VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

EXERCISE MANUAL

EXERCISE MATERIALS

DF01
0/1

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

TABLE OF CONTENTS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

TABLE OF CONTENTS

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

1.0 INTRODUCTION

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

1.1 EXERCISE SCHEDULE

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

1.1 EXERCISE SCHEDULE

A. Controller and Observer Briefing

Date: September 1, 1992
Time: 9:30 a.m.
Location: Vermont Yankee Corporate Office, Brattleboro, Vermont
Purpose: Briefing on Exercise Activities and Assignments
Attendees. Vermont Yankee and Yankee Atomic Controllers and Observers

B. Controller and Observer Plant Tour

Date: September 1, 1992
Time: As necessary (contact Lead Controller)
Location: Emergency Response Facilities and Affected In-Station Areas
Purpose: Familiarize Controllers and Observers with Affected Areas
Attendees: Vermont Yankee and Yankee Atomic Controllers and Observers

C. NRC Entrance and Exercise Briefing

Date: September 1, 1992
Time: 2:00 p.m.
Location: Vermont Yankee Corporate Office, Brattleboro, Vermont
Purpose: NRC Briefing and Review of Exercise Scenario
Attendees: NRC Evaluators

D. Exercise

Date: September 2, 1992
Time: To Be Announced
Location: Vermont Yankee Emergency Response Centers and Designated Portions of States' Emergency Response Centers (as necessary)
Purpose: Emergency Response Preparedness Exercise
Attendees: Vermont Yankee Emergency Response Organization, NRC Evaluators and Yankee Atomic Engineering Support Center Staff

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

1.1 EXERCISE SCHEDULE (continued)

E. Exercise Debriefing

Date:	Day of Exercise
Time:	To be announced during or immediately following the exercise
Location:	To be determined by the respective Emergency Response Facility Controller
Purpose:	Debrief Players, Observers and Controllers
Attendees:	Controllers, Observers and Key Participants

F. Controller Debriefing

Date:	September 3, 1992
Time:	8:00 a.m.
Location:	Vermont Yankee Training Center - Conference Rm. "A"
Purpose:	Exercise Debriefing
Attendees:	Exercise Coordinator and Controllers

G. Exercise Critique

Date:	September 3, 1992
Time:	1:00 p.m.
Location:	Vermont Yankee Corporate Office, Brattleboro, Vermont
Purpose:	Utility Self-Critique/NRC Preliminary Findings
Attendees:	Vermont Yankee Management, NRC Evaluators, Exercise Controllers (Observers as needed) and Vermont Yankee Key Participants

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

1.2 PARTICIPATING [illegible]/AGENCIES

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

1.2 PARTICIPATING CENTERS/AGENCIES

VERMONT YANKEE NUCLEAR POWER CORPORATION

Vermont Yankee Nuclear Power Station:

- Control Room (notification and communications 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 Building)
- Emergency Operations Facility/Recovery Center (1st floor of Training Building)
- News Media Center (1st and 2nd floor of Training Building)

YANKEE ATOMIC ELECTRIC COMPANY

Yankee Atomic Corporate Headquarters (Bolton, Massachusetts):

- Engineering Support Center

STATE OF VERMONT(Limited Participation - Practical Training)

Vermont Emergency Management Agency:

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

STATE OF NEW HAMPSHIRE(Limited Participation - Practical Training)

New Hampshire Office of Emergency Management:

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

COMMONWEALTH OF MASSACHUSETTS(Limited Participation - Practical Training)

Massachusetts Emergency Management Agency:

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

Massachusetts Department of Public Health (EOF, Brattleboro, Vermont)

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

1.3 ABBREVIATIONS AND DEFINITIONS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

1.3 ABBREVIATIONS AND DEFINITIONS

A. Abbreviations

- AO - Auxiliary Operator
- AOG - Advanced Off-Gas System
- APRM - Average Power Range Monitor
- ARM - Area Radiation Monitor
- ATWS - Anticipated Transient Without Scram
- CR - Control Room/Control Rod
- CRD - Control Rod Drive
- CS - Core Spray
- DW - Drywell
- EAL - Emergency Action Level
- ECCS - Emergency Core Cooling System
- ENS - Emergency Notification System
- EOC - Emergency Operations Center
- EOF - Emergency Operations Facility
- EPR - Electric Pressure Regulator
- EPZ - Emergency Planning Zone
- ESC - Engineering Support Center
- FEMA - Federal Emergency Management Agency
- FW - Feedwater
- HPCI - High Pressure C ant Injection
- HPN - Health Physics Network
- HRNG - High Range Noble Gas

- LPCI - Low Pressure Coolant Injection
- MPR - Mechanical Pressure Regulator
- MSIV - Main Steam Isolation Valve
- NAS - Nuclear Alert System
- NG - Noble Gases
- NRC - Nuclear Regulatory Commission
- OSC - Operations Support Center
- PASS - Post-Accident Sampling System
- PCIS - Primary Containment Isolation System
- PED - Plant Emergency Director
- PVS - Plant Vent Stack
- RA - Radiological Assistant
- RCIC - Reactor Core Isolation Cooling
- REMVEC - Rhode Island, Eastern Massachusetts, and Vermont Energy Control.
- RPS - Reactor Protection System
- RR - Reactor Recirculation System
- RRU - Reactor Recirculation Unit
- RWCU - Reactor Water Clean-Up
- Rx - Reactor
- SBGTS - Standby Gas Treatment System
- SJAE - Steam Jet Air Ejector
- SRM - Site Recovery Manager/Source Range Monitor
- TSC - Technical Support Center
- VY - Vermont Yankee
- VYNPC - Vermont Yankee Nuclear Power Corporation
- VYNPS - Vermont Yankee Nuclear Power Station
- YNSD - Yankee Nuclear Services Division

B. Definitions

- 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 or more activities or functions for the purpose of keeping the action going according to a scenario, resolving differences, supervising and 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 levels 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 Center - Areas designated by state/local representatives as Emergency Plan assembly areas for their respective staffs.

- 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.

- 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 inhalation exposure pathway zone and the

50-mile radius ingestion exposure pathway zone.

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

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

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

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

- News Media Center - An emergency response facility (VYNPC Corporate Offices, Brattleboro, Vermont) 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.

- 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.

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

- 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.

- 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.

- 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 follows.

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

- 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.

- Small-Scale Exercise - An exercise which tests as much of the licensee emergency plan and procedures with minimal, voluntary participation of state and local government agencies.

- 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.

- 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.

•	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.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

1.4 REFERENCES

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

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

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
   a. "RASCAL" Computer Model, Version 1, Modification 2
   b. "METPAC" (METeorological PACkage) Dose Assessment Computer Model, Version 4.1

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

2.0 EXERCISE OBJECTIVES AND EXTENT OF PLAY - VERMONT YANKEE

2.0 OBJECTIVES AND EXTENT OF PLAY - VERMONT YANKEE

		Extent of Play
A. Emergency Classification and 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 will provide the operational and radiological data to allow personnel to demonstrate this objective by implementing Procedure A.P. 3125, Emergency Plan Classification and Action Level Scheme.
2. Demonstrate the ability of Control Room personnel 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 transmitted 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.
4. Demonstrate the ability of the TSC staff to initiate and coordinate corrective actions in an efficient and timely manner.*	A.4	The scenario events will enable the TSC to coordinate in-plant corrective actions through the use of OSC personnel.
5. Demonstrate the ability of appropriate TSC staff to participate with the 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.

*Indicates NRC identified item from the 1991 exercise.

		Extent of Play
6. Demonstrate the ability to assess data from appropriate chemistry samples in support of accident assessment activities and plant conditions.	A.6	Scenario events will require Chemistry and Radiation Protection technicians located at the OSC to simulate taking reactor coolant, containment air, or plant vent stack samples to assess plant conditions. Sample results will be provided by Observers who accompany the technicians during their sampling activities. (Refer to Procedure OP-3530, "Post-Accident Sampling.")
7. Demonstrate the ability to effectively use the ERFIS in the assessment and trending of plant conditions.	A.7	Emergency Response Facility Information System (ERFIS) terminals at the TSC and EOF/RC will be linked to the Simulator Control Room to receive and transmit scenario data. This will allow Emergency Response Facility staff personnel the opportunity to demonstrate the effectiveness of ERFIS under simulated emergency conditions.
B. Notification and Communication		
1. Demonstrate that messages are transmitted in an accurate and timely manner and that decisions, information, and messages are properly logged and documented.*	B.1 B.3 B.4	Various communications links will be established between emergency response facilities in order to transmit information and data. Record keeping 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.

*Indicates NRC identified item from the 1991 exercise.

		Extent of Play
2.	Demonstrate the capability to notify federal and state authorities of emergency classifications and significant changes in plant status 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 FTS 2000 ENS phone. The State authorities will be notified through the Nuclear Alert System (Orange Phone).
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 emergency response facilities and federal and state authorities.	
C.	Direction and Control	
1.	Demonstrate the proper transfer of responsibilities from the SS/PED to the Duty Call Officer and subsequently to the TSC Coordinator and Recovery Manager as appropriate.	C.1 Scenario events require the activation of the Emergency Response Organization. As each position of authority is activated, responsibilities associated with that position will be assumed from the SS/PED up to the Recovery Manager.
2.	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.2 All emergency response facilities have designated coordinators who will direct and coordinate emergency response activities in their particular area of responsibility.

*Indicates NRC identified item from the 1991 exercise.

		Extent of Play
3. Demonstrate appropriate coordination of activities with federal and state government agencies.	C.3	The Control Room will initially contact the federal and state agencies, providing them with appropriate information on plant conditions and emergency status. This function will pass to the TSC and EOF/RC after the facilities are activated.
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 D.2	Scenario events will require 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.		
E. Plant Augmentation and Staffing		
1. Demonstrate the adequacy of plant emergency notification methods and procedures to augment plant staff and resources.	E.1	Shift personnel should demonstrate the use of the emergency call-in system to augment plant staff as may be required by scenario events.
2. Demonstrate the ability to utilize outside resources to provide technical assistance and logistical support.	E.2	The Yankee Nuclear Services Division's Engineering Support Center (ESC) will be contacted and activated for this exercise. The ESC will provide technical and logistical support as requested by Vermont Yankee.

*Indicates NRC identified item from the 1991 exercise.

		Extent of Play
3.	Demonstrate the ability to maintain shift staffing and manpower to provide for future manpower and logistics needs.	E.3 Available resources will be evaluated and assigned to support extended operations.
F.	Radiological Exposure Control	
1.	Demonstrate the ability to provide adequate radiation protection controls for on-site emergency response personnel dosimetry, equipment, and protective clothing.	F.1 Scenario events will require OSC On-Site F.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.") In addition, the exposure of the off-site monitoring teams will be monitored and tracked in the EOF.
2.	Demonstrate the ability to monitor and track radiation exposure of on-site emergency response personnel.	
G.	In-Plant Corrective and Repair Actions	
1.	Demonstrate the ability to dispatch and deploy on-site assistance teams in a timely fashion, consistent with plant conditions and assigned function.*	G.1 OSC on-site assistance teams should be dispatched G.2 to investigate problems associated with plant G.3 equipment. Briefings should be conducted with on-site assistance teams to ensure that responsibilities are clear and understood. Briefing sheets (refer to VYOPF 3507.02) should be used to brief and debrief teams on work assignments conducted. All information should be documented in accordance with established procedures. Plant personnel will be given the opportunity to perform corrective actions associated with damaged plant equipment.

*Indicates NRC identified item from the 1991 exercise.

		Extent of Play
	2. Demonstrate the ability to provide adequate briefings to ERF staff and on-site assistance teams as conditions and information change.*	
	3. Demonstrate the ability of on-site assistance teams to perform corrective actions on plant equipment during emergency conditions.	
H.	Radiological Assessment	
	1. Demonstrate that adequate dose assessment activities can be performed to determine off-site radiological consequences.	H.1 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," as may be required by scenario events.
	2. Demonstrate that radiological assessment personnel at the EOF can obtain radiological and meteorological data in a timely manner.	H.2 H.3 H.4 H.5
	3. Demonstrate the ability to perform timely assessment of off-site radiological conditions to support the formulation of protective action recommendations for the plume exposure pathway.	
	4. Demonstrate the ability to assess potential off-site radiological consequences based on plant conditions.	

*Indicates NRC identified item from the 1991 exercise.

		Extent of Play
5.	Demonstrate the ability to project the plume trajectory and potentially affected downwind sectors utilizing the computer dose assessment model (METPAC).	
6.	Demonstrate adequate staffing, equipment readiness check, and deployment (if necessary) of off-site monitoring teams.	H.6 H.7 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."
7.	Demonstrate the use of appropriate equipment and procedures to perform off-site radiological monitoring.	
I.	Protective Action Decision Making	
1.	Demonstrate the ability to implement appropriate on-site protective measures for emergency response personnel.	I.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.
2.	Demonstrate the adequacy of the protective action decision making process to make appropriate recommendations concerning off-site radiological consequences.	I.2 Protective action decision making will be demonstrated in accordance with Procedure OP-3511, "Off-Site Protective Actions Recommendations".

*Indicates NRC identified item from the 1991 exercise.

		Extent of Play
J. Public Information		
1. Demonstrate the ability to develop and periodically disseminate timely and accurate press releases to the public and the news media.	J.1 J.2 J.3	The News Media Center will be fully activated. Information on the simulated events occurring at the plant will be gathered, verified, incorporated into a news release, and disseminated to key players. After approval, this information will be discussed at the News Media Center.
2. Demonstrate the ability to provide briefings 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.	J.4	A communication line will be established to provide rumor control for questions concerning the simulated accident.
5. Demonstrate the ability to coordinate news releases with the state's public information representatives, if available.	J.5	State public information representatives from Vermont, New Hampshire, and Massachusetts may be present at the News Media Center. Information concerning news releases will be coordinated with the states' public information representatives, if available.

*Indicates NRC identified item from the 1991 exercise.

		Extent of Play
K.	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.	K.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. Note: The annual Radiological Monitoring drill and semiannual 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).	K.2 Exercise critique will be conducted with exercise controllers, observers, and players. Critique items will be compiled and documented by the Exercise Coordinator.

*Indicates NRC identified item from the 1991 exercise.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

3.0 EXERCISE GUIDELINES AND SCOPE

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

3.1 EXERCISE GUIDELINES

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

3.1 EXERCISE GUIDELINES

A. Purpose

This package provides guidance for conducting the 1992 VYNPS Emergency Response Preparedness Exercise. It provides the framework for demonstrating emergency response capabilities, conducting the exercise and evaluating response activities.

B. Concepts of Operations and Control of the Exercise

An Exercise Coordinator has been appointed by Vermont Yankee management to oversee all exercise activities. The Exercise Coordinator is responsible for approving the objectives and developing the scenario time sequence. The Exercise Coordinator is also responsible for the selection and training of the personnel required to conduct and evaluate the exercise.

Vermont Yankee will supply Controllers and Observers (Evaluators) for major locations where an emergency response action will be demonstrated. Prior to the exercise, the Evaluators will be provided with the appropriate materials necessary for their assigned function. The material will include any maps and messages to be used and forms for documenting and evaluating observed activities.

In each facility where an activity takes place, the Controller will make judgment decisions to keep the action going in accordance with the scenario timeline. The Controllers will also provide guidance to Observers and resolve minor problems which may occur. If a serious problem arises, an Observer should first contact the Facility Controller who will then contact the Exercise Coordinator for guidance or resolution of the problem. All major requests for scenario modifications or holding periods must be cleared through the Exercise Coordinator. Controllers also have the authority to resolve scenario-related problems which may occur during the exercise.

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

The exercise initial conditions will be provided to a Control Room operations crew, located in the Simulator. Plant and reactor system parameters for the exercise will be generated by running the accident scenario on the simulator. Additional exercise message cards and scenario parameters will be provided by Evaluators at the times indicated in the exercise sequence of events, or when requested by the players.

As information is provided to the players, they should determine the nature of the emergency and implement appropriate emergency plan implementing procedures and emergency operating procedures. These procedures should 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. Wherever possible, operators should complete activities as if they were actually responding to plant events. Inconsistencies in the scenario may be intentional and required to test the capabilities of the emergency response facilities to the maximum extent possible in a limited period of time.

C. General Guidance for the Conduct of the Exercise

1. Simulating Emergency Response Actions

Since the exercise is intended to demonstrate actual capabilities as realistically as possible, participants should act as they would during an actual emergency. Wherever possible, simulation of response activities should be avoided. Emergency response actions should be simulated only 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 3.2). When an

emergency response is to be simulated, the Evaluator 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 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 response activities without actually entering the RWP-controlled area even if they are authorized on the RWP for some other duty.

2. Avoiding Violations of Laws

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

a. All Evaluators and potential participants must be specifically informed of the need to avoid violating any federal, state and local laws, regulations, ordinances, statutes and other legal restrictions. The orders of all police, sheriffs or other authorities shall be followed as appropriate.

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

c. Participants will not intentionally take illegal actions when responding to scenario events. Specifically, local traffic laws (i.e., speed limits) will be observed.

3. Avoiding Personnel and Property Endangerment

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

4. Actions to Minimize Public Inconvenience

It is not the intent, nor is it desirable, to effectively train or test the public response during the conduct of the exercise. Public inconvenience is to be avoided.

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, located at the Vermont Yankee Training Center in Brattleboro, Vermont. The support staff normally on duty will initially be simulated until after the ALERT classification when it will be performed by the emergency response organization. Plant and reactor system parameters will be provided to the Control Room emergency response crew by the simulator control board and the Controllers. Other information, such as radiological data and meteorological data, will be provided to the Control Room emergency response crew as necessary. Communications links that duplicate the emergency communications capabilities available at the Control Room will be used to communicate between the Simulator Control Room and other emergency response facilities. The actual Control Room communication system for transmission of emergency announcements and information (e.g., Gaitronics) will also be utilized.

3. Technical Support Center (TSC) Operations

The TSC emergency response organization will be activated during the exercise. TSC information will originate from the Simulator Control Room. Information that is normally accessible by TSC personnel from the plant computer will be provided by Evaluators 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.

4. Operations Support Center (OSC) Operations

The OSC emergency response organization will be activated during the exercise. Operations Support Center response activities will be communicated to the Tecnnical Support Center. OSC Observers will accompany OSC teams dispatched during the exercise and will provide appropriate operational and radiological data to the players. No team participating in the exercise should leave the Staging Area without notifying an Evaluator.

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

The EOF/RC emergency response organization will be activated during the exercise. Information and data will be transmitted to the EOF/RC from the TSC and Control Room (Simulator). EOF Evaluators 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 acccrdance with existing procedures.

Simulated data will be provided to off-site monitoring teams by the Off-Site Monitoring Team Evaluators.

7. News Media Center Operations

The News Media Center will be activated and staffed during the exercise. News Media Center staff will obtain all the necessary information on current plant status through communications channels with the EOF/RC. Press releases will be generated 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 exercise-related security emergency response activities 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 obtain information from the Facility Controllers regarding the status of player actions and the demonstration of the exercise objectives.

2. The Facility Controllers are responsible for informing the Exercise Coordinator of their facility status and whether the emergency response actions and objectives have been satisfactorily observed.

3. Upon receipt of information from the Facility Controllers, the Exercise Coordinator will inform the Site Recovery Manager and TSC Coordinator that all exercise observations have been completed and that the exercise can be terminated.

4. A coordinated decision to terminate the exercise will be made between the Site Recovery Manager and the TSC Coordinator. The Site Recovery Manager will also receive concurrence from the States to terminate exercise activities.

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

The exercise may also be terminated under the following circumstances:

1. An actual plant emergency condition develops coincident with the exercise.

2. An actual off-site emergency impacts the response actions of Vermont Yankee exercise participants.

In the event that Item 1 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 the following statement over the plant paging system:

   "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 announcements.

4. The Exercise Coordinator will be responsible for directing the actions of all other exercise participants.

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

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

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

3. The Exercise Coordinator will be responsible for temporarily halting the exercise until such time a decision is made.

4. If the final decision is to cancel the exercise, the Exercise Coordinator will be responsible for directing the activities of all exercise participants, as well as for the notification of the NRC.

5. If the final decision is to continue the exercise, the Exercise Coordinator is responsible for informing all Evaluators of any projected changes to the expected response action(s).

6. The Exercise Coordinator will direct the organization as to the appropriate action required to restore the exercise sequence.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

3.2 PLAYER INSTRUCTIONS AND GROUND RULES

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

3.2 PLAYER INSTRUCTIONS AND GROUND RULES

The Vermont Yankee Emergency Response Preparedness Exercise will be conducted on September 2, 1992. All emergency response facilities will be fully activated, and the scenario will be driven by the simulator, as in past exercises. This year's exercise is a small-scale event with full participation from Vermont Yankee and Yankee Atomic. Limited participation is expected from the State of Vermont, New Hampshire, Commonwealth of Massachusetts and local towns within the plume exposure EPZ. Limited participation for these organizations would pertain to event notifications and practical training for the state representatives at the EOF. The successful demonstration of emergency response capabilities will depend on player response and protocol. The following information contains details and instructions for the players regarding the exercise. Department Heads are responsible for ensuring that personnel are made aware of this information prior to the scheduled exercise date.

A. General Guidelines

1. Participants will include the Exercise Coordinator, Players, Controllers, Observers, and NRC Inspectors. Controllers and Observers will provide players with command and message cards to initiate emergency response actions. Controllers, Observers and NRC Evaluators will also evaluate and note player actions. Controllers, Observers, (herein referred to as "Evaluators") and NRC Evaluators will be identified by badges.

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

3. You may ask the Evaluator 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 emergency teams after a sample has been properly obtained.

   d. Counting efficiency of all counting equipment.

   e. Activity from nose swabs or skin contamination surveys.

4. You may <u>not</u> ask the following from the Evaluators:

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

   b. Judgments as to which procedures should be used.

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

   d. Assistance in performing actions.

   e. Assistance in performing calculations.

5. Play out all actions, as much as possible, in accordance with your plan and procedures as if it were an actual emergency. If an action or data is to be simulated, an Evaluator will provide appropriate direction.

6. Identify and discuss your actions to NRC Evaluators, if present in your facility and observing your functions.

7. Periodically speak out loud, identifying your key actions and decisions to the Evaluators. This may seem artificial, but it will assist the evaluators in determining the various response actions being initiated and is to your benefit.

8. When you are assigned to complete a response action, be sure to notify an Evaluator prior to performing the action. Let the Evaluators prioritize which actions will be observed and which ones will not. If an Evaluator elects to observe your activity, ensure the Evaluator remains with you to observe the task (i.e don't lose the evaluator enroute to the area where the action will take place).

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

10. The scenario has been scrutinized to anticipate as many success paths that may be initiated by the response teams. In the event you or your staff determine there may be alternative responses to scenario conditions, you may not be allowed to initiate your proposed "fix". You will however, be credited with the initiative and requested to continue your response in accordance with a "Command Card" from the Evaluator. In addition, the

Evaluator may periodically issue messages or instructions designed to initiate response actions. You must accept these messages immediately. They are essential to the proper completion of the exercise scenario.

11. If a Evaluator intervenes in your response actions and recommends you redirect or reconsider your play actions, it is for a good reason. The Evaluator's direction may be essential to ensure demonstration of objectives for all participating groups.

12. If you disagree with your Evaluator, discuss your concerns in a professional manner. However, the Evaluator's 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 Evaluator if they want to initiate additional emergency conditions.
However, you may answer questions directed to you by NRC Evaluators. If you do not know the answer, offer to get them the answer as soon as possible (without interfering with exercise activities) or refer them to your lead facility player or Evaluator.

15. You must respond as if elevated radiation levels are actually present based on the scenario information you receive. This may require you to wear protective clothing, respirators, or additional dosimetry.

16. 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," so that exercise related communications are not confused with an actual emergency.

