VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993 PLUME PATHWAY EXERCISE MANUAL

EXERCISE MATERIAL

VERMONT YANKEE NUCLEAR POWER STATION
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1.0 INTRODUCTION

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1.1 EXERCISE SCHEDULE

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1.1 EXERCISE SCHEDULE

A. On-Site Controller and Observer Briefing

Date:	To be Determined
Time:	To be Determined
Location:	Vermont Yankee Corporate Office, Brattleboro, Vermont
Purpose:	Briefing on Exercise Activities and Assignments
Attendees:	On-Site Controllers and Observers

B. Off-Site Controller and Observer Briefing

Date:	To Be Determined
Time:	To Be Determined
Location:	To Be Determined
Purpose:	Briefing on Exercise Activities and Assignments
Attendees:	Off-Site Controllers and Observers

C. NRC Entrance and Exercise Briefing

Date:	To Be Determined
Time:	To Be Determined
Location:	Vermont Yankee Corporate Office, Brattleboro, Vermont
Purpose:	NRC Briefing and Review of Exercise Scenario
Attendees:	NRC Evaluators, Vermont Yankee Management and Controllers

D. FEMA Entrance and Exercise Briefing

Date:	To Be Determined
Time:	To Be Determined
Location:	Vermont Yankee Corporate Office, Brattleboro, Vermont
Purpose:	FEMA Briefing and Review of Exercise Scenario
Attendees:	FEMA Evaluators, Vermont Yankee and State Representatives

E. Exercise

Date:	To Be Determined (Week of April 25, 1993)
Time:	Unannounced and Off-hours
Location:	Vermont Yankee Emergency Response Centers and Designated State and Local Emergency Response Centers
Purpose:	Emergency Response Preparedness Exercise
Attendees:	Vermont Yankee Emergency Response Organization, State and Local Emergency Response Organizations from Vermont, New Hampshire and Massachusetts, Controllers and Observers, NRC and FEMA Evaluators and Yankee Atomic Engineering Support Center Staff

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1.1 EXERCISE SCHEDULE (continued)

F. Exercise Debriefing

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

G. Controller Debriefing

Date:	To Be Determined
Time:	To Be Determined
Location:	To Be Determined
Purpose:	Exercise Debriefing
Attendees:	Exercise Coordinator and Controllers

H. Exercise Critique

Date:	To Be Determined
Time:	To Be Determined
Location:	Vermont Yankee Corporate Office, Brattleboro, Vermont
Purpose:	Utility Self-Critique/NRC Preliminary Findings
Attendees:	Vermont Yankee Management, NRC Evaluators, Exercise Controllers (Observers as needed) and Vermont Yankee Key Participants

I. FEMA State Debriefing

Date:	To Be Determined
Time:	To Be Determined
Location:	To Be Determined
Purpose:	Debrief State Representatives
Attendees:	State Representatives, FEMA and Vermont Yankee

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1.1 EXERCISE SCHEDULE (continued)

J. FEMA Public Meeting

Date:	To Be Determined
Time:	To Be Determined
Location:	To Be Determined
Purpose:	Present FEMA Preliminary Exercise Findings and Assessment
Attendees:	State Representatives, FEMA, Vermont Yankee and General Public

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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 Emergency Response Organization

Facilities

Vermont Yankee Nuclear Power Station - Vernon, Vermont

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

Vermont Yankee Training Center - Brattleboro, Vermont

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

YANKEE ATOMIC ELECTRIC COMPANY

Yankee Nuclear Services Division - Bolton, Massachusetts

Facility

- Engineering Support Center

STATE OF VERMONT

Key Participating State Agencies

- Vermont Emergency Management
- Vermont State Health Department

Facilities

- State Warning Point, Vermont State Police - Waterbury, Vermont
- Emergency Operations Center - Waterbury, Vermont
- Incident Field Office - Dummerston, Vermont
- Department of Health Laboratory - Burlington, Vermont
- Emergency Operations Facility/Recovery Center - Brattleboro, Vermont
- News Media Center, Vermont Yankee Training Center - Brattleboro, Vermont

Key Participating Local Agencies

- Brattleboro, Dummerston, Guilford, Halifax and Vernon Emergency Management Agencies

Facilities

- Brattleboro Emergency Operations Center (EOC) - Brattleboro Town Hall
- Dummerston EOC - Dummerston Town Office Building
- Guilford EOC - Guilford Fire Station
- Halifax EOC - Halifax Fire Station
- Vernon EOC - Vernon Fire Station

STATE OF NEW HAMPSHIRE

Key Participating State Agencies

- New Hampshire Office of Emergency Management
- Department of Public Health Service

Facilities

- State Police Communications Center and Troop C - Concord, New Hampshire and

Keene, New Hampshire

- Southwestern Fire Mutual Aid Dispatch Center - Keene, New Hampshire
- Emergency Operations Center - Concord, New Hampshire
- Incident Field Office - Keene, New Hampshire
- Emergency Operations Facility/Recovery Center - Brattleboro, Vermont
- News Media Center, Vermont Yankee Training Center - Brattleboro, Vermont

Key Participating Local Agencies

- Chesterfield, Hinsdale, Richmond, Swanzey and Winchester Emergency Management Agencies

Facilities

- Chesterfield Emergency Operations Center (EOC) - Chesterfield Town Office
- Hinsdale EOC - Hinsdale Fire Station/Town Hall
- Richmond EOC - Richmond Civil Defense Building
- Swanzey EOC - Swanzey Center Fire Station
- Winchester EOC - Winchester Emergency Service Building

COMMONWEALTH OF MASSACHUSETTS

Key Participating State Agencies and Radio Stations

- Massachusetts Emergency Management Agency
- Massachusetts Department of Public Health
- WRSI/WGAM Radio, Greenfield
- WHYN Radio, Springfield
- WHAI Radio, Greenfield

Facilities

- Emergency Operations Center - Framingham, Massachusetts
- Area IV Emergency Operations Center - Belchertown, Massachusetts
- Emergency Operations Facility/Recovery Center - Brattleboro, Vermont
- News Media Center, Vermont Yankee Training Center - Brattleboro, Vermont

Key Participating Local Agencies/Organizations

- Bernardston, Colrain, Gill, Greenfield, Leyden, Northfield and Warwick Emergency Management Agencies
- Franklin County Dispatch

Facilities

- Bernardston Emergency Operations Center (EOC) - Bernardston Fire Station
- Colrain EOC - Colrain Fire Station
- Gill EOC - Gill Fire Station
- Greenfield EOC - Greenfield Fire Station
- Leyden EOC - Leyden Fire Station
- Northfield EOC - Town Hall
- Warwick EOC - Warwick Fire Station

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1.3 ABBREVIATIONS AND DEFINITIONS

VERMONT YANKEE NUCLEAR POWER STATION

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1.3 ABBREVIATIONS AND DEFINITIONS

A. Abbreviations

- AO - Auxiliary Operator
- AOG - Advanced Off-Gas System
- APRM - Average Power Range Monitor
- ARM - Area Radiation Monitor
- ATWS - Anticipated Transient Without Scram
- CR - Control Room/Control Rod
- CRD - Control Rod Drive
- CRP - Control Room Panel
- CS - Core Spray
- DCO - Duty and Call Officers
- DW - Drywell
- EAL - Emergency Action Level
- ECCS - Emergency Core Cooling System
- ENS - Emergency Notification System
- EOC - Emergency Operations Center
- EOF - Emergency Operations Facility
- EPR - Electric Pressure Regulator
- EPZ - Emergency Planning Zone
- ERF - Emergency Response Facility
- ESC - Engineering Support Center
- FCV - Flow Control Valve
- FEMA - Federal Emergency Management Agency

- FW - Feedwater
- GE - General Emergency
- HPCI - High Pressure Coolant Injection
- HPN - Health Physics Network
- HRNG - High Range Noble Gas
- LNP - Loss of Normal Power
- LPCI - Low Pressure Coolant Injection
- MCC - Motor Control Center
- MPR - Mechanic . Pressure Regulator
- MSIV - Main Steam Isolation Valve
- NAS - Nuclear Alert System
- NG - Noble Gases
- NRC - Nuclear Regulatory Commission
- NWS - National Weather Service
- OBE - Operating Basis Earthquake
- OSC - Operations Support Center
- PASS - Post-Accident Sampling System
- PCIS - Primary Containment Isolation System
- PED - Plant Emergency Director
- PVS - Plant Vent Stack
- RA - Radiological Assistant
- RCIC - Reactor Core Isolation Cooling
- REMVEC - Rhode Island, Eastern Massachusetts, and Vermont Energy Control.
- RPS - Reactor Protection System
- RR - Reactor Recirculation System
- RRU - Reactor Recirculation Unit
- RWCU - Reactor Water Clean-Up
- Rx - Reactor
- SBGTS - Standby Gas Treatment System

- SCR - Simulator Control Room
- SDI - Seismic Damage Indication
- SJAE - Steam Jet Air Ejector
- SLC - Standby Liquid Control
- SRM - Site Recovery Manager/Source Range Monitor
- TSC - Technical Support Center
- VY - Vermont Yankee
- VYNPC - Vermont Yankee Nuclear Power Corporation
- VYNPS - Vermont Yankee Nuclear Power Station
- YNSD - Yankee Nuclear Services Division

B. Definitions

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

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

- Controller Message - Controller messages provide supplemental information pertinent to the anticipated player response actions. These may direct specific actions ("command cards") or provide clarification to an existing condition ("message cards").

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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1.4 REFERENCES

1.4 REFERENCES

1. Vermont Yankee Nuclear Power Station Emergency Plan

2. Vermont Yankee Nuclear Power Station Emergency Plan Implementing Procedures

3. Vermont Yankee Nuclear Power Station Final Safety Analysis Report

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

5. Vermont Yankee Nuclear Power Station Emergency Operating Procedures

6. Vermont Yankee Nuclear Power Station Core Damage Assessment Methodology

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

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

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2.0 EXERCISE OBJECTIVES AND EXTENT OF PLAY

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2.1 EXERCISE OBJECTIVES AND EXTENT OF PLAY - VERMONT YANKEE

2.1 OBJECTIVES AND EXTENT OF PLAY - VERMONT YANKEE

A. Emergency Classification and Accident Assessment		**Extent of Play**
1. Demonstrate the ability of Control Room personnel to recognize emergency initiating events and properly classify the condition in accordance with pre-established emergency action levels.	A.1	The scenario events initiated on the simulator will provide the operational and radiological data to allow personnel to demonstrate this objective by implementing Procedure A.P. 3125, Emergency Plan Classification and Action Level Scheme.
2. Demonstrate the ability of Control Room personnel and TSC staff to coordinate the assessment of plant conditions and corrective actions to mitigate accident conditions.*	A.2	The scenario will provide technical information to players which will allow them to analyze plant conditions and initiate corrective actions in accordance with established procedures.
3. Demonstrate that information concerning plant conditions can be transmitted between the Control Room and TSC in a timely manner.	A.3	Telephone communications links will be established by communicators between the Simulator Control Room (SCR) and the various Emergency Response Facilities in order to transmit key information and data.
4. Demonstrate the ability of the TSC staff to initiate and coordinate corrective actions in an efficient and timely manner.	A.4	The scenario events will enable the TSC to coordinate in-plant corrective actions through the use of OSC personnel.
5. Demonstrate the ability of appropriate TSC staff to participate with the Control Room and the EOF/RC in emergency classification and EAL discussions.	A.5	The scenario includes events which allow for discussion between the Control Room, TSC, and EOF/RC staff on classification.

*Indicates NRC identified item from the 1992 exercise.

Extent of Play

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

A.6 Scenario events will require Chemistry and Radiation Protection Technicians to obtain samples from the Reactor Coolant System, Containment Atmosphere or the Plant Vent Stack. ACTUAL SAMPLING AND ACTUAL MANIPULATION OF SAMPLING SYSTEM COMPONENTS WILL BE SIMULATED. However, sampling activities to obtain and analyze samples will be discussed and sample results will be provided by the Observer.

7. Demonstrate the ability to effectively use the ERFIS in the assessment and trending of plant conditions.

A.7 Emergency Response Facility Information System (ERFIS) terminals at the TSC and EOF/RC will be linked to the SCR to receive and transmit scenario data. This will allow Emergency Response Facility staff personnel the opportunity to demonstrate the effectiveness of ERFIS under simulated emergency conditions.

B. Notification and Communication

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

B.1 Various communications links will be established between emergency response facilities in order to transmit information and data. Record keeping and documentation will be demonstrated in accordance with Procedure OP-3504, "Emergency Communications."

Communications and transfer of data between facilities will be evaluated for timeliness and completeness.

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*Indicates NRC identified item from the 1992 exercise.

			Extent of Play
2.	Demonstrate the capability to notify federal and state authorities of emergency classifications and significant changes in plant status in accordance with established procedures.	B.2	Vermont Yankee staff, NRC, and state authorities shall be notified in accordance with established procedures. NRC will be notified by utilizing the FTS 2000 ENS phone. The State authorities will be notified through the Nuclear Alert System (Orange Phone).
3.	Demonstrate that appropriate status boards are utilized to display pertinent accident information at the various emergency response facilities.	B.3	Status Boards (where provided) will be utilized by response personnel to display pertinent information. Status Board Caretakers will be assigned by facility coordinators to maintain the status boards with current information.
4.	Demonstrate that adequate emergency communication systems are in place to facilitate transmittal of data between emergency response facilities and federal and state authorities.	B.4	Communications will be demonstrated between the various Emergency Response Facilities using established communications systems as described in Procedure OP-3504, "Emergency Communications."
5.	Demonstrate that Off-Site Monitoring Teams can appropriately identify their location when reporting sample results to the EOF.	B.5	Off-Site Monitoring Teams will be dispatched to the field and directed to specific sample points for monitoring activities.
6.	Demonstrate the ability to provide adequate briefings to Off-Site Monitoring Teams as conditions and information change.	B.6	During the period that the Off-Site Monitoring Teams will be in the field, scenario events may require that periodic updates be transmitted to the teams in the field.

*Indicates NRC identified item from the 1992 exercise.

Extent of Play

C. Direction and Control

1. Demonstrate the proper transfer of responsibilities from the SS/PED to the Duty Call Officer and subsequently to the TSC Coordinator and Site Recovery Manager as appropriate.

C.1 Scenario events require the activation of the Emergency Response Organization. As each position of authority is activated, responsibilities associated with that position will be assumed from the SS/PED up to the Site Recovery Manager.

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

C.2 All emergency response facilities have designated coordinators who will direct and coordinate emergency response activities in their particular area of responsibility.

3. Demonstrate appropriate coordination of activities with federal and state government agencies.

C.3 The SCR will initially contact the federal and state agencies, providing them with appropriate information on plant conditions and emergency status. This function will pass to the TSC and EOF/RC after the facilities are activated.

D. Emergency Response Facilities

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

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

D.1
D.2 Scenario events will require activation and operation of Vermont Yankee emergency response facilities. The SCR, 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.

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*Indicates NRC identified item from the 1992 exercise.

	Objective		Extent of Play
E.	**Plant Augmentation and Staffing**		
1.	Demonstrate the adequacy of plant emergency notification methods and procedures to augment plant staff and resources.	E.1	Shift personnel should demonstrate the use of the emergency call-in system to augment plant staff as may be required by scenario events.
2.	Demonstrate the ability to utilize outside resources to provide technical assistance and logistical support.	E.2	The Yankee Nuclear Services Division's Engineering Support Center (ESC) will be contacted and activated for this exercise. The ESC will provide technical and logistical support as requested by Vermont Yankee.
3.	Demonstrate the ability to maintain shift staffing and manpower to provide for future manpower and logistics needs.*	E.3	Available resources will be evaluated and assigned to support extended operations.
F.	**Radiological Exposure Control**		
1.	Demonstrate the ability to provide adequate radiation protection controls for on-site emergency response personnel dosimetry, equipment, and protective clothing.	F.1 F.2	Scenario events will require OSC On-Site Assistance Teams to be dispatched to investigate problems associated with plant equipment. Investigation and repair activities in the plant will require implementation of radiation protection controls which include monitoring and tracking of radiation exposure of OSC On-Site Assistance Teams. (Refer to Procedure OP-3507, "Emergency Radiation Exposure Control.") In addition, the exposure of the Off-Site Monitoring Teams will be monitored and tracked in the EOF.
2.	Demonstrate the ability to monitor and track radiation exposure of on-site emergency response personnel.		

*Indicates NRC identified item from the 1992 exercise.

Extent of Play

G. In-Plant Corrective and Repair Actions

1. Demonstrate the ability to assemble and dispatch On-Site Assistance Teams in a timely fashion, consistent with plant conditions and assigned function.

2. Demonstrate the ability to provide adequate briefings to ERF staff and On-Site Assistance Teams as conditions and information change.

3. Demonstrate the ability of On-Site Assistance Teams to perform corrective actions on plant equipment during emergency conditions.*

G.1 G.2 G.3 OSC On-Site Assistance Teams should be dispatched to investigate problems associated with plant equipment. For established exercise miniscenarios, briefings should be conducted with On-Site Assistance Teams to ensure that responsibilities are clear and understood. Briefing sheets (refer to VYOPF 3507.02) should be used to brief and debrief teams on work assignments conducted. On-Site Assistance Team personnel will demonstrate implementation of corrective actions (including obtaining necessary approvals, tools, procedures, replacement parts, etc.) on mockups of damaged plant equipment in accordance with established exercise miniscenarios.

*Indicates NRC identified item from the 1992 exercise.

Extent of Play

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

G.4 The exercise miniscenarios will allow players to implement the appropriate emergency work controls in accordance with established procedures. (Refer to Procedure OP-3507, "Emergency Radiation Exposure Control" and Procedure AP-0021, "Work Orders.")

H. Radiological Assessment

1. Demonstrate that adequate dose assessment activities can be performed to determine off-site radiological consequences.

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

3. Demonstrate the ability to perform timely assessment of off-site radiological conditions to support the formulation of protective action recommendations for the plume exposure pathway.

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

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

H.1 H.2 H.3 H.4 H.5 The scenario will provide information on plant conditions and in-plant radiological conditions to players which will allow them to evaluate potential off-site radiological consequences. Players will implement appropriate sections of Procedures OP-3513, "Evaluation of Off-Site Radiological Conditions" and OP-3511, "Off-Site Protective Actions Recommendations," as may be required by scenario events.

*Indicates NRC identified item from the 1992 exercise.

Extent of Play

6. Demonstrate adequate staffing, equipment readiness check, and deployment (if necessary) of Off-Site Monitoring Teams.

H.6 H.7 Off-Site Monitoring Teams will be assigned at the OSC. Players will implement appropriate sections of Procedure OP-3510, "Off-Site and Site Boundary Monitoring" in the field.

7. Demonstrate the use of appropriate equipment and procedures to perform off-site radiological monitoring.

I. Protective Action Decision Making

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

I.1 On-site protective action measures will include radiation exposure control and plant evacuation of nonessential personnel. After plant evacuation and accountability has been completed, all plant personnel and contractors not directly involved in the exercise may be allowed to return to work.

2. Demonstrate the adequacy of the protective action decision making process to make appropriate recommendations concerning off-site radiological consequences.

I.2 Protective action decision making will be demonstrated in accordance with Procedure OP-3511, "Off-Site Protective Actions Recommendations".

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*Indicates NRC identified item from the 1992 exercise.

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

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*Indicates NRC identified item from the 1992 exercise.

