	6	3
0800	2:00	60	4	40	1000	40	>500	420	30	20	15	10	10	60	30
0815	2:15	150	3	35	4000	200	>500	450	150	130	60	30	20	60	200
0830	2:30	400	4	20	8000	600	>500	450	550	530	200	80	40	60	500
0845	2:45	800	6	20	8000	1000	>500	450	950	900	300	100	75	80	900
0900	3:00	$>10^3$	8	25	8000	1500	>500	>500	1400	1300	500	200	150	100	900
0915	3:15	$>10^3$	10	30	8000	2000	>500	>500	1800	1500	900	350	300	100	900
0930	3:30	$>10^3$	10	30	8000	2000	>500	>500	1800	1500	900	350	300	500	1200
0945	3:45	$>10^3$	15	40	8000	2000	>500	>500	1800	1500	900	400	300	500	1200
1000	4:00	$>10^3$	20	50	9000	2500	>500	>500	2000	1800	1000	450	400	1000	2000
1015	4:15	$>10^3$	600	2000	$>10^4$	3200	>500	>500	2800	2500	1500	1200	800	[illegible]0	3000
1030	4:30	$>10^3$	700	2000	$>10^4$	3200	>500	>500	2800	2500	[illegible]00	1200	800	1500	3000
1045	4:45	$>10^3$	800	2000	$>10^4$	3200	>500	>500	2800	2500	1500	[illegible]200	800	1500	3000
1100	5:00	$>10^3$	$>10^3$	2000	$>10^4$	3200	>500	>500	2800	2500	1500	[illegible]200	800	1500	3000
1130	5:30	$>10^3$	$>10^3$	2000	$>10^4$	3500	>500	>500	2800	2500	1500	1200	800	[illegible]500	3000
1200	6:00	$>10^3$	$>10^3$	2000	$>10^4$	3500	>500	>500	2800	2500	1500	1200	800	1500	3000
1230	6:30	$>10^3$	$>10^3$	2000	$>10^4$	3500	>500	>500	2800	2500	1500	1200	800	1500	3000
1300	7:00	$>10^3$	$>10^3$	2000	$>10^4$	3500	>500	>500	2800	2500	1500	1200	800	1500	3000
1315	7:15	$>10^3$	$>10^3$	2000	$>10^4$	3500	>500	>500	2800	2500	1500	1200	800	1500	3000
1330	7:30	$>10^3$	$>10^3$	2000	$>10^4$	3500	>500	>500	2800	2500	1500	1200	800	1500	3000
1415	8:15	$>10^3$	$>10^3$	2000	$>10^4$	3500	>500	>500	2800	2500	1500	1200	800	1500	3000

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm^2 in all zones.
* RM-14 readings in cpm and the RM-14 on X1 scale goes off-scale at >500 cpm.

TABLE 9.3-5
(Continued)

Clock Time	Scenario Time	RMS II-1**	RMS II-2**	RMS II-3**
0600	0	<1.0	<1.0	<1.0
0700	1:00	<1.0	<1.0	<1.0
0715	1:15	<1.0	<1.0	<1.0
0730	1:30	<1.0	<1.0	<1.0
0745	1:45	<1.0	<1.0	<1.0
0800	2:00	<1.0	<1.0	<1.0
0815	2:15	<1.0	<1.0	<1.0
0830	2:30	<1.0	<1.0	<1.0
0845	2:45	1.0	1.0	<1.0
0900	3:00	1.5	1.5	<1.0
0915	3:15	1.5	2.0	1.0
0930	3:30	1.5	2.0	1.0
0945	3:45	2.0	2.5	1.0
1000	4:00	2.0	2.5	1.0
1015	4:15	2.0	2.5	1.0
1030	4:30	2.0	2.5	1.0
1045	4:45	2.0	2.5	1.0
1100	5:00	2.0	2.5	1.0
1130	5:30	2.0	2.5	1.0
1200	6:00	2.0	2.5	1.0
1230	6:30	2.0	2.5	1.0
1300	7:00	2.0	2.5	1.0
1315	7:15	2.0	2.5	1.0
1330	7:30	2.0	2.5	1.0
1415	8:15	2.0	2.5	1.0

Notes:

** RMS II readings in R/hr (high-range accident ARMs - 1 R/hr to 10,000 R/hr)

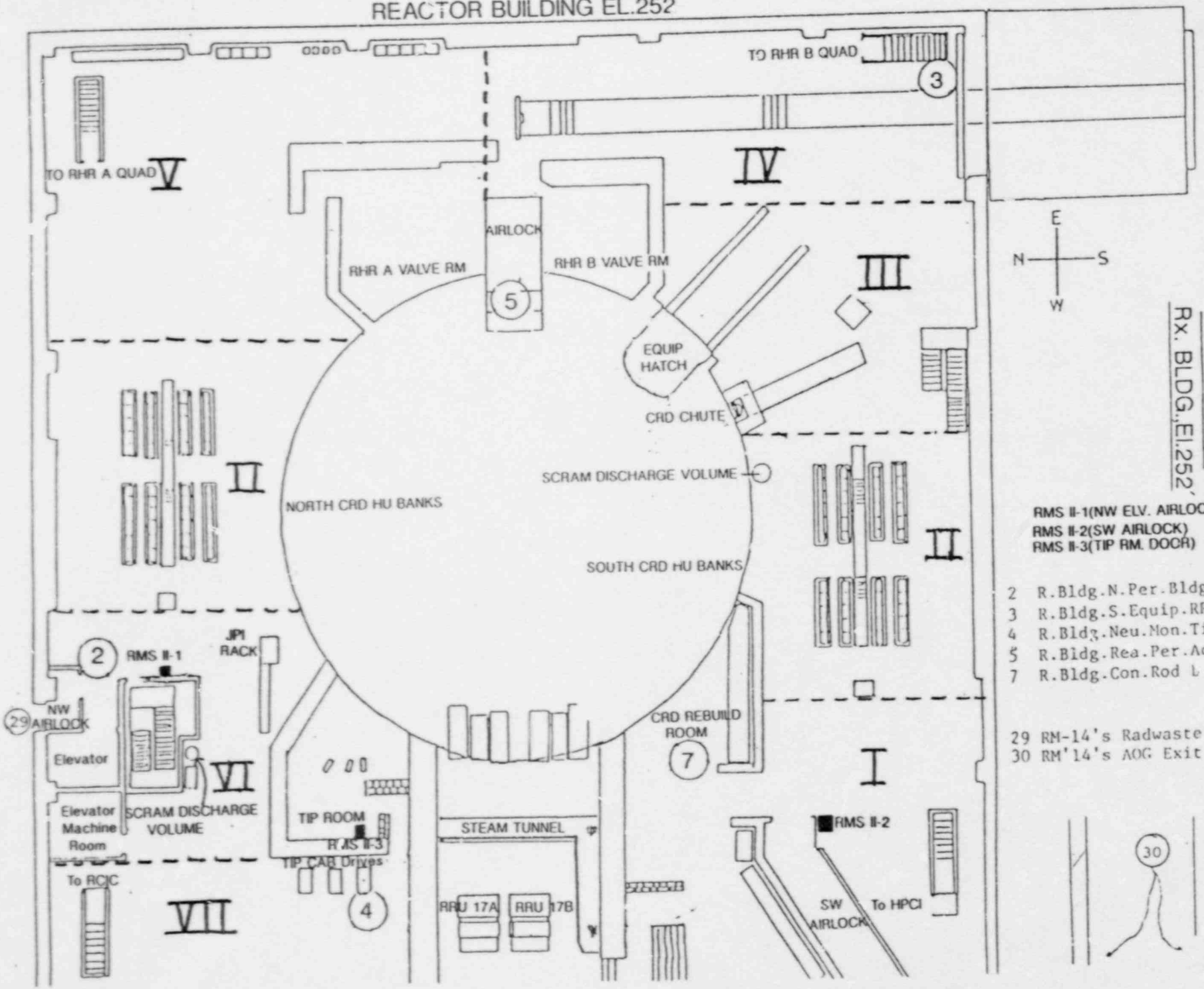


FIGURE 9.3-5
Rx. BLDG.,El.252'

RMS II-1(NW ELV. AIRLOCK)
RMS II-2(SW AIRLOCK)
RMS II-3(TIP RM. DOOR)

2 R.Bldg.N.Per.Bldg.Acc.
3 R.Bldg.S.Equip.RR.Acc.
4 R.Bldg.Neu.Mon.Tip With
5 R.Bldg.Rea.Per.Acc.Hat.
7 R.Bldg.Con.Rod D v.Rep.

29 RM-14's Radwaste Hall.
30 RM'14's AOG Exit

TABLE 9.3-6

Turbine Deck, Elevation 272'
(mR/hr unless otherwise noted)

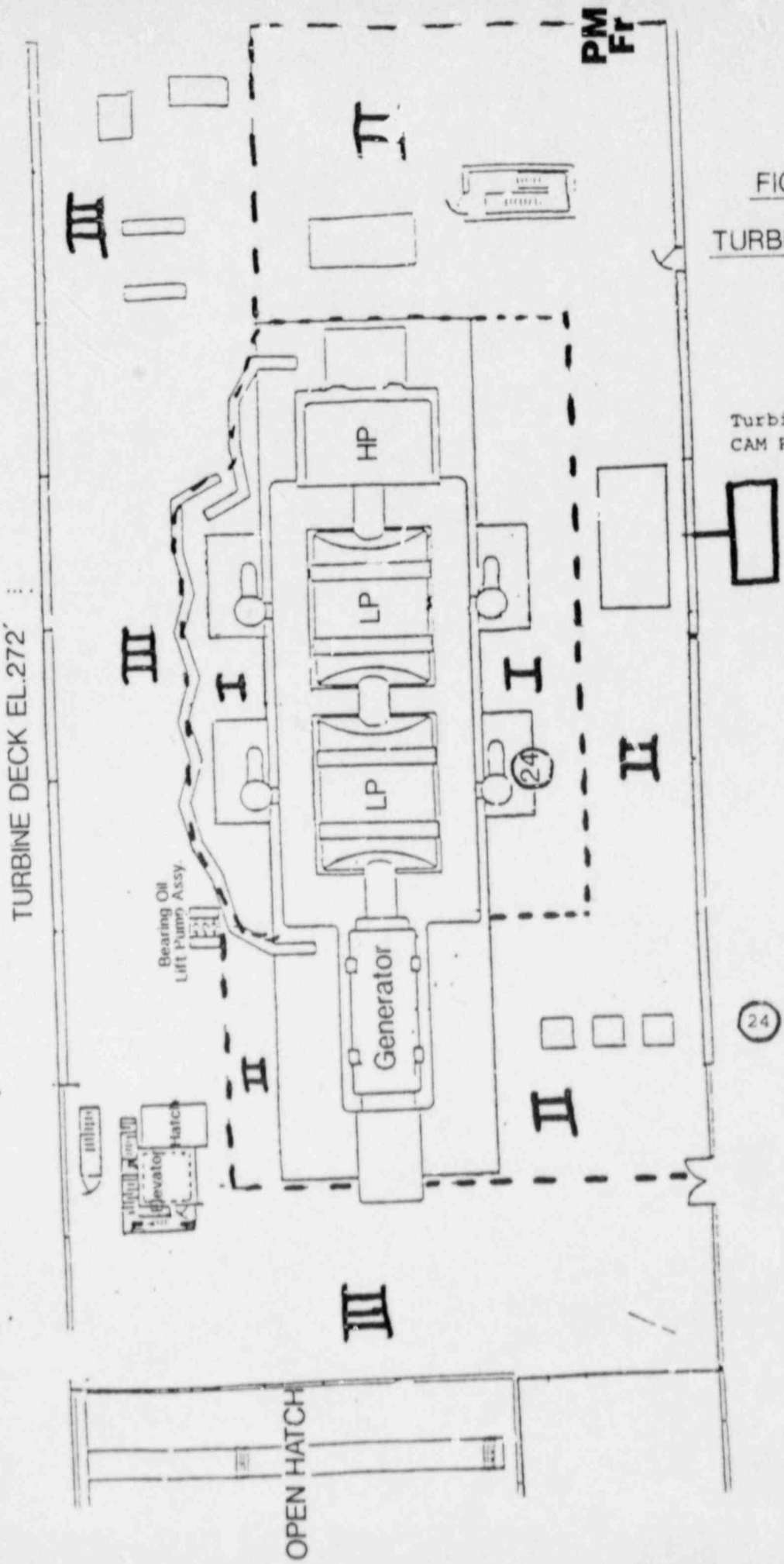
Clock Time	Scenario Time	ARM 24	Zone I	Zone II	Zone III	Turbine Deck CAM (cpm) NG	Turbine Deck CAM (cpm) Particulate
0600	0	200	100	25	2	250	900
0700	1:00	200	100	25	2	250	900
0715	1:15	180	80	20	2	250	900
0730	1:30	150	75	20	2	250	900
0745	1:45	150	75	15	2	250	900
0800	2:00	150	75	15	2	250	900
0815	2:15	100	50	10	2	275	900
0830	2:30	100	50	10	1	300	900
0845	2:45	90	40	10	1	300	[illegible]
0900	3:00	80	40	8	0.8	300	90[illegible]
0915	3:15	70	30	7	0.8	300	900
0930	3:30	60	30	6	0.7	300	900
0945	3:45	55	25	5	0.7	300	900
1000	4:00	50	25	5	0.7	300	900
1015	4:15	45	20	5	0.7	300	900
1030	4:30	40	20	4	0.4	300	900
1045	4:45	40	20	4	0.4	300	900
1100	5:00	35	15	4	0.4	300	900
1130	5:30	30	15	4	0.4	300	900
1200	6:00	30	15	4	0.4	300	900
1230	6:30	30	15	4	0.4	300	900
1300	7:00	30	15	4	0.4	300	900
1315	7:15	30	15	4	0.4	300	900
1330	7:30	30	15	4	0.4	300	900
1415	8:15	25	15	4	0.4	300	900

Notes: Zone readings are average dose rates throughout zone.

FIGURE 9.3-6

TURBINE BUILDING EL.272'

(Turbine Deck)



Turbine Deck
CAM Readout Panel

(24) Turbine Bldg.
Turbine Steam Inlet

TABLE 9.3-7

Turbine Building Truck Bay, Make-Up Demineralization Cond. Demineralization Areas, Elevation 252'

(mR/hr unless otherwise noted)

Clock Time	Scenario Time	RM-14-23A (cpm)	ARM 26	RM-14-36 (cpm)	RM-14-37 (cpm)	Zone I	Zone II	Zone III	Zone IV
0600	0	150	0.02	150	150	0.2	0.2	0.1	0.2
0700	1:00	150	0.02	150	150	0.4	0.3	0.2	0.2
0715	1:15	150	0.02	150	150	0.5	0.3	0.2	0.2
0730	1:30	150	0.02	150	150	0.5	0.3	0.2	0.2
0745	1:45	150	0.02	150	150	0.5	0.3	0.2	0.2
0800	2:00	150	0.02	150	150	0.5	0.3	0.2	0.2
0815	2:15	150	0.02	150	150	0.5	0.3	0.2	0.2
0830	2:30	150	0.02	150	150	0.5	0.3	0.2	0.2
0845	2:45	150	0.02	150	150	0.5	0.3	0.2	0.2
0900	3:00	150	0.01	150	150	0.6	0.3	0.2	0.2
0915	3:15	150	0.01	150	150	0.6	0.3	0.2	0.2
0930	3:30	150	0.01	150	150	0.6	0.3	0.2	0.2
0945	3:45	150	0.01	150	150	0.6	0.3	0.2	0.2
1000	4:00	150	0.01	150	150	0.6	0.3	0.2	0.2
1015	4:15	150	0.01	150	150	0.7	0.3	0.2	0.2
1030	4:30	150	0.01	150	150	0.7	0.3	0.2	0.2
1045	4:45	150	0.01	150	150	0.7	0.3	0.2	0.2
1100	5:00	150	0.01	150	150	0.7	0.3	0.2	0.2
1130	5:30	150	0.01	150	150	0.7	0.3	0.2	0.2
1200	6:00	150	0.01	150	150	0.7	0.3	0.2	0.2
1230	6:30	150	0.01	150	150	0.7	0.3	0.2	0.2
1300	7:00	150	0.01	150	150	0.7	0.3	0.2	0.2
1315	7:15	150	0.01	150	150	0.7	0.3	0.2	0.2
1330	7:30	150	0.01	150	150	0.7	0.3	0.2	0.2
1415	8:15	150	0.01	150	150	0.7	0.3	0.2	0.2

Notes: Zone readings are average dose rates throughout zone.

