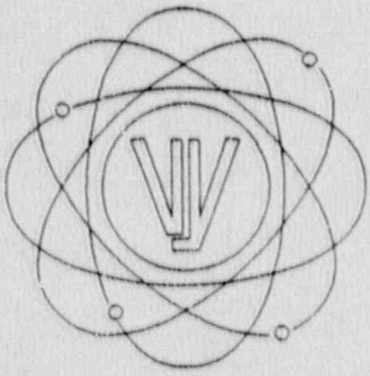
VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990



EXERCISE MANUAL

EXERCISE MATERIAL

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1.0 INTRODUCTION

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1.1 EXERCISE SCHEDULE

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1.1 EXERCISE SCHEDULE

A. Controller/Observer Briefing

Date: July 17, 1990

Time: 9:00 a.m.

Location: Vermont Yankee Corporate Office (Brattleboro, Vermont)

Purpose: Controller/Observer Briefing on Scenario and Assignments

Attendees: Vermont Yankee and Yankee Atomic Controllers/Observers

B. Controller/Observer Plant Tour

Date: July 17, 1990

Time: As necessary (contact Lead Controller)

Location: Emergency Response Facilities and In-Station Areas

Purpose: Familiarize Controllers/Observers with Affected Areas

Attendees: Controllers/Observers

C. NRC Briefing

Date: July 17, 1990

Time: To be announced

Location: To be announced

Purpose: NRC Briefing and Review of Exercise Scenario

Attendees: NRC Evaluators

D. Exercise

Date: July 18, 1990

Time: To be announced

Location: Vermont Yankee Emergency Response Centers
Designated States Emergency Response Centers

Purpose: Emergency Response Preparedness Exercise

Attendees: Vermont Yankee Emergency Response Organization, NRC Region I Incident Response Team, Select State (Vermont, New Hampshire, and Massachusetts) Emergency Response Organizations, Controllers/Observers, NRC Evaluators, and Yankee Atomic Engineering Support Center Staff

E. Exercise Debriefing

Date: Day of Exercise

Time: To be announced during or immediately following exercise

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

Purpose: Players and Controller/Observer Debriefing

Attendees: Controllers/Observers, Key Participants

F. Controller Debriefing

Date: After Exercise Player Debriefing

Time: To be announced

Location: To be announced

Purpose: Exercise Debriefing

Attendees: Exercise Coordinator and Controllers

G. Exercise Critique

Date: July 19, 1990

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 need not attend), and Vermont Yankee Key Participants

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1.2 PARTICIPATING CENTERS/AGENCIES

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1.2 PARTICIPATING CENTERS/AGENCIES

VERMONT YANKEE NUCLEAR POWER CORPORATION

Vermont Yankee Nuclear Power Station:

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

Vermont Yankee Training Center:

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

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

YANKEE ATOMIC ELECTRIC COMPANY

Yankee Atomic Corporate Headquarters:

- Engineering Support Center (Bolton, Massachusetts)

NUCLEAR REGULATORY COMMISSION

- NRC Region I Incident Response Base Team (King of Prussia, Pennsylvania)

- NRC Region I Incident Response Site Team (Vermont Yankee Emergency Response Facilities)

STATE OF VERMONT

Vermont Emergency Management Agency (State Response Agencies):

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

- Emergency Operations Center (Waterbury, Vermont)

STATE OF NEW HAMPSHIRE

New Hampshire Emergency Management Agency (State Response Agencies):

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

- Emergency Operations Center (Concord, New Hampshire)

COMMONWEALTH OF MASSACHUSETTS

Massachusetts Civil Defense Agency (State Response Agencies):

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

- Emergency Operations Center (Framingham, Massachusetts)

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1.3 ABBREVIATIONS AND DEFINITIONS

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1.3 ABBREVIATIONS AND DEFINITIONS

A. Abbreviations

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

- HPCI - High Pressure Coolant Injection
- HPN - Health Physics Network
- HRNG - High Range Noble Gas
- I&C - Instrumentation and Control
- LPCI - Low Pressure Coolant Injection
- MCC - Motor Control Center
- MPR - Mechanical Pressure Regulator
- MSIV - Main Steam Isolation Valve
- MSL - Main Steam Line
- NAS - Nuclear Alert System
- NG - Noble Gases
- NRC - Nuclear Regulatory Commission
- NWS - National Weather Service
- OP - Operating Procedure
- OSC - Operations Support Center
- OT - Operational Transient
- PASS - Post-Accident Sampling System
- PCIS - Primary Containment Isolation System
- PED - Plant Emergency Director
- PVS - Plant Vent Stack
- RA - Radiological Assistant
- RCS - Reactor Coolant System
- RCIC - Reactor Core Isolation Cooling
- REMVEC - Rhode Island, Eastern Massachusetts, and Vermont Energy Control.
- RERP - Radiological Emergency Response Plan
- RHR - Residual Heat Removal

- RPS - Reactor Protection System
- RR - Reactor Recirculation System
- RRU - Reactor Recirculation Unit
- RV - Relief Valve
- RWCU - Reactor Water Clean-Up
- Rx - Reactor
- SAE - Site Area Emergency
- SBGTS - Standby Gas Treatment System
- SJAE - Steam Jet Air Ejector
- SRM - Site Recovery Manager/Source Range Monitor
- SRV - Safety Relief Valve
- TAG - Technical Administrative Guideline
- TS - Technical Specification
- TSC - Technical Support Center
- UE - Unusual Event
- VY - Vermont Yankee
- VYNPC - Vermont Yankee Nuclear Power Corporation
- VYNPS - Vermont Yankee Nuclear Power Station
- WSI - Weather Services International
- YNSD - Yankee Nuclear Services Division

B. Definitions

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

- o 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.

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

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

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

- o Emergency Operations Center - Areas designated by state/local representatives as Emergency Plan assembly areas for their respective staffs.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- **Small-Scale Exercise** - An exercise which tests as much of the licensee emergency plan and procedures without 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.

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1.4 REFERENCES

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1.4 REFERENCES

1. Vermont Yankee Nuclear Power Station Emergency Plan.

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

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

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

5. Vermont Yankee Nuclear Power Station Emergency Operating Procedures.

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

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

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

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

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2.0 EXERCISE OBJECTIVES AND EXTENT OF PLAY - VERMONT YANKEE

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2.0 EXERCISE OBJECTIVES AND EXTENT OF PLAY - VERMONT YANKEE

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

	Extent of Play
4. Demonstrate the ability of the TSC staff to initiate and coordinate corrective actions in an efficient and timely manner.	A.4 The scenario provides events that will enable the TSC to coordinate in-plant corrective actions through the use of OSC personnel.
5. Demonstrate the ability of appropriate TSC staff to participate with Control Room and the EOF/RC in emergency classification and EAL discussions.	A.5 The scenario includes events which allow for discussion between the Control Room, TSC, and EOF staff on classification.
6. Demonstrate the ability to 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.")
B. Notification and Communication	
1. Demonstrate that messages are transmitted in an accurate and timely manner and that messages are properly logged and documented.	B.1 Various communications links will be established between the emergency response facilities in order to transmit information and data. Recordkeeping and documentation will be demonstrated in accordance with Procedure OP-3504, "Emergency Communications." Communications and transfer of data between facilities will be evaluated for timeliness and completeness. B.3 B.4

	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 NRC ENS red 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 the emergency response facilities and federal and state authorities.	
C. Direction and Control	
1. Demonstrate the capability of key emergency response facility management personnel to direct and coordinate their respective emergency response activities in an efficient and timely manner.	C.1 All emergency response facilities have designated coordinators who will direct and coordinate emergency response activities in their particular area of responsibility.
2. Demonstrate appropriate coordination of activities with federal and state government agencies.	C.2 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. NRC Region I Incident Response Team (Base and Site) will be participating in the exercise. Communications and information flow with the NRC Region I Incident Response Team will be demonstrated.

*Indicates NRC-identified improvement items from the 1989 exercise.

	Extent of Play
D. Emergency Response Facilities	
1. Demonstrate the ability of station and corporate personnel to activate and staff the emergency response facilities in a timely manner.	D.1 Scenario data and exercise events will allow D.2 activation and operation of Vermont Yankee emergency response facilities. The Simulator Control Room, Control Room (communication functions only), TSC, OSC, EOF/RC, News Media Center and Engineering Support Center will be activated in accordance with established procedures. Designated plant and corporate emergency response personnel will participate in the exercise.
2. Demonstrate and test the adequacy and effectiveness of emergency response facilities, operations, and equipment.*	
E. Radiological Exposure Control	
1. Demonstrate the ability to provide adequate radiation protection controls for on-site emergency response personnel, such as appropriate personnel dosimetry equipment, and protective clothing.	E.1 Scenario events will require OSC On-Site E.2 Assistance Teams to be dispatched to investigate problems associated with plant equipment. Investigation and repair activities in the plant will require implementation of radiation protection controls which include monitoring and tracking of radiation exposure of OSC On-Site Assistance Teams. (Refer to Procedure OP-3507, "Emergency Radiation Exposure Control.")
2. Demonstrate the ability to monitor and track radiation exposure of on-site emergency response personnel.	
F. In-Plant Corrective and Repair Actions	
1. Demonstrate that on-site assistance teams can be dispatched and deployed in a timely manner.	F.1 Scenario events will require OSC on-site F.2 assistance teams to be dispatched F.3 to investigate problems associated with plant equipment. Plant personnel will be given the opportunity to perform corrective actions associated with damaged plant equipment. Equipment mockup of the postulated damaged plant equipment will be available for plant personnel to perform corrective actions.
2. Demonstrate the ability of on-site assistance teams to perform corrective actions on plant equipment during emergency conditions.	

*Indicates NRC-identified improvement items from the 1989 exercise.

	Extent of Play
3. Demonstrate the ability to provide adequate administrative controls and documentation for necessary repairs of plant equipment and systems during an emergency situation.	
G. Radiological Assessment	
1. Demonstrate that radiological assessment personnel at the EOF can obtain radiological and meteorological data in a timely manner.	G.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. The scenario will postulate an off-site radiological release through the plant vent stack which will allow players to evaluate off-site radiological conditions. Players will implement appropriate sections of Procedures OP-3513, "Evaluation of Off-Site Radiological Conditions" and OP-3511, "Off-Site Protective Actions Recommendations."
2. Demonstrate that adequate dose assessment procedures can be performed to determine off-site radiological consequences.	
3. Demonstrate the ability to assess potential off-site radiological consequences based on plant conditions.	
4. 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.	
5. Demonstrate the ability to project the plume trajectory and potentially affected downwind sectors utilizing the computer dose assessment model (METPAC).	

	Extent of Play
6. Demonstrate adequate staffing, equipment readiness check, and deployment (if necessary) of off-site monitoring teams.	G.6 Off-site monitoring teams will be assigned at G.7 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.	
H. Protective Action Decision Making	
1. Demonstrate the ability to implement appropriate on-site protective measures for emergency response personnel.	H.1 On-site protective action measures will include radiation exposure control and plant evacuation of nonessential personnel. After plant evacuation and accountability has been completed, all plant personnel and contractors not directly involved in the exercise may be allowed to return to work.
2. Demonstrate the adequacy of the protective action decision making process to make recommendations concerning off-site radiological consequences.*	H.2 Protective action decision making will be demonstrated in accordance with Procedure OP-3511, "Off-Site Protective Actions Recommendations".
I. Parallel and Other Actions	
1. Test and evaluate the adequacy of methods to establish and maintain access control and personnel accountability within the protected area.	I.1 Security activities will be implemented in accordance with established procedures to control access to the protected area. Assembly of emergency response personnel and evacuation of contractor/visitors will be implemented in order to test personnel accountability within the protected area. However, after the plant evacuation accountability checks have been completed, contractors and visitors will be exempted from additional personnel accountability checks.

*Indicates NRC-identified improvement items from the 1989 exercise.

	Extent of Play
2. Demonstrate the licensee's capability for self-critique and ability to identify areas needing improvement.	I.2 Exercise critique will be conducted with exercise controllers, observers, and players. Critique items will be compiled and documented by the Exercise Coordinator.
J. Public Information	
1. Demonstrate the ability to develop and disseminate timely accurate press release to the public and the news media.	J.1 The News Media Center will be fully activated.
2. Demonstrate the ability to provide briefings for and to interface with the public and news media.*	J.2 Information on the simulated events occurring at the plant will be gathered, verified, incorporated into a news release, and disseminated to key players. Also, after approval this information will be discussed at the News Media Center.
3. Demonstrate the ability to communicate and coordinate news releases between the EOF and the News Media Center.	J.3
4. Demonstrate the ability to provide rumor control.	J.4 A hot line will be established to provide rumor control for questions concerning the simulated accident.
Note: The annual radiological monitoring drill and semi-annual health physics drill will be included as part of the 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).	

*Indicates NRC-identified improvement items from the 1989 exercise.

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3.0 EXERCISE GUIDELINES AND SCOPE

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3.1 EXERCISE GUIDELINES

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3.1 EXERCISE GUIDELINES

A. Purpose

This package provides guidance for conducting the 1990 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 plant 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 Controllers/Observers required to conduct and evaluate the exercise.

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

In each facility where an action 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. Individual observers are responsible for being knowledgeable in the area of their assigned function. The Observers will critique the effectiveness of the emergency response actions 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, by the Controllers. The 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 Controllers/Observers 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. 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 the plant events. Inconsistencies in the scenario may be intentional and may be 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 Controller/Observer will provide verbal or written directions on which actions are to be simulated.

Radiation Work Permits (RWPs) have not been issued for the conduct of the emergency response exercise. If scenario events direct players to areas that are actually RWP-controlled due to high radiation, surface contamination, or airborne radioactivity, players will simulate 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 Controllers/Observers and potential exercise 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. Exercise participants will not direct illegal actions to be taken by other participants or members of the general public.

c. Exercise participants will not intentionally take illegal actions when responding to exercise 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 exercise, members of the general public, animals and the environment.

4. Actions to Minimize Public Inconvenience

It is not the intent, nor is it desirable, 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 when it will be performed by the emergency response organization. The 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 Controllers/Observers utilizing telephone communications between the simulator area and plant computer room. In addition, TSC Communicators, who would normally be assigned to the Control Room to provide TSC requested plant data, will be staged at the Simulator.

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 Technical Support Center. OSC Observers will accompany all 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 an Controller/Observer.

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 Controllers/Observers will provide other data to EOF/RC players as necessary.

6. Off-Site Monitoring Teams

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

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.

9. Nuclear Regulatory Commission (NRC) Operations

The NRC Region I Incident Response Team will participate in the exercise. The NRC Region I will play a full participation role with a NRC Base Team located at the regional office in King of Prussia, Pennsylvania and the NRC Site Team at Vermont Yankee emergency response facilities. No NRC Public Affairs participation is planned.

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 the Controllers/Observers and other exercise participants.

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

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

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

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

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

5. 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.

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

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

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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3.2 PLAYER INSTRUCTIONS AND GROUND RULES

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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3.2 PLAYER INSTRUCTIONS AND GROUND RULES

The Vermont Yankee Emergency Response Preparedness Exercise will be conducted on July 18, 1990. All emergency response facilities will be fully activated, and the scenario will be driven by the simulator, as in past exercises. The successful demonstration of emergency response capabilities will depend on player response and protocol. The following information contains exercise details and instructions for the players regarding the exercise. Department Heads are responsible for ensuring that personnel are trained on this information.

A. General Guidelines

1. Exercise participants include the Exercise Coordinator, Players (including the NRC Incident Response Team), Controllers, Observers, and NRC Evaluators. Controllers will provide players with command and message cards to initiate emergency response actions. Observers and the NRC Evaluators will evaluate and note player actions. Controllers, Observers, and NRC Evaluators will be identified by badges.

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

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

   a. Initial conditions of the plant and systems including:

      - operating history of the core

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

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

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

d. Counting efficiency of all counting equipment.

e. Activity from nose swabs or skin contamination surveys.

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

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

b. Judgments as to which procedures should be used.

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

d. Assistance in performing actions in this exercise.

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, a Controller/Observer will provide appropriate direction.

6. Always identify and discuss your actions to the Controllers/Observers and NRC Evaluators.

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

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

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

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

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

12. If you disagree with your Controller/Observer, discuss your concerns. However, the Controller's/Observer'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 Controller/Observer 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, refer them to your lead player or Controller/ Observer.

15. You must respond as if radiation levels are actually present in accordance with the information you receive. This may require you to wear protective clothing, respirators, and additional dosimetry and adhere to radiation protection practices.

16. Controllers/Observers/NRC 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 these 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 Controller/Observer after the exercise. Areas for improvement or weaknesses when corrected will improve the overall emergency response capability.

B. <u>Player's Simulation List</u>

The following describes those specific actions which do not have to be performed and can be simulated by exercise participants. All

other actions are to be performed in accordance with plant procedures. No action will be allowed which alters or affects the ongoing operation of the plant. The simulation list is as follows:

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

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 using a "test" file available to the Simulator Control Room Meteorological Computer System.

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

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

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

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

8. No emergency response facility evacuation will be demonstrated during the exercise.

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

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

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

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

13. All decontamination actions associated with the exercise may be simulated after discussion and approval by the Controller/Observer.

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

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 Controller 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 Controller. Channel 3 should be utilized for all exercise messages.

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

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

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

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

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

D. Player's Gamesmanship

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 action.

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

3. Hold briefings regularly, at a minimum every 30 minutes.

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 Exercise Participation (Exempted Exercise Participants)

Procedures require that all exercise 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, the Governor Hunt House, the EOF/RC, the simulator area, the 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 normal activities. The Department Heads should review their area of responsibility and provide the Exercise Coordinator with a list of names and positions for anyone that should be exempted from exercise participation.

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

F. Off-Site Participation

This year, Vermont Yankee is conducting a small scale exercise which will involve the participation of the NRC Region I Incident Response Team. The NRC Region I will play a full participation role with a NRC Base Team located at the regional office in King of Prussia, Pennsylvania and the NRC Site Team at the Vermont Yankee emergency response facilities. No NRC Public Affairs participation is planned. The States of Vermont, New Hampshire, Massachusetts, and the local communities within the plume exposure pathway will have the opportunity to participate in the exercise.

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 Emergency Notification System (ENS) red phone.

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

c. NRC Region I Incident Response Team representatives and Vermont, New Hampshire, and Massachusetts State officials present at the EOF/RC and the News Media Center (NMC) will be notified by the appropriate Vermont Yankee personnel.

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 phone 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). Three critique sessions will be held:

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

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 and deficiencies 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.

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3.3 PROCEDURE EXECUTION LIST

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3.3 EMERGENCY PLAN IMPLEMENTING PROCEDURES EXECUTION LIST

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

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4.0 CONTROLLER/OBSERVER INFORMATION

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4.1 CONTROLLER/OBSERVER ASSIGNMENTS

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

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4.2 CONTROLLER AND OBSERVER EXERCISE GUIDANCE

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4.2 CONTROLLER AND OBSERVER EXERCISE GUIDANCE

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

Controllers/Observers 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 Controllers/Observers. Controllers/Observers 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 Controllers/Observers is to evaluate the emergency responses activities of the players. In order to document the adequacy of emergency response actions during the exercise, Controllers/Observers are required to complete the Emergency Exercise/Drill Observers Evaluation Form. When completing this form, Controllers/Observers should attempt to differentiate their comments into either adequate or potential deficiencies. For deficiencies of personnel, equipment, etc. provide recommendations for improvement which detail corrective actions, if possible.

Controllers/Observers should not allow their biases to be documented as recognized weakness or deficiencies. Comments and recommendations should be further subdivided under the general headings 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 Observer 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 center status boards were effectively used. Observers should document their comments in this area very carefully, providing sufficient details to track any recognized deficiencies.

Plans and Procedural comments should identify: (1) whether personnel were fami[illegible] 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 impaired the expected emergency response.

Scenario related comments should address: (1) whether sufficient information was available to ensure appropriate player response; (2) whether the scenario details deviated from actual procedural requirements; and (3) whether the

scenario detail provided any 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 Controllers/Observers.

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 communications available in the work area were adequate; (4) whether the noise level hindered emergency response efforts; and (5) whether sufficient references were available to complete the job assignment.

Off-site monitoring team observers should identify: (1) the adequacy of sampling methods; (2) the adequacy of contamination control measures; (3) the adequacy of reporting and documentation measures; and (4) the effectiveness of the team in defining the plume condition and sample locations. Dose projection techniques should be evaluated in conjunction with this general category. 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 Controller/Observer 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.

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4.3 CONTROLLER AND OBSERVER EVALUATION CRITERIA

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4.3 CONTROLLER AND OBSERVER EVALUATION CRITERIA

As discussed in Sections 4.1 and 4.2, each Controller/Observer has been assigned specific areas of response to evaluate. This section has been developed to assist the Controllers/Observers 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 Controller/Observer 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 Controller/Observer.

All three attachments should be completed and submitted to the facility Controller. Each Controller will then submit the attachments to the Exercise Coordinator for inclusion in the final exercise report.

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ATTACHMENT A

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

Time	Observation/Comment

Name: _____ Area Evaluated: _____

Date: _____

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ATTACHMENT A
(Continued)

Time	Observation/Comment

Name: _____ Area Evaluated: _____

Date: _____

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ATTACHMENT B

Vermont Yankee
Emergency Exercise/Drill Evaluation Check List

INSTRUCTIONS

The following evaluation check lists are provided to assist the Controllers/Observers with their evaluation of the drill/exercise. The Controllers/Observers should complete the check list(s) for their assigned location(s). To complete the evaluation check list(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.

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ATTACHMENT B
(Continued)

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ATTACHMENT B
(Continued)

I. CONTROL ROOM

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

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ATTACHMENT 1
(Continued)

I. CONTROL ROOM

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

Controller/Observer Name: _____

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ATTACHMENT B
(Continued)

II. TECHNICAL SUPPORT CENTER

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

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EMERGENCY RESPONSE PREPAREDNESS EXER[illegible]
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ATTACHMENT B
(Continued)

II. TECHNICAL SUPPORT CENTER

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

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ATTACHMENT B
(Continued)

II. TECHNICAL SUPPORT CENTER

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

Controller/Observer Name: _____

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ATTACHMENT B
(Continued)

III. OPERATIONS SUPPORT CENTER

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

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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ATTACHMENT B
(Continued)

III. OPERATIONS SUPPORT CENTER

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

VERMONT YANKEE NUCLEAR POWER STATION
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ATTACHMENT B
(Continued)

III. OPERATIONS SUPPORT CENTER

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

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

Controller/Observer Name: _____

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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

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ATTACHMENT B
(Continued)

IV. EMERGENCY OPERATIONS FACILITY/RECOVERY CENTER

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

C. Radiological Assessment

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

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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ATTACHMENT B
(Continued)

IV. EMERGENCY OPERATIONS FACILITY/RECOVERY CENTER

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

D. Protective Action Decision-Making

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

Controller/Observer Name: _____

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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ATTACHMENT B
(Continued)

V. SITE AND OFF-SITE MONITORING

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

Controller/Observer Name: _____

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ATTACHMENT B
(Continued)

VI. SECURITY

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

Controller/Observer Name: _____

VERMONT YANKEE NUCLEAR POWER STATION
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ATTACHMENT B
(Continued)

VII. NEWS MEDIA CENTER

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

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ATTACHMENT C

Emergency Exercise/Drill
Observer's Evaluation Form

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

Exercise/Drill Title: _____

Observer's Location: _____

Time Started: _____ Time Ended: _____

Observed:	Player	Function
	_____	_____
	_____	_____
	_____	_____

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

_____

_____

Recognized Deficiencies: _____

_____

_____

Comments and Recommendations (Specific): _____

_____

_____

NOTE:

Use additional pages as required.

Signature: _____ Title: _____

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ATTACHMENT C
(Continued)

Continued on Additional Pages _____Yes _____No

Signature: _____ Title: _____

Date: _____

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5.0 EXERCISE SCENARIO

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

5.1 INITIAL CONDITIONS

5. Regional Meteorological Forecast Information:

Mostly sunny today with variable winds becoming northwest 5 to 10 mph by late morning. High temperatures 75 to 80. Probability of precipitation less than 10%.

A high pressure system centered over Pennsylvania this morning will drift to the southeast and slowly weaken during the day. This system will dominate the weather today.

Table 5.1-1

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	162 inches
Reactor Pressure	1,006 psig
Reactor Power - APRM (average)	100%
Core Plate Differential Pressure	20.0 psid
Total Core Flow	46 mil lbs/hr
Main Steam Line Flow - Total	6.2 mil lbs/hr
Main Steam Line Radiation	194 mR/hr
Condenser Hotwell Level	56%
Condenser Vacuum	2.6 inches Hg(Abs)
Condensate Storage Tank Level	52%
Reactor Coolant Temperature	527 °F
Recirc Drive Flow (average)	30,000 gpm
Feedwater Flow	6.4 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches Hg
Drywell Pressure	1.70 psig
Drywell Temperature	140 °F
Torus Water Level	1.16 ft
Torus Temperature	72 °F
Drywell/Torus O_2 Concentration	2.6%
High Range Containment Monitors	2.7 R/hr
Containment Gas/Particulate	600/60,000 cpm
Reactor Building Vent Monitors Gas/Part	500/4,000 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	270 mR/hr
SJAE Discharge Rate	50,000 uCi/sec
Stack Gas I/II	150/200 cpm
High Range Noble Gas Monitor	0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

5.2 NARRATIVE SUMMARY

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

5.2 NARRATIVE SUMMARY

The scenario begins at 0700 with the simulator reactor running at approximately 100% power. The reactor has been in a steady state for the past sixteen months with no recent shutdowns. . Night orders have instructed the operations crew that containment de-inerting has been started for a scheduled power reduction and drywell entry. The Reactor Engineering staff has determined that power reduction should not exceed 1% per 3 minutes. The drywell entry is needed to accomplish repairs to the Drywell Reactor Recirculation Units (RRUs). RRUs 2 and 4 are showing abnormal amperage fluctuations. The Auxiliary Operators have also been directed to change the suction filters on the "B" Control Rod Drive (CRD) Pump. All other power generating and safety system equipment is operable.

At 0730, an earthquake is sensed on-site and could be felt at various locations around the plant. Upon confirmation that an earthquake has been sensed on-site, the Shift Supervisor should declare an UNUSUAL EVENT. The **UNUSUAL EVENT (approximately 0745)** is based upon AP 3125, "Natural Phenomenon", due to any earthquake sensed on-site as recognized by either observation, detection or notification.

The Shift Supervisor should initiate the appropriate notifications concerning the declaration of the UNUSUAL EVENT and changing plant conditions. The shift operations crew will initiate appropriate procedures to check plant instrumentation and to conduct visual inspections for an assessment of any potential damage caused by the earthquake.

At 0800, a high turbine vibration alarm occurs. The turbine trips on a high vibration signal causing an automatic reactor SCRAM signal. When the reactor SCRAM signal occurs, the control rods fail to insert causing the reactor to remain critical and an Anticipated Transient Without Scram (ATWS) condition exists. This results in reactor power remaining above 2%. The Main Steam Isolation Valves (MSIVs) are still open and pressure is being regulated by the Electric Pressure Regulator (EPR) and the turbine bypass valves to the Main Condenser.

An ALERT should be declared (approximately 0815) based upon AP 3125, "Loss of Systems or Equipment", due to failure of Reactor Protection System (RPS) to initiate or accomplish a required SCRAM.

Following the ALERT, 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.

The Control Room staff will initiate actions to stabilize the plant, and the operators will attempt to individually drive control rods into the reactor core. The control rods will be allowed to be inserted successfully. Operators will insert the control rods in accordance with Reactor Engineering directions.

By 0830, the "A" CRD Pump trips due to an electrical breaker problem. Operators will not be able to continue to insert control rods into the reactor core because both "A" and "B" CRD Pumps are not available. Plant personnel should be dispatched to investigate the problem on "A" CRD Pump or expedite the completion of the filter replacement on "B" CRD Pump.

By 0925, Loss of Main Condenser vacuum occurs due to condenser air in-leakage problems. Loss of condenser vacuum causes the closure of the MSIVs. The Main Condenser is no longer available as a heat sink. Control rods are still not fully inserted and reactor power is still above 2%.

By 0935, one of the CRD Pumps will be returned to service (depending upon plant corrective actions and decisions). Operators will be able to continue to individually drive control rods into the reactor core. Reactor power will be reduced as the control rods are successfully inserted.

A SITE AREA EMERGENCY should be declared (approximately 0945) based upon AP 3125, "Loss of Systems or Equipment", due to failure of Reactor Protection System (RPS) to initiate and accomplish a required SCRAM with the Main Condenser unavailable.

Upon primary containment isolation, operators will continue control rod insertion and implement actions to stabilize the plant. This will include using the Safety Relief Valves (SRVs), HPCI or RCIC with the torus as the heat sink to control reactor pressure and cooldown. Operators will also start RHR in the torus cooling mode and monitor torus temperature and level.

Reactor power reduction and pressure control will continue. Once all control rods have been inserted into the reactor core, operators will commence a reactor cooldown. Plant conditions will be stabilizing and remaining fairly constant for the next hour and thirty minutes. Plant discussions may begin on the possibility of de-escalation from the emergency phase to a recovery mode of operation.

At 1130, the Simulator Operator will insert a casualty that causes a large steam line break inside the primary containment. A rapid depressurization of the reactor will occur with a rapid increase in containment pressure. The rapid reactor pressure decrease causes fuel cladding failures and releases fission product gases into the primary containment. The containment radiation monitors will have increased significantly.

By 1135, a high drywell pressure alarm is received which initiates a Primary Containment Isolation of Groups 2, 3, and 4. The simulator control board will indicate that the Torus Purge Supply Valve (V16-19-10) did not close on Group 3 isolation. Reactor operator efforts to isolate the Torus Purge Supply Valve (V16-19-10) are unsuccessful. Area radiation monitors in the Reactor Building are increasing significantly. Plant Vent Stack monitors are indicating a release of radioactivity to the environment. The release pathway is associated with a flange being dislodged upstream of the Torus Purge Supply Valve (V16-19-10) in the Reactor Building.

A **GENERAL EMERGENCY** should be declared (approximately 1145) based upon AP 3125, "Fuel Damage," due to the loss of two of three fission product barriers with the potential loss of third.

By 1200, it is anticipated that on-site assistance teams should be dispatched to investigate the leak in the Reactor Building and the problem associated with the Torus Purge Supply Valve (V16-19-10).

By 1300, the repairs associated with the Torus Purge Supply Valve (V16-19-10) have been completed. The leakage into the Reactor Building is isolated.

By 1330, the plant is stabilized, and the Plant Vent Stack monitors have decreased. The source of the release into the Reactor Building has been controlled and isolated. Therefore, the release of radioactivity to the environment will continue to decrease with time based upon the volume exchange rate of the Reactor Building through Standby Gas Treatment System. De-escalation from the emergency phase into the recovery mode is now feasible.

At 1400, the exercise will be terminated.

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5.3 SCENARIO TIME LINE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

5.3 SCENARIO TIME LINE

CLOCK TIME	SCENARIO TIME	DESCRIPTION
0700	0:00	<--- Initial conditions established.
0715	0:15	
0730	0:30	<--- Earthquake sensed on-site.
0745	0:45	<--- UNUSUAL EVENT (AP 3125, NATURAL PHENOMENON) - Any Earthquake sensed on-site as recognized by either observation, detection, or notification.
0800	1:00	<--- Turbine vibration alarm. Turbine trips. Rx SCRAM signal occurs with control rods not inserting. ATWS condition exists.
0815	1:15	<--- ALERT (AP 3125, LOSS OF SYSTEMS OR EQUIPMENT) - Failure of Reactor Protection System (RPS) to initiate or accomplish a required SCRAM.
0830	1:30	<--- "A" CRD Pump trips. No CRD Pumps available to drive control rods. Plant personnel dispatch to investigate CRD Pump problems.
0845	1:45	
0900	2:00	***** Continued On Next Page ****

5.3 SCENARIO TIME LINE (continued)

CLOCK TIME	SCENARIO TIME	DESCRIPTION
0900	2:00	
0915	2:15	
0925	2:25	<--- Loss of Main Condenser vacuum causes MSIV closure. Control rods still not inserted and Reactor power above 2%.
0930	2:30	
0935	2:35	<--- CRD Pump returned to service. Operators continue to drive control rods.
0945	2:45	<--- SITE AREA EMERGENCY (AP 3125, LOSS OF SYSTEMS OR EQUIPMENT) - Failure of Reactor Protection System (RPS) to initiate and accomplish a required SCRAM with the Main Condenser unavailable.
1000	3:00	<--- Operators to continue control rod insertion and implement actions to stabilize the plant.
1015	3:15	<--- Reactor pressure and cooldown is being controlled. Plant conditions stabilizing and remaining fairly constant.
1030	3:30	
1045	3:45	
1100	4:00	
1115	4:15	

**** Continued On Next Page ****

5.3 SCENARIO TIME LINE (continued)

CLOCK TIME	SCENARIO TIME	DESCRIPTION
1115	4:15	
1130	4:30	<--- Steam Line Break Inside Primary Containment. Rapid depressurization occurs.
1135	4:35	<--- PCIS occurs (Groups 2,3,4). Problem with Torus Purge Supply Valve V16-19-10. ARMs in Rx Bldg. increasing significantly. Plant Vent Stack release begins.
1145	4:45	<--- GENERAL EMERGENCY (AP 3125, FUEL DAMAGE) - Loss of 2 of 3 fission product barriers with the potential loss of third.
1200	5:00	<--- Teams sent to investigate Reactor Building leakage and problem with the Torus Purge Supply Valve (V16-19-10).
1215	5:15	
1230	5:30	
1245	5:45	
1300	6:00	<--- Repairs to the Torus Purge Supply Valve (V16-19-10) have been completed. Leak into Reactor Building is isolated.
1315	6:15	

**** Continued On Next Page ****

5.3 SCENARIO TIME LINE (continued)

CLOCK TIME	SCENARIO TIME		DESCRIPTION
1330	6:30	-	<--- Plant is stabilized. Release from Plant Vent Stack has been controlled.
		-	De-escalation from the emergency phase into the recovery mode is possible.
		-	
1345	6:45	-	
		-	
		-	
1400	7:00	-	EXERCISE IS TERMINATED.

VERMONT YANKEE NUCLEAR POWER STATION
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5.4 DETAILED SEQUENCE OF EVENTS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

5.4 DETAILED SEQUENCE OF EVENTS

Clock Time	Scenario Time	Event/Action	Message	Command
Prior to 0700	00:00	EXPECTED CONTROL ROOM (CR) ACTIONS WILL BE IMPLEMENTED BY AN EXERCISE OPERATIONS CREW (INCLUDING SUFFICIENT NUMBER OF PRESTAGED INDIVIDUALS FROM THE VERMONT YANKEE EMERGENCY ORGANIZATION) LOCATED IN THE SIMULATOR COMPLEX IN THE CORPORATE TRAINING CENTER. OPERATIONAL CONTROL ROOM DATA WILL BE PROVIDED BY THE SIMULATOR INSTRUMENTATION RESPONSES. IN CASES WHERE SPECIFIC INFORMATION NOT MONITORED BY THE SIMULATOR IS REQUIRED, IT WILL BE ISSUED BY CONTROLLERS/OBSERVERS ON MESSAGE CARDS. IN THE EVENT THAT A SIMULATOR MALFUNCTION OCCURS, THE EXERCISE WILL BE CONDUCTED USING INFORMATION DEVELOPED FROM SECTION 8.0 AND SECTION 9.0.		

Clock Time	Scenario Time	Event/Action	Message	Command
Prior to 0700 (Cont'd)	00:00	The Simulator CR Controller issues initial conditions to the simulator CR players. Guidelines for use of Gaitronics and the plant evacuation alarm are provided to players.	SCR-M-1	SCR-C-1
		Initiating messages are also provided to all emergency centers and facility staffs upon subsequent activations. Operational and radiological data will be available to the TSC via TSC communicators who normally respond to the CR prestaged in the simulator. Security will be provided a list of Controllers/ Observers and nonparticipants who will not have to be accounted for during the exercise.	CR-M-1 TSC-M-1 TSC-M-2A TSC-M-2B OSC-M-1 SRM-M-1 EOF-M-1 ESC-M-1	
0700	00:00	Simulator is put into operation. Reactor power is at 100 percent power. The reactor has been operating steady state for the past 16 months with no recent shutdowns.		