Extent of Play

K. Parallel and Other Actions

1. Test and evaluate the adequacy of methods to establish and maintain access control and personnel accountability within the protected area.

K.1 Security activities will be implemented in accordance with established procedures to control access to the protected area. Assembly of emergency response personnel and evacuation of contractor/visitors will be implemented in order to test personnel accountability within the protected area. However, after the plant evacuation accountability checks have been completed, contractors and visitors will be exempted from additional personnel accountability checks.

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

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

K.2 Exercise critique will be conducted with exercise controllers, observers, and players. C itique items will be compiled and documented by the Exercise Coordinator.

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*Indicates NRC identified item from the 1992 exercise.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

2.2 <u>EXERCISE OBJECTIVES AND EXTENT OF PLAY- STATE OF VERMONT</u>

REP-14 Objectives	State of Vermont	Local Jurisdiction
1. **MOBILIZATION OF EMERGENCY PERSONNEL.** Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.	yes	yes

Extent of Play:

State and local jurisdictions will be alerted and notified at each ECL. Mobilizatior of State and local emergency facilities and field operations personnel will be in accordance with state and local plans. The following facilities will be activated and staffed:

Vermont State EOC
State Warning Point
Emergency Operations Facility
Department of Health Laboratory
Local EOC's in the Towns of:
Brattleboro
Vernon
Guilford
Halifax
Dummerston

ARCA: None

2. **FACILITIES - EQUIPMENT, DISPLAYS, AND WORK ENVIRONMENT.** Demonstrate the adequacy of facilities, equipment, displays, and other materials to support emergency operations.	yes	yes

	State of Vermont	Local Jurisdiction
Extent of Play:		

Facilities, equipment, maps, and displays will be used to support response operations. Access to facilities will be controlled.

ARCA: None

	State of Vermont	Local Jurisdiction
3. **DIRECTION AND CONTROL.** Demonstrate the capability to direct and control emergency operations.	yes	yes

Extent of Play:

Direction and control for all state and local emergency operations will be demonstrated by the appropriate ORO member in accordance with state and local plans.

ARCA: None

	State of Vermont	Local Jurisdiction
4. **COMMUNICATIONS.** Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.	yes	yes

Extent of Play:

State and local emergency response personnel, including field teams will demonstrate the capability to communicate with appropriate locations. This includes communications between utility and state facilities personnel and state and local facilities personnel.

ARCA: 91-21, 91-23, 91-31

	State of Vermont	Local Jurisdiction
5. **EMERGENCY WORKER EXPOSURE CONTROL.** Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers.	yes	yes

Extent of Play:

Each off-site organization having a responsibility for emergency workers will utilize appropriate dosimetry to control radiation exposure. ORO's will demonstrate the capability to issue, zero, and read dosimeters and record readings. Each Emergency Worker will be issued a (TLD). Procedures will be demonstrated to manage exposure of emergency workers. Appropriate decisions will be made for EW's who may enter areas of higher dose limits.

ARCA: 91-22

	State of Vermont	Local Jurisdiction
6. **FIELD RADIOLOGICAL MONITORING - AMBIENT RADIATION MONITORING.** Demonstrate the appropriate use of equipment and procedures for determining field radiation measurements.	yes	no

Extent of Play:

Field Teams will be provided proper equipment to perform field operations. Operational checks of equipment are performed prior to deployment. Each team will demonstrate proper deployment and knowledge of assigned locations. Proper monitoring procedures will be performed and data will be promptly relayed to the Health Services Coordinator. The State Health Department will follow all standard operating procedures.

ARCA: 87-8, 87-10, 87-11.

	State of Vermont	Local Jurisdiction
7. **PLUME DOSE PROJECTION.** Demonstrate the capability to develop dose projections and protective action recommendations regarding evacuation and sheltering.	yes	no

Extent of Play: The state will demonstrate the capability to locate the plume and develop dose projections based on utility information and field team data. From this information the state will develop appropriate protective action recommendations. Initial PAR's may be derived solely from utility information. Additional field team data may be utilized to adjust initial PAR's.

ARCA: None

	State of Vermont	Local Jurisdiction
8. **FIELD RADIOLOGICAL MONITORING - AIRBORNE RADIOIODINE AND PARTICULATE ACTIVITY MONITORING.** Demonstrate the appropriate use of equipment and procedures for the measurement of airborne radioiodine concentrations as low as (10-7) 0.0000001 microcuries per cubic centimeter in the presence of noble gases and obtain samples of particulate activity in the airborne plume.	yes	no

Extent of Play:

Field teams perform operational checks of equipment prior to deployment. Calibration of equipment is within 12 months. Airborne radioiodine and particulate samples are taken in accordance with procedures. Field teams will measure radioiodine and particulate matter outside of plume . Field teams will transmit

	State of Vermont	Local Jurisdiction
data to the Health Services Coordinator in accordance with procedures. Samples are properly bagged and delivered to designated locations. ARCA: 87-10		
9. **PLUME PROTECTIVE ACTION DECISION MAKING.** Demonstrate the capability to make timely and appropriate protective action decisions (PAD).	yes	no

Extent of Play:

State decision makers will demonstrate the ability to make initial and subsequent PADs. Distribution and issuance of KI will be considered. Coordination with other jurisdictions, (i.e., N.H. and MA) will be demonstrated.

ARCA: None

	State of Vermont	Local Jurisdiction
10. **ALERT & NOTIFICATION.** Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway emergency planning zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate State or local officials.	yes	yes

Extent of Play:

Initial public notification will be demonstrated actually in all its parts once during the exercises. Subsequent notifications will be simulated. Initial notification will be coordinated with NH & MA. All response facilities will be provided copies of messages. NWS will tone out weather alert receivers. WTSA-Brattleboro will transmit initial EBS message.

	State of Vermont	Local Jurisdiction

Once Coordination has been completed by responsible ORO's as to contact and time of message initiation; an initial instructional message will be sent throughout the 10-mile EPZ within 15 minutes. NWS, Burlington, VT., will be notified of timing schedule for activation of weather alert radios. Local EPZ communities will be instructed to sound sirens within the 15 minute time frame; and EBS WTSA-Brattleboro will begin initiation of instructional messages to the public.

Local towns will simulate backup route alerting. A single supplementary alerting and notification route will be demonstrated. There are no exception areas in local plans.

ARCA: None

	State of Vermont	Local Jurisdiction
11. **PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION.** Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.	yes	partial

Extent of Play:

The State will demonstrate the capability to formulate and disseminate the accurate information and instructions to the public. The State will demonstrate coordination of message content with other appropriate staff jurisdictions, organizations, facilities and States (N.H., MA).

The State will demonstrate the capability to provide instructions to the public including information on the initiation and implementation of protective actions. Information should delineate local government jurisdictions affected by the message.

	State of Vermont	Local Jurisdiction
Local Towns have designated public information officers. Towns may simulate instructional and emergency information pertinent to their jurisdictions.		
For ingestion measures, pre printed information and instructions are available. ARCA: 87-73, 91-25, 91-27.		
12. **EMERGENCY INFORMATION - MEDIA.** Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media.	yes	no

Extent of Play:

The State designated spokesman will coordinate activities and briefings with the media at the News Media Center at the Vermont Yankee corporate office in Brattleboro. All emergency and public information will be discussed from this location. The State will provide updated information to the News Media Center. The Local ORO's refer media questions to the News Media Center.

ARCA: 89-12, 91-24, 91-26, 91-27, 91-28, 91-32, 91-33, 91-34, 91-35.

	State of Vermont	Local Jurisdiction
13. **EMERGENCY INFORMATION - RUMOR CONTROL.** Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.	yes	yes

Extent of Play:

The state EOC has a rumor control number publicized in mailings to the 10-mile EPZ.

	State of Vermont	Local Jurisdiction
Local ORO's will refer rumor calls to the News Media Center. The Vermont representative at the News Media Center will exchange messaging with NH and MA representatives.		
ARCA: 91-24, 91-25, 91-26, 91-29, 91-34, 91-35.		
14. **IMPLEMENTATION OF PROTECTIVE ACTIONS - USE OF KI FOR EMERGENCY WORKERS, INSTITUTIONALIZED INDIVIDUALS AND THE GENERAL PUBLIC.** Demonstrate the capability and resources to implement potassium iodide (KI) protective actions for emergency workers, institutionalized individuals, and, if the State plan specifies, the general public.	yes	yes

Extent of Play:
The State will make the determination to issue KI to emergency workers, and institutionalized individuals. Local ORO's will simulate access and distribute KI according to plans. Local ORO's have instructions available for those advised to take KI. No KI will actually be distributed or taken.

ARCA: 91-27, 91-32, 91-33

	State of Vermont	Local Jurisdiction
15. **IMPLEMENTATION OF PROTECTIVE ACTIONS - SPECIAL POPULATIONS.** Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.	yes	yes

Extent of Play:

The state will notify Local ORO's to alert special populations within the areas identified

	State of Vermont	Local Jurisdiction
for protective actions. Local ORO's will identify special population groups. Actual contact simulated. ARCA: None		
16. **IMPLEMENTATION OF PROTECTIVE ACTIONS - SCHOOLS.** Demonstrate the capability and resources necessary to implement protective actions for school children within the plume pathway emergency planning zone (EPZ). ARCA: 89-15.	not an objective	
17. **TRAFFIC AND ACCESS CONTROL.** Demonstrate the organizational capability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas. Extent of Play: State and local ORO's consistent with developing scenario events and PARS will determine the location of TCP/ACP's. Each local town impacted by scenario events will deploy personnel to a single TCP/ACP. Deployed EW's and activated facilities will demonstrate emergency worker exposure control procedures. ARCA: None	yes	yes
18. **RECEPTION CENTER - MONITORING DECONTAMINATION, AND REGISTRATION.** Demonstrate the adequacy of procedures, facilities, equipment, and	Not an objective	

	State of Vermont	Local Jurisdiction
personnel for the radiological monitoring, decontamination, and registration of evacuees.		
Extent of Play:		
Extent of play specific to this ARCA at the Bellows Falls Reception Center will be demonstrated. Outstanding issue remaining is demonstration of "Recovery and Reentry" decision making. Local ORO will tabletop this discussion. Reception Center will simulate activation for monitoring, demonstration and registration of evacuees. This tabletop exercise will be demonstrated out of sequence to regular exercise activities. Actual time to be negotiated with FEMA.		
ARCA: 82-15		
19. **CONGREGATE CARE.** Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for congregate care of evacuees.	Not an objective	
ARCA: None		
20. **MEDICAL SERVICES - TRANSPORTATION.** Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or exposed individuals.	Not an objective	
ARCA: None		

	State of Vermont	Local Jurisdiction
21. **MEDICAL SERVICES - FACILITIES.** Demonstrate the adequacy of the equipment, procedures, supplies, and personnel of medical facilities responsible for treatment of contaminated, injured, or exposed individuals.	Not an objective	

ARCA: None

22. **EMERGENCY WORKERS, EQUIPMENT, AND VEHICLES - MONITORING AND DECONTAMINATION.** Demonstrate the adequacy of procedures for the monitoring and decontamination of emergency workers, equipment, and vehicles.	Not an objective	

ARCA: None

23. **SUPPLEMENTARY ASSISTANCE (FEDERAL/OTHER).** Demonstrate the capability to identify the need for external assistance and to request such assistance from Federal or other support organizations.	yes	no

Extent of Play:

Certain Federal and private response organizations, i.e., American Red Cross, Civil Air Patrol, U.S. Dept. of Agriculture, will be represented at the State EOC during the plume and ingestion phases of the exercise. The State ORO will simulate calls to FEMA Region I during the plume and ingestion exercise phases to activate federal response.

ARCA: None

24. **POST-EMERGENCY SAMPLING.** Demonstrate the use of equipment and procedures for the collection and transportation of samples from areas that received deposition from the airborne plume.

Extent of Play:

The sampling teams will demonstrate all sample collection procedures as well as procedures for preventing cross contamination. The particular types of samples to be collected and the areas from which they are collected may be determined in advance. Prior contact will be made to secure access to properties.

Teams will demonstrate the proper equipment to collect samples of soil, grass, forage, stored feed, leafy vegetables, local produce, milk and surface water.

All activities related to sample transportation, storage and record maintenance and documentation will be demonstrated for a representative number of samples.

The Department of Health in coordination with the state Office of Emergency Management and state response agencies will provide direction on where field sampling should take place. The teams will demonstrate equipment and supplies used for field sampling (e.g. scoops, shovels, collection bags, containers, ID labels, etc). They will demonstrate equipment used for measuring background radiation for field personnel, sample location and individual samples. Each team will take at least one sample from predetermined sampling locations. These samples will be delivered to the muster and collection point for teams and then to the State of Vermont Health Laboratory for analysis. Actual sample transport from the muster/collection point to the health laboratory will occur one time only.

ARCA 87-8, 87-10, 87-11

25. **LABORATORY OPERATIONS.** Demonstrate laboratory operations and procedures for measuring and analyzing samples.

The laboratories' capability to process samples will be demonstrated. The use of laboratory equipment, laboratory grade analytical instruments suitable for determining radioisotopes present and levels of radioactivity in samples, as well as the training of personnel to use the equipment will be demonstrated by analyzing prepackaged environmental samples.

The State of Vermont Health Laboratory will receive and identify all incoming ingestion samples for analysis. The results will be transmitted to the Department of Health staff located at the state EOC.

ARCA: 87-12, 87-13, 87-14

26. **INGESTION EXPOSURE PATHWAY - DOSE PROJECTION AND PROTECTIVE ACTION DECISION MAKING.** Demonstrate the capability to project dose to the public for the ingestion pathway and to recommend protective measures.

The State Department of Health, with other state agencies will demonstrate the capability to make appropriate Protective Action Decisions (PADs) using data provided by exercise controllers. The data consists of meteorologic conditions from the emergency phase, release isotopic composition and radiation levels found in field monitoring samples and DOE flyover results. All data will be in the form normally available either from the field monitoring teams, the laboratory and DOE.

PADS will also be developed using the laboratory sample analysis results of the food and agricultural.

ARCA: None

27. **INGESTION EXPOSURE PATHWAY - PROTECTIVE ACTION IMPLEMENTATION.** Demonstrate the capability to implement protective actions for ingestion exposure pathway.

Extent of Play:

The State will identify and utilize current information regarding dairy and agricultural food producers/processors within the ingestion pathway for the implementation of protective actions.

Development of measures and strategies for the implementation of ingestion pathway EPZ protective actions will be demonstrated by protective action messages to the general public and food producers and processors. Actual broadcast of messages will be simulated.

Demonstration of this objective will also include selection of appropriate instructional material (preprinted and to be printed) for distribution within the ingestion pathway EPZ at the time of the emergency. Actual printing and distribution of materials will be simulated.

State agencies will demonstrate the capability to control, restrict or prevent distribution of contaminated foodstuffs by commercial businesses by issuing administrative orders through health or agricultural agencies. Communications and coordination with agencies responsible for enforcing food controls within the ingestion pathway EPZ will be demonstrated, but actual communications with food producers and processors will be simulated.

28. **RELOCATION, RE-ENTRY, AND RETURN - DECISION MAKING.** Demonstrate the capability to develop decisions on relocation, re-entry, and return.

The identification of areas requiring Relocation of the general public will be demonstrated by comparing simulated measurements to decision criteria. Assessments will be made based on Doe Flyover data provided by controllers and field monitoring exposure rate readings. State personnel responsible for accident assessment will demonstrate the capability to use this data to plot on a map the location of the area from which the population should be Relocated (the Restricted zone).

The decision criteria and strategies that are followed to allow Re-entry into controlled areas will be demonstrated at the State EOC in a group setting discussion with representatives from all major state organizations. Decisions will be made regarding the location of control points and policies.

Responsible agencies will use simulated environmental measurements provided by controllers to identify the location of the boundaries of areas to which Return is permitted.

Demonstrated decision making regarding assistance to individuals who are affected by the emergency will be demonstrated at the state EOC in a group setting discussion with representatives from all major state organizations. Discussions will be held regarding priorities, necessary actions and implementation.

The coordination of decision making with the various state organizations and the other states will be demonstrated.

29. **RELOCATION, RE-ENTRY, AND RETURN - IMPLEMENTATION.** Demonstrate the capability to implement relocation, re-entry, and return.

Extent of Play:

Relocation efforts will focus on those individuals not previously evacuated from the restricted zone and those evacuated populations unable to return because of contamination. Relocation activities will be demonstrated through internal meetings, briefings, discussions and coordination with various state organizations in a group setting.

The State will demonstrate control of Emergency Workers and the public who re-enter the restricted zone. Actions required for the implementation of reentry will be demonstrated through discussions with state agencies at the EOC.

The State will demonstrate the capability to return populations that were evacuated during the emergency phase. Return activities will be demonstrated through internal meetings, briefings, discussions and coordination with various state organizations in a group setting.

The State will demonstrate the coordination of this implementation with the other states.

	State of Vermont	Local Jurisdiction
Activities demonstrated in this objective will be in accord with the State Plan.		
ARCA: 82-15		
30. **CONTINUOUS, 24-HOUR STAFFING.** Demonstrate the capability to maintain staffing on a continuous, 24-hour basis through an actual shift change.	Not an objective	
31. **OFFSITE SUPPORT FOR THE EVACUATION OF ONSITE PERSONNEL.** Demonstrate the capability to provide offsite support for the evacuation of onsite personnel.	Not an objective	
32. **UNANNOUNCED EXERCISE OR DRILL.** Demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill.	yes	yes

Extent of Play:

This objective will be demonstrated during the plume exposure pathway exercise.

ARCA: None

	State of Vermont	Local Jurisdiction
33. **OFF-HOURS EXERCISE OR DRILL.** Demonstrate the capability to carry out emergency response functions during an off-hours exercise or drill.	yes	yes

	State of Vermont	Local Jurisdiction
Extent of Play: This objective will be demonstrated during the plume exposure pathway exercise. ARCA: None		
34. **LICENSEE OFFSITE RESPONSE ORGANIZATIONS.** Demonstrate the capability of licensee offsite response organization [licensee (ORO)] personnel to interface with non-participating organizations and accomplish coordination essential for emergency response.	Not an objective	

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

2.3 EXERCISE OBJECTIVES AND EXTENT OF PLAY - STATE OF NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE
1993 PLUME EXPOSURE AND INGESTION PATHWAY EXERCISE
VERMONT YANKEE

12/4/92

OBJECTIVES AND EXTENT OF PLAY

OBJECTIVE #1 (2):

MOBILIZATION OF EMERGENCY PERSONNEL :

Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY PHASE :

Emergency facilities will be alerted in accordance with the NHRERP. Those facilities which are to participate in the exercise will mobilize accordingly. Rosters for relief shifts will be available in each participating facility. Those facilities that are not participating will acknowledge receipt of notification, but will take no further action. Controllers will simulate facilities not participating.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC, EOF, IFO, JOINT MEDIA CENTER, LOCAL EOC'S, STATE WARNING POINT, SOUTH WEST FIRE MUTUAL AID.

EXTENT OF PLAY INGESTION PATHWAY PHASE :

Facilities will be staged independently at predetermined times. Controllers at each facility will support participating facilities by managing the flow of communications and data to support exercise play and objective demonstration.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

STATE EOC.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #2 (5) :

FACILITIES-EQUIPMENT, DISPLAYS AND WORK ENVIRONMENT :

Demonstrate the adequacy of facilities and equipment, displays, and other materials to support emergency operations.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY PHASE :

Each participating facility will demonstrate its capabilities in accordance with this objective.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC, EOF, IFO, JOINT MEDIA CENTER, LOCAL EOC'S, STATE WARNING POINT, SOUTH WEST FIRE MUTUAL AID.