19. Keep a list of items which you believe will improve your plans and procedures. A player debriefing will follow the exercise. Provide any comments or observations to your lead player or Evaluator after 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 participants. All other actions are to be performed in accordance with plant procedures. No action will be allowed which alters or affects the ongoing operation of the plant.

1. Scenario specific data will be programmed into various Simulated Plant Process Computer (SPPCS) terminals via the simulator. The Control Room's SPPCS terminal will remain tied to the plant process computer (ERFIS).

2. A sufficient number of individuals from the Vermont Yankee Emergency Response Organization will be prestaged at the Simulator.

3. Meteorological data will be simulated through the simulator SPPCS computer.

4. After plant evacuation and accountability have 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. Distribution of potassium iodide (KI) will be simulated.

6. Charcoal cartridges will be used in place of silver zeolite cartridges during off-site monitoring activities.

7. YNSD Site Responders will be prestaged in the area.

8. Emergency Response Facility evacuation will not be demonstrated during the exercise.

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

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

11. The plant Gaitronics is not available from the simulator; actual plant announcements will be coordinated by the controllers and made from the Vermont Yankee plant Control Room.

12. Evaluators will not be issued dosimetry unless plant access is required prior to the exercise. Security will be notified of the Evaluators assigned locations.

13. All decontamination actions associated with the scenario events may be simulated after discussion and approval by the Evaluator.

14. The use of respiratory protection equipment may be simulated by plant personnel after discussion and approval by the Evaluator.

15. Radiation Work Permits (RWPs) have not been issued for the conduct of the 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 plant Control Room will be directed to an area (SS office) that will have a Control Room Evaluator and communications link with the simulator. All Control Room exercise communications should be directed to the Simulator Control Room.

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

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

4. TSC Communicators normally assigned to the Control Room and a Radiation Protection Technician for transmitting initial radiological and meteorological data will be prestaged in the simulator.

5. Personnel movement in and out of the Simulator Control Room will be limited to the Evaluators.

6. Communications equipment in the Simulator Control Room is the same as the plant Control Room. The commercial telephone extensions are different, but the auto-ring down circuits and speaker telephones are operable. The orange Nuclear Alert System (NAS) State telephone and Federal Telephone System (FTS) 2000 Emergency Notification System (ENS)-NRC telephone will be operable. The orange NAS telephone extension is 613. The red ENS-NRC telephone will be operable until the TSC takes over this communication function.

D. Player's Gamesmanship

The following is a list of items that should be followed to improve gamesmanship during the exercise:

1. Make it known when significant events occur or when you are about to perform a significant activity.

2. Keep all messages, status boards, and problem boards accurate, current, timed, and dated.

3. Hold briefings regularly, approximately every 30-45 minutes, or as conditions warrant.

4. Key players should wear badges which identify their role. Bound log books should be used in all emergency response facilities.

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 (e.g., step-off pads, etc.).

E. Personnel Accountability and Participation (Exempted Participants)

Procedures require that all participants be identified. Proper identification will not only help eliminate confusion, but is necessary for security and accountability. This requirement applies to all areas within the plant fence, Governor Hunt House, EOF/RC, simulator area, News Media Center, and the Vermont Yankee Corporate Office in Brattleboro.

Although it is expected that all personnel will respond to the declared emergency as delineated in the applicable procedures, it is recognized that a number of persons (e.g., normal plant operations shift, normal security complement, fire watches, etc.) will not participate due to the nature of their assigned duties and activities. Department Heads should review their area of responsibility and provide the Exercise Coordinator with a list of names for anyone that should be exempted from participation. The number of exempt personnel should be minimized. As in the past, people evacuated from the plant will be allowed to return to their normal duties upon approval from the TSC Coordinator.

Plant Security will be provided with the list of exempt personnel for the exercise. All other personnel, not listed, are expected to participate as required by the Emergency Plan. The list of exempt personnel will include the On-Shift Security Crew, Operating Crew, and Duty Chemistry and Radiation Protection Technician and other individuals identified by the Department Heads.

F. Off-Site Participation (Federal, State and Local)

This year, Vermont Yankee is conducting a small-scale exercise which may involve partial participation of the States of Vermont, New Hampshire, Commonwealth of Massachusetts and the local towns within the Plume Exposure pathway EPZ.

The capability to notify federal, state, and local authorities of emergency classifications in accordance with established procedures will be demonstrated as follows:

a. NRC will be notified by utilizing the FTS 2000 ENS-NRC telephone.

b. Vermont, New Hampshire, and Massachusetts State Police dispatchers and State Emergency Operations Centers (EOCs) will be notified through the orange NAS telephone.

c. Vermont, New Hampshire, and Massachusetts State officials at the EOF/RC and the News Media Center (NMC) will be notified by the appropriate Vermont Yankee personnel (if available and participating in the exercise).

If any state official tries to contact the plant Control Room REGARDING THE EXERCISE, the Vernon switchboard should transfer the call to the Simulator Control Room in Brattleboro. The NAS orange telephone extension in the Simulator Control Room is 613.

G. 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 the emergency plan and procedures, and identify areas for future improvements. The specific schedule for the critique sessions will be announced at the conclusion of the exercise.

Emergency Response Facility Critiques

The critique sessions will be conducted by the Controllers. Exercise participants will be debriefed on the findings for their particular emergency response facility(s). Four critique sessions will be held:

1. SRM and EOF
2. TSC and Simulator Control Room
3. Operations Support Center and Security
4. News Media Center

Controller Debriefing

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

Exercise Critique

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

NRC Exit

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

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

3.3 PROCEDURE EXECUTION LIST

3.3 EMERGENCY PLAN IMPLEMENTING PROCEDURE EXECUTION LIST

Procedure Number	Rev. No.	Title
AP 3125	10	Emergency Plan Classification and Action Level Scheme
OP 3500	12	Unusual Event
OP 3501	13	Alert
OP 3502	25	Site Area Emergency
OP 3503	27	General Emergency
OP 3504	25	Emergency Communications
OP 3507	20	Emergency Radiation Exposure Control
OP 3510	18	Off-Site and Site Boundary Monitoring
OP 3511	6	Off-site Protective Actions Recommendation
OP 3513	14	Evaluation of Off-Site Radiological Conditions
OP 3524	10	Emergency Actions to Ensure Accountability and Security Response
OP 3525	5	Radiological Coordination
OP 3530	14	Post-Accident Sampling
OP 3531	4	Emergency Call-In Method

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

4.0 CONTROLLER AND OBSERVER INFORMATION

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

4.1 CONTROLLER AND OBSERVER ASSIGNMENTS

NOTE: ASSIGNMENTS WILL BE PROVIDED AT THE EXERCISE BRIEFING SESSION

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

4.2 CONTROLLER AND OBSERVER EXERCISE GUIDANCE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

4.2 CONTROLLER AND OBSERVER EXERCISE GUIDANCE

Prior to the exercise, each Evaluator will be provided a scenario package and the plant emergency plan implementing procedures which correspond to their assignment. It is the responsibility of the Evaluator to read the contents of the package and review the procedures. An Evaluator briefing will be conducted prior to the exercise. Any questions regarding the scenario or assignments should be discussed at this time. Each Evaluator should ensure that they are familiar with the location(s) required by their assignment. Emergency response facility tours are available after the Evaluator briefing.

The Controller is responsible for directing Observer activities throughout the course of the exercise. When the exercise is terminated, the Controllers will meet with the Observers to obtain their comments, observations, and documentation. Each Controller will be responsible for ensuring that the documentation is provided to the Exercise Coordinator at the conclusion of the exercise. Each Controller is also responsible for providing a brief summary of their facility comments during the player debriefing.

Evaluators should identify themselves to the players and explain their role in the exercise. Players should be informed that any actions which deviate from standard plant or emergency procedures should be identified to the Evaluators. Evaluators should keep a detailed log throughout the exercise. This log should note the time, location, and player responses. Section 4.3 contains log sheets, checklists, and evaluation forms for documentation purposes.

The primary role of Evaluators is to evaluate the emergency response activities of the players. In order to document the adequacy of emergency response actions during the exercise, Evaluators are required to complete the Emergency Exercise/Drill Observers Evaluation Form. When completing this form, Evaluators should attempt to differentiate

their comments into either adequate or potential weaknesses. For identified weaknesses of personnel, equipment, etc. provide a clear, written explanation of the finding, with recommendations for improvement which detail corrective actions, if possible.

Evaluators should not allow their biases to be documented as recognized weaknesses or deficiencies. Comments and recommendations should be further subdivided under the general headings as follows: 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 became well organized; (4) whether personnel performance followed the organized arrangements specified by plant procedures; and (5) the efficiency of methods of authority transfer. If a transfer of responsibility occurred, then the Evaluator should determine if all affected personnel were aware that the transfer had 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 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 the use of computer systems; and (7) whether facility boards were effectively used. Evaluators 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 the overall concepts of applicable procedures; (2) whether situations developed which required deviation from the procedures or plan; (3) whether personnel were overwhelmed with

procedural requirements which distracted 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 provided an adequate service; and (5) whether equipment malfunctions impacted the expected emergency response.

Scenario related comments should address: (1) whether sufficient data were available to ensure appropriate player response; (2) whether the scenario details deviated from actual procedural requirements; and (3) whether the scenario detail provided any prompting to the player. The adequacy of the scenario in keeping the players active and interested throughout the exercise should also be addressed by the Evaluators.

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

Comments on facility layout deficiencies/recommendations should identify: (1) whether the available work space was adequate; (2) whether traffic flow hindered the response efforts; (3) whether the noise level hindered emergency response efforts; and (4) 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. Observations regarding 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 Evaluators evaluation and documentation forms are found in Section 4.3. All such documentation must be provided to the Controller after the exercise and prior to the plant critique.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

4.3 CONTROLLER AND OBSERVER EVALUATION CRITERIA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

4.3 CONTROLLER AND OBSERVER EVALUATION CRITERIA

As discussed in Sections 4.1 and 4.2, each Evaluator has been assigned specific areas of response to evaluate. This section has been developed to assist the Evaluators in recording and documenting their findings and observations. The completed material will be an official record of the exercise observations.

Attachment A consists of forms to be used in maintaining an event chronology log.

Attachment B contains evaluation checklists for each emergency response facility. Each Evaluator should complete the appropriate checklist.

Attachment C contains an evaluation form which should be used to summarize major findings and observations. This form MUST BE completed by each Evaluator.

All three attachments should be completed and submitted to the facility Controller. Each Controller will then submit the attachments to the Exercise Coordinator for documentation and record keeping.

ATTACHMENT A

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

Time	Observation/Comment

Name: _____ Area Evaluated: _____

Date: _____

ATTACHMENT A
(Continued)

Time	Observation/Comment

Name: _____ Area Evaluated: _____

Date: _____

R15\128

ATTACHMENT B

Vermont Yankee
Emergency Exercise/Drill Evaluation Checklist

INSTRUCTIONS

The following evaluation checklists are provided to assist the Evaluator with their evaluation of the drill/exercise. The Evaluator should complete the checklist(s) for their assigned location(s). To complete the evaluation checklist(s), utilize the rating scale listed below. Any comments or suggestions for improvement, should be included on Attachment C, the Emergency Exercise/Drill Evaluation Form or on a separate piece of paper.

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.

---

* Comments should also include strong positive strengths that were demonstrated by player actions and response.

ATTACHMENT B
(Continued)

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
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

ATTACHMENT B
(Continued)

I. CONTROL ROOM

	Rating	Comments
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: _____

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 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
2. Was adequate record keeping of events, actions, and communications documented and logged by the TSC staff?	_____	Yes/No
3. Were adequate emergency communication systems available in the TSC to transmit data and information to other emergency response facilities?	_____	Yes/No

ATTACHMENT B
(Continued)

II. TECHNICAL SUPPORT CENTER

	Rating	Comments
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
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: _____

ATTACHMENT B
(Continued)

III. OPERATIONS SUPPORT CENTER

	Rating	Comments
A. Notification and Communication	_____	Yes/No
1. Was information flow within the OSC and to other appropriate emergency response facilities timely, complete, and accurate?		
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
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

ATTACHMENT B
(Continued)

III. OPERATIONS SUPPORT CENTER

		Rating	Comments
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.	Were on-site assistance teams able to troubleshoot and evaluate problems with plant equipment and systems?	_____	Yes/No
12.	Were there 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: _____ _____ _____

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
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

ATTACHMENT B
(Continued)

IV. EMERGENCY OPERATIONS FACILITY/RECOVERY CENTER

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

ATTACHMENT B
(Continued)

IV. EMERGENCY OPERATIONS FACILITY/RECOVERY CENTER

	Rating	Comments
D. Protective Action Decision Making	_____	Yes/No
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?		
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.		
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: _____

ATTACHMENT B
(Continued)

V. SITE AND OFF-SITE MONITORING

	Rating	Comments
A. Activation and Response		
1. Did on-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 on-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
5. Were off-site monitoring teams briefed on plant conditions and changes?	_____	Yes/No

Controller/Observer Name: _____

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 Procedure 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: _____

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 the 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
5. Did the News Media staff demonstrate the ability to coordinate news releases with the state's public information representatives?	_____	Yes/No
6. Did the News Media staff demonstrate the ability to provide briefings for and to interface with the public and news media?	_____	Yes/No

Controller/Observer Name: _____

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 Weaknesses and Deficiencies: _____

_____

_____

Comments and Recommendations (Specific): _____

_____

_____

NOTE:

Use additional pages as required.

Signature: _____ Title: _____

ATTACHMENT C
(Continued)

Continued on Additional Pages _____Yes _____No

Signature: _____ Title: _____

Date: _____

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

5.0 EXERCISE SCENARIO

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

5.1 INITIAL CONDITIONS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

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 100% power. The reactor has been operating steady state for the past six months with no recent shutdowns.

2. Night Orders for the operations crew provides the following information:

   a. The "A" CRD pump has been removed from service and tagged out for repair.

   b. Off-gas system radiation levels have been increasing over the last month. The last SJAE discharge release rate for previous day was 37800 uCi/sec.

   c. Reactor Engineering Department recommends limiting power changes to less than 1% CTP/MIN due to the suspected fuel pin leakage.

3. Maintenance Department indicates that the "A" CRD pump will be returned to service within the next three hours.

4. The Vernon Hydroelectric Station has removed the Vernon Tie Line from service. Latest estimate to return the Vernon Tie Line to service is by early afternoon today.

5. All other power generating and safety systems are operable.

6. The following on-site meteorological conditions exist at 0815:

Wind Speed, mph (lower/upper)	3.0/2.8
Wind Direction, degrees (lower/upper)	125/128
Delta Temperature, °F (lower/upper)	-0.8/-1.1
Ambient Temperature, °F	57.6
Precipitation, inches	0.00

7. Regional Meteorological Forecast Information:
A weak hig pressure ridge centered in the Gulf of Maine will remain stationary over the next 24 hours. A weak frontal boundary extending southwestward from a low centered over Hudson's Bay will drift slowly eastward. Mostly sunny this morning. Temperatures rising through the 60's. East to southeast winds around 5 mph.

Table 5.1-1

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	161 Inches
Reactor Pressure	1008 psig
Reactor Coolant Temperature	527 °F
Reactor Power - APRM (average)	100 %
Core Plate D/P	18 psid
Total Core Flow	47 x 10^6 lbm/hr
Main Steam Line Flow - Total	6.4 x 10^6 lbm/hr
Main Steam Line Radiation	170 mR/hr
Condenser Hotwell Level	61 %
Condenser Vacuum	2.7 in. Hg(Abs)
Condensate Storage Tank Level	50 %
Recirc Drive Flow	30.5 Kgpm/loop
Feedwater Flow	6.4 x 10^6 lbm/hr
Reactor Building D/P	-1.62 in H_2O
Drywell Pressure	17 psia
Drywell Temperature	138 °F
Torus Water Level	0.54 ft
Torus Temperature	78 °F
Drywell/Torus O_2 Concentration	1.27 %
High Range Containment Monitors	1.5 R/hr
Containment Gas/Particulate	540/25107 cpm
Reactor Building Vent Monitors Gas/Part	185/1481 cpm
Reactor Building Vent Exhaust N/S	2.0/2.0 mR/hr
Steam Jet Air Ejector (ARM)	61 mR/hr
SJAE Discharge Rate	32,800 µCi/sec
Stack Gas I/II	150/200 cpm
High Range Noble Gas Monitor	.1 mR/hr

VERMONT YANKEE DAILY STATUS REPORT

THIS IS A DRILL

DATE: SEPT 2 1992

PLANT OPERATING STATUS

		VALUE	DATE	TIME
1. Core Thermal Power	(MWt) | (%)	1593 | 100%		0700
2. Gross MWe	(MWe)	538		0700
3. Net MWe	(MWe)	511		0700
4. Gross MWh for previous day	(MWh)	12F		
5. Core Flow	(Mlb/hr) | (%)	47 9		0700

REACTOR COOLANT SYSTEM

6. Conductivity	(umho/cm)	0.9	9/1/92	0900
7. Unidentified Leakage @ midnight previous day	(gpm)	0.11		
8. Total Leakage @ midnight previous day	(gpm)	1.91		
9. Gross Activity	(cpm/ml)	202500	9/1/92	0900
10. Iodine-131 Dose Equivalent	(uCi/ml)	4.50E-03	8/31/92	0900

STACK RELEASES

11. Particulate	(ci/period)	4.08E-03	8/31/92	1430
12. Average	(uCi/sec)	200	9/2/92	0115
13. Peak	(uCi/sec)	NONE	9/2/92	0115
14. Discharge Average Gamma Energy	(Mev)	1.12	9/2/92	0115
15. Dose Rate to Critical Organs	(mrem/year)	1.3	8/31/92	1430
16. Iodine-131	(uCi/sec)	3.30E-05	8/31/92	1430

OFF-GAS ANALYSIS

17. SJAE Dis. Release Rate Measured/ Estimated (circle one)	(uCi/sec)	32800	9/2/92	0115
18. SJAE Discharge Slope of Mixture		-0.0686	9/2/92	0115
19. Condenser Air Leakage	(cfm)	13.3	9/2/92	0115

LIQUID RELEASES & RIVER TEMPERATURE

20. Liquid Release	(Gal)	NA		
21. Liquid Release (Gross : Beta, Gamma)	(uCi/ml)	NA		
22. Liquid Release (Tritium)	(uCi/ml)	NA		
23. Liquid Release (Dissolved Noble Gas)	(uCi/ml)	NA		
24. River Mon. #3 Highest Temp. for previous day	(oF)	70		1830

BURNUP

25. Core Avg. Burnup for previous day	(MWD/ST)	16945.75		
26. Core Cycle Burnup for previous day	(MWD/ST)	6325.45		

REVIEWER: _____

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

5.2 NARRATIVE SUMMARY

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

5.2 NARRATIVE SUMMARY

The scenario begins at 0815 with the simulator reactor running at approximately 100% power. The reactor has been in a steady state for the last six months with no recent shutdowns. Night orders have informed the operations crew that the "A" CRD pump has been removed from service and tagged out for repair. Maintenance has indicated that the "A" CRD pump will return to service within the next three hours. The off-gas system radiation levels have been increasing over the last month indicative of a small fuel pin leak. Reactor Engineering has recommended to limit power changes to less than 1% per minute due to suspected fuel pin leakage. The Vernon Hydroelectric Station has removed the Vernon Tie Line from service. Latest estimate to return the Vernon Tie Line to service is by early afternoon today. All other power generating and safety systems are operable.

At 0830, the "B" CRD pump trips. Within several minutes, the control drive accumulator panalarms start to alarm. Upon recognition that two hydraulic control units (HCU's) are inoperable and fall within a 9x9 array, the Shift Supervisor should declare an **UNUSUAL EVENT** (approximately 0845). The **UNUSUAL EVENT** is based upon AP 3125, "Loss of Systems or Equipment" (plant shutdown required in accordance with LCO of Tech. Specs.).

The Shift Supervisor should initiate the appropriate notifications concerning the declaration of the **UNUSUAL EVENT** and changing plant conditions. Plant personnel should be dispatched to investigate the problem on "B" CRD pump or expedite the completion of repairs on "A' CRD

pump. Tech. Spec. 3.3.D requires an orderly shutdown be initiated and the reactor to be in the cold shutdown condition within 24 hours.

At 0915, a main steam line high radiation signal isolates the Main Steam Isolation Valves (MSIVs). The reactor scrams, but four control rods fail to insert. The operating crew may request support from plant support (TSC or R&CE) about limitations caused by these control rods failing to insert. To insert these rods, operators will have to go to the local HCU and vent the above pistons area of each rod (Miniscenario 7.2.1).

The Shift Supervisor should initiate the appropriate notifications about the reactor scram and changing plant conditions. The Control Room staff also will initiate actions to stabilize the plant. This will include using the Safety Relief Valves (SRVs) with the torus as the heat sink to control reactor pressure. During this evolution, the operators will monitor torus temperature and level.

At 0930, a primary system leak occurs. Drywell pressure and radiation levels start to increase.

By 0945, a high drywell pressure alarm is received that initiates a Primary Containment Isolation of Groups 2, 3 and 4. Drywell sumps isolate on Group 2 isolation signal.

Coincident with the high drywell pressure signal, some automatic plant systems and equipment does not actuate. The "B" diesel generator does not start due to a clogged starting air filter (Miniscenario 7.2.2). One RHR pump (not being used for torus cooling) does not start due to a circuit breaker problem (Miniscenario 7.2.3).

At 1000, high level alarms for the drywell equipment and drywell floor drain sump are received.

An **ALERT** should be declared (approximately 1015) based on AP 3125, "Coolant Inventory," (drywell pressure greater than or equal to 2.5 psig and both drywell sumps alarming at high level).

Following the **ALERT** declaration, the Technical Support Center (TSC), Operations Support Center (OSC), and Emergency Operations Facility/Recovery Center (EOF/RC) will be activated and staffed. Notifications should be made to the appropriate personnel including the state and federal authorities.

On-site assistance teams should be requested to investigate the problems associated with the "B" diesel generator and the affected RHR pump.

At 1030, the torus pressure has reached greater than 4 psig and the drywell radiation level has reached 450 R/hr. The operators will consider spraying the torus to control pressure.

Reactor power reduction and pressure control will continue. Plant personnel complete activities to allow for control rod insertion. Plant personnel may be dispatched to look for the source of the drywell leakage.

At 1100, drywell radiation levels continue to increase and containment high-range monitor readings are trending up to 1000 R/hr.

A **SITE AREA EMERGENCY** should be declared (approximately 1115) based on AP 3125, "Fuel Damage," (containment radiation monitors reading greater than 1000 R/hr).

By 1120, the on-site assistance teams dispatched to the "B" diesel generator and the affected RHR pump should discover the problems associated with the starting air filter and circuit breaker, respectively.

At 1130, the plant will experience a loss of normal power on Bus #3 due to blown bus pot fuses. The "B" diesel generator and Vernon Tie Line have

not been returned to service; therefore, all equipment powered from Bus #3 is temporarily not available. Plant personnel should start to discuss options on how to regain power to Bus #3.

At 1200, the repair activities for the "B" diesel generator have been completed. The "B" diesel generator is returned to service and can supply power to Bus #3. Equipment powered from Bus #3 is available for operation.

At 1230, the repair activities for the RHR pump have been completed. The RHR pump is available for operation.

By 1245, Simulator Control Room indications show that plant conditions are stabilizing. Plant staff continue actions to stabilize the plant.