1910e/20.601

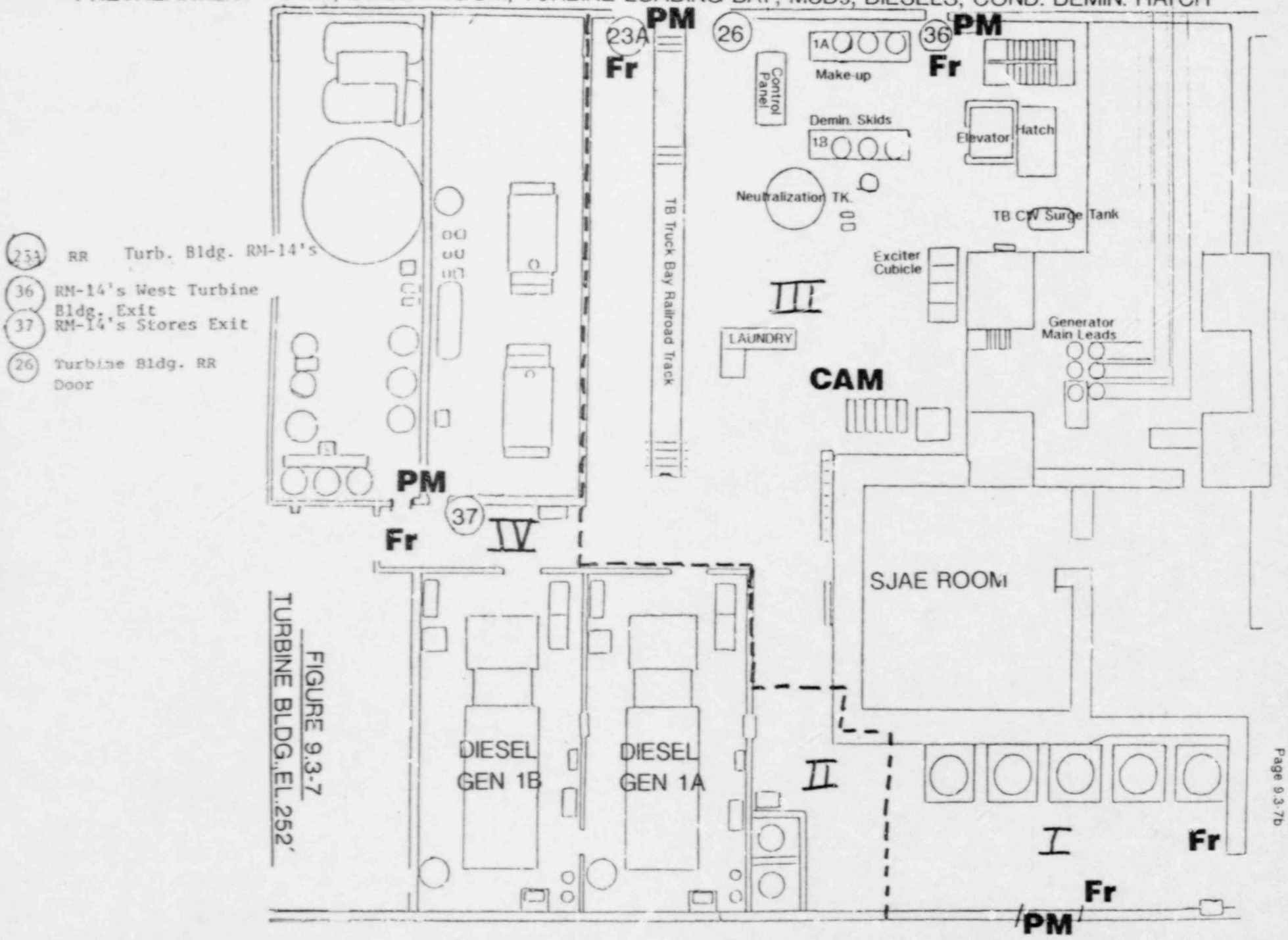


FIGURE 9.3-7
TURBINE BLDG. EL. 252'

TABLE 9.3-8

Turbine Building Cond. Bay, Elevation 248'
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 20	ARM 21	Zone I	Zone II	Zone III	Zone IV
0600	0	3	400	70	300	400	2
0700	1:00	2.5	400	80	300	400	3
0715	1:15	2.5	350	70	250	350	3
0730	1:30	2.5	300	60	200	300	3
0745	1:45	2.5	280	50	180	280	3
0800	2:00	2.5	280	0.5	180	280	3
0815	2:15	2.5	220	0.5	120	220	2.5
0830	2:30	2	180	0.5	80	180	2.5
0845	2:45	2	170	0.5	70	170	2.5
0900	3:00	2	150	0.5	50	150	2
0915	3:15	1.8	150	0.5	30	150	2
0930	3:30	1.8	140	0.5	30	100	2
0945	3:45	1.8	130	0.5	30	100	2
1000	4:00	1.8	120	0.5	20	90	1.8
1015	4:15	1.8	100	0.5	20	70	1.8
1030	4:30	1.8	100	0.5	20	60	1.8
1045	4:45	1.5	90	0.5	20	60	1.5
1100	5:00	1.5	70	0.5	20	60	1.5
1130	5:30	1.5	65	0.5	20	60	1.5
1200	6:00	1.5	60	0.5	20	50	1.5
1230	6:30	1.5	60	0.5	20	50	1.5
1300	7:00	1.5	55	0.5	20	50	1.5
1315	7:15	1.5	55	0.5	20	50	1.5
1330	7:30	1.5	55	0.5	20	50	1.5
1415	8:15	1.5	55	0.5	20	50	1.5

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm^2.

1910e/20.601

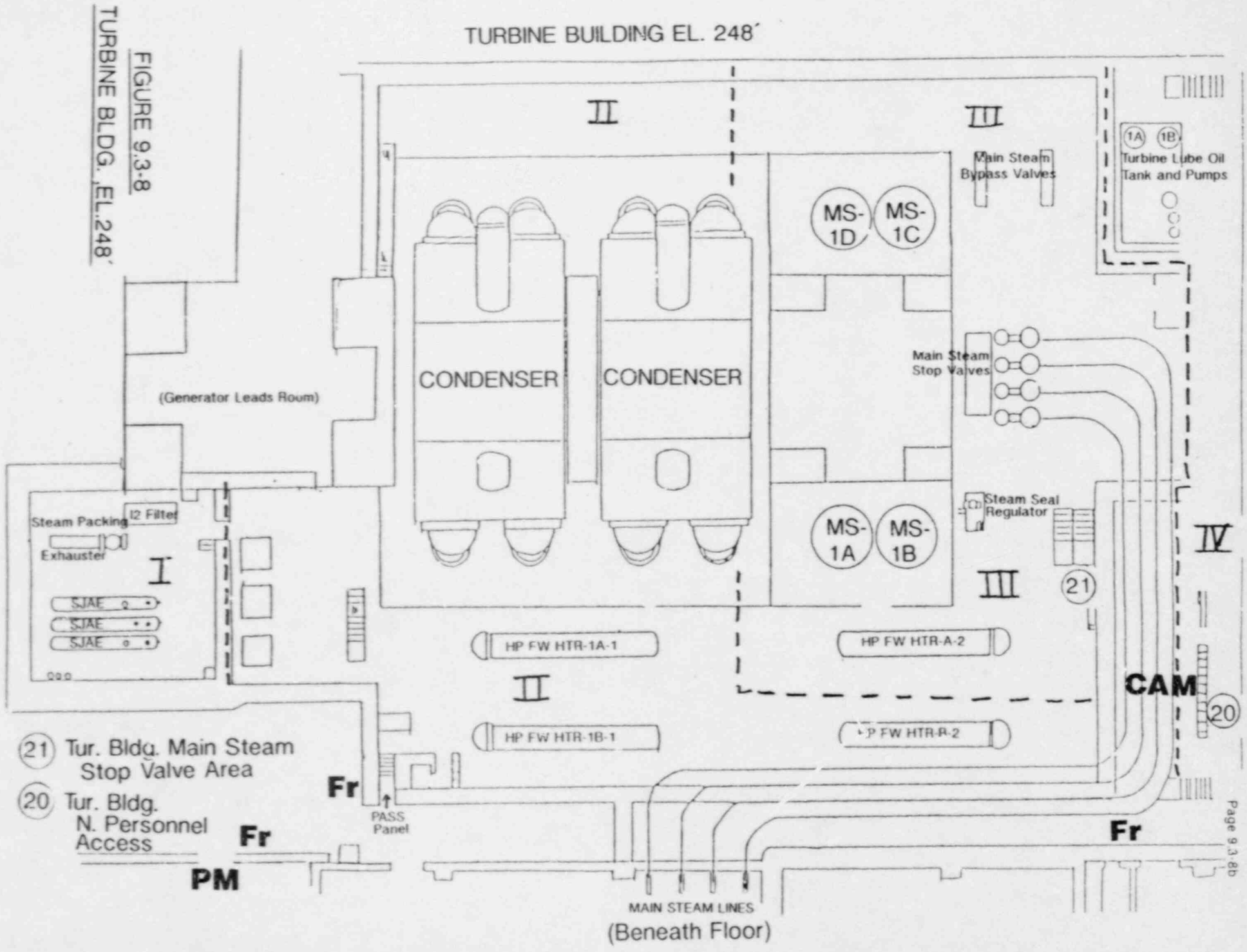

TURBINE BUILDING EL. 248´
TURBINE BLDG. EL.248´
FIGURE 9.3-8
II
III
IV
I
CONDENSER
CONDENSER
MS-1D
MS-1C
MS-1A
MS-1B
Main Steam Bypass Valves
1A
1B
Turbine Lube Oil Tank and Pumps
Main Steam Stop Valves
Steam Seal Regulator
(Generator Leads Room)
Steam Packing
I2 Filter
Exhauster
SJAE
SJAE
SJAE
HP FW HTR-1A-1
HP FW HTR-A-2
HP FW HTR-1B-1
HP FW HTR-B-2
21
CAM
20
21 Tur. Bldg. Main Steam Stop Valve Area
20 Tur. Bldg. N. Personnel Access
Fr
Fr
Fr
PASS Panel
PM
MAIN STEAM LINES
(Beneath Floor)

TABLE 9.3-9

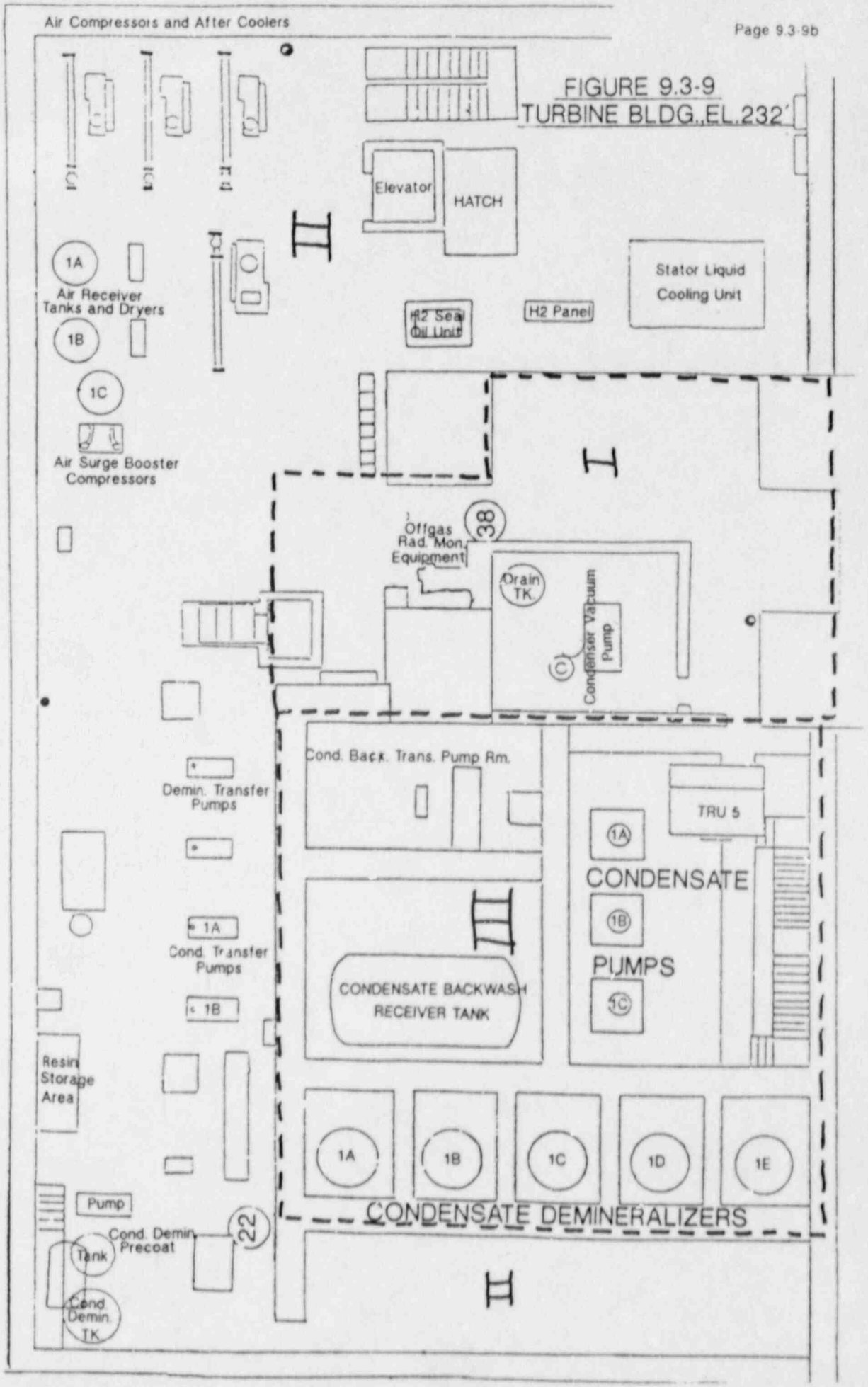
Turbine Building, Demineralization/OG Areas, Elevation 232'
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 22	ARM 38	Zone I	Zone II	Zone III
0600	0	0.3	140	10	0.5	3
0700	1:00	0.3	160	10	0.5	3
0715	1:15	0.25	140	10	0.5	3
0730	1:30	0.25	120	10	0.5	3
0745	1:45	0.25	100	10	0.5	3
0800	2:00	0.25	D/S	10	0.5	1
0815	2:15	0.25	D/S	10	0.5	1
0830	2:30	0.2	D/S	10	0.5	1
0845	2:45	0.2	D/S	5	0.5	1
0900	3:00	0.18	D/S	5	0.5	1
0915	3:15	0.18	D/S	5	0.5	1
0930	3:30	0.15	D/S	5	0.5	1
0945	3:45	0.15	D/S	5	0.5	1
1000	4:00	0.15	D/S	5	0.5	1
1015	4:15	0.15	D/S	5	0.5	1
1030	4:30	0.15	D/S	5	0.5	1
1045	4:45	0.15	D/S	5	0.5	1
1100	5:00	0.15	D/S	5	0.5	1
1130	5:30	0.15	D/S	5	0.5	1
1200	6:00	0.15	D/S	5	0.5	1
1230	6:30	0.15	D/S	5	0.5	1
1300	7:00	0.15	D/S	5	0.5	1
1315	7:15	0.15	D/S	5	0.5	1
1330	7:30	0.15	D/S	5	0.5	1
1415	8:15	0.15	D/S	5	0.5	1

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm^2.
D/S = Downscale reading.

1910e/20.601

FIGURE 9.3-9
TURBINE BLDG. EL. 232'



(22) Condensate Demin. Turbine Bldg.
(38) Offgas Rad Monitors

TABLE 9.3-10

Turbine Building Cond. Bay, Elevation 222'6" & 228'6"
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 13	Zone I	Zone II	Zone III	Zone IV	Zone V
0600	0	150	3	150	70	2	2
0700	1:00	150	3	150	70	2	3
0715	1:15	150	3	150	70	2	3
0730	1:30	120	3	120	60	2	3
0745	1:45	120	3	120	60	2	3
0800	2:00	100	2	100	60	2	3
0815	2:15	80	2	80	55	2	3
0830	2:30	60	2	60	50	2	3
0845	2:45	60	2	60	50	2	2.5
0900	3:00	50	2	50	50	1.5	2.5
0915	3:15	40	2	40	50	1.5	2.5
0930	3:30	35	2	25	45	1.5	2.5
0945	3:45	30	2	20	45	1.5	2.5
1000	4:00	25	2	20	40	1.5	2.5
1015	4:15	25	2	15	40	1.5	2.5
1030	4:30	20	2	10	40	1.5	2.5
1045	4:45	18	2	8	2	1.5	2.5
1100	5:00	15	1.5	8	2	1.5	2.5
1130	5:30	10	1.5	8	2	1.5	2.5
1200	6:00	10	1.5	8	2	1.5	2.5
1230	6:30	10	1.5	8	2	1.5	2.5
1300	7:00	10	1.5	8	2	1.5	2.5
1315	7:15	10	1.5	8	2	1.5	2.5
1330	7:30	10	1.5	8	2	1.5	2.5
1415	8:15	10	1.5	8	2	1.5	2.5

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm^2.