EXTENT OF PLAY INGESTION PATHWAY PHASE :

Each participating facility will demonstrate its capabilities in accordance with this objective.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

STATE EOC.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #3 (3):

DIRECTION AND CONTROL :

Demonstrate the capability to direct and control emergency operations.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY PHASE:

Participating state and local facilities will demonstrate their ability to direct and control emergency operations in accordance with the NHRERP.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC, EOF, IFO, JOINT MEDIA CENTER, LOCAL EOC'S, STATE WARNING POINT, SOUTH WEST FIRE MUTUAL AID.

EXTENT OF PLAY INGESTION PATHWAY PHASE :

Participating state and local facilities will demonstrate their ability to direct and control emergency operations in accordance with the NHRERP.

FACILITIES DEMONSTRATING THIS OBJECTIVE IN THE INGESTION PATHWAY PHASE :

STATE EOC.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #4 (4):

COMMUNICATIONS :

Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY PHASE :

Facilities participating in the exercise will demonstrate the primary and a back up communications resource per facility.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC, EOF, IFO, JOINT MEDIA CENTER, LOCAL EOC'S, STATE WARNING POINT, SOUTH WEST FIRE MUTUAL AID, MONITORING TEAMS.

EXTENT OF PLAY INGESTION PATHWAY PHASE :

This objective will be demonstrated during the plume phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

Hinsdale EOC will demonstrate improvements to its radio system.
(SEE ARCA 91-1).

Field monitoring teams will demonstrate their capability to communicate with the IFO.
(SEE ARCA 91-2).

OBJECTIVE #5 (6):

EMERGENCY WORKER EXPOSURE CONTROL :

Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

This objective will be demonstrated in accordance with the NHRERP by facilities that participate in the exercise.

An emergency worker in Richmond, at Troop C and in Hinsdale will discuss appropriate actions to be taken in the event he has a dosimeter reading that indicates that exposure limits have been exceeded. This action will be initiated by a controller message. Upon completing this demonstration the controller will direct the emergency worker to resume exercise play as appropriate.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

LOCAL EOC'S, FIELD TEAMS, EPZ EMERGENCY WORKERS (Traffic and Access Control).

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated in conjunction with the plume exposure pathway portion of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

Richmond EOC will demonstrate the capability to brief emergency workers on the use of dosimetry,exposure limits and reporting procedures.

(SEE ARCA 91-3,91-4).

New Hampshire State Police Troop C access control personnel will demonstrate the distribution and proper use of dosimetry.

(SEE ARCA 91-5).

Hinsdale EOC will demonstrate the capability to issue emergency workers the appropriate dosimetry per the NHRERP.

(SEE ARCA 91-6).

OBJECTIVE #6 (7):

FIELD RADIOLOGICAL MONITORING-AMBIENT RADIATION MONITORING :

Demonstrate the appropriate use of equipment and procedures for determining field radiation measurements.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

Two NHDPHS radiological monitoring teams will be dispatched. At least six monitoring points per team will be monitored.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

FIELD MONITORING TEAMS

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated during the plume phase.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #7 (10) :

PLUME DOSE PROJECTION:

Demonstrate the capability to develop dose projections and protective action recommendations regarding evacuation and sheltering.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

This objective will be demonstrated in accordance with the NHRERP in the context of the exercise scenario. METPAC and other accident assessment programs will be used.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC.

EXTENT OF PLAY INGESTION PATHWAY :

N/A.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #8 (8,9) :

FIELD RADIOLOGICAL MONITORING-AIRBORNE RADIOIODINE AND PARTICULATE ACTIVITY MONITORING :

Demonstrate the appropriate use of equipment and procedures for the measurement of airborne radioiodine concentrations as low as 10^-7 (0.0000001) Microcurie per cubic centimeter in the presence of noble gasses and obtain samples of particulate activity in the airborne plume.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

This objective will be demonstrated in accordance with the NHRERP. Use of Silver Zeolite filter media will be simulated by charcoal filter cartridges.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

FIELD MONITORING TEAMS.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated as part of the plume exposure phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

Field monitoring teams will demonstrate the mechanisms for obtaining back up equipment and Silver Zeolite air sampling media per the NHRERP.
(SEE ARCAS 91-7,91-8).

OBJECTIVE #9 (11) :

PLUME PROTECTIVE ACTION DECISION MAKING :

Demonstrate the capability to make timely and appropriate protective action decisions (PAD).

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

This objective will be demonstrated by the state decision making team in accordance with the NHRERP. Local organizations will be notified and respond in accordance with their plans and procedures according to the recommended protective action.

The New Hampshire decision making team will coordinate with the decision making teams of Vermont and Massachusetts.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated by the state decision making team at the State EOC in accordance with the NHRERP during the plume phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #10 (12) :

ALERT AND NOTIFICATION:

Demonstrate the capability to promptly alert and notify the public within the 10-mile Plume Pathway Emergency Planning Zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate state or local officials.

EXTENT OF PLAY PLUME EXPOSURE :

Sounding of sirens and broadcast of NOAA and EBS messages will be simulated. EBS messages will be formulated and distributed by the New Hampshire EOC. Simulation of the activation of the NOAA weather radio and EBS messages will be coordinated with Massachusetts and Vermont officials.

EPZ communities will demonstrate this objective through the receipt of activation times from their local liaisons and will demonstrate their capability to monitor NOAA and EBS stations.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC, WKNE, SWFMA, LOCAL EOC'S.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated during the plume exposure phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

EBS station WKNE will demonstrate the ability to receive an activation message from the State. EBS activation will be simulated.
(SEE ARCA 91-9).

Hinsdale EOC will demonstrate its ability to monitor NOAA tone alert radios.
(SEE ARCA 91-10).

Richmond EOC will demonstrate its ability to activate sirens if the primary activation mechanism fails.
(SEE ARCA 91-11).

OBJECTIVE #11 (13) :

PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION :

Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

Public information messages will be developed periodically. Messages will be developed based upon scenario information. Broadcast of these messages will be simulated. The messages will be distributed to the EOF, IFO, Media Center, and the State EOC.

Communities will receive information concerning protective action recommendations from their respective local liaison. Communities do not prepare public information messages and do not have a representative at the Media Center. Communities will monitor NOAA and EBS radio at their EOC's.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC, JOINT MEDIA CENTER.

EXTENT OF PLAY INGESTION PATHWAY :

Public information messages will be developed periodically. Messages will be developed based upon scenario information. Broadcast of these messages will be simulated. The message distribution will be simulated.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

STATE EOC.

AREAS REQUIRING CORRECTIVE ACTION :

State EOC-media center will demonstrate the ability to develop messages to provide the public accurate emergency information.

(SEE ARCA 91-12).

OBJECTIVE #12 (14) :

EMERGENCY INFORMATION -MEDIA

Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media.

EXTENT OF PLAY PLUME EXPOSURE :

The demonstration of this objective occurs at the state EOC and the Media Center. Controllers will simulate media response.

The primary responsibility for briefing the media with respect to off site activities in New Hampshire lies with the State. New Hampshire will coordinate its' response actions and media advisories with Vermont, Massachusetts and Vermont Yankee at the joint media center in accordance with the NHRERP.

EPZ communities may respond to questions about local emergency response but are encouraged to refer press inquires to the Media Center. A controller message will be generated for each community to initiate a response and referral to media inquiries.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC, JOINT MEDIA CENTER, LOCAL EOC'S.

EXTENT OF PLAY INGESTION PATHWAY:

The demonstration of this objective will occur at the State EOC. Messages and news advisories will be developed at the EOC, but their distribution will be simulated.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

STATE EOC.

AREAS REQUIRING CORRECTIVE ACTION :

The State EOC will demonstrate its ability to exchange media information with Vermont and Massachusetts in accordance with the NHRERP at the Joint Media Center. (SEE ARCA 91-13).

OBJECTIVE #13 (15) :

EMERGENCY INFORMATION-RUMOR CONTROL :

Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

In accordance with the NHRERP, demonstration of this objective will occur at the Joint Media Center. Incoming calls will be provided by controllers. At least one false or misleading rumor relating to PARs will be provided by the controllers. Calls to the rumor control center will occur at a rate of at least six per hour per operator during the Site Area Emergency and General Emergency levels. Rumor control personnel will screen messages for trends.

Communities will refer calls which address issues beyond local jurisdiction to the rumor control number. A controller message will be generated for each community to initiate a response and referral of information.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

JOINT MEDIA CENTER.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated during the plume exposure phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #14 (16,17) :

IMPLEMENTATION OF PROTECTIVE ACTION-USE OF KI FOR EMERGENCY WORKERS, INSTITUTIONALIZED INDIVIDUALS,AND THE GENERAL PUBLIC :

Demonstrate the capability and resources to implement Potassium Iodide(KI) protective actions for emergency workers, institutionalized individuals,and if the state plan specifies the general public.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

The decision to use or not use KI for emergency workers and institutionalized individuals will be demonstrated at the State EOC.

The capability to distribute and administer KI will be demonstrated at appropriate state and local facilities. Actual distribution of KI to emergency workers and institutionalized individuals will be simulated. No KI will be administered.

Quantities of KI are stored at local EOC's and the IFO. The NHRERP does not provide for the issuance of KI to the general public.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC, LOCAL EOC'S, IFO, MONITORING TEAMS.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated during the plume exposure pathway phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #15 (18) :

IMPLEMENTATION OF PROTECTIVE ACTIONS-SPECIAL POPULATIONS :

Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

The ability and resources to implement protective actions for special populations will be demonstrated in accordance with the NHRERP. Each local EOC will simulate calls to special needs populations per their special needs call lists and arrange for appropriate resources to meet the special needs. Controller messages will simulate requests for assistance.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

LOCAL EOC'S.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated during the plume phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #16 (19) :

IMPLEMENTATION OF PROTECTIVE ACTION-SCHOOLS :

Demonstrate the capability and resources necessary to implement protective actions for school children within the Plume Pathway Emergency Planning Zone(EPZ).

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

Calls will be made to each school to verify transportation resource requirements. Calls will be made to transportation providers to verify resource capabilities. Mobilization of actual transportation resources will be simulated.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC, LOCAL EOC'S, SCHOOLS.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated during the plume exposure phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #17 (20) :

TRAFFIC AND ACCESS CONTROL :

Demonstrate the organizational capability and resources to control evacuation traffic flow and to control access to evacuated and sheltered areas.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

Local police will be asked to demonstrate the staffing of one traffic control point in their jurisdiction.

One access control point and the ability to handle a traffic impediment will be demonstrated by Troop C, New Hampshire State Police.

Demonstrations will occur during the plume exposure pathway phase of the exercise at times to be coordinated between facility controllers and FEMA evaluators. The demonstration will consist of a talk through of actions at the selected ACP, TCP, or impediment site. Traffic will not be disrupted.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

LOCAL EOC'S, TROOP C.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated during the plume phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

Hinsdale EOC will demonstrate the ability to set up and man a traffic control point.
(SEE ARCA 91-14).

OBJECTIVE #18 (21) :

RECEPTION CENTER-MONITORING,DECONTAMINATION, AND REGISTRATION :

Demonstrate the adequacy of procedures facilities, equipment, and personnel for the radiological monitoring, decontamination, and registration of evacuees.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

A tour of the reception/ monitoring/decon center facilities will take place out of sequence on day two of the exercise. The tour will be conducted in conjunction with the demonstration of objectives 19 and 22.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

RECEPTION/DECON CENTER (KEENE STATE COLLEGE).

EXTENT OF PLAY INGESTION PATHWAY :

Demonstration of this objective will occur in conjunction with the plume exposure phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION ;

None cited.

OBJECTIVE #19 (22) :

CONGREGATE CARE :

Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for congregate care of evacuees.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

A tour of selected congregate care facilities will be conducted out of sequence on day two of the exercise. The tour for this objective will be conducted in conjunction with the tours for objective 18 and 22.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

SELECTED CONGREGATE CARE FACILITIES.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #20 (23) :

MEDICAL SERVICES-TRANSPORTATION :

Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured or exposed individuals.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

This objective will be demonstrated out of sequence as part of the next scheduled MS-1 drill scheduled for the Cheshire Medical Center. (June or July 93 ?).

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

CHESHIRE MEDICAL CENTER, SELECTED EMS TRANSPORT CO.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated in conjunction with the plume exposure phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #21 (24) :

MEDICAL SERVICES-FACILITIES :

Demonstrate the adequacy of the equipment procedures, supplies, and personnel of medical facilities responsible for treatment of contaminated, injured, or exposed individuals.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

This objective will be demonstrated out of sequence as part of the next scheduled MS-1 drill scheduled for the Cheshire Medical Center. (June or July 93 ?).

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

CHESHIRE MEDICAL CENTER.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated in conjunction with the plume exposure exercise phase.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #22 (25) :

EMERGENCY WORKERS, EQUIPMENT, AND VEHICLES- MONITORING AND DECONTAMINATION :

Demonstrate the adequacy of procedures for the monitoring and decontamination of emergency workers, equipment and vehicles.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

A tour of the emergency worker monitoring/decon facility will be conducted out of sequence in conjunction with the extent of play for objective 18 and 19 on day two of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

EMERGENCY WORKER MONITORING/DECON FACILITY (KEENE STATE COLLEGE).

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated in conjunction with the plume exposure phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #23 (26) :

SUPPLEMENTARY ASSISTANCE (FEDERAL/OTHER) :

Demonstrate the capability to identify the need for external assistance and to request such assistance from Federal or other support organizations.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

American Red Cross and Civil Air Patrol will send representatives to facilities in accordance with the NHRERP. New Hampshire will coordinate its requests for supplementary assistance with Vermont and Massachusetts pursuant to the NHRERP.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

STATE EOC.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated as part of the discussion that takes place in the State EOC. Supplementary assistance and response by Federal and other agencies will be simulated.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

STATE EOC.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #24 (27) :

POST EMERGENCY SAMPLING :

Demonstrate the use of equipment and procedures for the collection and transportation of samples from areas that received deposition from the airborne plume.

EXTENT OF PLAY PLUME EXPOSURE :

This objective will be demonstrated in conjunction with the ingestion phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

N/A.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated at the State EOC by a discussion of sampling strategy. A late May/early June sampling time frame will be imposed for exercise purposes by a controller message. Deployment of sampling teams will be simulated.

Actual deployment of sampling teams will occur in conjunction with the Seabrook Station ingestion pathway exercise to be conducted in December, 1994. The sampling procedures and personnel for both Seabrook Station and Vermont Yankee are the same.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

State EOC.

AREAS REQUIRING CORRECTIVE ACTION :

The State EOC will demonstrate the ability to develop data from plume monitoring activities for sample collection team dispatch. Transmission of this data to the IFO will be simulated. Use of plume monitoring data as a basis for dispatching New Hampshire sampling teams will be demonstrated in this manner.
(SEE ARCAS 87-29,87-44,87-46).

The ARCAs listed below will be addressed in the 1994 Ingestion Pathway exercise for Seabrook Station.

Sampling team equipment which requires calibration will be marked to indicate currency of calibration.
(SEE ARCA 87-39).

Sampling teams will be provided complete sampling kits per the NHRERP.
(SEE ARCA 87-40).

Sampling teams will demonstrate familiarity with the set-up and operation of sampling equipment.
(SEE ARCA 87-41).

Sampling teams will demonstrate familiarity with procedures for taking water samples.
(SEE ARCA 87-42).

Sampling team will demonstrate familiarity with taking radiation ground-level readings.
(SEE ARCA 87-43).

Sampling teams will demonstrate the ability to read dosimeters at prescribed intervals per the NHRERP.
(SEE ARCA 87-45).

OBJECTIVE #25 (28) :

LABORATORY OPERATIONS:

Demonstrate laboratory operations and procedures for measuring and analyzing samples.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

The State Laboratory in Concord will demonstrate this objective in conjunction with the ingestion pathway phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

N/A.

EXTENT OF PLAY INGESTION PATHWAY :

The State Laboratory in Concord will simulate this objective. A discussion of laboratory procedures and capabilities will be held at the State EOC during the Ingestion Pathway portion of the exercise. A late May early June time frame will be assumed for exercise purposes.

Demonstration of laboratory capabilities will occur in conjunction with the Seabrook Station ingestion pathway exercise to be conducted in December, 1994. The laboratory procedures and personnel for both Seabrook Station and Vermont Yankee are the same.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #26 (29) :

INGESTION EXPOSURE PATHWAY-DOSE PROJECTION AND PROTECTIVE ACTION DECISION MAKING :

Demonstrate the capability to project dose to the public for the Ingestion Pathway and to recommend protective measures.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

The activity required to demonstrate this objective will occur during the Ingestion Pathway phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

N/A.

EXTENT OF PLAY INGESTION PATHWAY :

The activity required to demonstrate this objective will occur during three separate phases of the exercise. The State EOC Accident Assessment Team will develop a post accident monitoring plan to identify the plume foot print. This will occur at the end of the plume exposure pathway phase of the exercise on Day One of the exercise.

A late May/early June time frame will be assumed for exercise purposes.

On day Two of the exercise the DPHS Accident Assessment Team will convene at the State EOC. DOE fly over results, one meter dose rates, monitoring team data and some preliminary laboratory results (soil samples) will be available for them to determine projected milk concentration/response levels and 1, 2, and 50 year dose projections. A summary table will then be provided for remaining samples. The table will compare the samples against the PAR limits already determined. With the aid of this data the accident assessment staff will develop milk pathway protective action recommendations and Relocation / Return protective action recommendations. An agricultural sampling plan will be completed for days 2-3. This will conclude exercise activity on Day Two.

Play will continue at the State EOC on Day Three simulating days 2 and 4 using a time jump. The State EOC will be fully staffed for an ingestion pathway scenario. Play will begin with a discussion of the implementation of previously determined milk, relocation/return protective actions. A discussion will also be initiated to identify requirements for emergency re-entry. Appropriate news releases will be developed which reflects the actions taken. Upon completion of these activities a time jump will occur to exercise day four.

Day three laboratory results will be provided to the accident assessment team for analysis. Various agricultural sample data including water milk vegetables and soil will be included. Once the accident assessment team has demonstrated the ability to evaluate this data, summary tables will be provided with results already compiled and agricultural PARs will be developed and implemented. Appropriate news releases will be developed. A long term sampling plan will be discussed and an appropriate media release will be developed. This will end exercise play.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

STATE EOC.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #27 (30) :

INGESTION EXPOSURE PATHWAY-PROTECTIVE ACTION IMPLEMENTATION :

Demonstrate the capability to implement protective actions for Ingestion Exposure Pathway.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY:

This objective will be demonstrated in conjunction with the Ingestion Pathway phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

N/A.

EXTENT OF PLAY INGESTION PATHWAY :

See extent of play for objective #26.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

STATE EOC.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE # 28 (32) :

RELOCATION, RE-ENTRY, AND RETURN-DECISION MAKING :

Demonstrate the capability to develop decisions on relocation, re-entry, and return.

EXTENT OF PLAY :

This objective will be demonstrated in conjunction with the Ingestion Pathway phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

N/A.