At 1300, the exercise may be terminated.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

5.3 SCENARIO TIME LINE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

5.3 SCENARIO TIME LINE

CLOCK TIME	SCENARIO TIME	DESCRIPTION
0815	0:00	<--- Initial conditions established in the Simulator Control Room.
0830	0:15	<--- "B" CRD Pump trips. Control Drive Accumulator panalarms start to alarm.
0845	0:30	<--- UNUSUAL EVENT (A.P. 3125, LOSS OF SYSTEMS OR EQUIPMENT) - Plant shutdown required in accordance with LCO in Tech. Specs.
0900	0:45	
0915	1:00	<--- Main Steam Line high radiation signal isolates MSIV's. Reactor scrams. Four rods fail to scram (Miniscenario 7.2.1).
0930	1:15	<--- Primary system leak occurs. Drywell pressure and radiation levels start to increase.
0945	1:30	<--- High Drywell Pressure Alarm occurs. Drywell sumps isolate. "B" diesel generator and RHR pump does not start on high drywell pressure signal (Miniscenario 7.2.2 and 7.2.3).
1000	1:45	<--- Drywell equipment and drywell floor drain sump high level alarms.
1015	2:00	<--- ALERT (A.P. 3125, COOLANT INVENTORY) - Drywell pressure ≥ 2.5 psig and both drywell pumps alarming at high level.
1030	2:15	<--- Torus pressure > 4 psig and drywell radiation levels at 450 R/hr. Operators may spray torus for pressure control.
1045	2:30	<--- Reactor power reduction and pressure control continues.
1100	2.45	<--- Drywell radiation levels continue to increase. Containment high-range monitors trending up.
1115	3:00	<--- SITE AREA EMERGENCY (AP 3125, FUEL DAMAGE) - Containment radiation monitors greater than 1,000 R/hr.
1130	3:15	<--- Loss of normal power to Bus #3 occurs. Equipment powered from Bus #3 is lost (Miniscenario 7.2.4).
1145	3:30	
1200	3:45	<--- "B" diesel generator repaired and returned power supply to Bus #3. Equipment powered from Bus #3 returned to service.
1215	4:00	
1230	4:15	<--- RHR pump is repaired. Plant conditions are stabilizing. Plant staff continue actions to stabilize plant.
1245	4:30	
1300	4:45	<--- EXERCISE MAY BE TERMINATED.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

5.4 DETAILED SEQUENCE OF EVENTS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

5.4 DETAILED SEQUENCE OF EVENTS

Clock Time	Scenario Time	Event/Action	Message Information
Prior to 0815	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.	
		The Simulator CR Contrcller issues initial conditions to the simulator CR players. Cuidelines for use of Gaitronics and the plant evacuation alarm are provided to players.	SCR/CR-M-1 SCR-C-1

Clock Time	Scenario Time	Event/Action	Message Information
Prior to 0815 (Cont'd)	00:00	Initiating messages are also provided to all emergency centers and facility staffs upon subsequent activations. TSC communicators prestaged in the SCR, who normally respond to the CR, will be available for communication and data transmission. ERFIS terminals in the TSC and EOF will be linked to the SCR to transmit operational and radiological scenario data. Security will be provided a list of Evaluators and nonparticipants who will not have to be accounted for during the exercise.	ERF-M-1 TSC-M-1 TSC-M-2
0815	00:00	Simulator is put into operation. Reactor is at 100% power. The reactor has been operating steady state for the past 6 months with no recent shutdowns. Night orders have instructed the Operations crew that the "A" CRD pump has been removed from service and tagged out for repair. Maintenance has indicated that the "A" CRD pump will be returned to service within the next 3 hours. Off-gas system radiation levels have been increasing over the last month, indicative of a small fuel pin leak. Reactor Engineering has recommended to limit power changes to 1% per minute due to the suspected fuel pin leakage. The Vernon Hydroelectric Station has removed the Vernon Tie Line from service. Latest estimate to return the Vernon Tie Line to service is by early afternoon today.	

Clock Time	Scenario Time	Event/Action	Message Information
0830	00:15	"B" CRD pump trips. Within several minutes. Control Rod Drive accumulator Panalarms start to annunciate. Operators should recognize that two hydraulic control units (HCUs) are inoperable and fall within a 9x9 array.	
Approx. 0845	00:30	The Shift Supervisor should declare an UNUSUAL EVENT based upon the following EAL: AP 3125, "LOSS OF SYSTEMS OR EQUIPMENT - Plant shutdown required in accordance with LCO of Technical Specifications." The SS/PED should initiate Procedure OP 3500, UNUSUAL EVENT and refer to Appendix I, the SS/PED checklist. Operators should begin a controlled power reduction in accordance with Tech. Spec. 3.3.D Plant personnel should be dispatched to investigate the problem with the "B" CRD pump, or expedite repairs to the "A" pump. FOR EXERCISE PURPOSES, EARLY IN-STATION ACTIONS MAY BE CONTROLLED AND PERFORMED BY THE SIMULATOR CONTROLLERS. 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 shift crew in the actual Control Room.	SCR-C-2

Clock Time	Scenario Time	Event/Action	Message Information
Approx. 0845 (Cont'd)	00:30	The SS/PED should notify Vermont, New Hampshire, and Massachusetts State Police Agencies using the Nuclear Alert System (NAS, orange telephone) and provide the appropriate message to each agency.	
		The SS/PED should notify the NRC (FTS 2000 ENS Phone) and maintain communications until relieved by the TSC.	
		The Security Shift Supervisor should implement Procedure OP-3531, "Emergency Call-In Method," to notify the appropriate emergency response personnel.	
		The Security Shift Supervisor should notify Yankee Nuclear Services Division (YNSD) Security and activate the YNSD Personnel Group Paging System.	
		The Security Shift Supervisor also 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 EOF Coordinator assignments would be discussed, as appropriate.	

Clock Time	Scenario Time	Event/Action	Message Information
Approx. 0845 (Cont'd)	00:30	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.	
0900	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-3
0915	01:00	Simulator Operator inserts a main steam line high radiation signal, resulting in a reactor scram. In addition, the Simulator Operator inserts a malfunction where 4 control rods do not insert as required by the automatic scram. As a result of the changing plant conditions, the SS/PED should initiate notifications to the appropriate agencies, and to plant personnel. The Control Room staff will initiate activities in an attempt to stabilize the plant, including insertion of the stuck rods by way of venting the piston in the individual HCUs and cycling the SRVs to the torus to control reactor pressure (refer to Miniscenario 7.2.1).	

Clock Time	Scenario Time	Event/Action	Message Information
0930	01:15	Simulator Operator inserts a primary system leak. Drywell pressure and radiation levels start to increase. Radiation Protection Technicians may be dispatched to perform dose rate surveys, air sampling and contamination surveys of the plant.	
0945	01:30	Drywell pressure has exceeded the high alarm setpoint, a Primary Containment Isolation Signal (PCIS) is initiated for Groups 2, 3 and 4 (the drywell sumps isolate under Group 2 isolation). The "B" diesel generator did not start on high drywell pressure due to clogged starting air filters (refer to Miniscenario 7.2.2). One RHR pump (not being used for torus cooling) did not start on high drywell pressure due to a blown fuse in the circuit breaker's charging motor circuit (refer to Miniscenario 7.2.3). The SS/PED should inform the TSC Coordinator about the problems with the "B" diesel generator and affected RHR pump.	
1000	01:45	The drywell floor drain and equipment sump levels exceed the high alarm setpoints. Alarms are received in the Simulator Control Room.	

Clock Time	Scenario Time	Event/Action	Message Information
1000 (Cont'd)	01:45	The TSC Coordinator and SS/PED should review the plant conditions against Procedure AP 3125, "Emergency Plan Classification and Action Level Scheme."	
1015	02:00	The SS/PED or TSC Coordinator should declare an ALERT based upon the following EAL: AP 3125, "COOLANT INVENTORY - Drywell Pressure greater than or equal to 2.5 psig, and both drywell sumps alarming at high level."	
		The SS/PED directs the operations staff to initiate Procedure OP 3501, "ALERT."	
		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 report to the Governor Hunt House Information Center and wait for further instructions.	
		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 using the NAS of the escalation to the ALERT emergency classification.	

Clock Time	Scenario Time	Event/Action	Message Information
1015 (Cont'd)	02:00	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.	
		The Security Shift Supervisor should notify Yankee Nuclear Services Division (YNSD) Security of the escalation to the ALERT status.	
		Upon ALERT notification, the YNSD Engineering Support Center (ESC) is activated.	ESC-M-1
		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.	
1020	02:05	The Security Shift Supervisor should ensure that an accountability of personnel has been initiated in accordance with procedure OP 3524, "Emergency Actions to Ensure Accountability and Security Response."	
		The TSC Coordinator should respond, activate, and staff the TSC in accordance with Appendix III of OP 3501, "ALERT."	

Clock Time	Scenario Time	Event/Action	Message Information
1020 (Cont'd)	02:05	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) 8. Plant Services Supervisor 9. Other staff personnel to fulfill the functions of the TSC (i.e., Status Board Caretakers, Communicators, Switchboard Operators, etc.). The Emergency Operations Facility (EOF) Coordinator should activate and staff the EOF/RC in accordance with Appendix A OP-3501, "ALERT."	

Clock Time	Scenario Time	Event/Action	Message Information
1020 (Cont'd)	02:05	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: - 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 2. Control Instrument Specialists 3. Maintenance Staff 4. Status Board Caretaker 5. Other personnel as required.	EOF-M-1

Clock Time	Scenario Time	Event/Action	Message Information
1020 (Cont'd)	C2:05	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."	
1030	02:15	Torus pressure has exceeded 4 psig and drywell radiation level has reached 450 R/hr. Operators may consider spraying the torus to control pressure.	
		IF AN ALERT HAS NOT BEEN DECLARED BY THE SS/PED, HE WILL BE DIRECTED TO DO SO AT THIS TIME.	SCR-C-4
		SCR operators will continue to stabilize the plant. This may include activities to allow control rod insertion, reactor power reduction and pressure control. Plant personnel may be dispatched to determine the source of the drywell leakage.	
Approx 1045	02:30	The ESC should be assisting at this time in technical problem solving. In addition, the ESC meteorologist should be providing a weather forecast for the VY site.	
		The EOF Dose Assessment Personnel should be doing radiological off-site consequence assessments, based upon potential containment failure.	
1100	02:45	Drywell radiation levels continue to increase and containment high-range monitors readings are trending up to 1000 R/hr.	

Clock Time	Scenario Time	Event/Action	Message Information
1105	02:50	The SRM, TSC Coordinator and SS/PED should evaluate plant conditions against Procedure AP 3125, "Emergency Plan Classification and Action Level Scheme."	
Approx. 11:15	03:00	The SRM should declare a SITE AREA EMERGENCY based on 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 the State's EOCs via the NAS 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.	
Approx. 1120	03:05	On-site assistance teams dispatched to the "B" diesel generator and the affected RHR pump will discover the problems associated with the starting air filter and circuit breaker, respectively. The teams should discuss actions to initiate necessary repairs.	

Clock Time	Scenario Time	Event/Action	Message Information
Approx. 1125	03:10	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 the NWS.	EOF-M-2
1130	03:15	Loss of normal power on Bus #3 occurs due to blown bus pot fuses. "B" diesel generator and Vernon Tie Line have not been returned to service. All equipment powered from Bus #3 is temporarily not available. Plant personnel should start to discuss options on how to regain power to Bus #3 (refer to Miniscenario 7.2.4).	
1135	03:20	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
1200	03:45	Repair activities for the "B" diesel generator have been completed. The "B" diesel generator is returned back to operational status and can supply power to Bus #3. Equipment powered from Bus #3 is available for operation.	
1230	04:15	Repair activities for the RHR Pump have been completed. The RHR Pump is returned back to operational status.	

Clock Time	Scenario Time	Event/Action	Message Information
1245	4:30	Simulator Control Room indications show that plant conditions are stabilizing. Plant staff continue actions to stabilize the plant.	
1300	04:45	The exercise may be terminated.	

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

6.0 EXERCISE MESSAGES

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

6.1 COMMAND CARDS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO COMMAND CARD

FROM: Simulator CR Controller COMMAND NO.: SCR-C-1

TO: Shift Supervisor CLOCK TIME: Prior to 0815

LOCATION: Simulator Control Room SCENARIO TIME: Prior to 00:00

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

Communications systems that are available in the Control Room have been duplicated in the Simulator Control Room (SCR) EXCEPT for GAITRONICS and the PLANT EVACUATION ALARM.

Please use the GAITRONICS/PLANT EVACUATION ALARM in the SCR to complete the required PA announcements. An Exercise controller will then direct a member of the shift operations crew at the plant to repeat the announcements from the Main Control Room.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO COMMAND CARD

FROM: Shift CR Controller COMMAND NO.: SCR-C-2

TO: Shift Supervisor CLOCK TIME: 0845

LOCATION: Simulator Control Room SCENARIO TIME: 00:30

****

THIS IS A DRILL
DO NOT initiate any actions affecting normal plant operations.

****

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

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO COMMAND CARD

FROM: Security Controller COMMAND NO.: SEC-C-1

TO: Security Supervisor CLOCK TIME: 0845 or when needed

LOCATION: Security Gatehouse SCENARIO TIME: 00:30

****

THIS IS A DRILL
DO NOT initiate any actions affecting normal plant operations.

****

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

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO COMMAND CARD

FROM: Simulator CR Controller COMMAND NO.: SCR-C-3

TO: Shift Supervisor CLOCK TIME: 0900

LOCATION: Simulator Control Room SCENARIO TIME: 00:15

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

DECLARE AN UNUSUAL EVENT BASED UPON AP 3125, "LOSS OF SYSTEMS OR EQUIPMENT - Plant shutdown required in accordance with LCO of Technical Specifications".

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO COMMAND CARD

FROM: Simulator CR Controller COMMAND NO.: SCR-C-4

TO: Shift Supervisor/PED CLOCK TIME: 1030

LOCATION: Simulator Control Room SCENARIO TIME: 02:15

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

DECLARE AN ALERT BASED UPON AP 3125, "COOLANT INVENTORY - Drywell Pressure greater than or equal to 2.5 psig, and both drywell sumps alarming at high level."

***** **********

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO COMMAND CARD

FROM: EOF Controller COMMAND NO.: EOF-C-1

TO: Site Recovery Manager CLOCK TIME: 1135

LOCATION: EOF SCENARIO TIME: 03:20

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

DECLARE A SITE AREA EMERGENCY BASED UPON AP 3125, "FUEL DAMAGE - Containment radiation monitors reading greater than 1,000 R/hr"

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

6.2 MESSAGE CARDS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

FROM: Controller MESSAGE NO.: SCR/CR-M-1

TO: Shift Supervisor/DCO CLOCK TIME: Start of Exercise

LOCATION: CR/Sim CR SCENARIO TIME: Prior to 00:00

****

THIS IS A DRILL
DO NOT initiate any actions affecting normal plant operations.

****

For initial conditions, see attached pages.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE

SCENARIO MESSAGE CARD

INITIAL CONDITIONS

1. The reactor is now at approximately 100% power. The reactor has been operating steady state for the past six months with no recent shutdowns.

2. Night Orders for the operations crew provides the following information:

   a. The "A" CRD pump has been removed from service and tagged out for repair.

   b. Off-gas system radiation levels have been increasing over the last month. The last SJAE discharge release rate for the previous day was 32,800 μCi/sec.

   c. Reactor Engineering Department recommends limiting power changes to less than 1% CTP/minute due to the suspected fuel pin leakage.

3. Maintenance Department indicates the "A" CRD pump will be returned to service within the next 3 hours.

4. The Vernon Hydroelectric Station has removed the Vernon Tie Line from service. Latest estimate to return the Vernon Tie Line to service is by early afternoon today.

5. All other power generating and safety systems equipment are operable.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

6. The following on-site meteorological conditions exist at 0815:

Wind Speed, mph (lower/upper)	3.0/2.8
Wind Direction, degrees (lower/upper)	125/128
Delta Temperature, °F (lower/upper)	-0.8/-1.1
Ambient Temperature, °F	57.6
Precipitation, inches	0.00

7. Regional Meteorological Forecast Information:
A weak high pressure area ridge centered in the Gulf of Maine will remain nearly stationary over the next 24 hours. A weak frontal boundary extending southwestward from a low centered over Hudson's Bay will drift eastward slowly.

Mostly sunny this morning. Temperatures rising through the 60's. East to southeast winds around 5 MPH.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	161 Inches
Reactor Pressure	1008 psig
Reactor Coolant Temperature	527 °F
Reactor Power - APRM (average)	100 %
Core Plate D/P	18 psid
Total Core Flow	47 x 10^6 lbm/hr
Main Steam Line Flow - Total	6.4 x 10^6 lbm/hr
Main Steam Line Radiation	175 mR/hr
Condenser Hotwell Level	61 %
Condenser Vacuum	2.7 in. Hg(Abs)
Condensate Storage Tank Level	50 %
Recirc Drive Flow	30.5 Kgpm/loop
Feedwater Flow	6.4 x 10^6 lbm/hr
Reactor Building D/P	-1.62 in H_2O
Drywell Pressure	17 psia
Drywell Temperature	138 °F
Torus Water Level	0.54 ft
Torus Temperature	78 °F
Drywell/Torus O_2 Concentration	1.27 %
High Range Containment Monitors	1.5 R/hr
Containment Gas/Particulate	540/25107 cpm
Reactor Building Vent Monitors Gas/Part	185/1481 cpm
Reactor Building Vent Exhaust N/S	2/2 mR/hr
Steam Jet Air Ejector (ARM)	61 mR/hr
SJAE Discharge Rate	32,800 µCi/sec
Stack Gas I/II	150/200 cpm
High Range Noble Gas Monitor	0.1 mR/hr

****

THIS IS A DRILL

****

VERMONT YANKEE DAILY STATUS REPORT

THIS IS A DRILL

DATE: SEPT 2 1992

PLANT OPERATING STATUS

		VALUE	DATE	TIME
1. Core Thermal Power	(MWt) | (%)	1593 | 100%		0700
2. Gross MWe	(MWe)	536		0700
3. Net MWe	(MWe)	511		0700
4. Gross MWh for previous day	(MWh)	12878		
5. Core Flow	(Mlb/hr) | (%)	47 | 97.9		0700

REACTOR COOLANT SYSTEM

6. Conductivity	(umho/cm)	0.9	9/1/92	0900
7. Unidentified Leakage @ midnight previous day	(gpm)	0.41		
8. Total Leakage @ midnight previous day	(gpm)	1.91		
9. Gross Activity	(cpm/ml)	202500	9/1/92	0900
10. Iodine-131 Dose Equivalent	(uCi/ml)	4.50E-03	8/31/92	0900

STACK RELEASES

11. Particulate	(ci/period)	4.08E-03	8/31/92	1430
12. Average	(uCi/sec)	200	9/2/92	0115
13. Peak	(uCi/sec)	NONE	9/2/92	0115
14. Discharge Average Gamma Energy	(Mev)	1.12	9/2/92	0115
15. Dose Rate to Critical Organs	(mrem/year)	1.3	8/31/92	1430
16. Iodine-131	(uCi/sec)	3.30E-05	8/31/92	1430

OFF-GAS ANALYSIS

17. SJAE Dis. Release Rate Measured/ Estimated (circle one)	(uCi/sec)	32800	9/2/92	0115
18. SJAE Discharge Slope of Mixture		-0.0686	9/2/92	0115
19. Condenser Air Leakage	(cfm)	13.3	9/2/92	0115

LIQUID RELEASES & RIVER TEMPERATURE

20. Liquid Release	(Gal)	NA		
21. Liquid Release (Gross : Beta, Gamma)	(uCi/ml)	NA		
22. Liquid Release (Tritium)	(uCi/ml)	NA		
23. Liquid Release (Dissolved Noble Gas)	(uCi/ml)	NA		
24. River Mon. #3 Highest Temp. for previous day	(oF)	70		1830

BURNUP

25. Core Avg. Burnup for previous day	(MWD/ST)	16945.75		
26. Core Cycle Burnup for previous day	(MWD/ST)	6325.45		

REVIEWER: _____

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

FROM: Facility Controller MESSAGE NO.: ERF-M-1

TO: Facility Coordinator CLOCK TIME: Start of Exercise or

LOCATION: Various ERFs SCENARIO TIME: Facility Activation

****

THIS IS A DRILL
DO NOT initiate any actions affecting normal plant operations.

****

For initial conditions, see attached pages.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

VERMONT YANKEE
DAILY OPERATIONS REPORT SEPTEMBER 2, 1992

PLANT STATUS: 100% POWER
GEN GROSS 538 MWE
OFFGAS 32,800 uCI/sec

PLANT OPERATION SUMMARY & SIGNIFICANT EVENTS:

*THE PLANT HAS BEEN OPERATING FOR 6 MONTHS WITH NO RECENT SHUTDOWNS. CONTINUED FULL POWER OPS. "A" CRD PUMP IS OUT OF SERVICE AND TAGGED OUT FOR REPAIR. OFF-GAS RAD LEVELS ELEVATED. SOME MINOR FUEL PIN LEAKAGE. VERNON TIE LINE IS OUT OF SERVICE. EXPECT VERNON TIE LINE BACK BY EARLY AFTERNOON TODAY.

SIGNIFICANT NEW WORs

#	DESCRIPTION	DEPT	PRIORITY

NONE

TECH SPEC/LCO EQUIPMENT OUT OF SERVICE:

SYSTEM/COMPONENT	TECH SPEC	DATE/TIME	ALLOWABLE TIME
"A" CRD PUMP			

STATUS/COMMENTS ON MAJOR WORK IN PROGRESS:

* MAINTENANCE PERFORMING REPAIRS TO "A" CRD PUMP. "A" CRD PUMP TO BE BACK IN SERVICE LATER THIS MORNING (1130).
* RE INSTRUCTIONS TO LIMIT POWER CHANGES TO LESS THAN 1% PER MINUTE DUE TO SUSPECTED FUEL PIN LEAKAGE.

PRO'S/NOTIFICATIONS:
NONE

LONG TERM PROBLEMS SOLVED:
NONE

****

THIS IS A DRILL

****

VERMONT YANKEE DAILY STATUS REPORT

THIS IS A DRILL

DATE: SEPT 2 1992

PLANT OPERATING STATUS

		VALUE	DATE	TIME
1. Core Thermal Power	(MWt) | (%)	1593 | 100%		0700
2. Gross MWe	(MWe)	538		0700
3. Net MWe	(MWe)	511		0700
4. Gross MWh for previous day	(MWh)	12878		
5. Core Flow	(Mlb/hr) | (%)	47 | 97.9		0700

REACTOR COOLANT SYSTEM

6. Conductivity	(umho/cm)	0.9	9/1/92	0000
7. Unidentified Leakage @ midnight previous day	(gpm)	0.41		
8. Total Leakage @ midnight previous day	(gpm)	1.91		
9. Gross Activity	(cpm/ml)	202500	9/1/92	0900
10. Iodine-131 Dose Equivalent	(uCi/ml)	4.50E-03	8/31/92	0900

STACK RELEASES

11. Particulate	(ci/period)	4.08E-03	8/31/92	1430
12. Average	(uCi/sec)	200	9/2/92	0115
13. Peak	(uCi/sec)	NONE	9/2/92	0115
14. Discharge Average Gamma Energy	(Mev)	1.12	9/2/92	0115
15. Dose Rate to Critical Organs	(mrem/year)	1.3	8/31/92	1430
16. Iodine-131	(uCi/sec)	3.30E-05	8/31/92	1430

OFF-GAS ANALYSIS

17. SJAE Dis. Release Rate Measured/ Estimated (circle one)	(uCi/sec)	32800	9/2/92	0115
18. SJAE Discharge Slope of Mixture		-0.0686	9/2/92	0115
19. Condenser Air Leakage	(cfm)	13.3	9/2/92	0115

LIQUID RELEASES & RIVER TEMPERATURE

20. Liquid Release	(Gal)	NA		
21. Liquid Release (Gross : Beta, Gamma)	(uCi/ml)	NA		
22. Liquid Release (Tritium)	(uCi/ml)	NA		
23. Liquid Release (Dissolved Noble Gas)	(uCi/ml)	NA		
24. River Mon. #3 Highest Temp. for previous day	(oF)	70		1830

BURNUP

25. Core Avg. Burnup for previous day	(MWD/ST)	16945.75		
26. Core Cycle Burnup for previous day	(MWD/ST)	6325.45		

REVIEWER: _____

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

FROM: TSC Controller
MESSAGE NO.: TSC-M-1
TO: TSC Coordinator
CLOCK TIME: Upon assignment of Data Recorder
LOCATION: TSC
SCENARIO TIME:

****

THIS IS A DRILL
DO NOT initiate any actions affecting normal plant operations.