1910e/20.601

TURBINE BUILDING EL.222'6"&228'6"

(13) Turbine Bldg. Moisture Separator Area

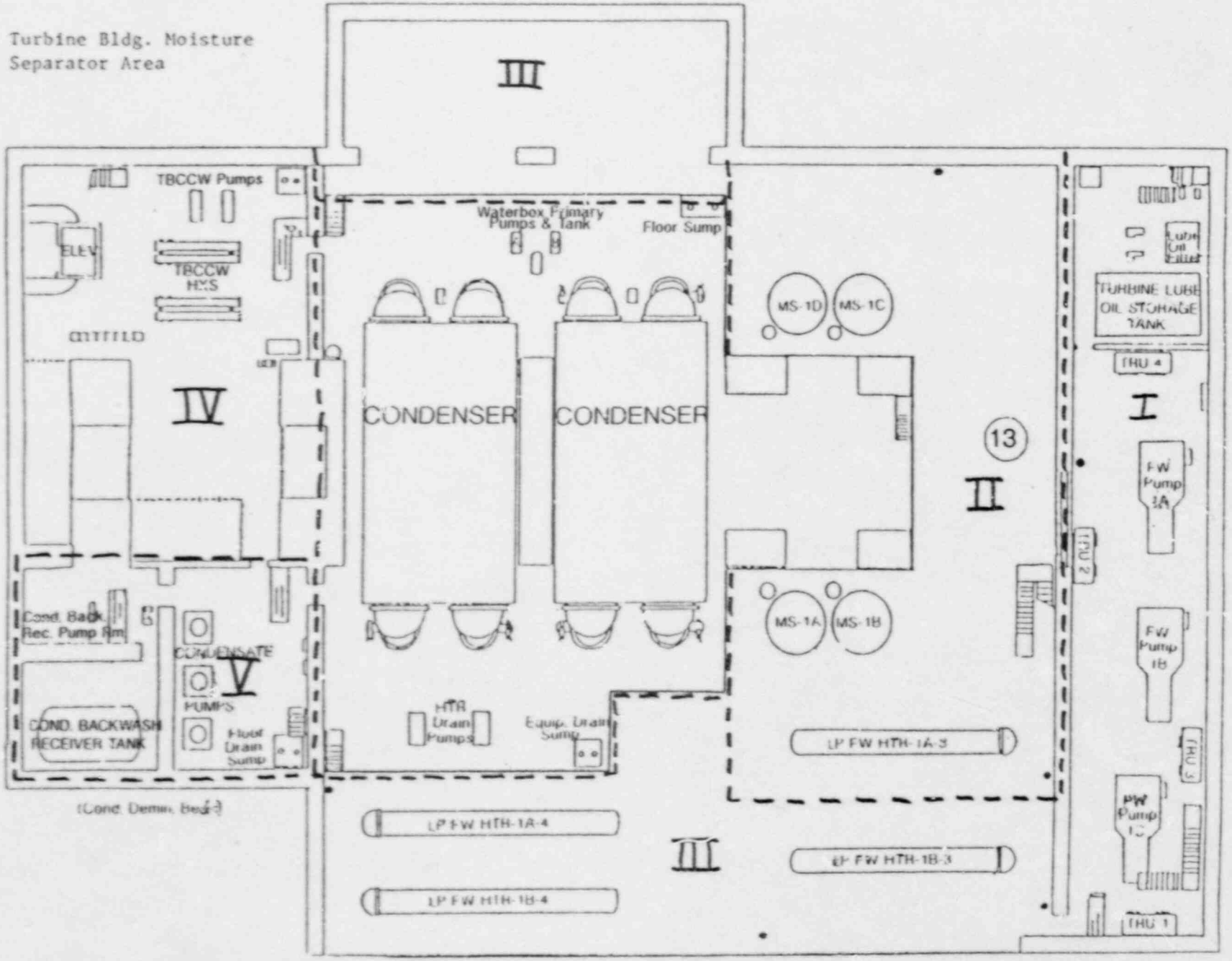


FIGURE 9.3-10
TURBINE BLDG. EL.222'6"&228'6"

TABLE 9.3-11

Drywell, Elevation 252'
(R/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 27	ARM 28
0600	0	2.0	2.0
0700	1:00	2.0	2.0
0715	1:15	2.0	2.0
0730	1:30	3.0	3.0
0745	1:45	3.0	3.0
0800	2:00	30	30
0815	2:15	100	100
0830	2:30	100	100
0845	2:45	300	300
0900	3:00	400	400
0915	3:15	400	400
0930	3:30	450	470
0945	3:45	520	550
1000	4:00	620	600
1015	4:15	1500	1500
1030	4:30	1500	1500
1045	4:45	1500	1500
1100	5:00	1500	1500
1130	5:30	1500	1500
1200	6:00	1500	1500
1230	6:30	1500	1500
1300	7:00	1500	1500
1315	7:15	1500	1500
1330	7:30	1500	1500
1415	8:15	1500	1500

FIGURE 9.3-11
DRYWELL EL.252'6"

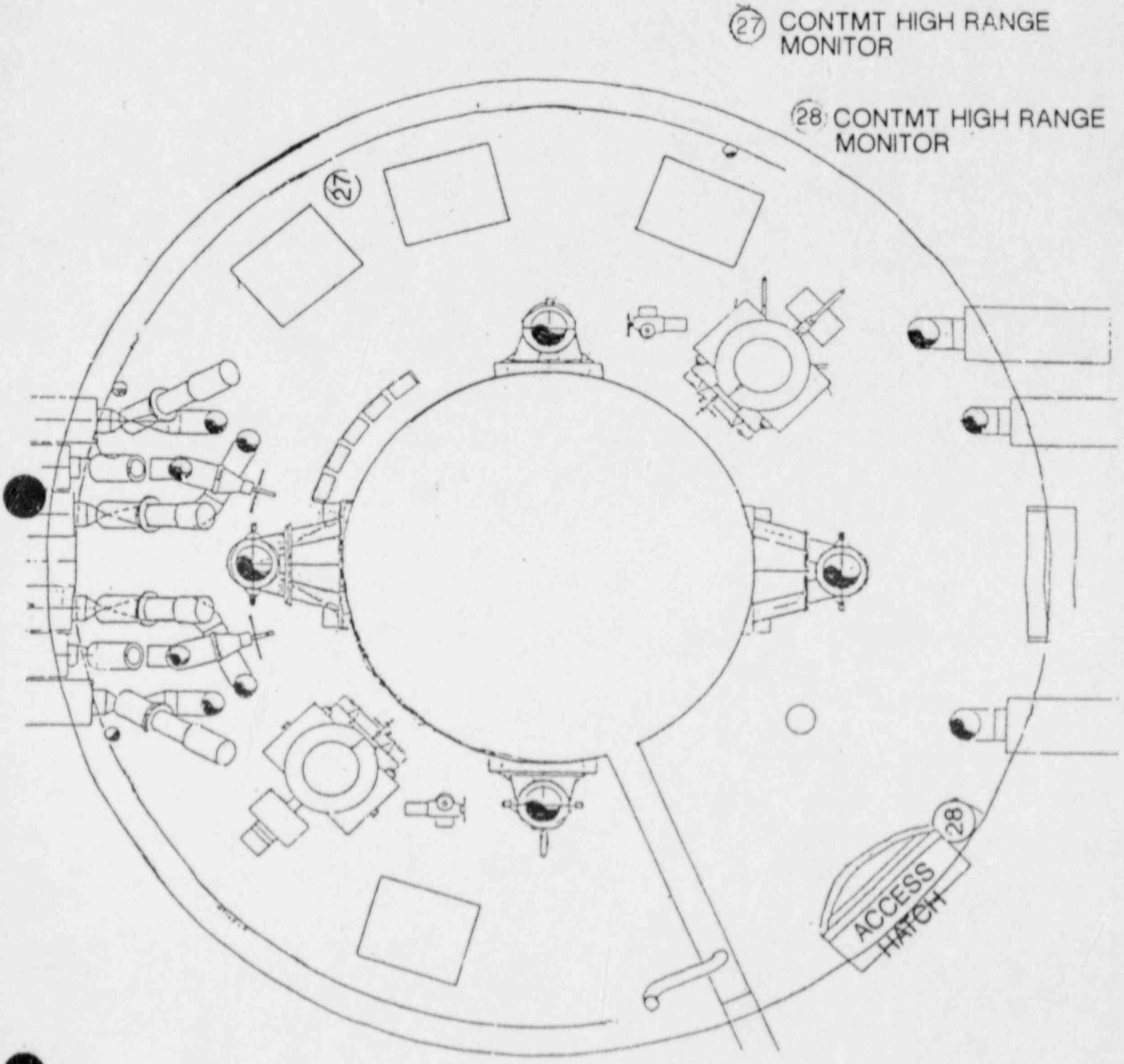


TABLE 9.3-12

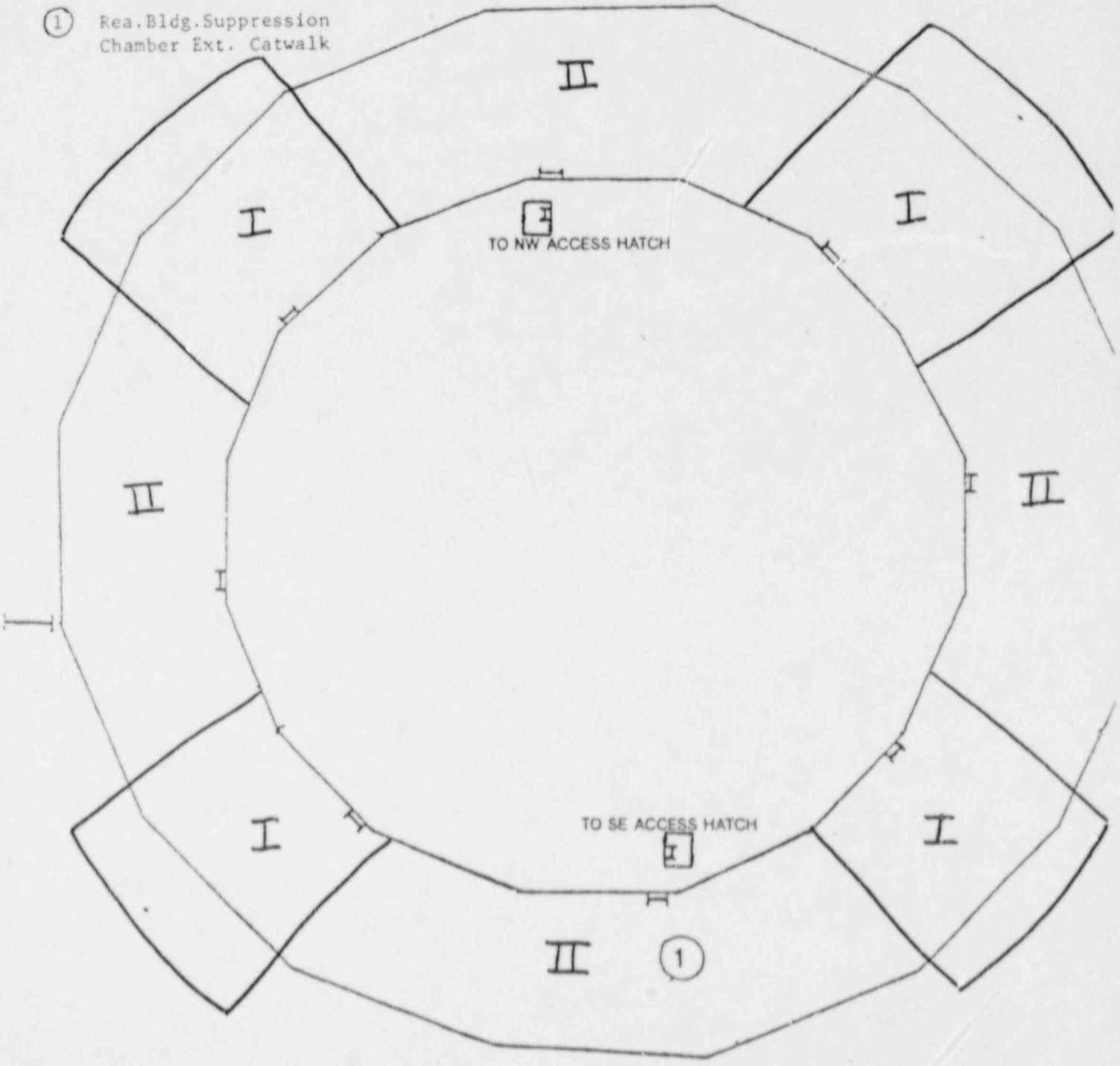
Torus Catwalk
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 1	Zone I	Zone II
0600	0	10	30	10
0700	1:00	10	30	10
0715	1:15	10	30	10
0730	1:30	10	30	10
0745	1:45	10	30	10
0800	2:00	100	300	100
0815	2:15	450	1300	450
0830	2:30	3000	9000	3000
0845	2:45	$>10^4$	30000	12000
0900	3:00	$>10^4$	40000	15000
0915	3:15	$>10^4$	40000	15000
0930	3:30	$>10^4$	40000	15000
0945	3:45	$>10^4$	40000	15000
1000	4:00	$>10^4$	40000	15000
1015	4:15	$>10^4$	50000	25000
1030	4:30	$>10^4$	50000	25000
1045	4:45	$>10^4$	50000	25000
1100	5:00	$>10^4$	50000	25000
1130	5:30	$>10^4$	50000	25000
1200	6:00	$>10^4$	50000	25000
1230	6:30	$>10^4$	50000	25000
1300	7:00	$>10^4$	50000	25000
1315	7:15	$>10^4$	50000	25000
1330	7:30	$>10^4$	50000	25000
1415	8:15	$>10^4$	50000	25000

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm^2.

FIGURE 9.3-12

TORUS CATWALK



VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

9.4.1 REACTOR COOLANT ACTIVITY DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

	Time		
Isotope	Prior to 0615	0615 - 0630	0630 - 0645
I-131	2.3E-4	9.5E-3	1.1E-2
I-132	3.4E-4	1.4E-2	1.6E-2
I-133	5.3E-4	2.2E-2	2.6E-2
I-134	4.6E-4	1.9E-2	2.3E-2
I-135	4.4E-4	1.8E-2	2.2E-2
Total Iodine:	2.0E-3	8.3E-2	9.8E-2
I-131 Dose Equivalent:	4.4E-4	1.8E-2	2.2E-2
Kr-85m	7.5E-5	3.2E-3	3.7E-3
Kr-85	9.5E-6	4.0E-4	4.7E-4
Kr-87	9.9E-5	4.2E-3	4.9E-3
Kr-88	1.8E-4	7.6E-3	8.8E-3
Xe-133	4.3E-4	1.8E-2	2.1E-2
Xe-135m	1.1E-4	4.6E-3	5.4E-3
Xe-135	9.1E-5	3.8E-3	4.5E-3
Total Noble Gas:	1.0E-3	4.2E-2	4.9E-2

Note: Reactor coolant sample dose rates are provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Time 0645-0700	0700-0745
I-131	2.3E-2	5.9E-2
I-132	3.4E-2	8.6E-2
I-133	5.3E-2	1.3E-1
I-134	4.6E-2	1.2E-1
I-135	4.4E-2	1.1E-1
Total Iodine:	2.0E-1	5.1E-1
I-131 Dose Equivalent:	4.4E-2	1.1E-1
Kr-85m	7.5E-3	2.0E-2
Kr-85	9.5E-4	2.5E-3
Kr-87	9.9F-3	2.6E-2
Kr-88	1.8E-2	4.7E-2
Xe-133	4.3E-2	1.1E-1
Xe-135m	1.1E-2	2.9E-2
Xe-135	9.1E-3	2.4E-2
Total Noble Gas:	1.0E-1	2.6E-1

Note: Reactor coolant sample dose rates are provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uC ml)

Isotope	Time 0745 - 0800	0800 - 0815
I-131	3.2E+1	2.9E+1
I-132	4.7E+1	4.2E+1
I-133	7.4E+1	6.6E+1
I-134	6.5E+1	5.8E+1
I-135	6.2E+1	5.5E+1
Total Iodine:	2.8E+2	2.5E+2
I-131 Dose Equivalent	6.2E+1	5.5E+1
Kr-85m	2.2E+3	2.1E+3
Kr-85	2.8E+2	2.7E+2
Kr-87	2.9E+3	2.8E+3
Kr-88	5.2E+3	5.0E+3
Xe-133	1.2E+4	1.2E+4
Xe-135m	3.2E+3	3.1E+3
Xe-135	2.6E+3	2.5E+3
Total Noble Gas:	2.9E+4	2.8E+4

Note: Reactor coolant sample dose rates are provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

	Time		
Isotope	0815 - 0830	0830 - 0845	0845 - 0900
I-131	2.6E+1	2.4E+1	2.3E+1
I-132	3.9E+1	3.5E+1	3.4E+1
I-133	6.1E+1	5.5E+1	5.3E+1
I-134	5.3E+1	4.9E+1	4.6E+1
I-135	5.1E+1	4.6E+1	4.4E+1
Total Iodine:	2.3E+2	2.1E+2	2.0E+2
I-131 Dose Equivalent:	5.1E+1	4.6E+1	4.4E+1
Kr-85m	2.0E+3	2.0E+3	1.9E+3
Kr-85	2.6E+2	2.5E+2	2.4E+2
Kr-87	2.7E+3	2.6E+3	2.5E+3
Kr-88	4.9E+3	4.7E+3	4.5E+3
Xe-133	1.2E+4	1.1E+4	1.1E+4
Xe-135m	3.0E+3	2.9E+3	2.8E+3
Xe-135	2.5E+3	2.4E+3	2.3E+3
Total Noble Gas:	2.7E+4	2.6E+4	2.5E+4

Note: Reactor coolant sample dose rates are provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Time 0900 - 0915	0915 - 0930	0930 - 1000
I-131	2.2E+1	2.1E+1	1.3E+1
I-132	3.2E+1	3.0E+1	1.9E+1
I-133	5.0E+1	4.8E+1	3.1E+1
I-134	4.4E+1	4.2E+1	2.7E+1
I-135	4.2E+1	4.0E+1	2.6E+1
Total Iodine:	1.9E+2	1.8E+2	1.2E+2
I-131 Dose Equivalent:	4.2E+1	4.0E+1	2.4E+1
Kr-85m	1.7E+3	1.6E+3	7.5E+2
Kr-85	2.2E+2	2.0E+2	9.5E+1
Kr-87	2.3E+3	2.1E+3	9.9E+2
Kr-88	4.1E+3	3.8E+3	1.8E+3
Xe-133	9.9E+3	9.0E+3	4.3E+3
Xe-135m	2.5E+3	2.3E+3	1.1E+3
Xe-135	2.1E+3	1.9E+3	9.1E+2
Total Noble Gas:	2.3E+4	2.1E+4	1.0E+4

Note: Reactor coolant sample dose rates are provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Time 1000 - 1015	1015 - 1030	1030 - 1415
I-131	1.3E+1	1.1E+1	1.1E+1
I-132	1.8E+1	1.6E+1	1.6E+1
I-133	2.9E+1	2.6E+1	2.5E+1
I-134	2.5E+1	2.3E+1	2.2E+1
I-135	2.4E+1	2.2E+1	2.1E+1
Total Iodine:	1.1E+2	9.8E+1	9.5E+1
I-131 Dose Equivalent:	2.4E+1	2.2E+1	2.1E+1
Kr-85m	7.1E+2	9.0E-1	3.9E-2
Kr-85	9.0E+1	1.1E-1	4.3
Kr-87	9.4E+2	1.2E+0	
Kr-88	1.7E+3	2.2E+0	9.4E-2
Xe-133	4.1E+3	5.2E+0	2.2E-1
Xe-135m	1.0E+3	1.3E+0	5.7E-2
Xe-135	8.6E+2	1.1E+0	4.7E-2
Total Noble Gas:	9.5E+3	1.2E+1	5.2E-1

Note: Reactor coolant sample dose rates are provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DAT.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Activity Concentrations (uCi/cc)

Isotope	Time Prior to 0615	0615-0630	0630-0645
I-131	*	2.9E-8	4.0E-8
I-132	*	4.2E-8	5.9E-8
I-133	*	6.6E-8	9.2E-8
I-134	*	5.8E-8	8.1E-8
I-135	*	5.5E-8	7.7E-8
Total Iodine	*	2.5E-7	3.5E-7
I-131 Dose Equivalent	*	5.5E-8	7.7E-8
Kr-85m	*	3.8E-6	5.3E-6
Kr-85	*	4.8E-7	6.7E-7
Kr-87	*	5.0E-6	6.9E-6
Kr-88	*	9.0E-6	1.3E-5
Xe-133	*	2.2E-5	3.0E-5
Xe-135m	*	5.5E-6	7.7E-6
Xe-135	*	4.6E-6	6.4E-6
Total Noble Gas	*	5.0E-5	7.0E-5

* Below MDA at specified time.