EXTENT OF PLAY INGESTION PATHWAY PHASE :

See extent of play for objective #26.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

STATE EOC.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #29 (33) :

RELOCATION, RE-ENTRY, AND RETURN-IMPLEMENTATION :

Demonstrate the capability to implement relocation, re-entry, and return.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

This objective will be demonstrated in conjunction with the Ingestion Pathway phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

N/A.

EXTENT OF PLAY INGESTION PATHWAY :

See extent of play for objective #26.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

STATE EOC.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #30 (34) :

CONTINUOUS, 24-HOUR STAFFING :

Demonstrate the capability to maintain staffing on a continuous 24-hour basis through an actual shift change.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

Second shift staffing rosters will be provided at each facility. An actual shift turnover will not be demonstrated.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

N/A.

EXTENT OF PLAY INGESTION PATHWAY :

This objective will be demonstrated in conjunction with the Plume Phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #31 (35) :

OFF SITE SUPPORT FOR THE EVACUATION OF ON SITE PERSONNEL :

Demonstrate the capability to provide off site support for the evacuation of on site personnel.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

N/A.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

N/A.

EXTENT OF PLAY INGESTION PATHWAY :

N/A.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #32 (36) :

UNANNOUNCED EXERCISE OR DRILL :

Demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

The exercise will be unannounced.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

ALL PARTICIPATING FACILITIES: STATE EOC, EOF, IFO, JOINT MEDIA CENTER, LOCAL EOC'S, STATE WARNING POINT, SOUTH WEST FIRE MUTUAL AID.

EXTENT OF PLAY INGESTION PATHWAY :

Demonstration of this objective will occur in conjunction with the Plume Phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #33 (36) :

OFF-HOURS EXERCISE OR DRILL :

Demonstrate the capability to carry out emergency response functions during an off-hours exercise or drill.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

The exercise will be off hours.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

ALL PARTICIPATING FACILITIES: STATE EOC, EOF, IFO, JOINT MEDIA CENTER, LOCAL EOC'S, STATE WARNING POINT, SOUTH WEST FIRE MUTUAL AID.

EXTENT OF PLAY INGESTION PATHWAY :

Demonstration of this objective will occur in conjunction with the Plume Phase of the exercise.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

OBJECTIVE #34 :

LICENSEE OFF SITE RESPONSE ORGANIZATIONS :

Demonstrate the capability of licensee off site response organization (licensee (ORO)) personnel to interface with non participating organizations and accomplish coordination essential for emergency response.

EXTENT OF PLAY PLUME EXPOSURE PATHWAY :

N/A.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE PLUME EXPOSURE PATHWAY PHASE :

N/A.

EXTENT OF PLAY INGESTION PATHWAY :

N/A.

FACILITIES DEMONSTRATING THIS OBJECTIVE DURING THE INGESTION PATHWAY PHASE :

N/A.

AREAS REQUIRING CORRECTIVE ACTION :

None cited.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

2.4 EXERCISE OBJECTIVES AND EXTENT OF PLAY - COMMONWEALTH OF MASSACHUSETTS

MASSACHUSETTS OBJECTIVES AND EXTENT-OF-PLAY FOR THE
1993 FULL SCALE EXERCISE
VERMONT YANKEE NUCLEAR POWER STATION

	REP-14 Objectives	State of Massachusetts	Local Jurisdiction
1.(2)	**MOBILIZATION OF EMERGENCY PERSONNEL.** Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.	yes	yes

EXTENT OF PLAY:

State and local jurisdictions will be alerted and notified at each ECL according to plan. State and local mobilization of emergency and field operations in accordance with state and local plans. Facility activations are:

- Massachusetts State EOC
- Massachusetts State Police, Troop B, Northampton
- Emergency Operations Facility
- MEMA Area IV EOC
- Joint Information Center
- Franklin County Dispatch
- Local EOCs to include Towns of:
  - Bernardston
  - Colrain
  - Gill
  - Greenfield
  - Leyden
  - Northfield
  - Warwick

ARCA: None

2.(5)	**FACILITIES - EQUIPMENT, DISPLAYS, AND WORK ENVIRONMENT.** Demonstrate the adequacy of facilities, equipment, displays, and other materials to support emergency operations.	yes	yes

		State of Massachusetts	Local Jurisdiction

EXTENT OF PLAY:

Facilities, equipment, maps, and displays at all facilities be adequate to support response operations. Access to facilities will be controlled.

ARCA: None

		State of Massachusetts	Local Jurisdiction
3.(3)	**DIRECTION AND CONTROL.** Demonstrate the capability to direct and control emergency operations.	yes	yes

EXTENT OF PLAY:

Each operational facility and its ORO will provide direction and control according to plan.

ARCA:

MEMA Area IV will demonstrate improvement in transmission of messages to local communities (See ARCA 91-15)

		State of Massachusetts	Local Jurisdiction
4.(4)	**COMMUNICATIONS.** Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.	yes	yes

EXTENT OF PLAY:

State and local facilities and field teams will demonstrate the capability to communicate with appropriate locations. This includes systems between utility and state, state and local organizations.

ARCA: None

		State of Massachusetts	Local Jurisdiction
5.(6)	**EMERGENCY WORKER EXPOSURE CONTROL.** Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers.	yes	yes

EXTENT OF PLAY:

Each off-site organization having a responsibility for emergency workers will utilize appropriate dosimetry to control radiation exposure. OROs will demonstrate the capability to issue, zero, read, record, accepted direct reading dosimetry. Each EW will be issued a non-self reading dosimeter (TLD) prior to service. Procedures will be demonstrated to manage exposure by EWs. Appropriate decisions will be made for EWs who may enter areas of higher dose limits.

ARCA: None

		State of Massachusetts	Local Jurisdiction
6.(7)	**FIELD RADIOLOGICAL MONITORING - AMBIENT RADIATION MONITORING.** Demonstrate the appropriate use of equipment and procedures for determining field radiation measurements.	yes	no

EXTENT OF PLAY:

Field Teams will be provided proper equipment to perform field operations. Operational checks of equipment is performed prior to deployment. Each team demonstrates proper deployment and knowledge of assigned locations. Proper monitoring procedures are performed, data promptly relayed to radiological Coordinator. Health Department will follow all standard operating procedures.

ARCA: None

		State of Massachusetts	Local Jurisdiction
7.(10)	**PLUME DOSE PROJECTION.** Demonstrate the capability to develop dose projections and protective action recommendations regarding evacuation and sheltering. State will develop appropriate protective actions based upon originating data supplied by licensee, available field data.	yes	no

EXTENT OF PLAY:

The state will demonstrate location of plume and projected dose based on utility information and field team data. From this information the state will apply appropriate protective actions recommendations. Initial PARs may be derived based solely on utility information. Additional field team data may be utilized to adjust initial PARs.

ARCA: None

8.(8,9)	**FIELD RADIOLOGICAL MONITORING - AIRBORNE RADIOIODINE AND PARTICULATE ACTIVITY MONITORING.** Demonstrate the appropriate use of equipment and procedures for the measurement of airborne radioiodine concentrations as low as 0.0000001 microcuries per cubic centimeter in the presence of noble gases and obtain samples of particulate activity in the airborne plume.	yes	no

EXTENT OF PLAY:

Field teams perform operational checks of equipment prior to deployment. Calibration of equipment is within 12 months. Samples of radioiodine and particulate are in accordance with procedures. Field teams will measure radioiodine and particulate matter outside of plume location. Field teams will transmit data to radiological coordinator in accordance with its procedures. Samples are properly bagged and delivered to designated locations.

ARCA:

NIAT personnel will be trained with updated procedures for gaining reproducible counting geometry for air samples (see ARCA 91-16)

		State of Massachusetts	Local Jurisdiction
9.(11)	**PLUME PROTECTIVE ACTION DECISION MAKING.** Demonstrate the capability to make timely and appropriate protective action decisions (PAD).	yes	no

EXTENT OF PLAY:

This objective will be demonstrated by the state decision making team in accordance with the MARERP. Local organizations will be notified and respond in accordance with their plans and procedures according to their recommended protective action. The Massachusetts decision making team will coordinate with the decision making teams of Vermont and New Hampshire.

ARCA:

The State EOC will demonstrate improvement in promptly informing Area IV EOC and local EOCs of any radioactive release (See ARCA 91-17).

10.(12)	**ALERT AND NOTIFICATION.** Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway emergency planning zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate State or local officials.	yes	yes

EXTENT OF PLAY:

The Massachusetts EOC will demonstrate coordination with the States of Vermont and New Hampshire regarding the sounding of sirens, NOAA tone-alert radios, and EBS radio.

Activation of the NOAA tone-alert radio system will be demonstrated once, at the time of initial public alert and notification, through the State of Vermont using a test message.

	State of Massachusetts	Local Jurisdiction

Sounding of sirens will be simulated.

EBS activation will be demonstrated once, at the time of initial notification of the public, using a test message. "Real" EBS messages will be formulated and distributed by the Massachusetts EOC to the Media Center and Area IV, but not to the radio stations.

EPZ communities will demonstrate this objective through the receipt of activation times from Area IV and will demonstrate their capability to monitor NOAA and EBS radio.

ARCA:

The Town of Warwick will demonstrate correct use of NOAA tone alert radio (See ARCA 91-1d).

		State of Massachusetts	Local Jurisdiction
11.(13)	**PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION.** Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.	yes	partial

EXTENT OF PLAY:

The State will demonstrate the capability to formulate and disseminate to the public accurate information and instructions for the public. State will demonstrate coordination of message content with the States of Vermont and New Hampshire.

The State will demonstrate the capability to provide instructions to the public and what actions should be taken to protect themselves. Information should delineate local government jurisdictions affected by the message.

ARCA: None

MASSACHUSETTS OBJECTIVES AND EXTENT-OF-PLAY FOR THE
1993 FULL SCALE EXERCISE
VERMONT YANKEE NUCLEAR POWER STATION

		State of Massachusetts	Local Jurisdiction
12.(14)	**EMERGENCY INFORMATION - MEDIA**		
	Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media.	yes	no

EXTENT OF PLAY:

The demonstration of this objective occurs primarily at the Media Center. The primary responsibility for briefing the media with respect to off site activities in Massachusetts lies with the State. Massachusetts will coordinate its news briefings and releases with Vermont, New Hampshire and Vermont Yankee at the Media Center in accordance with the MARERP.

The State EOC will provide information and periodic updates to the Media Center staff for use in preparing news briefings and news releases.

EPZ communities may respond to questions about local emergency response but are encouraged to refer press inquires to the Media Center.

ARCA:

Massachusetts will demonstrate exchange of public information with Vermont and New Hampshire (See ARCA 91-19).

13.(15)	**EMERGENCY INFORMATION - RUMOR CONTROL.** Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.	yes	yes

	State of Massachusetts	Local Jurisdiction

EXTENT OF PLAY:

In accordance with the MARERP, demonstration of this objective will occur primarily at the MA EOC. Incoming calls will be provided by controllers. At least one false or misleading rumor relating to PARs will be provided by the controllers. Calls to the rumor control center will occur at a rate of at least six per hour per operator during the Site Area Emergency and General Emergency levels. Rumor control personnel will screen messages for trends. Identified rumors (3 or more similar calls) will be addressed through an EBS message if the rumor affects a PAD or through a news release from the Media Center if the rumor relates to general information.

Communities will refer calls which address issues beyond local jurisdiction to the rumor control number. A controller message will be generated for each community to initiate a response and referral of information.

ARCA: None

	State of Massachusetts	Local Jurisdiction
IMPLEMENTATION OF PROTECTIVE ACTIONS - USE OF KI FOR EMERGENCY WORKERS, INSTITUTIONALIZED INDIVIDUALS AND THE GENERAL PUBLIC. Demonstrate the capability and resources to implement potassium iodide (KI) protective actions for emergency workers, institutionalized individuals, and, if the State plan specifies, the general public.	yes	yes

EXTENT OF PLAY:

State will make determination for the issuance of KI to emergency workers. There are no institutions in the EPZ. Local OROs will simulate access and distribution of KI according to plans. Local OROs have lists of instructions available for those advised to take KI. No KI will actually be distributed or taken.

ARCA:

Area IV staff will demonstrate proper notification to local EOCs regarding use of KI (See ARCA 91-20).

		State of Massachusetts	Local Jurisdiction
15.(18)	**IMPLEMENTATION OF PROTECTIVE ACTIONS - SPECIAL POPULATIONS.** Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.	yes	yes

EXTENT OF PLAY:

This objective is plume dependent and will be demonstrated if necessary by the towns showing a list of special populations and a list of the resources necessary to support it.

ARCA: None

16.(19)	**IMPLEMENTATION OF PROTECTIVE ACTIONS - SCHOOLS.** Demonstrate the capability and resources necessary to implement protective actions for school children within the plume pathway emergency planning zone (EPZ).	yes	yes

EXTENT OF PLAY:

The Colrain Elementary School, Colrain EOC and the Buckland, Colrain, Shelburne Regional School District Superintendent's Office will demonstrate this objective. Actual response, including deployment of one school bus and escort to drive the route to Greenfield Community College Reception Center, is scenario time dependent.

ARCA: None

17.(20)	**TRAFFIC AND ACCESS CONTROL.** Demonstrate the organizational capability and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas.	yes	yes

EXTENT OF PLAY:

State and local OROs consistent with developing scenarios and PADs will determine location of TCP/ACPs. Each local facility impacted by the scenario will deploy to a single control point. Deployed EWs and activated facilities will demonstrate EW exposure control procedures.

	State of Massachusetts	Local Jurisdiction

If the plume does not impact the towns of Bernardston, Greenfield, Leyden and Warwick, they will demonstrate this objective by showing the evaluator the traffic control points in their town and having the personnel and equipment evaluated at the EOC at a convenient time.

ARCA: None

		State of Massachusetts	Local Jurisdiction
18.(21)	**RECEPTION CENTER - MONITORING DECONTAMINATION, AND REGISTRATION.** Demonstrate the adequacy of procedures, facilities, equipment, and personnel for the radiological monitoring, decontamination, and registration of evacuees.	no	yes

EXTENT OF PLAY:

This objective is plume-dependent. If necessary, Greenfield Community College will demonstrate this objective through an interview with the Reception Center Manager.

ARCA: None

		State of Massachusetts	Local Jurisdiction
19.(22)	**CONGREGATE CARE.** Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for congregate care of evacuees.	no	yes

EXTENT OF PLAY:

This objective is plume-dependent. If necessary, a tour of one of the facilities will be conducted out-of-sequence by the American Red Cross.

ARCA: None

		State of Massachusetts	Local Jurisdiction
20.(23)	**MEDICAL SERVICES - TRANSPORTATION.**		
	Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or exposed individuals.	Not an objective (out-of-sequence annually)	
	ARCA: None		
21.(24)	**MEDICAL SERVICES - FACILITIES.**		
	Demonstrate the adequacy of the equipment, procedures, supplies, and personnel of medical facilities responsible for treatment of contaminated, injured, or exposed individuals.	Not an objective (out-of-sequence annually)	
22.(25)	**EMERGENCY WORKERS, EQUIPMENT, AND VEHICLES - MONITORING AND DECONTAMINATION.** Demonstrate the adequacy of procedures for the monitoring and decontamination of emergency workers, equipment, and vehicles.	no	yes

This objective is plume-dependent. If necessary, the RM & D operation will be demonstrated out-of-sequence. However, Colrain will demonstrate this objective out-of-sequence at a convenient time.

ARCA: None

23.(26)	**SUPPLEMENTARY ASSISTANCE (FEDERAL/OTHER).** Demonstrate the capability to identify the need for external assistance and to request such assistance from Federal or other support organizations.	yes	no

EXTENT OF PLAY:

Massachusetts will coordinate its requests for supplementary assistance with Vermont and New Hampshire pursuant to the MARERP and the New England Rad Health Conference.

ARCA: None

		State of Massachusetts	Local Jurisdiction
24.(27)	**POST-EMERGENCY SAMPLING.**		
	Demonstrate the use of equipment and procedures for the collection and transportation of samples from areas that received deposition from the airborne plume.	no	no

EXTENT OF PLAY: None

ARCA: None

		State of Massachusetts	Local Jurisdiction
25.(28)	**LABORATORY OPERATIONS.**		
	Demonstrate laboratory operations and procedures for measuring and analyzing samples.	no	no

EXTENT OF PLAY:

None

ARCA: None

		State of Massachusetts	Local Jurisdiction
26.(29)	**INGESTION EXPOSURE PATHWAY - DOSE PROJECTION AND PROTECTIVE ACTION DECISION MAKING.** Demonstrate the capability to project dose to the public for the ingestion pathway and to recommend protective measures.	yes	no

EXTENT OF PLAY:

On day two of the exercise the MDPH Accident Assessment Team will convene at the State EOC. DOE fly over results, one meter dose rates, monitoring team data and some preliminary laboratory results (soil samples) will be available for them to determine projected milk concentration/response levels and 1, 2, and 50 year dose projections. A summary table will then be provided for remaining samples. The table will compare the samples against the PAR limits already determined. With the aid of this data the accident assessment staff will develop milk pathway protective action recommendations and Relocation / Return protective action recommendations. This will conclude exercise activity on Day Two.

ARCA: None

	State of Massachusetts	Local Jurisdiction
27.(30) **INGESTION EXPOSURE PATHWAY - PROTECTIVE ACTION IMPLEMENTATION.** Demonstrate the capability to implement protective actions for ingestion exposure pathway.	yes	no

EXTENT OF PLAY:

Play will continue at the state EOC on Day Three simulating days 2, 4, and 8 using time jumps. The state EOC will be fully staffed for an ingestion pathway scenario. Play will begin with a discussion of the implementation of previously determined milk, relocation/return protective actions. A discussion will also be initiated to identify requirements for emergency re-entry. An agricultural sampling plan will be completed for days 2-3 and appropriate news releases will be developed which reflect the actions taken. Upon completion of these activities a time jump will occur to exercise day four.

ARCA: None

	State of Massachusetts	Local Jurisdiction
28.(32) **RELOCATION, RE-ENTRY, AND RETURN - DECISION MAKING.** Demonstrate the capability to develop decisions on relocation, re-entry, and return.	yes	no

EXTENT OF PLAY:

All activities associated with the identification of areas requiring Relocation by comparing simulated measurements to decision criteria, will be completed as they would in an actual emergency. Assessments will be made based on simulated data developed as part of the scenario.

	State of Massachusetts	Local Jurisdiction

Demonstration of the decision making regarding assistance to individuals who are affected by the emergency will be accomplished at the state EOC in a group setting with representatives of all major state organizations. The conditions facing individuals will be determined by decisions made under the above criteria. Discussions will be held regarding the actions that will be needed, priorities, and the processes for implementation.
Demonstration of the coordination of decision making with other organizations will be accomplished with representatives of all major state organizations. Based on field survey information, decision makers will determine the relocation criteria. The corresponding iso-dose rate line will be drawn on appropriate maps. The area of interest will be discusses in regards to the effect on the public, and special population groups. Population estimates, relocation time estimates, and host community requirements, as well as traffic control will be discussed.

ARCA: None

29.(33) **RELOCATION, RE-ENTRY, AND RETURN - IMPLEMENTATION.**

	State of Massachusetts	Local Jurisdiction
Demonstrate the capability to implement relocation, re-entry, and return.	yes	no

EXTENT OF PLAY:

Relocation efforts will be demonstrated by focusing on those individuals not previously evacuated from the restricted zone; and for those evacuated populations who are unable to return because of contamination. Actions are demonstrated through internal meetings, briefings, discussions and coordination.