****

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
1992

SCENARIO MESSAGE CARD

FROM: TSC Controller MESSAGE NO.: TSC-M-2

TO: TSC Coordinator CLOCK TIME: Upon assignment of Communicators

LOCATION: TSC SCENARIO TIME: _____

****

THIS IS A DRILL
DO NOT initiate any actions affecting normal plant operations.

****

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

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

FROM: ESC Controller MESSAGE NO.: ESC-M-1

TO: ESC Meteorologist CLOCK TIME: 1015 or as requested

LOCATION: ESC SCENARIO TIME: 02:00

****

THIS IS A DRILL
DO NOT initiate any actions affecting normal plant operations.

****

Utilize the attached meteorological information to generate the weather forecast for the Vermont Yankee site.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

Date of Forecast: 09-02-92
Time of Forecast: 10:15

Current Site Meteorology (as of 09:00):

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precip.
	Lower	2.8 MPH	109 DEG FROM	-0.9 DEG F	D	
	Upper	2.9 MPH	129 DEG FROM	-1.2 DEG F	D	0 IN/15 MIN

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precip.
09:00 - 11:00	Lower	5.0 MPH	110 DEG FROM	-1.4 DEG F	C	
	Upper	6.0 MPH	120 DEG FROM	-1.8 DEG F	D	0 IN/15 MIN
11:00 - 13:00	Lower	6.0 MPH	120 DEG FROM	-1.6 DEG F	B	
	Upper	8.0 MPH	130 DEG FROM	-1.9 DEG F	D	0 IN/15 MIN
13:00 - 15:00	Lower	7.0 MPH	160 DEG FROM	-1.3 DEG F	D	
	Upper	10.0 MPH	160 DEG FROM	-1.9 DEG F	D	0 IN/15 MIN

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

National Weather Service Forecast for site region:

Mostly sunny this morning. Temperatures rising through the 60's. East to Southeast winds around 5 MPH.

Special Weather Statements:

NONE

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

FROM: EOF/RA Controller MESSAGE NO.: EOF-M-1

TO: Radiological Assistant CLOCK TIME: 1020 or as requested

LOCATION: EOF/Dose Assessment Area SCENARIO TIME: _____

****

THIS IS A DRILL
DO NOT initiate any actions affecting normal plant operations.

****

07:00-11:00 - General Area Forecast

Mostly sunny this morning. Temperatures rising through the 60's. East to southeast winds around 5 MPH.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

FROM: ESC Controller MESSAGE NO.: ESC-M-2

TO: ESC Meteorologist CLOCK TIME: 1125 or as requested

LOCATION: ESC SCENARIO TIME: 03:10

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

Utilize the attached meteorological information to generate the weather forecast for the Vermont Yankee site.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

Date of Forecast: 09-02-92
Time of Forecast: 11:00

Current Site Meteorology (as of 11:00):

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precip.
	Lower	5.9 MPH	084 DEG FROM	-2.0 DEG F	A	
	Upper	5.4 MPH	120 DEG FROM	-2.5 DEG F	B	0 IN/15 MIN

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precip.
11:00 - 13:00	Lower	6.0 MPH	120 DEG FROM	-1.6 DEG F	B	
	Upper	8.0 MPH	130 DEG FROM	-1.9 DEG F	D	0 IN/15 MIN
13:00 - 15:00	Lower	7.0 MPH	160 DEG FROM	-1.3 DEG F	D	
	Upper	10.0 MPH	160 DEG FROM	-1.9 DEG F	D	0 IN/15 MIN
15:00 - 17:00	Lower	6.0 MPH	180 DEG FROM	-0.7 DEG F	D	
	Upper	9.0 MPH	180 DEG FROM	-1.3 DEG F	D	0 IN/15 MIN

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

National Weather Service Forecast for site region:

Mostly sunny and warm this afternoon. High temperatures in the upper 70's. South to southeast winds 5 - 10 MPH.

Special Weather Statements:

None

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPARFDNESS EXERCISE
1992

SCENARIO MESSAGE CARD

FROM: EOF/RA Controller MESSAGE NO.: EOF-M-2

TO: Radiological Assistant CLOCK TIME: 1125 or as requested

LOCATION: EOF/Dose Assessment Area SCENARIO TIME: 03:10

****

THIS IS A DRILL
DO NOT initiate any actions affecting normal plant operations.

****

11:00-17:00 - General Area Forecast

National Weather Service Forecast for site region:

Mostly sunny and warm this afternoon. High temperatures in the upper 70's. South to southeast winds 5 to 10 MPH.

Special Weather Statements:

None

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

7.0 STATION EVENT DATA

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

7.1 EVENTS SUMMARY

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

7.1 EVENTS SUMMARY

The following information and supplementary material are provided for those evaluators 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 evaluator must be cognizant of the actions of those players to which assignments are 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 evaluator will be required to provide additional information to the players.

Miniscenario	Approximate Time	Event	Location	Initiation
7.2.1	0915	Control Rod Venting of HCU Pistons	Reactor Building	OSC Controller
7.2.2	0945	"B" Diesel Generator Failure	"B" Diesel Generator Room	Simulator Response
7.2.3	0945	RHR Pump Inspection and Breaker Failure	Switchgear Room and Reactor Bldg (RHR Pump Corner Rm.)	Simulator Response
7.2.4	1130	Loss of Power on Bus #3	Switchgear Room	Simulator Response

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

7.2.1 Miniscenario - Control Rod Venting of HCU Pistons

I. General Description

At approximately 0915, a main steam line high radiation condition occurs resulting in an isolation signal being sent to the Main Steam Isolation Valves (MSIVs). When the MSIVs trip, a reactor scram signal is generated by the Reactor Protection System (RPS). When the scram occurs, four control rods fail to insert to the 00 position. The SCR Operators will attempt to insert the individual rods from the Reactor Control Panel in the SCR. All operator attempts to insert these rods will fail. The operators should initiate activities to manually insert the rods using the over-piston vent procedure, from the individual Hydraulic Control Unit (HCU), using reactor pressure as the driving medium.

II. Description of Player Responses/Observations/Corrective Actions

The Shift Supervisor should dispatch Auxiliary Operators (AOs) to the vent-over piston area for each of the affected control rods. The AOs should assemble the necessary tools and equipment for this procedure, obtain a briefing from the SS/PED and proceed to the first control to be vented. When the AOs arrive at the designated location, they should establish communications with the SCR and proceed with the evolution.

III. Event Closeout

This event will be closed out when the AOs inform the SCR that they are in the process of venting each piston. The Simulator operator will allow each rod to be inserted to the 00 position, as the insertion process is carried out. After all the control rods are at the 00 position, the miniscenario will be terminated.

IV. Messages

All information will be provided verbally by the appropriate controller.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

7.2.2 Miniscenario - "B" Diesel Generator Failure

I. General Description

When the drywell high pressure signal is received, SCR operators receive indications that the "B" Diesel Generator failed to start. Any subsequent attempts to start the diesel will be unsuccessful.

II. Description of Player Responses/Observations/Corrective Actions

The SCR may request an AO or an electrician be dispatched to the "B" Diesel Room to investigate the cause of the failure to start.

In addition to a visual inspection, the investigator may be requested to attempt to start the diesel locally. If at any times 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. Upon investigation of this symptom, the differential pressure gauge (PI-3-1B) across the Dollinger air filter will indicate 120 psid.

Subsequent investigation will reveal that the filter is clogged and will need to be replaced. Maintenance will be requested to change the air filter as soon as possible.

III. Event Closeout

This event will be terminated when the maintenance team leader informs the evaluator of all actions that would be taken based on the conditions described above. The SCR operators will then be allowed to start the diesel from the appropriate control panel.

IV. Messages

All information will be provided verbally by the appropriate controller.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

7.2.3 Miniscenario - RHR Pump Inspection and Breaker Failure

I. General Description

When the drywell high pressure signal is received, SCR operators receive indications that the RHR pump not being used for torus cooling failed to start. Any attempts to restart the affected pump will be unsuccessful.

II. Description of Player Responses/Observations/Corrective Actions

The Shift Supervisor should send out an AO to investigate the RHR pump breaker in the switchgear room. An operator may also be dispatched to the RHR corner room to physically inspect the RHR pump and motor.

The operator inspecting the RHR pump and motor will find no apparent problems, and will report his findings to the control room.

The operator inspecting the RHR pump breaker will find its closing spring discharged and a blown fuse in the charging motor circuit. The Shift Supervisor will request Electrical Maintenance to check the circuit and replace the fuse.

III. Event Closeout

This event will be terminated when the charging motor circuit is checked out (no abnormalities) and the fuse can be replaced. This will return the pump to operational status. The SCR operators may decide to start the affected RHR pump without further incident with the breaker closing circuit.

IV. Messages

All information will be provided verbally by the appropriate controller.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

7.2.4 Miniscenario - Loss of Power on Bus #3

I. General Description

At 1130 the plant will experience a loss of electrical power on bus #3 due to blown bus pot fuses. The Vernon tie line was removed from service earlier in the day, and the emergency diesel generator (B) has not been returned to service as yet. All equipment powered from this bus will be lost temporarily.

II. Description of Player Responses/Observations/Corrective Actions

The emergency response facilities will discuss options of regaining power to bus #3. The LNP signal caused the 3T1 tie breaker to open and isolate bus #3 from Bus #1, and also caused an automatic load shedding of non-essential loads.

Normally, the B diesel generator would start and power bus #3, and if that fails, the operators would manually close tie breakers connecting bus #3 to the Vernon power supply. In this case both sources of power are unavailable.

The emergency response organization has ample opportunity to investigate the status of the Vernon tie-line, and the B emergency diesel generator.

III. Event Closeout

One option is the B emergency diesel generator has been returned to service and is supplying power to Bus #3. A second option is to find and replace the blown bus pot fuses, and close the 3T1 tie breaker.

V. Messages

All information will be provided verbally by the appropriate controller.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

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 operational 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	INSTR ID	DESCRIPTION	UNITS	SCENARIO TIME / CLOCK TIME	00:00 / 08:15	00:15 / 08:30	00:30 / 08:45	00:45 / 09:00	01:00 / 09:15
1	9-3	FT-23-108-1	HPCI FLOW	GPM		0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM		1	1	1	1	1
3	9-3	FI-10-139B	RHR B FLOW	GPM		1	1	1	1	1
4	9-3	FI-14-50A	CS A FLOW	GPM		0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM		0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA		17	17	17	17	17
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA		17	17	17	17	17
8	9-4	FI-13-91	RCIC FLOW	GPM		0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM		65	65	65	65	65
10	9-4	FI-12-141B	RWCU FLOW	GPM		65	65	65	65	65
11	9-4	2-165A	RX COOLANT TEMP	DEG F		527	527	525	519	513
12	9-4	2-165B	RX COOLANT TEMP	DEG F		527	527	525	519	513
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM		30.5	30.6	27.4	20.3	13
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM		30.5	30.5	27.3	20.3	12.9
15	9-5	7-46A	APRM/IRM A	%		100	100	92	73	58
16	9-5	7-46B	APRM/IRM B	%		100	100	92	74	58
17	9-5	7-46C	APRM/IRM C	%		99	99	91	73	57
18	9-5	7-46D	APRM/IRM D	%		100	100	92	73	58
19	9-5	7-46E	APRM/IRM E	%		101	101	93	74	58
20	9-5	7-46F	APRM/IRM F	%		100	100	93	74	58
21	9-5	7-43A	SRM A	CPS		3.78E+05	3.81E+05	3.15E+05	1.93E+05	1.13E+05
22	9-5	7-43B	SRM B	CPS		4.52E+05	4.56E+05	3.77E+05	2.30E+05	1.34E+05
23	9-5	7-43C	SRM C	CPS		5.10E+05	5.14E+05	4.25E+05	2.59E+05	1.52E+05
24	9-5	7-43D	SRM D	CPS		4.24E+05	4.27E+05	3.53E+05	2.16E+05	1.26E+05
25	9-5	2-3-95	CORE FLOW	MLB/HR		47	47	43	32	22
26	9-5	2-3-95	CORE DP	PSID		18	18	16	10	7
27	9-5	FI-3-310	CRD FLOW	GPM		44.2	44.1	0	0	0
28	9-5	6-96	WIDE RANGE PRESS	PSIG		1008	1008	999	976	960
29	9-5	6-96	NAR RANGE PRESS	PSIG		1008	1008	999	976	960
30	9-5	6-97	FEEDWATER FLOW	MLB/HR		6.4	6.4	5.9	4.6	3.6
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR		6.4	6.4	5.9	4.6	3.6
32	9-5	6-98	NAR RANGE LEVEL	INCHES		161	161	161	161	161
33	9-5	6-98	WIDE RANGE LEVEL	INCHES		497	490	448	310	206
34	9-6	LI-107-5	CST LEVEL	%		50	49	49	49	49
35	9-6	LI-102-5A	HOTWELL LEVEL N	%		61	61	61	62	60
36	9-6	LI-102-5B	HOTWELL LEVEL S	%		59	59	59	60	59
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG		2.7	2.7	2.6	2.3	1.9
38	9-8		D/G A BKR			OPEN	OPEN	OPEN	OPEN	OPEN
39	9-8		D/G B BKR			OPEN	OPEN	OPEN	OPEN	OPEN
40	9-23	16-19-33A/C	TORUS TEMP	DEG F		78	78	78	78	78
41	9-25	LI-46A	TORUS LEVEL	FEET		0.54	0.54	0.54	0.54	0.54
42	9-25	LI-46B	TORUS LEVEL	FEET		0.54	0.54	0.54	0.54	0.54
43	9-25	TR-16-19-44	TORUS PRESS	PSIA		14.6	14.6	14.6	14.6	14.6
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA		17	17	17	17	17
45	9-25	PR-1-156-3	DW/TORUS DP	PSID		1.96	1.92	1.89	1.86	1.9
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F		138	138	137	137	136
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O		-1.62	-1.62	-1.62	-1.62	-1.62
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O		-1.62	-1.62	-1.62	-1.62	-1.62
49	9-26	FI-1-125-1A	SGTS FLOW	CFM		0	8	8	8	8
50	9-26	FI-1-125-1B	SGTS FLOW	CFM		0	0	0	0	0
51	CAD		DW/TORUS O2 CONC.	%		1.27	1.27	1.27	1.27	1.26

8.0 OPERATIONAL DATA

ITEM	PANEL	INSTR. ID	DESCRIPTION	UNITS	SCENARIO TIME / CLOCK TIME	01:15 / 09:30	01:30 / 09:45	01:45 / 10:00	02:00 / 10:15	02:15 / 10:30
1	9-3	FT-23-108-1	HPCI FLOW	GPM		0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM		5791	2	7367	7366	7365
3	9-3	FI-10-139B	RHR B FLOW	GPM		6063	2	7356	7355	7355
4	9-3	FI-14-50A	CS A FLOW	GPM		0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM		0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA		17	17	18	18	18
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA		17	17	18	18	18
8	9-4	FI-13-91	RCIC FLOW	GPM		0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM		0	0	0	0	0
10	9-4	FI-12-141B	RWCU FLOW	GPM		0	0	0	0	0
11	9-4	2-165A	RX COOLANT TEMP	DEG F		537	552	498	453	465
12	9-4	2-165B	RX COOLANT TEMP	DEG F		537	552	498	453	465
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM		8.3	8.3	8.2	8.3	8.3
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM		8.3	8.3	8.2	8.3	8.3
15	9-5	7-46A	APRM/IRM A	%		0	0	0	0	0
16	9-5	7-46B	APRM/IRM B	%		0	0	0	0	0
17	9-5	7-46C	APRM/IRM C	%		0	0	0	0	0
18	9-5	7-46D	APRM/IRM D	%		0	0	0	0	0
19	9-5	7-46E	APRM/IRM E	%		0	0	0	0	0
20	9-5	7-46F	APRM/IRM F	%		0	0	0	0	0
21	9-5	7-43A	SRM A	CPS		5.82E+01	3.21E+01	3.43E+01	5.00E+02	3.57E+01
22	9-5	7-43B	SRM B	CPS		6.58E+01	3.21E+01	3.43E+01	5.00E+02	3.57E+01
23	9-5	7-43C	SRM C	CPS		6.96E+01	3.15E+01	3.36E+01	8.00E+02	3.50E+01
24	9-5	7-43D	SRM D	CPS		6.34E+01	3.23E+01	3.45E+01	7.00E+02	3.59E+01
25	9-5	2-3-95	CORE FLOW	MLB/HR		14	14	14	14	14
26	9-5	2-3-95	CORE DP	PSID		4	4	4	4	4
27	9-5	FI-3-310	CRD FLOW	GPM		0	0	0	0	0
28	9-5	6-96	WIDE RANGE PRESS	PSIG		855	1063	828	432	490
29	9-5	6-96	NAR RANGE PRESS	PSIG		950	1063	950	950	950
30	9-5	6-97	FEEDWATER FLOW	MLB/HR		0.1	0	0.8	0.1	0
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR		0	0	0	0	0
32	9-5	6-98	NAR RANGE LEVEL	INCHES		159	157	164	156	160
33	9-5	6-98	WIDE RANGE LEVEL	INCHES		159	157	164	156	160
34	9-6	LI-107-5	CST LEVEL	%		48	48	47	46	45
35	9-6	LI-102-5A	HOTWELL LEVEL N	%		61	63	58	59	63
36	9-6	LI-102-5B	HOTWELL LEVEL S	%		60	60	56	57	59
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG		5.1	13.3	18.7	25.3	29.9
38	9-8		D/G A BKR			OPEN	OPEN	OPEN	OPEN	OPEN
39	9-8		D/G B BKR			OPEN	OPEN	OPEN	OPEN	OPEN
40	9-23	16-19-33A/C	TORUS TEMP	DEG F		84	84	88	95	95
41	9-25	LI-46A	TORUS LEVEL	FEET		0.57	0.58	0.62	0.69	0.72
42	9-25	LI-46B	TORUS LEVEL	FEET		0.57	0.58	0.62	0.69	0.72
43	9-25	TR-16-19-44	TORUS PRESS	PSIA		14.8	15.1	15.6	16.1	16.3
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA		17	17	18	18	18
45	9-25	PR-1-156-3	DW/TORUS DP	PSID		1.72	2.01	2.02	1.93	2.1
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F		136	140	143	145	147
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O		-0.68	-0.68	-0.68	-0.68	-0.68
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O		-0.68	-0.68	-0.68	-0.68	-0.68
49	9-26	FI-1-125-1A	SGTS FLOW	CFM		1500	1500	1500	1500	1500
50	9-26	FI-1-125-1B	SGTS FLOW	CFM		1500	1500	1500	1500	1500
51	CAD		DW/TORUS O2 CONC.	%		1.26	1.21	1.16	1.13	1.1

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.0 RADIOLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.1 AREA RADIATION MONITORS

9.1 AREA RADIATION MONITORS

			SCENARIO TIME	0:00	0:15	0:30	0:45	1:00	1:15	1:30	1:45
			CLOCK TIME	8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00
ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS							
RMS II-1	9-11	RB/252	RX BLDG HI RADS - N	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-2	9-11	RB/252	RX BLDG HI RADS - S	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-3	9-11	RB/252	TIP RM HI RAD	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
1	9-11	RB/232	SUPP CHAMB RB EXT CW	MR/HR	8	8	8	8	10	100	200	300
2	9-11	RB/252	N PERSONNEL RX BLDG	MR/HR	4	4	4	3	3	190	460	650
3	9-11	RB/252	S EQUIP RR RX BLDG	MR/HR	0.3	0.3	0.3	0.3	0.3	20	45	65
4	9-11	RB/252	RX BLD NEUTRON TIP	MR/HR	5	5	5	5	5	200	475	650
5	9-11	RB/252	PERSONNEL HATCH RX B	MR/HR	520	520	500	480	420	OSH (>1E4)	OSH	OSH
6	9-11	RB/280	ELEV ENTR 280FT RX	MR/HR	8	8	8	7	7	5	5	5
7	9-11	RB/252	CRD REPAIR RX BLDG	MR/HR	12	12	10	10	8	4	4	4
8	9-11	RB/303	ELEV ENTR 303FT RX	MR/HR	4	4	4	3	3	1	1	1
9	9-11	RB/303	H2O CLEANUP RX BLDG	MR/HR	4	4	4	4	4	4	4	4
10	9-11	RB/318	ELEV ENTR 318FT RX	MR/HR	7	7	6	6	5	3	3	3
11	9-11	RB/318	H2O CLEANUP RX BLDG	MR/HR	5	5	5	4	4	2	2	2
12	9-11	RB/345	ELEV ENTR 348FT RX	MR/HR	4	4	4	4	3	1	1	1
14	9-11	RB/345	WEST REFUEL RX BLDG	MR/HR	5	5	4	4	3	1	1	1
15	9-11	RB/345	SPENT FUEL POOL RX	MR/HR	8	8	8	8	8	8	8	8
16	9-11	RB/318	NEW FUEL VAULT RX B	MR/HR	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4
17	9-11	RW/252	PUMP RM RADWASTE BL	MR/HR	1	1	1	1	1	1	1	1
18	9-11	RW/252	RADW OPER AREA RW B	MR/HR	1	1	1	1	1	1	1	1
19	9-11	RW/230	PUMP/TANK AREA RW B	MR/HR	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
20	9-11	TB/248	N ACCESS 248FT TURB	MR/HR	2	2	2	2	2	1.5	1.5	1.5
21	9-11	TB/248	MAIN STM VALVE TURB	MR/HR	200	200	200	190	170	4	4	4
22	9-11	TB/232	COND DEMIN TURB BLD	MR/HR	0.26	0.26	0.26	0.25	0.24	0.12	0.12	0.12
23	9-11	TB/252	DECON/MACH SHOP TB	MR/HR	0.17	0.17	0.17	0.16	0.16	0.15	0.15	0.15
24	9-11	TB/272	TURB STM IN TURB BL	MR/HR	9	7	7	7	7	7	7	7
25	9-11	AB/272	VIEW GALLERY CONT RM	MR/HR	0.82	0.82	0.81	0.77	0.7	0.11	0.11	0.11
26	9-11	TB/252	REAR GATE TURB WAREH	MR/HR	0.17	0.17	0.17	0.16	0.14	0.01	0.01	0.01
13	9-11	TB/228	MOIST SEP AREA TURB	MR/HR	150	150	150	140	125	1	1	1