Note: Primary containment sample dose rates provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Activity Concentrations (uCi/cc)

Isotope	Time 0645-0700	0700-0715	0715-0730
I-131	5.4E-8	7.4E-8	9.5E-8
I-132	7.9E-8	1.1E-7	1.4E-7
I-133	1.2E-7	1.7E-7	2.2E-7
I-134	1.1E-7	1.5E-7	1.9E-7
I-135	1.0E-7	1.4E-7	1.8E-7
Total Iodine	4.7E-7	6.4E-7	8.3E-7
I-131 Dose Equivalent	1.0E-7	1.4E-7	1.8E-7
Kr-85m	7.1E-6	9.8E-6	1.3E-5
Kr-85	8.9E-7	1.2E-6	1.6E-6
Kr-87	9.3E-6	1.3E-5	1.7E-5
Kr-88	1.7E-5	2.3E-5	3.1E-5
Xe-133	4.0E-5	5.6E-5	7.3E-5
Xe-135m	1.0E-5	1.4E-5	1.9E-5
Xe-135	8.6E-6	1.2E-5	1.5E-5
Total Noble Gas	9.4E-5	1.3E-4	1.7E-4

Note: Primary containment sample dose rates provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Activity Concentrations (uCi/cc)

Isotope	Time 0730-0745	0745-0800	0800-0815
I-131	1.5E-7	1.0E-4	1.0E-3
I-132	2.2E-7	1.5E-4	1.5E-3
I-133	3.4E-7	2.3E-4	2.3E-3
I-134	3.0E-7	2.0E-4	2.0E-3
I-135	2.9E-7	1.9E-4	1.9E-3
Total Iodine	1.3E-6	8.8E-4	8.8E-3
I-131 Dose Equivalent	2.9E-7	1.9E-4	1.9E-3
Kr-85m	2.0E-5	2.4E-2	2.4E-1
Kr-85	2.0E-6	1.0E-3	1.0E-2
Kr-87	2.6E-5	2.2E-2	2.2E-1
Kr-88	4.7E-5	5.4E-2	5.4E-1
Xe-133	1.1E-4	2.2E-1	2.2E+0
Xe-135m	2.9E-5	3.0E-2	3.0E-1
Xe-135	2.4E-5	9.0E-2	9.0E-1
Total Noble Gas	2.6E-4	4.4E-1	4.4E+0

Note: Primary containment sample dose rates provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Activity Concentrations (uCi/cc)

Isotope	Time 0815-0830	0830-0845	0845-0900
I-131	3.5E-3	6.7E-3	1.0E-2
I-132	5.0E-3	9.7E-3	1.5E-2
I-133	7.9E-3	1.5E-2	2.3E-2
I-134	6.9E-3	1.3E-2	2.0E-2
I-135	6.6E-3	1.3E-2	1.9E-2
Total Iodine	3.0E-2	5.8E-2	8.8E-2
I-131 Dose Equivalent	6.6E-3	1.3E-2	1.9E-2
Kr-85m	5.5E-2	1.6E+0	2.4E+0
Kr-85	3.5E-2	6.9E-2	1.0E-1
Kr-87	7.5E-1	1.5E+0	2.2E+0
Kr-88	1.8E+0	3.6E+0	5.4E+0
Xe-133	7.5E+0	1.5E+1	2.2E+1
Xe-135m	1.0E+0	2.0E+0	3.0E+0
Xe-135	3.1E+0	5.9E+0	9.0E+0
Total Noble Gas	1.5E+1	2.9E+1	4.4E+1

Note: Primary containment sample dose rates provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Activity Concentrations (uCi/cc)

Isotope	Time 0900-0930	0930-1000	1000-1015
I-131	1.4E-2	1.7E-2	2.1E-2
I-132	2.0E-2	2.5E-2	3.1E-2
I-133	3.1E-2	4.0E-2	4.9E-2
I-134	2.7E-2	3.5E-2	4.3E-2
I-135	2.6E-2	3.3E-2	4.1E-2
Total Iodine	1.2E-1	1.5E-1	1.8E-1
I-131 Dose Equivalent	2.6E-2	3.3E-2	4.1E-2
Kr-85m	3.2E+0	5.5E+0	6.9E+0
Kr-85	1.4E-1	6.9E-1	8.7E-1
Kr-87	3.0E+0	7.2E+0	9.1E+0
Kr-88	7.3E+0	1.3E+1	1.7E+1
Xe-133	3.0E+1	3.1E+1	4.0E+1
Xe-135m	4.1E+0	8.0E+0	1.0E+1
Xe-135	1.2E+1	6.6E+0	8.4E+0
Total Noble Gas	5.9E+1	7.3E+1	9.2E+1

Note: Primary containment sample dose rates provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Activity Concentrations (uCi/cc)

Isotope	Time 1015-1030	1030-1415
I-131	5.1E-2	6.2E-2
I-132	7.4E-2	9.1E-2
I-133	1.2E-1	1.5E-1
I-134	1.0E-1	1.3E-1
I-135	9.7E-2	1.2E-1
Total Iodine	4.4E-1	5.5E-1
I-131 Dose Equivalent	9.7E-2	1.3E-1
Kr-85m	1.2E+1	1.4E+1
Kr-85	5.2E-1	6.3E-1
Kr-87	1.1E+1	1.3E+1
Kr-88	2.7E+1	3.3E+1
Xe-133	1.1E+2	1.4E+2
Xe-135m	1.5E+1	1.8E+1
Xe-135	4.5E+1	5.5E+1
Total Noble Gas	2.2E+2	2.7E+2

Note: Primary containment sample dose rates provided in Section 9.5.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.4.3 REACTOR BUILDING AIR ACTIVITY DATA

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

9.4.3 REACTOR BUILDING AIR ACTIVITY DATA

A. Reactor Building Air Activity Concentrations (uCi/cc)(1)

Sample Type	Time(2)
Gross Particulate (3)	2.0E-10 to 1.0E-9
Gross Iodine (3)	<1E-10
Gross Noble Gas (3)	<1E-10

Notes:

(1) Activity concentrations (uCi/cc) listed is for all Reactor Building elevations.

(2) Time period is for the entire exercise.

(3) If air samples are analyzed, it will be assumed that the gamma isotopic results will show all radionuclides below the MDA of the multi-channel analyzer. Also, RM-14/HP-210 survey of the air samples (filter or cartridge) will show no counts above background.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.5 RADIOLOGICAL SAMPLE DOSE RATES

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.5.1 Reactor Coolant Sample Dose Rates

A. Gas Samples

Time	Unshielded (mR/hr per cc)* Contact	Unshielded (mR/hr per cc)* 1 ft	Shielded (1 in. lead in mR/hr per cc)* Contact	Shielded (1 in. lead in mR/hr per cc)* 1 ft
0615-0700	1.8E-3	1.3E-5	2.3E-5	1.6E-7
0700-0745	7.5E-3	5.2E-5	9.4E-5	6.5E-7
0745-0815	8.3E+2	5.8E+0	1.0E+1	7.2E-2
0815-0900	7.5E+2	5.2E+0	9.4E+0	6.5E-2
0900-0915	6.6E+2	4.6E+0	8.3E+0	5.8E-2
0915-0930	6.0E+2	4.2E+0	7.6E+0	5.3E-2
0930-1015	2.7E+2	1.9E+0	3.4E+0	2.4E-2
1015-1030	3.5E-1	2.4E-3	4.4E-3	3.0E-5
1030-1415	1.5E-2	1.0E-4	1.9E-5	1.3E-6

B. Liquid (Iodine)

0615-0700	1.0E-1	7.0E-4	1.3E-3	8.7E-6
0700-0715	4.0E-1	2.8E-3	5.0E-3	3.4E-5
0715-0745	1.3E0	9.0E-3	1.6E-2	1.1E-4
0745-0815	2.0E+2	1.4E0	2.5E0	1.7E-2
0815-0930	1.6E+2	1.1E0	2.0E0	1.4E-2
0930-1030	8.6E+1	5.9E-1	1.1E0	7.4E-3
1030-1415	7.5E+1	5.2E-1	9.4E-1	6.5E-3

*Note: Values must be multiplied by the sample volume in cubic centimeters for gas samples and milliliters for liquid samples to obtain the sample dose rate in mR/hr.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.5.2 Primary Containment Sample Dose Rates

A. Gas Samples

Time	Unshielded (mR/hr per cc)* Contact	Unshielded (mR/hr per cc)* 1 ft	Shielded (1 in. lead in mR/hr per cc)* Contact	Shielded (1 in. lead in mR/hr per cc)* 1 ft
0615-0700	2.0E-5	1.4E-7	2.5E-7	1.8E-9
0700-0730	4.3E-5	3.0E-7	5.4E-7	3.8E-9
730-0745	7.5E-5	5.2E-7	9.4E-7	6.5E-9
0745-0800	1.3E-1	8.8E-4	1.6E-3	1.1E-5
0800-0815	1.3E0	8.8E-3	1.6E-2	1.1E-4
0815-0845	6.4E0	4.4E-2	7.9E-2	5.5E-4
0845-0930	1.5E+1	1.0E-1	1.9E-1	1.3E-3
0930-1000	2.1E+1	1.5E-1	2.6E-1	1.8E-3
1000-1015	2.6E+1	1.8E-1	3.3E-1	2.3E-3
1015-1415	7.7E+1	5.4E-1	9.7E-1	6.7E-3

B. Iodine

0615-0700	2.7E-7	1.9E-9	3.4E-9	2.4E-11
0700-0730	5.8E-7	4.0E-9	7.2E-9	5.0E-11
0730-0745	1.0E-6	7.0E-9	1.3E-8	8.8E-11
0745-0800	6.8E-4	4.8E-6	8.6E-6	5.9E-8
0800-0815	6.8E-3	4.8E-5	8.6E-5	5.9E-7
0815-0845	2.5E-2	1.7E-4	3.1E-4	2.2E-6
0845-0930	6.8E-2	6.5E-4	1.2E-3	8.1E-6
0930-1000	1.2E-1	8.1E-4	1.5E-3	1.0E-5
1000-1015	1.4E-1	9.7E-4	1.7E-3	1.2E-5
1015-1030	3.4E-1	2.4E-3	4.3E-3	3.0E-5
1030-1415	4.2E-1	3.0E-3	5.3E-3	3.7E-5

*Note: Values must be multiplied by the sample volume in cubic centimeters to obtain the sample dose rate in mR/hr.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.6 PLANT VENT STACK RELEASE DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

9.6 PLANT VENT STACK RELEASE DATA

Plant Vent Stack Activity Release Concentrations (uCi/cc)

Sample Type	Time(1)
Gross Noble Gas(2)	<1.0E-6
Gross Iodine(2)	2.9E-12
Gross Particulate(2)	<1.0E-12

NOTES:

(1) Time period is for the entire exercise.

(2) If plant vent stack samples are analyzed, it will be assumed that the gamma isotopic results will show all radionuclides below the MDA of the multichannel analyzer. Also, RM-14/HP-210 survey of the stack filter or cartridge will show no counts above background.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

10.0 METEOROLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

10.1 ON-SITE METEOROLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

10.1 ON-SITE METEOROLOGICAL DATA

06:00-07:30

	Time						
	06:00	06:15	06:30	06:45	07:00	07:15	07:30
LOWSAV AVG LOWER SPEED MPH	5.2	6.5	6.9	7.9	7.6	7.8	9.7
UPWSAV AVG UPPER SPEED MPH	9.1	9.3	10.2	11.4	11.8	11.5	12.5
LOWDAV AVG LOWER DIR DEGS	356	358	6	8	15	12	4
LOWDSD AVG LOWER DIR SIGMA	13	13	11	15	14	15	11
UPWDAV AVG UPPER DIR DEGS	359	3	5	8	11	11	5
UPWDSD AVG UPPER DIR SIGMA	6	7	7	8	9	10	7
LOTTAV AVG LOWER TEMP DEGS (F)	60.3	60.6	61.1	61.7	62.2	62.8	63.2
LODTAV AVG LOWER DELTA T DEGS (F)	-0.8	-1	-1.1	-1.2	-1.3	-1.3	-1.4
UPDTAV AVG UPPER DELTA T DEGS (F)	-1.1	-1.3	-1.3	-1.4	-1.5	-1.6	-1.6
SOLRAV AVG SOLAR RAD LANGS	0.18	0.25	0.33	0.4	0.47	0.54	0.62
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00

07:45-09:15

	Time						
	07:45	08:00	08:15	08:30	08:45	09:00	09:15
LOWSAV AVG LOWER SPEED MPH	7.8	7.1	7.9	7.9	8.3	9.1	10.1
UPWSAV AVG UPPER SPEED MPH	11.3	9.4	11.7	11.7	11.4	13.7	14.3
LOWDAV AVG LOWER DIR DEGS	356	358	345	355	2	359	359
LOWDSD AVG LOWER DIR SIGMA	16	16	15	16	15	13	14
UPWDAV AVG UPPER DIR DEGS	357	357	353	356	0	357	359
UPWDSD AVG UPPER DIR SIGMA	6	9	7	10	10	6	6
LOTTAV AVG LOWER TEMP DEGS (F)	63.9	64.4	65.4	66	66.6	66.8	67
LODTAV AVG LOWER DELTA T DEGS (F)	-1.8	-1.7	-2.1	-2	-2	-2	-2
UPDTAV AVG UPPER DELTA T DEGS (F)	-2	-1.9	-2.4	-2.3	-2.3	-2.4	-2.3
SOLRAV AVG SOLAR RAD LANGS	0.69	0.75	0.82	0.88	0.95	1	1.02
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1988

10.1 ON-SITE METEOROLOGICAL DATA

09:30-11:30

	Time								
	09:30	09:45	10:00	10:15	10:30	10:45	11:00	11:15	11:3
LOWSAV AVG LOWER SPEED MPH	10.7	9.9	9.4	8.7	9.5	8.7	8.8	9.0	7
UPWSAV AVG UPPER SPEED MPH	14.6	14.9	13.3	11.5	12.1	14.2	13.1	12.3	8.8
LOWDAV AVG LOWER DIR DEGS	360	359	358	13	9	352	355	19	7
LOWDSD AVG LOWER DIR SIGMA	12	15	15	18	15	20	21	21	29
UPWDAV AVG UPPER DIR DEGS	3	359	357	8	10	352	358	15	9
UPWDSD AVG UPPER DIR SIGMA	6	7	7	19	15	9	14	14	25
LOTTAV AVG LOWER TEMP DEGS (F)	67.3	68	68.9	69.2	69.1	70	70.2	70	70.7
LODTAV AVG LOWER DELTA T DEGS (F)	-1.8	-2	-2.3	-2	-1.8	-2.5	-2.4	-2.1	-2.1
UPDTAV AVG UPPER DELTA T DEGS (F)	-2.2	-2.4	-2.6	-2.4	-2.1	-2.8	-2.7	-2.4	-2.4
SOLRAV AVG SOLAR RAD LANGS	1.04	1.12	1.17	1.15	1.19	1.26	1.3	1.32	1.33
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

11:45-13:30

	Time							
	11.45	12:00	12:15	12:30	12:45	13:00	13:15	13:30
LOWSAV AVG LOWER SPEED MPH	6.9	9.3	7.1	7.3	6.7	7.1	7.3	6.3
UPWSAV AVG UPPER SPEED MPH	9.8	11.9	10.3	10.1	8.9	9.1	8.7	8.1
LOWDAV AVG LOWER DIR DEGS	358	27	12	12	11	19	27	27
LOWDSD AVG LOWER DIR SIGMA	20	20	19	22	23	25	18	22
UPWDAV AVG UPPER DIR DEGS	2	23	5	8	18	20	20	32
UPWDSD AVG UPPER DIR SIGMA	14	10	14	10	13	15	21	21
LOTTAV AVG LOWER TEMP DEGS (F)	71.3	71.4	71.9	72.5	72.9	72.9	73.2	72.9
LODTAV AVG LOWER DELTA T DEGS (F)	-2.3	-2.1	-2.2	-2.1	-2.1	-2	-1.8	-1.6
UPDTAV AVG UPPER DELTA T DEGS (F)	-2.5	-2.3	-2.5	-2.5	-2.3	-2.1	-1.9	-1.8
SOLRAV AVG SOLAR RAD LANGS	1.35	1.36	1.29	1.34	1.4	1.24	1.12	1.03
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.11

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

10.2 GENERAL AREA NWS FORECASTS

THIS IS A DRILL

10.2 GENERAL AREA NWS FORECASTS

6:00-12:00 - General Area Forecast

Mostly sunny with northerly winds today. High temperatures in the mid 70's, with a slight chance for an afternoon shower.