ARCA: None

		State of Massachusetts	Local Jurisdiction
30.(34)	**CONTINUOUS, 24-HOUR STAFFING.** Demonstrate the capability to maintain staffing on a continuous 24-hour basis through an actual shift change.		

EXTENT OF PLAY:

Colrain will demonstrate this objective by shift change of key personnel.

ARCA: See ARCA from the 1990 Yankee Rowe Exercise

		State of Massachusetts	Local Jurisdiction
31.(35)	**OFFSITE SUPPORT FOR THE EVACUATION OF ONSITE PERSONNEL.** Demonstrate the capability to provide offsite support for the evacuation of onsite personnel.	Not an objective	
32.(36)	**UNANNOUNCED EXERCISE OR DRILL.** Demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill.	yes	yes

EXTENT OF PLAY:

This objective will be demonstrated during the plume exposure pathway.

ARCA: None

		State of Massachusetts	Local Jurisdiction
33.(36)	**OFF-HOURS EXERCISE OR DRILL.** Demonstrate the capability to carry out emergency response functions during an off-hours exercise or drill.	yes	yes

EXTENT OF PLAY:

This objective will be demonstrated during the plume exposure pathway.

ARCA: None

VERMONT YANKEE

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

3.0 EXERCISE GUIDELINES AND SCOPE

VERMONT YANKEE

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

3.1 EXERCISE GUIDELINES

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3.1 GUIDELINES

A. Purpose

This package provides the guidance for conducting the 1993 Vermont Yankee Emergency Response Preparedness Exercise. It provides the framework for demonstrating emergency response capabilities, conducting the exercise and evaluating response activities.

B. Concepts of Operations and Control of the Exercise

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

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

In each facility where an activity takes place, the Controller will make judgment decisions to keep the action going in accordance with the scenario timeline. The Controllers will also provide advice 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.

Evaluators for the exercise will observe the players as they perform their assigned emergency response functions. Evaluators are responsible for being knowledgeable in the area of their assigned function and possible activities which may be observed. In the event of corrective or repair activities, the Evaluator shall be cognizant of procedures associated with the action. If an activity is to be simulated (as identified on the scenario simulation list), the Evaluator shall request the players to describe, in detail, all actions that would be initiated to effect the desired outcome of the assigned task. The Evaluators will critique the effectiveness of the emergency response actions taken during the exercise and will also provide a written evaluation of their observations.

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

As information is provided to the players, they should determine the nature of the emergency and implement appropriate plant procedures including emergency plan implementing procedures and emergency operating procedures. These procedures should include a determination of the emergency classification in accordance with the Vermont Yankee Emergency Plan. Notifications will be made to the appropriate federal and state authorities.

The hypothesized emergency will continue to develop based on data and information provided to the operators located in the simulator. Wherever possible, operators should complete actions as if they were actually responding to 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 in an actual emergency. Simulation of response activities will occur only when actions are outside of the defined miniscenarios. Section 3.2 also defines specific activities that will be simulated during the exercise. When an emergency response is to be simulated, the Evaluator will provide verbal or written directions on which actions are to be simulated.

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

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

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

3. Avoiding Personnel and Property Endangerment

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

4. Actions to Minimize Public Inconvenience

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

The conduct of an exercise could arouse public concern that an actual emergency is occurring. It is important that conversations that can be monitored by the public (radio, loudspeakers, etc.) be prefaced and conclude with the words, "THIS IS A DRILL; THIS IS A DRILL."

D. Emergency Response Implementation and Operations

1. Initial and Follow-up Notifications

Initial and follow-up notification of the 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 Control Room (SCR), located at the Vermont Yankee Training Center in

Brattleboro, Vermont. Early in-station actions normally performed by the Control Room support personnel may be controlled and performed by the simulator controllers until after the ALERT classification. After the ALERT, these activities will be performed by the emergency response organization. Plant and reactor system parameters will be provided to the SCR 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 SCR emergency response crew as necessary. Communications links that duplicate the emergency communications capabilities available in the actual Control Room will be used to communicate between the SCR 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. Information for the TSC which would typically come from the Control Room, will originate from the SCR. Emergency Response Facility Information System (ERFIS) terminals at the TSC will be linked to the SCR to receive and transmit scenario data. In addition, TSC Communicators, who normally would be assigned to the Control Room to provide TSC requested plant data, will be staged at the Simulator. TSC Evaluators may also provide additional data to TSC players, as necessary.

4. Operations Support Center (OSC) Operations

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

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

The EOF/RC emergency response organization will be activated during the exercise. Information and data will be transmitted to the EOF/RC from the TSC, SCR and the Emergency Response Facility Information System (ERFIS). EOF Evaluators will provide other data to EOF/RC players as necessary.

6. Off-Site Monitoring Teams

Off-Site monitoring teams will be fully activated and dispatched in accordance with existing procedures. Simulated data will be provided to each team by the Off-Site Monitoring Team Evaluators.

7. News Media Center (NMC) 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 be violated in support of the exercise.

E. Exercise Termination

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

The following steps will be implemented to terminate the exercise:

1. The Exercise Coordinator will obtain information from the Facility Controllers regarding the status of player actions and the demonstration of the exercise objectives.

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

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

In the event item 1 should occur, the following actions will be taken:

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

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

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

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

   This message may be immediately followed by the appropriate emergency announcements.

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

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

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

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

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

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

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

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

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3.2 PLAYER INSTRUCTIONS AND GROUND RULES

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

3.2 PLAYER INSTRUCTIONS AND GROUND RULES

The Vermont Yankee Emergency Response Preparedness Exercise will be conducted during the week of April 25, 1993. All emergency response facilities will be fully activated, and the scenario will be driven by the simulator, as in past exercises. This year's exercise is a full-participation, off-hours and unannounced exercise, which will involve participation of of the Vermont Yankee station and corporate personnel. The exercise is also off-hours and unannounced for the the State of Vermont, State of New Hampshire, Commonwealth of Massachusetts, and local communities within the plume exposure EPZ who plan to participate in the exercise. In addition to the plume exposure exercise, an ingestion pathway exercise will be conducted on the following days. This activity requires minimal participation by VY station personnel and will primarily focus on the response capabilities of the respective state organizations. The successful demonstration of emergency response capabilities will depend on player response and protocol. The following information contains details and instructions for the players regarding the exercise. Department Heads are responsible for ensuring that personnel are made aware of this information prior to the scheduled exercise date.

A. General Guidelines

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

identified by badges.

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

3. You may ask the Evaluator for information such as:

   a. Initial conditions of the plant and systems including:
      - o operating history of the core
      - o initial coolant activity
      - o general weather conditions
      - o availability of systems according to the scenario

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

   c. Airborne data at the location of emergency teams after a sample has been properly obtained.

   d. Counting efficiency of all counting equipment.

   e. Activity from nose swabs or skin contamination surveys.

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

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

   b. Judgments as to which procedures should be used.

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

   d. Assistance in performing actions.

   e. Assistance in performing calculations.

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

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

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

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

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

10. The scenario has been scrutinized to anticipate as many success paths that may be initiated by the response teams. In the event you or your staff determine there may be alternative responses to scenario conditions, you may not be allowed to initiate your proposed "fix". You will however, be credited with the initiative and requested to continue your response in accordance with a "Command Card" from the Evaluator. In addition, the Evaluator may periodically issue messages or instructions designed to initiate response actions. You <u>must</u> accept these messages immediately. They are essential to the proper completion of the exercise scenario.

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

12. If you disagree with your Evaluator, discuss your concerns in a professional manner. However, the Evaluator's final decisions must be followed.

13. Respond to questions in a timely manner.

14. Do not accept any messages/instructions from the Federal (NRC and FEMA) Evaluators. They should work through Vermont Yankee Evaluators if they want to initiate additional emergency conditions. However, you may answer questions directed to you by Federal Evaluators. If you do not know the answer, offer to get them the answer as soon as possible (without interfering with exercise activities) or refer them to your lead facility player or Evaluator.

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

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

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

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

19. Keep a list of items which you believe will improve your plans and procedures. A player debriefing will follow the exercise. Provide any comments or observations to your lead player or Evaluator after the exercise. Areas for improvement or weaknesses when corrected will improve the overall emergency response capability.

B. Player's Simulation List

The following describes those specific actions which do not have to be performed and can be simulated by participants. No action will be allowed which alters or affects the ongoing operation of the plant.

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

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

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

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

5. Discussion of potassium iodide (KI) usage will be done if scenario conditions warrant its use. However, distribution and ingestion of KI will be simulated.

6. If off-site monitoring sampling is required, charcoal cartridges will be used in place of silver zeolite cartridges.

7. Off-Site monitoring teams and security boundary monitoring personnel <u>will not</u> wear either protective clothing or respirators.

8. The inner gate and electrically controlled doors <u>will not</u> be left in the open position during the exercise.

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

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

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

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

C. <u>Simulator Control Room (SCR) Information</u>

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

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

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

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

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

5. Personnel movement in and out of the SCR will be limited to the Evaluators.

6. Communications equipment in the SCR is the same as the plant Control Room. The commercial telephone extensions are different, but the auto-ring down circuits and speaker telephones are operable. The orange Nuclear Alert System (NAS) State telephone and Federal Telecommunications System (FTS 2000) Emergency Notification System (ENS)-NRC telephone will be operable. The orange NAS telephone 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 activity.

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

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

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

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

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

E. Personnel Accountability and Participation (Exempted Participants)

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

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

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

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

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

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

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

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

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

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

G. Exercise Critiques

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

Emergency Response Facility Critiques

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

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

Controller Debriefing

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

Exercise Critique

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

NRC Exit

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

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3.3 PROCEDURE EXECUTION LIST

3.3 EMERGENCY PLAN IMPLEMENTING PROCEDURE EXECUTION LIST

Procedure Number	Rev. No.	Title
AP 3125	11	Emergency Plan Classification and Action Level Scheme
OP 3500	12	Unusual Event
OP 3501	13	Alert
OP 3502	25	Site Area Emergency
OP 3503	27	General Emergency
OP 3504	25	Emergency Communications
OP 3507	20	Emergency Radiation Exposure Control
OP 3510	18	Off-Site and Site Boundary Monitoring
OP 3511	6	Off-site Protective Actions Recommendation
OP 3513	14	Evaluation of Off-Site Radiological Conditions
OP 3524	10	Emergency Actions to Ensure Accountability and Security Response
OP 3525	5	Radiological Coordination
OP 3530	14	Post-Accident Sampling
OP 3531	4	Emergency Call-In Method

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4.0 CONTROLLER AND OBSERVER INFORMATION

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4.1 <u>CONTROLLER AND OBSERVER ASSIGNMENTS</u>

NOTE: ASSIGNMENTS WILL BE PROVIDED AT THE EXERCISE BRIEFING SESSION

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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 Evaluator will be provided a scenario package and the plant emergency plan implementing procedures that correspond to their respective assignments. It is the responsibility of the Evaluator to read the contents of the scenario package and review the procedure(s) associated with their assignment.

Each Evaluator will be requested to attend a pre-exercise briefing session. Any questions regarding the scenario or assignments should be discussed at this time. Each Evaluator should ensure that they are familiar with location(s) required by their assignment. Tours will be provided as a portion of the training; however, these tours will be limited in their duration. It may be advisable to plan an additional tour, if necessary.

Observers should familiarize themselves with their assigned Facility Controller prior to the exercise. The Facility Controller is responsible to direct Observer activities throughout the course of the exercise. At the exercise termination, each Facility Controller is responsible to meet with their Observers to obtain their comments, observations and documentation. Each Facility Controller is responsible to provide this documentation to the Exercise Coordinator at the conclusion of the critique session. Each Facility Controller is also responsible to provide a brief summary of their Observer comments to the Exercise Coordinator for presentation during the critique.

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

The primary role of the Evaluator is to document the emergency response activities of the players. In order to document emergency response activities, each Evaluator is required to complete the Emergency Exercise/Drill Observers Evaluation Form. When completing this form, each Evaluator should attempt to differentiate their comments into either adequate, needs improvement or potential weaknesses. For identified weaknesses of personnel, equipment, etc. provide a clear written description of the finding, with recommendations for improvement detailing corrective actions, if possible. If the evaluation criteria is not applicable to the exercise objectives or the scenario, this should also be noted on the evaluation form.

Evaluators should not allow their biases to be documented as recognized weaknesses or deficiencies. Comments and recommendations should be further subdivided according to the following major headings: Facility Activation and 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 are organized; (4) whether personnel performance follows the organized arrangements specified by plant procedures; and (5) the efficiency of methods of authority transfer. If a transfer of responsibility occurs, then the Evaluator should determine if affected personnel are aware that the transfer has occurred.

Communication comments should identify: (1) personnel familiarity with emergency communications use; (2) whether sufficient communications were available to ensure a timely, efficient, and effective flow of information; (3) whether there were enough communications personnel to make use of all available equipment; (4) the adequacy of communications logs and describe the effectiveness of data transfer; (5) whether there were any problems in the design of the existing communications system (i.e., location relative to traffic flow); (6) whether there were any recognized difficulties in use of computer systems; and (7) whether status boards are effectively used. Evaluators should document their comments in this area very carefully, providing sufficient details to track any recognized deficiencies.

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

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

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

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

<u>Facility Layout</u> comments 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.

<u>Off-Site Monitoring</u> comments should identify: (1) the adequacy of sampling methods; (2) the adequacy of reporting and documentation; and (3) the effectiveness of the team in defining radiological status. Dose projection methods should also be evaluated with this general category. Consideration of dose projection methods should identify: (1) the effectiveness of methods to interpret off-site conditions; and (2) the effectiveness of using the dose projections in positioning off-site teams.

<u>Personnel Dosimetry/Exposure Control</u> comments should identify: (1) the timeliness and effectiveness of dosimetry distribution; (2) the effectiveness of protective measures; (3) the adequacy of established contamination control access points; (4) the adequacy of exposure planning measures afforded in plant activities; and (5) the adequacy of decontamination and posting techniques.

The Evaluators evaluation and documentation forms are found in Section 4.3. All such documentation must be provided to the Controller after the exercise and prior to the critique.

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4.3 EXERCISE EVALUATION CRITERIA

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4.3 EXERCISE EVALUATION CRITERIA

As discussed in Sections 4.1 and 4.2, each Evaluator has been assigned specific areas of response to observe. This section has been developed to assist the Evaluators in recording and documenting their findings and observations. The following attachments are included:

Attachment A provides a form to be used to maintain an event chronology log.

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

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

All three attachments should be completed and submitted to the Facility Controller. Each Facility Controller will submit the completed attachments to the Exercise Coordinator for documentation of exercise observations and findings.

ATTACHMENT A

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

TIME	COMMENT/OBSERVATION

Name: ______________________ Area Evaluated: ____________________

Date: ______________________

ATTACHMENT B

Vermont Yankee
Emergency Exercise/Drill Evaluation Checklist

INSTRUCTIONS

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

Rating	Symbol	Comments and Suggested Improvements
Adequate	A	Comments may include strong positive strengths demonstrated by player actions and responses. Adequate indicates that the demonstrated performance was consistent with plans and procedures.
Inadequate	I	Comments should provide a clear description of finding with recommendations for improvement, if possible. Inadequate indicates that the demonstrated performance could have precluded effective implementation of plans and procedures.
Not Observed or Not Applicable	N	No comments or suggestions are required.

Note: If your evaluation indicates inadequate performance, please provide a description of the problem area on the Emergency Exercise/Drill Evaluation Form.

ATTACHMENT B
(continued)

Section		Page
I.	Control Room (Simulator and Actual)	4.3-5
II.	Technical Support Center	4.3-6
III.	Operations Support Center	4.3-8
IV.	Emergency Operations Facility/Recovery Center	4.3-10
V.	Site and Off-Site Monitoring	4.3-12
VI.	Security	4.3-13
VII.	News Media Center	4.3-14

I. CONTROL ROOM

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

II. TECHNICAL SUPPORT CENTER

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

Controller/Observer Name: ________________________________

C. Activation and Response	Rating	Comments
1. Did the TSC staff demonstrate the ability to activate and staff the TSC?	______	Yes/No
2. Did the TSC staff demonstrate the ability to appropriately implement Emergency Plan Implementing Procedures and did they follow them?	______	Yes/No
3. Were initial and continuous accountability checks of TSC and CR personnel performed?	______	Yes/No
4. Did the TSC Coordinator establish and coordinate access control into the Protected Area and Control Room?	______	Yes/No
5. Did the TSC Coordinator demonstrate the ability to maintain command and control of TSC emergency response activities?	______	Yes/No
6. Did the TSC keep other emergency response facilities advised of the status of their activities and information which they had developed?	______	Yes/No
7. Was the TSC organization and initiation of activity efficient and well organized?	______	Yes/No

Controller/Observer Name: ______________________________

III. OPERATIONS SUPPORT CENTER

A. Notification and Communication	Rating	Comments
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 communication systems available in the OSC to transmit data and information to other emergency response facilities?	______	Yes/No
4. Were status boards utilized and maintained to display pertinent accident information at the OSC?	______	Yes/No
B. Activation and Response		
1. Did the OSC staff demonstrate the ability to activate and staff the OSC?	______	Yes/No
2. Did the OSC staff demonstrate the ability to appropriately implement Emergency Plan Implementing Procedures and did they follow them?	______	Yes/No
3. Were initial and continuous accountability checks of OSC personnel performed?	______	Yes/No
4. Did the OSC Coordinator and OSC Coordinator's Assistant demonstrate the ability to maintain command and control of OSC emergency response activities?	______	Yes/No
5. Did the OSC keep other emergency response facilities advised of the status of their activities and information which they had developed?	______	Yes/No
6. Was the OSC organization and 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

Controller/Observer Name: ______________________________

III. OPERATIONS SUPPORT CENTER

	Rating	Comments
8. Did the OSC staff demonstrate the ability to monitor and track radiation exposure of on-site emergency response personnel?	______	Yes/No
9. Did the OSC staff demonstrate the ability to obtain and analyze appropriate chemistry samples as directed by the TSC?	______	Yes/No
10. Did the OSC staff demonstrate the ability to initiate, brief, and dispatch on-site assistance teams?	______	Yes/No
11. Were on-site assistance teams able to troubleshoot and evaluate problems with plant equipment and systems?	______	Yes/No
12. Were there adequate administrative controls and documentation taken to perform the necessary repairs of plant equipment and systems during an emergency situation?	______	Yes/No

Controller/Observer Name: ________________________________

IV. EMERGENCY OPERATIONS FACILITY/RECOVERY CENTER

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

Controller/Observer Name: ________________________________

IV. EMERGENCY OPERATIONS FACILITY/RECOVERY CENTER

	Rating	Comments
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 OP 3513?	______	Yes/No
3. Did the EOF staff demonstrate the ability to effectively track and define the plume utilizing the computerized dose assessment model (METPAC)?	______	Yes/No

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 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: ______________________________

V. SITE AND OFF-SITE MONITORING

A. Activation and Response

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

Controller/Observer Name: ______________________________

VI. SECURITY

A. Activation and Response

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

Controller/Observer Name: ______________________________

VII. NEW MEDIA CENTER

A. Activation and Response

	Rating	Comments
1. Did the News Media staff demonstrate the ability to activate and staff the News Media Center?	______	Yes/No
2. Was information flow between the News Media Center and the EOF/RC timely, complete, and accurate?	______	Yes/No
3. Were the News Media staff familiar with their plans and procedures and do they follow them?	______	Yes/No
4. Did the News Media staff demonstrate the ability to provide accurate and timely information concerning the emergency to the public and the news media?	______	Yes/No
5. Did the News Media staff demonstrate the ability to coordinate news releases with the state's public information representatives?	______	Yes/No
6. Did the News Media staff demonstrate the ability to provide briefings for and to interface with public and news media?	______	Yes/No

Controller/Observer Name: ______________________________

ATTACHMENT C

EMERGENCY EXERCISE/DRILL
OBSERVERS EVALUATION FORM

Observer's Name:________________________________ Exercise/Drill Date: ______________

Exercise/Drill Title:____

Observer's Location:____

Time Started:_______________________ Time Ended:_________________________________

Observed: Player Function

_____________________ _____________________

_____________________ _____________________

_____________________ _____________________

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

____

____

Recognized Weaknesses and Deficiencies:____

____

____

Comments and Recommendations (Specific):____

____

____

NOTE
Use additional pages as required.