Clock Time	Scenario Time	Event/Action	Message	Command
0700 (Cont'd)	00:00	Night orders have instructed the Operations crew that containment de-inerting has begun on the previous shift for a scheduled power reduction and drywell entry. The Reactor Engineering staff has determined that power reduction should not exceed 1% per three minutes. The drywell entry is needed to accomplish repairs to the Drywell Reactor Recirculation Units (RRUs). RRUs 2 and 4 are showing abnormal amperage fluctuations. The Auxiliary Operators have been directed to change the suction filters on the "B" Control Rod Drive (CRD) pump. All other power generating and safety system equipment is operable.		
0730	00:30	An earthquake is sensed on-site and can be felt at various locations around the plant.	SCR-M-2	
		Control Room operators should initiate Procedure OP-3127, "Natural Phenomena" which will instruct them to check plant instrumentation and to conduct visual inspections for an assessment of the potential damage caused by the earthquake.	SCR-M-3	

Clock Time	Scenario Time	Event/Action	Message	Command
0730 (Cont'd)	00:30	This will include checking indications on the seismic accelerometer and contacting Vernon and Bellows Falls dams for an assessment of dam status.	SCR-M-4	SCR-C-2
Approx. 0745	Approx. 00:45	The Shift Supervisor should declare an UNUSUAL EVENT based upon the following EAL: AP-3125, "NATURAL PHENOMENON - Any earthquake sensed on-site as recognized by either observation, detection or notification."		
		The SS/PED should initiate Procedure OP-3500, Unusual Event and refer to Appendix I, the SS/PED checklist.		
		Operators may dispatch other plant personnel (auxiliary operators or security force) to perform plant inspections/tours associated with the earthquake event and other plant activities.		
		FOR EXERCISE PURPOSES, EARLY IN-STATION ACTIONS MAY BE CONTROLLED AND PERFORMED BY THE SIMULATOR CONTROLLERS.		SCR-C-3

Clock Time	Scenario Time	Event/Action	Message	Command
Approx. 0745 (Cont'd)	Approx. 00:45	The SS/PED should announce the Unusual Event over the Plant Paging System. This activity will be performed by players in the Simulator CR, and simultaneously performed by a Controller directed member of the operating shift crew in the actual Control Room. The SS/PED should notify Vermont, New Hampshire, and Massachusetts State Police Agencies using the Nuclear Alert System (orange phone) and provide the appropriate message to each agency. The SS/PED should notify the NRC on the red 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.		

Clock Time	Scenario Time	Event/Action	Message	Command
Approx. 0745 (Cont'd)	Approx. 00:45	The Security Shift Supervisor should notify Yankee Nuclear Services Division (YNSD) Security and activate the YNSD Personnel Group Paging System.		
		The Security Shift Supervisor should also 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.		
		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.		

Clock Time	Scenario Time	Event/Action	Message	Command
		Activation of the Technical Support Center (TSC) is optional at the Unusual Event.		
0750	00:50	IF AN UNUSUAL EVENT HAS NOT BEEN DECLARED BY THE SS/PED, HE WILL BE DIRECTED TO DO SO AT THIS TIME.		SCR-C-4
		Plant personnel sent to perform a visual inspection of the plant will find no damage from the earthquake.	OSC-M-2	
0800	01:00	Simulator control board indicates high turbine vibration alarm.		
		Turbine trips on high vibration signal causing an automatic reactor SCRAM signal.		
		When the reactor SCRAM signal occurs, the control rods fail to insert causing the reactor to remain critical. An Anticipated Transient Without Scram (ATWS) condition exists. Reactor power is also above 2%.		

Clock Time	Scenario Time	Event/Action	Message	Command
0800 (Cont'd)	01:00	The SS/PED should notify the TSC Coordinator of the changing plant conditions, and that a partial reactor SCRAM occurred. The TSC Coordinator and SS/PED should start to review the plant conditions against Procedure AP-3125, "Emergency Plan Classification and Action Level Scheme." The Control Room personnel will be working to stabilize plant conditions, and the operators will start to manually drive control rods that have not fully inserted into the core. Operators will insert the control rods in accordance with Reactor Engineering directions. The Main Steam Isolation Valves (MSIVs) are still open, and pressure is being regulated by the Electric Pressure Regulator (EPR) and the turbine bypass valves to the Main Condenser.		

Clock Time	Scenario Time	Event/Action	Message	Command
Approx. 0815	Approx. 01:15	The SS/PED or TSC Coordinator should declare an ALERT based upon the following EAL: AP-3125, "LOSS OF SYSTEMS OR EQUIPMENT - Failure of the Reactor Protection System (RPS) to initiate or accomplish a required SCRAM."		
		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 return 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.		

Clock Time	Scenario Time	Event/Action	Message	Command
Approx. 0815 (Cont'd)	Approx. 01:15	The SS/PED should notify the Vermont, New Hampshire, and Massachusetts State Police Agencies of the escalation to the Alert emergency classification.		
		The NRC should be notified of the escalation to the Alert.		
		The Security Shift Supervisor should initiate the emergency call-in method for the Alert classification.		
		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.		
		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.		SEC-C-1

Clock Time	Scenario Time	Event/Action	Message	Command
Approx. 0815 (Cont'd)	Approx. 01:15	The TSC Coordinator should notify REMVEC of the Alert status and plant conditions.		
0820	01:20	The Security Shift Supervisor should ensure that an accountability of personnel has been initiated in accordance with procedures SP-0906, "Emergency Procedures" and 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."		
		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		

Clock Time	Scenario Time	Event/Action	Message	Command
0820 (Cont'd)	01:20	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 Keepers, Communicators, Switchboard Operators, etc.).		
0825	01:25	The Emergency Operations Facility (EOF) Coordinator should activate and staff the EOF/RC in accordance with Appendix IV of OP-3501, "Alert."		

Clock Time	Scenario Time	Event/Action	Message	Command
0825 (Cont'd)	01:25	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		

Clock Time	Scenario Time	Event/Action	Message	Command
0825 (Cont'd)	01:25	- 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 Specialist		
		3. Maintenance Staff		
		4. Status Board Caretaker		
		5. Other personnel as required.		

Clock Time	Scenario Time	Event/Action	Message	Command
0825 (Cont'd)	01:25	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." Radiation Protection Technicians from the OSC may be dispatched to perform dose rate radiation surveys, air sampling, and contamination surveys of the plant.		
0830	01:30	IF AN ALERT HAS NOT BEEN DECLARED BY THE SS/PED, HE WILL BE DIRECTED TO DO SO AT THIS TIME.		SCR-C-5
Approx. 0830	Approx. 01:30	Simulator control board indicates the "A" CRD pump has tripped. Operators will not be able to continue to insert control rods into the reactor core. The SS/PED should immediately inform the TSC Coordinator and SRM concerning the unavailability of both "A" and "B" CRD pumps.		

Clock Time	Scenario Time	Event/Action	Message	Command
Approx. 0935	Approx. 02:35	One of the CRD pumps will be declared operable and returned to service. Operators will be able to continue to individually drive control rods into the reactor core. Reactor power will be reduced as the control rods are successfully inserted.	OSC-M-5	
0935	02:35	The SRM, TSC Coordinator, and SS/PED should evaluate plant conditions against Procedure AP-3125, "Emergency Plan Classification and Action Level Scheme." The SRM with consultation from the TSC Coordinator and SS/PED should recognize the need to escalate to a Site Area Emergency.		
Approx. 0945	Approx. 02:45	The SRM should declare a SITE AREA EMERGENCY based upon the following EAL: AP-3125, "LOSS OF SYSTEMS OR EQUIPMENT - Failure of Reactor Protection System (RPS) to initiate and accomplish a required scram with the Main Condenser unavailable."		

Clock Time	Scenario Time	Event/Action	Message	Command
Approx. 0945 (Cont'd)	Approx. 02:45	If present, the SRM should inform the NRC Site Team representatives, the State representatives of Vermont, New Hampshire, and Massachusetts located at the EOF/RC and contact each State's EOCs via the Nuclear Alert System to inform them of the escalation to the Site Area Emergency. The SS/PED will also be directed to make the appropriate plant announcement concerning the escalation to the Site Area Emergency. Upgraded notifications should also be made to YNSD and the NRC.		
0950	02:50	Upon primary containment isolation, operators will continue control rod insertion and implement actions to stabilize the plant. This will include using the Safety Relief Valves (SRVs), HPCI, or RCIC with the torus as the heat sink to control reactor pressure and cooldown.		

Clock Time	Scenario Time	Event/Action	Message	Command
0950 (Cont'd)	02:50	Operators will also start RHR in the torus cooling mode and monitor torus temperature and level.		
1000	03:00	IF A SITE AREA EMERGENCY HAS NOT BEEN DECLARED BY THE SRM, HE WILL BE DIRECTED TO DO SO AT THIS TIME.		SRM-C-1
1030	03:30	Reactor power reduction and pressure control will continue. Plant conditions will be stabilizing and remaining fairly constant. Plant discussions may begin on the possibility of de-escalation from the emergency phase to a recovery mode of operation.		
1040	03:40	The ESC should be providing technical and engineering support to the Vermont Yankee staff. The ESC meteorologist should provide a specialized weather forecast for the Vermont Yankee site.	ESC-M-2	

Clock Time	Scenario Time	Event/Action	Message	Command
1130	04:30	A casualty will be inserted by Simulator Operator that causes a large steam line break inside the primary containment. A rapid depressurization of the reactor occurs with a rapid increase in containment pressure. The rapid reactor pressure decrease causes fuel cladding failures and releases fission product gases into the primary containment. The containment radiation monitors will have increased significantly.		
1135	04:35	A high drywell pressure alarm is received which initiates a Primary Containment Isolation of Groups 2, 3, and 4. Simulator control board will indicate that the Torus Purge Supply Valve V16-19-10 did not close on Group 3 isolation. Area radiation monitors in the Reactor Building are increasing significantly.		

Clock Time	Scenario Time	Event/Action	Message	Command
1135	04:35	Standby Gas Treatment System (SBGTS) initiated automatically on Group 3 isolation. Stack Gas Monitors I/II, and high-range plant vent stack monitor begin to increase as indicated by the simulator control board. The release pathway is associated with a flange being dislodged upstream of the Torus Purge Supply Valve V16-19-10 in the Reactor Building. Reactor operator efforts to isolate the Torus Purge Supply Valve V16-19-10 are unsuccessful.		
Approx. 1145	Approx. 04:45	The SRM, with consultation from the TSC Coordinator and SS/PED, should recognize the need to escalate to a General Emergency. The SRM should declare a GENERAL EMERGENCY based upon the following EAL: AP-3125, "FUEL DAMAGE - Loss of 2 of 3 fission product barriers with potential loss of third."		

Clock Time	Scenario Time	Event/Action	Message	Command
1150	04:50	Stack gas monitors continue to escalate due to noble gases and iodines passing through the standby gas treatment charcoal filters. The appropriate EOF staff should initiate Procedure OP-3513, "Evaluation of Off-Site Radiological Conditions," to determine off-site dose projections. Off-Site Monitoring Teams should be dispatched to monitor the plume in the downwind direction. The EOF Coordinator and Radiological Assistant should initiate Procedure OP-3511, "Off-Site Protective Action Recommendations," to formulate protective action recommendations based upon off-site radiological conditions. The SS/PED should inform the TSC Coordinator and SRM that the Torus Purge Supply Valve V16-19-10 did not close upon Group 3 isolation and attempts to isolate the valve were unsuccessful.		

Clock Time	Scenario Time	Event/Action	Message	Command
1200	05:00	IF A GENERAL EMERGENCY HAS NOT BEEN DECLARED BY THE SRM, HE WILL BE DIRECTED TO DO SO AT THIS TIME.		SRM-C-2
Approx. 1200	Approx. 05:00	Team should be requested to take a plant vent stack sample (refer to Procedure OP-3530, "Post-Accident Sampling").		
		Plant personnel should be looking for the source of the leakage into the Reactor Building.		
		On-site assistance teams may be dispatched to investigate the leak in the Reactor Building.		
Approx. 1200	Approx. 05:00	TSC personnel should also be investigating the problem associated with the Torus Purge Supply Valve V16-19-10 (refer to Miniscenario 7.2.2).		
Approx. 1215	Approx. 05:15	The team sent to investigate the problem with the Torus Purge Supply Valve V16-19-10 will find that the valve indication is open. Corrective actions to close the valve will be expected to occur by the team.	OSC-M-6 OSC-M-7	

Clock Time	Scenario Time	Event/Action	Message	Command
1230	05:30	The ESC has reviewed the latest NWS forecast and has updated meteorological information for the site.	ESC-M-3	
		An updated weather forecast is available from NWS.	EOF-M-3	
		IF NOT ALREADY DONE, THE TSC COORDINATOR WILL BE DIRECTED TO DISPATCH ON-SITE ASSISTANCE TEAM TO INVESTIGATE PROBLEM WITH THE TORUS PURGE SUPPLY VALVE V16-19-10.		TSC-C-1
1245	05:45	IF A NATIONAL WEATHER SERVICE UPDATE HAS NOT BEEN REQUESTED BY THE RA, HE WILL BE PROVIDED WITH ONE.		EOF-C-1
Approx. 1300	Approx. 06:00	Repairs associated with the Torus Purge Supply Valve V16-19-10 have been completed.	OSC-M-8 OSC-M-9	SCR-C-6
		Simulator control board indications show that the Torus Purge Supply Valve V16-19-10 has closed. Leakage past the Torus Purge Supply Valve has stopped.		

Clock Time	Scenario Time	Event/Action	Message	Command
Approx. 1300	Approx. 06:00	The leak into the Reactor Building is isolated.		
1330	06:30	Control Room indications show that plant conditions are stabilizing and the plant vent stack monitors have decreased. The source of the fission product release into the Reactor Building has been controlled and isolated. The release of radioactivity to the environment will continue to decrease with time based upon the volume exchange rate of the Reactor Building through Standby Gas Treatment System. De-escalation from the emergency phase into the recovery mode is now possible.		
Approx. 1400	Approx. 07:00	Exercise is terminated.		

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

6.0 EXERCISE MESSAGES

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VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

6.1 COMMAND CARDS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-1
TO:	Shift Supervisor	CLOCK TIME:	Prior to 0700
LOCATION:	Simulator Control Room	SCENARIO TIME:	Prior to 00:00

PARTICIPANT MESSAGE
THIS IS A DRILL

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

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-2
TO:	Shift Supervisor	CLOCK TIME:	0730
LOCATION:	Simulator Control Room	SCENARIO TIME:	00:30

PARTICIPANT MESSAGE
THIS IS A DRILL

For exercise purposes, Control Room communications with Vernon and Bellow Falls Dams will be simulated.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-3
TO:	Shift Supervisor	CLOCK TIME:	0745
LOCATION:	Simulator Control Room	SCENARIO TIME:	00:45

PARTICIPANT MESSAGE
THIS IS A DRILL

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO COMMAND CARD

FROM:	Security Controller	COMMAND NO.:	SEC-C-1
TO:	Security Supervisor	CLOCK TIME:	0745 or when needed
LOCATION:	Security Gatehouse	SCENARIO TIME:	00:45

PARTICIPANT MESSAGE
THIS IS A DRILL

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-4
TO:	Shift Supervisor	CLOCK TIME:	0750
LOCATION:	Simulator Control Room	SCENARIO TIME:	00:50

PARTICIPANT MESSAGE
THIS IS A DRILL

DECLARE AN UNUSUAL EVENT BASED UPON AP-3125, NATURAL PHENOMENON, ANY EARTHQUAKE SENSED ON-SITE AS RECOGNIZED BY EITHER OBSERVATION, DETECTION, OR NOTIFICATION.

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

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-5
TO:	Shift Supervisor/Plant Emergency Director	CLOCK TIME:	0830
LOCATION:	Simulator Control Room	SCENARIO TIME:	01:30

PARTICIPANT MESSAGE
THIS IS A DRILL

DECLARE AN ALERT BASED UPON AP-3125, LOSS OF SYSTEMS OR EQUIPMENT - FAILURE OF THE REACTOR PROTECTION SYSTEM (RPS) TO INITIATE OR ACCOMPLISH A REQUIRED SCRAM.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO COMMAND CARD

FROM:	SRM Controller	COMMAND NO.:	SRM-C-1
TO:	Site Recovery Manager	CLOCK TIME:	1000
LOCATION:	EOF/RC	SCENARIO TIME:	03:00

PARTICIPANT MESSAGE
THIS IS A DRILL

DECLARE A SITE AREA EMERGENCY BASED UPON AP-3125, LOSS OF SYSTEMS OR EQUIPMENT - FAILURE OF THE REACTOR PROTECTION SYSTEM (RPS) TO INITIATE AND ACCOMPLISH A REQUIRED SCRAM WITH THE MAIN CONDENSER UNAVAILABLE.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO COMMAND CARD

FROM:	SRM Controller	COMMAND NO.:	SRM-C-2
TO:	Site Recovery Manager	CLOCK TIME:	1200
LOCATION:	EOF/RC	SCENARIO TIME:	05:00

PARTICIPANT MESSAGE
THIS IS A DRILL

DECLARE A GENERAL EMERGENCY BASED UPON AP-3125, FUEL DAMAGE, DUE TO LOSS OF TWO OF THREE FISSION PRODUCT BARRIERS WITH THE POTENTIAL LOSS OF THE THIRD.

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

FROM:	EOF Controller	COMMAND NO.:	EOF-C-1
TO:	Radiological Assistant	CLOCK TIME:	1245
LOCATION:	EOF/RA-Dose Assessment Area	SCENARIO TIME:	05:45

PARTICIPANT MESSAGE
THIS IS A DRILL

REQUEST A WEATHER FORECAST FROM ESC AT THIS TIME.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-6
TO:	Shift Supervisor	CLOCK TIME:	1300 or as needed
LOCATION:	Simulator Control Room	SCENARIO TIME:	06:00

PARTICIPANT MESSAGE
THIS IS A DRILL

REPAIRS TO THE TORUS PURGE SUPPLY VALVE V-16-19-10 HAVE BEEN COMPLETED. SIMULATOR CONTROL BOARD INDICATIONS SHOW THAT THE TORUS PURGE SUPPLY VALVE V16-19-10 HAS CLOSED. LEAKAGE INTO THE REACTOR BUILDING IS ISOLATED.

MAKE SURE THIS INFORMATION IS TOLL TO THE SITE RECOVERY MANAGER AND TSC COORDINATOR.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

6.2 MESSAGE CARDS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	Simulator CR Controller	MESSAGE NO.:	SCR-M-1
TO:	Shift Supervisor	CLOCK TIME:	Prior to 0700
LOCATION:	Simulator Control Room	SCENARIO TIME:	00:00

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

INITIAL CONDITIONS

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

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

2. Night orders for the operations crew are as follows:

   a. Containment de-inerting has commenced on the previous shift for a scheduled power reduction and Drywell entry. Reactor Engineering staff has determined that power reduction should not exceed 1% per 3 minutes.

   b. The Drywell entry is needed to accomplish repairs to the Drywell Reactor Recirculation Units (RRUs). RRUs 2 and 4 are showing abnormal amperage fluctuations.

   c. The Auxiliary Operators are changing the suction filters on the "B" Control Rod Drive (CRD) Pump.

3. All other power generating and safety system equipment is operable.

4. The following on-site meteorological conditions exist at 0700:

Wind Speed , mph (lower/upper)	2.8/5.6
Wind Direction , degrees (lower/upper)	10/348
Delta Temperature , °F (lower/upper)	-0.7/-0.6
Ambient Temperature , °F	53.4
Precipitation , inches	0.0

5. Regional Meteorological Forecast Information:

Mostly sunny today with variable winds becoming northwest 5 to 10 mph by late morning. High temperatures 75 to 80. Probability of precipitation less than 10%.

A high pressure system centered over Pennsylvania this morning will drift to the southeast and slowly weaken during the day. This system will dominate the weather today.

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	162 inches
Reactor Pressure	1,006 psig
Reactor Power - APRM (average)	100%
Core Plate Differential Pressure	20.0 psid
Total Core Flow	46 mil lbs/hr
Main Steam Line Flow - Total	6.2 mil lbs/hr
Main Steam Line Radiation	194 mR/hr
Condenser Hotwell Level	56%
Condenser Vacuum	2.6 inches Hg(Abs)
Condensate Storage Tank Level	52%
Reactor Coolant Temperature	527 °F
Recirc Drive Flow (average)	30,000 gpm
Feedwater Flow	6.4 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches Hg
Drywell Pressure	1.70 psig
Drywell Temperature	140 °F
Torus Water Level	1.16 ft
Torus Temperature	72 °F
Drywell/Torus O_2 Concentration	2.6%
High Range Containment Monitors	2.7 R/hr
Containment Gas/Particulate	600/60,000 cpm
Reactor Building Vent Monitors Gas/Part	500/4,000 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	270 mR/hr
SJAE Discharge Rate	50,000 uCi/sec
Stack Gas I/II	150/200 cpm
High Range Noble Gas Monitor	0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	Control Room Controller	MESSAGE NO.:	CR-M-1
TO:	Control Room Communicator	CLOCK TIME:	Prior to 0700
LOCATION:	Control Room	SCENARIO TIME:	00:00

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

INITIAL CONDITIONS

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

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

2. Night orders for the operations crew are as follows:

   a. Containment de-inerting has commenced on the previous shift for a scheduled power reduction and Drywell entry. Reactor Engineering staff has determined that power reduction should not exceed 1% per 3 minutes.

   b. The Drywell entry is needed to accomplish repairs to the Drywell Reactor Recirculation Units (RRUs). RRUs 2 and 4 are showing abnormal amperage fluctuations.

   c. The Auxiliary Operators are changing the suction filters on the "B" Control Rod Drive (CRD) Pump.

3. All other power generating and safety system equipment is operable.

4. The following on-site meteorological conditions exist at 0700:

Wind Speed , mph (lower/upper)	2.8/5.6
Wind Direction , degrees (lower/upper)	10/348
Delta Temperature , °F (lower/upper)	-0.7/-0.6
Ambient Temperature , °F	53.4
Precipitation , inches	0.0

5. Regional Meteorological Forecast Information:

Mostly sunny today with variable winds becoming northwest 5 to 10 mph by late morning. High temperatures 75 to 80. Probability of precipitation less than 10%.

A high pressure system centered over Pennsylvania this morning will drift to the southeast and slowly weaken during the day. This system will dominate the weather today.

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	162 inches
Reactor Pressure	1,006 psig
Reactor Power - APRM (average)	100%
Core Plate Differential Pressure	20.0 psid
Total Core Flow	46 mil lbs/hr
Main Steam Line Flow - Total	6.2 mil lbs/hr
Main Steam Line Radiation	194 mR/hr
Condenser Hotwell Level	56%
Condenser Vacuum	2.6 inches Hg(Abs)
Condensate Storage Tank Level	52%
Reactor Coolant Temperature	527 °F
Recirc Drive Flow (average)	30,000 gpm
Feedwater Flow	6.4 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches Hg
Drywell Pressure	1.70 psig
Drywell Temperature	140 °F
Torus Water Level	1.16 ft
Torus Temperature	72 °F
Drywell/Torus O_2 Concentration	2.6%
High Range Containment Monitors	2.7 R/hr
Containment Gas/Particulate	600/60,000 cpm
Reactor Building Vent Monitors Gas/Part	500/4,000 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	270 mR/hr
SJAE Discharge Rate	50,000 uCi/sec
Stack Gas I/II	150/200 cpm
High Range Noble Gas Monitor	0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

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

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached page

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

INITIAL CONDITIONS

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

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

2. Night orders for the operations crew are as follows:

   a. Containment de-inerting has commenced on the previous shift for a scheduled power reduction and Drywell entry. Reactor Engineering staff has determined that power reduction should not exceed 1% per 3 minutes.

   b. The Drywell entry is needed to accomplish repairs to the Drywell Reactor Recirculation Units (RRUs). RRUs 2 and 4 are showing abnormal amperage fluctuations.

   c. The Auxiliary Operators are changing the suction filters on the "B" Control Rod Drive (CRD) Pump.

3. All other power generating and safety system equipment is operable.

4. The following on-site meteorological conditions exist at 0700:

Wind Speed , mph (lower/upper)	2.8/5.6
Wind Direction , degrees (lower/upper)	10/348
Delta Temperature , °F (lower/upper)	-0.7/-0.6
Ambient Temperature , °F	53.4
Precipitation , inches	0.0

5. Regional Meteorological Forecast Information:

Mostly sunny today with variable winds becoming northwest 5 to 10 mph by late morning. High temperatures 75 to 80. Probability of precipitation less than 10%.

A high pressure system centered over Pennsylvania this morning will drift to the southeast and slowly weaken during the day. This system will dominate the weather today.

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	162 inches
Reactor Pressure	1,006 psig
Reactor Power - APRM (average)	100%
Core Plate Differential Pressure	20.0 psid
Total Core Flow	46 mil lbs/hr
Main Steam Line Flow - Total	6.2 mil lbs/hr
Main Steam Line Radiation	194 mR/hr
Condenser Hotwell Level	56%
Condenser Vacuum	2.6 inches Hg(Abs)
Condensate Storage Tank Level	52%
Reactor Coolant Temperature	527 °F
Recirc Drive Flow (average)	30,000 gpm
Feedwater Flow	6.4 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches Hg
Drywell Pressure	1.70 psig
Drywell Temperature	140 °F
Torus Water Level	1.16 ft
Torus Temperature	72 °F
Drywell/Torus O_2 Concentration	2.6%
High Range Containment Monitors	2.7 R/hr
Containment Gas/Particulate	600/60,000 cpm
Reactor Building Vent Monitors Gas/Part	500/4,000 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	270 mR/hr
SJAE Discharge Rate	50,000 uCi/sec
Stack Gas I/II	150/200 cpm
High Range Noble Gas Monitor	0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

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

PARTICIPANT MESSAGE

THIS IS A DRILL

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

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

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

PARTICIPANT MESSAGE

THIS IS A DRILL

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

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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SCENARIO MESSAGE CARDS

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

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

INITIAL CONDITIONS

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

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

2. Night orders for the operations crew are as follows:

   a. Containment de-inerting has commenced on the previous shift for a scheduled power reduction and Drywell entry. Reactor Engineering staff has determined that power reduction should not exceed 1% per 3 minutes.

   b. The Drywell entry is needed to accomplish repairs to the Drywell Reactor Recirculation Units (RRUs). RRUs 2 and 4 are showing abnormal amperage fluctuations.

   c. The Auxiliary Operators are changing the suction filters on the "B" Control Rod Drive (CRD) Pump.

3. All other power generating and safety system equipment is operable.

4. The following on-site meteorological conditions exist at 0700:

Wind Speed , mph (lower/upper)	2.8/5.6
Wind Direction , degrees (lower/upper)	10/348
Delta Temperature , °F (lower/upper)	-0.7/-0.6
Ambient Temperature , °F	53.4
Precipitation , inches	0.0

5. Regional Meteorological Forecast Information:

Mostly sunny today with variable winds becoming northwest 5 to 10 mph by late morning. High temperatures 75 to 80. Probability of precipitation less than 10%.

A high pressure system centered over Pennsylvania this morning will drift to the southeast and slowly weaken during the day. This system will dominate the weather today.

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	162 inches
Reactor Pressure	1,006 psig
Reactor Power - APRM (average)	100%
Core Plate Differential Pressure	20.0 psid
Total Core Flow	46 mil lbs/hr
Main Steam Line Flow - Total	6.2 mil lbs/hr
Main Steam Line Radiation	194 mR/hr
Condenser Hotwell Level	56%
Condenser Vacuum	2.6 inches Hg(Abs)
Condensate Storage Tank Level	52%
Reactor Coolant Temperature	527 °F
Recirc Drive Flow (average)	30,000 gpm
Feedwater Flow	6.4 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches Hg
Drywell Pressure	1.70 psig
Drywell Temperature	140 °F
Torus Water Level	1.16 ft
Torus Temperature	72 °F
Drywell/Torus O_2 Concentration	2.6%
High Range Containment Monitors	2.7 R/hr
Containment Gas/Particulate	600/60,000 cpm
Reactor Building Vent Monitors Gas/Part	500/4,000 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	270 mR/hr
SJAE Discharge Rate	50,000 uCi/sec
Stack Gas I/II	150/200 cpm
High Range Noble Gas Monitor	0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

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

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

INITIAL CONDITIONS

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

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

2. Night orders for the operations crew are as follows:

   a. Containment de-inerting has commenced on the previous shift for a scheduled power reduction and Drywell entry. Reactor Engineering staff has determined that power reduction should not exceed 1% per 3 minutes.

   b. The Drywell entry is needed to accomplish repairs to the Drywell Reactor Recirculation Units (RRUs). RRU [illegible]d 4 are showing abnormal amperage fluctuations.

   c. The Auxiliary Operators are changing the suction filters on the "B" Control Rod Drive (CRD) Pump.

3. All other power generating and safety system equipment is operable.

4. The following on-site meteorological conditions exist at 0700:

Wind Speed , mph (lower/upper)	2.8/5.6
Wind Direction , degrees (lower/upper)	10/348
Delta Temperature , °F (lower/upper)	-0.7/-0.6
Ambient Temperature , °F	53.4
Precipitation , inches	0.0

5. Regional Meteorological Forecast Information:

Mostly sunny today with variable winds becoming northwest 5 to 10 mph by late morning. High temperatures 75 to 80. Probability of precipitation less than 10%.

A high pressure system centered over Pennsylvania this morning will drift to the southeast and slowly weaken during the day. This system will dominate the weather today.

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	162 inches
Reactor Pressure	1,006 psig
Reactor Power - APRM (average)	100%
Core Plate Differential Pressure	20.0 psid
Total Core Flow	46 mil lbs/hr
Main Steam Line Flow - Total	6.2 mil lbs/hr
Main Steam Line Radiation	194 mR/hr
Condenser Hotwell Level	56%
Condenser Vacuum	2.6 inches Hg(Abs)
Condensate Storage Tank Level	52%
Reactor Coolant Temperature	527 °F
Recirc Drive Flow (average)	30,000 gpm
Feedwater Flow	6.4 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches Hg
Drywell Pressure	1.70 psig
Drywell Temperature	140 °F
Torus Water Level	1.16 ft
Torus Temperature	72 °F
Drywell/Torus O_2 Concentration	2.6%
High Range Containment Monitors	2.7 R/hr
Containment Gas/Particulate	600/60,000 cpm
Reactor Building Vent Monitors Gas/Part	500/4,000 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	270 mR/hr
SJAE Discharge Rate	50,000 uCi/sec
Stack Gas I/II	150/200 cpm
High Range Noble Gas Monitor	0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

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

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

INITIAL CONDITIONS

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

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

2. Night orders for the operations crew are as follows:

   a. Containment de-inerting has commenced on the previous shift for a scheduled power reduction and Drywell entry. Reactor Engineering staff has determined that power reduction should not exceed 1% per 3 minutes.

   b. The Drywell entry is needed to accomplish repairs to the Drywell Reactor Recirculation Units (RRUs). RRUs 2 and 4 are showing abnormal amperage fluctuations.

   c. The Auxiliary Operators are changing the suction filters on the "B" Control Rod Drive (CRD) Pump.

3. All other power generating and safety system equipment is operable.

4. The following on-site meteorological conditions exist at 0700:

Wind Speed , mph (lower/upper)	2.8/5.6
Wind Direction , degrees (lower/upper)	10/348
Delta Temperature , °F (lower/upper)	-0.7/-0.6
Ambient Temperature , °F	53.4
Precipitation , inches	0.0

5. Regional Meteorological Forecast Information:

Mostly sunny today with variable winds becoming northwest 5 to 10 mph by late morning. High temperatures 75 to 80. Probability of precipitation less than 10%.

A high pressure system centered over Pennsylvania this morning will drift to the southeast and slowly weaken during the day. This system will dominate the weather today.

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	162 inches
Reactor Pressure	1,006 psig
Reactor Power - APRM (average)	100%
Core Plate Differential Pressure	20.0 psid
Total Core Flow	46 mil lbs/hr
Main Steam Line Flow - Total	6.2 mil lbs/hr
Main Steam Line Radiation	194 mR/hr
Condenser Hotwell Level	56%
Condenser Vacuum	2.6 inches Hg(Abs)
Condensate Storage Tank Level	52%
Reactor Coolant Temperature	527 °F
Recirc Drive Flow (average)	30,000 gpm
Feedwater Flow	6.4 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches Hg
Drywell Pressure	1.70 psig
Drywell Temperature	140 °F
Torus Water Level	1.16 ft
Torus Temperature	72 °F
Drywell/Torus O_2 Concentration	2.6%
High Range Containment Monitors	2.7 R/hr
Containment Gas/Particulate	600/60,000 cpm
Reactor Building Vent Monitors Gas/Part	500/4,000 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	270 mR/hr
SJAE Discharge Rate	50,000 uCi/sec
Stack Gas I/II	150/200 cpm
High Range Noble Gas Monitor	0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

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

PARTICIPANT MESSAGE

THIS IS A DRILL

For initial conditions, see attached pages.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

INITIAL CONDITIONS

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

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

2. Night orders for the operations crew are as follows:

   a. Containment de-inerting has commenced on the previous shift for a scheduled power reduction and Drywell entry. Reactor Engineering staff has determined that power reduction should not exceed 1% per 3 minutes.

   b. The Drywell entry is needed to accomplish repairs to the Drywell Reactor Recirculation Units (RRUs). RRUs 2 and 4 are showing abnormal amperage fluctuations.

   c. The Auxiliary Operators are changing the suction filters on the "B" Control Rod Drive (CRD) Pump.

3. All other power generating and safety system equipment is operable.

4. The following on-site meteorological conditions exist at 0700:

Wind Speed , mph (lower/upper)	2.8/5.6
Wind Direction , degrees (lower/upper)	10/348
Delta Temperature , °F (lower/upper)	-0.7/-0.6
Ambient Temperature , °F	53.4
Precipitation , inches	0.0

5. Regional Meteorological Forecast Information:

Mostly sunny today with variable winds becoming northwest 5 to 10 mph by late morning. High temperatures 75 to 80. Probability of precipitation less than 10%.

A high pressure system centered over Pennsylvania this morning will drift to the southeast and slowly weaken during the day. This system will dominate the weather today.

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	162 inches
Reactor Pressure	1,006 psig
Reactor Power - APRM (average)	100%
Core Plate Differential Pressure	20.0 psid
Total Core Flow	46 mil lbs/hr
Main Steam Line Flow - Total	6.2 mil lbs/hr
Main Steam Line Radiation	194 mR/hr
Condenser Hotwell Level	56%
Condenser Vacuum	2.6 inches Hg(Abs)
Condensate Storage Tank Level	52%
Reactor Coolant Temperature	527 °F
Recirc Drive Flow (average)	30,000 gpm
Feedwater Flow	6.4 mil lbs/hr
Reactor Building Differential Pressure	-0.75 inches Hg
Drywell Pressure	1.70 psig
Drywell Temperature	140 °F
Torus Water Level	1.16 ft
Torus Temperature	72 °F
Drywell/Torus O_2 Concentration	2.6%
High Range Containment Monitors	2.7 R/hr
Containment Gas/Particulate	600/60,000 cpm
Reactor Building Vent Monitors Gas/Part	500/4,000 cpm
Reactor Building Vent Exhaust N/S	1.5/1.5 mR/hr
Steam Jet Air Ejector	270 mR/hr
SJAE Discharge Rate	50,000 uCi/sec
Stack Gas I/II	150/200 cpm
High Range Noble Gas Monitor	0.1 mR/hr

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	Simulator CR Controller	MESSAGE NO.:	SCR-M-2
TO:	Shift Supervisor	CLOCK TIME:	0730
LOCATION:	Simulator CR	SCENARIO TIME:	00:30

PARTICIPANT MESSAGE

THIS IS A DRILL

Guard House called to report that they sensed the ground moving and that abnormal river motion was observed.