As a strong high pressure moves further east, strong winds will give way to light variable conditions.

THIS IS A DRILL

THIS IS A DRILL

10.2 GENERAL AREA NWS FORECASTS

12:00-18:00 - General Area Forecast

Mostly clear this afternoon and tonight. Low temperature this evening in the high 50's, winds northerly 5-10 mph. Tomorrow sunny, clear, high near 80.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1988

10.3 NATIONAL WEATHER SERVICE SURFACE MAPS


LOW
LOW
LOW
LOW
HIGH
HIGH
HIGH
HIGH
ACK WEATHER MAP
STATION WEATHER
7:00 AM EST

NRC Briefing Agenda

1988 Vermont Yankee
Emergency Preparedness Graded Exercise
31 August 1988

- Introduction ..... Stan Jefferson
- Schedule ..... Ed Porter
- Organization/Layout ..... Ed Porter
- Exercise Manual Review ..... Ed Salomon
- Questions/Errata ..... Ed Porter
- ERF Tour(s) ..... Ed Porter

Vermont Yankee Nuclear Power Corporation

Emergency Preparedness
Organization & Facilities

1988 Graded Exercise
31 August 1988

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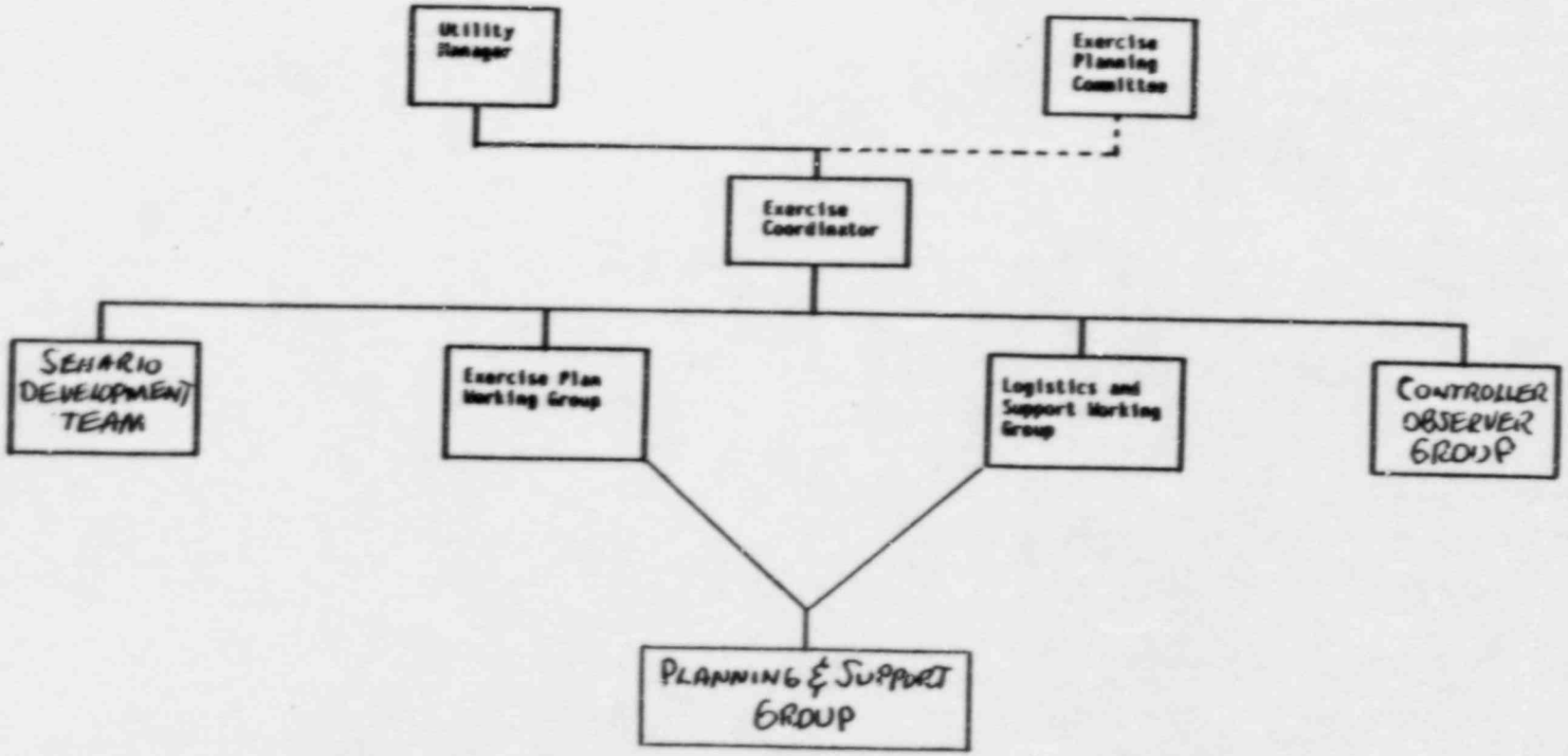
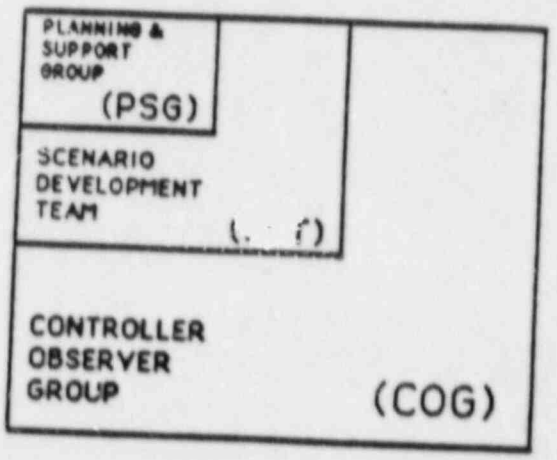
ORGANIZATION FOR EXERCISE PLANNING CONDUCTING & EVALUATING



1988 Exercise Organization



Planning & Support Group Personnel:

- Stan Jefferson (SJJ)
- Ed Porter (ECP)
- Fred Deal (FJD)
- Ed Salomon (EHS)
- Cal Cameron (CBC)

Planning & Support Group Functions:

1. Maintain schedule
2. Maintain punch list
4. Interface with off-site groups for exercise prep/conduct
5. Training preparation for players
6. Training preparation for controllers & observers
7. Assemble exercise package
8. Generate ground rules memo
9. Track costs
10. Brief & train NRC
11. Conduct critiques

SCENARIO DEVELOPMENT TEAM (SDT)

MEMBERS/SUPPORT

JEFFERSON
CAMERON
SALOMON
  HAWXHURST
PORTER
  BURDA
  SCHNEIDER
DEAL
  ERVIN
  STAFFORD
  WILDER
  HOWARD
CRESLEY
  SLAUZN-WHITE
  TUTTLE
  KRIDER
SRO-PLANT

RESPONSIBILITIES

1. DETERMINE SCENARIO
2. DETERMINE RAD DATA
3. DETERMINE PLUME DATA
4. DETERMINE OPERATIONAL DATA
5. DEVELOP MINI-SCENARIOS
6. TEST ON SIMULATOR
7. SERVE AS OBSER/CONTROLLERS
8. DETERMINE PLANT ACTIVITIES

CONTROLLER/OBSERVER ORGANIZATION

GRADED EXERCISE
AUGUST 31, 1988

EXERCISE COORDINATOR
S. J. JEFFERSON

SIMULATOR CR	PLANT CR	TSC	OSC	EOF	SRM	SEC	NMC	ESC
CONTROLLER	CONTROLLER	CONTROLLER	CONTROLLER	CONTROLLER	CONTROLLER	CONTROLLER	CONTROLLER	CONTROLLER
Chesley	Slauenwhite	Hawxhurst	Deal	Salomon	Porter	None	Zikaras	Wojnas
OBSERVERS	OBSERVERS	OBSERVERS	OBSERVERS	OBSERVERS	OBSERVERS	OBSERVERS	OBSERVERS	OBSERVERS
Tuttle	None	LeClair	McDavitt	Traegde	Arms	Gilman	LeFebrve	None
Erider		Tarcuzzer	Cameron	Morgan			Burda	
McArdle			Ervin	Cardarelli				
Thomas (Sim Data)			Stafford					
			Wilder					
			Babbitt					
			Howard					
			Dyer					
			Race					