Signature________________________________ Title_________________________________

VERMONT YANKEE NUCLEAR POWER STATION

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5.0 EXERCISE SCENARIO

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5.1 INITIAL CONDITIONS

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5.1 INITIAL CONDITIONS

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

1. The reactor is now at approximately 100% power. The reactor has been operating steady state for the past seventeen months with no recent shutdowns. The core is nearing the end of the current operating cycle. A refueling outage is scheduled to begin in three weeks.

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

   a. The Circulating Water System is operating in Open Cycle.

   b. All equipment is operable and available.

   c. No Limiting Conditions of Operation (LCOs) are in effect.

3. The following on-site meteorological conditions exist at 0245:

Wind Speed, mph (lower/upper)	3.0/3.5
Wind Direction, degrees (lower/upper)	163/170
Delta Temperature, °F (lower/upper)	-0.5/1.2
Ambient Temperature, °F	32.0
Precipitation, inches	0.00

4. Regional Meteorological Forecast Information:

   A low pressure system is currently centered over the Pennsylvania area. Mostly cloudy and overcast this morning. Temperatures in the low to mid 30's. Southerly winds from 3 to 6 mph.

Table 5.1-1

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	161 Inches
Reactor Pressure	1008 psig
Reactor Coolant Temperature	527 °F
Reactor Power - APRM (average)	99.9 %
Core Plate D/P	18 psid
Total Core Flow	46 x 10^6 lbm/hr
Main Steam Line Flow - Total	6.4 x 10^6 lbm/hr
Main Steam Line Radiation (average)	170 mR/hr
Condenser Hotwell Level	60 %
Condenser Vacuum	1.7 in. Hg(Abs)
Condensate Storage Tank Level	49 %
Recirc Drive Flow	29.7 Kgpm/loop
Feedwater Flow	6.4 x 10^6 lbm/hr
Reactor Building D/P	-1.62 in H_2O
Drywell Pressure	17 psia
Drywell Temperature	120 °F
Torus Water Level	11.05 ft
Torus Temperature	78 °F
Drywell/Torus O_2 Concentration	1.14 %
High Range Containment Monitors	1.5 R/hr
Containment Gas/Particulate	540/25000 cpm
Reactor Building Vent Monitors Gas/Part	185/1481 cpm
Reactor Building Vent Exhaust N/S	2.0/2.0 mR/hr
Steam Jet Air Ejector (ARM)	60 mR/hr
SJAE Discharge Rate	22,200 μCi/sec
Stack Gas I/II	20/20 cpm
High Range Noble Gas Monitor	.1 mR/hr

VERMONT YANKEE DAILY PLANT STATUS REPORT

THIS IS A DRILL

DATE: APR __ 1993

PLANT OPERATING STATUS

		VALUE	DATE	TIME
1. Core Thermal Power	(MWt) | (%)	1592 | 99.9		0700
2. Gross MWe	(MWe)	535		0700
3. Net MWe	(MWe)	515		0700
4. Gross MWh for previous day	(MWh)	12906		
5. Core Flow	(Mlb/hr) | (%)	46 | 95.8		0700

REACTOR COOLANT SYSTEM

6. Conductivity	(umho/cm)	0.08	4/ /93	0900
7. Unidentified Leakage @ midnight previous day	(gpm)	1.34		
8. Total Leakage @ midnight previous day	(gpm)	2.84		
9. Gross Activity	(cpm/ml)	165940	4/ /93	0900
10. Iodine-131 Dose Equivalent	(uCi/ml)	4.50E-03	4/ /93	0900

STACK RELEASES

11. Particulate	(ci/period)	2.10E-03	4/ /93	1430
12. Average	(uCi/sec)	<100	4/ /93	0115
13. Peak	(uCi/sec)	NONE	4/ /93	0115
14. Discharge Average Gamma Energy	(Mev)	1.12	4/ /93	0115
15. Dose Rate to Critical Organs	(mrem/year)	4.37E-01	4/ /93	1430
16. Iodine-131	(uCi/sec)	2.34E-04	4/ /93	1430

OFF-GAS ANALYSIS

17. SJAE Dis. Release Rate Measured/ Estimated (circle one)	(uCi/sec)	22200	4/ /93	0115
18. SJAE Discharge Slope of Mixture		-0.0747	4/ /93	0115
19. Condenser Air Leakage	(cfm)	12.4	4/ /93	0115

LIQUID RELEASES & RIVER TEMPERATURE

20. Liquid Release	(Gal)	NA		
21. Liquid Release (Gross : Beta, Gamma)	(uCi/ml)	NA		
22. Liquid Release (Tritium)	(uCi/ml)	NA		
23. Liquid Release (Dissolved Noble Gas)	(uCi/ml)	NA		
24. River Mon. #3 Highest Temp. for previous day	(oF)	58		1830

BURNUP

25. Core Avg. Burnup for previous day	(MWD/ST)	17011.16		
26. Core Cycle Burnup for previous day	(MWD/ST)	5600.84		

REVIEWER: ____________

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

5.2 NARRATIVE SUMMARY

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

5.2 NARRATIVE SUMMARY

The exercise begins at 0245 with the simulator reactor running at approximately 100% power. The reactor has been in a steady state for the last seventeen months with no recent shutdowns. The core is nearing the end of the current operating cycle. A refueling outage is scheduled to begin in three weeks. Night orders indicate that all power generating and safety systems are operable. The Circulating Water System is operating in Open Cycle.

At 0300, a failure in the Start-Up Transformer lockout relay occurs. This results in a loss of both Start-Up Transformers. Upon recognition of loss of both S/U Transformers, the Shift Supervisor should declare an **UNUSUAL EVENT** (approximately 0315) based on AP 3125, "Loss of Power" (Unplanned Loss of Both Start-Up Transformers).

The Shift Supervisor should initiate the appropriate notifications concerning the declaration of the **UNUSUAL EVENT** and changing plant conditions. Plant personnel should be dispatched to investigate the problem with the lockout switch and to restore power to the Start-Up Transformers.

At 0345, an earthquake is sensed on-site. This is evident by the Seismic Annunciator Alarm on the Simulator Control Board. Operations personnel perform inspections of plant equipment in accordance with OP 3127 "Natural Phenomena". Minor damage around the plant is reported, apparently limited to non-safety related structures and equipment. In the Reactor Building, this includes a steam leak from space heater unit SUH-18 on the 345' elevation, also on the 345' elevation, RBAC-1C cooling unit has shifted position, and the concrete wall, next to the RBCCW pumps on the 303' elevation, is cracked and some of the blocks have fallen to the floor. There is also some water spraying from air cooler RRU-10 on the 280' elevation. In addition, the feeder breaker to DC-3A trips resulting in the loss of Control Room annunciator panels 9-3, 9-4, 9-5, 9-6 and 9-8.

The Shift Supervisor should direct available personnel to conduct damage assessment investigations throughout the plant. Upon confirmation of the equipment damage from the earthquake or the loss of CRP annunciators, the Shift Supervisor should declare an **ALERT**. The **ALERT** (approximately 0400) is based on AP 3125, "Loss of Systems or Equipment OR Natural Phenomenon," (Loss of CR Alarm panels or Earthquake exceeds OBE or minor damage to SDI equipment). In either case, notifications should be made to appropriate plant personnel and offsite agencies. Coincident with the notifications, the operations crew will be verifying plant conditions using available information. Power changes will be minimized until positive indication of reactor status is available. The Simulator Control Room (SCR) staff will continue activities to stabilize the plant. The Shift Supervisor will request I&C to check the seismic monitor station to determine if an Operating Basis Earthquake (OBE) was exceeded.

Following the **ALERT** declaration, the Technical Support Center (TSC), Operations Support Center (OSC), and Emergency Operations Facility/Recovery Center (EOF/RC) will be activated and staffed.

As Emergency Response Support personnel arrive in the OSC, On-Site Assistance teams should be assembled and dispatched to continue investigations in the plant for earthquake damage, repairs to the S/U transformer lockout relay and restoration of power to the CRP annunciators.

At approximately 0415, power is restored to the CRP annunciators by either feeding from DC-1 or reclosing of DC-3A feeder breaker. Power changes can be initiated as soon as reactor status indications have been verified to be in-service (following repowering of DC-3A).

At approximately 0630, excessive turbine vibration occurs and a turbine trip results. Since the S/U Transformers are still unavailable, a Loss of Normal Power occurs, and a Group I isolation is initiated. Additionally, the reactor fails to complete the required scram, resulting in an ATWS condition with reactor power remaining above 2%. The operations crew will attempt to shutdown the reactor by individually driving control rods and by initiating Standby Liquid

Control (SLC). Upon SLC initiation, both Squib explosive valves will fail to actuate, necessitating local actuation of the firing mechanism. Operations personnel should be dispatched by the SS/PED to manually actuate the Squib valves per OP 3101, Appendix G, to initiate SLC injection. In addition, the CRD Flow Control valve fails shut preventing the operators from manually driving control rods. This will have to be evaluated and an AO dispatched to shift Flow Control Valves in accordance with OP 2111. As a result of the ATWS and resultant power/pressure spike, degradation of the fuel cladding occurs causing a maximum of 1% core inventory of Iodine and Noble Gas to be released into the Reactor Coolant System (RCS). Radiation levels inside containment and Torus begin to increase as a result of the increase in reactor coolant activity.

A **SITE AREA EMERGENCY** should be declared (approximately 0645) based on AP 3125, "Loss of Systems or Equipment" (failure of RPS to initiate and accomplish a required SCRAM and power generation continues).

At 0700 the Service Water Flow Control Valve (FCV-28B) for "B" diesel generator fails shut, resulting in a high temperature trip of the "B" diesel generator. This results in a loss of equipment supplied from Buses 3 and 8. An On-Site Assistance Team should be assigned from the OSC to investigate the failure.

The ATWS condition has resulted in significant heat to be added to the Torus. The heat addition causes Torus pressure to increase. Subsequently, by 0715, the Torus to Drywell vacuum breakers open to relieve the buildup of pressure in the Torus. One of the vacuum breakers fails to shut after pressure has equalized between the Torus and Drywell, resulting in a direct flow path between the two structures.

Repair personnel report that the Start-Up Transformer Lockout relay has been repaired. Buses 1 and 2 can be re-energized, allowing subsequent powering of associated buses, MCCs and station equipment. However, MCC 7 is unable to be re-energized due to a failure in its associated feeder breaker (breaker 27) and 6T7. Repair team personnel should be dispatched from the OSC to investigate this problem.

Efforts continue to insert control rods and to restore equipment lost as a result of the LNP and loss of the "B" diesel generator. At approximately 0730 and 0815 respectively, Turbine Building ventilation has been restored and all control rods have been inserted.

At 0830, a small steam leak occurs into the Primary Containment. Drywell pressure begins to increase.

At approximately 0845, the hardened vent rupture disk begins to leak when drywell pressure approaches 5 psig. (The hardened vent rupture disk has been weakened due to the induced stress from the earthquake.) Due to the previous failure of the Torus to Drywell vacuum breaker and the hardened vent rupture disk leakage, a direct path from the Torus to the Plant Vent Stack exists. Attempts to isolate the hardened vent line using the associated downstream Motor Operated Valve are not successful due to loss of power to the MOV (powered from MCC 7). Local operation of the valve will not be possible due to mechanical failure and inhibited by high radiation levels in the area.

By 0900, the Plant Vent Stack (PVS) is indicating a release of radioactivity to the environment.

A GENERAL EMERGENCY should be declared (approximately 0915) based on AP 3125, Fuel Damage" (Loss of 2 of three fission product barriers with potential loss of the third).

By 1045, repairs to MCC 7 feeder breaker or 6T7 are completed, power is restored to MCC 7 to allow closure of the hardened vent isolation valve. Upon valve closure, the source term of the release to the environment is isolated. The PVS monitor readings will start to decrease. Offsite activities will continue to track the release.

By 1130, the PVS monitor readings will indicate background levels.

At 1230, the exercise may be terminated.

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5.3 SCENARIO TIME LINE

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5.3 SCENARIO TIME LINE

CLOCK TIME	SCENARIO TIME	DESCRIPTION
0245	0:00	Initial conditions established in the Simulator Control Room.
0300	0:15	Loss of both Start-Up Transformers due to failure in the Start-Up Transformer lockout relay.
0315	0:30	UNUSUAL EVENT (A.P. 3125, LOSS OF POWER) - Unplanned Loss of Both Start-Up Transformers.
0330	0:45	
0345	1:00	Earthquake sensed on-site, resulting in damage to non-safety related equipment. DC-3A feeder breaker trips, causing a loss of Control Room Panel (CRP) annunciators on panels 9-3, -4, -5, -6 and -8.
0400	1:15	ALERT (A.P. 3125, LOSS OF SYSTEMS OR EQUIPMENT <u>OR</u> NATURAL PHENOMENON) - Loss of CR Alarm panels (all control room alarms on CRP 9-3, 4 and 5) <u>or</u> Earthquake (exceeds OBE or minor damage to SDI equipment).
0415	1:30	Power to DC-3A is restored, CRP 9-3, -4, -5, -6 and 8 are restored.
0430	1:45	
0445	2:00	
0500	2:15	
0515	2:30	
0530	2:45	
0545	3:00	
0600	3:15	
0615	3:30	

5.3 SCENARIO TIME LINE (continued)

CLOCK TIME	SCENARIO TIME	DESCRIPTION
0630	3:45	<--- Excessive turbine bearing vibration causing a turbine trip. Reactor fails to scram. ATWS conditions exists. Loss of Normal Power (LNP) also occurs.
0645	4:00	<--- SITE AREA EMERGENCY (AP 3125 - LOSS OF SYSTEMS OR EQUIPMENT) - (Failure of RPS to initiate and accomplish a required SCRAM and Power Generation Continues).
0700	4:15	<--- Service Water flow control valve to the "B" diesel generator fails closed and results in a high temperature trip of the "B" diesel generator.
0715	4:30	<--- Drywell vacuum breakers open (one fails open) causing a direct flow path from the Drywell to the Torus atmosphere. Repairs to the Start-Up Transformer lockout relay are completed.
0730	4:45	<--- Turbine Building ventilation is restored.
0745	5:00	<--- Efforts to shutdown the reactor are ongoing.
0800	5:15	
0815	5:30	<--- All control rods have been inserted.
0830	5:45	<--- A small steam leak occurs into the Primary Containment. Containment pressure starts to increase.
0845	6:00	<--- Primary Containment pressure approaches 5 psig due to the steam leak. The hardened vent rupture disk begins to leak. A direct path from the Torus to the Plant Vent Stack (PVS) exists.
0900	6:15	<--- PVS indicating a release of radioactivity to the environment.
0915	6:30	<--- GENERAL EMERGENCY (AP 3125 - FUEL DAMAGE) - Loss of 2 of 3 fission product barriers with potential loss of the third.
0930	6:45	
0945	7:00	
1000	7:15	<--- Activities to repower MCC 7, repair FCV-28B and isolate the hardened vent continue.
1015	7:30	
1030	7:45	

5.3 <u>SCENARIO TIME LINE</u> (continued)

CLOCK TIME	SCENARIO TIME	DESCRIPTION
1045	8:00	<--- Repairs to MCC 7 feeder breaker are complete. Power is restored to the hardened vent isolation valve and the valve is closed. The release to the environment is terminated.
1100	8:15	<--- Off-Site monitoring and dose assessment activities continue.
1115	8:30	
1130	8:45	<--- PVS monitor readings indicate background levels.
1145	9:00	
1200	9:15	
1215	9:30	
1230	9:45	<--- EXERCISE MAY BE TERMINATED

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5.4 DETAILED SEQUENCE OF EVENTS

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5.4 DETAILED SEQUENCE OF EVENTS

Clock Time	Scenario Time	Event/Action	Message Information
Prior to 0245	00:00	EXPECTED CONTROL ROOM (CR) ACTIONS WILL BE IMPLEMENTED BY AN EXERCISE OPERATIONS CREW (INCLUDING SUFFICIENT NUMBER OF PRESTAGED INDIVIDUALS FROM THE VERMONT YANKEE EMERGENCY ORGANIZATION) LOCATED IN THE SIMULATOR COMPLEX IN THE CORPORATE TRAINING CENTER.	
		OPERATIONAL CONTROL ROOM DATA WILL BE PROVIDED BY THE SIMULATOR INSTRUMENTATION RESPONSES. IN CASES WHERE SPECIFIC INFORMATION NOT MONITORED BY THE SIMULATOR IS REQUIRED, IT WILL BE ISSUED BY CONTROLLERS/OBSERVERS ON MESSAGE CARDS. IN THE EVENT THAT A SIMULATOR MALFUNCTION OCCURS, THE EXERCISE WILL BE CONDUCTED USING INFORMATION DEVELOPED FROM SECTION 8.0 AND SECTION 9.0.	
		The Simulator CR Controller issues initial conditions to the simulator CR players. Guidelines for use of Gaitronics and the plant evacuation alarm are provided to players.	SCR/CR-M-1 SCR-C-1

Clock Time	Scenario Time	Event/Action	Message Information
Prior to 0245 (Cont'd)	00:00	Initiating messages are also provided to all emergency centers and facility staffs upon subsequent activations. TSC communicators prestaged in the SCR, who normally respond to the CR, will be available for communication and data transmission. ERFIS terminals in the TSC and EOF will be linked to the SCR to transmit operational and radiological scenario data. Security will be provided a list of Evaluators and nonparticipants who will not have to be accounted for during the exercise.	ERF-M-1 TSC-M-1 TSC-M-2
0245	00:00	Simulator is put into operation. Reactor is at 100% power. The reactor has been operating steady state for the past seventeen months with no recent shutdowns. The core is nearing the end of the current operating cycle. A refueling outage is scheduled to begin in three weeks.	
0300	00:15	Failure in the Start-Up Transformer lockout relay. Loss of both S/U Transformers. (Refer to Miniscenario 7.2.1)	
Approx. 0315	00:30	The Shift Supervisor should declare an **UNUSUAL EVENT** based upon the following EAL: AP 3125, "LOSS OF POWER - Unplanned Loss of both Start-Up Transformers". The SS/PED should initiate Procedure OP 3500, UNUSUAL EVENT and refer to Appendix I, the SS/PED checklist. An AO should be dispatched to investigate the loss of the S/U Transformers.	