A plant technician who was working in the South Warehouse called to report that he felt the floor moving and several items rattled on the storage racks.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	Simulator CR Controller	MESSAGE NO.:	SCR-M-3
TO:	Shift Supervisor	CLOCK TIME:	0735
LOCATION:	Simulator CR	SCENARIO TIME:	00:35

PARTICIPANT MESSAGE

THIS IS A DRILL

Auxiliary Operator reports a positive indication on the seismic accelerometer.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	Simulator CR Controller	MESSAGE NO.:	SCR-M-4
TO:	Shift Supervisor	CLOCK TIME:	Approximately 0740
LOCATION:	Simulator CR	SCENARIO TIME:	00:40

PARTICIPANT MESSAGE

THIS IS A DRILL

Dam personnel from the Vernon and Bellows Falls Dams have been contacted and report that they have observed abnormal river motion, but the dam is intact and exhibit no signs of damage or failure.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	OSC Observer	MESSAGE NO.:	OSC-M-2
TO:	AO or Plant Personnel Investigating Earthquake Damage	CLOCK TIME:	Approximately 0750 or as needed
LOCATION:	Plant Site	SCENARIO TIME:	00:50

PARTICIPANT MESSAGE

THIS IS A DRILL

Upon inspection for damages caused by the earthquake, you have noticed no visual damage to plant equipment.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	OSC Observer	MESSAGE NO.:	OSC-M-3
TO:	On-Site Assistance Team	CLOCK TIME:	Approximately 0830 or as needed
LOCATION:	Reactor Building	SCENARIO TIME:	01:30

PARTICIPANT MESSAGE

THIS IS A DRILL

Team investigating problem with the "A" CRD pump:

- Visual inspection of the "A" CRD pump breaker reveals the relay is burnt.
- Estimated time to repair the breaker is approximately one hour.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	OSC Observer	MESSAGE NO.:	OSC-M-4
TO:	AO or On-Site Assistance Team	CLOCK TIME:	Approximately 0830 or as needed
LOCATION:	Reactor Building, El. 232'-6"	SCENARIO TIME:	01:30

PARTICIPANT MESSAGE

THIS IS A DRILL

Estimated time to complete the suction filter change on the "B" CRD pump is approximately one hour.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	News Media Center Observer	MESSAGE NO.:	NMC-M-1
TO:	News Media Center Staff	CLOCK TIME:	0845
LOCATION:	News Media Center	SCENARIO TIME:	01:45

PARTICIPANT MESSAGE

THIS IS A DRILL

(The following information was heard on the local radio stations and local television network.)

This morning an earthquake was felt in southern Vermont at around 7:30 a.m. The New England Seismic Network estimated the magnitude at 4.8 on the Richter scale. The epicenter was located near the town of Northfield, Massachusetts (latitude 43 degrees, 43 minutes and longitude 72 degrees, 28 minutes) approximately 11 to 12 miles southeast of Brattleboro, Vermont. No casualties or road and bridge damage have been reported, according to local Brattleboro officials. However, several chimneys have fallen and telephone service was temporarily interrupted in the Greenfield, Massachusetts area. Scientists from the New England Seismic Network have also stated that after shocks may be felt throughout the day.

While it may be surprising to most people, an average of five earthquakes are felt somewhere in New England each year. The probabilities of a damaging earthquake occuring somewhere in New England are small by worldwide standards. The chances that a potentially damaging earthquake, of equal or greater value than the one that occurred today will repeat somewhere in New England, are 1 in 300 per year.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	OSC Observer	MESSAGE NO.:	OSC-M-5
TO:	On-Site Assistance Team	CLOCK TIME:	Approximately 0935 or as needed
LOCATION:	Reactor Building	SCENARIO TIME:	02:35

PARTICIPANT MESSAGE

THIS IS A DRILL

Repairs to the CRD pump are completed. The CRD pump is operable and can be returned to service.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	ESC Controller	MESSAGE NO.:	ESC-M-2
TO:	ESC Meteorologist	CLOCK TIME:	1040 or as requested
LOCATION:	ESC Yankee Atomic Electric Co.	SCENARIO TIME:	03:40

PARTICIPANT MESSAGE

THIS IS A DRILL

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

THIS IS A DRILL

WEATHER FORECAST FOR SITE: VERMONT YANKEE

Date of Forecast: _____
Time of Forecast: 1000

Current Site Meteorology (as of 0945):

	Wind Speed	Wind Direction	Delta-Temperature	Stability	Precipitation
Lower	4.9 mph	10 deg from	-1.5 °F	C	0.00 in/15 min
Upper	5.4 mph	345 deg from	-1.5 °F	D	

Forecast Site Meteorology:

	Time		Wind Speed	Wind Direction	Delta-Temperature	Stability	Precipitation
A.	1000-1100	Lower	4 mph	350 deg from	-- °F	C	0.00in/15 min
		Upper	8 mph	345 deg from	-- °F	D	
B.	1100-1200	Lower	6 mph	330 deg from	-- °F	B	0.00in/15 min
		Upper	10 mph	335 deg from	-- °F	C	
C.	1200-1300	Lower	5 mph	320 deg from	-- °F	B	0.00in/15 min
		Upper	10 mph	315 deg from	-- °F	C	

National Weather Service Forecast for site region:

Mostly sunny today, with variable winds becoming northwest 5 to 10 mph by late morning. High temperatures will be 75°F to 80°F. Probability of precipitation less than 10%.

A high pressure system centered over Pennslyvania this morning will drift to the southeast and slowly weaken during the day. This system will dominate the weather today.

Special Weather Statements:

Winds predominantly from the north to north northwest. Neutral to slightly unstable conditions should persist throughout the day.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	OSC Observer	MESSAGE NO.:	OSC-M-6
TO:	On-Site Assistance Team	CLOCK TIME:	Approximately 1215 or as needed
LOCATION:	Reactor Building, El. 252' - South Side	SCENARIO TIME:	05:15

PARTICIPANT MESSAGE

THIS IS A DRILL

Upon arrival at the south side to the Reactor Building, El. 252', you observe the following:

- o You can hear a hissing sound coming from the south wall of the Reactor Building.
- o Upon looking up near the south wall, you see the bottom flange of Valve V16-19-9 dislodged.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	OSC Observer	MESSAGE NO.:	OSC-M-7
TO:	On-Site Assistance Team	CLOCK TIME:	Approximately 1215 or as needed
LOCATION:	Torus Catwalk - Torus Purge Supply Valve (V16-19-10)	SCENARIO TIME:	05:15

PARTICIPANT MESSAGE

THIS IS A DRILL

Visual inspection of the valve reveals that the valve indication is open.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	ESC Controller	MESSAGE NO.:	ESC-M-3
TO:	ESC Meteorologist	CLOCK TIME:	1230 or as requested
LOCATION:	ESC Yankee Atomic Electric Co.	SCENARIO TIME:	05:30

PARTICIPANT MESSAGE

THIS IS A DRILL

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

THIS IS A DRILL

WEATHER FORECAST FOR SITE: VERMONT YANKEE

Date of Forecast: _____
Time of Forecast: 1200

Current Site Meteorology (as of 1130):

	Wind Speed	Wind Direction	Delta-Temperature	Stability	Precipitation
Lower	2.9 mph	309 deg from	-2.1 °F	A	0.00 in/15 min
Upper	6.2 mph	310 deg from	-2.3 °F	C	

Forecast Site Meteorology:

	Time		Wind Speed	Wind Direction	Delta-Temperature	Stability	Precipitation
A.	1200	Lower	6 mph	310 deg from	-- °F	B	0.00in/15 min
	1300	Upper	12 mph	320 deg from	-- °F	C	
B.	1300	Lower	6 mph	310 deg from	-- °F	A	0.00in/15 min
	1400	Upper	10 mph	320 deg from	-- °F	B	
C.	1400	Lower	5 mph	308 deg from	-- °F	B	0.00in/15 min
	1500	Upper	10 mph	325 deg from	-- °F	C	

National Weather Service Forecast for site region:

Mostly sunny and warm this afternoon with a high near 80°F. Northwest winds 5 mph to 10 mph. Mostly clear tonight with a low around 55°F. Winds becoming light and variable.

Tomorrow, becoming cloudy with showers. Highs in the mid 70's. Winds becoming south to southwest 10 mph to 15 mph.

Special Weather Statements:

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	EOF/RA Controller	MESSAGE NO.:	EOF-M-3
TO:	Radiological Assistant	CLOCK TIME:	As Requested (Approximately 1230)
LOCATION:	EOF/Dose Assessment Area	SCENARIO TIME:	05:30

PARTICIPANT MESSAGE

THIS IS A DRILL

12:00-18:00 - General Area Forecast

Mostly sunny and warm this afternoon with a high near 80°F. Northwest winds 5 mph to 10 mph. Mostly clear tonight with a low around 55°F. Winds becoming light and variable.

Tomorrow, becoming cloudy with showers. Highs in the mid 70's. Winds becoming south to southwest 10 mph to 15 mph.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

SCENARIO MESSAGE CARDS

FROM:	OSC Observer	MESSAGE NO.:	OSC-M-8
TO:	On-Site Assistance Team	CLOCK TIME:	Approximately 1300 or as needed
LOCATION:	Torus Catwalk - Torus Purge Supply Valve (V16-19-10)	SCENARIO TIME:	06:00

PARTICIPANT MESSAGE

THIS IS A DRILL

Upon completing repair efforts on the torus purge supply valve (V16-19-10), you observe the following:

- o You hear the air vent off from the valve and the valve will shut.
- o Valve indication is showing closed position.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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SCENARIO MESSAGE CARDS

FROM:	OSC Observer	MESSAGE NO.:	OSC-M-9
TO:	On-Site Assistance Team	CLOCK TIME:	Approximately 1300 or as needed
LOCATION:	Reactor Building ,El. 252' - South Side	SCENARIO TIME:	06:00

PARTICIPANT MESSAGE

THIS IS A DRILL

NOTE: (Message card should be given to team only if the team proceeded to the south side of the Reactor Building, El. 252', before fixing the valve and team is located near the south side of the Reactor Building.)

You hear no more hissing sound from the south wall of the Reactor Building, El. 252'.

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

7.0 STATION EVENT DATA

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

7.1 EVENTS SUMMARY

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

7.1 EVENTS SUMMARY

The following information and supplementary material are provided for the Controllers/Observers having in-plant control assignments to 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 event. The Controller/Observer must be cognizant of the actions of the players 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 Controller/Observer will be required to provide additional information to the players.

Miniscenario	Approximate Time	Event	Location
7.2.1	0830	Plant Damage Assessment o CRD Pumps	Reactor Bldg. and Switchgear Room
7.2.2	1200	Plant Damage Assessment o Torus Purge Supply Valve (V16-19-10) Inspection and Repair	Reactor Bldg. and Torus Catwalk

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

7.2 EVENT MINISCENARIOS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

Miniscenario 7.2.1

I. General Description

The plant is in an Alert classification due to an ATWS condition. At 0830 while operators are driving in control rods, the "A" CRD Pump trips due to a breaker problem. It is expected that plant personnel will be dispatched to investigate the problem with the "A" CRD Pump or expedite the completion of the suction filter replaceme : on "B" CRD Pump.

II. Description of Player Responses/Observations/ Corrective Actions

The Shift Supervisor should immediately inform the TSC Coordinator that the both the "A" and "B" CRD Pumps are not available to drive in control rods. The TSC Coordinator should direct plant personnel to investigate the problem with the "A" CRD Pump and to determine the status and completion of the suction filter replacement on the "B" CRD Pump.

The plant personnel investigating the problem with the "A" CRD Pump will determine that the relay in the "A" CRD Pump breaker cubicle has been burned out. The replacement of the relay will take approximately one hour to complete the repairs (refer to Message Card OSC-M-3). It will also be determined that the status of completing the suction filter change on the "B" CRD Pump is approximately one hour (refer to Message Card OSC-M-4). The TSC Coordinator may dispatch plant personnel to assist with the suction filter change or discuss alternative methods to allow for the "B" CRD Pump to be returned to service as soon as possible.

III. Event Closeout

Due to the interactive nature of this event, the actions taken by plant personnel will determine when the CRD Pumps are declared operable and returned to service. The event will be completed upon returning one of the CRD Pumps back into operation (refer to Message Card OSC-M-5).

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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Miniscenario 7.2.2

I. General Description

At approximately 1135, the simulator control board will indicate that the Torus Purge Supply Valve (V16-19-10) did not close on Group 3 isolation. Reactor operator attempts to isolate the Torus Purge Supply Valve are unsuccessful. It is also apparent that there is a leak in the Reactor Building as indicated by significantly elevated Reactor Building ARMs and the Plant Vent Stack monitor readings increasing. It is anticipated that on-site assistance team(s) will be dispatched to investigate the leak in the Reactor Building and the problem associated with the Torus Purge Supply Valve (V16-19-10).

II. Description of Player Responses/Observations/ Corrective Actions

The Shift Supervisor should inform the TSC Coordinator and the Site Recovery Manager (SRM) that the Torus Purge Supply Valve (V16-19-10) did not close on Group 3 isolation and attempts to isolate the valve were unsuccessful. The TSC Coordinator, with consultation from the Shift Supervisor and SRM, should dispatch on-site assistance teams to investigate the leak into the Reactor Building and the problem associated with the Torus Purge Supply Valve (V16-19-10). Discussions on emergency exposure concerns, radiological exposure control, dose commitments, in-plant radiological conditions and task assignments should occur prior to dispatching the team(s).

It is expected that the on-site assistance team will be directed to go to the Torus Purge Supply Valve (V16-19-10) located on the Torus Catwalk. There are two possible ways of accessing the Torus Catwalk by entering the

Reactor Building EL 252 (ground floor) and proceeding to the northwest access hatch or southeast access hatch. Upon entrance to the Reactor Building, the team will encounter elevated radiation levels (refer to the appropriate Tables and Figures in Section 9.3).

If the team initially utilizes the southeast access hatch to the Torus Catwalk or proceeds to the south side of the Reactor Building EL 252, the team will be told that they can hear a hissing sound coming from the south wall. The team will also be told upon looking up near the south wall, they can see the bottom flange of Valve V16-19-9 dislodged (refer to Message Card OSC-M-6). However, if the team initially utilizes the northwest access hatch to the Torus Catwalk and does not proceed to the south side of Reactor Building EL 252, the team will only encounter the elevated radiation levels.

Upon proceeding to the Torus Catwalk and locating the Torus Purge Supply Valve (V16-19-10), the team will find that the valve indication is open (refer to Message Card OSC-M-7). Corrective actions to close the valve will be expected to occur by the team. When repair efforts are successfully completed, the team will be told that they can hear the air vent off from the valve and the valve will shut. The team will also be told that the valve indication is in the close position (refer to OSC-M-8). If the team exits the south side of the Reactor Building and initially entered the south side before closing the valve, the team will also be told that they cannot hear the hissing sound from the south wall (refer to Message Card OSC-M-9).

III. Event Closeout

The on-site assistance team will have successfully shut the Torus Purge Supply Valve (V16-19-10). Simulator control board will also show that the Torus Purge Supply Valve (V16-19-10) has closed. The leakage into the Reactor Building has been isolated.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

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	INST ID	SCENARIO CLOCK DESCRIPTION	TIME UNITS	00:00 07:00	00:15 07:15	00:30 07:30	00:45 07:45	01:00 08:00	01:15 08:15	01:30 08:30	01:45 08:45
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	0	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	0	0	0	0	0	0	0	0
3	9-3	FI-10-139B	RHR B FLOW	GPM	0	0	0	0	0	0	0	0
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESSURE	PSIA	17	17	17	17	16	16	16	16
7	9-3	PI-16-19-12B	DRYWELL PRESSURE	PSIA	17	17	17	17	16	16	16	16
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	60	60	60	60	0	0	0	0
10	9-4	FI-12-141B	RWCU FLOW	GPM	60	60	60	60	0	0	0	0
11	9-4	2-165A	RX COOLANT TEMP	DEG F	527	527	527	527	532	517	524	521
12	9-4	2-165B	RX COOLANT TEMP	DEG F	527	527	527	527	532	517	524	521
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	30	30	30	30	30	0	0	0
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	30.1	30.1	30.1	30.1	30.1	0	0	0
15	9-5	7-46A	APRM/IRM A	%	100	100	100	100	65	13	13	13
16	9-5	7-46B	APRM/IRM B	%	99	99	99	99	65	13	13	13
17	9-5	7-46C	APRM/IRM C	%	100	100	100	100	65	13	13	13
18	9-5	7-46D	APRM/IRM D	%	100	100	100	100	65	13	13	13
19	9-5	7-46E	APRM/IRM E	%	101	101	101	101	66	13	13	13
20	9-5	7-46F	APRM/IRM F	%	101	101	101	101	66	13	13	13
21	9-5	7-43A	SRM A	CPS	352000	352000	352000	352000	130000	9730	9410	9410
22	9-5	7-43B	SRM B	CPS	429000	429000	429000	428000	146000	10700	10300	10300
23	9-5	7-43C	SRM C	CPS	506000	506000	506000	505000	174000	11500	11500	11500
24	9-5	7-43D	SRM D	CPS	397000	397000	397000	396000	141000	9800	9800	9800
25	9-5	2-3-95	CORE FLOW	MLB/HR	47	47	47	47	54	8	2	2
26	9-5	2-3-[illegible]9	CORE DP	PSID	21	21	21	21	23	4	3	3
27	9-5	FI-[illegible]-31C	CRD FLOW	GPM	45.9	45.9	45.9	45.9	120.6	45.9	0	0
28	9-5	6-9[illegible]	WIDE RANGE PRESSURE	PSIG	1006	1006	1006	1006	969	925	923	923
29	9-5	6-96	NARROW RANGE PRESS	PSIG	1006	1006	1006	1006	969	DSL	DSL	DSL
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	6.2	6.2	6.2	6.2	5.3	0.3	0.1	0.1
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	6.2	6.2	6.2	6.2	4	0.3	0.1	0.1
32	9-5	6-98	NARROW RANGE LEVEL	INCHES	162	162	162	162	152	164	168	162
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	OSN	OSN	OSN	OSN	155	164	168	162
34	9-6	LI-107-5	CST LEVEL	%	52	52	52	52	52	50	50	50
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	56	56	56	56	55	62	66	65
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	54	54	54	54	52	53	54	54
37	9-7	PI-[illegible]01-29	CONDENSER VACUUM	IN [illegible]	2.6	2.6	2.6	2.6	3.1	1.6	1.3	1.2
38	9-8		D/G A BKR (T=CLOSED; F=OPEN)		F	F	F	F	F	F	F	F
39	9-8		D/G B BKR (T=CLOSED; F=OPEN)		F	F	F	F	F	F	F	F
40	9-23	16-19-33A/C	TORUS TEMPERATURE	DEG F	72	72	72	72	72	72	72	72
41	9-25	LI-46A	TORUS LEVEL	FEET	1.16	1.16	1.16	1.16	1.15	1.15	1.15	1.15
42	9-25	LI-46B	TORUS LEVEL	FEET	1.16	1.16	1.16	1.16	1.15	1.15	1.15	1.15
43	9-25	TR-16-19-44	TORUS PRESSURE	PSIA	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
44	9-25	TR-16-19-44	DRYWELL PRESSURE	PSIA	17	17	17	17	16	16	16	16
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	1.87	1.87	1.87	1.85	1.82	1.79	1.77	1.75
46	9-25	TR-16-19-45	DRYWELL TEMPERATURE	DEG F	138	138	138	137	137	136	135	134
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-0.75	-0.75	-0.75	-0.75	-0.7	-0.68	-0.68	-0.68
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-0.75	-0.75	-0.75	-0.75	-0.7	-0.68	-0.68	-0.68
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	78	78	78	11	1500	1500	1500	1500
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	0	0	0	0	1500	1500	1500	1500
51	CAD		DW/TORUS O2 CONC.	%	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58

8.0 OPERATIONAL DATA (CONT'D)

ITEM	PANEL	INST ID	SCENARIO CLOCK DESCRIPTION	TIME UNITS	02:00 09:00	02:15 09:15	02:30 09:30	02:45 09:45	03:00 10:00	03:15 10:15	03:30 10:30	03:45 10:45
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	2414	3029	3029	4131	4130	4130
2	9-3	FI-10-139A	RHR A FLOW	GPM	0	0	0	0	0	0	0	0
3	9-3	FI-10-139B	RHR B FLOW	GPM	0	0	5876	5976	5976	5976	5976	5976
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESSURE	PSIA	16	16	16	15	14	14	14	15
7	9-3	PI-16-19-12B	DRYWELL PRESSURE	PSIA	16	16	16	15	14	14	14	15
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	0	0	0	65	62	65	65	65
10	9-4	FI-12-141B	RWCU FLOW	GPM	0	0	0	65	62	65	65	65
11	9-4	2-165A	RX COOLANT TEMP	DEG F	519	517	516	525	529	489	499	499
12	9-4	2-165B	RX COOLANT TEMP	DEG F	519	517	516	525	529	489	499	499
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	0	0	0	0	0	0	0	0
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	0	0	0	0	0	0	0	0
15	9-5	7-46A	APRM/IRM A	%	13	13	13	5	0	0	0	0
16	9-5	7-46B	APRM/IRM B	%	13	13	13	5	0	0	0	0
17	9-5	7-46C	APRM/IRM C	%	13	13	13	5	0	0	0	0
18	9-5	7-46D	APRM/IRM D	%	13	13	13	5	0	0	0	0
19	9-5	7-46E	APRM/IRM E	%	13	13	13	5	0	0	0	0
20	9-5	7-46F	APRM/IRM F	%	13	13	13	5	0	0	0	0
21	9-5	7-43A	SRM A	CPS	9410	9410	9410	30	28.1	32.2	28.8	28.5
22	9-5	7-43B	SRM B	CPS	10300	10300	10300	30	27.6	31.8	28.4	28
23	9-5	7-43C	SRM C	CPS	11500	11500	11500	30	27.8	31.9	28.5	28.1
24	9-5	7-43D	SRM D	CPS	9800	9800	9800	30	27.8	31.9	28.5	28.2
25	9-5	2-3-95	CORE FLOW	MLB/HR	1	1	1	1	1	1	1	1
26	9-5	2-3-95	CORE DP	PSID	3	3	3	3	3	3	3	3
27	9-5	FI-3-310	CRD FLOW	GPM	0	0	0	45.9	45.9	46	45.9	45.9
28	9-5	6-96	WIDE RANGE PRESSURE	PSIG	922	922	990	935	946	864	752	745
29	9-5	6-96	NARROW RANGE PRESS	PSIG	DSL	DSL	990	DSL	DSL	DSL	DSL	DSL
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	0.1	0.1	0.1	0	0	0	0	0
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	0.1	0.1	0	0	0	0	0	0
32	9-5	6-98	NARROW RANGE LEVEL	INCHES	162	164	170	167	156	158	166	158
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	162	164	170	167	156	158	166	158
34	9-6	LI-107-5	CST LEVEL	%	50	49	49	50	50	49	48	48
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	65	65	65	56	55	57	58	58
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	54	54	54	55	55	54	54	54
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	1.2	1.2	17.1	29.5	30	30	29.9	29.9
38	9-8		D/G A BKR (T=CLOSED;F=OPEN)		F	F	F	F	F	F	F	F
39	9-8		D/G B BKR (T=CLOSED;F=OPEN)		F	F	F	F	F	F	F	F
40	9-23	16-19-33A/C	TORUS TEMPERATURE	DEG F	72	72	72	75	77	79	81	82
41	9-25	LI-46A	TORUS LEVEL	FEET	1.15	1.14	1.14	1.01	1.03	1.06	1.08	1.1
42	9-25	LI-46B	TORUS LEVEL	FEET	1.15	1.14	1.14	1.01	1.03	1.06	1.08	1.1
43	9-25	TR-16-19-46	TORUS PRESSURE	PSIA	14.7	14.7	14.7	14.4	14.4	14.4	14.4	14.4
44	9-25	TR-16-19-44	DRYWELL PRESSURE	PSIA	16	16	16	15	14	14	14	15
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	1.73	1.7	1.68	0.07	0.07	0.07	0.07	0.07
46	9-25	TR-16-19-45	DRYWELL TEMPERATURE	DEG F	133	132	132	131	129	128	127	126
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-0.68	-0.68	-0.68	-0.71	-1	-1	-1	-1
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-0.68	-0.68	-0.68	-0.71	-1	-1	-1	-1
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	1500	1500	1500	1500	1500	1500	1500	1500
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	1500	1500	1500	0	0	0	0	0
51	CAD		DW/TORUS O2 CONC.	%	2.58	2.58	2.58	2.4	9.02	13.04	15.5	16.98

B.0 OPERATIONAL DATA (CONT'D)

ITEM	PANEL	INST ID	SCENARIO CLOCK DESCRIPTION	TIME UNITS	04:00 11:00	04:15 11:15	04:30 11:30	04:45 11:45	05:00 12:00	05:15 12:15	05:30 12:30	05:45 12:45
1	9-3	FT-23-108-1	HPCI FLOW	GPM	4130	4129	4126	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	0	7363	7363	6449	5897	5897	5897	5897
3	9-3	FI-10-139B	RHR B FLOW	GPM	5976	5976	5976	0	0	0	0	0
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESSURE	PSIA	14	15	15	17	17	17	17	17
7	9-3	PI-16-19-12B	DRYWELL PRESSURE	PSIA	14	15	15	17	17	17	17	17
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	65	65	65	65	65	60	60	60
10	9-4	FI-12-141B	RWCU FLOW	GPM	65	65	65	65	65	60	60	60
11	9-4	2-165A	RX COOLANT TEMP	DEG F	473	472	470	276	278	314	298	298
12	9-4	2-165B	RX COOLANT TEMP	DEG F	473	472	470	276	278	314	298	298
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	0	0	0	0	0	0	0	0
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	0	0	0	0	0	0	0	0
15	9-5	7-46A	APRM/IRM A	%	0	0	0	0	0	0	0	0
16	9-5	7-46B	APRM/IRM B	%	0	0	0	0	0	0	0	0
17	9-5	7-46C	APRM/IRM C	%	0	0	0	0	0	0	0	0
18	9-5	7-46D	APRM/IRM D	%	0	0	0	0	0	0	0	0
19	9-5	7-46E	APRM/IRM E	%	0	0	0	0	0	0	0	0
20	9-5	7-46F	APRM/IRM F	%	0	0	0	0	0	0	0	0
21	9-5	7-43A	SRM A	CPS	31.8	28.6	28	39.1	38.7	38.7	38.7	38.7
22	9-5	7-43B	SRM B	CPS	31.3	28.1	27.5	38.6	38.1	38.1	38.1	38.1
23	9-5	7-43C	SRM C	CPS	31.4	28.2	27.6	38.8	38.4	38.4	38.4	38.4
24	9-5	7-43D	SRM D	CPS	31.5	28.3	27.6	38.8	38.3	38.3	38.3	38.3
25	9-5	2-3-95	CORE FLOW	MLB/HR	1	1	1	1	2	2	1	1
26	9-5	2-3-95	CORE DP	PSID	3	3	3	3	3	3	3	3
27	9-5	FI-3-310	CRD FLOW	GPM	45.9	45.9	45.9	59.8	35.1	35.1	35.1	35.1
28	9-5	6-96	WIDE RANGE PRESSURE	PSIG	690	582	562	104	53	53	53	53
29	9-5	6-96	NARROW RANGE PRESS	PSIG	DSL	DSL	DSL	DSL	DSL	DSL	DSL	DSL
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	0.1	0	0.1	0	0	0	0	0
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	0	0	0	0	0	0	0	0
32	9-5	6-98	NARROW RANGE LEVEL	INCHES	158	164	158	OSH	OSH	OSH	OSH	OSH
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	158	164	158	OSH	OSH	OSH	OSH	OSH
34	9-6	LI-107-5	CST LEVEL	%	48	47	47	45	45	40	39	39
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	57	58	58	55	54	57	58	58
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	54	54	54	55	54	54	54	54
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	29.9	29.9	29.9	30	30	30.3	30.3	30.3
38	9-8		D/G A BKR (T=CLOSED; F=OPEN)		F	F	F	F	F	F	F	F
39	9-8		D/G B BKR (T=CLOSED; F=OPEN)		F	F	F	F	F	F	F	F
40	9-23	16-19-33A/C	TORUS TEMPERATURE	DEG F	84	86	87	93	95	98	98	98
41	9-25	LI-46A	TORUS LEVEL	FEET	1.13	1.15	1.19	1.14	1.05	1.82	1.88	1.88
42	9-25	LI-46B	TORUS LEVEL	FEET	1.13	1.15	1.19	1.14	1.05	1.82	1.88	1.88
43	9-25	TR-16-19-44	TORUS PRESSURE	PSIA	14.4	14.4	14.4	14.7	14.7	14.7	14.7	14.7
44	9-25	TR-16-19-44	DRYWELL PRESSURE	PSIA	14	15	15	17	17	17	17	17
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	0.07	0.07	0.07	2.2	2.12	2.56	2.62	2.62
46	9-25	TR-16-19-45	DRYWELL TEMPERATURE	DEG F	125	125	124	224	236	240	245	245
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-1	-1	-1	-0.34	-0.34	-0.34	-0.34	-0.34
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-1	-1	-1	-0.34	-0.34	-0.34	-0.34	-0.34
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	1500	1500	1500	1500	1500	1500	1500	1500
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	0	0	0	0	0	0	0	0
51	CAD		DW/TORUS O2 CONC.	%	17.89	18.44	18.77	11.09	12.07	12.96	13.46	13.46

8.0 OPERATIONAL DATA (CONT'D)

ITEM	PANEL	INST ID	SCENARIO CLOCK DESCRIPTION	TIME UNITS	06:00 13:00	06:15 13:15	06:30 13:30	06:45 13:45	07:00 14:00	POST 07:00 14:00
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	5897	5897	5897	5897	5897	5897
3	9-3	FI-10-139B	RHR B FLOW	GPM	0	0	0	0	0	0
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESSURE	PSIA	17	17	17	17	17	17
7	9-3	PI-16-19-12B	DRYWELL PRESSURE	PSIA	17	17	17	17	17	17
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	60	60	60	60	60	60
10	9-4	FI-12-141B	RWCU FLOW	GPM	60	60	60	60	60	60
11	9-4	2-165A	RX COOLANT TEMP	DEG F	298	298	298	298	298	298
12	9-4	2-165B	RX COOLANT TEMP	DEG F	298	298	298	298	298	298
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	0	0	0	0	0	0
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	0	0	0	0	0	0
15	9-5	7-46A	APRM/IRM A	%	0	0	0	0	0	0
16	9-5	7-46B	APRM/IRM B	%	0	0	0	0	0	0
17	9-5	7-46C	APRM/IRM C	%	0	0	0	0	0	0
18	9-5	7-46D	APRM/IRM D	%	0	0	0	0	0	0
19	9-5	7-46E	APRM/IRM E	%	0	0	0	0	0	0
20	9-5	7-46F	APRM/IRM F	%	0	0	0	0	0	0
21	9-5	7-43A	SRM A	CPS	38.7	38.7	38.7	38.7	38.7	38.7
22	9-5	7-43B	SRM B	CPS	38.1	38.1	38.1	38.1	38.1	38.1
23	9-5	7-43C	SRM C	CPS	38.4	38.4	38.4	38.4	38.4	38.4
24	9-5	7-43D	SRM D	CPS	38.3	38.3	38.3	38.3	38.3	38.3
25	9-5	2-3-95	CORE FLOW	MLB/HR	1	1	1	1	1	1
26	9-5	2-3-95	CORE DP	PSID	3	3	3	3	3	3
27	9-5	FI-3-310	CRD FLOW	GPM	35.1	35.1	35.1	35.1	35.1	35.1
28	9-5	6-96	WIDE RANGE PRESSURE	PSIG	53	53	53	53	53	53
29	9-5	6-96	NARROW RANGE PRESS	PSIG	DSL	DSL	DSL	DSL	DSL	DSL
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	0	0	0	0	0	0
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	0	0	0	0	0	0
32	9-5	6-98	NARROW RANGE LEVEL	INCHES	OSH	OSH	OSH	OSH	OSH	OSH
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	OSH	OSH	OSH	OSH	OSH	OSH
34	9-6	LI-107-5	CST LEVEL	%	39	39	39	39	39	39
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	58	58	58	58	58	58
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	54	54	54	54	54	54
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	30.3	30.3	30.3	30.3	30.3	30.3
38	9-8		D/G A BKR (T=CLOSED;F=OPEN)		F	F	F	F	F	F
39	9-8		D/G B BKR (T=CLOSED;F=OPEN)		F	F	F	F	F	F
40	9-23	16-19-33A/C	TORUS TEMPERATURE	DEG F	98	98	98	98	98	98
41	9-25	LI-46A	TORUS LEVEL	FEET	1.88	1.88	1.88	1.88	1.88	1.88
42	9-25	LI-46B	TORUS LEVEL	FEET	1.88	1.88	1.88	1.88	1.88	1.88
43	9-25	TR-16-19-44	TORUS PRESSURE	PSIA	14.7	14.7	14.7	14.7	14.7	14.7
44	9-25	TR-16-19-44	DRYWELL PRESSURE	PSIA	17	17	17	17	17	17
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	2.62	2.62	2.62	2.62	2.62	2.62
46	9-25	TR-16-19-45	DRYWELL TEMPERATURE	DEG F	245	245	245	245	245	245
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-0.34	-0.34	-0.34	-0.34	-0.34	-0.34
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-0.34	-0.34	-0.34	-0.34	-0.34	-0.34
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	1500	1500	1500	1500	1500	1500
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	0	0	0	0	0	0
51	CAD		DW/TORUS O2 CONC.	%	13.46	13.46	13.46	13.46	13.46	13.46

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

9.0 RADIOLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

9.1 AREA RADIATION MONITORS

9.1 AREA RADIATION MONITORS

		SCENARIO TIME	00:00	00:15	00:30	00:45	01:00	01:15	01:30	01:45
		CLOCK TIME	07:00	07:15	07:30	07:45	08:00	08:15	08:30	08:45
	PANEL	BLDG/ELV DESCRIPTION	UNITS							
RMS11-1	9-11	RB/256 RX BLDG HI RADS - N	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS11-2	9-11	RB/256 RX BLDG HI RADS - S	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS11-3	9-11	RB/256 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	8	7	7	7
2	9-11	RB/256 N PERSONNEL RB ACCESS	MR/HR	10	10	10	10	10	8	6	5
3	9-11	RB/256 S EQUIP RR RB ACCESS	MR/HR	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
4	9-11	RB/256 RB NEUTRON MON-TIP	MR/HR	5	5	5	5	5	5	5	5
5	9-11	RB/256 PERSONNEL HATCH RB	MR/HR	300	300	300	300	300	240	180	140
6	9-11	RB/280 ELEV ENTR 280FT RB	MR/HR	8	8	8	8	8	8	7	7
7	9-11	RB/256 CRD REPAIR RB(CRD RM)	MR/HR	16	16	16	16	16	13	10	10
8	9-11	RB/303 ELEV ENTR 303FT RB	MR/HR	3	3	3	3	3	2.5	2	2
9	9-11	RB/303 H2O CLEANUP(SAMPLE SINK)	MR/HR	4	4	4	4	4	4	4	4
10	9-11	RB/318 ELEV ENTR 318FT RB	MR/HR	5	5	5	5	5	4.5	4	4
11	9-11	RB/318 H2O CLEANUP(PRE-COAT)	MR/HR	5	5	5	5	5	4.5	4	4
12	9-11	RB/345 ELEV ENTR 348FT RB	MR/HR	4	4	4	4	4	3	2.5	2
14	9-11	RB/345 WEST REFUEL RB	MR/HR	3	3	3	3	3	2.5	2	2
15	9-11	RB/345 SPENT FUEL POOL RB	MR/HR	8	8	8	8	8	8	8	8
16	9-11	RB/318 NEW FUEL VAULT RB	MR/HR	0.65	0.65	0.65	0.65	0.65	0.58	0.52	0.48
17	9-11	RW/230 RECIRC PUMP RM RW	MR/HR	1	1	1	1	1	1	1	1
18	9-11	RW/255 RADW OPER AREA RW	MR/HR	1	1	1	1	1	1	1	1
19	9-11	RW/255 PUMP/TANK AREA RW	MR/HR	2	2	2	2	2	2	2	2
20	9-11	TB/248 N ACCESS 248FT TB	MR/HR	3	3	3	3	3	3	2	2
21	9-11	TB/248 MAIN STM VALVE TB	MR/HR	370	370	370	370	370	350	320	270
22	9-11	TB/232 CONDENSATE DEMIN TB	MR/HR	0.3	0.3	0.3	0.3	0.3	0.28	0.26	0.24
23	9-11	TB/252 DECONTAMINATION TB	MR/HR	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
24	9-11	TB/272 TURB STM INLET TB	MR/HR	190	190	190	190	190	180	160	140
25	9-11	AB/272 VIEW GALLERY CR	MR/HR	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
26	9-11	TB/252 REAR GATE TURB WAREHSE	MR/HR	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
13	9-11	TB/228 MOIST SEP AREA TB	MR/HR	150	150	150	150	150	140	130	110