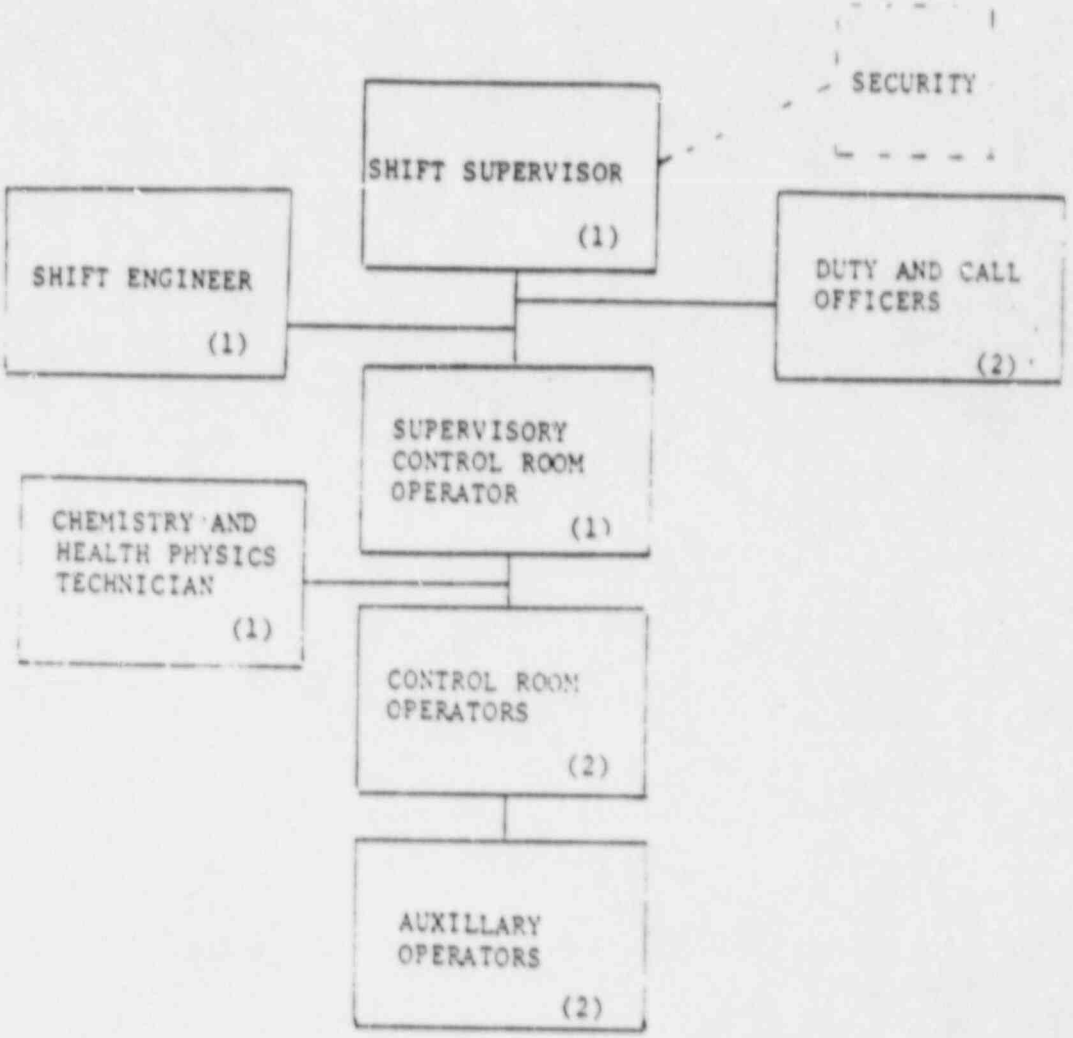


FIGURE 8.1

ON-SHIFT EMERGENCY ORGANIZATION AND ACTIONS

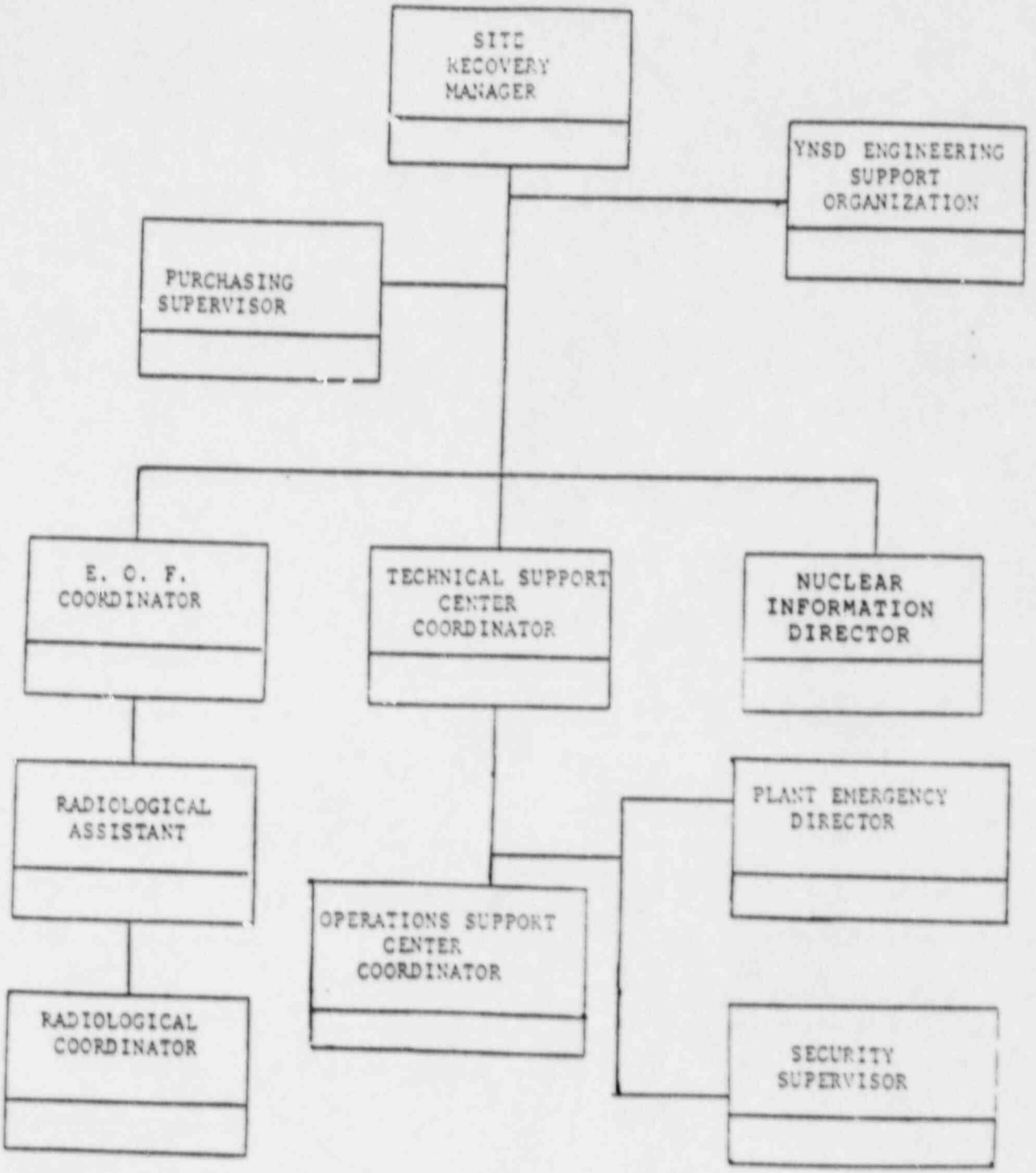


FIGURE 8.2

VERMONT YANKEE EMERGENCY MANAGEMENT ORGANIZATION

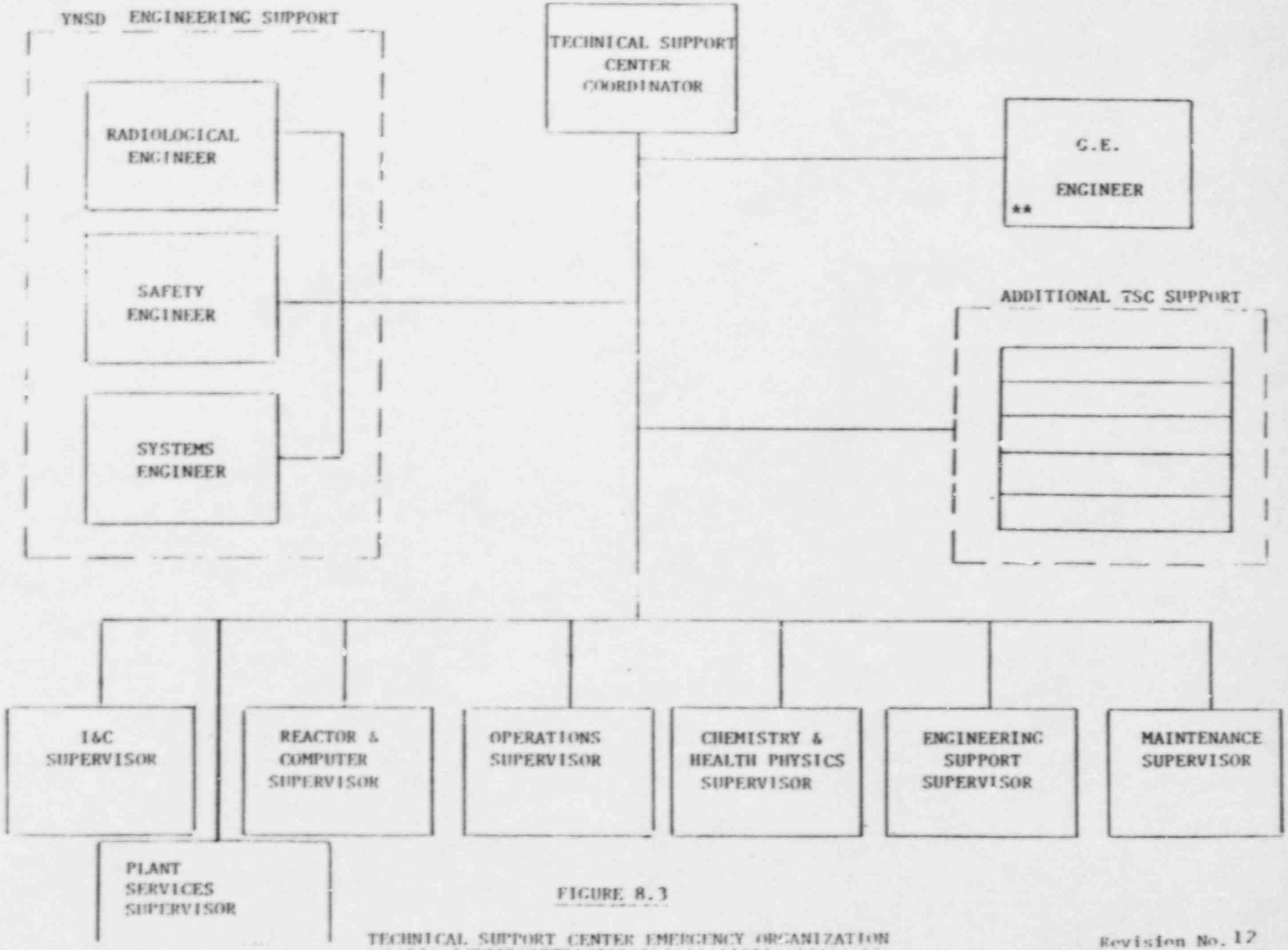


FIGURE 8.3

TECHNICAL SUPPORT CENTER EMERGENCY ORGANIZATION

(**) If Available

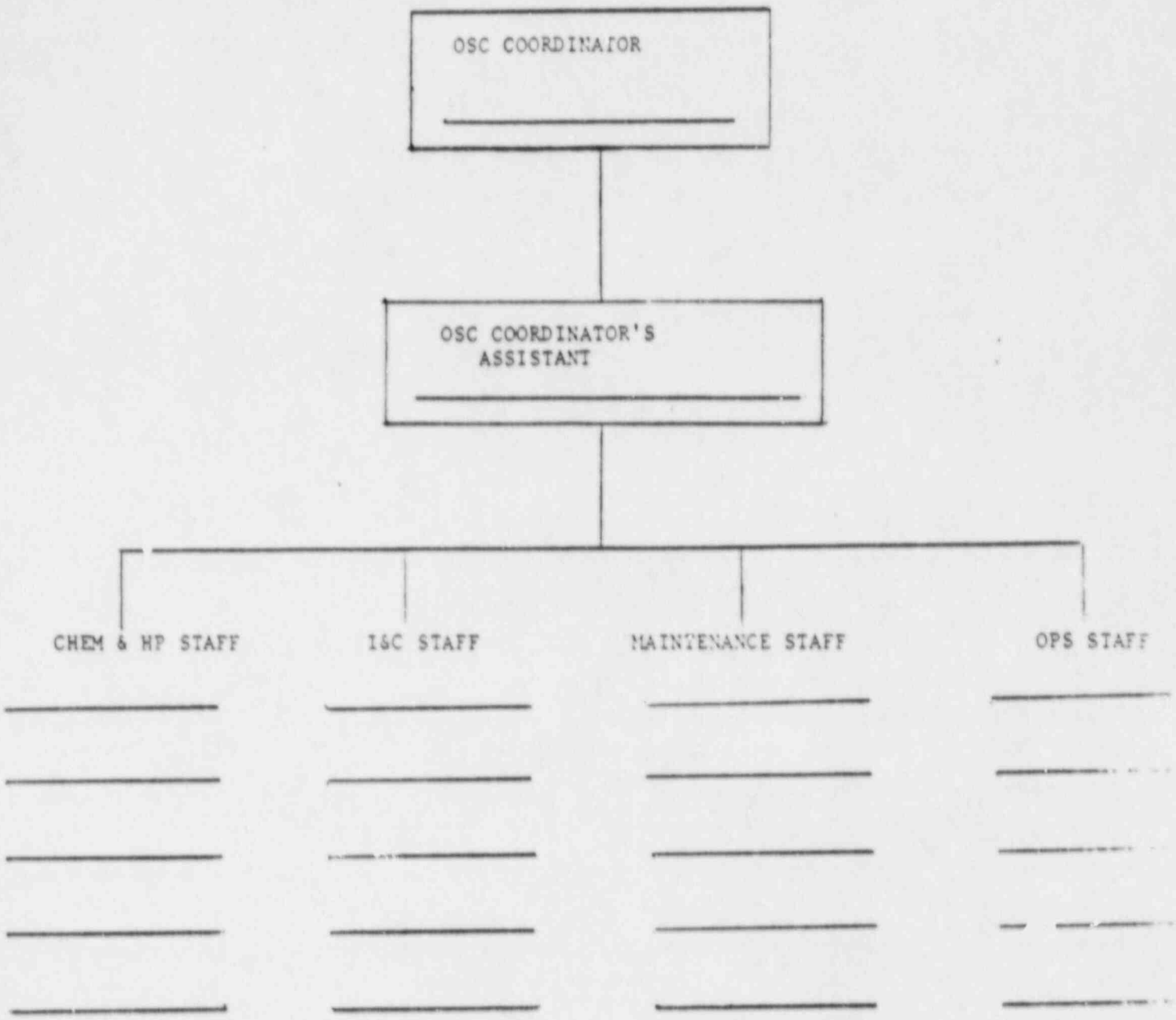


FIGURE 8.4

OPERATIONS SUPPORT CENTER EMERGENCY ORGANIZATION

(*) - OTHER EMERGENCY DISCIPLINES WILL BE ASSIGNED IN ACCORDANCE WITH THE PRIORITIES OF THE EMERGENCY

NOTE: The ON/OFF Site Teams will be staffed with personnel reporting to the OSC

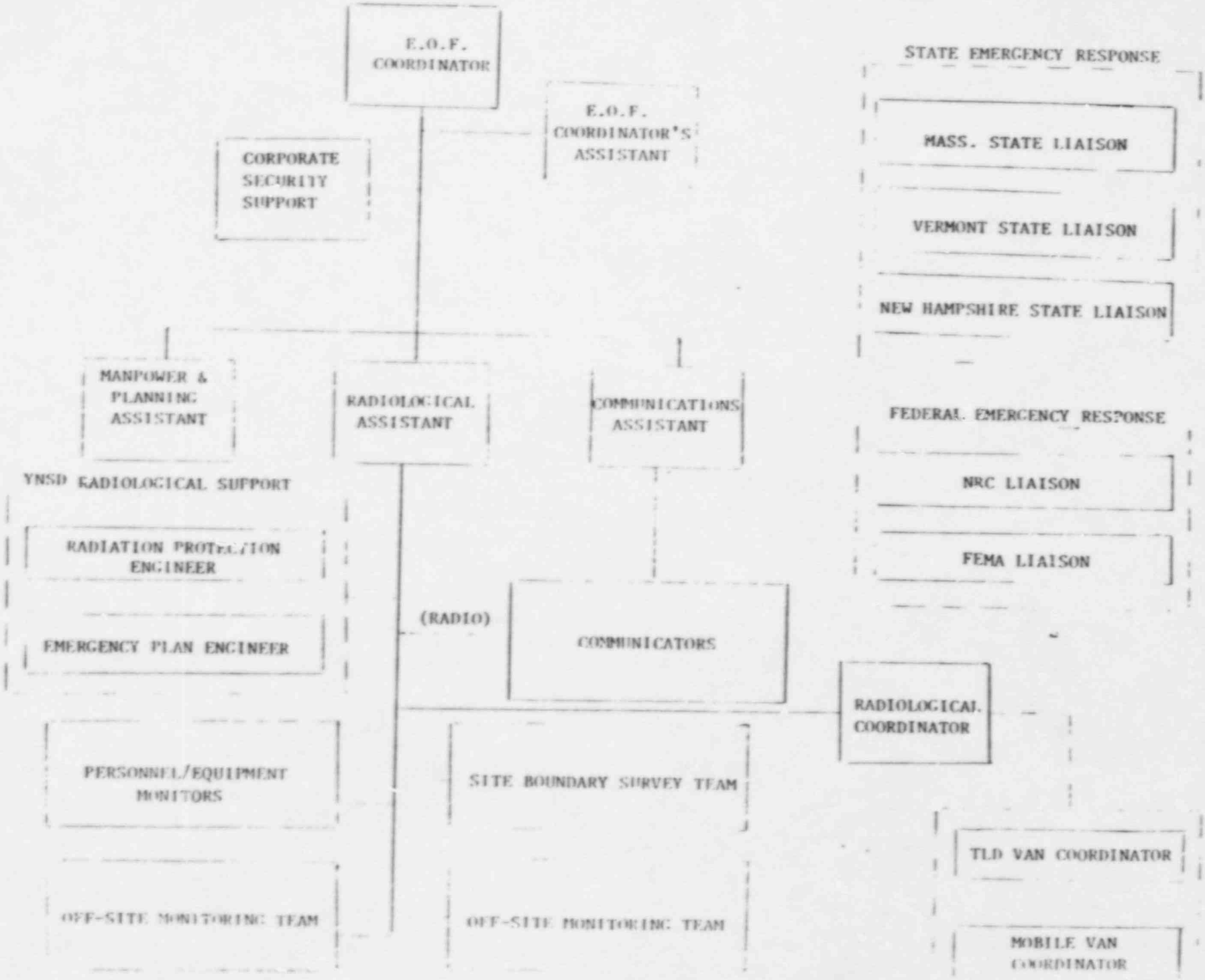

E.O.F. COORDINATOR
E.O.F. COORDINATOR'S ASSISTANT
CORPORATE SECURITY SUPPORT
STATE EMERGENCY RESPONSE
MASS. STATE LIAISON
VERMONT STATE LIAISON
NEW HAMPSHIRE STATE LIAISON
MANPOWER & PLANNING ASSISTANT
RADIOLOGICAL ASSISTANT
COMMUNICATIONS ASSISTANT
FEDERAL EMERGENCY RESPONSE
NRC LIAISON
FEMA LIAISON
YNSD RADIOLOGICAL SUPPORT
RADIATION PROTECTION ENGINEER
EMERGENCY PLAN ENGINEER
(RADIO)
COMMUNICATORS
RADIOLOGICAL COORDINATOR
PERSONNEL/EQUIPMENT MONITORS
SITE BOUNDARY SURVEY TEAM
TLD VAN COORDINATOR
OFF-SITE MONITORING TEAM
OFF-SITE MONITORING TEAM
MOBILE VAN COORDINATOR

FIGURE 9.3

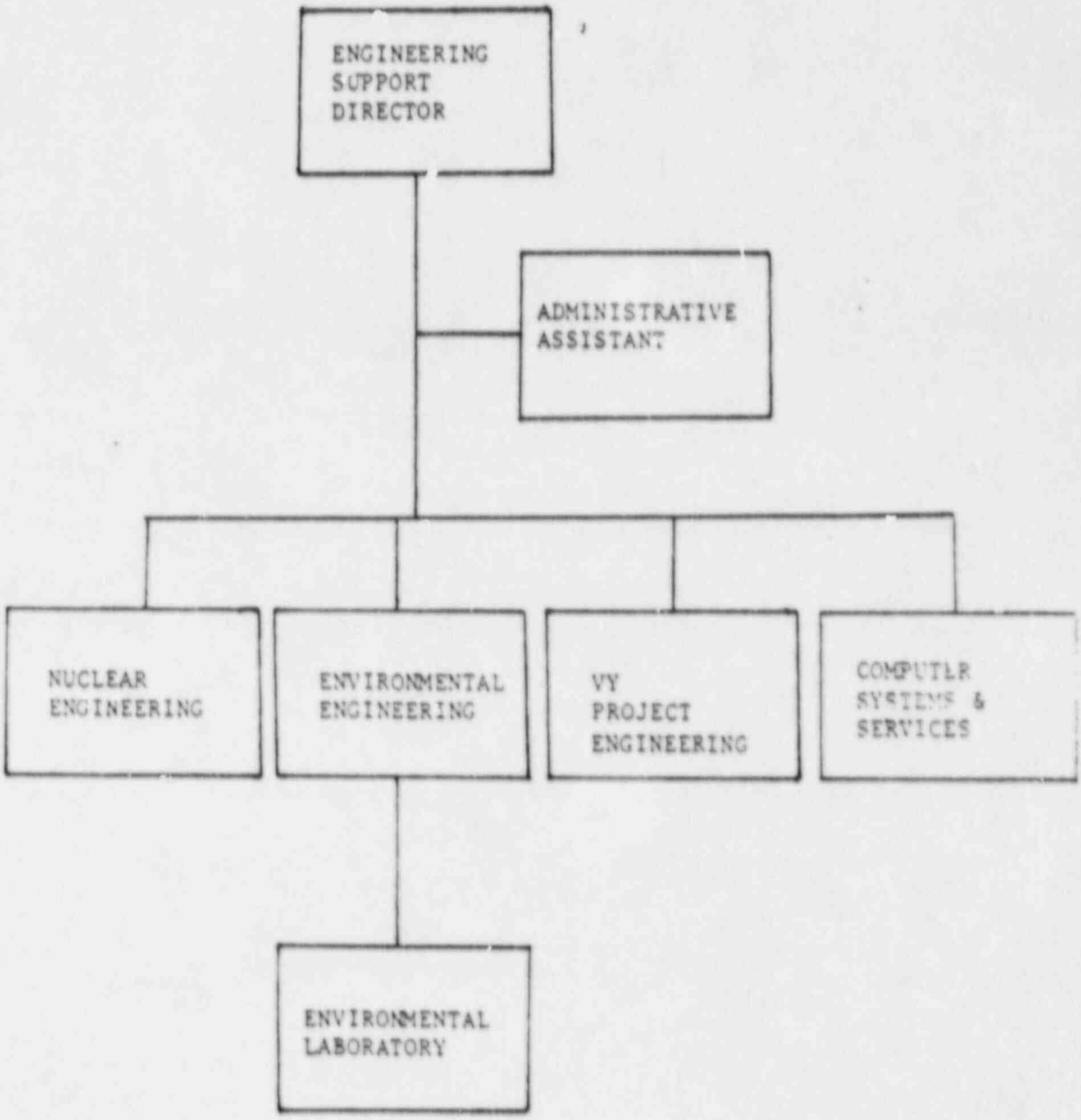
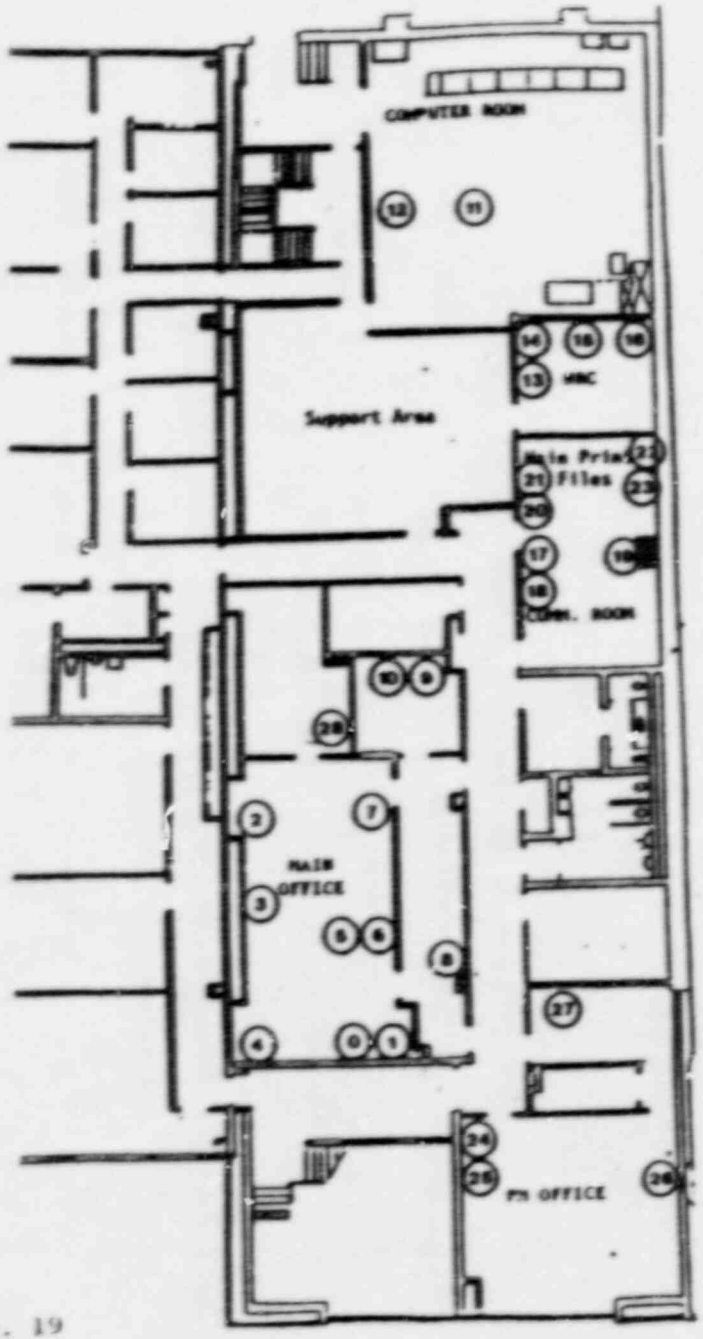