Clock Time	Scenario Time	Event/Action	Message Information
Approx. 0315 (Cont'd)	00:30	FOR EXERCISE PURPOSES, EARLY IN-STATION ACTIONS NORMALLY PERFORMED BY CONTROL ROOM SUPPORT PERSONNEL MAY BE CONTROLLED AND PERFORMED BY THE SIMULATOR CONTROLLERS UNTIL AFTER THE ON-SHIFT OPERATING SHIFT PERSONNEL ARE AUGMENTED BY THE EMERGENCY RESPONSE ORGANIZATION.	SCR-C-2
		The SS/PED should announce the UNUSUAL EVENT over the Plant Paging System. This activity will be performed by players in the Simulator Control Room (SCR), and simultaneously performed by a Controller directed member of the shift crew in the actual Control Room (CR).	
		The SS/PED should notify Vermont, New Hampshire, and Massachusetts State Police Agencies using the Nuclear Alert System (NAS, orange telephone) and provide the appropriate message to each agency.	
		The SS/PED should notify the NRC (FTS-2000 ENS Phone) and maintain communications until relieved by the TSC.	
		The Security Shift Supervisor should implement Procedure OP-3531, "Emergency Call-In Method," to notify the appropriate emergency response personnel.	SEC-M-1
		The Security Shift Supervisor should notify Yankee Nuclear Services Division (YNSD) Security and activate the YNSD Personnel Group Paging System.	

Clock Time	Scenario Time	Event/Action	Message Information
Approx. 0315 (Cont'd)	00:30	The Security Shift Supervisor also should notify New England Hydro Power Station of the UNUSUAL EVENT. THIS CALL WILL BE SIMULATED. The Primary and Secondary Duty and Call officers (DCOs) should contact the SS/PED to be advised of the situation. The DCOs should report to the plant after notification of the UNUSUAL EVENT Status. Responsibility for Technical Support Center (TSC) and Emergency Operations Facility (EOF) Coordinator assignments would be discussed, as appropriate. The TSC Coordinator, when present, should assume the overall supervision and coordination of the On-Site emergency response activities. This will include escalating the emergency classification as conditions warrant. Activation of the TSC is optional at the UNUSUAL EVENT.	SEC-C-1
0330	00:45	IF AN UNUSUAL EVENT HAS NOT BEEN DECLARED BY THE SS/PED, HE WILL BE DIRECTED TO DO SO AT THIS TIME.	SCR-C-3
0345	01:00	An earthquake is sensed on-site and at various locations around the plant. Seismic Annunciator comes in on the simulator control board. Minor damage to non-safety related equipment occurs around the plant. (refer to Miniscenario 7.2.2)	SCR-M-2

Clock Time	Scenario Time	Event/Action	Message Information
0345 (Cont'd)	01:00	DC-3A feeder breaker also trips causing a loss of Control Room Panel (CRP) annunciators 9-3, 9-4, 9-5, 9-6, and 9-8. (Refer to Miniscenario 7.2.3) The SS/PED should implement OP 3127, "Natural Phenomena" in response to the earthquake. This will instruct them to check plant instrumentation and to conduct visual inspections for an assessment of damage caused by the earthquake.	
0355	01:10	This will also include checking the seismic monitor work station and contacting Vernon and Bellows Falls dams for an assessment of dam status.	SCR-C-4 SCR-M-3
0400	01:15	The SS/PED and TSC Coordinator (if present) should review the plant conditions against Procedure AP 3125, "Emergency Plan Classification and Action Level Scheme." The SS/PED or TSC Coordinator should declare an ALERT based upon the following EAL: AP 3125, "LOSS OF SYSTEMS OR EQUIPMENT OR NATURAL PHENOMENON" - Loss of CR alarm panels (all control room alarms on CRP 9-3, 9-4 and 9-5) or Earthquake (exceeds OBE or minor damage to SDI equipment). The SS/PED directs the operations staff to initiate Procedure OP 3501, "ALERT."	

Clock Time	Scenario Time	Event/Action	Message Information
0400 (cont'd)	01:15	An ALERT announcement should be made over the plant page instructing emergency personnel to report to their assigned emergency response facilities, and other personnel, contractors, and visitors report to the Governor Hunt House Information Center and wait for further instructions.	
		At this time, the TSC, Operations Support Center (OSC), and the Emergency Operations Facility/Recovery Center (EOF/RC) should be in the process of being activated and staffed.	
		The SS/PED should notify the Vermont, New Hampshire, and Massachusetts State Police Agencies using the NAS of the escalation to the ALERT emergency classification.	
		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.	

Clock Time	Scenario Time	Event/Action	Message Information
0400 (cont'd)	01:15	The Security Shift Supervisor should notify the New England Hydro Power Station in Vernon of the escalation to the ALERT status. THIS CALL WILL BE SIMULATED.	
		The TSC Coordinator should notify REMVEC of the ALERT status and plant conditions.	
0405	01:20	The Security Shift Supervisor should ensure that an accountability of personnel has been initiated in accordance with procedure OP 3524, "Emergency Actions to Ensure Accountability and Security Response."	
		The TSC Coordinator should respond, activate, and staff the TSC in accordance with Appendix III of OP 3501, "ALERT."	
		TSC staff representing the following departments should assemble at the TSC following the declaration of an ALERT: 1. Security Manager 2. Instrument and Control Manager 3. Radiation Protection Manager 4. Reactor and Computer Engineering Manager 5. Operations Manager 6. Maintenance Manager 7. Engineering Director 8. Mechanical Engineering & Construction Supervisor 9. Electrical Engineering & Construction Supervisor 10. Technical Programs Supervisor 11. Communicators 12. Plant Switchboard Operator	

Clock Time	Scenario Time	Event/Action	Message Information
0400 (cont'd)	01:15	The Security Shift Supervisor should notify the New England Hydro Power Station in Vernon of the escalation to the ALERT status. THIS CALL WILL BE SIMULATED.	
		The TSC Coordinator should notify REMVEC of the ALERT status and plant conditions.	
0405	01:20	The Security Shift Supervisor should ensure that an accountability of personnel has been initiated in accordance with procedure OP 3524, "Emergency Actions to Ensure Accountability and Security Response."	
		The TSC Coordinator should respond, activate, and staff the TSC in accordance with Appendix III of OP 3501, "ALERT."	
		TSC staff representing the following departments should assemble at the TSC following the declaration of an ALERT: 1. Security Manager 2. Instrument and Control Manager 3. Radiation Protection Manager 4. Reactor and Computer Engineering Manager 5. Operations Manager 6. Maintenance Manager 7. Engineering Director 8. Mechanical Engineering & Construction Supervisor 9. Electrical Engineering & Construction Supervisor 10. Technical Programs Supervisor 11. Communicators 12. Plant Switchboard Operator	

Clock Time	Scenario Time	Event/Action	Message Information
0405 (Cont'd)	01:20	13. Status Board Caretakers 14. Other Staff as required to fulfill functions of the TSC The EOF Coordinator should activate and staff the EOF/RC in accordance with Appendix IV of OP-3501, "ALERT." The emergency response staff that reports to the EOF/RC includes the following: 1. Site Recovery Manager (SRM) and designated corporate staff 2. EOF Coordinator 3. Public Information Liaison 4. Additional trained plant staff members to assume the following tag board assignments: - EOF Coordinator's Assistant - Radiological Assistant - Manpower and Planning Assistant - Communications Assistant - Radiological Coordinator - Personnel and Equipment Monitoring Team 5. Corporate Security Force The OSC Coordinator (assigned by the TSC Coordinator) should activate and staff the OSC in accordance with Appendix VII of OP 3501, "ALERT." The Plant staff that reports to the OSC includes the following: 1. Radiation Protection and Chemistry Assistants and Technicians 2. Control Instrument Specialists	

Clock Time	Scenario Time	Event/Action	Message Information
0405 (cont'd)	01:20	3. Maintenance Staff 4. Status Board Caretaker 5. Other personnel as required. The Site Recovery Manager (SRM) and staff should report to the EOF/RC and implement the procedural steps listed in Appendix VIII of OP 3501, "ALERT." The SS/PED may instruct the operators to minimize activities that could influence reactor operations until such time that positive indication of reactor status is available.	
0415	01:30	IF AN ALERT HAS NOT BEEN DECLARED BY THE SS/PED, HE WILL BE DIRECTED TO DO SO AT THIS TIME. Repair to the DC-3A Feeder Breaker has been completed or power has been fed through DC-1. In either case, power is restored to Control Room Annunciators. SCR operators will continue to stabilize the plant.	SCR-C-5
Approx 04:45	02:00	The ESC should be providing technical and engineering support to Vermont Yankee staff. The ESC meteorologist should be providing a weather forecast for the VY site. Weather forecast information from the NWS is available.	ESC-M-1 EOF-M-1

Clock Time	Scenario Time	Event/Action	Message Information
Approx. 0445 (cont'd)	02:00	Activities continue to return the Start-Up Transformers to service, and to investigate throughout the plant for damage sustained from the earthquake.	
0600	03:15	Local news release information, with details of the earthquake, is simulated to have been broadcast over the local radio and television network.	NMC-M-1
0630	03:45	Excessive turbine vibration occurs such that a turbine trip occurs. Since the Start-Up Transformers are still unavailable, a Loss of Normal Power (LNP) condition exists and a Group I isolation occurs. The turbine trip also generates a reactor scram signal. The reactor fails to complete the required scram, resulting in an ATWS condition with reactor power remaining above 2%. The CRD Flow Control Valve fails closed preventing the operators from manually driving control rods. An AO should be dispatched to investigate the failure and to shift FCVs. (Refer to Miniscenario 7.2.4). When Standby Liquid Control (SLC) is initiated, both Squib explosive valves will fail to open, requiring local actuation of the valves. (Refer to Miniscenario 7.2.5).	

Clock Time	Scenario Time	Event/Action	Message Information
0630 (cont'd)	03:45	As a result of the ATWS and resultant power/pressure spike, degradation of the fuel cladding occurs causing a maximum of 1% core inventory of Iodine and Noble Gas to be released into the Reactor Coolant System (RCS). Radiation levels inside containment and the Torus begin to increase as a result of the increased activity in the RCS.	
0635	03:50	The SRM, TSC Coordinator and SS/PED should evaluate plant conditions against Procedure AP 3125, "Emergency Plan Classification and Action Level Scheme."	
Approx. 0645	04:00	The SRM should declare a **SITE AREA EMERGENCY** based on the following EAL: AP 3125 - "LOSS OF SYSTEMS OR EQUIPMENT" - (Failure of RPS to initiate and accomplish a required scram and power generation continues). If present in the EOF, the SRM should inform the State representatives of Vermont, New Hampshire and Massachusetts assigned to the EOF/RC and contact the State's EOCs via the NAS to inform them of the escalation to the SITE AREA EMERGENCY. The SS/PED will also be directed to make the appropriate plant announcement concerning the escalation to the SITE AREA EMERGENCY. Upgraded notifications should also be made to YNSD and the NRC	

Clock Time	Scenario Time	Event/Action	Message Information
0700	04:15	The Service Water Flow Control Valve to the "B" diesel generator (FCV-28B) fails closed resulting in a high temperature trip of the "B" diesel generator. (Refer to Miniscenario 7.2.6) An On-Site Assistance Team should be assembled and dispatched to investigate the trip of the "B" diesel generator.	
0715	04:30	IF A SITE AREA EMERGENCY HAS NOT BEEN DECLARED BY THE SRM, HE WILL BE DIRECTED TO DO SO AT THIS TIME	EOF-C-1
0715	04:30	As a result of the ATWS, sufficient heat has been introduced into the Torus to cause Torus pressure to exceed the setpoint for the Torus to Drywell vacuum breakers. Consequently, the vacuum breakers open relieving the over-pressure into the Drywell. As pressure equalizes between the two structures, one of the vacuum breakers fails to reset. Repairs to the Start-Up Transformer lockout relay are completed. Buses 1 and 2 are re-energized. Equipment powered from these sources are returned to service. MCC 7 cannot be powered due to a failure in its associated feeder breaker. An On-Site Assistance Team should be dispatched to investigate. (Refer to Miniscenario 7.2.7)	
Approx. 0730	04:45	Turbine Building Ventilation is restored.	

Clock Time	Scenario Time	Event/Action	Message Information
Approx. 0730 (cont'd)	04:45	Operators should be continuing attempts to insert Control Rods and bring the reactor to a shutdown condition.	
0815	05:30	All Control Rods have been successfully inserted into the core.	
0830	05:45	A small steam leak into the Primary Containment occurs. Primary Containment pressure begins to increase.	
0845	06:00	Primary Containment pressure approaches 5 psig. The hardened vent rupture disk begins to leak as a result of the increase in containment pressure and structural deterioration due to the earthquake. A direct path from the Torus to the Plant Vent Stack (PVS) exists. Attempts to isolate the downstream Motor Operated Valve for the hardened vent are unsuccessful due loss of power to MCC 7. Attempts to manually close the isolation valve are not successful due to mechanical failure and inhibited by elevated area radiation levels. (Refer to Miniscenario 7.2.8)	
0900	06:15	PVS high range monitor is indicating a release of radioactivity to the environment. The appropriate EOF staff should initiate OP 3513, Evaluation of Off-Site Radiological Conditions to determine potential off-site dose projections.	

Clock Time	Scenario Time	Event/Action	Message Information
0900 (cont'd)	06:15	Off-Site Monitoring Teams and a Site Boundary Team will be dispatched to monitor the plume in the downwind direction in accordance with OP 3510.	
		The SRM, with consultation from the TSC Coordinator and SS/PED, should recognize the need to escalate to GENERAL EMERGENCY.	
Approx. 0915	06:30	The SRM should declare a **GENERAL EMERGENCY** based on the following EAL: AP 3125 - "FUEL DAMAGE - Loss of 2 of 3 fission product barriers with the potential loss of the third."	
		The SRM should inform the State representatives of Vermont, New Hampshire and Massachusetts assigned to the EOF/RC and contact the State's EOCs via the NAS to inform them of the escalation to the GENERAL EMERGENCY.	
		The SS/PED will also be directed to make the appropriate plant announcement concerning the escalation to the GENERAL EMERGENCY.	
		Upgraded notifications should also be made to YNSD and the NRC.	
		The SRM should also implement Procedure OP 3511, "Off-Site Protective Action Recommendations", to formulate and recommend protective actions to State authorities based on plant and off-site radiological conditions.	

Clock Time	Scenario Time	Event/Action	Message Information
0930	06:45	IF A GENERAL EMERGENCY HAS NOT BEEN DECLARED BY THE SRM, HE WILL BE DIRECTED TO DO SO AT THIS TIME.	SRM-C-1
10:00	07:15	Activities to repower MCC 7, FCV-28B and closure of the hardened vent isolation valve continue.	
10:45	08:00	Repairs are complete to MCC 7 feeder breaker (breaker 27) or 6T7, power is available to MCC 7. The operators are able to close the hardened vent isolation valve. The source of the release to the environment has been isolated. PVS monitor readings will start to decrease.	
11:00	08:15	Off-Site monitoring and dose assessment activities continue. Results are used to continually assess Protective Action Recommendations under consideration. In addition, the information is provided to the individual states' representatives for comparison with their independent assessments.	
11:30	08:45	PVS monitor readings indicate background levels.	
12:30	09:45	Exercise is terminated.	

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6.0 EXERCISE MESSAGES

VERMONT YANKEE NUCLEAR POWER STATION

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6.1 COMMAND CARDS

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

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-1
TO:	Shift Supervisor	CLOCK TIME:	Prior to 0245
LOCATION:	Simulator Control Room	SCENARIO TIME:	Prior to 00:00

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

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

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

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
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1993

SCENARIO COMMAND CARD

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

TO: Shift Supervisor   CLOCK TIME: 0315

LOCATION: Simulator Control Room   SCENARIO TIME: 00:30

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

Early in-station actions normally performed by Control Room support personnel may be controlled and performed by the simulator controllers until after the operating shift personnel are augmented by the Emergency Response Organization.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO COMMAND CARD

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

TO: Security Shift Supervisor CLOCK TIME: 0315 or when needed

LOCATION: Security Gatehouse SCENARIO TIME: 00:30

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

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

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO COMMAND CARD

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

TO: Shift Supervisor CLOCK TIME: 0330

LOCATION: Simulator Control Room SCENARIO TIME: 00:45

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

DECLARE AN UNUSUAL EVENT BASED UPON AP 3125, "LOSS OF POWER - Unplanned Loss of Both Start-Up Transformers".

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO COMMAND CARD

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

TO: Shift Supervisor CLOCK TIME: 0355

LOCATION: Simulator Control Room SCENARIO TIME: 01:10

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

****

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

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO COMMAND CARD

FROM:	Simulator CR Controller	COMMAND NO.:	SCR-C-5
TO:	Shift Supervisor/PED	CLOCK TIME:	0415
LOCATION:	Simulator Control Room	SCENARIO TIME:	01:30

****

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

****

DECLARE AN ALERT BASED UPON AP 3125, "LOSS OF SYSTEMS OR EQUIPMENT OR NATURAL PHENOMENON - Loss of CR alarm panels (all control room alarms on CRP 9-3, 9-4 and 9-5) OR Earthquake (exceeds OBE or minor damage to SDI Equipment)".

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO COMMAND CARD

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

TO: Site Recovery Manager CLOCK TIME: 0715

LOCATION: EOF SCENARIO TIME: 04:30

****

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

****

DECLARE A SITE AREA EMERGENCY BASED UPON AP 3125, "LOSS OF SYSTEMS OR EQUIPMENT - Failure to SCRAM (Failure of RPS to initiate and accomplish a required SCRAM and power generation continues)".

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO COMMAND CARD

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

TO: Site Recovery Manager CLOCK TIME: 0930

LOCATION: EOF SCENARIO TIME: 06:45

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

DECLARE A GENERAL EMERGENCY BASED UPON AP 3125, "FUEL DAMAGE - Loss of 2 of 3 fission product barriers with the potential loss of the third".

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

6.2 MESSAGE CARDS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

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

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

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

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

****

For initial conditions, see attached pages.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE

SCENARIO MESSAGE CARD

INITIAL CONDITIONS

1. The reactor is now at approximately 100% power. The reactor has been operating steady state for the past seventeen months with no recent shutdowns. The core is nearing the end of the current operating cycle. A refueling outage is scheduled to begin in three weeks.

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

   a. The Circulating Water System is operating in Open Cycle.

   b. All equipment is operable and available.

   c. No Limiting Conditions of Operation (LCOs) are in effect.

3. The following on-site meteorological conditions exist at 0245:

Wind Speed, mph (lower/upper)	3.0/3.5
Wind Direction, degrees (lower/upper)	163/170
Delta Temperature, °F (lower/upper)	-0.5/1.2
Ambient Temperature, °F	32.0
Precipitation, inches	0.00

4. Regional Meteorological Forecast Information:
A low pressure system is currently centered over the Pennsylvania area. Mostly cloudy and overcast this morning. Temperatures in the low to mid 30's. Southerly winds from 3 to 6 mph.