9.1 AREA RADIATION MONITORS (CONT'D)

			SCENARIO TIME		02:00	02:15	02:30	02:45	03:00	03:15	03:30	03:45
			CLOCK TIME		09:00	09:15	09:30	09:45	10:00	10:15	10:30	10:45
ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS								
RMSII-1	9-11	RB/256	RX BLDG HI RADS - N	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMSII-2	9-11	RB/256	RX BLDG HI RADS - S	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMSII-3	9-11	RB/256	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	7	7	6	6	6	6	6	6
2	9-11	RB/256	N PERSONNEL RB ACCESS	MR/HR	4	3	3	2	1	1	0.7	0.6
3	9-11	RB/256	S EQUIP RR RB ACCESS	MR/HR	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
4	9-11	RB/256	RB NEUTRON MON-TIP	MR/HR	5	5	5	5	5	5	5	5
5	9-11	RB/256	PERSONNEL HATCH RB	MR/HR	100	90	75	50	35	20	15	12
6	9-11	RB/280	ELEV ENTR 280FT RB	MR/HR	6	6	6	6	5.5	5.5	5	5
7	9-11	RB/256	CRD REPAIR RB(CRD RM)	MR/HR	8	7	7	6	5	4	4	4
8	9-11	RB/303	ELEV ENTR 303FT RB	MR/HR	2	2	2	2	1	1	1	1
9	9-11	RB/303	H2O CLEANUP(SAMPLE SINK)	MR/HR	4	4	4	4	4	4	4	4
10	9-11	RB/318	ELEV ENTR 318FT RB	MR/HR	4	4	4	3	3	3	3	3
11	9-11	RB/318	H2O CLEANUP(PRE-COAT)	MR/HR	3	3	3	3	3	2	2	2
12	9-11	RB/345	ELEV ENTR 348FT RB	MR/HR	2	2	2	2	1	1	1	1
14	9-11	RB/345	WEST REFUEL RB	MR/HR	2	2	2	1	1	1	1	1
15	9-11	RB/345	SPENT FUEL POOL RB	MR/HR	8	8	8	8	8	8	8	8
16	9-11	RB/318	NEW FUEL VAULT RB	MR/HR	0.45	0.4	0.4	0.4	0.4	0.35	0.35	0.35
17	9-11	RW/230	RECIRC PUMP RM RW	MR/HR	1	1	1	1	1	1	1	1
18	9-11	RW/255	RADW OPER AREA RW	MR/HR	1	1	1	1	1	1	1	1
19	9-11	RW/255	PUMP/TANK AREA RW	MR/HR	2	2	2	2	2	2	2	2
20	9-11	TB/248	N ACCESS 248FT TB	MR/HR	2	2	2	2	2	2	2	2
21	9-11	TB/248	MAIN STM VALVE TB	MR/HR	230	190	160	140	120	110	100	90
22	9-11	TB/232	CONDEN[illegible]E DEMIN TB	MR/HR	0.2	0.2	0.18	0.18	0.16	0.15	0.15	0.14
23	9-11	TB/252	DECONTAMINATION TB	MR/HR	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15
24	9-11	TB/272	TURB STM INLET TB	MR/HR	110	95	80	70	60	55	50	45
25	9-11	AB/272	VIEW GALLERY CR	MR/HR	0.12	0.1	0.1	0.1	0.1	0.1	0.1	0.1
26	9-11	TB/252	REAR GATE TURB WAREHSE	MR/HR	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
13	9-11	TB/228	MOIST SEP AREA TB	MR/HR	90	80	65	55	45	40	30	30

9.1 AREA RADIATION MONITORS (CONT'D)

		SCENARIO TIME		04:00	04:15	04:30	04:45	05:00	05:15	05:30	05:45
		CLOCK TIME		11:00	11:15	11:30	11:45	12:00	12:15	12:30	12:45
ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS							
RMSII-1	9-11	RB/256	RX BLDG HI RADS - N	R/HR	<1	<1	<1	2	10	16	20	24
RMSII-2	9-11	RB/256	RX BLDG HI RADS - S	R/HR	<1	<1	<1	3	12	20	25	30
RMSII-3	9-11	RB/256	TIP RM HI RAD	R/HR	<1	<1	<1	2	10	16	20	24
1	9-11	RB/232	SUPP CHAMB RB EXT CW	MR/HR	6	6	6	3000	6000	9000	(OSH)>1E4	(OSH)
2	9-11	RB/256	N PERSONNEL RB ACCESS	MR/HR	0.5	0.4	0.4	(OSH)>1E3	(OSH)	(OSH)	(OSH)	(OSH)
3	9-11	RB/256	S EQUIP RR RB ACCESS	MR/HR	0.3	0.3	0.3	(OSH)>1E3	(OSH)	(OSH)	(OSH)	(OSH)
4	9-11	RB/256	RB NEUTRON MON-TIP	MR/HR	5	5	5	1800	10000	(OSH)>1E4	(OSH)	(OSH)
5	9-11	RB/256	PERSONNEL HATCH RB	MR/HR	9	8	7	6000	(OSH)>1E4	(OSH)	(OSH)	(OSH)
6	9-11	RB/280	ELEV ENTR 280FT RB	MR/HR	5	5	5	1700	5500	(OSH)>1E4	(OSH)	(OSH)
7	9-11	RB/256	CRD REPAIR RB(CRD RM)	MR/HR	4	4	4	200	630	1400	2100	2500
8	9-11	RB/303	ELEV ENTR 303FT RB	MR/HR	1	1	1	6000	(OSH)>1E4	(OSH)	(OSH)	(OSH)
9	9-11	RB/303	H2O CLEANUP(SAMPLE SINK)	MR/HR	4	4	4	6000	(OSH)>1E4	(OSH)	(OSH)	(OSH)
10	9-11	RB/318	ELEV ENTR 318FT RB	MR/HR	3	3	3	1700	5300	(OSH)>1E4	(OSH)	(OSH)
11	9-11	RB/318	H2O CLEANUP(PRE-COAT)	MR/HR	2	2	2	1700	5500	(OSH)>1E4	(OSH)	(OSH)
12	9-11	RB/345	ELEV ENTR 348FT RB	MR/HR	1	1	1	600	1800	3900	5500	6600
14	9-11	RB/345	WEST REFUEL RB	MR/HR	1	1	1	600	1800	3800	5400	6500
15	9-11	RB/345	SPENT FUEL POOL RB	MR/HR	8	8	8	600	1800	3800	5300	6400
16	9-11	RB/318	NEW FUEL VAULT RB	MR/HR	0.35	0.34	0.34	6.7	20	45	68	68
17	9-11	RW/230	RECIRC PUMP RM RW	MR/HR	1	1	1	1	1	1	1	1
18	9-11	RW/255	RADW OPER AREA RW	MR/HR	1	1	1	1	1	1	1	1
19	9-11	RW/255	PUMP/TANK AREA RW	MR/HR	2	2	2	2	2	2	2	2
20	9-11	TB/248	N ACCESS 248FT TB	MR/HR	2	2	2	2	2	2	2	2
21	9-11	TB/248	MAIN STM VALVE TB	MR/HR	80	70	65	60	55	55	50	50
22	9-11	TB/232	CONDENSATE DEMIN TB	MR/HR	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13
23	9-11	TB/252	DECONTAMINATION TB	MR/HR	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
24	9-11	TB/272	TURB STM INLET TB	MR/HR	40	35	35	30	28	28	25	25
25	9-11	AB/272	VIEW GALLERY CR	MR/HR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
26	9-11	TB/252	REAR GATE TURB WAREHSE	MR/HR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
13	9-11	TB/228	MOIST SEP AREA TB	MR/HR	23	19	1	16	16	16	16	16

(OSH) OFF SCALE HIGH

9.1 AREA RADIATION MONITORS (CONT'D)

			SCENARIO TIME		06:00	06:15	06:30	06:45	07:00	POST 07:00
			CLOCK TIME		13:00	13:15	13:30	13:45	14:00	14:00
ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS						
RMSII-1	9-11	RB/256	RX BLDG HI RADS - N	R/HR	28	27	26	24	24	*
RMSII-2	9-11	RB/256	RX BLDG HI RADS - S	R/HR	33	33	32	30	30	*
RMSII-3	9-11	RB/256	TIP RM HI RAD	R/HR	28	27	26	24	24	*
1	9-11	RB/232	SUPP CHAMB RB EXT CW	MR/HR	(OSH)>1E4	(OSH)	(OSH)	(OSH)	(OSH)	*
2	9-11	RB/256	N PERSONNEL RB ACCESS	MR/HR	(OSH)>1E3	(OSH)	(OSH)	(OSH)	(OSH)	*
3	9-11	RB/256	S EQUIP RR RB ACCESS	MR/HR	(OSH)>1E3	(OSH)	(OSH)	(OSH)	(OSH)	*
4	9-11	RB/256	RB NEUTRON MON-TIP	MR/HR	(OSH)>1E4	(OSH)	(OSH)	(OSH)	(OSH)	*
5	9-11	RB/256	PERSONNEL HATCH RB	MR/HR	(OSH)>1E4	(OSH)	(OSH)	(OSH)	(OSH)	*
6	9-11	RB/280	ELEV ENTR 280FT RB	MR/HR	(OSH)>1E4	(OSH)	(OSH)	(OSH)	(OSH)	*
7	9-11	RB/256	CRD REPAIR RB(CRD RM)	MR/HR	3000	2800	2700	2600	2500	*
8	9-11	RB/303	ELEV ENTR 303FT RB	MR/HR	(OSH)>1E4	(OSH)	(OSH)	(OSH)	(OSH)	*
9	9-11	RB/303	H2O CLEANUP(SAMPLE SINK)	MR/HR	(OSH)>1E4	(OSH)	(OSH)	(OSH)	(OSH)	*
10	9-11	RB/318	ELEV ENTR 318FT RB	MR/HR	(OSH)>1E4	(OSH)	(OSH)	(OSH)	(OSH)	*
11	9-11	RB/318	H2O CLEANUP(PRE-COAT)	MR/HR	(OSH)>1E4	(OSH)	(OSH)	(OSH)	(OSH)	*
12	9-11	RB/345	ELEV ENTR 348FT RB	MR/HR	7600	7300	7000	6700	6500	*
14	9-11	RB/345	WEST REFUEL RB	MR/HR	7500	7200	6800	6600	6400	*
15	9-11	RB/345	SPENT FUEL POOL RB	MR/HR	7400	7000	6700	6500	6200	*
16	9-11	RB/318	NEW FUEL VAULT RB	MR/HR	68	68	68	68	68	45
17	9-11	RW/230	RECIRC PUMP RM RW	MR/HR	1	1	1	1	1	1
18	9-11	RW/255	RADW OPER AREA RW	MR/HR	1	1	1	1	1	1
19	9-11	RW/255	PUMP/TANK AREA RW	MR/HR	2	2	2	2	2	2
20	9-11	TB/248	N ACCESS 248FT TB	MR/HR	1.5	1.5	1.5	1.5	1.5	1.5
21	9-11	TB/248	MAIN STM VALVE TB	MR/HR	50	50	50	50	50	54
22	9-11	TB/232	CONDENSATE DEMIN TB	MR/HR	0.13	0.13	0.13	0.13	0.13	0.13
23	9-11	TB/252	DECONTAMINATION TB	MR/HR	0.15	0.15	0.15	0.15	0.15	0.15
24	9-11	TB/272	TURB STM INLET TB	MR/HR	25	25	25	25	25	27
25	9-11	AB/272	VIEW GALLERY CR	MR/HR	0.1	0.1	0.1	0.1	0.1	0.1
26	9-11	TB/25[illegible]	REAR GATE TURB WAREHSE	MR/HR	0.01	0.01	0.01	0.01	0.01	0.01
13	9-11	TB/228	MOIST SEP AREA TB	MR/HR	16	16	16	16	16	16

(OSH) OFF SCALE HIGH

* MONITOR READINGS WILL DECREASE AS REACTOR BUILDING IS VENTED VIA SBGTS

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

9.2 PROCESS MONITORS

PROCESS MONITORS

ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS	SCENARIO TIME 00:00 / CLOCK TIME 07:00	00:15 / 07:15	00:30 / 07:30	00:45 / 07:45	01:00 / 08:00	01:15 / 08:15	01:30 / 08:30	01:45 / 08:45
	9-2		STACK GAS MON-GAS 1	CPM	150	150	150	150	150	150	150	150
	9-2		STACK GAS MON-GAS 2	CPM	200	200	200	200	200	200	200	200
	9-2		STACK HI RANGE	MR/HR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	9-2		CONTAINMENT MON GAS	CPM	600	600	600	600	600	600	600	600
	9-2		CONTAINMENT MON-PART	CPM	60000	60000	60000	60000	60000	60000	60000	60000
	9-2		DRYWELL CH A	R/HR	3	3	3	3	3	2	1	1
	9-2		DRYWELL CH B	R/HR	3	3	3	3	3	2	1	1
	9-2		RX BLDG VENT GAS	CPM	500	500	500	500	500	500	500	500
	9-2		RX BLDG VENT - PART	CPM	4000	4000	4000	4000	4000	4000	4000	4000
31	9-10		RX BLDG VENT NORTH	MR/HR	1	1	2	2	1	1	1	1
32	9-10		RX BLDG VENT SOUTH	MR/HR	1	1	2	2	1	1	1	1
453A	9-10		SPENT FUEL POOL A	MR/HR	10	10	10	10	10	10	10	8
453B	9-10		SPENT FUEL POOL B	MR/HR	10	10	10	10	10	10	10	8
	9-10		MAIN STM LINE A	MR/HR	200	200	200	200	200	100	100	80
	9-10		MAIN STM LINE B	MR/HR	200	200	200	200	200	100	100	80
	9-10		MAIN STM LINE C	MR/HR	200	200	200	200	200	100	100	80
	9-10		MAIN STM LINE D	MR/HR	200	200	200	200	200	100	100	80
38	9-10		SJAE(AIR EJECTOR)	MR/HR	270	270	270	270	270	260	250	240

9.2 PROCESS MONITORS (CONT'D)

			SCENARIO TIME		02:00	02:15	02:30	02:45	03:00	03:15	03:30	03:45
			CLOCK TIME		09:00	09:15	09:30	09:45	10:00	10:15	10:30	10:45
ITEM	PANEL	INST ID	DESCRIPTION	UNITS								
	9-2		STACK GAS MON-GAS 1	CPM	150	150	150	150	150	150	150	150
	9-2		STACK GAS MON-GAS 2	CPM	200	200	200	200	200	0	200	200
	9-2		STACK HI RANGE	MR/HR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	9-2		CONTAINMENT MON GAS	CPM	600	600	600	600	600	600	600	600
	9-2		CONTAINMENT MON-PART	CPM	60000	60000	60000	60000	60000	60000	60000	60000
	9-2		DRYWELL CH A	R/HR	1	1	1	1	1	1	1	1
	9-2		DRYWELL CH B	R/HR	1	1	1	1	1	1	1	1
	9-2		RX BLDG VENT GAS	CPM	500	500	500	500	500	500	500	500
	9-2		RX BLDG VENT - PART	CPM	4000	4000	4000	4000	4000	4000	4000	4000
31	9-10		RX BLDG VENT NORTH	MR/HR	1	1	1	1	1	1	1	1
32	9-10		RX BLDG VENT SOUTH	MR/HR	1	1	1	1	1	1	1	1
453A	9-10		SPENT FUEL POOL A	MR/HR	8	8	8	8	8	7	7	7
453B	9-10		SPENT FUEL POOL B	MR/HR	8	8	8	8	8	7	7	7
	9-10		MAIN STM LINE A	MR/HR	60	55	0	0	0	0	0	0
	9-10		MAIN STM LINE B	MR/HR	60	55	0	0	0	0	0	0
	9-10		MAIN STM LINE C	MR/HR	60	55	0	0	0	0	0	0
	9-10		MAIN STM LINE D	MR/HR	60	55	0	0	0	0	0	0
38	9-10		SJAE(AIR EJECTOR)	MR/HR	230	225	0	0	0	0	0	0

9.2 PROCESS MONITORS (CONT'D)

			SCENARIO TIME		04:00	04:15	04:30	04:45	05:00	05:15	05:30	05:45
			CLOCK TIME		11:00	11:15	11:30	11:45	12:00	12:15	12:30	12:45
ITEM	PANEL	INST ID	DESCRIPTION	UNITS								
	9-2		STACK GAS MON-GAS 1	CPM	150	150	150	OSH(>1E6)	OSH	OSH	OSH	OSH
	9-2		STACK GAS MON-GAS 2	CPM	200	200	200	OSH(>1E6)	OSH	OSH	OSH	OSH
	9-2		STACK HI RANGE	MR/HR	0.1	0.1	0.1	64	115	160	190	225
	9-2		CONTAINMENT MON GAS	CPM	600	600	600	OSH(>1E6)	OSH	OSH	OSH	OSH
	9-2		CONTAINMENT MON-PART	CPM	60000	60000	60000	OSH(>1E6)	OSH	OSH	OSH	OSH
	9-2		DRYWELL CH A	R/HR	1	1	1	1300	3000	2800	2700	2500
	9-2		DRYWELL CH B	R/HR	1	1	1	1300	3000	2800	2700	2500
	9-2		RX BLDG VENT GAS	CPM	500	500	500	OSH(>1E6)	OSH	OSH	OSH	OSH
	9-2		RX BLDG VENT - PART	CPM	4000	4000	4000	OSH(>1E6)	OSH	OSH	OSH	OSH
31	9-10		RX BLDG VENT NORTH	MR/HR	1	1	1	OSH(>1E3)	OSH	OSH	OSH	OSH
32	9-10		RX BLDG VENT SOUTH	MR/HR	1	1	1	OSH(>1E3)	OSH	OSH	OSH	OSH
453A	9-10		SPENT FUEL POOL A	MR/HR	7	7	7	600	2000	4000	5000	6000
453B	9-10		SPENT FUEL POOL B	MR/HR	7	7	7	600	2000	4000	5000	6000
	9-10		MAIN STM LINE A	MR/HR	0	0	0	0	0	0	0	0
	9-10		MAIN STM LINE B	MR/HR	0	0	0	0	0	0	0	0
	9-10		MAIN STM LINE C	MR/HR	0	0	0	0	0	0	0	0
	9-10		MAIN STM LINE D	MR/HR	0	0	0	0	0	0	0	0
38	9-10		SJAE(AIR EJECTOR)	MR/HR	0	0	0	0	0	0	0	0

9.2 PROCESS MONITORS (CONT'D)

		SCENARIO TIME		05:00	05:15	05:30	05:45	06:00
		CLOCK TIME		13:00	13:15	13:30	13:45	14:00
ITEM	PANEL	INST ID DESCRIPTION	UNITS					
	9-2	STACK GAS MON-GAS 1	CPM	OSH(>1E6)	OSH	OSH	OSH	OSH
	9-2	STACK GAS MON-GAS 2	CPM	OSH(>1E6)	OSH	OSH	OSH	OSH
	9-2	STACK HI RANGE	MR/HR	250	230	210	200	180
	9-2	CONTAINMENT MON GAS	CPM	OSH(>1E6)	OSH	OSH	OSH	OSH
	9-2	CONTAINMENT MON-PART	CPM	OSH(>1E6)	OSH	OSH	OSH	OSH
	9-2	DRYWELL CH A	R/HR	2900	2200	2100	2000	1900
	9-2	DRYWELL CH B	R/HR	2900	2200	2100	2000	1900
	9-2	RX BLDG VENT GAS	CPM	OSH(>1E6)	OSH	OSH	OSH	OSH
	9-2	RX BLDG VENT - PART	CPM	OSH(>1E6)	OSH	OSH	OSH	OSH
31	9-10	RX BLDG VENT NORTH	MR/HR	OSH(>1E3)	OSH	OSH	OSH	OSH
32	9-10	RX BLDG VENT SOUTH	MR/HR	OSH(>1E3)	OSH	OSH	OSH	OSH
453A	9-10	SPENT FUEL POOL A	MR/HR	7000	7000	6000	6000	2400
453B	9-10	SPENT FUEL POOL B	MR/HR	7000	7000	6000	6000	2400
	9-10	MAIN STM LINE A	MR/HR	0	0	0	0	0
	9-10	MAIN STM LINE B	MR/HR	0	0	0	0	0
	9-10	MAIN STM LINE C	MR/HR	0	0	0	0	0
	9-10	MAIN STM LINE D	MR/HR	0	0	0	0	0
38	9-10	SJAE(AIR EJECTOR)	MR/HR	0	0	0	0	0

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

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
0700	0	4	3	8	10	10	4	10	10	10
0800	1:00	4	3	8	10	10	4	10	10	10
0815	1:15	3	3	8	9	9	4	10	10	9
0830	1:30	3	3	8	9	9	4	9	9	9
0845	1:45	2	2	8	8	8	3	9	9	9
0900	2:00	2	2	8	8	8	3	8	8	9
0915	2:15	2	2	8	8	8	2	8	8	8
0930	2:30	2	2	8	8	8	2	8	8	8
0945	2:45	2	1	8	7	7	2	8	8	8
1000	3:00	1	1	8	7	7	2	7	7	8
1015	3:15	1	1	8	7	7	1	7	7	8
1030	3:30	1	1	8	7	7	1	7	7	8
1045	3:45	1	1	8	7	7	1	7	7	8
1100	4:00	1	1	8	7	7	1	7	7	8
1115	4:15	1	1	8	7	7	1	7	7	8
1130	4:30	1	1	8	7	7	1	7	7	8
1145	4:45	600	600	600	600	600	600	600	600	600
1200	5:00	1800	1800	1800	1700	1700	2000	1700	1700	2000
1215	5:15	3900	3900	3800	3700	3700	4000	4000	4000	4000
1230	5:30	5500	5400	5300	5200	5200	5500	5000	5000	5500
1245	5:45	6600	6500	6400	6200	6200	6600	6000	6000	6600
1300	6:00	7600	7500	7400	7200	7200	7600	6950	6950	7600
1315	6:15	7200	7000	7000	6900	6900	7300	6600	6600	7300
1330	6:30	7000	6800	6700	6600	6600	7100	6500	6500	7100
1345	6:45	6700	6600	6500	6300	6300	6700	6100	6100	6700
1400	7:00	6500	6400	6200	6100	6100	6500	5900	5900	6500

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 2K-10K dpm/100 cm2 in all zones after 1130.

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

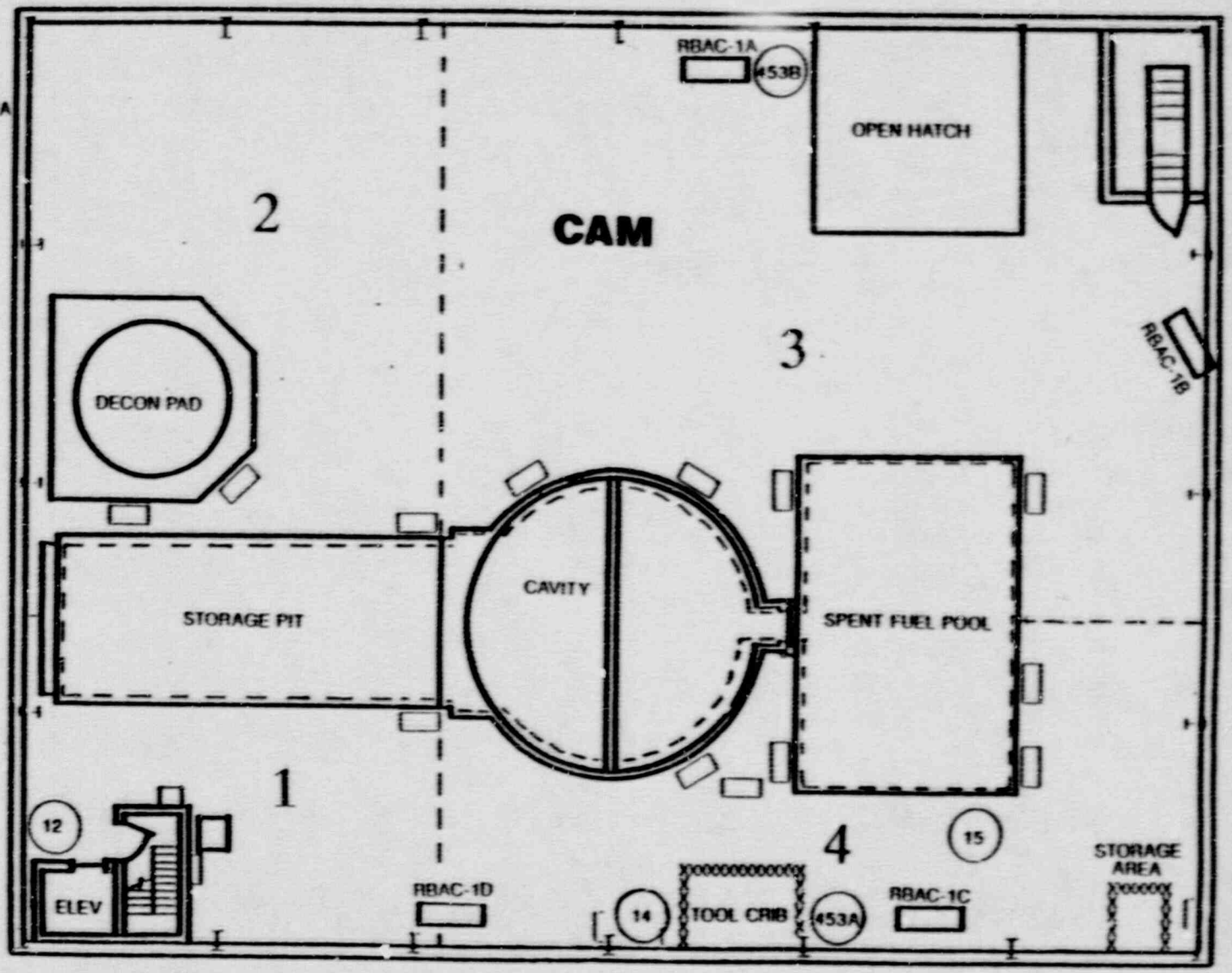


FIGURE 9.3-1

TABLE 9.3-2

Rev. 0
Page 9.3-2a

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
0700	0	5	5	1	5	5	3	5	4	1	1
0800	1:00	5	5	1	5	5	3	5	4	1	1
0815	1:15	4	4	1	5	5	3	5	4	1	1
0830	1:30	4	4	1	5	5	3	5	4	1	1
0845	1:45	4	4	1	4	4	3	4	3	1	1
0900	2:00	4	3	0.5	4	4	3	4	3	0.5	0.5
0915	2:15	4	3	0.5	4	4	3	4	3	0.5	0.5
0930	2:30	4	3	0.5	4	3	2	3	2	0.5	0.5
0945	2:45	3	3	0.5	4	3	2	3	2	0.5	0.5
1000	3:00	3	3	0.5	4	3	2	3	2	0.5	0.5
1015	3:15	3	2	0.5	3	2	2	2	1	0.5	0.5
1030	3:30	3	2	0.5	3	2	2	2	1	0.5	0.5
1045	3:45	3	2	0.5	3	2	1	2	1	0.5	0.5
1100	4:00	3	2	0.5	3	2	1	2	1	0.5	0.5
1115	4:15	3	2	0.5	3	2	1	2	1	0.5	0.5
1130	4:30	3	2	0.5	3	2	1	2	1	0.5	0.5
1145	4:45	1700	1700	7	1700	1700	1000	1700	800	1400	1400
1200	5:00	5300	5500	20	5300	5500	4500	5500	3600	4200	4200
1215	5:15	(OSH)>1E4	(OSH)>1E4	50	[illegible]	12000	10000	12000	8000	8800	8800
1230	5:30	(OSH)	(OSH)	70	17000	20000	15000	20000	12000	14000	14000
1245	5:45	(OSH)	(OSH)	84	20000	24000	20000	24000	16000	16000	16000
1300	6:00	(OSH)	(OSH)	98	23000	28000	22000	28000	18000	18000	18000
1315	6:15	(OSH)	(OSH)	94	22000	27000	21000	27000	17000	17000	17000
1330	6:30	(OSH)	(OSH)	91	21000	26000	21000	26000	17000	17000	17000
1345	6:45	(OSH)	(OSH)	85	20000	24000	20000	24000	16000	16000	16000
1400	7:00	(OSH)	(OSH)	82	19000	23000	20000	24000	16000	15000	15000

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 10K-50K dpm/100 cm2 in all zones after 1130.
(OSH) OFF SCALE HIGH

REACTOR BUILDING

ELEVATION 318'

N

MONITORS

10 - REACTOR BUILDING ELEVATOR ENTRANCE

11 - REACTOR BUILDING REACTOR WATER CLEANUP AREA

16 - REACTOR BUILDING NEW FUEL VAULT

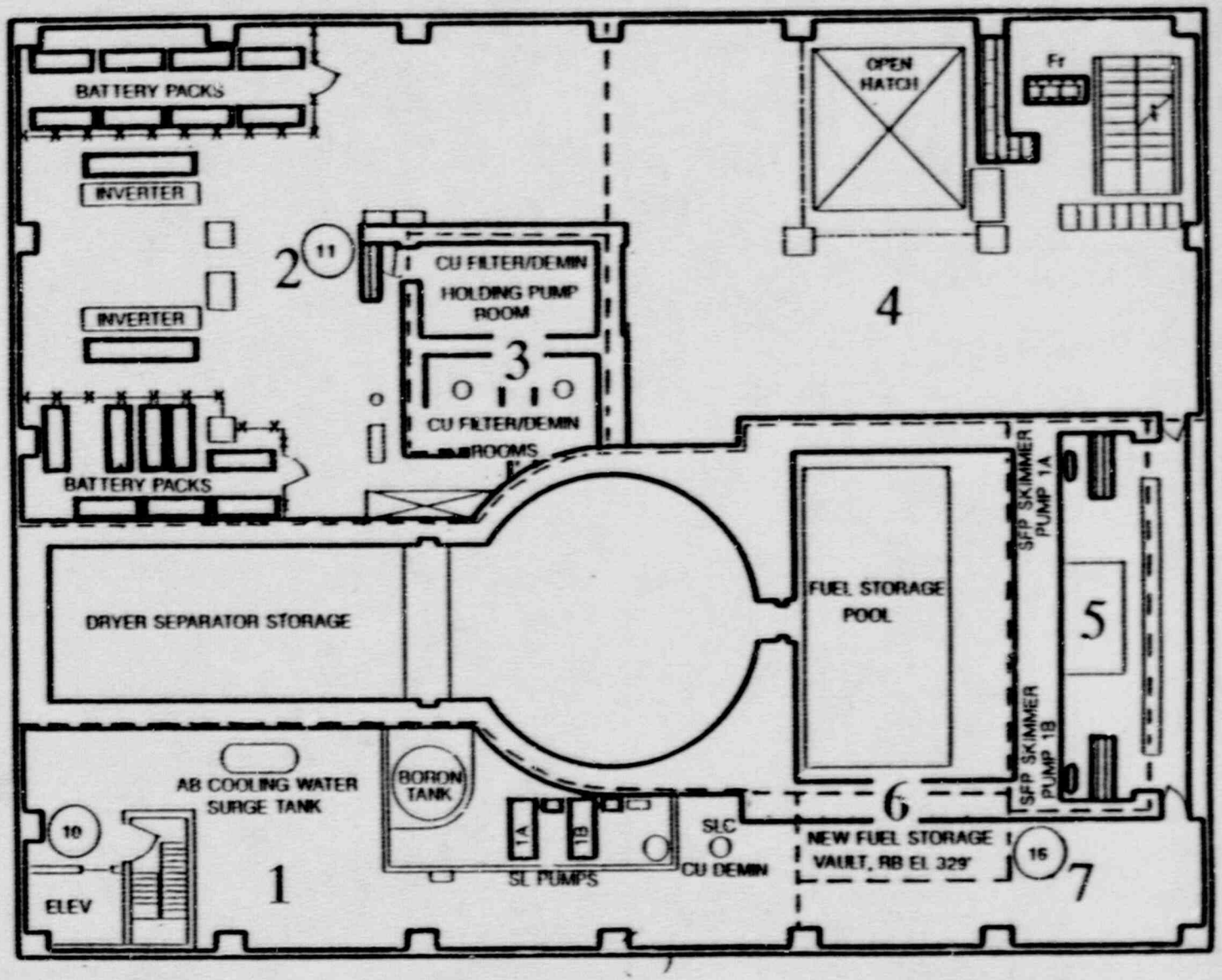


FIGURE 9.3-2

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
0700	0	3	4	4	3	6	3	6	5	5
0800	1:00	3	4	4	3	6	3	6	5	5
0815	1:15	2	4	4	3	6	3	6	5	5
0830	1:30	2	4	4	3	6	3	6	5	5
0845	1:45	2	4	4	3	6	3	6	5	5
0900	2:00	2	4	4	3	6	3	6	5	5
0915	2:15	2	4	4	4	6	4	6	5	5
0930	2:30	2	4	4	4	6	4	6	5	5
0945	2:45	2	4	4	4	6	4	6	5	5
1000	3:00	1	4	4	4	6	4	6	6	6
1015	3:15	1	4	4	4	7	4	7	6	6
1030	3:30	1	4	4	4	7	4	7	6	6
1045	3:45	1	4	4	4	7	4	7	6	6
1100	4:00	1	4	4	4	7	4	7	6	6
1115	4:15	1	4	4	4	7	4	7	6	6
1130	4:30	1	4	4	4	7	4	7	6	6
1145	4:45	1000	1600	1400	1400	900	1400	1400	1100	1400
1200	5:00	4000	5600	4200	4200	3000	4200	4200	3400	4200
1215	5:15	7800	9600	8800	8800	6000	8800	8800	7000	8800
1230	5:30	(OSH)>1E4	(OSH)>1E4	14000	14000	9000	14000	14000	11000	14000
1245	5:45	(OSH)	(OSH)	16000	16000	10000	16000	16000	13000	16000
1300	6:00	(OSH)	(OSH)	18000	18000	11000	18000	18000	14000	18000
1315	6:15	(OSH)	(OSH)	17000	17000	11000	17000	17000	14000	17000
1330	6:30	(OSH)	(OSH)	17000	17000	11000	17000	17000	14000	17000
1345	6:45	(OSH)	(OSH)	16000	16000	10000	16000	16000	13000	16000
1400	7:00	(OSH)	(OSH)	15000	15000	9600	15000	15000	12000	15000

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 10K-50K dpm/100 cm2 in all zones after 1130.
(OSH) OFF SCALE HIGH

REACTOR BUILDING

ELEVATION 303'