NOTE: OSH = Offscale High

9.1 AREA RADIATION MONITORS

					SCENARIO TIME	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45
					CLOCK TIME	10:15	10:30	10:45	11:00	11:15	11:30	11:45	12:00 to End
ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS									
RMS II-1	9-11	RB/252	RX BLDG HI RADS - N	R/HR	<1	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-2	9-11	RB/252	RX BLDG HI RADS - S	R/HR	<1	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-3	9-11	RB/252	TIP RM HI RAD	R/HR	<1	<1	<1	<1	<1	<1	<1	<1	<1
1	9-11	RB/232	SUPP CHAMB RB EXT CW	MR/HR	500	500	500	500	800	800	800	800	800
2	9-11	RB/252	N PERSONNEL RX BLDG	MR/HR	760	850	850	850	850	850	850	850	850
3	9-11	RB/252	S EQUIP RR RX BLDG	MR/HR	75	80	80	80	80	80	80	80	80
4	9-11	RB/252	RX BLD NEUTRON TIP	MR/HR	760	850	850	850	850	850	850	850	850
5	9-11	RB/252	PERSONNEL HATCH RX B	MR/HR	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
6	9-11	RB/280	ELEV ENTR 280FT RX B	MR/HR	5	5	5	5	5	5	5	5	5
7	9-11	RB/252	CRD REPAIR RX BLDG	MR/HR	4	4	4	4	4	4	4	4	4
8	9-11	RB/303	ELEV ENTR 303FT RX B	MR/HR	1	1	1	1	1	1	1	1	1
9	9-11	RB/303	H2O CLEANUP RX BLDG	MR/HR	4	4	4	4	4	4	4	4	4
10	9-11	RB/318	ELEV ENTR 318FT RX B	MR/HR	3	3	3	3	3	3	3	3	3
11	9-11	RB/318	H2O CLEANUP RX BLDG	MR/HR	2	2	2	2	2	2	2	2	2
12	9-11	RB/345	ELEV ENTR 348FT RX B	MR/HR	1	1	1	1	1	1	1	1	1
14	9-11	RB/345	WEST REFUEL RX BLDG	MR/HR	1	1	1	1	1	1	1	1	1
15	9-11	RB/345	SPENT FUEL POOL RX B	MR/HR	8	8	8	8	8	8	8	8	8
16	9-11	RB/318	NEW FUEL VAULT RX B	MR/HR	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
17	9-11	RW/252	PUMP RM RADWASTE BLD	MR/HR	1	1	1	1	1	1	1	1	1
18	9-11	RW/252	RADW OPER AREA RW B	MR/HR	1	1	1	1	1	1	1	1	1
19	9-11	RW/230	PUMP/TANK AREA RW B	MR/HR	2	2	2	2	2	2	2	2	2
20	9-11	TB/248	N ACCESS 248FT TURB	MR/HR	2	2	2	2	2	2	2	1	1
21	9-11	TB/248	MAIN STM VALVE TURB	MR/HR	4	4	4	4	4	4	4	4	4
22	9-11	TB/232	COND DEMIN TURB BLDG	MR/HR	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
23	9-11	TB/252	DECONTAM. TURB BLDG	MR/HR	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
24	9-11	TB/272	TURB STM IN TURB BLD	MR/HR	7	7	7	7	7	7	7	7	7
25	9-11	AB/272	VIEW GALLERY CONT RM	MR/HR	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
26	9-11	TB/252	REAR GATE TURB WAREH	MR/HR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
13	9-11	TB/228	MOIST SEP AREA TURB	MR/HR	1	1	1	1	1	1	1	1	1

NOTE: OSH = Offscale High

VERMONT YANKEE NUCLFAR POWER STATION

EMERGENCY RESPONSE PREPAF:DNESS EXERCISE

1992

9.2 PROCESS MONITORS

9.2 PROCESS MONITORS

			SCENARIO TIME		0:00	0:15	0:30	0:45	1:00	1:15	1:30	1:45
			CLOCK TIME		8:15	8:30	8:45	9:00	9:15	9:30	9:45	10:00
ARM NO.	PANEL	BLDG/ELV	DESCRIPTION	UNITS								
	9-2	ST/257	STACK GAS MON-GAS 1	CPM	150	150	150	150	150	150	150	150
	9-2	ST/257	STACK GAS MON-GAS 2	CPM	200	200	200	200	200	200	200	200
	9-2	RB/280	CONTAINMENT MON GAS	CPM	540	540	530	495	437	OSH (>1E6)	OSH	OSH
	9-2	RB/280	CONTAINMENT MON-PART	CPM	25107	25095	24776	23199	20489	OSH (>1E6)	OSH	OSH
	9-2	ST/257	STACK HI RANGE	MR/HR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
27	9-2	DW/252	DRYWELL CH A	R/HR	1.5	1.5	1.5	1.5	1.5	200	290	350
26	9-2	DW/252	DRYWELL CH B	R/HR	1.5	1.5	1.5	1.5	1.5	200	270	335
	9-2	RB/280	RX BLDG VENT GAS	CPM	185	185	179	163	149	45	13086	12444
	9-2	RB/280	RX BLDG VENT - PART	CPM	1481	1482	1430	1305	1189	363	104529	99551
31	9-10	RB/280	RX BLDG VENT NORTH	MR/HR	2	2	2	2	1	1	120	115
32	9-10	RB/280	RX BLDG VENT SOUTH	MR/HR	2	2	2	2	1	1	120	115
453A	9-10	RB/345	SPENT FUEL POOL A	MR/HR	4	4	4	4	4	4	4	4
453B	9-10	RB/345	SPENT FUEL POOL B	MR/HR	4	4	4	4	4	4	4	4
	9-10	RB/256	MAIN STM LINE A	MR/HR	173	173	166	146	125	1	1	1
	9-10	RB/256	MAIN STM LINE B	MR/HR	166	167	160	141	121	1	1	1
	9-10	RB/256	MAIN STM LINE C	MR/HR	168	169	161	143	122	1	1	1
	9-10	RB/256	MAIN STM LINE D	MR/HR	175	175	168	148	127	1	1	1
38	9-10	TB/248	SJAE(AIR EJECTOR)	MR/HR	61	61	60	57	51	0	0	0

NOTE: OSH = Offscale High

9.2 PROCESS MONITORS

			SCENARIO TIME		2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45
			CLOCK TIME		10:15	10:30	10:45	11:00	11:15	11:30	11:45	12:00 to End
ARM NO.	PANEL	BLDG/ELV	DESCRIPTION	UNITS								
	9-2	ST/257	STACK GAS MON-GAS 1	CPM	150	150	150	150	150	150	150	150
	9-2	ST/257	STACK GAS MON-GAS 2	CPM	200	200	200	200	200	200	200	200
	9-2	RB/280	CONTAINMENT MON GAS	CPM	OSH (>1E6)	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	RB/280	CONTAINMENT MON-PART	CPM	OSH (>1E6)	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	ST/257	STACK HI RANGE	MR/HR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
27	9-2	DW/252	DRYWELL CH A	R/HR	400	450	440	440	1100	1100	1100	1100
28	9-2	DW/252	DRYWELL CH B	R/HR	400	450	440	440	1100	1100	1100	1100
	9-2	RB/280	RX BLDG VENT GAS	CPM	11840	11265	11265	11265	11265	11265	11265	11265
	9-2	RB/280	RX BLDG VENT - PART	CPM	94717	90117	90117	90117	90117	90117	90117	90117
31	9-10	RB/280	RX BLDG VENT NORTH	MR/HR	110	100	100	100	100	100	100	100
32	9-10	RB/280	RX BLDG VENT SOUTH	MR/HR	110	100	100	100	100	100	100	100
453A	9-10	RB/345	SPENT FUEL POOL A	MR/HR	3	3	3	3	3	3	3	3
453B	9-10	RB/345	SPENT FUEL POOL B	MR/HR	3	3	3	3	3	3	3	3
	9-10	RB/256	MAIN STM LINE A	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE B	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE C	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE D	MR/HR	1	1	1	1	1	1	1	1
38	9-10	TB/248	SJAE(AIR EJECTOR)	MR/HR	0	0	0	0	0	0	0	0

NOTE: OSH = Offscale High

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

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 15	453 A	453 B	Zone I	Zone II	Zone III	Zone IV
0815	0:00	4	5	8	4	4	4	4	4	4
0830	0:15	4	5	8	4	4	4	4	4	4
0845	0:30	4	4	8	4	4	4	4	4	4
0900	0:45	4	4	8	4	4	4	4	4	4
0915	1:00	3	4	8	4	4	3	4	4	4
0930	1:15	1	1	8	4	4	1	4	4	4
0945	1:30	1	1	8	4	4	1	4	4	4
1000	1:45	1	1	8	4	4	1	4	4	4
1015	2:00	1	1	8	3	3	1	3	3	3
1030	2:15	1	1	8	3	3	1	3	3	3
1045	2:30	1	1	8	3	3	1	3	3	3
1100	2:45	1	1	8	3	3	1	3	3	3
1115	3:00	1	1	8	3	3	1	3	3	3
1130	3:15	1	1	8	3	3	1	3	3	3
1145	3:30	1	1	8	3	3	1	3	3	3
1200	to END	1	1	8	3	3	1	3	3	3

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 2K-5K dpm/100 cm2 in all zones.

REACTOR BUILDING

ELEVATION 345'

N

MONITORS

(12) - REACTOR BUILDING ELEVATOR ENTRANCE

(14) - REACTOR BUILDING WEST REFUELING AREA

(453A) - FUEL POOL WEST

(15) - SPENT FUEL POOL

(453B) - FUEL POOL EAST

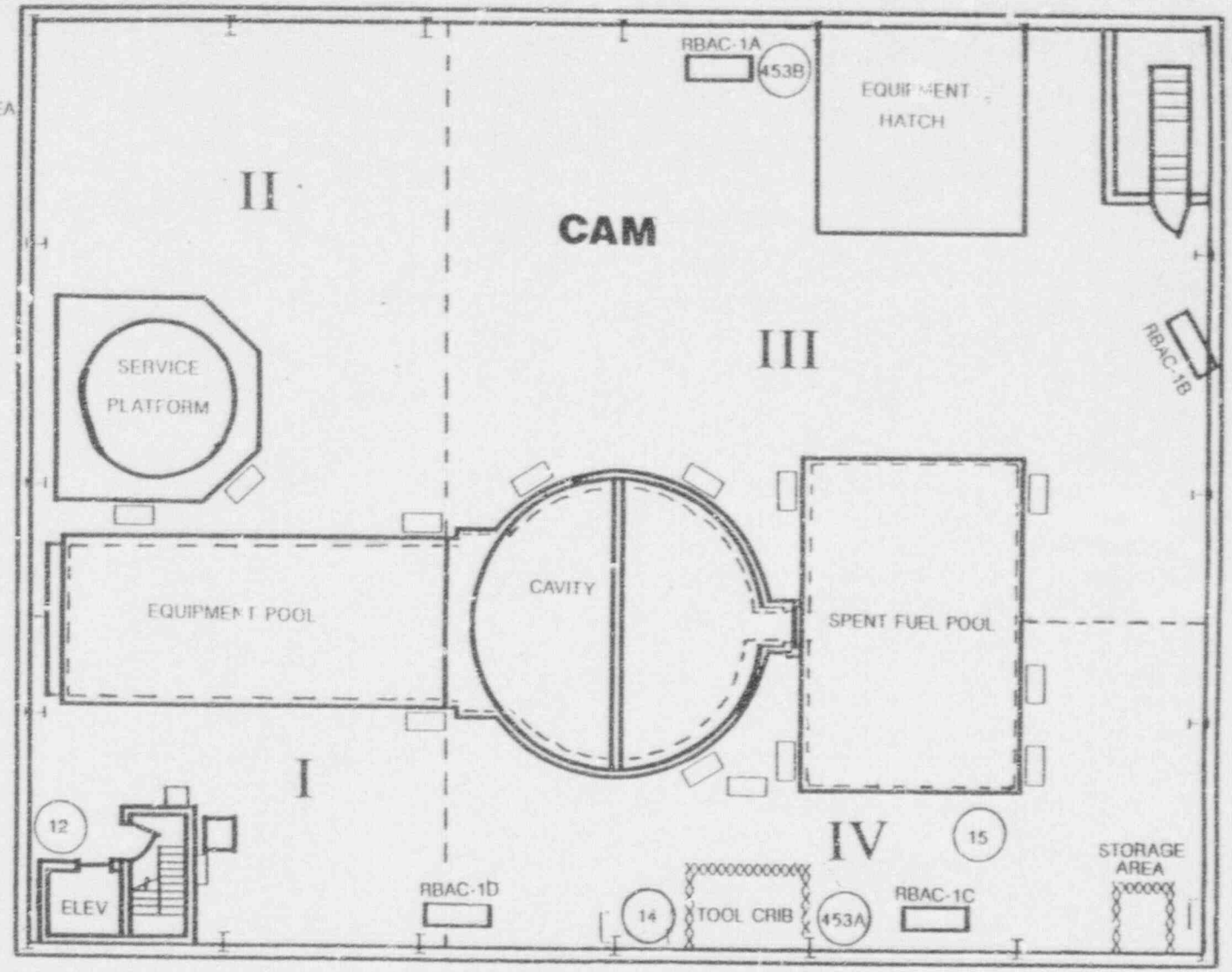


FIGURE 9.3-1

TABLE 9.3-2

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

Clock Time	Scenario Time	ARM 10	ARM 11	ARM 16	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI	Zone VII
0815	0:00	7	5	.5	7	5	300	5	80	.5	.5
0830	0:15	7	5	.5	7	5	300	5	80	.5	.5
0845	0:30	6	5	.5	6	5	300	5	80	.5	.5
0900	0:45	6	4	.4	6	4	200	4	80	.4	.4
0915	1:00	5	4	.4	5	4	200	4	80	.4	.4
0930	1:15	3	2	.4	3	2	200	2	80	.4	.4
0945	1:30	3	2	.4	3	2	200	2	80	.4	.4
1000	1:45	3	2	.4	3	2	200	2	80	.4	.4
1015	2:00	3	2	.3	3	2	200	2	80	.3	.3
1030	2:15	3	2	.3	3	2	100	2	60	.3	.3
1045	2:30	3	2	.3	3	2	100	2	60	.3	.3
1100	2:45	3	2	.3	3	2	100	2	60	.3	.3
1115	3:00	3	2	.3	3	2	100	2	60	.3	.3
1130	3:15	3	2	.3	3	2	100	2	60	.3	.3
1145	3:30	3	2	.3	3	2	100	2	60	.3	.3
1200	to END	3	2	.3	3	2	100	2	60	.3	.3

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 1K-5K dpm/100 cm2 in all zones.

REACTOR BUILDING

ELEVATION 318'

N

MONITORS

(10) REACTOR BUILDING ELEVATOR ENTRANCE

(11) REACTOR BUILDING REACTOR WATER CLEANUP AREA

(15) REACTOR BUILDING NEW FUEL VAULT

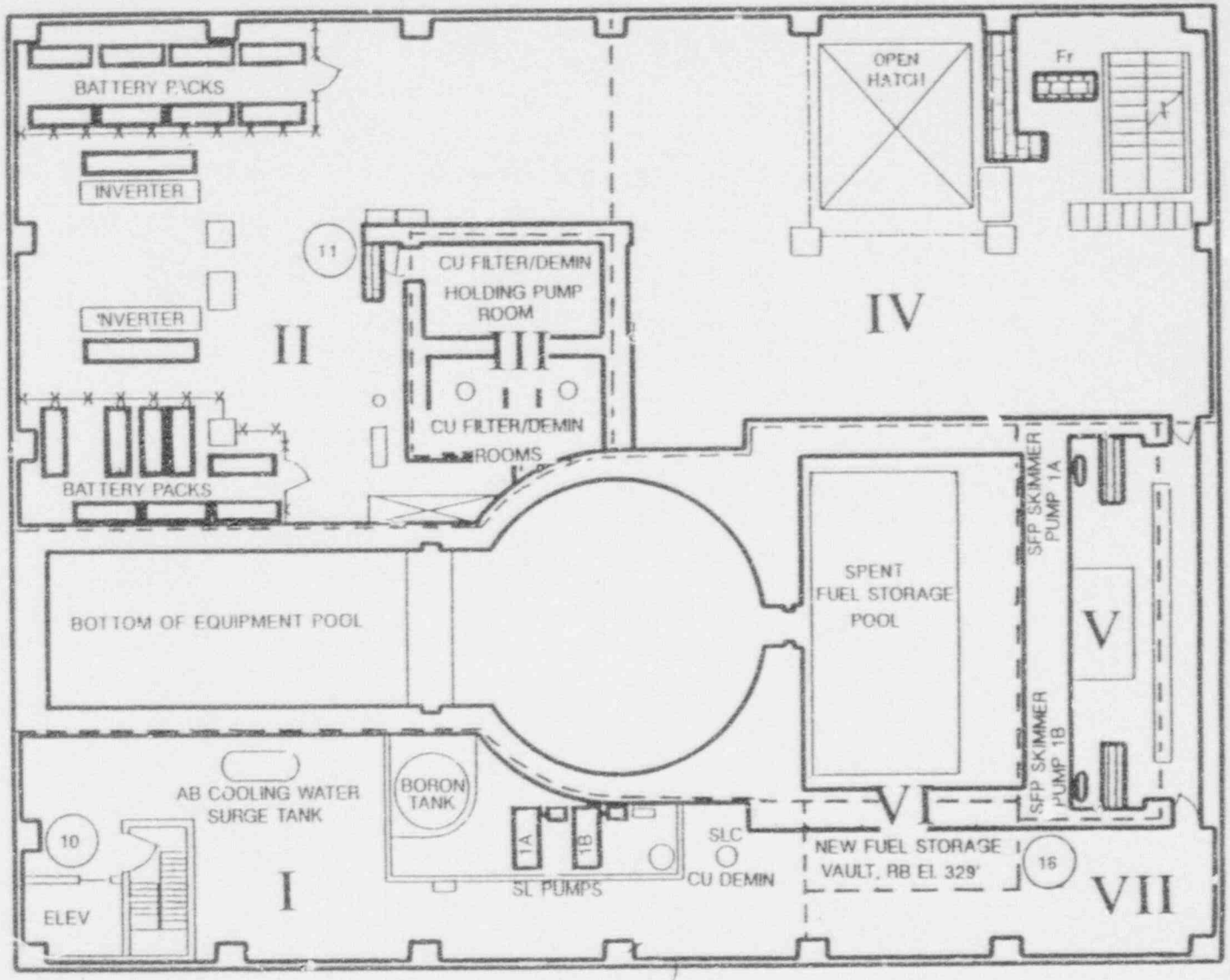


FIGURE 9.3-2

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	Zone V	Zone VI	Zone VII
0815	0:00	4	4	4	3	600	3	60	0.1	0.2
0830	0:15	4	4	4	3	600	3	60	0.1	0.2
0845	0:30	4	4	4	3	600	3	60	0.1	0.2
0900	0:45	3	4	4	3	600	3	60	0.1	0.2
0915	1:00	3	4	4	3	600	3	60	0.1	0.2
0930	1:15	1	4	4	3	800	3	60	0.1	0.2
0945	1:30	1	4	4	3	850	3	60	0.1	0.2
1000	1:45	1	4	4	3	900	3	60	0.1	0.2
1015	2:00	1	4	4	3	950	3	60	0.1	0.2
1030	2:15	1	4	4	3	1000	3	80	0.1	0.2
1045	2:30	1	4	4	3	1000	3	80	0.1	0.2
1100	2:45	1	4	4	3	1100	3	80	0.1	0.2
1115	3:00	1	4	4	3	1100	3	80	0.1	0.2
1130	3:15	1	4	4	3	1200	3	80	0.1	0.2
1145	3:30	1	4	4	3	1200	3	80	0.1	0.2
1200	to END	1	4	4	3	1200	3	80	0.1	0.2

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 1K-5K dpm/100 cm2 in all zones.

REACTOR BUILDING

ELEVATION 303'

N

MONITORS

8 REACTOR BUILDING ELEVATOR ENTRANCE

9 REACTOR BUILDING REACTOR WATER CLEANUP AREA

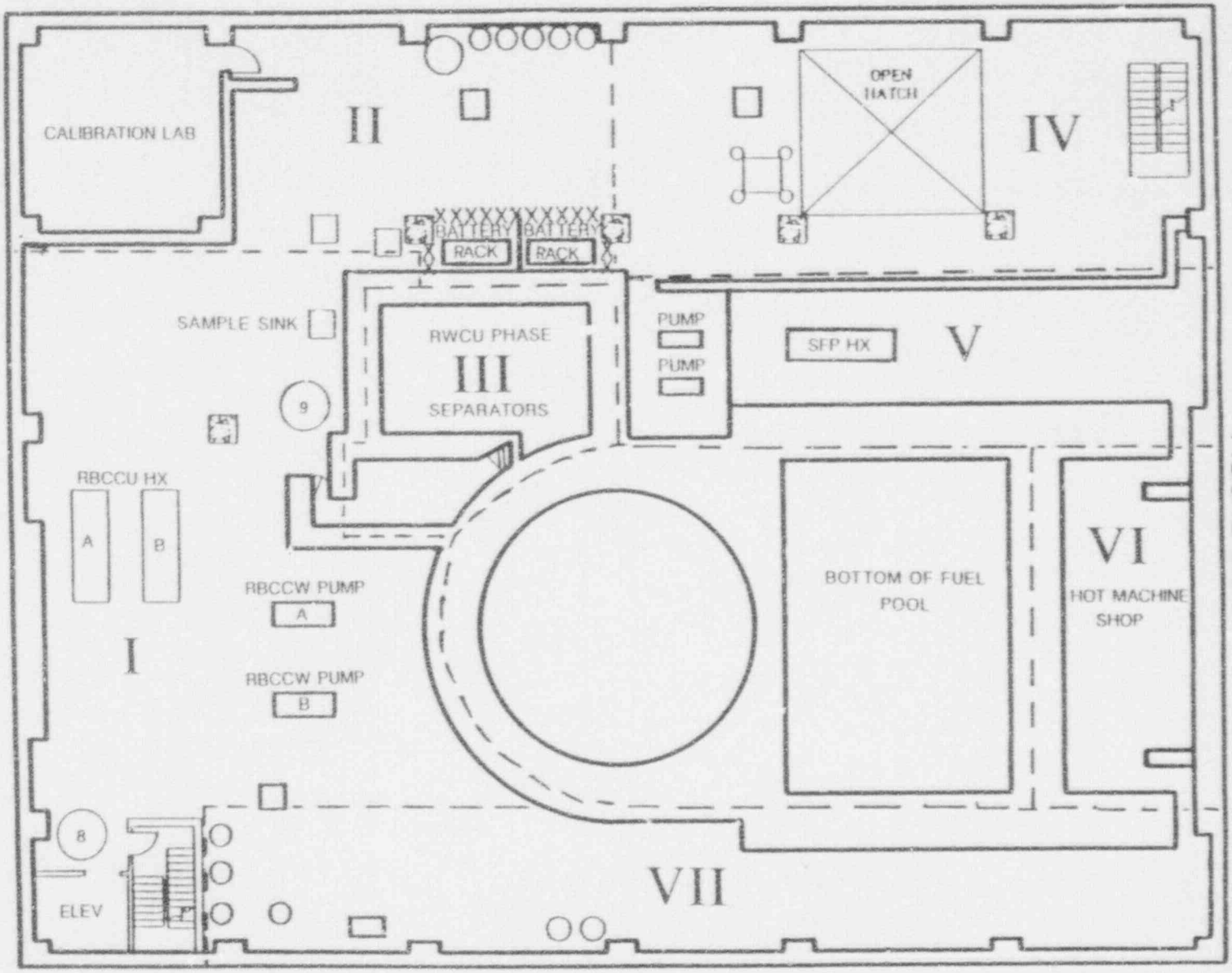


FIGURE 9.3-3

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	Zone VIII
0815	0:00	8	2	2	8	25	9	7	3	1	2	8
0830	0:15	8	2	2	8	20	9	7	3	1	2	8
0845	0:30	8	2	2	8	20	8	7	2	1	2	8
0900	0:45	7	2	2	7	20	8	7	2	1	2	7
0915	1:00	7	1	1	7	20	8	7	2	1	1	7
0930	1:15	5	1	1	5	20	8	5	2	1	1	5
0945	1:30	5	120	120	5	20	8	5	2	1	60	5
1000	1:45	5	115	115	5	20	8	5	2	1	60	5
1015	2:00	5	110	110	5	20	8	5	2	1	55	5
1030	2:15	5	100	100	5	20	8	5	2	1	50	5
1045	2:30	5	100	100	5	15	6	5	2	1	50	5
1100	2:45	5	100	100	5	15	6	5	2	1	50	5
1115	3:00	5	100	100	5	15	7	5	2	1	50	5
1130	3:15	5	100	100	5	15	7	5	2	1	50	5
1145	3:30	5	100	100	5	15	8	5	2	1	50	5
1200	to END	5	100	100	5	15	8	5	2	1	50	5

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 1K-2K dpm/100 cm2 in all zones.