FIGURE 8.6

YNSD EMERGENCY RESPONSE ORGANIZATION



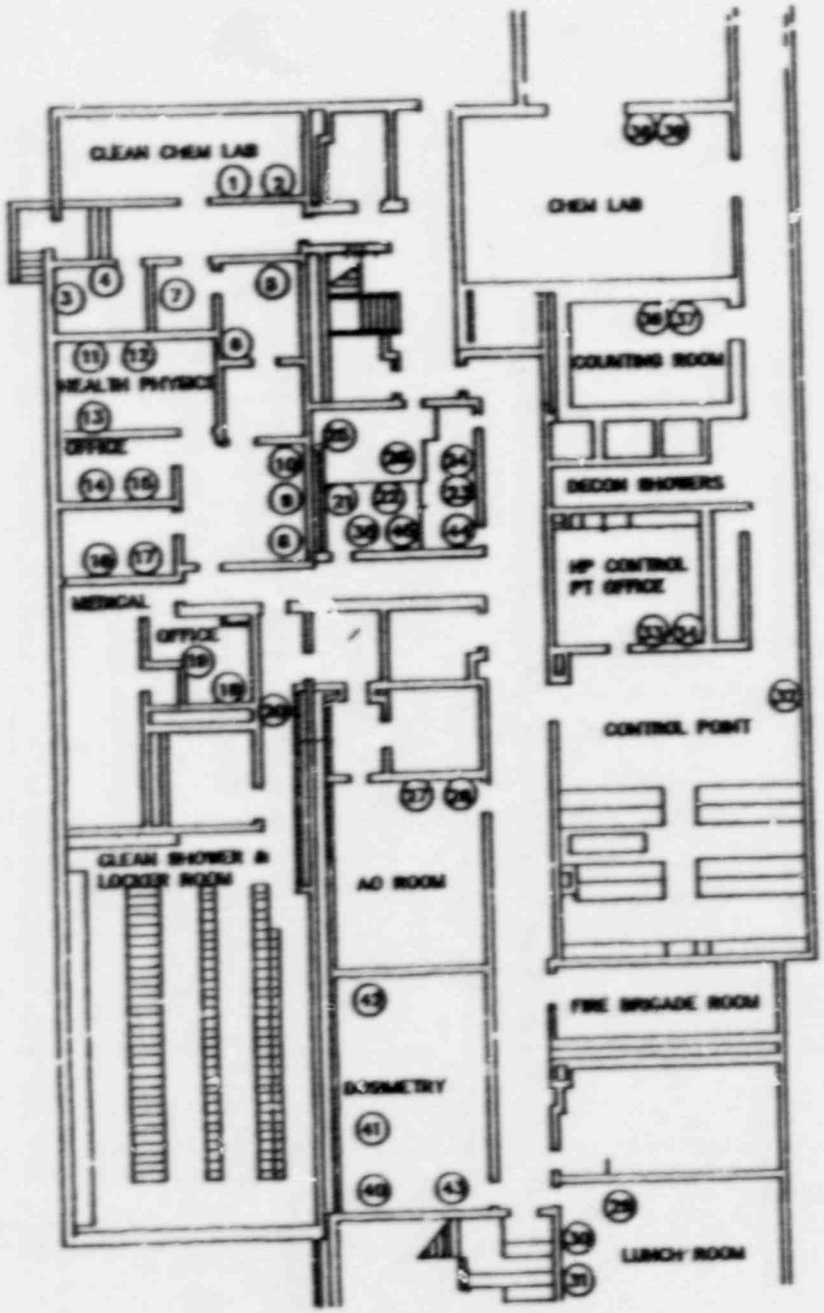
NO.	TELECOMMUNICATIONS DESCRIPTION	FEATURE	EXTN.
0.	SWITCHBOARD	———	———
1.	GAI – TRONICS	———	———
2.	EXTENSION TELEPHONE	———	2117
3.	EXTENSION TELEPHONE	———	2128
4.	EXTENSION TELEPHONE	———	2125
5.	EXTENSION TELEPHONE	———	2124
6.	EXTENSION TELEPHONE & TELECOPIER	QUARANL	2129
7.	MULTIPLE LINE EXTENSION TELEPHONE	———	2123
8.	GAI – TRONICS	———	———
9.	MULTIPLE LINE EXTENSION TELEPHONE	NON-QUARL	2122
10.	GAI – TRONICS	———	———
11.	EXTENSION TELEPHONE	QUARANL	2277
12.	GAI – TRONICS	———	———
13.	EXTENSION TELEPHONE	QUARANL	2337
14.	GAI – TRONICS	—	———
15.	MRC REDPHONE – GP 01485	———	———
16.	MRC HPN TELEPHONE	———	257-8208
17.	MULTIPLE LINE EXTENSION TELEPHONE	QUARANL	2354
18.	GAI – TRONICS	———	———
19.	MRC REDPHONE – GP 01485	———	———
20.	GAI – TRONICS	———	———
21.	TSD – WAY RADIO – MAXAR 80	———	———
22.	MULTIPLE LINE EXTENSION TELEPHONE (PRIMARY ARD)	QUARANL	2353*
23.	ALTERNATE AUTO RINGDOWN (ARD)	———	AUTO R/D*
24.	MULTIPLE LINE EXTENSION TELEPHONE	QUARANL	2110
25.	GAI – TRONICS	———	———
26.	GAI – TRONICS	———	2118
27.	MULTIPLE LINE EXTENSION TELEPHONE	———	———
28.	TELEPHONE AND DATA EQUIPMENT ROOM	———	———

* RINGDOWN POINTS ARE TSC/OSC/DR AND EOF.

NOTE: COMPUTER ROOM AREA BEING REMODELED

TECHNICAL SUPPORT CENTER – COMMUNICATIONS ARRANGEMENT

FIGURE 4

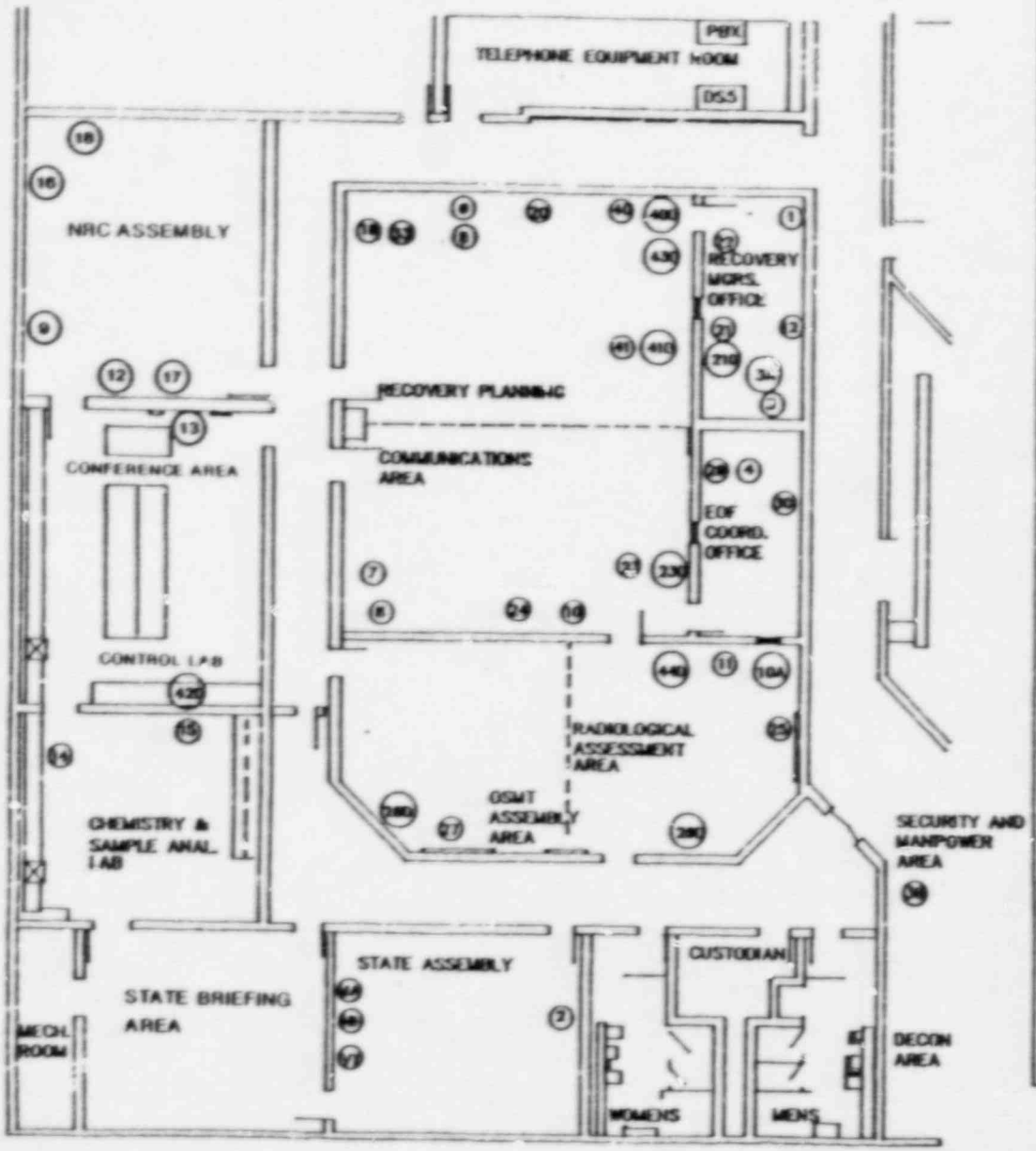


NO.	TELECOMMUNICATIONS DESCRIPTION	FEATURE	EXTN.
1	EXTENSION TELEPHONE	——	2160
2	GAI – TRONICS	——	——
3	EXTENSION TELEPHONE	——	2158
4	GAI – TRONICS	——	——
5	MULTIPLE LINE EXTENSION TELEPHONE	——	2156
6	GAI – TRONICS	——	——
7	EXTENSION TELEPHONE	——	2237
8	EXTENSION TELEPHONE	——	2516
9	MULTIPLE LINE EXTENSION TELEPHONE	——	2508
10	GAI – TRONICS	——	——
11	MULTIPLE LINE EXTENSION TELEPHONE	NON–GUAR.	2150
12	GAI – TRONICS	——	——
13	NRC HPN TELEPHONE	——	257–8208
14	EXTENSION TELEPHONE	——	2161
15	GAI – TRONICS	——	——
16	EXTENSION TELEPHONE	——	2162
17	GAI – TRONICS	——	——
18	EXTENSION TELEPHONE	——	2166
19	GAI – TRONICS	——	——
20	GAI – TRONICS	——	——
21	EXTENSION TELEPHONE	——	2181
22	GAI – TRONICS	——	——
23	EXTENSION TELEPHONE	——	2154
24	GAI – TRONICS	——	——
25	EXTENSION TELEPHONE	——	2162
26	GAI – TRONICS	——	——
27	EXTENSION TELEPHONE	NON–GUAR.	2174
28	GAI – TRONICS	——	——
29	PAY PHONE	——	254–8548
30	EXTENSION TELEPHONE	——	2358
31	GAI – TRONICS	——	——
32	GAI – TRONICS	——	——
33	EXTENSION TELEPHONE	——	2156
34	GAI – TRONICS	——	——
35	MULTIPLE LINE EXTENSION TELEPHONE PRIMARY AUTO R/T	NON–GUAR.	2351*
36	GAI – TRONICS	——	——
37	EXTENSION TELEPHONE	NON–GUAR.	2168
38	EXTENSION TELEPHONE	NON–GUAR.	2165
39	GAI – TRONICS	——	——
40	EXTENSION TELEPHONE	——	2154
41	TELECOPIER	——	2155
42	EXTENSION TELEPHONE	——	2153
43	GAI – TRONICS	——	——
44	EXTENSION TELEPHONE	——	2163
45	ALTERNATE AUTO RINGDOWN	——	—— *

* RINGDOWN POINTS ARE TSC/OSC/OR AND EOF

OPERATIONS SUPPORT CENTER – COMMUNICATIONS ARRANGEMENT

FIGURE 5



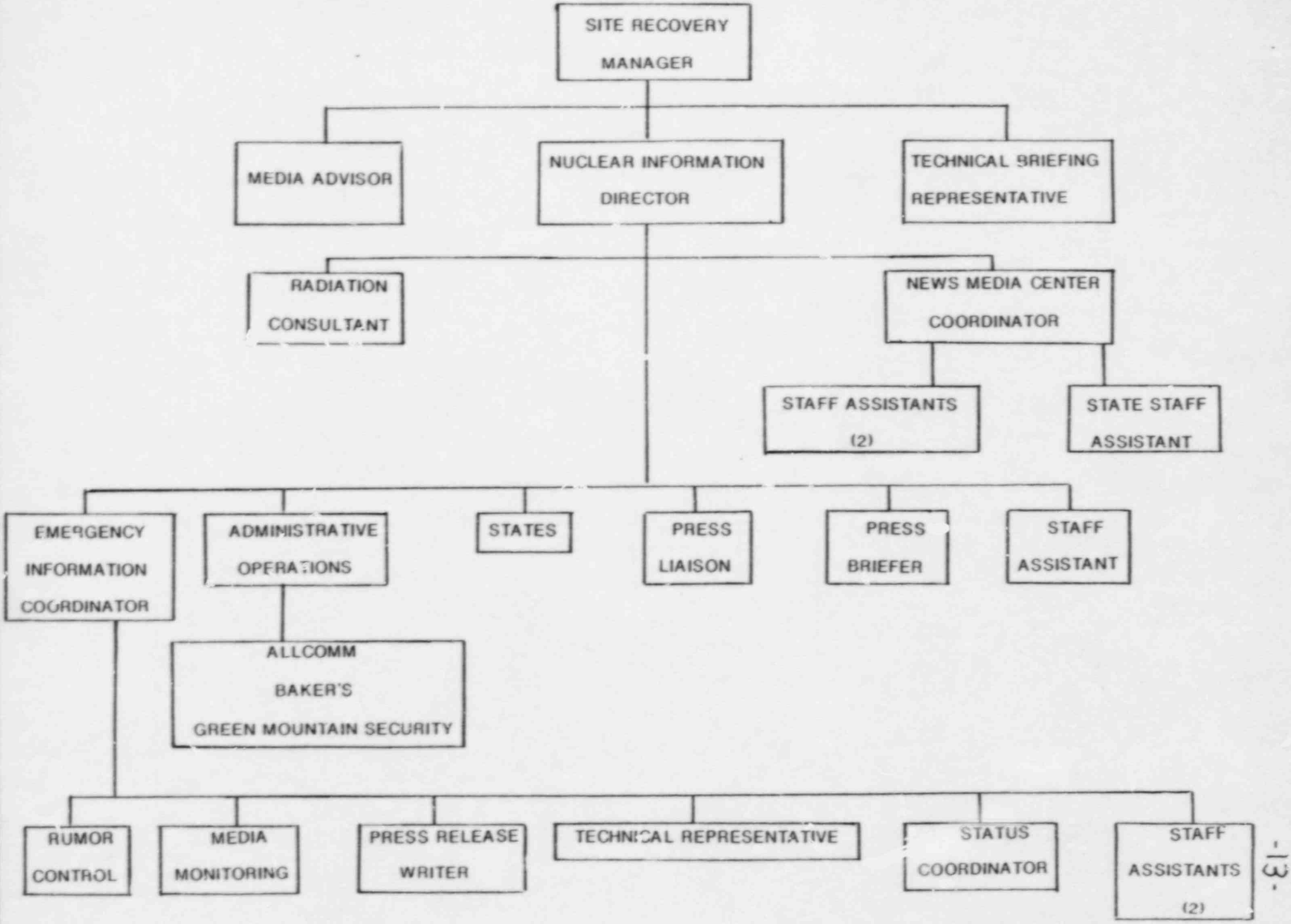
NO.	TELECOMMUNICATIONS DESCRIPTION	FEATURE	EXTN.
20	RECOVERY PLANNING - 1	NON-QUAR	413
1	RECOVERY MANAGER NAS - 8	———	NAS
12	RECOVERY MANAGER ENS - 3	———	257-8651
22	RECOVERY MANAGER NRC - 2	QUARAN.	411
19	RECOVERY PLANNING	NON-QUAR	414
3	RECOVERY PLANNING PRIMARY ARD	———	AUTO R/TD*
3A	RECOVERY PLANNING ALTERNATE ARD	———	AUTO R/TD*
21	RECOVERY PLANNING - 1	QUARAN.	412
33	VT NUCLEAR ENG	OUT-ONLY	480
5	COMMUNICATIONS - INTERNAL	NON-QUAR	424
6	COMMUNICATIONS - DEPT. EOF (CO LINE)	———	264-4840
23	COMMUNICATIONS - ASSISTANT	IN-ONLY	472
24	COMMUNICATIONS - 3	QUARAN.	[illegible]
8	COMMUNICATIONS - TELECOPIER - 2	QUARAN.	428
7	COMMUNICATIONS - TELECOPIER - 1	QUARAN.	421
10	NRC RESTRICTED CRL	———	257-8231
30	EOF COORDINATOR - 2	NON-QUAR	402
29	EOF COORDINATOR - NRC - 1	QUARAN.	401
10A	NRC RESTRICTED CRL	———	257-8231
25	RAD ASSESSMENT - NRC - 5	QUARAN.	431
26	RAD ASSESSMENT - MET - 2	———	DATA
11	RAD ASSESSMENT - 1	NON-QUAR	438
27	RAD ASSESSMENT - 4	NON-QUAR	432
28	RAD ASSESSMENT - HPN/DC MET	———	DATA
2	STATE - NAS - 8	———	NAS
	STATE (AREA) - FEMA - 7	———	257-8653
	STATE - VT. - 10	QUARAN.	467
	STATE - VT. - 1	NON-QUAR	481
	STATE - VT. TELECOPIER - 2	QUARAN.	462
	STATE - VT. CONV. LINE - 9	———	AUTO R/TD
	STATE - MASS. - 6	QUARAN.	485
	STATE - MASS. TELECOPY - 6	QUARAN.	486
	STATE - NHL - 11	QUARAN.	468
	STATE - MASS. - 12	NON-QUAR	469
	STATE - NHL - 3	NON-QUAR	483
	STATE - NHL TELECOPIER - 4	QUARAN.	484
32	NRC - 4	———	257-8652
18	NRC - HPN - 1	QUARAN.	453
16	NRC - ENS - 2	QUARAN.	452
17	NRC - 3	———	257-8651
35	RECOVERY MANAGER ENS - 3	———	257-8651
6	NAC - TELECOPY - 8	QUARAN.	451
15	SAMPLE ANALYSIS - 2	QUARAN.	434
14	SAMPLE ANALYSIS - 1	NON-QUAR	433
13	CONFERENCE ROOM - 1 DC	QUARAN.	441
34	SECURITY/MANPOWER (LOBBY POWER FAIL)	NON-QUAR	471
36	RECOVERY PLANNING	NON-QUAR	414
40	CORDLESS PHONE	QUARAN.	458
400	LINE TO DATA SWITCH	———	DATA
41	PURCHASING	QUARAN.	420
410	PURCHASING DATA	———	DATA
210	RECOVERY MGR DATA	———	DATA
220	COMMUNICATIONS	———	DATA
420	LAB 127	———	DATA
430	ADAL TO PURCHASING (Y)	———	DATA
240	COMMUNICATIONS	———	DATA
440	RAD ASSESSMENT		