N

MONITORS

8 - REACTOR BUILDING ELEVATOR ENTRANCE

9 - REACTOR BUILDING REACTOR WATER CLEANUP AREA

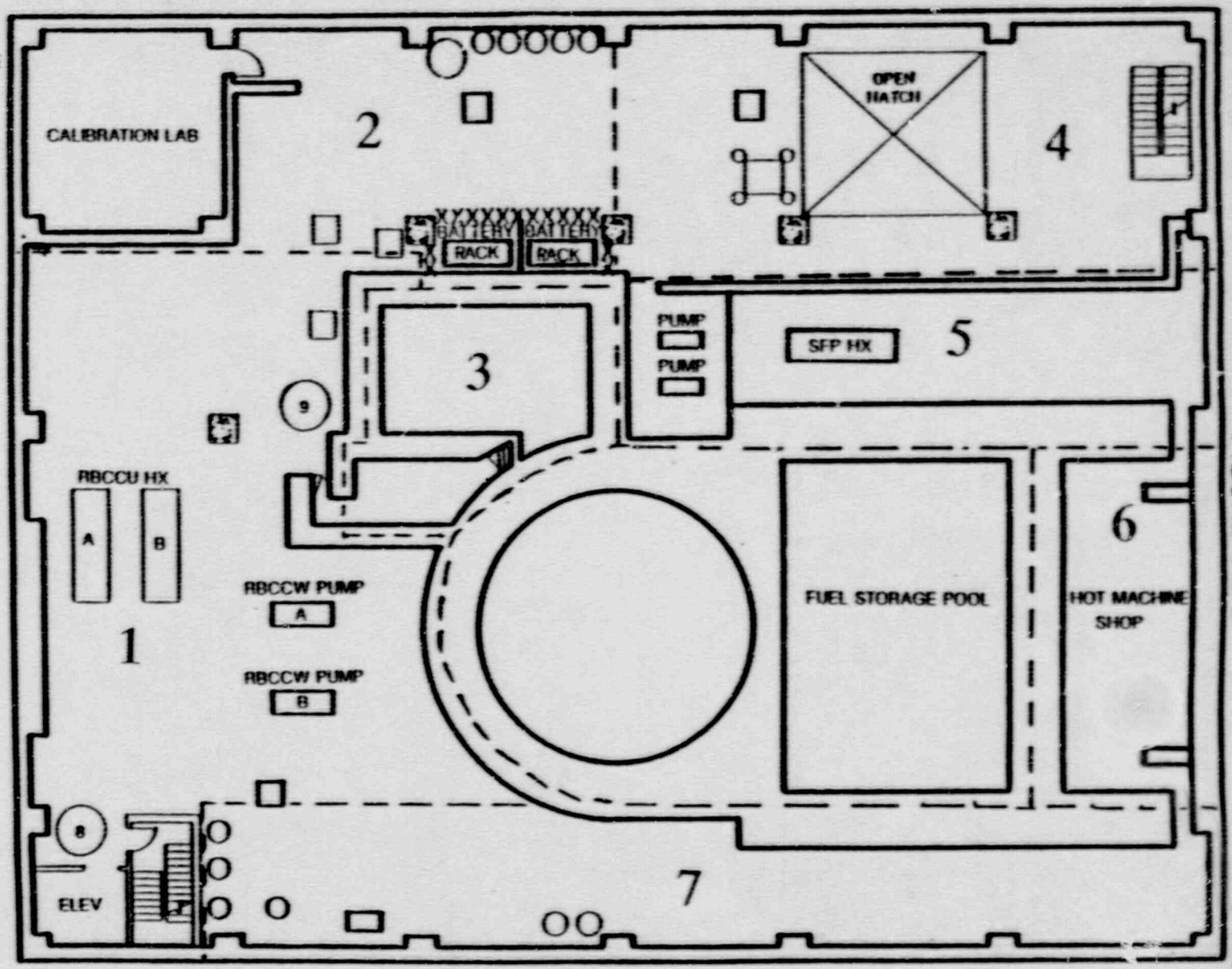


FIGURE 9.3-3

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
0700	0	8	1	1	10	12	10	8	10	12	1
0800	1:00	8	1	1	10	12	10	8	10	12	1
0815	1:15	7	1	1	8	12	8	7	8	12	1
0830	1:30	7	1	1	8	12	8	7	8	12	1
0845	1:45	7	1	1	8	10	8	7	8	10	1
0900	2:00	6	1	1	8	10	8	6	8	10	1
0915	2:15	6	1	1	7	10	7	6	7	10	1
0930	2:30	6	1	1	7	10	7	6	7	10	1
0945	2:45	6	1	1	7	10	7	6	7	10	1
1000	3:00	6	1	1	7	9	7	6	7	9	1
1015	3:15	5	1	1	7	9	7	5	7	9	1
1030	3:30	5	1	1	7	9	7	5	7	9	1
1045	3:45	5	1	1	7	9	7	5	7	9	1
1100	4:00	5	1	1	7	9	7	5	7	9	1
1115	4:15	5	1	1	7	9	7	5	7	9	1
1130	4:30	5	1	1	7	8	7	5	7	8	1
1145	4:45	1700	OSH(>1E3)	OSH(>1E3)	2000	2200	2000	1700	2000	2200	2000
1200	5:00	5500	OSH	OSH	5500	5800	5500	5500	5500	5800	5000
1215	5:15	OSH(>1E4)	OSH	OSH	12000	15000	12000	11800	12000	15000	10000
1230	5:30	OSH	OSH	OSH	20000	24000	20000	17000	20000	24000	15000
1245	5:45	OSH	OSH	OSH	24000	29000	24000	21000	24000	29000	18000
1300	6:00	OSH	OSH	OSH	28000	34000	28000	24000	28000	34000	20000
1315	6:15	OSH	OSH	OSH	27000	32000	27000	23000	27000	32000	20000
1330	6:30	OSH	OSH	OSH	26000	31000	26000	22000	26000	31000	20000
1345	6:45	OSH	OSH	OSH	24000	29000	24000	21000	25000	29000	20000
1400	7:00	OSH	OSH	OSH	24000	28000	24000	20000	24000	28000	20000

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 20K-100K dpm/100 cm2 in all zones after 1130.
Zone VIII same as Zone VI

Rx BUILDING

ELEVATION 280'

MONITORS

6 - REACTOR BUILDING ELEVATOR ENTRANCE

31 - REACTOR BUILDING VENT EXHAUST MONITOR (NORTH)

32 - REACTOR BUILDING VENT EXHAUST MONITOR (SOUTH)

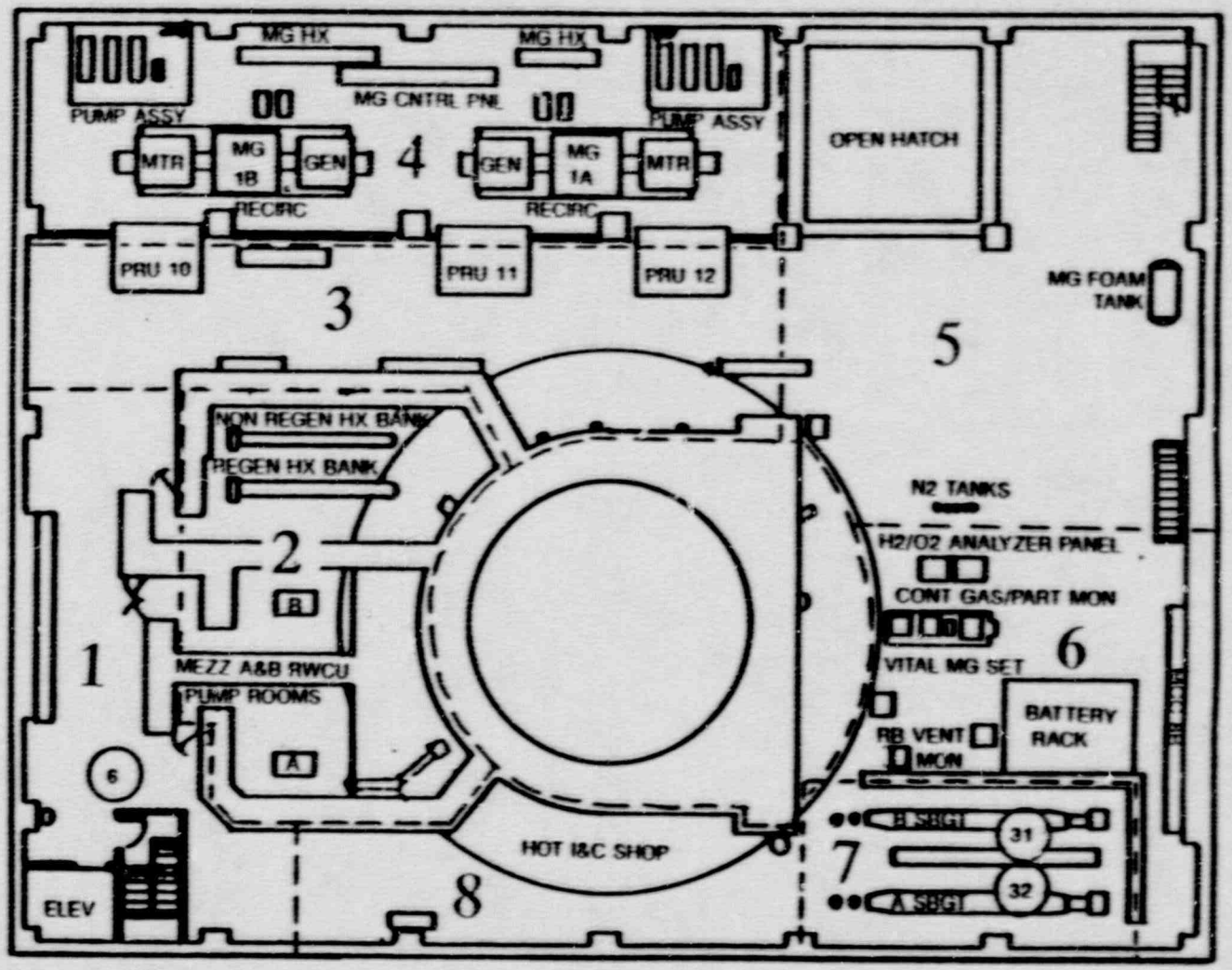


FIGURE 9.3-4

TABLE 9.3-5

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

Clock Time	Scenario Time	ARM2	ARM3	ARM4	ARM5	ARM7	RM-14-29*	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI	Zone VII
0700	0	10	1	5	300	20	100	5	12	1	300	1	20	28
0800	1:00	10	1	5	300	20	100	5	12	1	300	1	20	24
0815	1:15	8	1	5	240	10	100	5	12	1	240	1	10	20
0830	1:30	6	1	5	180	10	100	5	10	1	180	1	10	18
0845	1:45	5	1	5	140	10	100	5	8	1	140	1	10	15
0900	2:00	4	1	5	100	10	100	5	7	1	100	1	10	13
0915	2:15	3	1	5	90	10	100	5	5	1	90	1	10	10
0930	2:30	3	1	5	70	10	100	5	5	1	70	1	10	10
0945	2:45	2	1	5	50	5	100	5	3	1	50	1	5	10
1000	3:00	1	1	5	30	5	100	5	2	1	30	1	5	10
1015	3:15	1	1	5	20	5	100	5	1	1	20	1	5	10
1030	3:30	1	1	5	20	5	100	5	1	1	20	1	5	10
1045	3:45	1	1	5	10	5	100	5	1	1	10	1	5	10
1100	4:00	1	1	5	10	5	100	5	1	1	10	1	5	10
1115	4:15	1	1	5	10	5	100	5	1	1	10	1	5	9
1130	4:30	1	1	5	10	5	100	5	1	1	10	1	5	8
1145	4:45	>1E3	>1E3	1800	6000	200	>500	2000	2000	3000	6000	3000	200	250
1200	5:00	(OSH)	(OSH)	10000	>1E4	600	>500	10000	10000	12000	19500	12000	600	700
1215	5:15	(OSH)	(OSH)	>1E4	(OSH)	1400	>500	16000	16000	20000	41000	20000	1400	1800
1230	5:30	(OSH)	(OSH)	(OSH)	(OSH)	2100	>500	20000	20000	25000	53500	25000	2100	2900
1245	5:45	(OSH)	(OSH)	(OSH)	(OSH)	2500	>500	24000	24000	30000	64000	30000	2500	3500
1300	6:00	(OSH)	(OSH)	(OSH)	(OSH)	3000	>500	28000	28000	35000	74000	35000	3000	4000
1315	6:15	(OSH)	(OSH)	(OSH)	(OSH)	2800	>500	27000	27000	33000	71000	33000	2800	3800
	6:30	(OSH)	(OSH)	(OSH)	(OSH)	2700	>500	26000	26000	32000	68500	32000	2700	3700
1345	6:45	(OSH)	(OSH)	(OSH)	(OSH)	2500	>500	24000	24000	30000	64000	30000	2500	3500
1400	7:00	(OSH)	(OSH)	(OSH)	(OSH)	2500	>500	24000	24000	30000	64000	30000	2500	3400

Notes: Zone readings are average dose rates throughout zone.
General area contamination levels 20K-100K dpm/100 cm² in all zones after 1130.

TABLE 9.3-5
(Continued)

Clock Time	Scenario Time	NORTH RMS II-1**	SOUTH RMS II-2**	TIP RMS II-3**
0700	0	<1.0	<1.0	<1.0
0800	1:00	<1.0	<1.0	<1.0
0815	1:15	<1.0	<1.0	<1.0
0830	1:30	<1.0	<1.0	<1.0
0845	1:45	<1.0	<1.0	<1.0
0900	2:00	<1.0	<1.0	<1.0
0915	2:15	<1.0	<1.0	<1.0
0930	2:30	<1.0	<1.0	<1.0
0945	2:45	<1.0	<1.0	<1.0
1000	3:00	<1.0	<1.0	<1.0
1015	3:15	<1.0	<1.0	<1.0
1030	3:30	<1.0	<1.0	<1.0
1045	3:45	<1.0	<1.0	<1.0
1100	4:00	<1.0	<1.0	<1.0
1115	4:15	<1.0	<1.0	<1.0
1130	4:30	<1.0	<1.0	<1.0
1145	4:45	2	3	2
1200	5:00	10	12	10
1215	5:15	16	20	16
1230	5:45	20	25	20
1245	5:45	24	30	24
1300	6:00	28	35	28
1315	6:15	27	33	27
1330	6:30	26	32	26
1345	6:45	24	30	24
1400	7:00	24	30	24

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

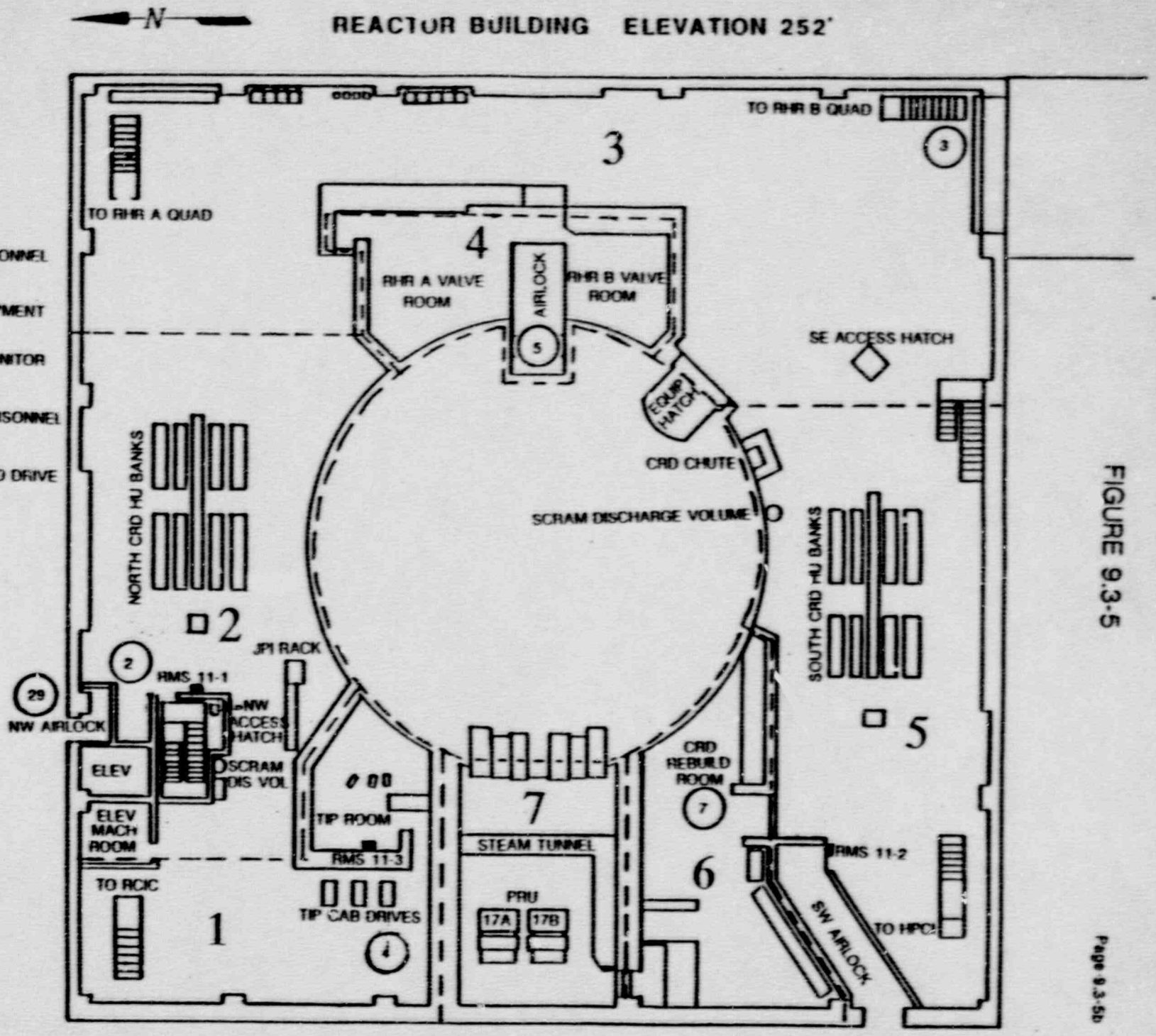


FIGURE 9.3-5

TABLE 9.3-6

Rev. 0
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
0700	0	190	100	150	190	250	900
0800	1:00	190	100	150	190	250	900
0815	1:15	180	80	140	180	250	900
0830	1:30	160	75	120	160	250	900
0845	1:45	140	75	120	140	250	900
0900	2:00	110	75	90	110	250	900
0915	2:15	100	50	80	100	250	900
0930	2:30	80	50	70	80	250	900
0945	2:45	70	40	60	70	250	900
1000	3:00	60	40	50	60	250	900
1015	3:15	50	30	50	50	250	900
1030	3:30	50	30	40	50	250	900
1045	3:45	40	20	35	40	250	900
1100	4:00	40	20	35	40	250	900
1115	4:15	40	15	30	40	250	900
1130	4:30	30	16	22	30	250	900
1145	4:45	30	16	22	30	250	900
1200	5:00	30	11	22	30	250	900
1215	5:15	30	11	22	30	250	900
1230	5:30	25	11	22	25	250	900
1245	5:45	25	10	20	25	250	900
1300	6:00	25	10	20	25	250	900
1315	6:15	25	10	20	25	250	900
1330	6:30	25	10	20	25	250	900
1345	6:45	25	10	20	25	250	900
1400	7:00	25	10	20	25	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

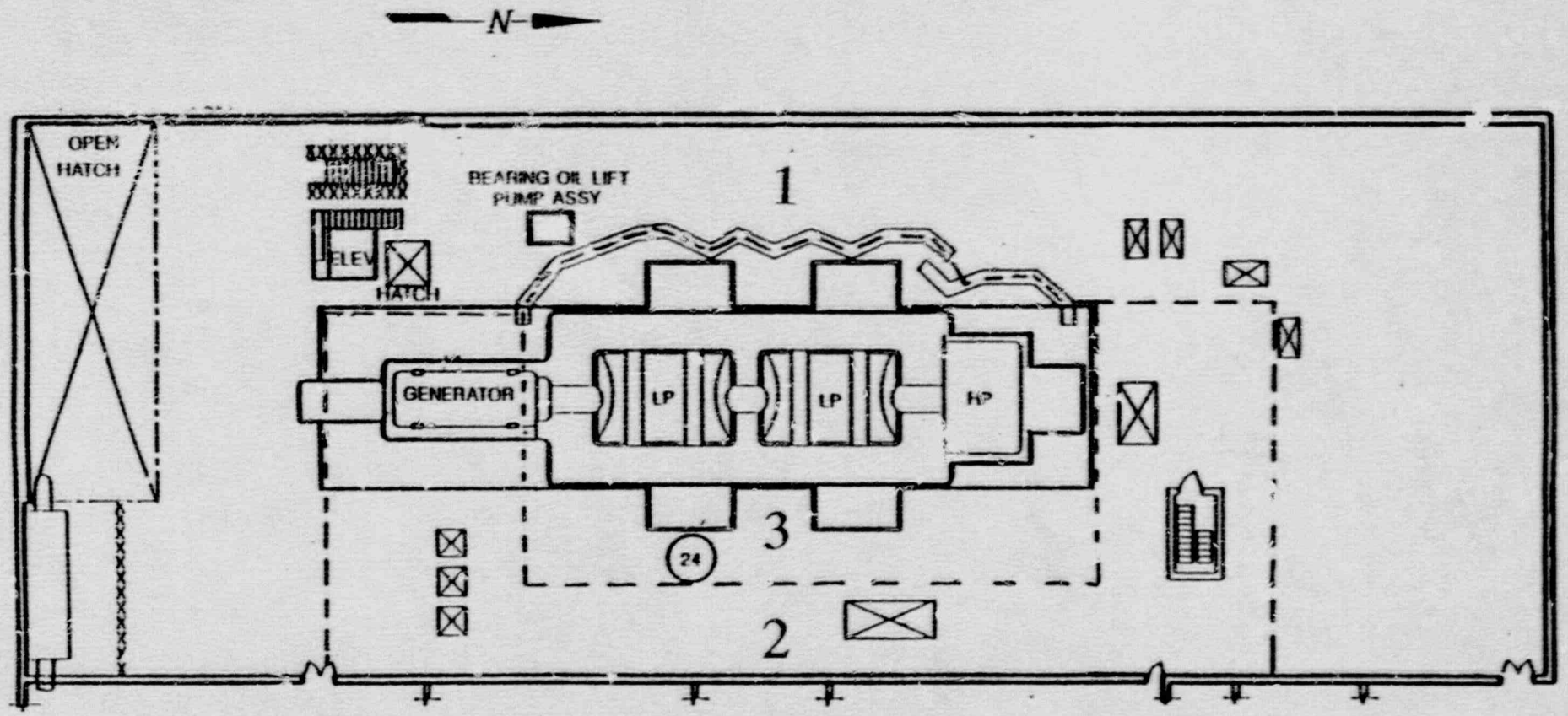


FIGURE 9.3-6

TABLE 9.3-7

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

Clock Time	Scenario Time	RM-14-23A (cpm)	ARM 26	RM-14-36 (cpm)	Zone I	Zone II	Zone III	Zone IV
0700	0	150	0.02	150	0.2	0.2	0.1	0.2
0800	1:00	150	0.02	150	0.4	0.3	0.2	0.2
0815	1:15	150	0.02	150	0.5	0.3	0.2	0.2
0830	1:30	150	0.02	150	0.5	0.3	0.2	0.2
0845	1:45	150	0.02	150	0.5	0.3	0.2	0.2
0900	2:00	150	0.02	150	0.5	0.3	0.2	0.2
0915	2:15	150	0.01	150	0.5	0.3	0.2	0.2
0930	2:30	150	0.01	150	0.5	0.3	0.2	0.2
0945	2:45	150	0.01	150	0.5	0.3	0.2	0.2
1000	3:00	150	0.01	150	0.6	0.3	0.2	0.2
1015	3:15	150	0.01	150	0.6	0.3	0.2	0.2
1030	3:30	150	0.01	150	0.6	0.3	0.2	0.2
1045	3:45	150	0.01	150	0.6	0.3	0.2	0.2
1100	4:00	150	0.01	150	0.6	0.3	0.2	0.2
1115	4:15	150	0.01	150	0.7	0.3	0.2	0.2
1130	4:30	150	0.01	150	0.7	0.3	0.2	0.2
1145	4:45	150	0.01	150	0.7	0.3	0.2	0.2
1200	5:00	150	0.01	150	0.7	0.3	0.2	0.2
1215	5:15	150	0.01	150	0.7	0.3	0.2	0.2
1230	5:30	150	0.01	150	0.7	0.3	0.2	0.2
1245	5:45	150	0.01	150	0.7	0.3	0.2	0.2
1300	6:00	150	0.01	150	0.7	0.3	0.2	0.2
1315	6:15	150	0.01	150	0.7	0.3	0.2	0.2
1330	6:30	150	0.01	150	0.7	0.3	0.2	0.2
1345	6:45	150	0.01	150	0.7	0.3	0.2	0.2
1400	7:00	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

MONITORS

23A - TURBINE BUILDING RAILROAD TRACK RM-14'S

36 - WEST TURBINE BUILDING EXIT RM-14'S

26 - TURBINE BUILDING RAILROAD DOOR

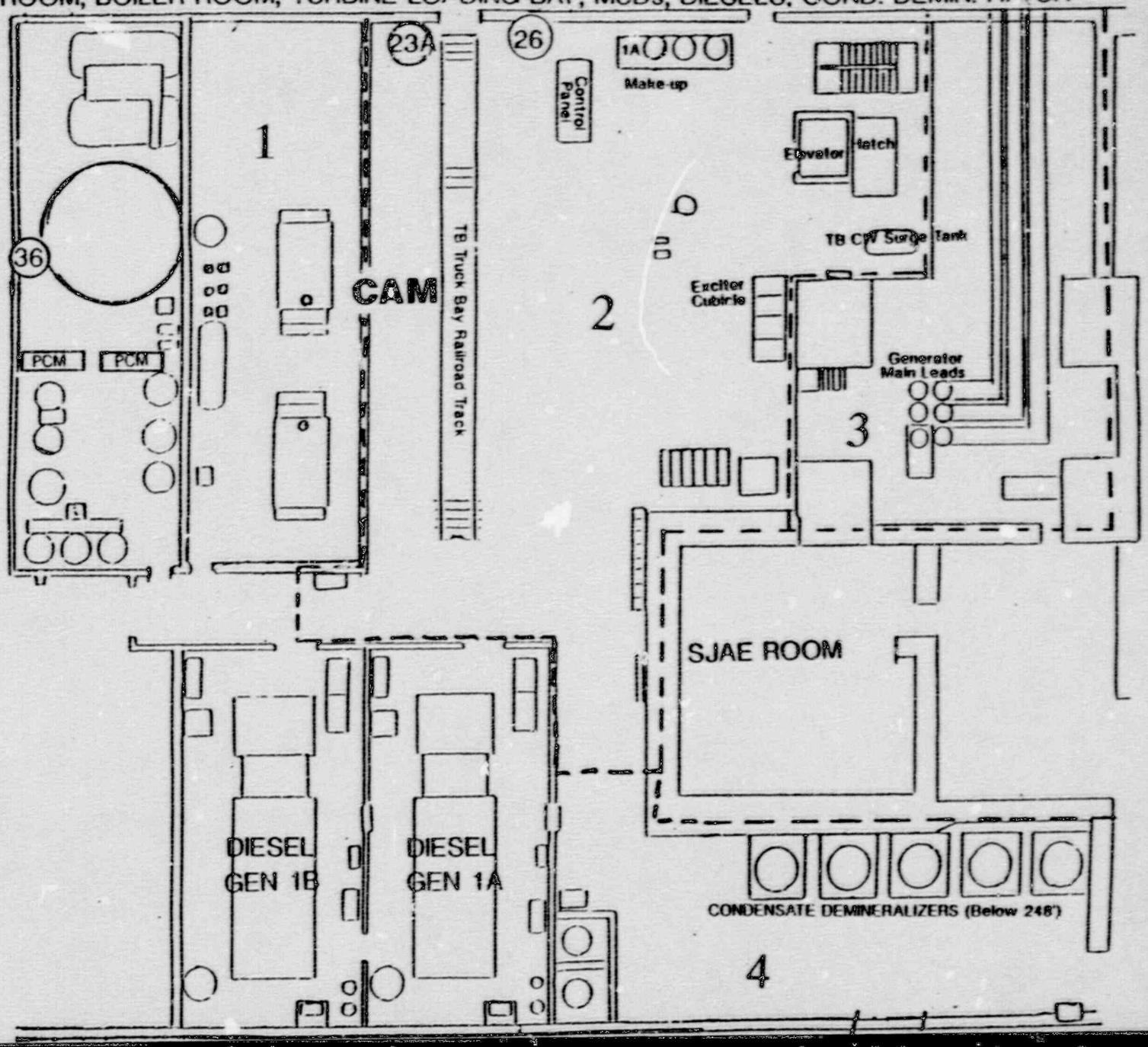


FIGURE 9.3-7

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 VII
0700	0	3	370	2	2	4	8	300	3
0800	1:00	3	370	2	2	4	8	300	3
0815	1:15	3	350	2	2	4	8	300	3
0830	1:30	2	320	2	2	4	8	300	2
0845	1:45	2	270	2	2	4	4	300	2
0900	2:00	2	230	2	2	3	4	200	2
0915	2:15	2	190	2	2	3	4	150	2
0930	2:30	2	160	2	2	3	4	150	2
0945	2:45	2	140	2	2	3	4	150	2
1000	3:00	2	120	2	2	3	4	100	2
1015	3:15	2	110	2	2	3	3	100	2
1030	3:30	2	100	2	1	3	3	90	2
1045	3:45	2	90	2	1	3	3	80	2
1100	4:00	2	80	1	1	3	3	80	2
1115	4:15	2	70	1	1	2	3	60	2
1130	4:30	2	65	1	1	2	3	60	2
1145	4:45	2	60	1	1	2	2	50	2
1200	5:00	2	55	1	1	2	2	50	2
1215	5:15	2	55	1	1	1	1	50	1
1230	5:30	2	50	1	1	1	1	50	1
1245	5:45	2	50	1	1	1	1	50	1
1300	6:00	2	50	1	1	1	1	50	1
1315	6:15	2	50	1	1	1	1	50	1
1330	6:30	2	50	1	1	1	1	50	1
1345	6:45	2	50	1	1	1	1	50	1
1400	7:00	2	50	1	1	1	1	50	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

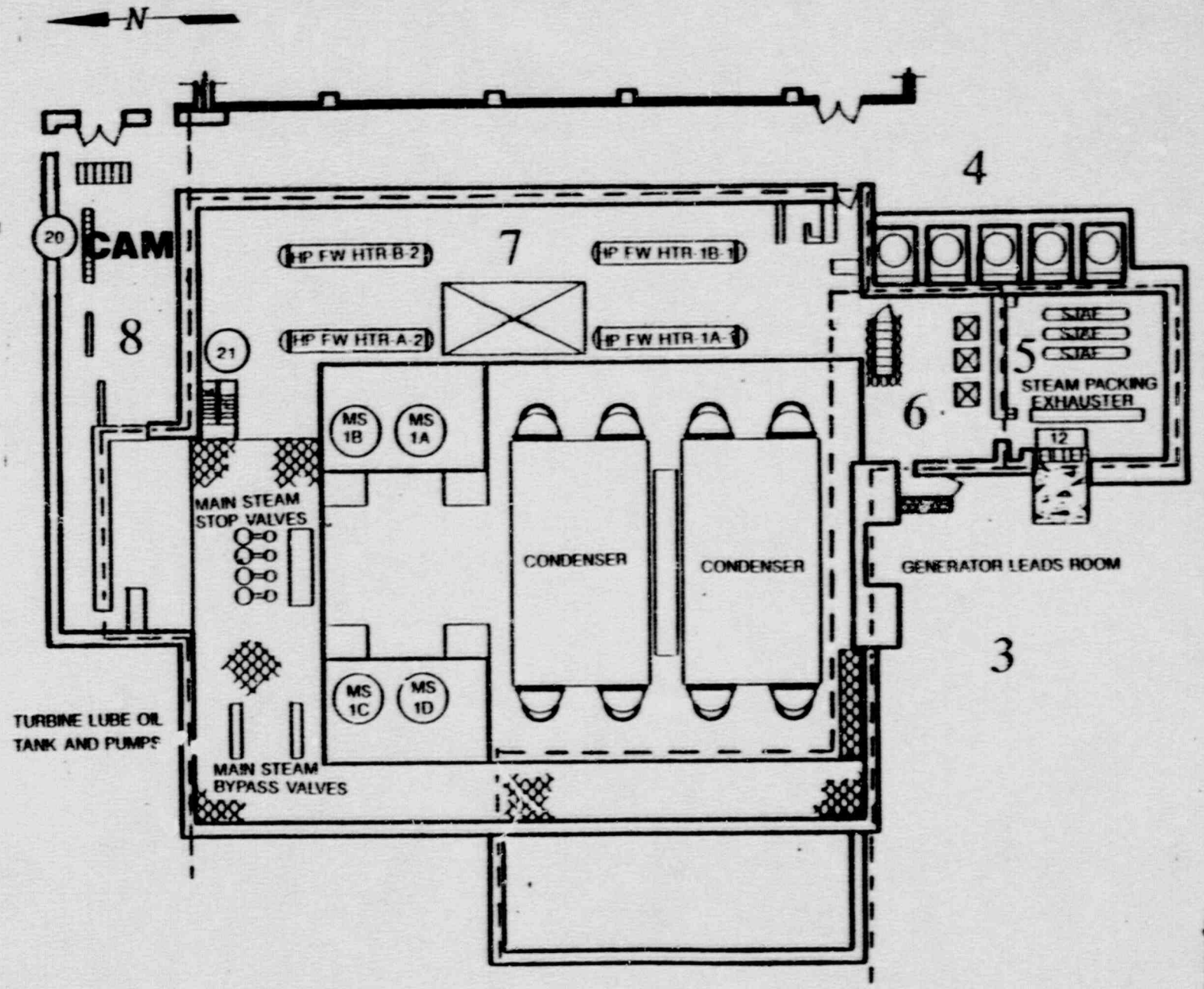


FIGURE 9.3-8

TABLE 9.3-9

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

Clock Time	Scenario Time	ARM 22	ARM 38	Zone I	Zone II	Zone III
0700	0	0.3	70	0.2	0.5	0.2
0800	1:00	0.3	70	0.2	0.5	0.2
0815	1:15	0.28	60	0.2	0.5	0.2
0830	1:30	0.26	50	0.2	0.5	0.2
0845	1:45	0.24	40	0.2	0.5	0.2
0900	2:00	0.20	30	0.2	0.5	0.2
0915	2:15	0.20	25	0.2	0.5	0.2
0930	2:30	0.18	D/S	0.2	0.5	0.2
0945	2:45	0.18	D/S	0.2	0.5	0.2
1000	3:00	0.16	D/S	0.2	0.5	0.2
1015	3:15	0.15	D/S	0.2	0.5	0.2
1030	3:30	0.15	D/S	0.2	0.5	0.2
1045	3:45	0.14	D/S	0.2	0.5	0.2
1100	4:00	0.14	D/S	0.2	0.5	0.2
1115	4:15	0.14	D/S	0.2	0.5	0.2
1130	4:30	0.13	D/S	0.2	0.5	0.2
1145	4:45	0.13	D/S	0.2	0.5	0.2
1200	5:00	0.13	D/S	0.2	0.5	0.2
1215	5:15	0.13	D/S	0.2	0.5	0.2
1230	5:30	0.13	D/S	0.2	0.5	0.2
1245	5:45	0.13	D/S	0.2	0.5	0.2
1300	6:00	0.13	D/S	0.2	0.5	0.2
1315	6:15	0.13	D/S	0.2	0.5	0.2
1330	6:30	0.13	D/S	0.2	0.5	0.2
1345	6:45	0.13	D/S	0.2	0.5	0.2
1400	7:00	0.13	D/S	0.2	0.5	0.2

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

TURBINE BUILDING
ELEVATION 232'

MONITORS

22 - TURBINE BUILDING CONDENSATE DEMINERALIZERS

38 - OFF GAS RADIATION MONITORS

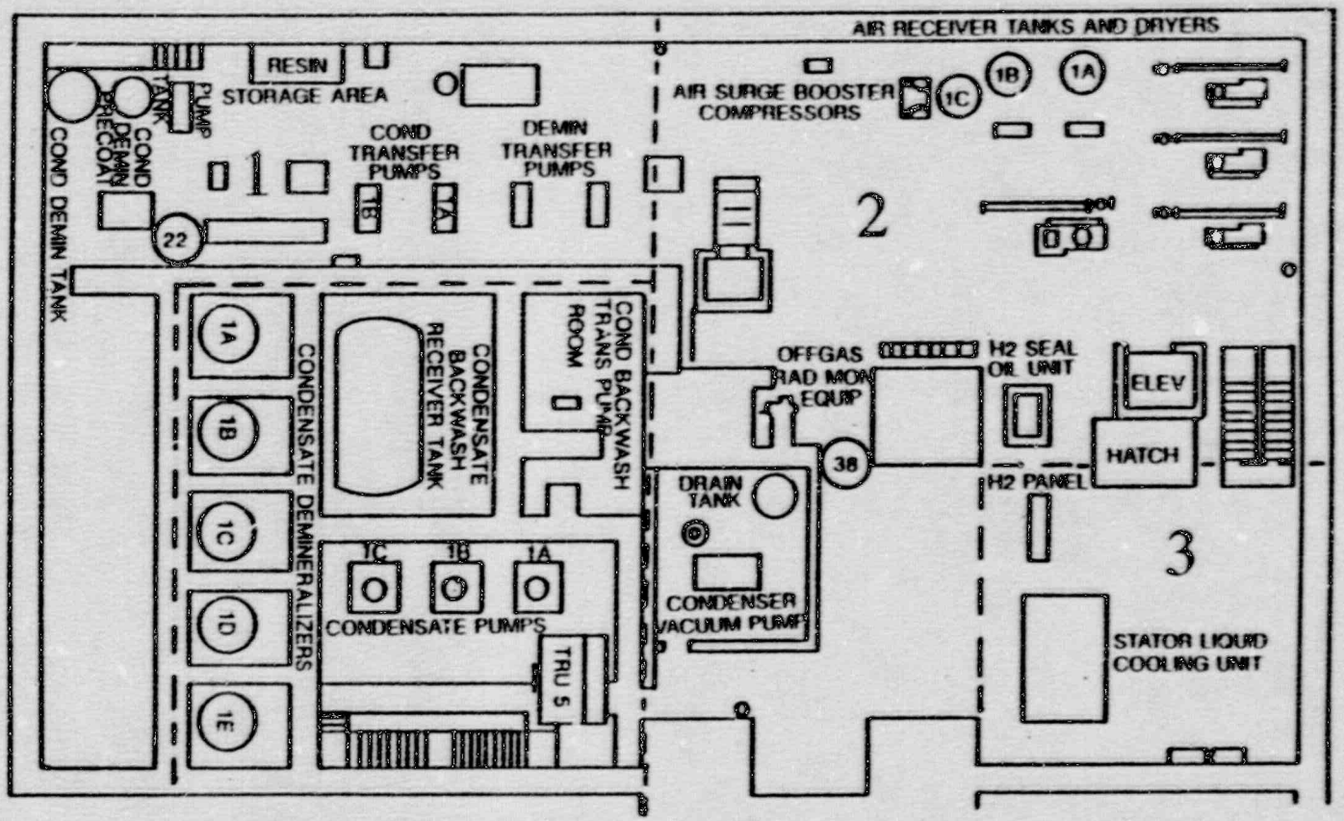


FIGURE 9.3-9

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
0700	0	150	3	1	50	150	2	75
0800	1:00	150	3	1	50	150	2	75
0815	1:15	140	3	1	45	140	2	70
0830	1:30	130	3	1	45	130	2	70
0845	1:45	110	3	1	35	110	2	55
0900	2:00	90	3	1	30	90	2	45
0915	2:15	80	3	1	25	80	2	40
0930	2:30	70	3	1	20	70	2	35
0945	2:45	60	1	1	20	60	2	30
1000	3:00	50	1	1	15	50	2	25
1015	3:15	40	1	1	10	40	2	20
1030	3:30	30	1	1	10	30	2	15
1045	3:45	30	1	1	10	30	2	15
1100	4:00	20	1	1	5	20	2	10
1115	4:15	20	1	1	5	20	2	10
1130	4:30	15	1	1	5	15	2	7
1145	4:45	15	1	1	5	15	2	7
1200	5:00	15	1	1	5	15	2	7
1215	5:15	15	1	1	5	15	2	7
1230	5:30	15	1	1	5	15	2	7
1245	5:45	15	1	1	5	15	2	7
1300	6:00	15	1	1	5	15	2	7
1315	6:15	15	1	1	5	15	2	7
1330	6:30	15	1	1	5	15	2	7
1345	6:45	15	1	1	5	15	2	7
1400	7:00	15	1	1	5	15	2	7