Rx BUILDING

ELEVATION 280'

N

MONITORS

(6) REACTOR BUILDING ELEVATOR ENTRANCE

(31) REACTOR BUILDING VENT EXHAUST MONITOR (NORTH)

(32) REACTOR BUILDING VENT EXHAUST MONITOR (SOUTH)

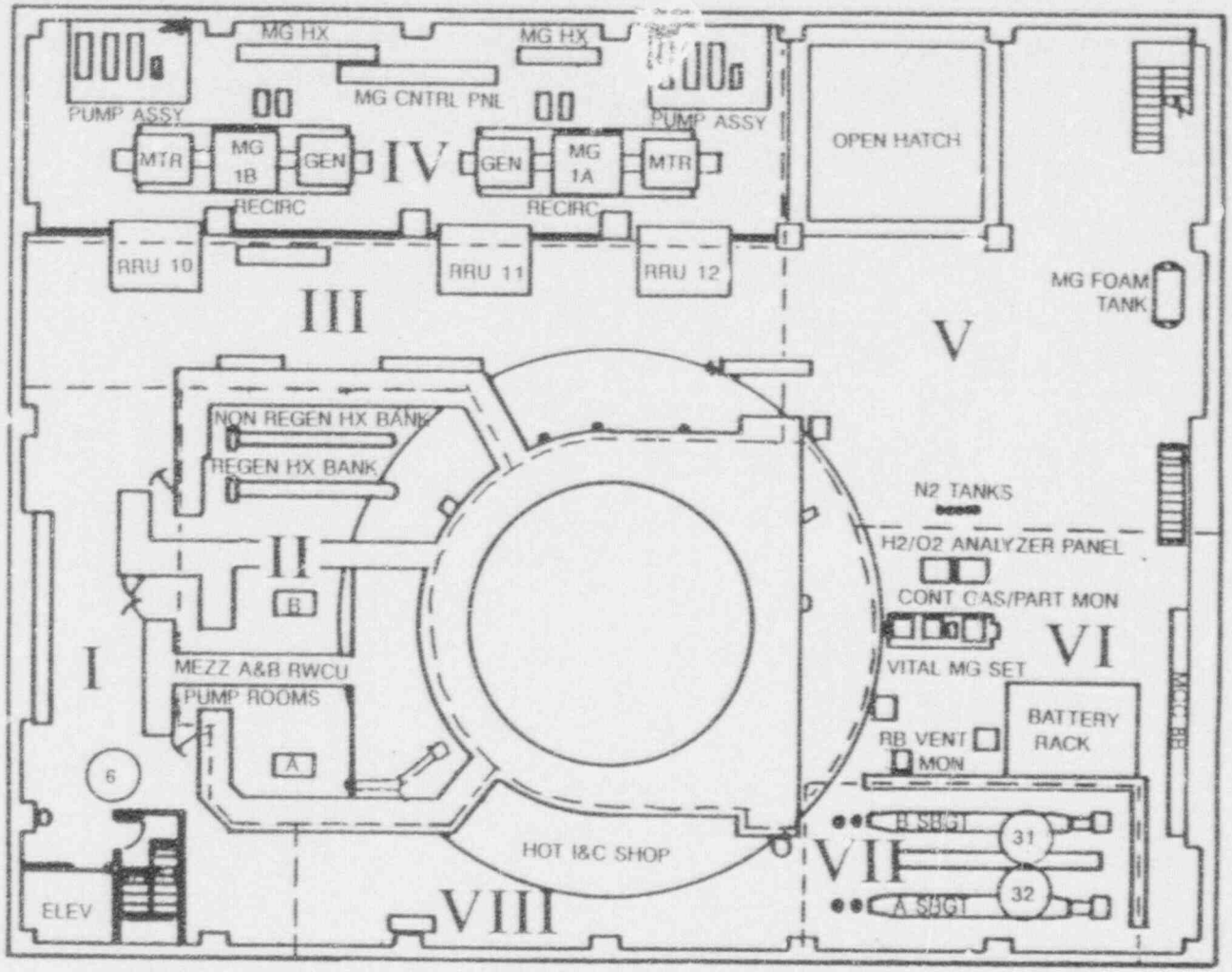


FIGURE 9.3-4

TABLE 9.3-5

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

Clock Time	Scenario Time	ARM2	ARM3	ARM4	ARM5	ARM7	PM-14-29	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI	Zone VII
0815	0:00	4	.3	5	520	12	100	5	4	.3	50	4	12	24
0830	0:15	4	.3	5	520	12	100	5	4	.3	50	4	12	24
0845	0:30	4	.3	5	500	10	100	5	4	.3	50	4	10	20
0900	0:45	3	.3	5	480	10	100	5	3	.3	50	3	10	20
0915	1:00	3	.3	5	420	8	100	5	3	.3	40	3	8	16
0930	1:15	190	20	200	(OSH)>1E4	4	100	200	190	20	2800	190	4	8
0945	1:30	460	45	475	(OSH)	4	100	475	460	45	3800	460	4	8
1000	1:45	650	65	650	(OSH)	4	100	650	650	65	5000	650	4	8
1015	2:00	760	75	760	(OSH)	4	100	760	760	75	6000	760	4	8
1030	2:15	850	80	850	(OSH)	4	100	850	850	80	6500	850	4	8
1045	2:30	850	80	850	(OSH)	4	100	850	850	80	6500	850	4	8
1100	2:45	850	80	850	(OSH)	4	100	850	850	80	6000	850	4	8
1115	3:00	850	80	850	(OSH)	4	100	850	850	80	12000	850	4	8
1130	3:15	850	80	850	(OSH)	4	100	850	850	80	12000	850	4	8
1145	3:30	850	80	850	(OSH)	4	100	850	850	80	12000	850	4	8
1200	to END	850	80	850	(OSH)	4	100	850	850	80	12000	850	4	8

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 1K-2K dpm/100 cm2 in all zones.

TABLE 9.3-5
(Continued)
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	NORTH ** RMS II-1	SOUTH ** RMS II-2	TIP ** RMS II-3	RHR A QUAD	RHR B QUAD	RCIC QUAD	HPCI QUAD
0815	0:00	<1.0	<1.0	<1.0	3	3	50	40
0830	0:15	<1.0	<1.0	<1.0	3	3	50	40
0845	0:30	<1.0	<1.0	<1.0	3	3	50	40
0900	0:45	<1.0	<1.0	<1.0	3	3	50	40
0915	1:00	<1.0	<1.0	<1.0	3	3	50	40
0930	1:15	<1.0	<1.0	<1.0	200	200	2000	1900
0945	1:30	<1.0	<1.0	<1.0	450	450	4750	4600
1000	1:45	<1.0	<1.0	<1.0	650	650	6500	6500
1015	2:00	<1.0	<1.0	<1.0	750	750	7600	7600
1030	2:15	<1.0	<1.0	<1.0	800	800	8500	8500
1045	2:30	<1.0	<1.0	<1.0	800	800	8500	8500
1100	2:45	<1.0	<1.0	<1.0	800	800	8500	8500
1115	3:00	<1.0	<1.0	<1.0	800	800	8500	8500
1130	3:15	<1.0	<1.0	<1.0	800	800	8500	8500
1145	3:30	<1.0	<1.0	<1.0	800	800	8500	8500
1200	to END	<1.0	<1.0	<1.0	800	800	8500	8500

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

MONITORS

RMS 11-1 (NW AIRLOCK)

RMS 11-2 (SW AIRLOCK)

RMS 11-3 (TIP ROOM DOOR)

(2) REACTOR BUILDING NORTH PERSONNEL BUILDING ACCESS

(3) REACTOR BUILDING SOUTH EQUIPMENT RAILROAD ACCESS

(4) REACTOR BUILDING NEUTRON MONITOR TIP WITHDRAWL

(5) REACTOR BUILDING REACTOR PERSONNEL ACCESS HATCH

(7) REACTOR BUILDING CONTROL ROD DRIVE REPAIR

(29) RM-14 RADWASTE HALL

REACTOR BUILDING ELEVATION 252'

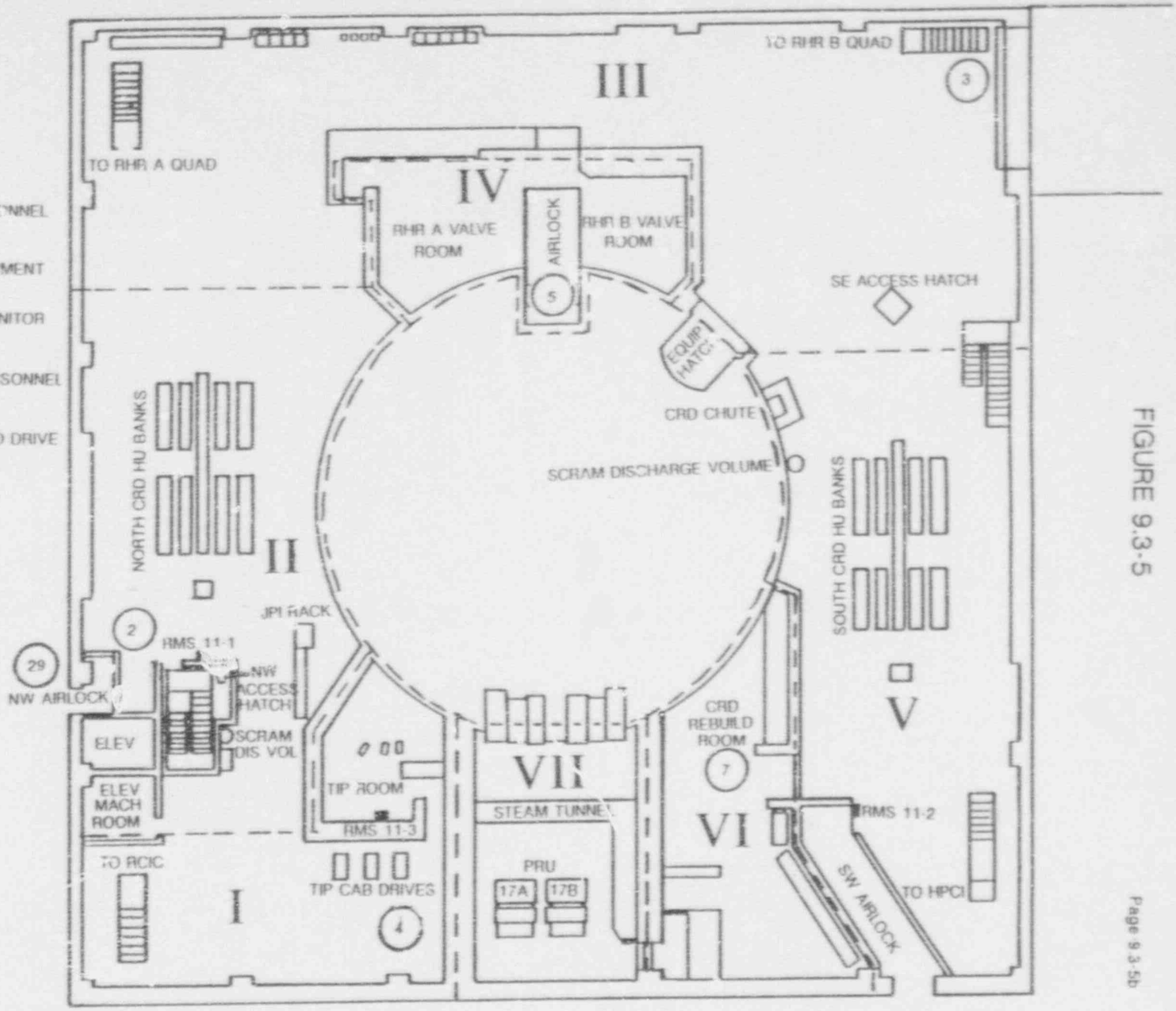


FIGURE 9.3-5

TABLE 9.3-6

Rev. 1
Page 9.3-6a

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
0815	0:00	9	100	150	9	250	900
0830	0:15	7	75	120	7	250	900
0845	0:30	7	40	60	7	250	900
0900	0:45	7	20	35	7	250	900
0915	1:00	7	20	35	7	250	900
0930	1:15	7	16	30	7	250	900
0945	1:30	7	16	22	7	250	900
1000	1:45	7	16	22	7	250	900
1015	2:00	7	11	22	7	250	900
1030	2:15	7	11	22	7	250	900
1045	2:30	7	11	22	7	250	900
1100	2:45	7	10	20	7	250	900
1115	3:00	7	10	20	7	250	900
1130	3:15	7	10	20	7	250	900
1145	3:30	7	10	20	7	250	900
1200 to	END	7	10	20	7	250	900

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm2.

TURBINE DECK

ELEVATION 272'

MONITOR

(24) TURBINE BUILDING TURBINE STEAM INLET

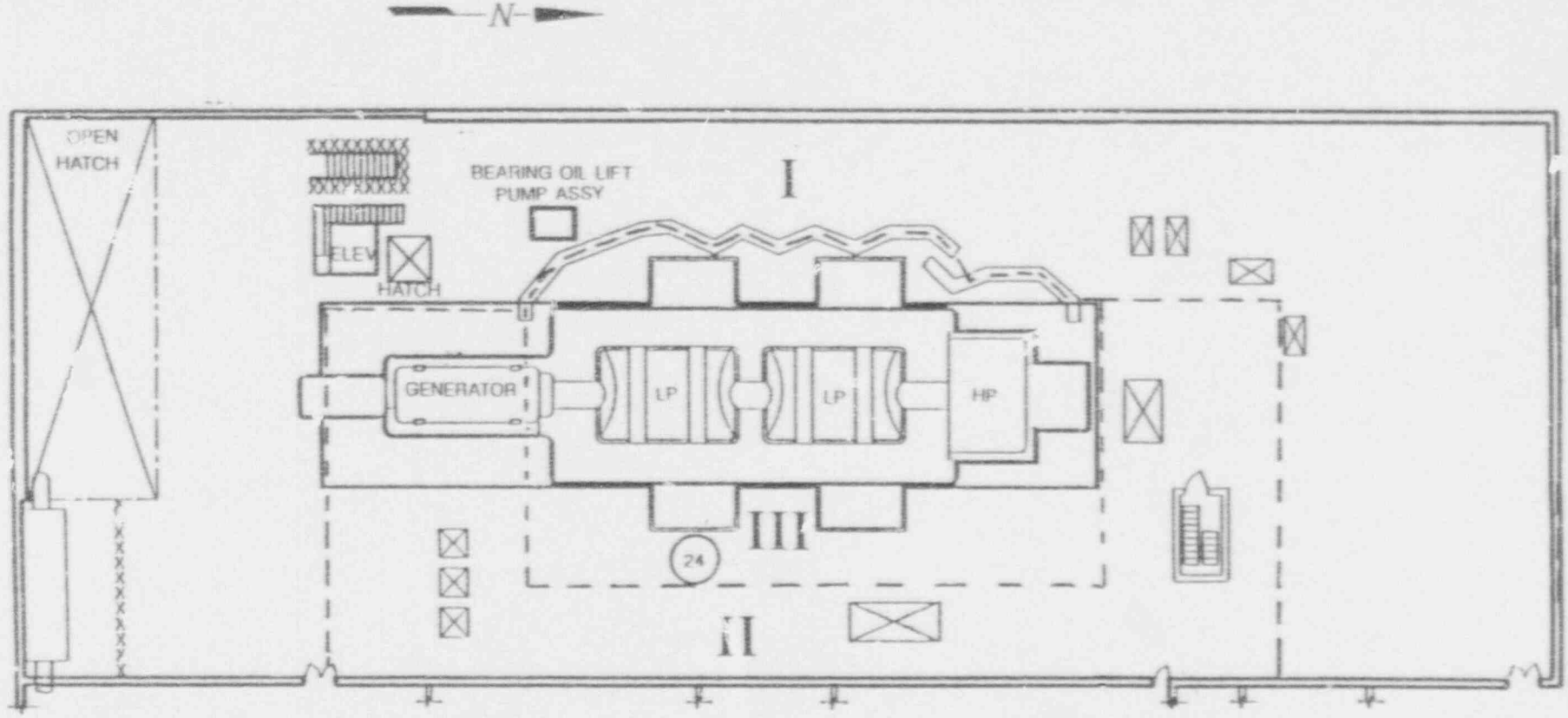


FIGURE 9.3-6

Turbine Building Truck Bay, Make-Up Demineralization Cond. Page 9.3-7a
Demineralization Areas, Elevation 252'
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	RM-14-23A (cpm)	ARM [illegible]	RM-14-36 (cpm)	Zone I	Zone II	Zone III	Zone IV
0815	0:00	150	0.17	150	0.2	0.2	0.1	0.2
0830	0:15	150	0.16	150	0.5	0.3	0.2	0.2
0845	0:30	150	0.14	150	0.5	0.3	0.2	0.2
0900	0:45	150	0.14	150	0.6	0.3	0.2	0.2
0915	1:00	150	0.13	150	0.6	0.3	0.2	0.2
0930	1:15	150	0.01	150	0.7	0.3	0.2	0.2
0945	1:30	150	0.01	150	0.7	0.3	0.2	0.2
1000	1:45	150	0.01	150	0.7	0.3	0.2	0.2
1015	2:00	150	0.01	150	0.7	0.3	0.2	0.2
1030	2:15	150	0.01	150	0.7	0.3	0.2	0.2
1045	2:30	150	0.01	150	0.7	0.3	0.2	0.2
1100	2:45	150	0.01	150	0.7	0.3	0.2	0.2
1115	3:00	150	0.01	150	0.7	0.3	0.2	0.2
1130	3:15	150	0.01	150	0.7	0.3	0.2	0.2
1145	3:30	150	0.01	150	0.7	0.3	0.2	0.2
1200 to	END	150	0.01	150	0.7	0.3	0.2	0.2

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm2.

ELEVATION 252'

PRETREATMENT ROOM, BOILER ROOM, TURBINE LOADING BAY, MUDs, DIESELS, COND. DEMIN. HATCH

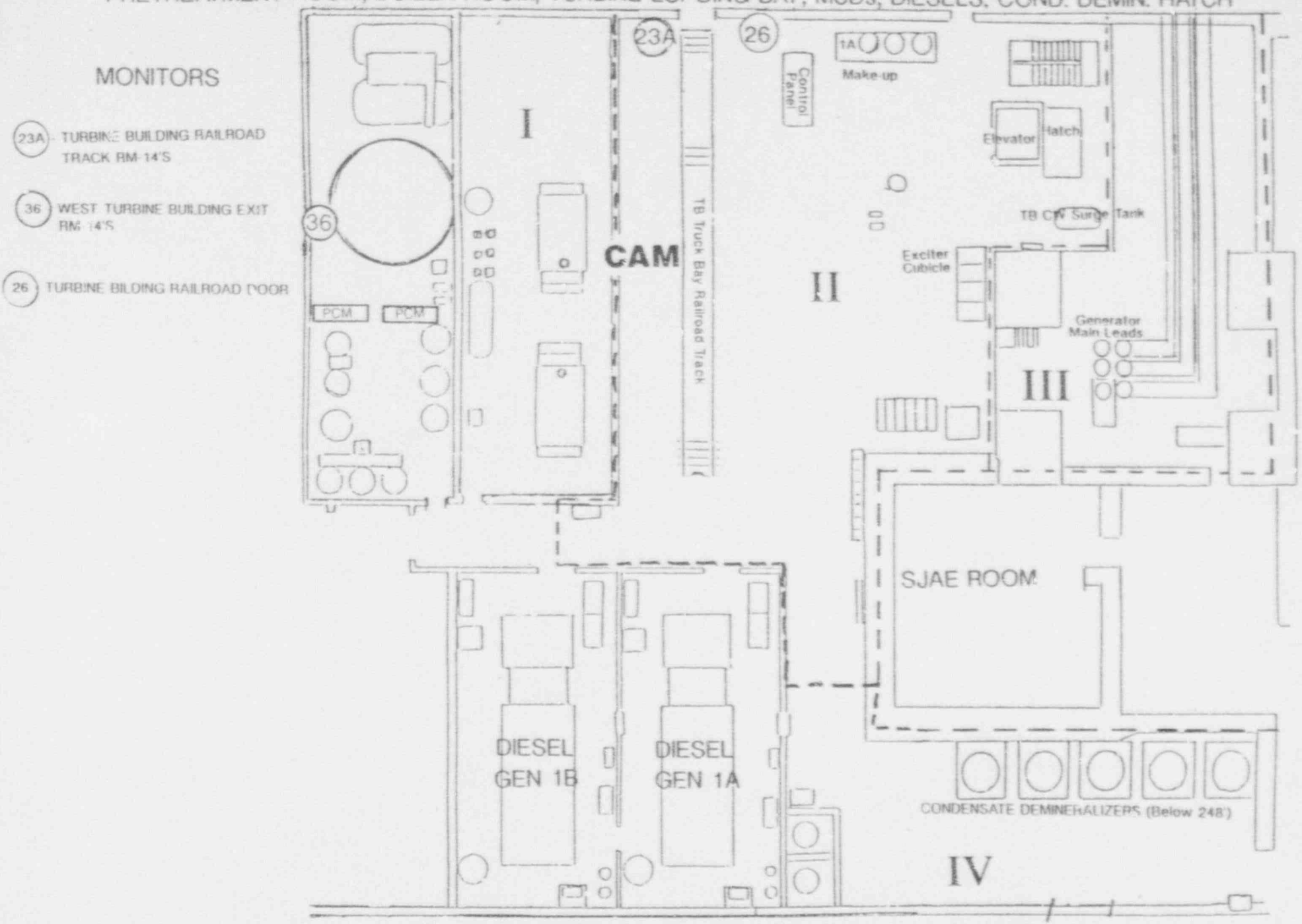


FIGURE 9.3-7

TABLE 9.3-8

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

Clock Time	Scenario Time	ARM 20	ARM 21	Zone III	Zone IV	Zone V	Zone VI	Zone VII	Zone VIII
0815	0:00	2	200	2	2	4	8	200	2
0830	0:15	2	200	2	2	4	4	200	2
0845	0:30	2	200	2	2	3	4	200	2
0900	0:45	2	190	2	1	3	3	190	2
0915	1:00	2	170	1	1	3	3	170	2
0930	1:15	1	4	1	1	2	3	4	1
0945	1:30	1	4	1	1	2	3	4	1
1000	1:45	1	4	1	1	2	2	4	1
1015	2:00	1	4	1	1	2	2	4	1
1030	2:15	1	4	1	1	1	1	4	1
1045	2:30	1	4	1	1	1	1	4	1
1100	2:45	1	4	1	1	1	1	4	1
1115	3:00	1	4	1	1	1	1	4	1
1130	3:15	1	4	1	1	1	1	4	1
1145	3:30	1	4	1	1	1	1	4	1
1200 to	END	1	4	1	1	1	1	4	1

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm2.