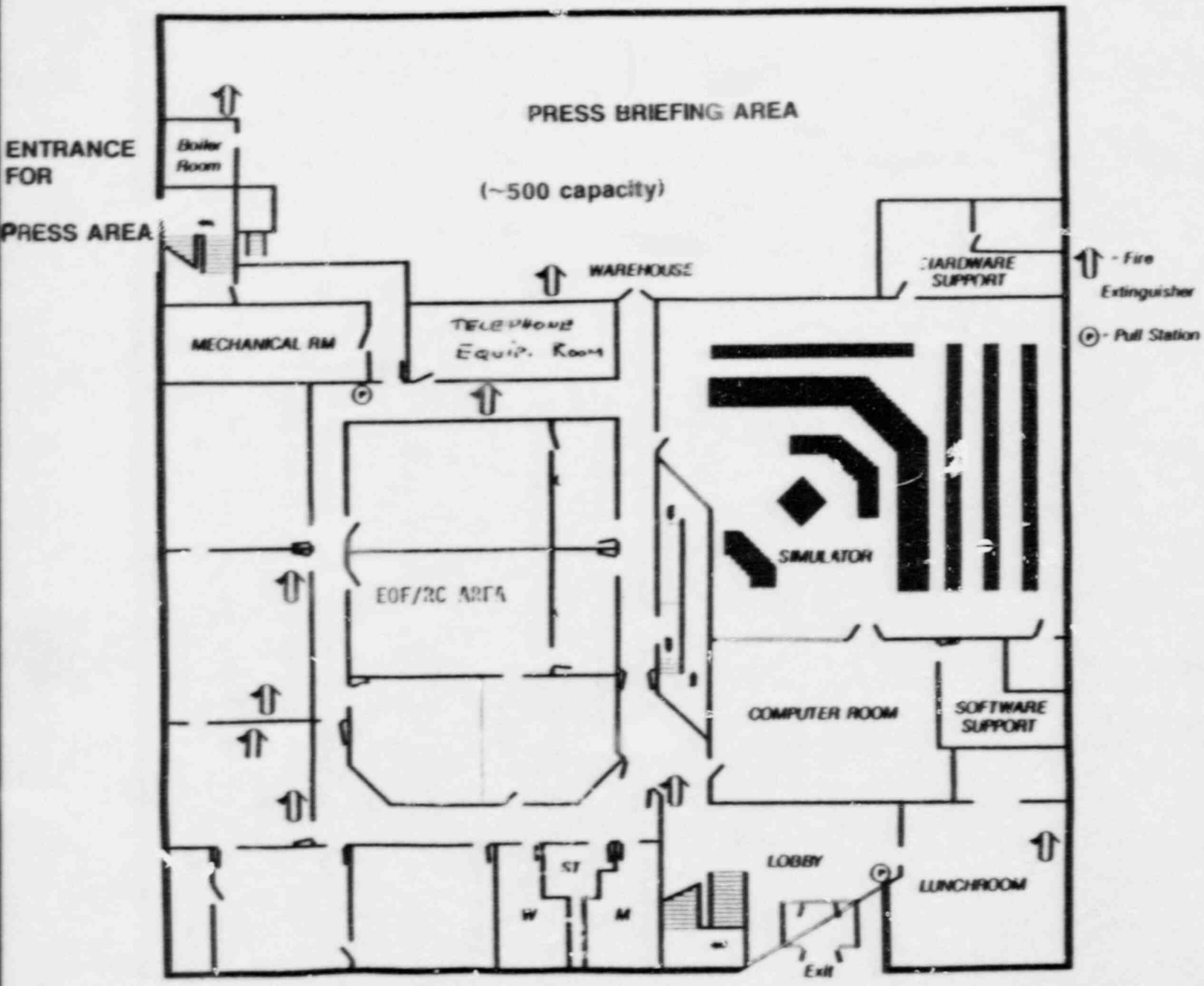
* RINGDOWN POINTS ARE TSC/OSC/CR AND EOF

EMERGENCY OPERATIONS FACILITY/RECOVERY CENTER - COMMUNICATIONS ARRANGEMENT

FIGURE 6

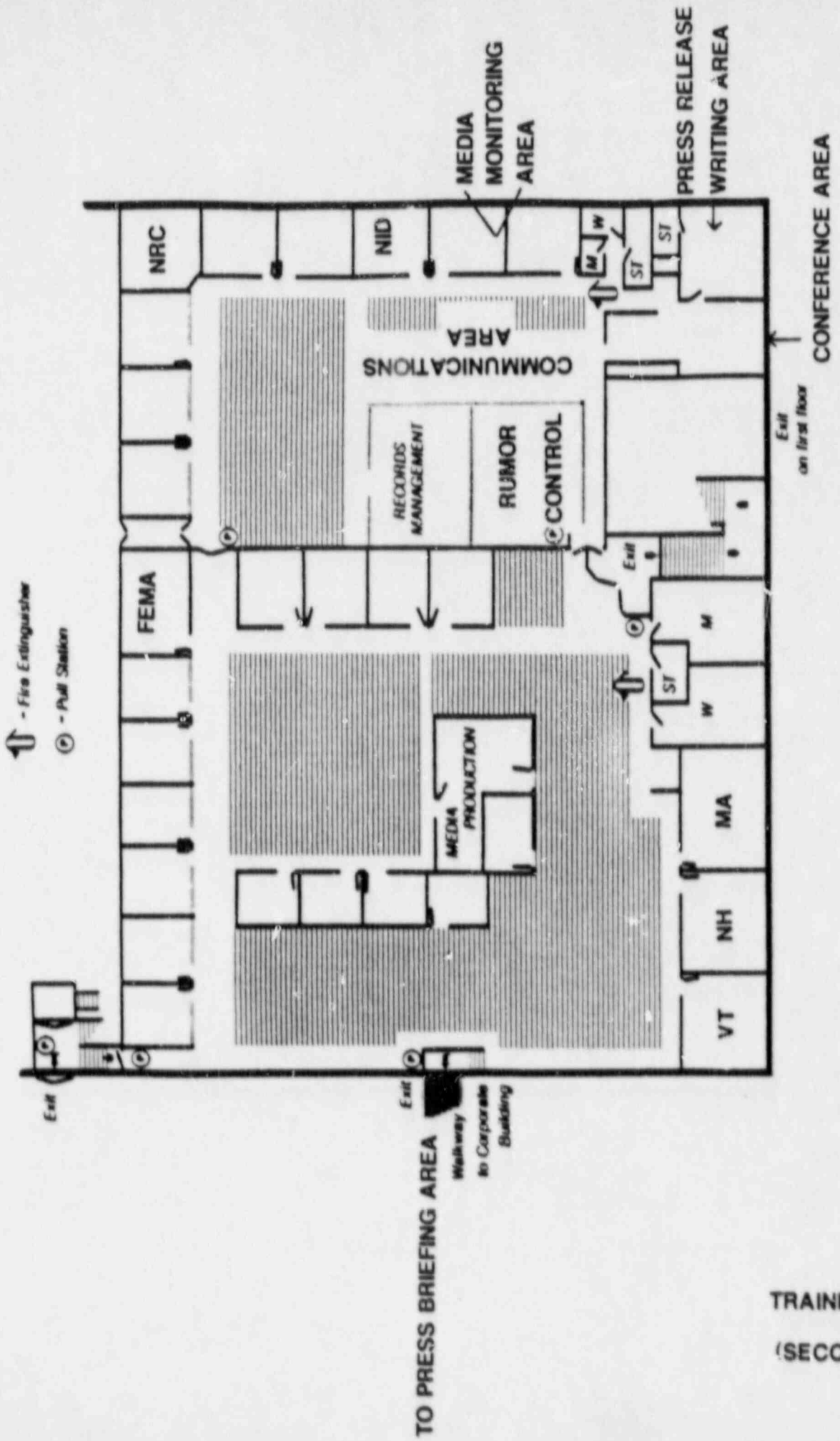
12.


SITE RECOVERY MANAGER
MEDIA ADVISOR
NUCLEAR INFORMATION DIRECTOR
TECHNICAL BRIEFING REPRESENTATIVE
RADIATION CONSULTANT
NEWS MEDIA CENTER COORDINATOR
STAFF ASSISTANTS (2)
STATE STAFF ASSISTANT
EMERGENCY INFORMATION COORDINATOR
ADMINISTRATIVE OPERATIONS
STATES
PRESS LIAISON
PRESS BRIEFER
STAFF ASSISTANT
ALLCOMM
BAKER'S
GREEN MOUNTAIN SECURITY
RUMOR CONTROL
MEDIA MONITORING
PRESS RELEASE WRITER
TECHNICAL REPRESENTATIVE
STATUS COORDINATOR
STAFF ASSISTANTS (2)



TRAINING FACILITY
(GROUND FLOOR)

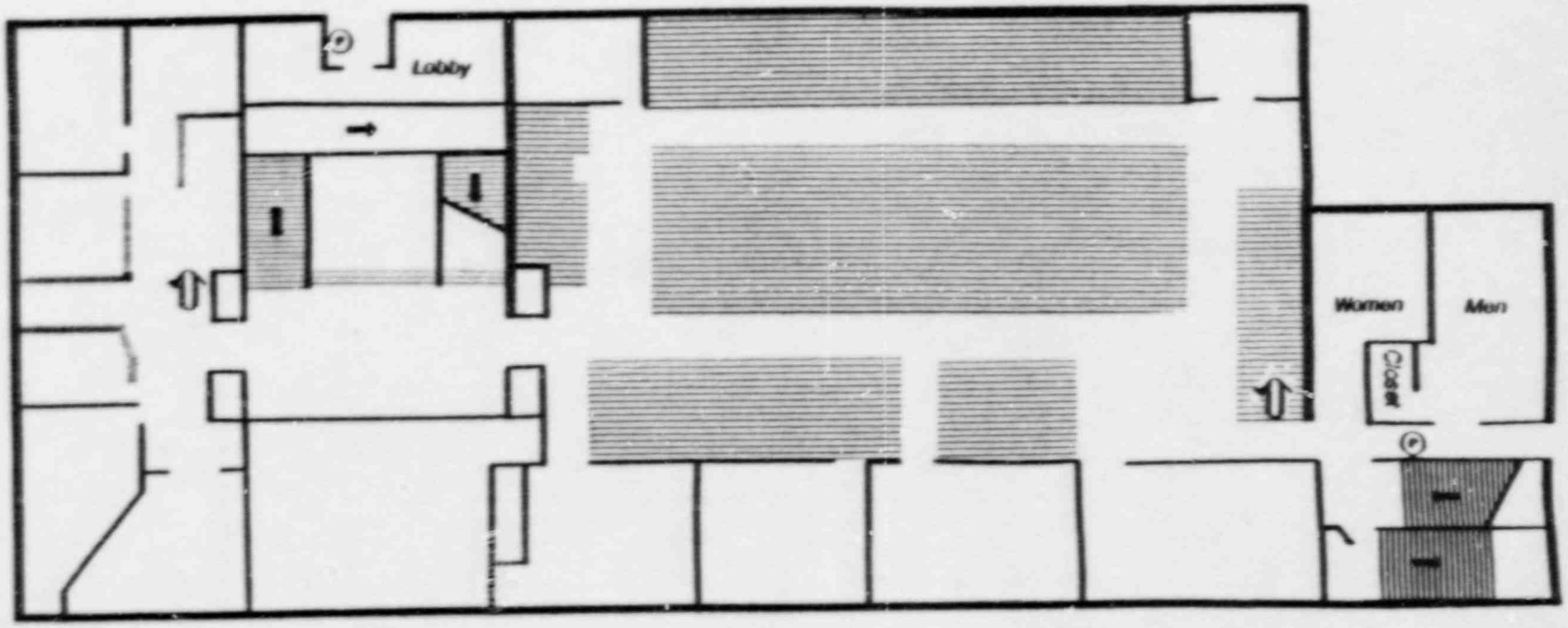
ENTRANCE FOR VY REPS, STATE REPS, NRC. FEMA



TRAINING FACILITY

(SECOND FLOOR)

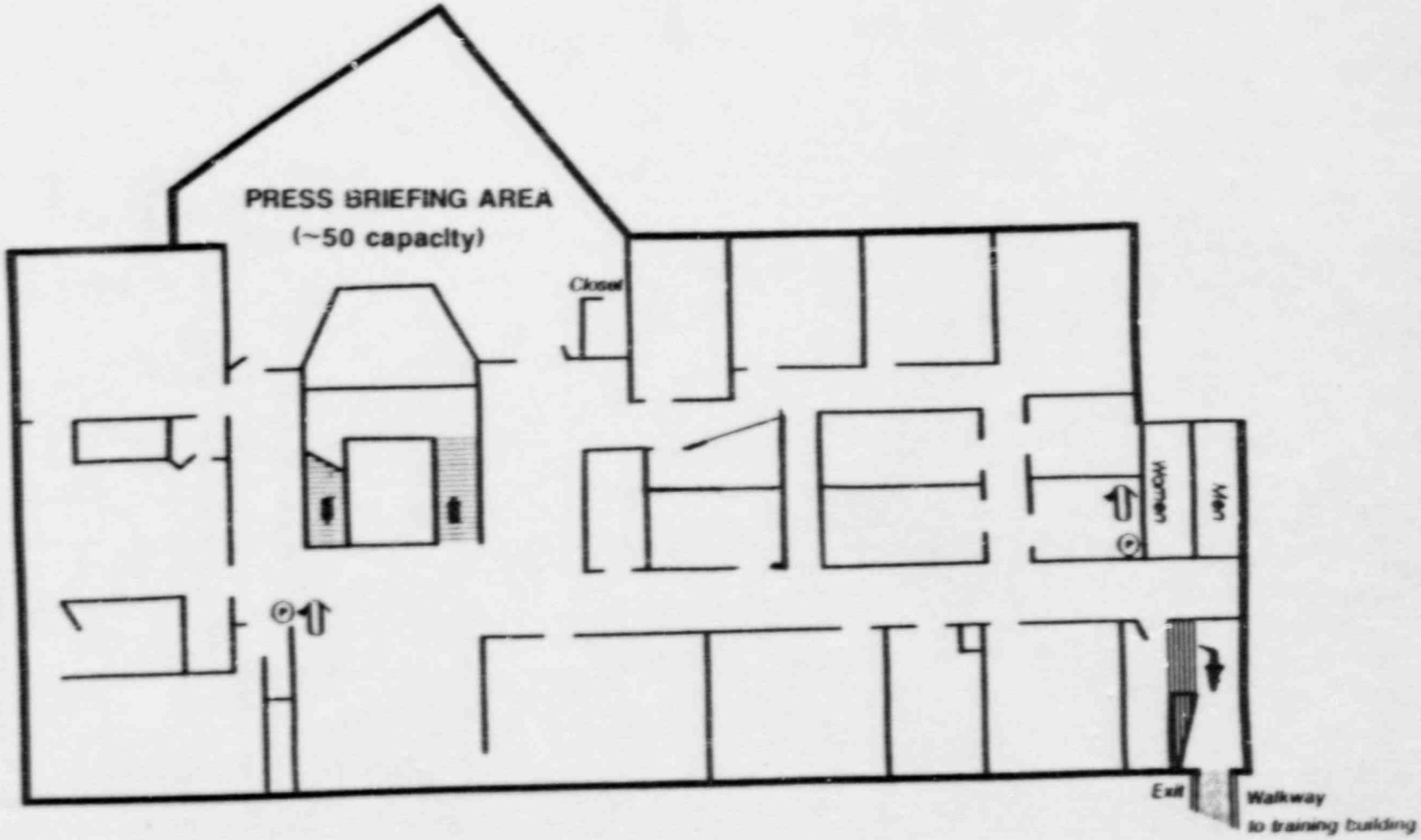
ENTRANCE FOR MEDIA



- Fire Extinguisher

- Pull Station

Ground Floor Corporate



Top Floor Corporate

- Fire Extinguisher

- Pull Station