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

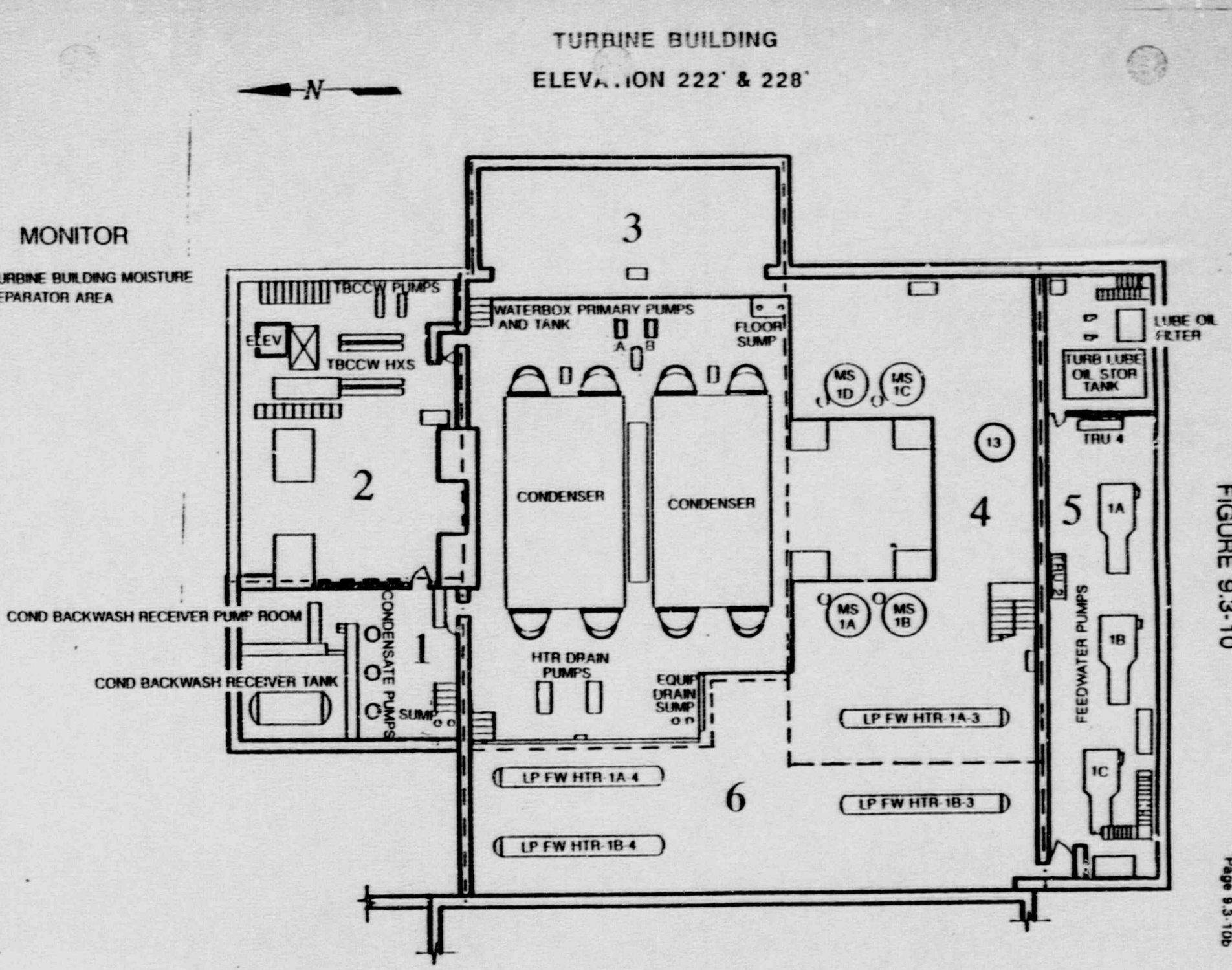

TURBINE BUILDING
ELEVATION 222' & 228'
N
MONITOR
13 - TURBINE BUILDING MOISTURE SEPARATOR AREA
TBCCW PUMPS
ELEV
TBCCW HXS
WATERBOX PRIMARY PUMPS AND TANK
A
B
FLOOR SUMP
LUBE OIL FILTER
TURB LUBE OIL STOR TANK
TRU 4
MS 1D
MS 1C
MS 1A
MS 1B
CONDENSER
CONDENSER
13
2
3
4
5
6
1
1A
1B
1C
COND BACKWASH RECEIVER PUMP ROOM
COND BACKWASH RECEIVER TANK
CONDENSATE PUMPS
SUMP
HTR DRAIN PUMPS
EQUIP DRAIN SUMP
TRU 2
FEEDWATER PUMPS
LP FW HTR 1A-3
LP FW HTR 1A-4
LP FW HTR 1B-3
LP FW HTR 1B-4

FIGURE 9.3-10

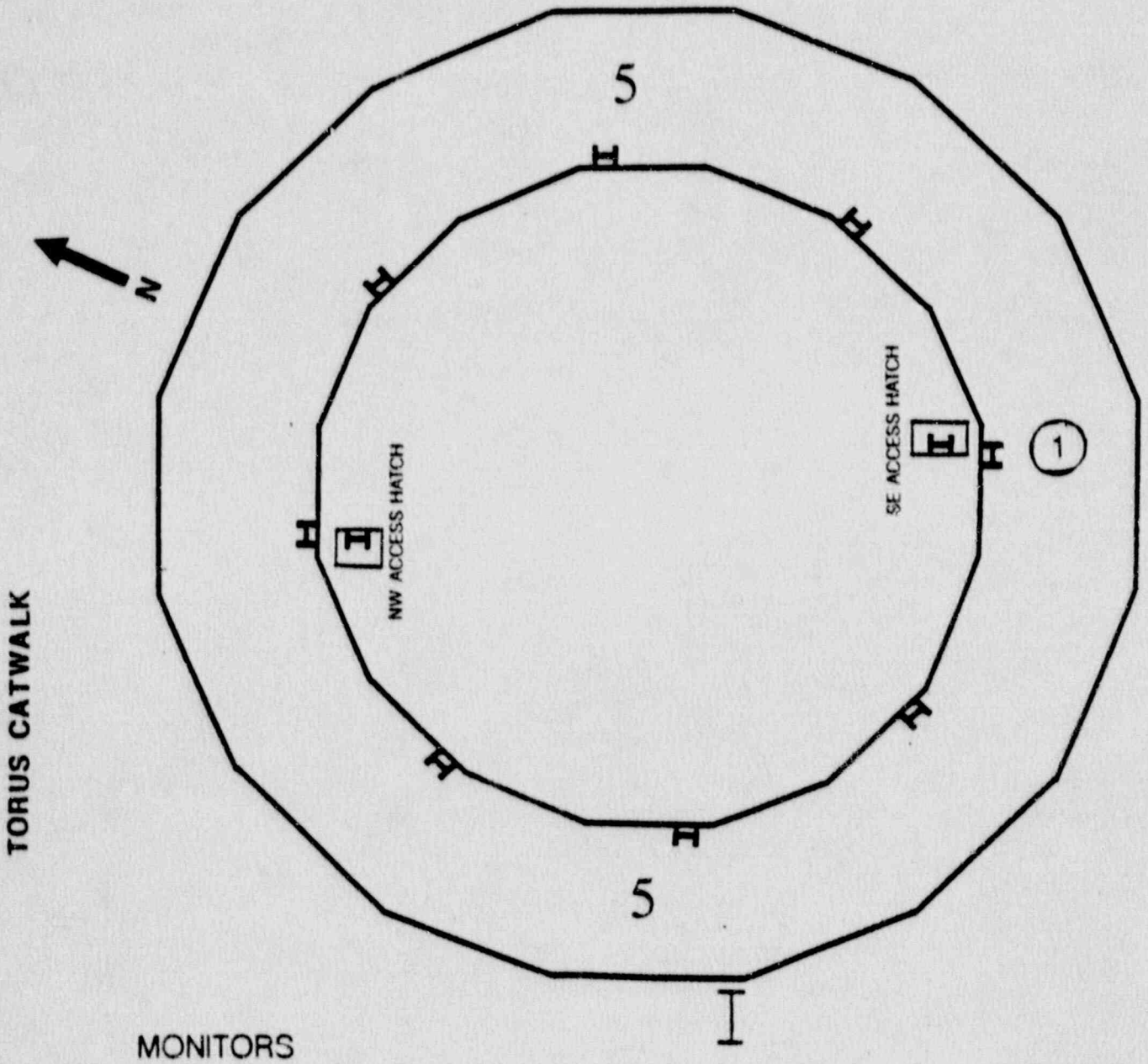
TABLE 9.3-11

Torus Catwalk
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 1	Zone 5
0700	0	8	10
0800	1:00	8	10
0815	1:15	7	10
0830	1:30	7	10
0845	1:45	7	10
0900	2:00	7	10
0915	2:15	7	10
0930	2:30	6	8
0945	2:45	6	8
1000	3:00	6	8
1015	3:15	6	8
1030	3:30	6	8
1045	3:45	6	8
1100	4:00	6	8
1115	4:15	6	8
1130	4:30	6	8
1145	4:45	3000	4000
1200	5:00	6000	6500
1215	5:15	9000	9500
1230	5:40	(OSH)>1E4	16000
1245	5:45	(OSH)	19000
1300	6:00	(OSH)	22000
1315	6:15	(OSH)	22000
1330	6:30	(OSH)	20000
1345	6:45	(OSH)	20000
1400	7:00	(OSH)	19000

Notes: Zone readings are average dose rates throughout zone.
(OSH) OFF SCALE HIGH

FIGURE 9.3-11



1-REACTOR BUILDING SUPPRESSION CHAMBER EXT CATWALK

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

9.4 PLANT CHEMISTRY DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

9.4 PLANT CHEMISTRY DATA

SECTION — PAGE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

9.4.1 REACTOR COOLANT ACTIVITY DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
19--

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Time Prior to 1130	1130-1145	1145-1200
I-131	2.5E-03	1.1E+02	1.0E+02
I-132	2.8E-03	1.1E+02	1.0E+02
I-133	5.2E-03	2.0E+02	2.0E+02
I-134	4.1E-03	9.3E+01	7.5E+01
I-135	4.5E-03	1.8E+02	1.7E+02
Total Iodine	1.9E-02	6.9E+02	6.5E+02
I-131 Dose Equivalent	4.5E-03	1.8E+02	1.8E+02
Kr-83m	1.2E-03	6.1E-01	1.3E+00
Kr-85m	2.5E-02	4.3E-01	4.1E-01
Kr-85	4.8E-03	2.4E-02	2.4E-02
Kr-87	2.9E-03	5.0E-01	4.3E-01
Kr-88	1.0E-03	9.9E-01	9.1E-01
Xe-133	5.3E-03	4.4E+00	4.6E+00
Xe-135m	5.8E-03	8.2E+00	1.7E+01
Xe-135	2.2E-03	2.6E+00	5.5E+00
Total Noble Gas	4.8E-02	1.8E+01	3.0E+01

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

	Time		
Isotope	1200-1215	1215-1230	1230-1245
I-131	1.0E+02	1.0E+02	9.9E+01
I-132	9.2E+01	8.4E+01	7.6E+01
I-133	1.9E+02	1.9E+02	1.8E+02
I-134	6.1E+01	4.9E+01	4.0E+01
I-135	1.6E+02	1.5E+02	1.5E+02
Total Iodine	6.1E+02	5.8E+02	5.5E+02
I-131 Dose Equivalent	1.7E+02	1.7E+02	1.6E+02
Kr-83m	1.8E+00	2.2E+00	2.5E+00
Kr-85m	3.8E-01	3.6E-01	3.4E-01
Kr-85	2.3E-02	2.3E-02	2.2E-02
Kr-87	3.7E-01	3.2E-01	2.7E-01
Kr-88	8.4E-01	7.8E-01	7.2E-01
Xe-133	4.8E+00	5.0E+00	5.1E+00
Xe-135m	2.1E+01	2.2E+01	2.2E+01
Xe-135	8.3E+00	1.1E+01	1.3E+01
Total Noble Gas	3.7E+01	4.2E+01	4.5E+01

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Time 1245-1300	1300-1315	1315-1330
I-131	9.7E+01	9.5E+01	9.4E+01
I-132	7.0E+01	6.3E+01	5.8E+01
I-133	1.8E+02	1.8E+02	1.7E+02
I-134	3.2E+01	2.6E+01	2.1E+01
I-135	1.4E+02	1.4E+02	1.3E+02
Total Iodine	5.2E+02	5.0E+02	4.7E+02
I-131 Dose Equivalent	1.6E+02	1.6E+02	1.5E+02
Kr-83m	2.8E+00	2.9E+00	3.0E+00
Kr-85m	3.3E-01	3.1E-01	2.9E-01
Kr-85	2.2E-02	2.2E-02	2.1E-02
Kr-87	2.3E-01	2.0E-01	1.7E-01
Kr-88	6.7E-01	6.2E-01	5.7E-01
Xe-133	5.3E+00	5.4E+00	5.5E+00
Xe-135m	2.2E+01	2.1E+01	2.1E+01
Xe-135	1.6E+01	1.8E+01	1.9E+01
Total Noble Gas	4.7E+01	4.8E+01	5.0E+01

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

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9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Time 1330-1345	Time 1345-1400
I-131	9.2E+01	9.0E+01
I-132	5.3E+01	4.8E+01
I-133	1.7E+02	1.6E+02
I-134	1.7E+01	1.4E+01
I-135	1.2E+02	1.2E+02
Total Iodine	4.5E+02	4.3E+02
I-131 Dose Equivalent	1.5E+02	1.5E+02
Kr-83m	3.1E+00	3.1E+00
Kr-85m	2.8E-01	2.6E-01
Kr-85	2.1E-02	2.1E-02
Kr-87	1.5E-01	1.3E-01
Kr-88	5.3E-01	4.9E-01
Xe-133	5.7E+00	5.8E+00
Xe-135m	2.0E+01	1.9E+01
Xe-135	2.1E+01	2.3E+01
Total Noble Gas	5.1E+01	5.2E+01

Note: Reactor coolant sample dose rates are provided in Section 9.5.1. Post 1400 values continue to decline steadily with time.

VERMONT YANKEE NUCLEAR POWER STATION

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9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

VERMONT YANKEE NUCLEAR POWER STATION
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9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

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

Isotope	Time Prior to 1130	1130-1145	1145-1200
I-131	*	3.1E-01	3.0E-01
I-132	*	3.2E-01	2.9E-01
I-133	*	6.0E-01	5.8E-01
I-134	*	2.7E-01	2.2E-01
I-135	*	5.1E-01	4.9E-01
Total Iodine	*	2.0E+00	1.9E+00
I-131 Dose Equivalent	*	5.3E-01	5.2E-01
Kr-83m	*	1.3E+01	1.2E+01
Kr-85m	*	2.5E+01	2.4E+01
Kr-85	*	1.4E+00	1.4E+00
Kr-87	*	2.9E+01	2.5E+01
Kr-88	*	5.8E+01	5.3E+01
Xe-133	*	2.5E+02	2.5E+02
Xe-135m	*	3.4E+01	3.2E+01
Xe-135	*	6.9E+01	7.1E+01
Total Noble Gas	*	4.8E+02	4.7E+02

* Below MDA at specified time.

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

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

Isotope	Time 1200-1215	1215-1230	1230-1245
I-131	3.0E-01	2.9E-01	2.9E-01
I-132	2.7E-01	2.4E-01	2.2E-01
I-133	5.7E-01	5.6E-01	5.4E-01
I-134	1.8E-01	1.4E-01	1.2E-01
I-135	4.7E-01	4.5E-01	4.3E-01
Total Iodine	1.8E+00	1.7E+00	1.6E+00
I-131 Dose Equivalent	5.1E-01	4.9E-01	4.8E-01
Kr-83m	1.2E+01	1.1E+01	1.1E+01
Kr-85m	2.2E+01	2.1E+01	2.0E+01
Kr-85	1.4E+00	1.3E+00	1.3E+00
Kr-87	2.2E+01	1.9E+01	1.6E+01
Kr-88	4.9E+01	4.6E+01	4.2E+01
Xe-133	2.4E+02	2.4E+02	2.4E+02
Xe-135m	3.1E+01	3.0E+01	2.9E+01
Xe-135	7.2E+01	7.3E+01	7.4E+01
Total Noble Gas	4.5E+02	4.4E+02	4.3E+02

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

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

Isotope	Time 1245-1300	1300-1315	1315-1330
I-131	2.8E-01	2.8E-01	2.7E-01
I-132	2.0E-01	1.9E-01	1.7E-01
I-133	5.3E-01	5.2E-01	5.0E-01
I-134	9.4E-02	7.6E-02	6.1E-02
I-135	4.1E-01	4.0E-01	3.8E-01
Total Iodine	1.5E+00	1.5E+00	1.4E+00
I-131 Dose Equivalent	4.7E-01	4.6E-01	4.5E-01
Kr-83m	1.0E+01	9.9E+00	9.4E+00
Kr-85m	1.9E+01	1.8E+01	1.7E+01
Kr-85	1.3E+00	1.3E+00	1.2E+00
Kr-87	1.4E+01	1.2E+01	1.0E+01
Kr-88	3.9E+01	3.6E+01	3.4E+01
Xe-133	2.3E+02	2.3E+02	2.2E+02
Xe-135m	2.8E+01	2.8E+01	2.7E+01
Xe-135	7.5E+01	7.6E+01	7.6E+01
Total Noble Gas	4.2E+02	4.1E+02	3.9E+0

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

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

	Time	
Isotope	1330-1345	1345-1400
I-131	2.7E-01	2.7E-01
I-132	1.5E-01	1.4E-01
I-133	4.9E-01	4.8E-01
I-134	4.9E-02	4.0E-02
I-135	3.6E-01	3.5E-01
Total Iodine	1.3E+00	1.3E+00
I-131 Dose Equivalent	4.4E-01	4.3E-01
Kr-83m	8.9E+00	8.5E+00
Kr-85m	1.6E+01	1.5E+01
Kr-85	1.2E+00	1.2E+00
Kr-87	8.6E+00	7.4E+00
Kr-88	3.1E+01	2.9E+01
Xe-133	2.2E+02	2.2E+02
Xe-135m	2.6E+01	2.6E+01
Xe-135	7.7E+01	7.7E+01
Total Noble Gas	3.9E+02	3.8E+02

Note: Primary containment sample dose rate provided in Section 9.5.2. Post 1400 values continue to decline steadily with time.

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE

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9.4.3 REACTOR BUILDING AIR ACTIVITY DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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9.4.3 REACTOR BUILDING AIR ACTIVITY DATA

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

Elevations 252' and 280' - See Notes Below*

Isotope	Time: Prior to 1130	1130-1145	1145-1200
I-131	**	1.6E-04	4.6E-04
I-132	**	1.6E-04	4.5E-04
I-133	**	3.0E-04	8.9E-04
I-134	**	1.4E-04	3.4E-04
I-135	**	2.6E-04	7.5E-04
Total Iodine	**	1.0E-03	2.9E-03
I-131 Dose Equivalent	**	2.7E-04	7.9E-04
Kr-83m	**	6.4E-03	1.8E-02
Kr-85m	**	1.3E-02	3.6E-02
Kr-85	**	7.1E-04	2.1E-03
Kr-87	**	1.5E-02	3.8E-02
Kr-88	**	2.9E-02	8.1E-02
Xe-133	**	1.3E-01	3.4E-01
Xe-135m	**	1.5E-02	3.1E-02
Xe-135	**	3.5E-02	1.0E-01
Xe-133m	**	3.7E-03	1.1E-02
Total Noble Gas	**	2.5E-01	6.6E-01

*Notes:

1. Reactor Building Elevations 303' and 318' - divide concentrations by a factor of 2.
2. Reactor Building Elevation 345' - divide concentrations by a factor of 5.
3. Reactor Building air sample dose rates are provided in Section 9.5.3.

** Activity is below the MDA of the plant gamma ray spectrometer at this time.

VERMONT YANKEE NUCLEAR POWER STATION
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9.4.3 REACTOR BUILDING AIR ACTIVITY DATA

A. Reactor Building Air Activity Concentrations (uCi/cc)-
Elevations 252' and 280' - See Notes Below*

Isotope	Time 1200-1215	1215-1230	1230-1245	1245-1300
I-131	7.6E-04	1.0E-03	1.3E-03	1.6E-03
I-132	6.8E-04	8.7E-04	1.0E-03	1.1E-03
I-133	1.4E-03	2.0E-03	2.5E-03	2.9E-03
I-134	4.5E-04	5.1E-04	5.3E-04	5.2E-04
I-135	1.2E-03	1.6E-03	2.0E-03	2.3E-03
Total Iodine	4.5E-03	6.0E-03	7.3E-03	8.4E-03
I-131 Dose Equivalent	1.3E-03	1.7E-03	2.2E-03	2.6E-03
Kr-83m	2.8E-02	3.6E-02	4.3E-02	4.8E-02
Kr-85m	5.7E-02	7.5E-02	9.1E-02	1.1E-01
Kr-85	3.4E-03	4.7E-03	6.0E-03	7.2E-03
Kr-87	5.5E-02	6.5E-02	7.2E-02	7.5E-02
Kr-88	1.3E-01	1.6E-01	1.9E-01	2.2E-01
Xe-133	6.1E-01	8.4E-01	1.1E+00	1.3E+00
Xe-135m	3.9E-02	4.2E-02	4.2E-02	4.2E-02
Xe-135	1.7E-01	2.4E-01	3.0E-01	3.7E-01
Xe-133m	1.8E-02	2.5E-02	3.1E-02	3.7E-02
Total Noble Gas	1.1E+00	1.5E+00	1.9E+00	2.2E+00

*Notes:

1. Reactor Building Elevation 303' and 318' - divide concentrations by a factor of 2.
2. Reactor Building Elevation 345' - divide concentrations by a factor of 5.
3. Reactor Building air sample dose rates provided in Section 9.5.3.

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9.4.3 REACTOR BUILDING AIR ACTIVITY DATA

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

Elevation 252' and 280' - See Notes Below*

Isotope	Time 1300-1315	1315-1330	1330-1345	1345-1400
I-131	1.7E-03	1.7E-03	1.6E-03	1.5E-03
I-132	1.2E-03	1.1E-03	8.4E-04	7.6E-04
I-133	3.2E-03	3.1E-03	2.8E-03	2.8E-03
I-134	5.1E-04	4.6E-04	2.4E-04	1.9E-04
I-135	2.4E-03	2.4E-03	2.1E-03	2.0E-03
Total Iodine	9.0E-03	8.7E-03	7.6E-03	7.2E-03
I-131 Dose Equivalent	2.8E-03	2.8E-03	2.6E-03	2.5E-03
Kr-83m	5.1E-02	4.8E-02	3.4E-02	3.0E-03
Kr-85m	1.1E-01	1.1E-01	9.1E-02	8.6E-02
Kr-85	7.7E-03	7.7E-03	7.2E-03	7.0E-03
Kr-87	7.6E-02	7.0E-02	4.4E-02	3.8E-02
Kr-88	2.3E-01	2.2E-01	1.7E-01	1.6E-01
Xe-133	1.4E+00	1.4E+00	1.3E+00	1.2E+00
Xe-135m	4.2E-02	3.0E-02	3.9E-03	2.1E-03
Xe-135	4.0E-01	3.9E-01	3.5E-01	3.3E-01
Xe-133m	4.0E-02	4.0E-02	3.7E-03	3.6E-02
Total Noble Gas	2.4E+00	2.3E+00	2.0E+00	1.9E+00

*Notes:

1. Reactor Building Elevation 303' and 318' - divide concentrations by a factor of 2.
2. Reactor Building Elevation 345' - divide concentrations by a factor of 5.
3. Reactor Building air sample dose rates provided in Section 9.5.3.
4. Post 1400 values continue to decline steadily with time.

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9.5 RADIOLOGICAL SAMPLE DOSE RATES

VERMONY YANKEE NUCLEAR POWER STATION
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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 1130	1.4E-02	9.6E-05	1.7E-04	1.2E-06
1130-1145	5.2E+00	3.6E-02	6.4E-02	4.5E-04
1145-1200	8.7E+00	6.0E-02	1.1E-01	7.5E-04
1200-1215	1.1E+01	7.4E-02	1.3E-01	9.3E-04
1215-1230	1.2E+01	8.4E-02	1.5E-01	1.1E-03
1230-1245	1.3E+01	9.0E-02	1.6E-01	1.1E-03
1245-1300	1.4E+01	9.4E-02	1.7E-01	1.2E-03
1300-1315	1.4E+01	9.6E-02	1.7E-01	1.2E-03
1315-1330	1.5E+01	1.0E-01	1.8E-01	1.3E-03
1330-1345	1.5E+01	1.0E-01	1.8E-01	1.3E-03
1345-1400	1.5E+01	1.0E-01	1.8E-01	1.3E-03

Post 1400 values continue to decline steadily with time.

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

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9.5.1 Reactor Coolant Sample Dose Rates

B. Liquid (Iodine)

	Unshielded (mR/hr per cc)*		Shielded (1 in. lead in mR/hr per cc)*	
Time	Contact	1 ft	Contact	1 ft
Prior to 1130	1.5E-02	1.0E-04	1.9E-04	1.3E-06
1130-1145	5.4E+02	3.7E+00	6.7E+00	4.6E-02
1145-1200	5.1E+02	3.5E+00	6.3E+00	4.3E-02
1200-1215	4.8E+02	3.3E+00	5.9E+00	4.0E-02
1215-1230	4.5E+02	3.1E+00	5.7E+00	3.8E-02
1230-1245	4.3E+02	3.0E+00	5.4E+00	3.6E-02
1245-1300	4.1E+02	2.8E+00	5.1E+00	3.4E-02
1300-1315	3.9E+02	2.7E+00	4.9E+00	3.3E-02
1315-1330	3.7E+02	2.5E+00	4.6E+00	3.1E-02
1330-1345	3.5E+02	2.4E+00	4.4E+00	3.0E-02
1345-1400	3.4E+02	2.3E+00	4.2E+00	2.8E-02

Post 1400 Values continue to decline steadily with time.

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

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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 1130	As Read	As Read	As Read	As Read
1130-1145	1.4E+02	9.6E-01	1.7E+00	1.2E-02
1145-1200	1.4E+02	9.4E-01	1.7E+00	1.2E-02
1200-1215	1.3E+02	9.0E-01	1.6E+00	1.1E-02
1215-1230	1.3E+02	8.8E-01	1.6E+00	1.1E-02
1230-1245	1.2E+02	8.6E-01	1.5E+00	1.1E-02
1245-1300	1.2E+02	8.4E-01	1.5E+00	1.1E-02
1300-1315	1.2E+02	8.2E-01	1.5E+00	1.0E-02
1315-1330	1.1E+02	7.8E-01	1.4E+00	9.8E-03
1330-1345	1.1E+02	7.8E-01	1.4E+00	9.8E-03
1345-1400	1.1E+02	7.6E-01	1.4E+00	9.5E-03

Post 1400 values continue to decline steadily with time.

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

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

Elevation 252' and 280' - See Notes Below

Time	Unshielded (mR/hr per cc)* Contact	Unshielded (mR/hr per cc)* 1 ft	Shielded (1 in. lead in mR/hr per cc)* Contact	Shielded (1 in. lead in mR/hr per cc)* 1 ft
Prior to 1130	As Read	As Read	As Read	As Read
1130-1145	7.8E-04	5.4E-06	9.7E-06	6.8E-08
1145-1200	2.3E-03	1.6E-05	2.8E-05	2.0E-07
1200-1215	3.5E-03	2.4E-05	4.4E-05	3.0E-07
1215-1230	4.7E-03	3.2E-05	5.8E-05	4.1E-07
1230-1245	5.7E-03	3.9E-05	7.1E-05	4.9E-07
1245-1300	6.5E-03	4.5E-05	8.2E-05	5.7E-07
1300-1315	7.0E-03	4.8E-05	8.7E-05	6.1E-07
1315-1330	6.8E-03	4.7E-05	8.5E-05	5.9E-07
1330-1345	5.9E-03	4.1E-05	7.4E-05	5.1E-07
1345-1400	5.6E-03	3.9E-05	7.0E-05	4.9E-07

Post 1400 values continue to decline steadily with time.

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*Notes:
1. Values must be multiplied by the sample volume in cubic centimeters to obtain the sample dose rate in mR/hr.
2. Reactor Building Elevations 303' and 318' - divide dose rates by a factor of 2.
3. Reactor Building Elevation 345' - divide dose rates by a factor of 5.

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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
Prior to 1135	As Read	As Read	As Read	As Read
1135-1145	2.0E-03	1.4E-05	2.4E-05	1.7E-07
1145-1200	5.7E-03	4.0E-05	7.0E-05	5.0E-07
1200-1215	9.1E-03	6.4E-05	1.1E-04	8.1E-07
1215-1230	1.2E-02	8.6E-05	1.5E-04	1.1E-06
1230-1245	1.5E-02	1.0E-04	1.8E-04	1.3E-06
1245-1300	1.8E-02	1.2E-04	2.2E-04	1.6E-06
1300-1315	1.8E-02	1.3E-04	2.3E-04	1.6E-06
1315-1330	1.8E-02	1.3E-04	2.3E-04	1.6E-06
1330-1345	1.6E-02	1.1E-04	2.0E-04	1.4E-06
1345-1400	1.5E-02	1.0E-04	1.8E-04	1.3E-06

Post 1400 values continue to decline steadily with time.

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

**Plant vent stack sample dose rates remain constant from 0700-1130 given the same sample volume.

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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
Prior to 1135	As Read	As Read	As Read	As Read
1135-1145	1.2E-06	8.0E-09	1.4E-08	1.0E-10
1145-1200	3.2E-06	2.3E-08	4.0E-08	2.8E-10
1200-1215	5.0E-06	3.5E-08	6.2E-08	4.4E-10
1215-1230	6.6E-06	4.6E-08	8.2E-08	5.8E-10
1230-1245	7.7E-06	5.4E-08	9.6E-08	6.7E-10
1245-1300	9.2E-06	6.4E-08	1.2E-07	8.1E-10
1300-1315	1.0E-05	7.0E-08	1.2E-07	8.8E-10
1315-1330	1.0E-05	7.0E-08	1.2E-07	8.8E-10
1330-1345	8.4E-06	5.9E-08	1.1E-07	7.4E-10
1345-1400	7.7E-06	5.4E-08	9.6E-08	6.7E-10

Post 1400 values continue to decline steadily with time.

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

**Plant vent stack sample dose rates remain constant from 0700-1130 given the same sample volume.

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9.5.4 Plant Vent Stack Sample Dose Rates

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

Time	At Stack Door	Inside
Prior to 1135	As read*	As Read*
1135-1145	10	10
1145-1200	20	20
1200-1215	35	35
1215-1230	45	45
1230-1245	50	50
1245-1300	60	60
1300-1315	60	60
1315-1330	55	55
1330-1345	50	50
1345-1400	45	45
Post-1400	Dose Rates Continue to Decline	

* Background as read on survey meter.

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9.6 PLANT VENT STACK RELEASE DATA

NOTE: If the stack filter paper is analyzed, it will be assumed that the gamma isotopic results will show all radionuclides below the MDA of the multi-channel analyzer. An RM-14/HP-210 survey of the filter will show no counts above background.

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9.6 PLANT VENT STACK RELEASE DATA

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

Isotope	Time Prior to 1135	1135-1145	1145-1200
I-131	3.3E-13	2.3E-07	6.7E-07
I-132	4.8E-13	2.4E-07	6.5E-07
I-133	7.5E-13	4.4E-07	1.3E-06
I-134	6.6E-13	2.0E-07	4.8E-07
I-135	6.3E-13	3.8E-07	1.1E-06
Total Iodine	2.9E-12	1.5E-06	4.2E-06
I-131 Dose Equivalent	6.1E-13	3.9E-07	1.1E-06
Kr-83m	**	1.9E-04	5.2E-04
Kr-85m	**	3.7E-04	1.0E-03
Kr-85	**	2.1E-05	6.1E-05
Kr-87	**	4.3E-04	1.1E-03
Kr-88	**	8.5E-04	2.3E-03
Xe-133	**	3.7E-03	1.1E-02
Xe-135m	**	4.2E-04	9.1E-04
Xe-135	**	1.0E-03	3.0E-03
Total Noble Gas	**	6.9E-03	2.0E-02

* 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
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9.6 PLANT VENT STACK RELEASE DATA

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

Isotope	Time 1200-1215	1215-1230	1230-1245	1245-1300
I-131	1.1E-06	1.5E-06	1.9E-06	2.3E-06
I-132	9.8E-07	1.3E-06	1.5E-06	1.6E-06
I-133	2.1E-06	2.8E-06	3.5E-06	4.2E-06
I-134	6.5E-07	7.3E-07	7.6E-07	7.5E-07
I-135	1.7E-06	2.3E-06	2.8E-06	3.3E-06
Total Iodine	6.5E-06	8.6E-06	1.0E-05	1.2E-05
I-131 Dose Equivalent	1.8E-06	2.5E-06	3.2E-06	3.8E-06
Kr-83m	8.0E-04	1.0E-03	1.2E-03	1.4E-03
Kr-85m	1.6E-03	2.2E-03	2.6E-03	3.0E-03
Kr-85	9.9E-05	1.4E-04	1.7E-04	2.1E-04
Kr-87	1.6E-03	1.9E-03	2.1E-03	2.2E-03
Kr-88	3.6E-03	4.7E-03	5.5E-03	6.3E-03
Xe-133	1.8E-02	2.5E-02	3.1E-02	3.7E-02
Xe-135m	1.1E-03	1.2E-03	1.2E-03	1.2E-03
Xe-135	4.9E-03	6.8E-03	8.7E-03	1.1E-02
Total Noble Gas	3.2E-02	4.3E-02	5.2E-02	6.2E-02

* 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
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9.6 PLANT VENT STACK RELEASE DATA

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

Isotope	Time 1300-1315	1315-1330	1330-1345	1345-1400
I-131	2.4E-06	2.4E-06	2.3E-06	2.2E-06
I-132	1.7E-06	1.6E-06	1.2E-06	1.1E-06
I-133	4.5E-06	4.5E-06	4.1E-06	4.0E-06
I-134	7.3E-07	6.6E-07	3.4E-07	2.7E-07
I-135	3.5E-06	3.4E-06	3.0E-06	2.9E-06
Total Iodine	1.3E-05	1.3E-05	1.1E-05	1.0E-05
I-131 Dose Equivalent	4.0E-06	4.0E-06	3.7E-06	3.6E-06
Kr-83m	1.5E-03	1.4E-03	9.7E-04	8.7E-04
Kr-85m	3.2E-03	3.1E-03	2.6E-03	2.5E-03
Kr-85	2.2E-04	2.2E-04	2.1E-04	2.0E-04
Kr-87	2.2E-03	2.0E-03	1.3E-03	1.1E-03
Kr-88	6.6E-03	6.3E-03	4.9E-03	4.5E-03
Xe-133	4.0E-02	3.9E-02	3.7E-02	3.6E-02
Xe-135m	1.2E-03	8.8E-04	1.5E-04	1.1E-04
Xe-135	9.3E-03	1.1E-02	1.0E-02	7.0E-03
Total Noble Gas	6.4E-02	6.4E-02	5.7E-02	5.2E-02

Post 1400 values continue to decline steadily with time.