TURBINE BUILDING ELEVATION 248'

MONITORS

(20) TURBINE BUILDING NORTH PERSONNEL ACCESS

(21) TURBINE BUILDING MAIN STEAM STOP VALVE AREA

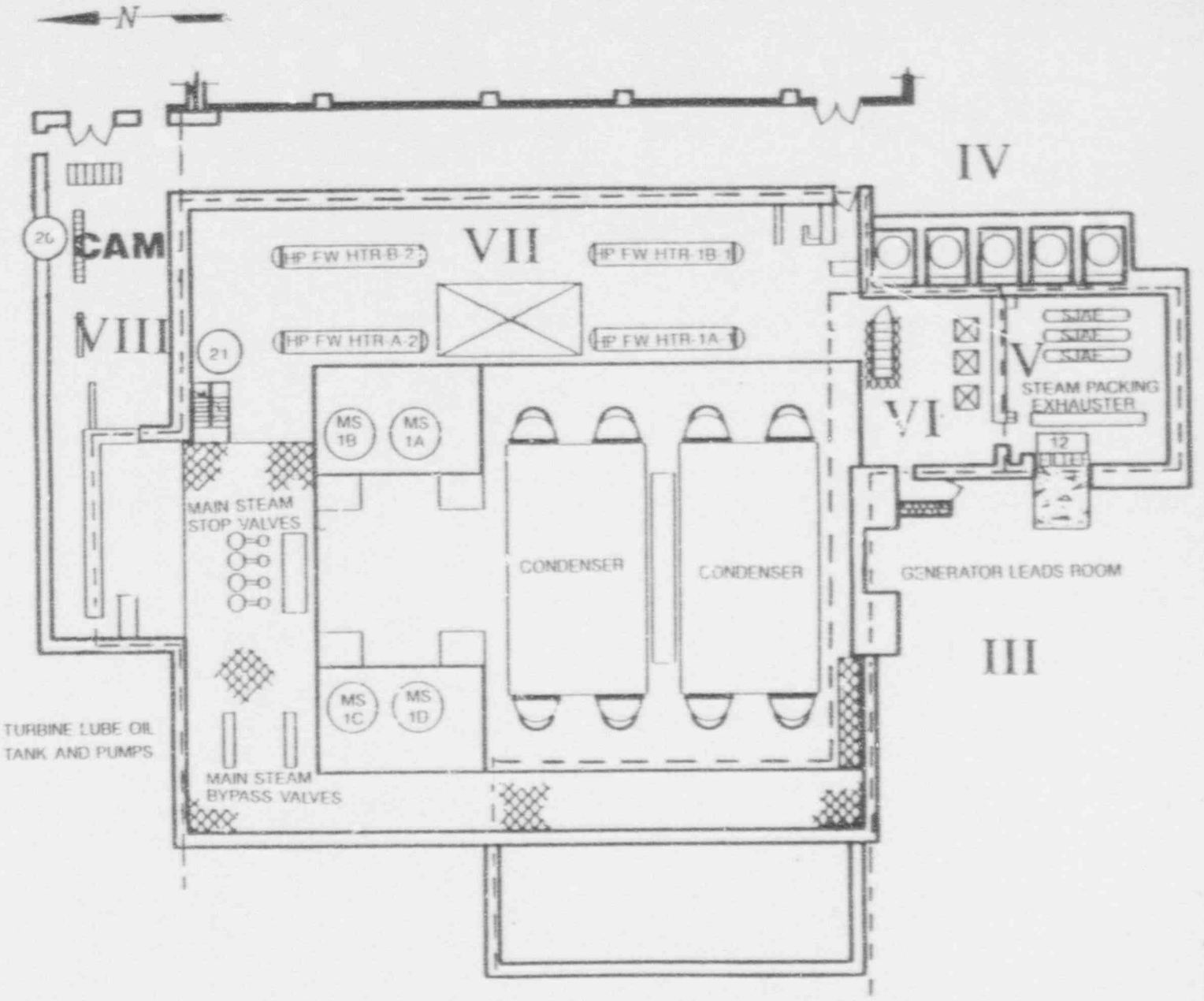


FIGURE 9.3-8

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
0815	0:00	0.3	60	0.2	0.5	0.2
0830	0:15	0.3	60	0.2	0.5	0.2
0845	0:30	0.2	60	0.2	0.5	0.2
0900	0:45	0.2	60	0.2	0.5	0.2
0915	1:00	0.2	50	0.2	0.5	0.2
0930	1:15	0.1	D/S	0.2	0.5	0.2
0945	1:30	0.1	D/S	0.2	0.5	0.2
1000	1:45	0.1	D/S	0.2	0.5	0.2
1015	2:00	0.1	D/S	0.2	0.5	0.2
1030	2:15	0.1	D/S	0.2	0.5	0.2
1045	2:30	0.1	D/S	0.2	0.5	0.2
1100	2:45	0.1	D/S	0.2	0.5	0.2
1115	3:00	0.1	D/S	0.2	0.5	0.2
1130	3:15	0.1	D/S	0.2	0.5	0.2
1145	3:30	0.1	D/S	0.2	0.5	0.2
1200 to	END	0.1	D/S	0.2	0.5	0.2

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm2.
D/S = Downscale reading.

TURBINE BUILDING

ELEVATION 232'

MONITORS

(22) TURBINE BUILDING CONDENSATE DEMINERALIZERS

(38) OFFGAS RADIATION MONITORS

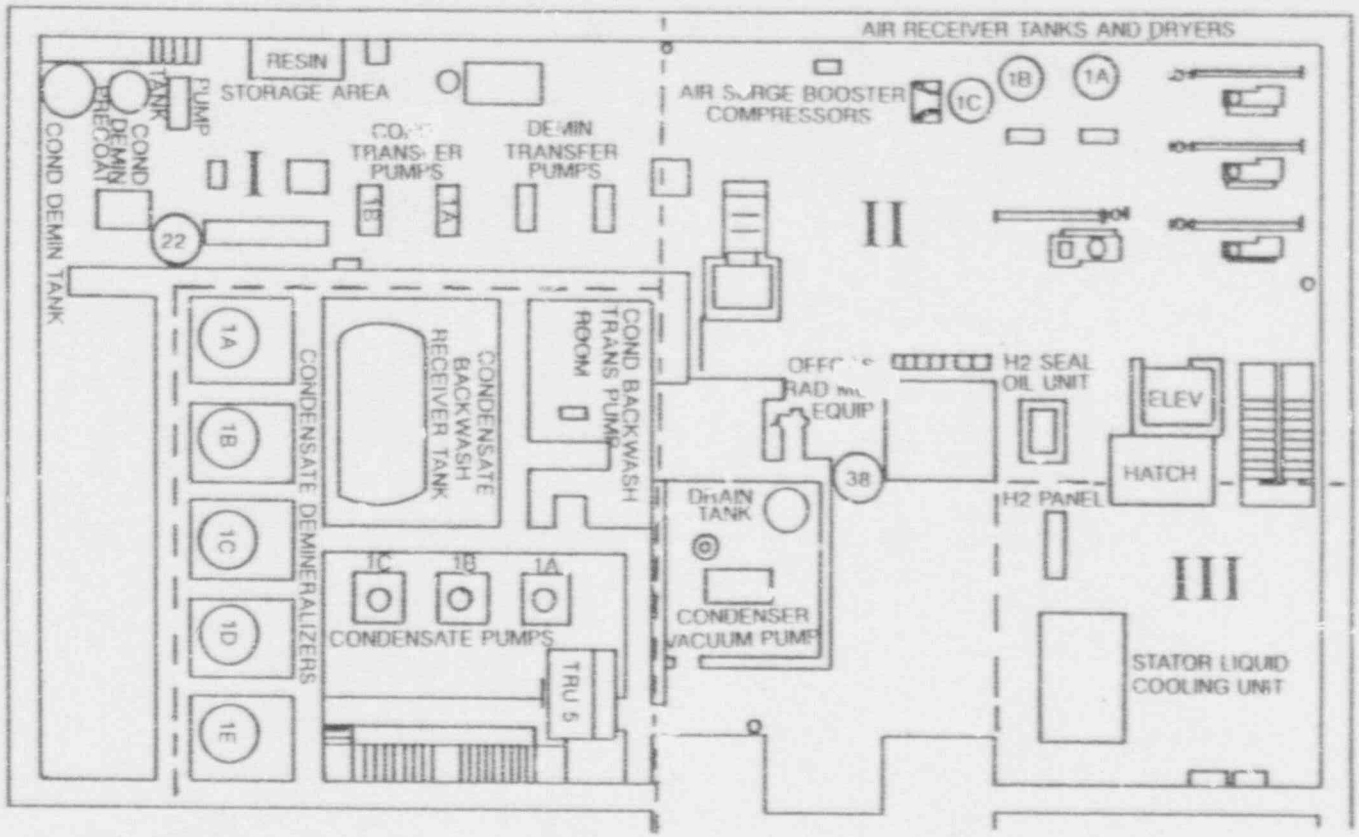


FIGURE 9.3-9

TABLE 9.3-10

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

Clock Time	Time	Scenario ARM 13	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI
0815	0:00	150	3	1	50	150	2	75
0830	0:15	150	3	1	50	150	2	75
0845	0:30	150	1	1	50	150	2	75
0900	0:45	140	1	1	45	140	2	70
0915	1:00	125	1	1	40	125	2	60
0930	1:15	1	1	1	1	1	2	1
0945	1:30	1	1	1	1	1	2	1
1000	1:45	1	1	1	1	1	2	1
1015	2:00	1	1	1	1	1	2	1
1030	2:15	1	1	1	1	1	2	1
1045	2:30	1	1	1	1	1	2	1
1100	2:45	1	1	1	1	1	2	1
1115	3:00	1	1	1	1	1	2	1
1130	3:15	1	1	1	1	1	2	1
1145	3:30	1	1	1	1	1	2	1
1200 to	END	1	1	1	1	1	2	1

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm2.

TURBINE BUILDING

ELEVATION 222' & 228'

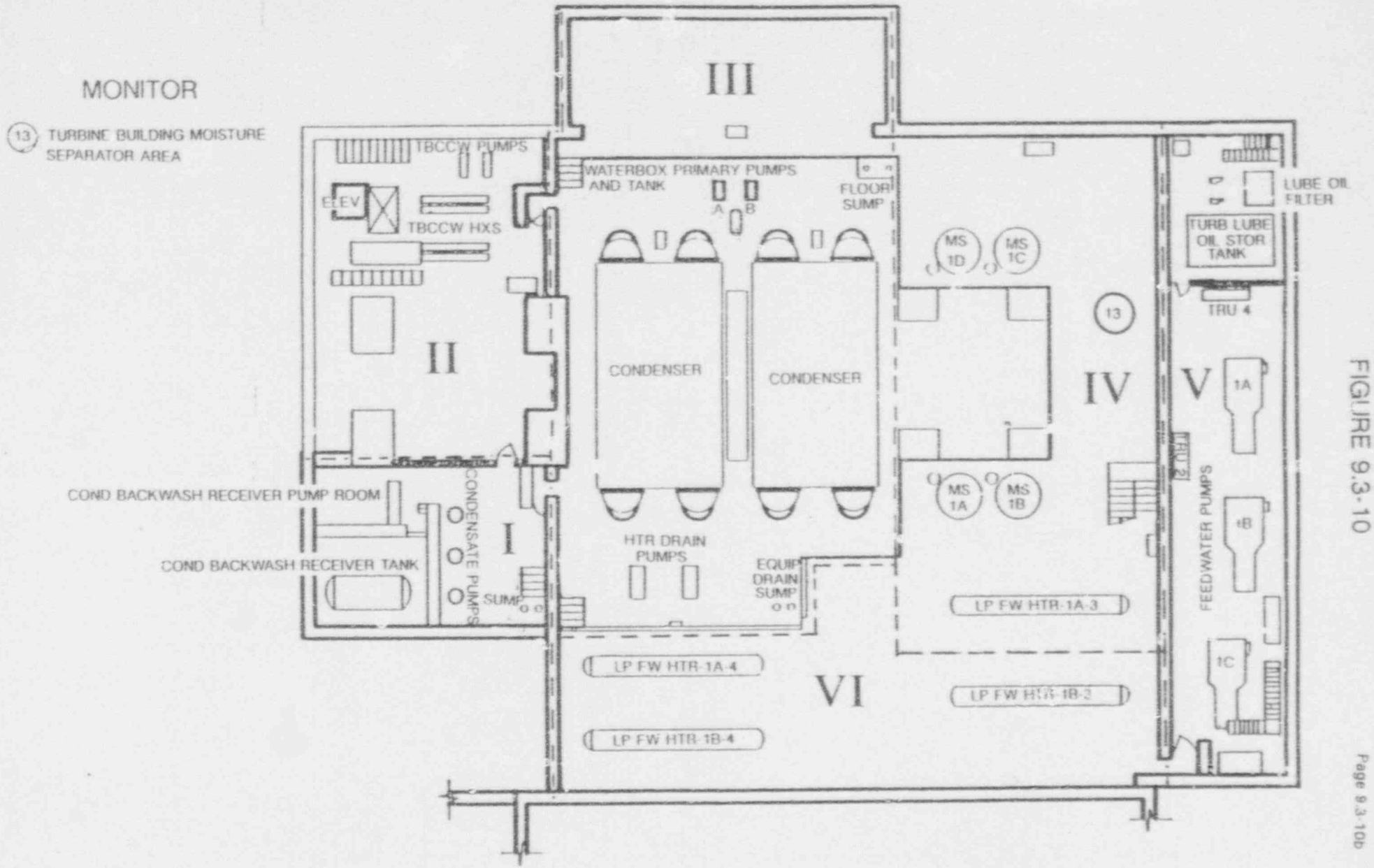


FIGURE 9.3-10

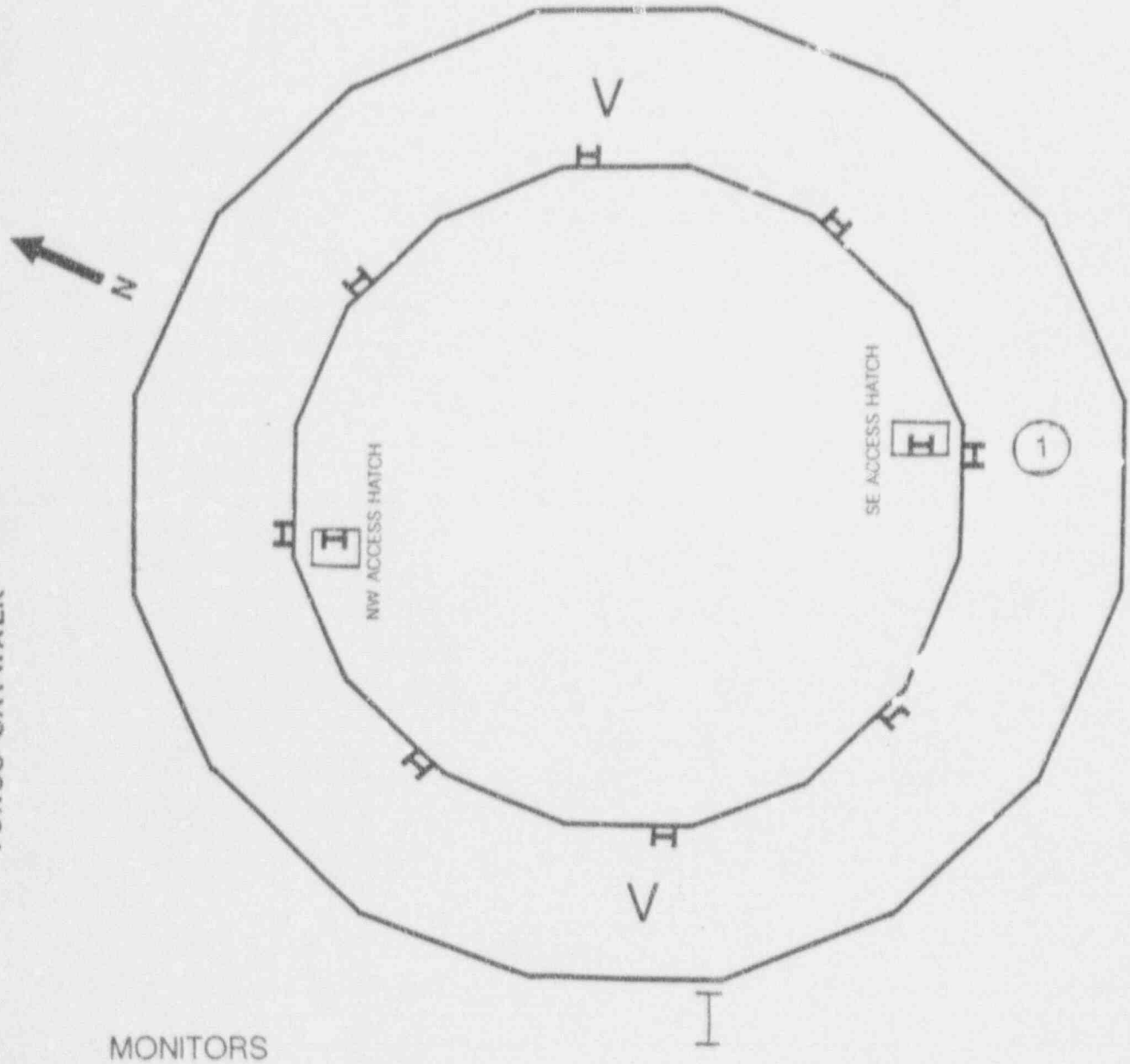
TABLE 9.3-11

Torus Catwalk
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 1	Zone 5
0815	0:00	8	8
0830	0:15	8	8
0845	0:30	8	8
0900	0:45	8	8
0915	1:00	10	10
0930	1:15	100	100
0945	1:30	200	200
1000	1:45	300	300
1015	2:00	500	500
1030	2:15	500	500
1045	2:30	500	500
1100	2:45	500	500
1115	3:00	800	800
1130	3:15	800	800
1145	3:30	800	800
1200	to END	800	800

Notes: Zone readings are average dose rates throughout zone.

FIGURE 9.3-11



①REACTOR BUILDING SUPPRESSION CHAMBER EXT. CATWALK

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.4 PLANT CHEMISTRY DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.4 PLANT CHEMISTRY DATA

SECTION — PAGE

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.4.1 REACTOR COOLANT ACTIVITY DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Time Prior to 0930	0930-0945	0945-1000	1000-1015
I-131	2.5E-03	1.9E+03	1.9E+03	1.9E+03
I-132	2.8E-03	2.6E+03	2.4E+03	2.2E+03
I-133	5.2E-03	3.7E+03	3.7E+03	3.6E+03
I-134	4.1E-03	3.6E+03	3.0E+03	2.4E+03
I-135	4.5E-03	3.4E+03	3.3E+03	3.2E+03
Total Iodine	1.9E-02	1.5E+04	1.4E+04	1.3E+04
I-131 Dose Equivalent	4.5E-03	3.3E+03	3.3E+03	3.2E+03
Kr-83m	1.2E-03	1.1E+01	2.7E+01	4.1E+01
Kr-85m	2.5E-02	8.2E+00	8.6E+00	8.3E+00
Kr-85	4.8E-03	2.1E-01	2.1E-01	2.1E-01
Kr-87	2.9E-03	1.5E+01	1.3E+01	1.2E+01
Kr-88	1.0E-03	1.1E+01	1.0E+01	9.7E+00
Xe-133m	7.2E-04	1.3E+00	1.6E+00	2.0E+00
Xe-133	5.3E-03	4.0E+01	4.5E+01	5.0E+01
Xe-135m	5.8E-03	1.6E+02	3.4E+02	4.2E+02
Xe-135	2.2E-03	3.7E+01	9.5E+01	1.5E+02
Total Noble Gas	4.9E-02	2.8E+02	5.4E+02	6.9E+02

Note: Reactor coolant sample dose rates are provided in Section 9.5.1.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Time 1015-1030	1030-1045	1045-1100	1100-1115
I-131	1.9E+03	1.8E+03	1.8E+03	1.8E+03
I-132	2.1E+03	1.9E+03	1.8E+03	1.6E+03
I-133	3.6E+03	3.6E+03	3.5E+03	3.5E+03
I-134	2.0E+03	1.6E+03	1.3E+03	1.1E+03
I-135	3.1E+03	3.1E+03	3.0E+03	2.9E+03
Total Iodine	1.3E+04	1.2E+04	1.1E+04	1.1E+04
I-131 Dose Equivalent	3.2E+03	3.2E+03	3.1E+03	3.1E+03
Kr-83m	5.2E+01	6.1E+01	6.8E+01	7.4E+01
Kr-85m	7.9E+00	7.6E+00	7.3E+00	7.0E+00
Kr-85	2.1E-01	2.1E-01	2.1E-01	2.1E-01
Kr-87	1.0E+01	8.9E+00	7.7E+00	6.7E+00
Kr-88	9.2E+00	8.6E+00	8.1E+00	7.6E+00
Xe-133m	2.3E+00	2.6E+00	2.9E+00	3.3E+00
Xe-133	5.4E+01	3.8E+03	6.3E+01	6.8E+01
Xe-135m	4.5E+02	4.6E+02	4.6E+02	4.6E+02
Xe-135	2.1E+02	2.6E+02	3.1E+02	3.6E+02
Total Noble Gas	8.0E+02	4.6E+03	9.3E+02	9.9E+02

Note: Reactor coolant sample dose rates are provided in Section 9.5.1.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Time 1115-1130	1130-1145	1145 - END
I-131	1.8E+03	1.8E+03	1.8E+03
I-132	1.5E+03	1.4E+03	1.3E+03
I-133	3.5E+03	3.4E+03	3.4E+03
I-134	9.0E+02	7.4E+02	6.0E+02
I-135	2.8E+03	2.7E+03	2.7E+03
Total Iodine	1.1E+04	1.0E+04	9.8E+03
I-131 Dose Equivalent	3.1E+03	3.1E+03	3.0E+03
Kr-83m	7.8E+01	8.1E+01	8.3E+01
Kr-85m	6.8E+00	6.5E+00	6.2E+00
Kr-85	2.1E-01	2.1E-01	2.1E-01
Kr-87	5.9E+00	5.1E+00	4.5E+00
Kr-88	7.1E+00	6.7E+00	6.3E+00
Xe-133m	3.6E+00	3.9E+00	4.2E+00
Xe-133	7.3E+01	7.7E+01	8.1E+01
Xe-135m	4.5E+02	4.4E+02	4.3E+02
Xe-135	4.1E+02	4.5E+02	5.0E+02
Total Noble Gas	1.0E+03	1.1E+03	1.1E+03

Note: Reactor coolant sample dose rates are provided in Section 9.5.1.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

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

Isotope	Prior to 0930	Time 0930-0945	0945-1000	1000-1015
I-131	*	1.3E-02	2.8E-02	4.2E-02
I-132	*	1.8E-02	3.6E-02	5.0E-02
I-133	*	2.6E-02	5.5E-02	8.1E-02
I-134	*	2.5E-02	4.4E-02	5.4E-02
I-135	*	2.4E-02	5.0E-02	7.2E-02
Total Iodine	*	1.1E-01	2.1E-01	3.0E-01
I-131 Dose Equivalent	*	2.3E-02	4.9E-02	7.2E-02
Kr-83m	*	1.4E-01	2.8E-01	4.0E-01
Kr-85m	*	3.1E-01	6.3E-01	9.1E-01
Kr-85	*	1.5E-02	3.1E-02	4.7E-02
Kr-87	*	5.3E-01	9.8E-01	1.3E+00
Kr-88	*	7.8E-01	1.5E+00	2.2E+00
Xe-133m	*	7.8E-02	1.6E-01	2.5E-01
Xe-133	*	2.6E+00	5.6E+00	8.4E+00
Xe-135m	*	4.4E-01	6.0E-01	6.2E-01
Xe-135	*	5.9E-01	1.3E+00	1.9E+00
Total Noble Gas	*	5.5E+00	1.1E+01	1.6E+01

Note: Primary containment sample dose rate provided in Section 9.5.2.
* Prior to 0930 containment air activity is below MDA.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