* 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
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9.7 OFF-SITE MONITORING MAPS AND DATA

VERMONT YANKEE NUCLEAR POWER STATION
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9.7 OFF-SITE MONITORING MAPS AND DATA

Off-site plume centerline whole body dose rates and radioiodine concentrations have been estimated as a function of time and distance from the site using a variable trajectory dose assessment model. Geographical representations of the plume are provided in this package for each 15 minute average of meteorological conditions, starting at 1130. During the exercise, off-site monitoring team observers will use the information contained in this package to provide field monitoring teams with radiological data for various times and locations.

During the exercise, the Survey Team Coordinator(s) will direct off-site monitoring teams to monitor locations relative to the meteorological conditions postulated for the exercise scenario. Use Figures 9.7-1 through 9.7-11 to provide survey results to the off-site monitoring teams.

Figures 9.7-1 through 9.7-11 depict the plume conditions at various times throughout the exercise. These figures represent a plume width which is equivalent to a 3-sigma value of the centerline conditions. Since the figures show a plume width relative to the centerline, gamma dose rates can be estimated using the color coded maps and off-centerline value provided. Radiological data for other locations within the plume can be calculated as a function of the centerline and outer edge values at a given segment/distance. Radiological data has been provided for each particular segment at centerline. Dose and count rates for locations between two segments can be estimated as a function of the values at those segments.

Prior to the exercise, training will be provided to the off-site monitoring team controller/observers on the use of this package. The following are specific instructions which off-site monitoring team controller/observers should use during the exercise:

1. As off-site monitoring teams are designated, check that Procedure Number OP-3510 is followed by team members. This will include the initial equipment check.

2. While enroute to the assigned monitoring location, or while traversing the plume, use the attached figures and tables to issue appropriate radiological data.

3. Attempt to estimate the team's accrued exposure as a function of their continual job assignment. Do not issue pocket dosimeter results to team members, unless they actually simulate checking their dosimeter reading. The pocket dosimeters in the kits have a range of 0-500 mR, which are subdivided into 20 mR intervals. Attempt to provide realistic values! 0-5 R dosimeters may be provided. Always check to ask them the range.

4. Ask the off-site monitoring teams what equipment they have available for their use. Ask them the scales associated with the equipment; log these answers to ensure that you do not provide them with data that exceeds the range of their equipment. If, at any point during the exercise, a situation occurs where the upper range of their equipment is exceeded, then issue them an "off-scale high" value.

5. If the off-site monitoring team stops to take an air sample:

   a. Report the appropriate whole body dose levels at that location.

b. If an RM-14/HP-210 is left on to track the plume while driving the meter count rate can be estimated using the following relationships:

(1) 3,500 cpm on the RM-14/HP-210 is equivalent to approximately 1.0 mR/hr. Therefore, 14 mR/hr will cause the RM-14/HP-210 to read "off-scale high."

(2) The upper range of RM-14/HP-210 = 50,000 cpm.

6. Whenever a team takes a "ground level" survey, the results should be the same as the waist-high survey.

7. The Vermont Yankee off-site monitoring teams will substitute a charcoal sample instead of a silver zeolite sample for the purposes of this exercise. All data will be given from the tasks provided as though silver zeolite samples were being utilized.

8. Certain field monitoring teams may take open window and closed window readings with their dose rate survey meters. If a team is located in the plume and air concentration is greater than zero (see maps), assume the open window reading is three times the gamma (closed window) line dose rate reading given on the map.

9. Air sample assumptions used to calculate the count rates (net cpm) for the silver zeolite cartridges with the RM-14 instrument.

Formula:

$$\text{Conc I-131 in uCi/cc} = \frac{(\text{net cpm})\ (4.5\ \text{E-10 uCi-l/dpm-cc})}{(E)(V)(T)}$$

where:

E = efficiency (0.025 for RM-14 - VY).
V = flow rate in liters per minute (VY flow rate - 10 lpm).
T = sample collection time in minutes (VY sample time - 10 minutes).

therefore:

Conc I-131 in uCi/cc = (net cpm) (1.8 E-10)

or

(Conc I-131 in uCi/cc) (5.6 E+09) = net cpm

Remember this assumes a sample volume of 100 liters and a RM-14 efficiency of 0.025.

NOTE: THE PLUME PLOT FIGURES ARE GRAPHIC REPRESENTATIONS OF ATMOSPHERIC DISPERSION. THE THREE-DIMENSIONAL PLUMES VARY IN TIME AND SPACE. A SIMILAR VERSION OF THE FIGURES OVERLAYED ON A LARGER FIELD SURVEY MAP WILL BE USED TO ASSIST CONTROLLERS IN INTERPRETATING DATA.

FIGURE 9.7.1
OFF-SITE RADIOLOGICAL CONDITIONS(SITE MAP)

TIME	PLUME ED	DISTANCE MILES	E.A. CONC. I-131 uCi/cc X 1.0E-6	BLUE AREA(CENTERLINE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE CH-14 CPM	CH-14 100 LITERS SILVER ZEOLITE CHARCOAL CPM	BAR-II 100 LITERS SILVER ZEOLITE CHARCOAL CPM	PARTICULATE FILTER CHARCOAL CPM	YELLOW AREA GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE CH-14 CPM	CH-14 100 LITERS SILVER ZEOLITE CHARCOAL CPM	BAR-II 100 LITERS SILVER ZEOLITE CHARCOAL CPM	PARTICULATE FILTER CHARCOAL CPM	GREEN AREA(OUTER EDGE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE CH-14 CPM	CH-14 100 LITERS SILVER ZEOLITE CHARCOAL CPM	BAR-II 100 LITERS SILVER ZEOLITE CHARCOAL CPM	PART. FILTER CHARCOAL CPM
1135-1145	2(50)	0.4	0	AS READ	1500	AS READ	AS READ	0	AS READ	150	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
1135-1145	1	0.1	0	AS READ	1200	AS READ	AS READ	0	AS READ	120	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
1145-1200	2(58)	0.4	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
1145-1200	1	0.1	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
1200-1215	2(58)	0.4	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
1200-1215	1	0.1	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
1215-1230	2(58)	0.4	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
1215-1230	1	0.1	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
1230-1245	2(58)	0.4	0	3	10500	AS READ	AS READ	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0
1230-1245	1	0.1	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
1245-1300	2(50)	0.4	0	3	10500	AS READ	AS READ	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0
1245-1300	1	0.1	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
1300-1315	2(50)	0.4	0	3	10500	AS READ	AS READ	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0
1300-1315	1	0.1	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
1315-1330	2(58)	0.4	0	3	10500	AS READ	AS READ	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0
1315-1330	1	0.1	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
1330-1345	2(58)	0.4	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
1330-1345	1	0.1	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
1345-1400	2(50)	0.4	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
1345-1400	1	0.1	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0

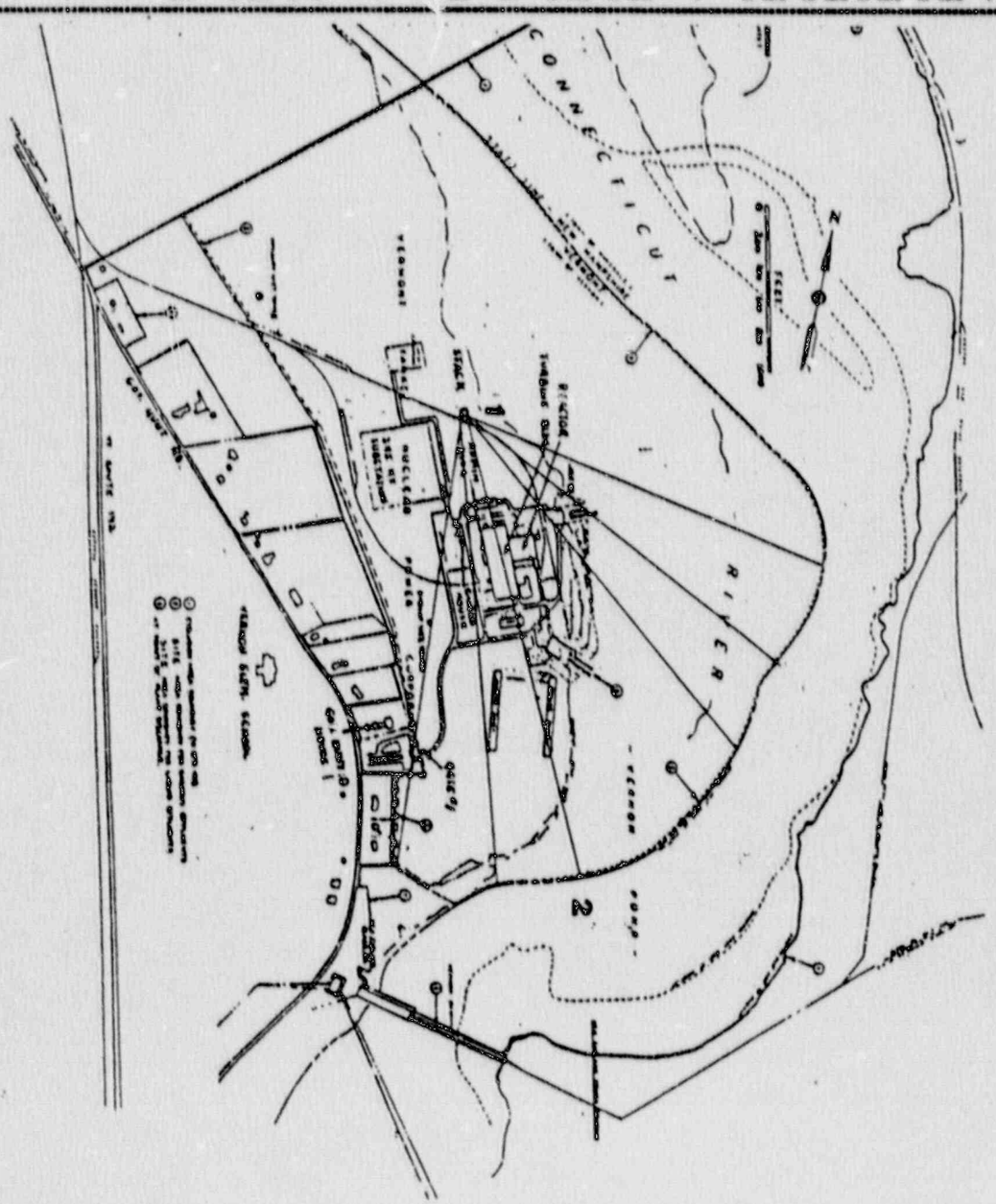


FIGURE 9.7.2
OFF-SITE RADIOLOGICAL CONDITIONS AT CLOCK TIME 1135-1145

PLUME	DISTANCE	C/L CONC.	BLUE AREA(CENTERLINE) GAMMA		I-14	SAR-11	PARTICULATE	GAMMA		YELLOW AREA I-14	SAR-11	PARTICULATE	GREEN AREA(OUTER EDGE) GAMMA		I-14	SAR-11	PART.
90	MILES	I-131	DOSE RATE		100 LITERS		FILTER	DOSE RATE		100 LITERS		FILTER	DOSE RATE		100 LITERS		FILTER
		uCi/cc	PIC-6	I-14	SILVER ZEOLITE		WET	PIC-6	I-14	SILVER ZEOLITE		WET	PIC-6	I-14	SILVER ZEOLITE		WET
		X 1.0E-6	mR/HR	CPM	WET CPM	WET CPM	CPM	mR/HR	CPM	WET CPM	WET CPM	CPM	mR/HR	CPM	WET CPM	WET CPM	CPM
1	0.4	0	AS READ	1500	AS READ	AS READ	0	AS READ	150	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
2	1.5	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0

FIGURE 9.7.3
OFF-SITE RADIOLOGICAL CONDITIONS AT CLOCK TIME 1145-1200

PLUME ID	DISTANCE MILES	C/L CONC. I-131 uCi/cc X 1.0E+6	BLUE AREA(CENTERLINE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE GM-14 CPM	GM-14 SAM-11 100 LITERS SILVER ZEOLITE CPM	PARTICULATE FILTER DET CPM	YELLOW AREA GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE GM-14 CPM	GM-14 SAM-11 100 LITERS SILVER ZEOLITE CPM	PARTICULATE FILTER DET CPM	GREEN AREA(OUTER EDGE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE GM-14 CPM	GM-14 SAM-11 100 LITERS SILVER ZEOLITE CPM	PART. FILTER DET CPM
1	0.6	0	1	3500	AS DEAD AS DEAD	0	AS DEAD	350	AS DEAD AS DEAD	0	AS DEAD	AS DEAD	AS DEAD AS DEAD	0
2	1.5	0	AS DEAD	2600	AS DEAD AS DEAD	0	AS DEAD	260	AS DEAD AS DEAD	0	AS DEAD	AS DEAD	AS DEAD AS DEAD	0
3	3.0	0	AS DEAD	490	AS DEAD AS DEAD	0	AS DEAD	AS DEAD	AS DEAD AS DEAD	0	AS DEAD	AS DEAD	AS DEAD AS DEAD	0

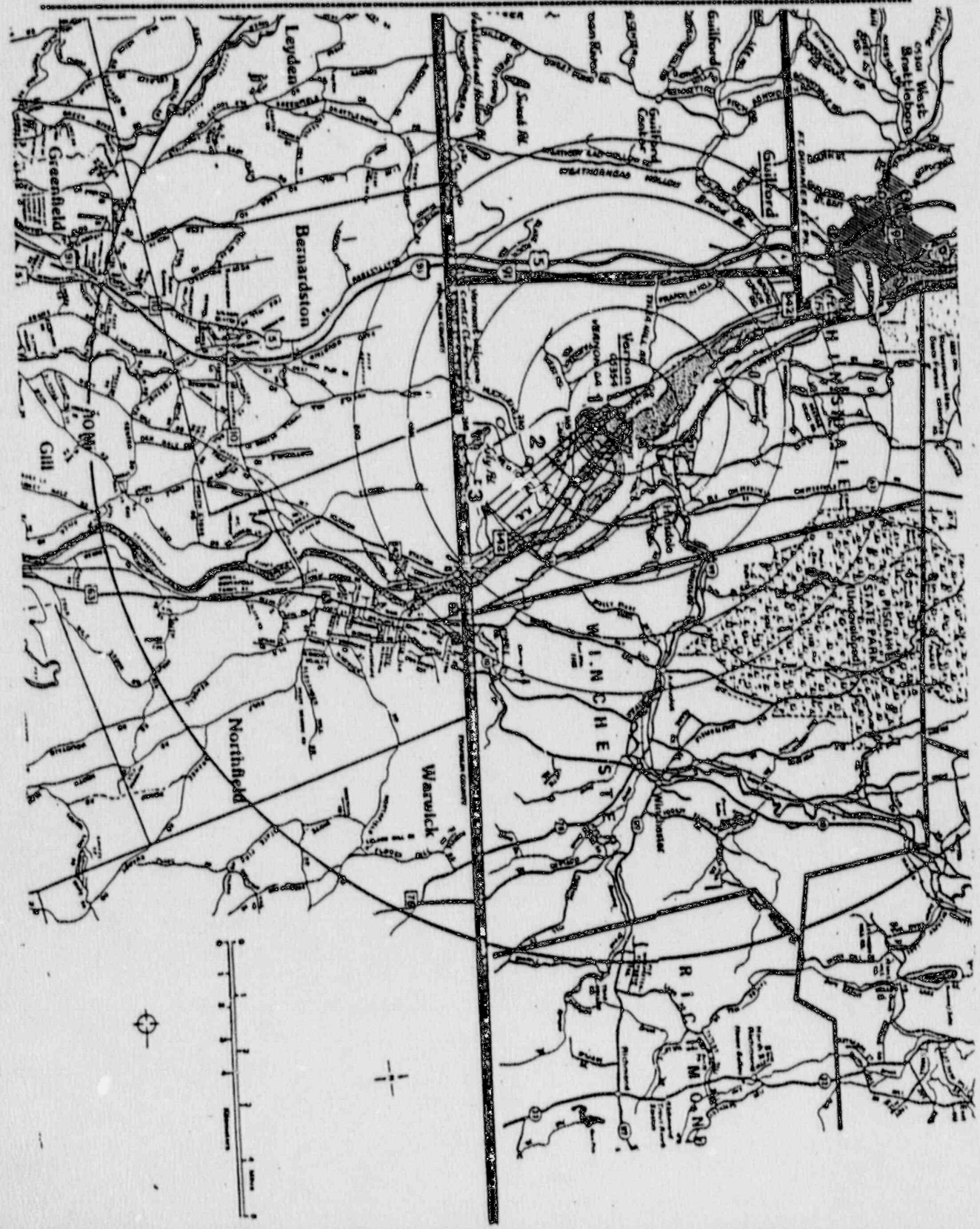


FIGURE 9.7.4
OFF-SITE RADIOLOGICAL CONDITIONS AT CLOCK TIME 1200-1215

PLUME NO	DISTANCE MILES	C/L CONC. I-131 uCi/cc X 1.0E-6A	BLUE AREA(CENTERLINE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	PARTICULATE FILTER BH-14 SAM-II 100 LITERS SILVER ZEOLITE BET CPM	PARTICULATE FILTER BET CPM	YELLOW AREA GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	PARTICULATE FILTER BH-14 SAM-II 100 LITERS SILVER ZEOLITE BET CPM	PARTICULATE FILTER BET CPM	GREEN AREA(OUTER EDGE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	PARTICULATE FILTER BH-14 SAM-II 100 LITERS SILVER ZEOLITE BET CPM	PART. FILTER BET CPM
1	0.6	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	C	AS READ	70	AS READ	AS READ	0
2	1.6	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
3	3.1	0	AS READ	900	AS READ	AS READ	0	AS READ	90	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
4	4.6	0	AS READ	200	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0

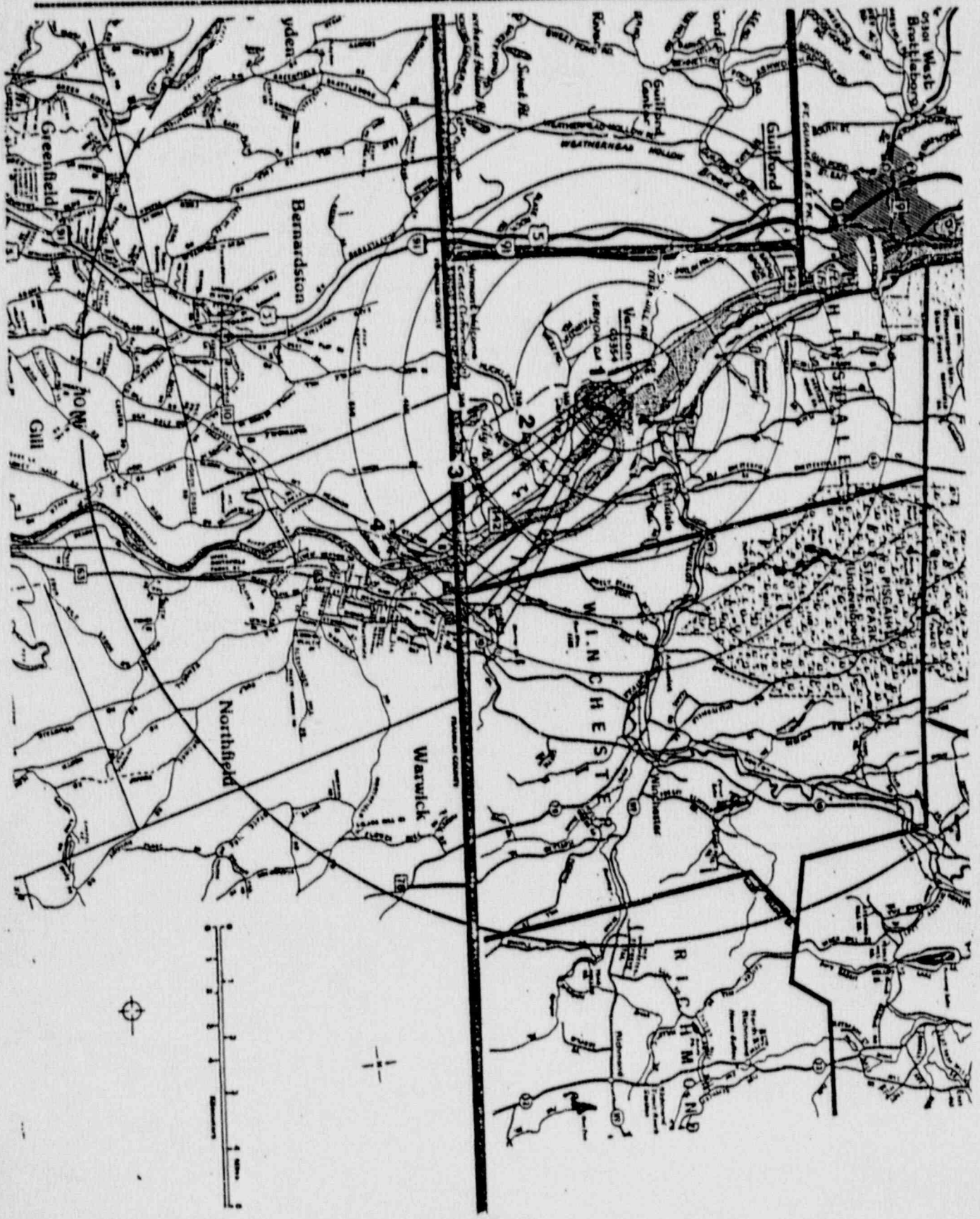


FIGURE 9.7.3
OFF-SITE RADIOLOGICAL CONDITIONS AT CLOCK TIME 1215-1230

PLUME ID	DISTANCE MILES	C/L CONC. I-131 uCi/cc X 1.02-06	BLUE AREA(CENTERLINE) GAMMA DOSE RATE PIC-6 mR/HR	GM-14 GAMMA DOSE RATE GM-14 CPM	SAM-II 100 LITERS SILVER ZEOLITE DET CPM	SAM-II 100 LITERS SILVER ZEOLITE DET CPM	PARTICULATE FILTER DET CPM	YELLOW AREA GAMMA DOSE RATE PIC-6 mR/HR	GM-14 GAMMA DOSE RATE GM-14 CPM	SA 100 LITERS SILVER ZEOLITE DET CPM	SA 100 LITERS SILVER ZEOLITE DET CPM	PARTICULATE FILTER DET CPM	GREEN AREA(OUTER EDGE) GAMMA DOSE RATE PIC-6 mR/HR	GM-14 GAMMA DOSE RATE GM-14 CPM	SAM-II 100 LITERS SILVER ZEOLITE DET CPM	SAM-II 100 LITERS SILVER ZEOLITE DET CPM	PART. FILTER DET CPM
1	0.6	0	2	7000	AS DEAD	AS DEAD	0	AS DEAD	700	AS DEAD	AS DEAD	0	AS DEAD	70	AS DEAD	AS DEAD	0
2	1.4	0	2	7000	AS DEAD	AS DEAD	0	AS DEAD	700	AS DEAD	AS DEAD	0	AS DEAD	70	AS DEAD	AS DEAD	0
3	3.0	0	AS DEAD	1500	AS DEAD	AS DEAD	0	AS DEAD	150	AS DEAD	AS DEAD	0	AS DEAD	AS DEAD	AS DEAD	AS DEAD	0
4	4.5	0	AS DEAD	500	AS DEAD	AS DEAD	0	AS DEAD	50	AS DEAD	AS DEAD	0	AS DEAD	AS DEAD	AS DEAD	AS DEAD	0
5	6.0	0	AS DEAD	100	AS DEAD	AS DEAD	0	AS DEAD	AS DEAD	AS DEAD	AS DEAD	0	AS DEAD	AS DEAD	AS DEAD	AS DEAD	0

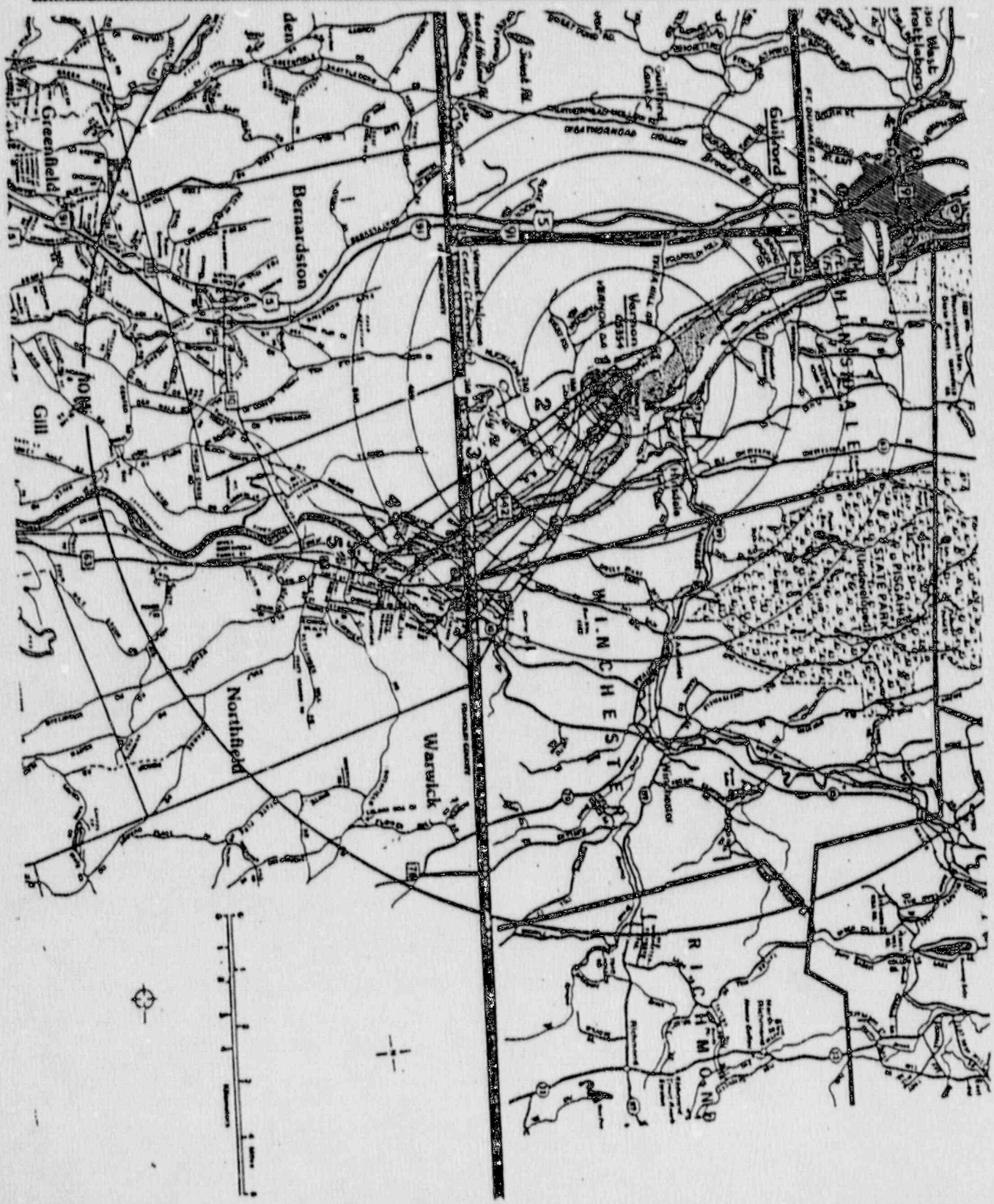


FIGURE 9.7.6
OFF-SITE RADIOLOGICAL CONDITIONS AT CLOCK TIME 1230-1245

PLUME NO	DISTANCE MILES	C/L CONC. I-131 uCi/cc X 1.0E-06	BLUE AREA (CENTERLINE) GAMMA DOSE RATE PIC-6 mR/HR	BLUE GAMMA DOSE RATE RM-14 CPM	BLUE RM-14 100 LITERS SILVER NET CPM	BLUE SAM-II 100 LITERS ZEOLITE NET CPM	BLUE PARTICULATE FILTER NET CPM	YELLOW AREA GAMMA DOSE RATE PIC-6 mR/HR	YELLOW GAMMA DOSE RATE RM-14 CPM	YELLOW RM-14 100 LITERS SILVER NET CPM	YELLOW SAM-II 100 LITERS ZEOLITE NET CPM	YELLOW PARTICULATE FILTER NET CPM	GREEN AREA (OUTER EDGE) GAMMA DOSE RATE PIC-6 mR/HR	GREEN GAMMA DOSE RATE RM-14 CPM	GREEN RM-14 100 LITERS SILVER NET CPM	GREEN SAM-II 100 LITERS ZEOLITE NET CPM	GREEN PART. FILTER NET CPM
1	0.4	0	3	10500	AS READ	AS READ	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0
2	1.7	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
3	3.1	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
4	4.7	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
5	6.2	0	AS READ	300	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
6	7.7	0	AS READ	70	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0

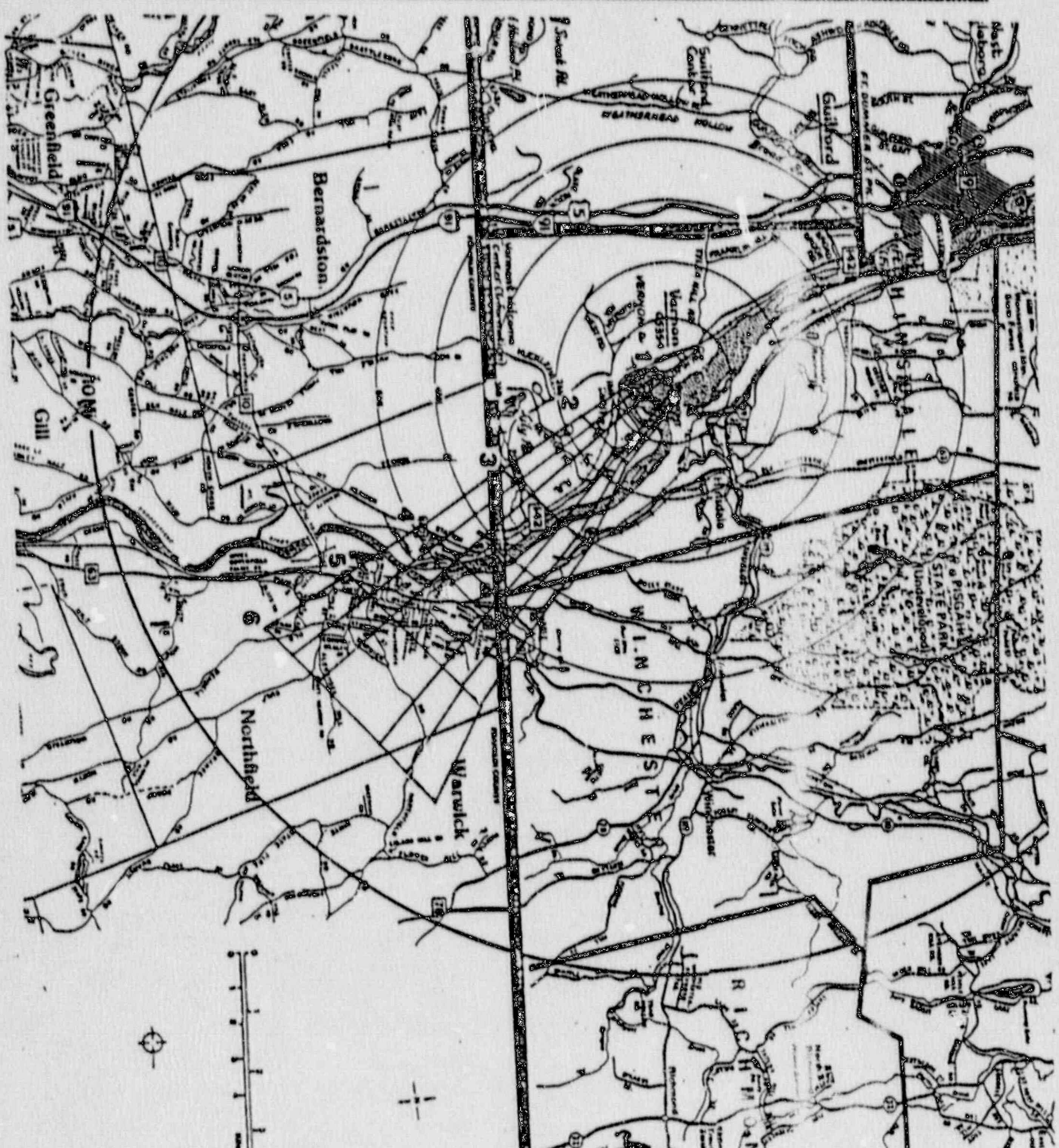


FIGURE 9.7.7
OFF-SITE RADIOLOGICAL CONDITIONS AT CLOCK TIME 1245-1300

PLUME SO	DISTANCE MILES	C/L CONC. I-131 uCi/cc X 1.0E+06	BLUE AREA(CENTERLINE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE SM-14 CPM	SM-14 SAM-II 100 LITERS SILVER ZEOLITE BET CPM	SM-14 SAM-II 100 LITERS SILVER ZEOLITE BET CPM	PARTICULATE FILTER BET CPM	YELLOW AREA GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE SM-14 CPM	SM-14 SAM-II 100 LITERS SILVER ZEOLITE BET CPM	SM-14 SAM-II 100 LITERS SILVER ZEOLITE BET CPM	PARTICULATE FILTER BET CPM	GREEN AREA(OUTER EDGE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE SM-14 CPM	SM-14 SAM-II 100 LITERS SILVER ZEOLITE BET CPM	SM-14 SAM-II 100 LITERS SILVER ZEOLITE BET CPM	PART. FILTER BET CPM
1	0.4	0	3	10500	AS READ	AS READ	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0
2	1.6	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
3	3.2	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
4	4.6	0	AS READ	900	AS READ	AS READ	0	AS READ	90	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
5	6.2	0	AS READ	400	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
6	7.7	0	AS READ	200	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
7	9.2	0	AS READ	50	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0