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

Isotope	Time 1015-1030	1030-1045	1045-1100	1100-1115
I-131	5.5E-02	6.8E-02	7.3E-02	1.5E-01
I-132	6.2E-02	7.1E-02	7.0E-02	1.4E-01
I-133	1.1E-01	1.3E-01	1.4E-01	2.9E-01
I-134	5.9E-02	6.0E-02	5.3E-02	9.2E-02
I-135	9.4E-02	1.1E-01	1.2E-01	2.4E-01
Total Iodine	3.8E-01	4.4E-01	4.5E-01	9.2E-01
1-131 Dose Equivalent	9.5E-02	1.2E-01	1.2E-01	2.6E-01
Kr-83m	5.0E-01	5.9E-01	5.8E-01	1.1E+00
Kr-85m	1.2E+00	1.4E+00	1.4E+00	2.9E+00
Kr-85	6.3E-02	7.7E-02	8.2E-02	1.8E-01
Kr-87	1.5E+00	1.6E+00	1.5E+00	2.8E+00
Kr-88	2.7E+00	3.2E+00	3.2E+00	6.4E+00
Xe-133m	3.3E-01	4.0E-01	4.3E-01	9.1E-01
Xe-133	1.1E+01	1.4E+01	1.5E+01	3.2E+01
Xe-135m	6.1E-01	5.8E-01	3.9E-01	5.9E-01
Xe-135	2.6E+00	3.3E+00	3.5E+00	7.4E+00
Total Noble Gas	2.1E+01	2.5E+01	2.6E+01	5.4E+01

Note: Primary containment sample dose rate provided in Section 9.5.2.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

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

Isotope	1115-1130	1130-1145	Time 1145 - END
I-131	1.6E-01	1.7E-01	1.8E-01
I-132	1.4E-01	1.3E-01	1.3E-01
I-133	3.1E-01	3.2E-01	3.4E-01
I-134	8.0E-02	6.9E-02	6.0E-02
I-135	2.5E-01	2.6E-01	6.4E-02
Total Iodine	9.4E-01	9.6E-01	7.7E-01
I-131 Dose Equivalent	2.7E-01	2.9E-01	2.8E-01
Kr-83m	1.1E+00	1.1E+00	1.1E+00
Kr-85m	3.0E+00	3.0E+00	3.0E+00
Kr-85	1.9E-01	2.0E-01	2.1E-01
Kr-87	2.6E+00	2.4E+00	2.2E+00
Kr-88	6.3E+00	6.3E+00	6.2E+00
Xe-133m	9.6E-01	1.0E+00	1.1E+00
Xe-133	3.3E+01	3.5E+01	3.6E+01
Xe-135m	4.8E-01	4.3E-01	3.9E-01
Xe-135	7.9E+00	8.3E+00	8.7E+00
Total Noble Gas	5.5E+01	5.7E+01	5.9E+01

Note: Primary containment sample dose rate provided in Section 9.5.2.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.4.3 REACTOR BUILDING AIR ACTIVITY DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.4.3 REACTOR BUILDING AIR ACTIVITY DATA

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

All elevations - See Notes Below

Isotope	Time 0700 to END
I-131	*
I-132	*
I-133	*
I-134	*
I-135	*
Total Iodine	*
I-131 Dose Equivalent	*
Kr-83m	*
Kr-85m	*
Kr-85	*
Kr-87	*
Kr-88	*
Xe-131m	*
Xe-133m	*
Xe-133	*
Xe-135m	*
Xe-135	*
Total Noble Gas	*

Notes:

1. (*) Denotes Activity Concentration below MDL.
2. Reactor Building air sample dose rates provided in Section 9.5.3.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.5 RADIOLOGICAL SAMPLE DOSE RATES

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.5.1 REACTOR COOLANT SAMPLE DOSE RATES

VERMONY YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.5.1 Reactor Coolant Sample Dose Rates

A. Gas Samples

	Unshielded (mR/hr per cc)*		Shielded (1 in. lead in mR/hr per cc)*	
Time	Contact	1 ft	Contact	1 ft
Prior to 0930	1.4E-02	9.8E-05	1.7E-04	1.2E-06
0930-0945	8.1E+01	5.6E-01	9.9E-01	7.0E-03
0945-1000	1.6E+02	1.1E+00	1.9E+00	1.4E-02
1000-1015	2.0E+02	1.4E+00	2.4E+00	1.7E-02
1015-1030	2.3E+02	1.6E+00	2.8E+00	2.0E-02
1030-1045	1.3E+03	9.2E+00	1.6E+01	1.2E-01
1045-1100	2.7E+02	1.9E+00	3.3E+00	2.3E-02
1100-1115	2.9E+02	2.0E+00	3.5E+00	2.5E-02
1115-1130	2.9E+02	2.0E+00	3.5E+00	2.5E-02
1130-1145	3.2E+02	2.2E+00	3.9E+00	2.8E-02
1145 - END	3.2E+02	2.2E+00	3.9E+00	2.8E-02

Notes: * Value must be multiplied by the sample volume in cubic centimeters for gas samples to obtain the sample dose rate in mR/hr.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.5.1 Reactor Coolant Sample Dose Rates

I-131 (Iodine)

Time	Unshielded (mR/hr per cc)*		Shielded (1 in. lead in mR/hr per cc)*	
	Contact	1 ft	Contact	1 ft
Prior to 0930	1.5E-02	1.0E-04	1.9E-04	1.3E-06
0930-0945	1.1E+04	8.1E+01	1.5E+02	1.0E-03
0945-1000	1.0E+04	7.6E+01	1.4E+02	9.7E-04
1000-1015	1.0E+04	7.0E+01	1.3E+02	8.6E-01
1015-1030	1.0E+04	7.0E+01	1.3E+02	8.6E-01
1030-1045	9.4E+03	6.5E+01	1.2E+02	7.9E-01
1045-1100	8.6E+03	6.0E+01	1.1E+02	7.3E-01
1100-1115	8.6E+03	6.0E+01	1.1E+02	7.3E-01
1115-1130	8.6E+03	6.0E+01	1.1E+02	7.3E-01
1130-1145	7.8E+03	5.4E+01	9.8E+01	6.6E-01
1145 - END	7.6E+03	5.3E+01	9.6E+01	6.5E-01

Notes: * Values must be multiplied by the sample volume in milliliters for liquid samples to obtain the sample dose rate in mR/hr.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.5.2 PRIMARY CONTAINMENT SAMPLE DOSE RATES

VERMONY YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.5.2 Primary Containment Sample Dose Rates

A. Gas Samples

	Unshielded (mR/hr per cc)*		Shielded (1 in. lead in mR/hr per cc)*	
Time	Contact	1 ft	Contact	1 ft
Prior to 0930	As Read	As Read	As Read	As Read
0930-0945	1.6E+00	1.1E-02	2.0E-02	1.4E-04
0945-1000	3.2E+00	2.2E-02	3.9E-02	2.8E-04
1000-1015	4.6E+00	3.2E-02	5.7E-02	4.0E-04
1015-1030	6.0E+00	4.2E-02	7.5E-02	5.3E-04
1030-1045	7.2E+00	5.0E-02	8.9E-02	6.3E-04
1045-1100	7.5E+00	5.2E-02	9.2E-02	6.5E-04
1100-1115	1.6E+01	1.1E-01	1.9E-01	1.4E-03
1115-1130	1.6E+01	1.1E-01	2.0E-01	1.4E-03
1130-1145	1.7E+01	1.2E-01	2.1E-01	1.5E-03
1145 - END	1.7E+01	1.2E-01	2.1E-01	1.5E-03

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

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.5.3 REACTOR BUILDING SAMPLE DOSE RATES

VERMONY YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.5.3 Reactor Building Air Sample Dose Rates (Iodine Cartridge Only)

All elevations - See Notes Below

Time	Unshielded (mR/hr per cc)*		Shielded (1 in. lead in mR/hr per cc)*	
	Contact	1 ft	Contact	1 ft
0700 - END	As Read	As Read	As Read	As Read

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

1992

9.5.4 PLANT VENT STACK SAMPLE DOSE RATES

VERMONY YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.5.4 Plant Vent Stack Sample Dose Rates

A. Gas (Grab Sample)

	Unshielded (mR/hr per cc)*		Shielded (1 in. lead in mR/hr per cc)*	
Time	Contact	1 ft	Contact	1 ft
0700 - END	As Read	As Read	As Read	As Read

Note: Values must be multiplied by the sample volume in cubic centimeters to obtain the sample dose rates in mr/hr.

VERMONY YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.5.4 Plant Vent Stack Sample Dose Rates

B. Air Sample (Iodine Cartridge)

	Unshielded (mR/hr per cc)*		Shielded (1 in. lead in mR/hr per cc)*	
Time	Contact	1 ft	Contact	1 ft
0700 - END	As Read	As Read	As Read	As Read

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

VERMONY YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.5.4 Plant Vent Stack Sample Dose Rates

C. General Area Exposure Rates at Stack (R/hr)

Time	At Stack Door	Inside
0700 - END	As Read*	As Read*

* Background as read on survey meter.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

9.6 PLANT VENT STACK RELEASE DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

9.6 PLANT VENT STACK RELEASE DATA

A. Plant Vent Stack Activity Release Concentrations (uCi/cc) *

Isotope	Time 0700 - END
I-131	3.3E-13
I-132	4.8E-13
I-133	7.5E-13
I-134	6.6E-13
I-135	6.3E-13
Total Iodine	2.9E-12
I-131 Dose Equivalent	6.1E-13
Kr-83m	**
Kr-85m	**
Kr-85	**
Kr-87	**
Kr-88	**
Xe-133	**
Xe-135m	**
Xe-135	**
Total Noble Gas	**

* Activity concentrations (in uCi/cc) may be converted to activity release rates (uCi/sec) by multiplying by the assumed stack flow rate of 4.9E7 cc/sec.

** Noble gas release rates are minimal at this time and below MDA of the multi-channel analyzer.

Note: Plant vent stack sample dose rates provided in Section 9.5.4.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

10.0 METEOROLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

10.1 ON SITE METEOROLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

10.1 ON-SITE METEOROLOGICAL DATA

(07:00 - 08:30)

	Time						
	07:00	07:15	07:30	07:45	08:00	08:15	08:30
LOWSAV AVG LOWER SPEED MPH	3.2	3.0	2.4	2.8	2.1	3.0	2.1
UPWSAV AVG UPPER SPEED MPH	3.0	3.1	2.8	2.9	2.3	2.8	2.5
LOWDAV AVG LOWER DIR DEGS	194	193	155	137	137	125	159
LOWDSD AVG LOWER DIR SIGMA	12	11	25	26	23	25	39
UPWDAV AVG UPPER DIR DEGS	156	165	172	147	155	128	144
UPWDSD AVG UPPER DIR SIGMA	14	16	19	36	28	17	34
LOTTAV AVG LOWER TEMP DEGS (F)	56.6	56.8	57.0	57.2	57.4	57.6	57.7
LODTAV AVG LOWER DELTA T DEGS (F)*	-0.5	-0.5	-0.5	-0.6	-0.7	-0.8	-0.6
UPDTAV AVG UPPER DELTA T DEGS (F)*	-0.6	-0.8	-0.9	-0.9	-1.0	-1.1	-0.9
SOLRAV AVG SOLAR RAD LANGS	0.00	0.01	0.02	0.03	0.04	0.05	0.07
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(08:45 - 10:15)

	Time						
	08:45	09:00	09:15	09:30	09:45	10:00	10:15
LOWSAV AVG LOWER SPEED MPH	2.4	2.8	4.6	3.9	3.7	4.9	5.8
UPWSAV AVG UPPER SPEED MPH	2.5	2.9	3.9	4.1	3.9	5.1	7.3
LOWDAV AVG LOWER DIR DEGS	136	109	113	122	114	111	108
LOWDSD AVG LOWER DIR SIGMA	34	34	17	20	27	14	17
UPWDAV AVG UPPER DIR DEGS	154	129	129	127	130	123	122
UPWDSD AVG UPPER DIR SIGMA	28	20	14	14	17	12	7
LOTTAV AVG LOWER TEMP DEGS (F)	57.9	58.4	58.5	58.8	59.4	59.7	60.3
LODTAV AVG LOWER DELTA T DEGS (F)*	-0.7	-0.9	-0.8	-1.0	-1.2	-1.2	-1.4
UPDTAV AVG UPPER DELTA T DEGS (F)*	-1.0	-1.2	-1.2	-1.3	-1.6	-1.6	-1.8
SOLRAV AVG SOLAR RAD LANGS	0.10	0.11	0.12	0.15	0.18	0.22	0.41
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*NOTES:

1. The height differential (Δh) for the lower delta temperature on the primary tower is 165 feet.
2. The height differential (Δh) for the upper delta temperature on the primary tower is 262 feet.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

10.1 ON-SITE METEOROLOGICAL DATA

(10:30 - 12:00)

	Time						
	10:30	10:45	11:00	11:15	11:30	11:45	12:00
LOWSAV AVG LOWER SPEED MPH	5.5	5.2	5.9	5.1	5.5	5.3	5.6
UPWSAV AVG UPPER SPEED MPH	7.8	6.8	5.4	5.5	5.9	5.6	7.3
LOWDAV AVG LOWER DIR DEGS	112	090	084	099	093	070	091
LOWDSD AVG LOWER DIR SIGMA	20	19	16	20	18	16	23
UPWDAV AVG UPPER DIR DEGS	116	115	120	113	108	096	121
UPWDSD AVG UPPER DIR SIGMA	8	8	14	8	10	10	10
LOTTAV AVG LOWER TEMP DEGS (F)	61.5	62.6	63.9	65.7	67.2	68.7	71.3
LODTAV AVG LOWER DELTA T DEGS (F)*	-1.7	-1.9	-2.0	-2.2	-1.5	-1.3	-1.4
UPDTAV AVG UPPER DELTA T DEGS (F)*	-2.2	-2.4	-2.5	-2.6	-1.3	-1.4	-1.8
SOLRAV AVG SOLAR RAD LANGS	0.84	0.61	0.59	0.83	1.03	1.05	1.06
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(12:15 - 13:45)

	Time						
	12:15	12:30	12:45	13:00	13:15	13:30	13:45
LOWSAV AVG LOWER SPEED MPH	5.3	7.5	8.5	8.0	7.2	7.1	7.1
UPWSAV AVG UPPER SPEED MPH	7.4	10.1	10.8	10.1	9.3	9.4	8.5
LOWDAV AVG LOWER DIR DEGS	131	163	163	167	161	159	168
LOWDSD AVG LOWER DIR SIGMA	32	15	20	16	18	15	16
UPWDAV AVG UPPER DIR DEGS	146	163	157	163	160	158	165
UPWDSD AVG UPPER DIR SIGMA	22	8	9	6	11	7	9
LOTTAV AVG LOWER TEMP DEGS (F)	73.6	75.1	75.7	75.9	76.4	76.9	77.4
LODTAV AVG LOWER DELTA T DEGS (F)*	-1.5	-1.5	-1.6	-1.5	-1.5	-1.5	-1.5
UPDTAV AVG UPPER DELTA T DEGS (F)*	-2.0	-2.1	-2.2	-2.1	-2.0	-2.1	-2.1
SOLRAV AVG SOLAR RAD LANGS	1.07	1.07	1.05	1.03	1.00	0.95	0.93
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*NOTES:

1. The height differential (Δh) for the lower delta temperature on the primary tower is 165 feet.
2. The height differential (Δh) for the upper delta temperature on the primary tower is 262 feet.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

10.1 ON-SITE METEOROLOGICAL DATA

(14:00 - 15:30)

	Time						
	14:00	14:[illegible]	14:30	14:45	15:00	15:15	15:30
LOWSAV AVG LOWER SPEED MPH	6.9	[illegible]	7.9	7.0	8.1	8.2	6.5
UPWSAV AVG UPPER SPEED MPH	9.0	[illegible]	10.3	9.2	10.8	12.1	9.8
LOWDAV AVG LOWER DIR DEGS	161	162	165	165	162	161	174
LOWDSD AVG LOWER DIR SIGMA	14	12	14	13	14	14	12
UPWDAV AVG UPPER DIR DEGS	161	155	159	158	160	160	165
UPWDSD AVG UPPER DIR SIGMA	8	7	6	7	6	5	7
LOTTAV AVG LOWER TEMP DEGS (F)	77.6	77.6	78.0	78.1	78.2	78.2	78.2
LODTAV AVG LOWER DELTA T DEGS (F)*	-1.4	-1.3	-1.2	-1.2	-1.1	-1.1	-1.0
UPDTAV AVG UPPER DELTA T DEGS (F)*	-2.0	-1.9	-1.8	-1.7	-1.7	-1.7	-1.6
SOLRAV AVG SOLAR RAD LANGS	0.8[illegible]	[illegible].81	0.78	0.72	0.68	0.62	0.40
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(15:45 - 17:15)

	Time						
	15:45	16:00	16:15	16:30	16:45	17:00	17:15
LOWSAV AVG LOWER SPEED MPH	6.7	6.2	5.8	6.1	5.3	4.1	3.7
UPWSAV AVG UPPER SPEED MPH	10.3	9.0	8.2	9.6	8.2	6.4	7.1
LOWDAV AVG LOWER DIR DEGS	161	172	179	189	194	193	201
LOWDSD AVG LOWER DIR SIGMA	15	14	12	14	9	9	9
UPWDAV AVG UPPER DIR DEGS	162	174	180	185	193	193	193
UPWDSD AVG UPPER DIR SIGMA	6	10	9	7	6	8	6
LOTTAV AVG LOWER TEMP DEGS (F)	78.2	78.0	77.9	77.6	77.1	76.8	76.0
LODTAV AVG LOWER DELTA T DEGS (F)*	-0.9	-0.8	-0.7	-0.6	-0.5	-0.3	0.2
UPDTAV AVG UPPER DELTA T DEGS (F)*	-1.5	-1.4	-1.3	-1.1	-0.9	-0.8	-0.2
SOLRAV AVG SOLAR RAD LANGS	0.22	0.36	0.32	0.29	0.22	0.15	0.08
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*NOTES:

1. The height differential (Δh) for the lower delta temperature on the primary tower is 165 feet.
2. The height differential (Δh) for the upper delta temperature on the primary tower is 262 feet.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

10.2 GENERAL AREA NATIONAL WEATHER SERVICE (NWS) FORECASTS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

10.2 GENERAL AREA NWS FORECASTS (See Note) -

Synopsis (07:00)

A weak high pressure ridge centered in the Gulf of Maine will remain nearly stationary over the next 24 hours. A weak frontal boundary extending southwestward from a low centered over Hudson's Bay will drift eastward slowly.

Valid (07:00-11:00)

Mostly sunny this morning. Temperatures rising through the 60's. East to southeast winds around 5 MPH.

Valid (11:00-17:00)

Mostly sunny and warm this afternoon. High temperatures in the upper 70's. South to southeast winds 5 to 10 MPH.

Valid (17:00-23:00)

Clear and cool this evening. Temperatures dropping into the 50's. South to southwest winds around 5 MPH...becoming light and variable.

PLANT/EOF WEATHER OBSERVATIONS (See Note) - Valid (07:00-17:00)

Time	General Observations
07:00	Clear with light winds.
08:00	Sunny with light winds.
09:00	Sunny with light winds.
10:00	Sunny with light winds.
11:00	Partly cloudy with light winds.
12:00	Sunny with light to moderate winds.
13:00	Sunny and warm with light to moderate winds.
14:00	Sunny and warm with light to moderate winds.
15:00	Sunny and warm with light to moderate winds.
16:00	Partly cloudy and warm with light to moderate winds.
17:00	Mostly sunny with light winds.

NOTE: GENERAL AREA NWS FORECASTS SHOULD BE PROVIDED UPON REQUEST. PLANT/EOF WEATHER OBSERVATIONS WILL BE POSTED AS APPROPRIATE.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

10.2 VERMONT YANKEE SITE FORECAST

To be provided to the ESC Meteorologist by the ESC Controller at 09:00.

WEATHER FORECAST FOR SITE: VY - VERNON

Date of Forecast: 09-02-92
Time of Forecast: 09:00

Current Site Meteorology (as of 09:00):

Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
Lower	2.8 MPH	109 DEG FROM	-0.9 DEG F	D	0.00 IN/15 MIN
Upper	2.9 MPH	129 DEG FROM	-1.2 DEG F	D	

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
09:00-11:00	Lower	5.0 MPH	110 DEG FROM	-1.4 DEG F	C	0.00 IN/15 MIN
	Upper	6.0 MPH	120 DEG FROM	-1.8 DEG F	D	
11:00-13:00	Lower	6.0 MPH	120 DEG FROM	-1.6 DEG F	B	0.00 IN/15 MIN
	Upper	8.0 MPH	130 DEG FROM	-1.9 DEG F	D	
13:00-15:00	Lower	7.0 MPH	160 DEG FROM	-1.3 DEG F	D	0.00 IN/15 MIN
	Upper	10.0 MPH	160 DEG FROM	-1.9 DEG F	D	

National Weather Service Forecast for site region:

Mostly sunny this morning. Temperatures rising through the 60's. East to southeast winds around 5 MPH.

Special Weather Statements:

NONE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

10.2 VERMONT YANKEE SITE FORECAST

To be provided to the ESC Meteorologist by the ESC Controller at 11:25.

WEATHER FORECAST FOR SITE: VY - VERNON

Date of Forecast: 09-02-92
Time of Forecast: 11:00

Current Site Meteorology (as of 11:00):

Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
Lower	5.9 MPH	084 DEG FROM	-2.0 DEG F	A	0.00 IN/15 MIN
Upper	5.4 MPH	120 DEG FROM	-2.5 DEG F	B	

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
11:00-13:00	Lower	6.0 MPH	120 DEG FROM	-1.6 DEG F	B	0.00 IN/15 MIN
	Upper	8.0 MPH	130 DEG FROM	-1.9 DEG F	C	
13:00-15:00	Lower	7.0 MPH	160 DEG FROM	-1.3 DEG F	D	0.00 IN/15 MIN
	Upper	10.0 MPH	160 DEG FROM	-1.9 DEG F	D	
15:00-17:00	Lower	6.0 MPH	180 DEG FROM	-0.7 DEG F	D	0.00 IN/15 MIN
	Upper	9.0 MPH	180 DEG FROM	-1.3 DEG F	D	

National Weather Service Forecast for site region:

Mostly sunny and warm this afternoon. High temperatures in the upper 70's. South to southeast winds 5 to 10 MPH.

Special Weather Statements:

NONE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

10.2 VERMONT YANKEE SITE FORECAST

To be provided to the ESC Meteorologist by the ESC Controller at 13:00.

WEATHER FORECAST FOR SITE: VY - VERNON

Date of Forecast: 09-02-92
Time of Forecast: 13:00

Current Site Meteorology (as of 13:00):

Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
Lower	8.0 MPH	167 DEG FROM	-1.5 DEG F	C	0.00 IN/15 MIN
Upper	10.1 MPH	163 DEG FROM	-2.1 DEG F	D	

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
13:00-15:00	Lower	7.0 MPH	160 DEG FROM	-1.3 DEG F	D	0.00 IN/15 MIN
	Upper	10.0 MPH	160 DEG FROM	-1.9 DEG F	D	
15:00-17:00	Lower	6.0 MPH	180 DEG FROM	-0.7 DEG F	D	0.00 IN/15 MIN
	Upper	9.0 MPH	180 DEG FROM	-1.3 DEG F	D	
17:00-19:00	Lower	3.0 MPH	200 DEG FROM	2.5 DEG F	F	0.00 IN/15 MIN
	Upper	7.0 MPH	180 DEG FROM	2.6 DEG F	F	

National Weather Service Forecast for site region:

Mostly sunny and warm this afternoon. High temperatures in the upper 70's. South to southeast winds 5 to 10 MPH.

Clear and cool this evening. Temperatures dropping into the 50's. South to southwest winds around 5 MPH...becoming light and variable.

Special Weather Statements:

NONE

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1992

10.3 NATIONAL WEATHER SERVICE SURFACE MAPS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1992

10.3 NATIONAL WEATHER SERVICE SURFACE MAP (07:00 EST)