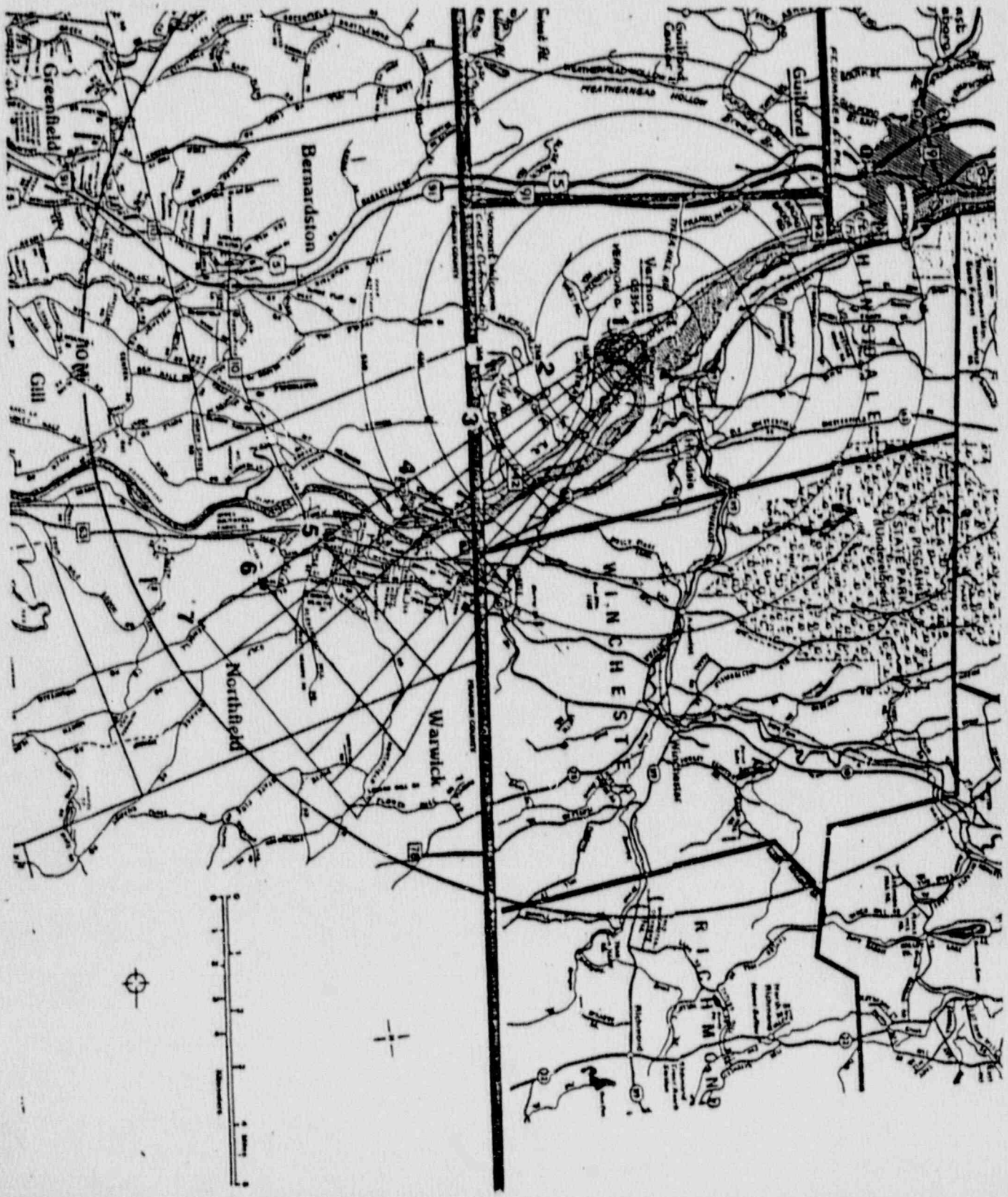


FIGURE 9.7.8
OFF-SITE RADIOLOGICAL CONDITIONS AT CLOCK TIME 1300-1315

PLUME NO	DISTANCE MILES	C/L CONC. I-131 uCi/cc X 1.0E-06	BLUE AREA(CENTERLINE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	BH-14 100 LITERS SILVER ZEOLITE BET CPM	BH-14 100 LITERS SAM-II BET CPM	PARTICULATE FILTER BET CPM	YELLOW AREA GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	BH-14 100 LITERS SILVER ZEOLITE BET CPM	BH-14 100 LITERS SAM-II BET CPM	PARTICULATE FILTER BET CPM	GREEN AREA(OUTER EDGE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	BH-14 100 LITERS SILVER ZEOLITE BET CPM	BH-14 100 LITERS SAM-II BET CPM	PART. FILTER BET CPM
1	0.4	0	3	10500	AS READ	AS READ	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0
2	1.4	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
3	3.1	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
4	4.8	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
5	6.2	0	AS READ	600	AS READ	AS READ	0	AS READ	60	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
6	7.8	0	AS READ	300	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
7	9.3	0	AS READ	150	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0

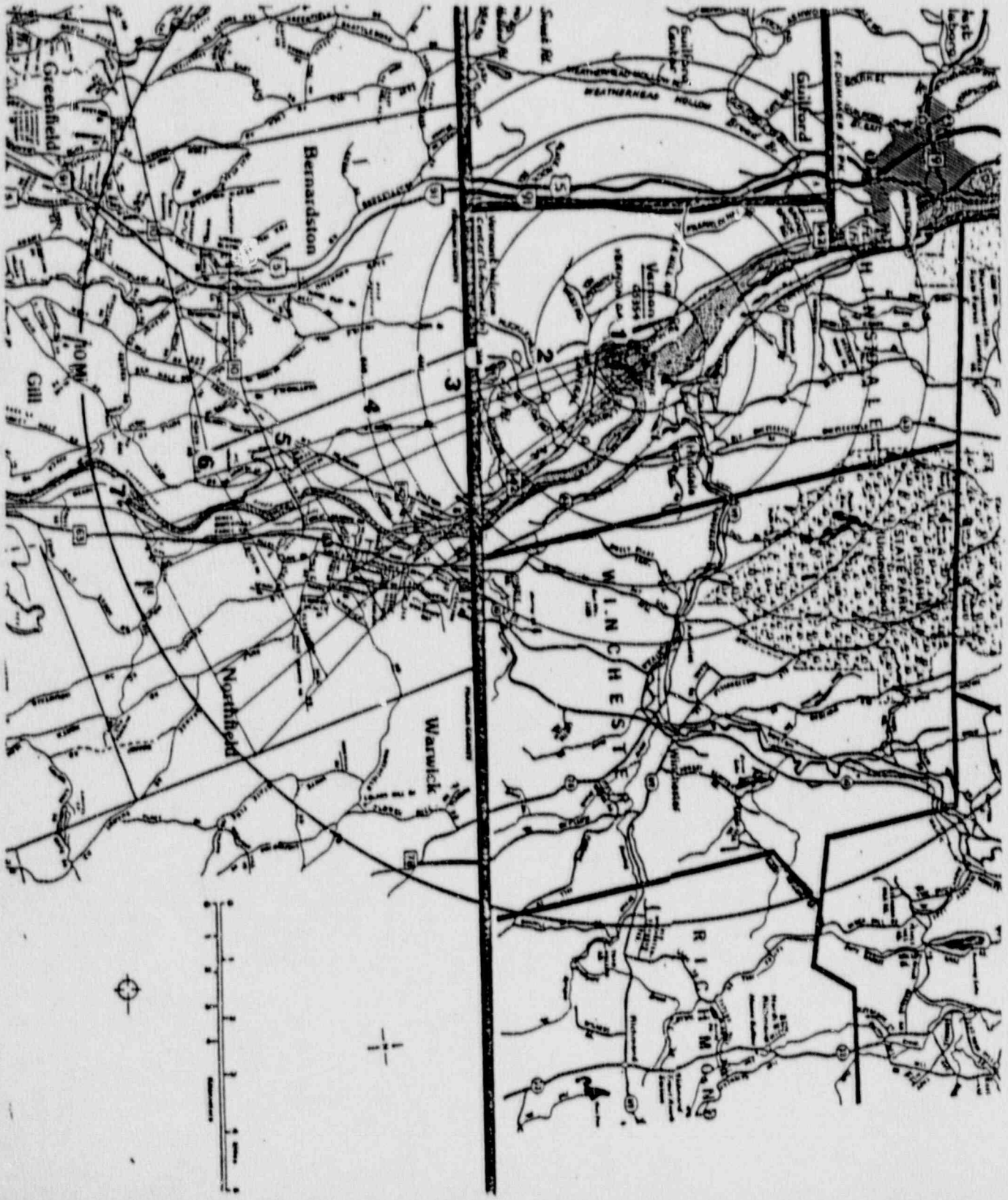


FIGURE 9.7.9
OFF-SITE RADIOLOGICAL CONDITIONS AT CLOCK TIME 1315-1330

PLUME NO	DISTANCE MILES	C/L CONC. I-131 uCi/cc X 1.0E-06	BLUE AREA(CENTERLINE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE RM-14 CPM	RM-14 SAM-II 100 LITERS SILVER ZEOLITE MET CPM	MET CPM	PARTICULATE FILTER MET CPM	YELLOW AREA GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE RM-14 CPM	RM-14 SAM-II 100 LITERS SILVER ZEOLITE MET CPM	MET CPM	PARTICULATE FILTER MET CPM	GREEN AREA(OUTER EDGE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE RM-14 CPM	RM-14 SAM-II 100 LITERS SILVER ZEOLITE MET CPM	MET CPM	PART. FILTER MET CPM
1	0.6	0	3	10500	AS READ	AS READ	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0
2	1.6	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
3	3.2	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
4	4.7	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
5	6.4	0	AS READ	600	AS READ	AS READ	0	AS READ	60	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
6	7.8	0	AS READ	400	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
7	9.4	0	AS READ	200	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0

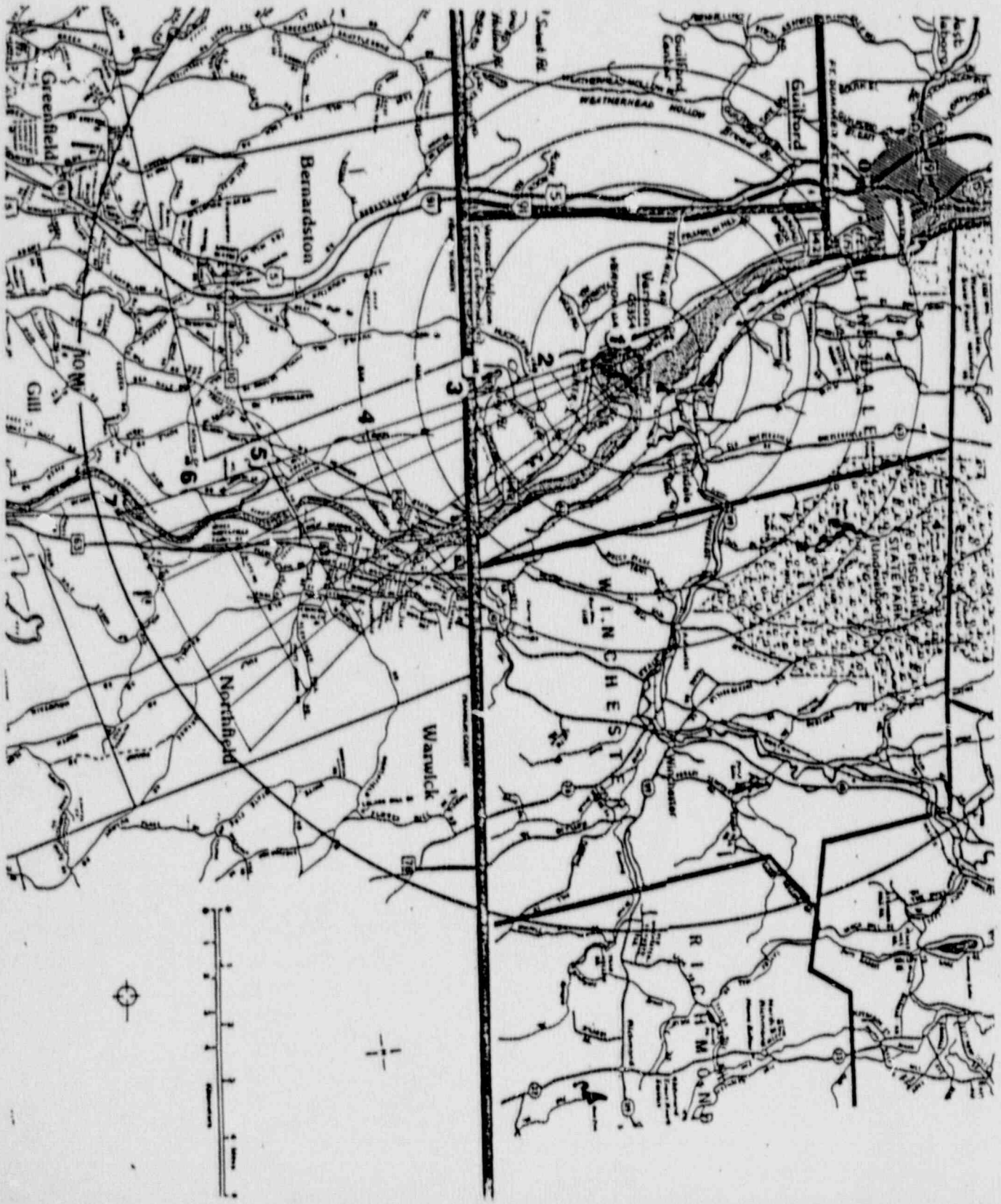


FIGURE 9.7.10
OFF-SITE RADIOLOGICAL CONDITIONS AT CLOCK TIME 1330-1345

PLUME SO	DISTANCE MILES	C/L CONC. I-131 uCi/cc X 1.0E-06	BLUE AREA(CENTERLINE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	BH-14 100 LITERS SILVER ZEOLITE NET CPM	SAM-II 100 LITERS SILVER ZEOLITE NET CPM	PARTICULATE FILTER pCi/ cM	YELLOW AREA GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	BH-14 100 LITERS SILVER ZEOLITE NET CPM	SAM-II 100 LITERS SILVER ZEOLITE NET CPM	PARTICULATE FILTER NET CPM	GREEN AREA(OUTER EDGE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	BH-14 100 LITERS SILVER ZEOLITE NET CPM	SAM-II 100 LITERS SILVER ZEOLITE NET CPM	PART. FILTER NET CPM
1	0.4	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS READ	70	AS READ	AS READ	0
2	2.1	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
3	3.7	0	AS READ	1800	AS READ	AS READ	0	AS READ	180	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
4	5.2	0	AS READ	1000	AS READ	AS READ	0	AS READ	100	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
5	6.8	0	AS READ	600	AS READ	AS READ	0	AS READ	60	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
6	8.5	0	AS READ	400	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
7	8.9	0	AS READ	300	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0

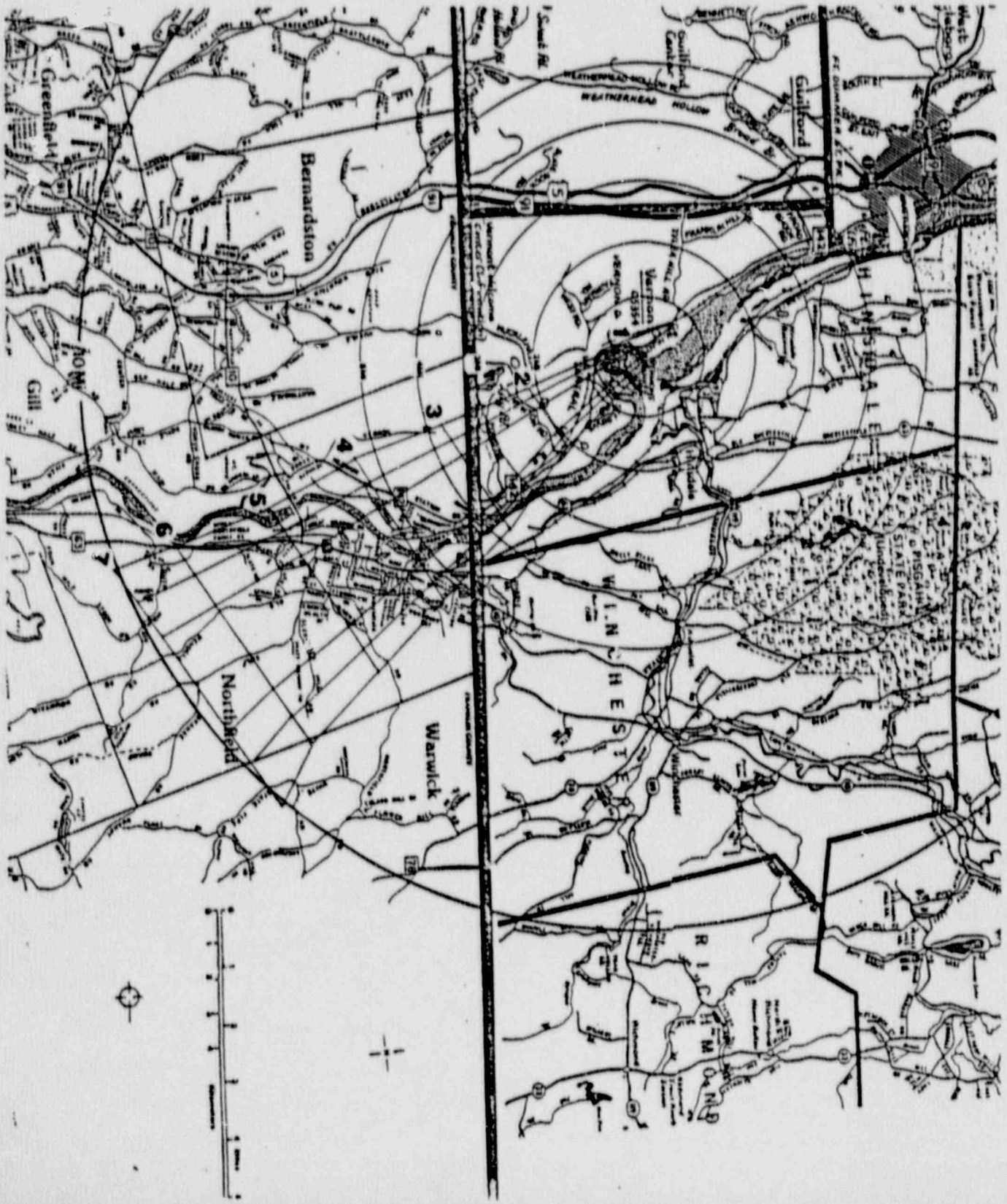
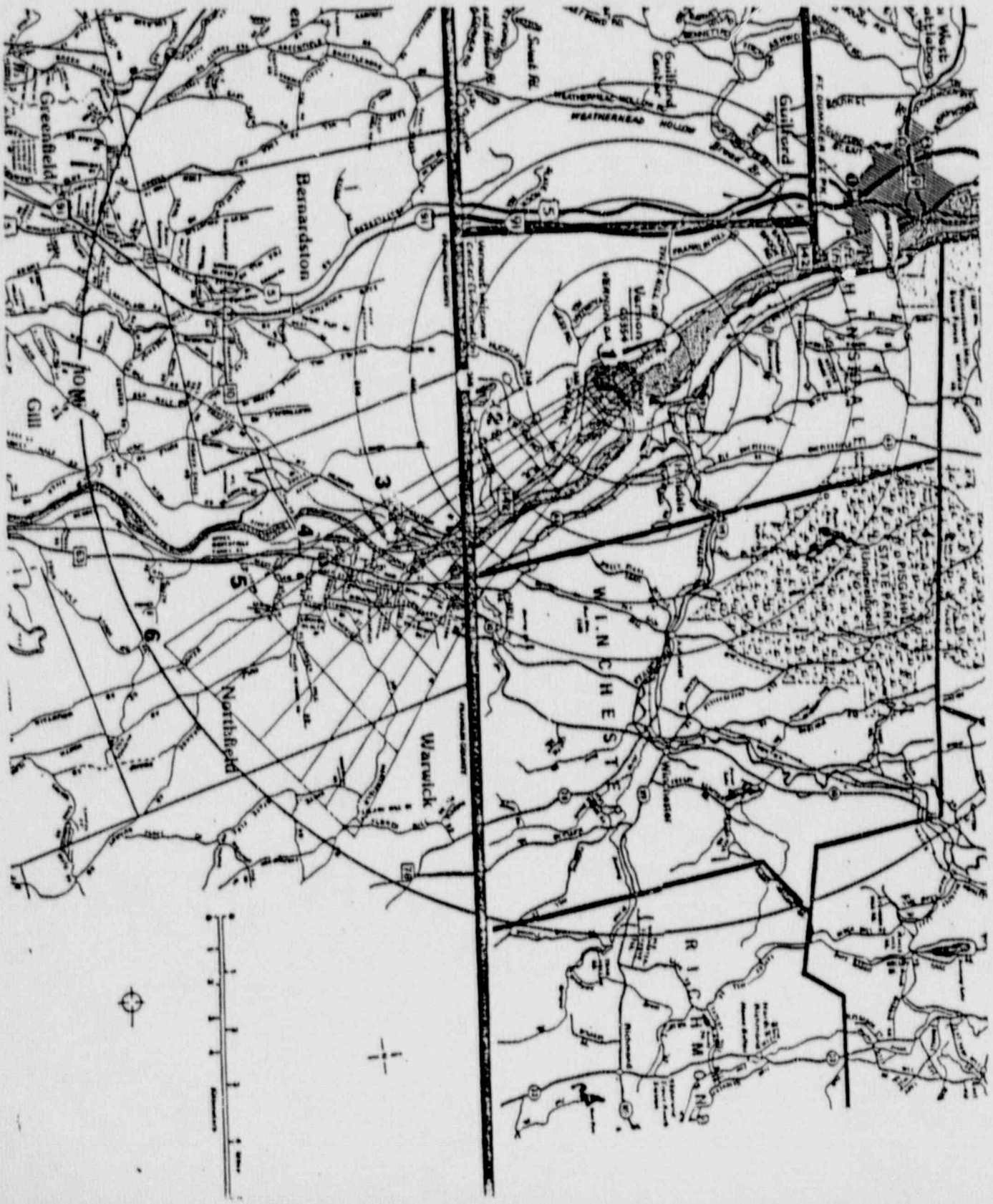


FIGURE 9.7.11
OFF-SITE RADIOLOGICAL CONDITIONS AT CLOCK TIME 1345-1400

PLUME NO	DISTANCE MILES	C/L CONC. I-131 uCi/cc X 1.0E+06	BLUE AREA(CENTERLINE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	BH-14 100 LITERS SILVER ZEOLITE BET CPM	BAM-11 100 LITERS SILVER ZEOLITE BET CPM	PARTICULATE FILTER BET CPM	YELLOW AREA GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	BH-15 100 LITERS SILVER ZEOLITE BET CPM	BAM-11 100 LITERS SILVER ZEOLITE BET CPM	PARTICULATE FILTER BET CPM	GREEN AREA(OUTER EDGE) GAMMA DOSE RATE PIC-6 mR/HR	GAMMA DOSE RATE BH-14 CPM	BH-14 100 LITERS SILVER ZEOLITE BET CPM	BAM-11 100 LITERS SILVER ZEOLITE BET CPM	PART. FILTER BET CPM
1	0.4	0	2	7000	AS READ	AS READ	0	AS READ	700	AS READ	AS READ	0	AS REA	70	AS READ	AS READ	0
2	2.4	0	1	3500	AS READ	AS READ	0	AS READ	350	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
3	4.4	0	AS READ	900	AS READ	AS READ	0	AS READ	90	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
4	6.0	0	AS READ	800	AS READ	AS READ	0	AS READ	80	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
5	7.6	0	AS READ	500	AS READ	AS READ	0	AS READ	50	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0
6	9.1	0	AS READ	400	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0	AS READ	AS READ	AS READ	AS READ	0



VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

10.0 METEOROLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

10.1 ON-SITE METEOROLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1990

10.1 ON-SITE METEOROLOGICAL DATA

06:15-07:30

	Time					
	06:15	06:30	06:45	07:00	07:15	07:30
LOWSAV AVG LOWER SPEED MPH	5.8	5.4	4.4	2.8	2.5	3.1
UPWSAV AVG UPPER SPEED MPH	6.2	6.0	6.4	5.6	6.2	6.4
LOWDAV AVG LOWER DIR DEGS	360	4	15	10	355	350
LOWDSD AVG LOWER DIR SIGMA	12	20	20	59	41	27
UPWDAV AVG UPPER DIR DEGS	345	350	349	348	328	330
UPWDSD AVG UPPER DIR SIGMA	17	24	22	18	40	37
LOTTAV AVG LOWER TEMP DEGS (F)	51.5	51.8	52.4	53.4	55.0	55.3
LODTAV AVG LOWER DELTA T DEGS (F)*	0.0	0.1	-0.2	-0.7	-1.4	-1.1
UPDTAV AVG UPPER DELTA T DEGS (F)*	0.1	0.1	-0.3	-0.6	-1.4	-1.2
SOLRAV AVG SOLAR RAD LANGS	0.16	0.25	0.19	0.36	0.45	0.51
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00

07:45-09:15

	Time						
	07:45	08:00	08:15	08:30	08:45	09:00	09:15
LOWSAV AVG LOWER SPEED MPH	2.2	2.7	3.2	2.7	2.7	3.1	3.6
UPWSAV AVG UPPER SPEED MPH	5.6	6.0	5.8	5.4	5.4	6.0	5.1
LOWDAV AVG LOWER DIR DEGS	330	345	340	350	355	350	2
LOWDSD AVG LOWER DIR SIGMA	39	49	31	70	47	35	32
UPWDAV AVG UPPER DIR DEGS	325	323	339	341	347	355	340
UPWDSD AVG UPPER DIR SIGMA	28	38	24	31	31	30	22
LOTTAV AVG LOWER TEMP DEGS (F)	55.6	57.7	60.0	61.5	63.4	65.4	66.6
LODTAV AVG LOWER DELTA T DEGS (F)*	-1.1	-1.5	-1.7	-1.4	-1.5	-1.7	-1.4
UPDTAV AVG UPPER DELTA T DEGS (F)*	-0.8	-1.5	-1.9	-1.4	-1.5	-1.6	-1.2
SOLRAV AVG SOLAR RAD LANGS	0.57	0.64	0.71	0.78	0.84	0.90	0.95
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
1990

10.1 ON-SITE METEOROLOGICAL DATA

09:30-11:30

	Time								
	09:30	09:45	10:00	10:15	10:30	10:45	11:00	11:15	11:30
LOWSAV AVG LOWER SPEED MPH	4.7	4.9	4.0	3.0	4.6	5.3	6.6	3.8	2.9
UPWSAV AVG UPPER SPEED MPH	5.5	5.4	4.6	3.7	5.7	8.1	8.7	6.9	6.2
LOWDAV AVG LOWER DIR DEGS	5	10	9	12	15	16	13	306	309
LOWDSD AVG LOWER DIR SIGMA	17	19	19	20	20	29	27	39	24
UPWDAV AVG UPPER DIR DEGS	350	345	340	342	330	332	326	319	310
UPWDSD AVG UPPER DIR SIGMA	17	15	14	16	17	14	21	25	13
LOTTAV AVG LOWER TEMP DEGS (F)	67.2	68.4	69.3	71.0	72.5	73.8	74.4	74.9	75.6
LODTAV AVG LOWER DELTA T DEGS (F)*	-1.2	-1.5	-1.6	-1.8	-1.7	-1.7	-1.9	-1.7	-2.1
UPDTAV AVG UPPER DELTA T DEGS (F)*	-1.1	-1.5	-1.7	-1.9	-1.7	-1.9	-2.1	-1.9	-2.3
SOLRAV AVG SOLAR RAD LANGS	1.00	1.05	1.09	1.13	1.17	1.05	1.09	1.8	1.31
RAINTO 15 MIN RAINFALL INCHES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

11:45-13:30

	Time							
	11.45	12:00	12:15	12:30	12:45	13:00	13:15	13:30
LOWSAV AVG LOWER SPEED MPH	3.1	2.8	3.0	3.6	2.9	3.2	3.9	3.7
UPWSAV AVG UPPER SPEED MPH	6.0	6.1	6.3	5.7	6.6	6.4	6.2	6.5
LOWDAV AVG LOWER DIR DEGS	322	308	322	308	312	309	304	339
LOWDSD AVG LOWER DIR SIGMA	34	30	34	40	24	34	43	24
UPWDAV AVG UPPER DIR DEGS	324	315	320	317	322	305	316	324
UPWDSD AVG UPPER DIR SIGMA	19	17	18	26	18	22	27	17
LOTTAV AVG LOWER TEMP DEGS (F)	75.7	76.5	76.4	76.9	77.2	77.3	77.9	77.5
LODTAV AVG LOWER DELTA T DEGS (F)*	-1.8	-1.6	-1.5	-1.8	-1.9	-1.6	-1.8	-1.7
UPDTAV AVG UPPER DELTA T DEGS (F)*	-2.2	-2.3	-2.3	-2.4	-2.2	-2.3	-2.2	-2.2
SOLRAV AVG SOLAR RAD LANGS	1.27	1.29	1.21	1.21	1.18	1.05	1.19	0.92
RAINTO 15 MIN RAINFALL INCHES	0.00	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
1990

10.1 ON-SITE METEOROLOGICAL DATA

13:45-15:00

	Time					
	13:45	14:00	14:15	14:30	14:45	15:00
LOWSAV AVG LOWER SPEED MPH	6.2	7.2	7.8	8.0	7.5	7.2
UPWSAV AVG UPPER SPEED MPH	8.3	9.4	9.5	10.0	9.5	10.0
LOWDAV AVG LOWER DIR DEGS	313	330	302	306	333	302
LOWDSD AVG LOWER DIR SIGMA	33	28	20	33	24	11
UPWDAV AVG UPPER DIR DEGS	317	325	315	304	320	311
UPWDSD AVG UPPER DIR SIGMA	23	15	11	25	17	11
LOTTAV AVG LOWER TEMP DEGS (F)	78.1	78.3	77.9	79.1	78.7	[illegible].0
LODTAV AVG LOWER DELTA T DEGS (F)*	-1.5	-1.8	-1.3	-1.9	-1.7	-1.6
UPDTAV AVG UPPER DELTA T DEGS (F)*	-2.3	-2.2	-2.2	-2.3	-2.3	-2.4
SOLRAV AVG SOLAR RAD LANGS	1.13	0.96	0.89	1.09	0.99	0.79
RAINTO 15 MIN RAINFALL INCHES	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

1990

10.2 GENERAL AREA NWS FORECASTS

THIS IS A DRILL

10.2 GENERAL AREA NWS FORECASTS

6:00-12:00 - General Area Forecast

Mostly sunny today, with variable winds becoming northwest 5 to 10 mph by late morning. High temperatures 75°F to 80°F. Probability of precipitation less than 10%.

A high pressure system centered over Pennsylvania will drift southeastward and slowly weaken during the day. This system will dominate the weather today.

THIS IS A DRILL

THIS IS A DRILL

10.2 GENERAL AREA NWS FORECASTS

12:00-18:00 - General Area Forecast

Mostly sunny and warm this afternoon with a high near 80°F. Northwest winds 5 to 10 mph. Mostly clear tonight with a low around 55°F. Winds becoming light and variable.

Tomorrow, becoming cloudy with showers. Highs in the mid 70's. Winds becoming south to southwest 10 to 15 mph.

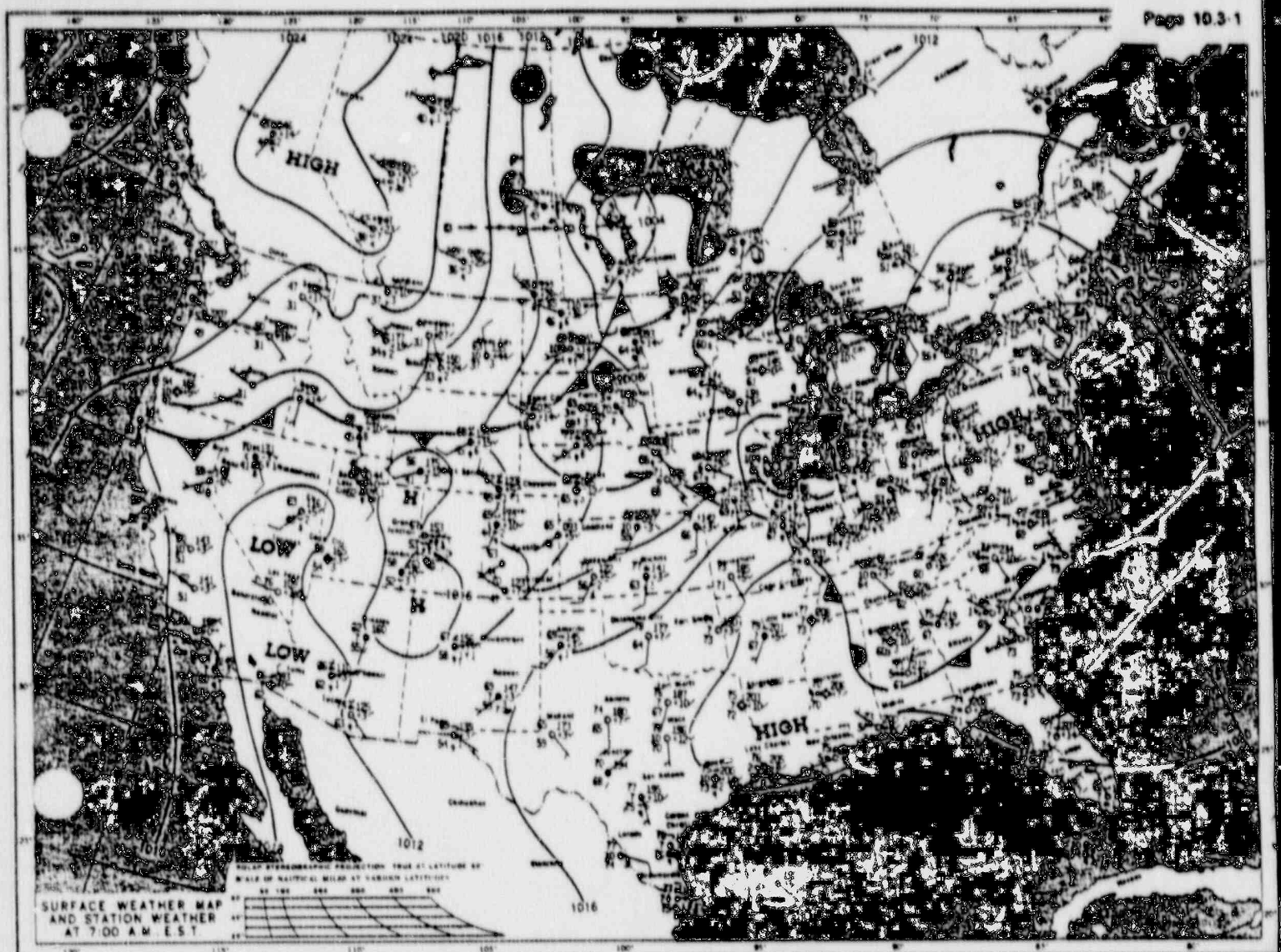
THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION

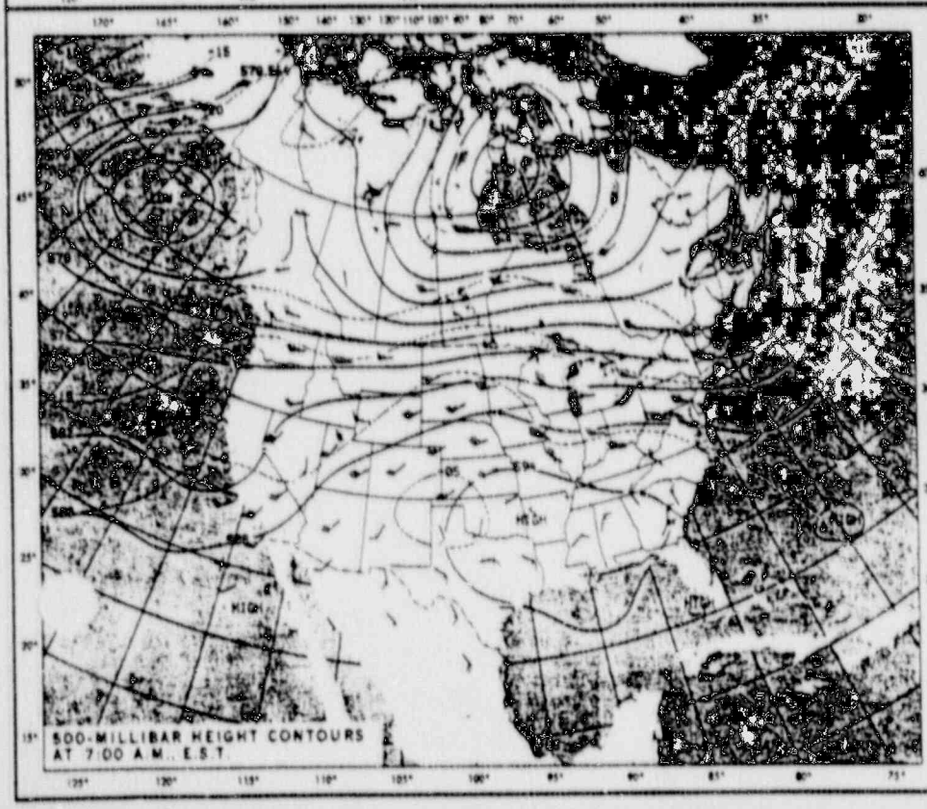
EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1990

10.3 NATIONAL WEATHER SERVICE SURFACE MAPS



SURFACE WEATHER MAP AND STATION WEATHER AT 7:00 A.M. E.S.T.



500-MILLIBAR HEIGHT CONTOURS AT 7:00 A.M. E.S.T.

HIGHEST AND LOWEST TEMPERATURES

PRECIPITATION AREAS AND AMOUNTS