****

THIS IS A DRILL

****

SCENARIO MESSAGE CARD

Initial Plant and Reactor System Values

Reactor Vessel Coolant Level	161 Inches
Reactor Pressure	1008 psig
Reactor Coolant Temperature	527 °F
Reactor Power - APRM (average)	99.9 %
Core Plate D/P	18 psid
Total Core Flow	47 x 10^6 lbm/hr
Main Steam Line Flow - Total	6.4 x 10^6 lbm/hr
Main Steam Line Radiation (average)	170 mR/hr
Condenser Hotwell Level	60 %
Condenser Vacuum	1.7 in. Hg(Abs)
Condensate Storage Tank Level	49 %
Recirc Drive Flow	29.7 Kgpm/loop
Feedwater Flow	6.4 x 10^6 lbm/hr
Reactor Building D/P	-1.62 in H_2O
Drywell Pressure	17 psia
Drywell Temperature	120 °F
Torus Water Level	11.05 ft
Torus Temperature	78 °F
Drywell/Torus O_2 Concentration	1.14 %
High Range Containment Monitors	1.5 R/hr
Containment Gas/Particulate	540/25000 cpm
Reactor Building Vent Monitors Gas/Part	185/1481 cpm
Reactor Building Vent Exhaust N/S	2.0/2.0 mR/hr
Steam Jet Air Ejector (ARM)	60 mR/hr
SJAE Discharge Rate	22,200 μCi/sec
Stack Gas I/II	20/20 cpm
High Range Noble Gas Monitor	0.1 mR/hr

****

THIS IS A DRILL

****

VERMONT YANKEE DAILY PLANT STATUS REPORT

THIS IS A DRILL

DATE: APR __ 1993

PLANT OPERATING STATUS

		VALUE	DATE	TIME
1. Core Thermal Power	(MWt) | (%)	1592 | 99.9		0700
2. Gross MWe	(MWe)	535		0700
3. Net MWe	(MWe)	515		0700
4. Gross MWh for previous day	(MWh)	12906		
5. Core Flow	(Mlb/hr) | (%)	46 | 95.8		0700

REACTOR COOLANT SYSTEM

6. Conductivity	(umho/cm)	0.08	4/ /93	0900
7. Unidentified Leakage @ midnight previous day	(gpm)	1.34		
8. Total Leakage @ midnight previous day	(gpm)	2.84		
9. Gross Activity	(cpm/ml)	165940	4/ /93	0900
10. Iodine-131 Dose Equivalent	(uCi/ml)	4.50E-03	4/ /93	0900

STACK RELEASES

11. Particulate	(ci/period)	2.10E-03	4/ /93	1430
12. Average	(uCi/sec)	<100	4/ /93	0115
13. Peak	(uCi/sec)	NONE	4/ /93	0115
14. Discharge Average Gamma Energy	(Mev)	1.12	4/ /93	0115
15. Dose Rate to Critical Organs	(mrem/year)	4.37E-01	4/ /93	1430
16. Iodine-131	(uCi/sec)	2.34E-04	4/ /93	1430

OFF-GAS ANALYSIS

17. SJAE Dis. Release Rate Measured/ Estimated (circle one)	(uCi/sec)	22200	4/ /93	0115
18. SJAE Discharge Slope of Mixture		-0.0747	4/ /93	0115
19. Condenser Air Leakage	(cfm)	12.4	4/ /93	0115

LIQUID RELEASES & RIVER TEMPERATURE

20. Liquid Release	(Gal)	NA		
21. Liquid Release (Gross : Beta, Gamma)	(uCi/ml)	NA		
22. Liquid Release (Tritium)	(uCi/ml)	NA		
23. Liquid Release (Dissolved Noble Gas)	(uCi/ml)	NA		
24. River Mon. #3 Highest Temp. for previous day	(oF)	58		1830

BURNUP

25. Core Avg. Burnup for previous day	(MWD/ST)	17011.16		
26. Core Cycle Burnup for previous day	(MWD/ST)	5600.84		

REVIEWER: ____________

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

FROM:	Facility Controller	MESSAGE NO.:	ERF-M-1
TO:	Facility Coordinator	CLOCK TIME:	Start of Exercise or
LOCATION:	Various ERFs	SCENARIO TIME:	Facility Activation

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

****

For initial conditions, see attached pages.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

VERMONT YANKEE
DAILY OPERATIONS REPORT APRIL XX, 1993

==

PLANT STATUS: 100% POWER
GEN GROSS 535 MWE
OFFGAS 22,200 uCI/sec

PLANT OPERATION SUMMARY & SIGNIFICANT EVENTS:

*THE PLANT HAS BEEN OPERATING FOR 17 MONTHS WITH NO RECENT SHUTDOWNS. CONTINUED FULL POWER OPS.

==

SIGNIFICANT NEW WORs

#	DESCRIPTION	DEPT	PRIORITY
NONE			

==

TECH SPEC/LCO EQUIPMENT OUT OF SERVICE:

SYSTEM/COMPONENT	TECH SPEC	DATE/TIME	ALLOWABLE TIME
NONE			

==

STATUS/COMMENTS ON MAJOR WORK IN PROGRESS:

NONE

==

PRO'S/NOTIFICATIONS:
NONE

==

LONG TERM PROBLEMS SOLVED:
NONE

==

****

THIS IS A DRILL

****

VERMONT YANKEE DAILY PLANT STATUS REPORT

THIS IS A DRILL

DATE: APR __ 1993

PLANT OPERATING STATUS

		VALUE	DATE	TIME
1. Core Thermal Power	(MWt) | (%)	1592 | 99.9		0700
2. Gross MWe	(MWe)	535		0700
3. Net MWe	(MWe)	515		0700
4. Gross MWh for previous day	(MWh)	12906		
5. Core Flow	(Mlb/hr) | (%)	46 | 95.8		0700

REACTOR COOLANT SYSTEM

6. Conductivity	(umho/cm)	0.08	4/ /93	0900
7. Unidentified Leakage @ midnight previous day	(gpm)	1.34		
8. Total Leakage @ midnight previous day	(gpm)	2.84		
9. Gross Activity	(cpm/ml)	165940	4/ /93	0900
10. Iodine-131 Dose Equivalent	(uCi/ml)	4.50E-03	4/ /93	0900

STACK RELEASES

11. Particulate	(ci/period)	2.10E-03	4/ /93	1430
12. Average	(uCi/sec)	<100	4/ /93	0115
13. Peak	(uCi/sec)	NONE	4/ /93	0115
14. Discharge Average Gamma Energy	(Mev)	1.12	4/ /93	0115
15. Dose Rate to Critical Organs	(mrem/year)	4.37E-01	4/ /93	1430
16. Iodine-131	(uCi/sec)	2.34E-04	4/ /93	1430

OFF-GAS ANALYSIS

17. SJAE Dis. Release Rate Measured/ Estimated (circle one)	(uCi/sec)	22200	4/ /93	0115
18. SJAE Discharge Slope of Mixture		-0.0747	4/ /93	0115
19. Condenser Air Leakage	(cfm)	12.4	4/ /93	0115

LIQUID RELEASES & RIVER TEMPERATURE

20. Liquid Release	(Gal)	NA		
21. Liquid Release (Gross : Beta, Gamma)	(uCi/ml)	NA		
22. Liquid Release (Tritium)	(uCi/ml)	NA		
23. Liquid Release (Dissolved Noble Gas)	(uCi/ml)	NA		
24. River Mon. #3 Highest Temp. for previous day	(oF)	58		1830

BURNUP

25. Core Avg. Burnup for previous day	(MWD/ST)	17011.16		
26. Core Cycle Burnup for previous day	(MWD/ST)	5600.84		

REVIEWER. ____________________

THIS IS A DRILL

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

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

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

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

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

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

TO: TSC Coordinator CLOCK TIME: Upon assignment of Communicators

LOCATION: TSC SCENARIO TIME: ______

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

After simulating assignment of your TSC Communicators to the Control Room, the prestaged TSC Communicators at the Simulator Control Room can now be used.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

FROM: Security Controller MESSAGE NO.: SEC-M-1

TO: Security Shift Supervisor CLOCK TIME: 0315

LOCATION: Gatehouse II SCENARIO TIME: 00:30

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

Ensure all EXERCISE related communications over the Security Force radio network and the VY Pager system are preceded by and end with "THIS IS A DRILL".

For EXERCISE purposes, use the appropriate emergency classification codes for VY Pager activations.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

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

TO: Shift Supervisor CLOCK TIME: 0345

LOCATION: Simulator CR SCENARIO TIME: 01:00

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

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

A Radiation Protection technician, in the area of the South Warehouse called to report that he was passing by the warehouse when the ground moved and he heard something fall, when he investigated inside the warehouse it appeared that several items had fallen from the storage shelves. The building itself seems to be intact with no obvious damage.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

FROM: Controller MESSAGE NO.: SCR-M-3

TO: Shift Supervisor CLOCK TIME: 0355

LOCATION: Simulator CR SCENARIO TIME: 01:10

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

****

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

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

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

TO: ESC Meteorologist CLOCK TIME: 0445 or as requested

LOCATION: ESC SCENARIO TIME: 02:00

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

****
NOTE TO CONTROLLER:

When requested by the ESC Meteorologist for current meteorological information, provide the meteorological information contained in Section 10.2 of the exercise manual for the appropriate time period.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

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

TO: Radiological Assistant CLOCK TIME: 0445 or as requested

LOCATION: EOF/Dose Assessment Area SCENARIO TIME: 02:00

****

THIS IS A DRILL

DO NOT initiate any actions affecting normal plant operations.

****

NOTE TO CONTROLLER:

When requested by the EOF/RC personnel for current forecast information, provide the General Area NWS Forecasts information contained in Section 10.2 (Page 10.2-1) of the exercise manual for the appropriate time period.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

SCENARIO MESSAGE CARD

FROM: News Media Center Observer MESSAGE NO.: NMC-M-1

TO: News Media Center Staff CLOCK TIME: 0600

LOCATION: News Media Center SCENARIO TIME: 03:15

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

****

(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 3:45 a.m. The New England Seismic Network estimated the magnitude at 4.8 on the open-ended 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 also stated that aftershocks 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 occurring somewhere in New England are small be worldwide standards. The chances that a potentially damaging earthquake, of equal or greater value that 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

1993

7.0 STATION EVENT DATA

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

7.1 EVENTS SUMMARY

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

7.1 EVENTS SUMMARY

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

Miniscenario	Approximate Time	Event	Location	Initiation
7.2.1	0300	Failure of the S/U Transformer Lockout relay	Start-Up Transformers & Control Room	OSC Controller
7.2.2	0345	Earthquake Damage Inspection	Various Locations in Reactor Building	Simulator Controller, OSC Controller
7.2.3	0345	Loss of Power to Bus DC-3A	Cable Vault Room	Simulator Response
7.2.4	0630	Shifting CRD Flow Control Valve	CRD Flow Control Station	Simulator Response
7.2.5	0630	Local Actuation of SLC Squib Valves	Reactor Building El. 318'	Simulator Response
7.2.6	0700	"B" Diesel Generator Trip	"B" Diesel Generator Room	Simulator Response
7.2.7	0900	Loss of Electrical Bus #7	Turbine Building	OSC Controller
7.2.8	0900	Investigation of Manual Isolation of Hardened Vent MOV	Reactor Building	OSC Controller

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

7.2 EVENT MINISCENARIOS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

7.2.1 Miniscenario - Failure of the Start-Up Transformer's 86ST Relay

I. General Description

At approximately 0300, an internal failure in the lockout relay for the Start-Up (S/U) Transformer results in tripping of both S/U Transformers. This results in a number of alarms on CRP 9-8 associated with the S/U Transformers. In addition, the respective circuit breakers will trip to isolate the S/U Transformers from the grid.

II. Description of Player Responses/Observations/Corrective Actions

The Shift Supervisor should dispatch the outside AO to the S/U Transformers to investigate the loss of the S/U Transformers. The Control Room crew investigating the S/U Transformer alarms will be informed by the Observer that the lockout switch appears to be open. Further investigation reveals the lockout relay has been damaged and will require replacement. The AO should report this information to the Simulator Control Room (SCR).

The Control Room should request Electrical Maintenance to investigate the failure and return the S/U Transformers to service as soon as practicable. This repair will not be accomplished before 0630 (the S/U Transformers must not be available to allow for the subsequent Loss of Normal Power).

III. Event Closeout

This activity will be closed out when the AO reports his observations to the Shift Supervisor in the SCR and a repair team has replaced the 86ST relay in the Control Room.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

IV. Messages

All information will be provided verbally by the appropriate controller.

Message Number	Approximate Time	Basic Description
7.2.1-1	0315	Observation of the lockout switch
7.2.1-2	0330	Observation of the lockout 86ST relay
7.2.1-3	0350	Results of internal investigation by Electricians

MESSAGES TO BE DEVELOPED FOLLOWING
REVIEW OF BASIC SCENARIO OUTLINE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

7.2.2 Miniscenario - Earthquake Damage Inspection

I. General Description

At approximately 0345, an earthquake is sensed on-site. Upon determination that a seismic event has occurred, the SCR should initiate a Seismic Damage Indication (SDI) walkdown in accordance with OP 3127. In addition, I&C personnel will be asked to implement OP 4396. This will provide the SS/PED with the OBE status and CAV numbers.

II. Description of Player Responses/Observations/Corrective Actions

The SCR should initiate the SDI walkdown (after verifying plant stability) following the guidance established in OP 3127, Attachment A. OSC Observers shall accompany anyone assigned to conduct an SDI walkdown. When I&C personnel become available, the SS/PED will request OBE status. The I&C personnel will retrieve the seismic data using OP 4396, Appendix A. The data sheet will be given to the SS/PED.

III. Event Closeout

This event will be terminated when all messages have been transmitted to the SCR. Additional information regarding damage to equipment will be contained in separate miniscenarios, as appropriate to the scenario.

IV. Messages

All information will be provided verbally by the assigned Evaluator.

Message Number	Approximate Time	Basic Description
7.2.2-1	0345	Steam Leak from SUH-18 (Rx Bldg 345')
7.2.2-2	0345	Movement of RBAC-1C (Rx Bldg 345')
7.2.2-3	0345	Concrete Block wall next to RBCCW pumps (Rx Bldg 303')
7.2.2-4	0345	Leak from RRU-10 (Rx Bldg 280')
7.2.2-5	0355	Seismic Monitor Data

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

MESSAGES TO BE DEVELOPED FOLLOWING
REVIEW OF BASIC SCENARIO OUTLINE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

7.2.3 Miniscenario - Loss of Power to Bus DC-3A

I. General Description

During the earthquake, the feeder breaker for Bus DC-3A experiences excessive movement, resulting in the breaker opening, causing a loss of Control Room Alarms associated with CRP 9-3, 9-4, 9-5, 9-6 and 9-8. The SS/PED should dispatch an AO to the Cable Vault to investigate the loss of power.

II. Description of Player Responses/Observations/Corrective Actions

Upon recognition that a loss of Control Room annunciators has occurred, the SS/PED should dispatch an AO or CRO to the Cable Vault to investigate the loss of power. Upon arrival, he determines that there may be internal damage in the feeder breaker to DC-3A. There is an odor of ozone in the immediate area of the breaker. He notifies the SCR and requests permission to manually transfer the supply to DC-3A from DC-1. Electrical Maintenance personnel should be dispatched to open the breaker and inspect the internal components. When the panel is exposed, there is evidence of a direct short from the trip coil to the breaker housing which resulted in the breaker tripping. The trip coil will need to be replaced, tested and put back in service before the breaker can be returned to service.

III. Event Closeout

This activity will be terminated when Maintenance personnel identify the fault and walkthrough the actions required to procure, install, test and return the breaker to service. The feed for DC-3A will be restored upon manual operation of the transfer switch.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

V. Messages

All information will be provided verbally by the appropriate controller.

Message Number	Approximate Time	Basic Description
7.2.3-1	0345	Loss of alarms on CRP 9-3, 9-5, 9-6 and 9-8
7.2.3-2	0355	Investigation of DC-3A feeder breaker
7.2.3-3	0545	Completion of trip coil replacement

MESSAGES TO BE DEVELOPED FOLLOWING
REVIEW OF BASIC SCENARIO OUTLINE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

7.2.4 Miniscenario - Shifting CRD Flow Control Valve

I. General Description

As soon as the SCR Operators realize an ATWS condition exists, they will initiate activites to bring the reactor to a shutdown condition. Among the options that may be pursued would be to manually drive the control rods into the core. If this is attempted, the rod(s) selected will fail to move.

II. Description of Player Responses/Observations/Corrective Actions

After CRD-56 is shut, the SCR Operator will attempt to manually drive control rods, he should observe drive flow and positive indication that the selected rod is moving. When this is not observed, an AO should be sent to the CRD Flow Control station to investigate the problem. When the AO indicates to the Observer what he is looking for, the Observer will inform the AO that the CRD Flow Control Valve is shut and there is no air pressure to the valve. This information should be passed on to the SCR Operators. The AO should be directed to shift FCVs in accordance with OP 2111. THIS ACTIVITY SHALL BE SIMULATED. When the AO has discussed this procedure with the Observer, completion of the task may be reported to the SCR.

III. Event Closeout

This event will be terminated when the AO successfully demonstrates the actions necessary to shift the CRD Flow Control Valves and made an appropriate report to the Control Room.

IV. Messages

All information will be provided verbally by the appropriate controller.

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7.2.5 Miniscenario - Local Actuation of SLC Squib Valves

I. General Description

At approximately 0630, excessive turbine vibration causes a turbine trip with a resulting reactor scram signal. The reactor will fail to complete the required scram resulting in an ATWS condition. The SCR operator will elect to inject SLC from the reactor control panel using the keylock control switches.

II. Description of Player Responses/Observations/Corrective Actions

Upon operation of the keylock switches, the operator will not receive either of the positive indications that SLC has successfully fired. He will not receive the alarm indicating a loss of continuity through the explosive charge, nor will he receive the flow indicating light. At this point the operator should report to the SS/PED that SLC failed to actuate from the control board. An AO should be dispatched to manually initiate SLC per OP 3101, Appendix G. This requires the AO to obtain a battery and appropriate electrical leads to attach to the firing mechanism of each valve. **THESE ACTIONS WILL BE SIMULATED**. When this task has been completed, the AO should report back to the SS/PED to verify actuation.

III. Event Closeout

This activity will be closed out when the AO reports that the SLC explosive primers have been detonated in accordance with OP 3101, Appendix G and the SCR has positive indication of SLC injection.

IV. Messages

All information will be provided verbally by the appropriate controller.

Message Number	Approximate Time	Basic Description
7.2.5-1	0650	Indications of local actuation of SLC

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MESSAGES TO BE DEVELOPED FOLLOWING
REVIEW OF BASIC SCENARIO OUTLINE

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7.2.6 Miniscenario - "B" Diesel Generator Trip

I. General Description

At approximately 0700, the "B" Diesel Generator Jacket Cooling temperature Hi/Low alarm actuates, followed shortly after by a trip of the Diesel Generator. The SCR will dispatch an AO to investigate the alarm and subsequent trip.

II. Description of Player Responses/Observations/Corrective Actions

The AO dispatched to the "B" Diesel Generator room will find abnormally high lube oil temperatures, and jacket cooling water temperatures are higher than normal. The AO will be informed by the observer that ambient temperatures in the area are noticeably higher than normal, particularly in the area around FCV-104-28B. If the AO climbs up to the FCV-104-28B valve to determine valve position, the observer will state that the valve indicates "shut". This information should be conveyed to the Control Room, and subsequently to the TSC. The TSC should request the OSC to dispatch I&C and/or maintenance personnel to the "B" Diesel Generator room. When these personnel attempt to manipulate FCV-104-28B, it frees up the shaft binding and the valve opens.

III. Event Closeout

The event will be terminated when the OSC sends personnel to manipulate the valve and it opens. This allows normal service water flow to be restored to the Diesel Generator Auxiliary Systems.

IV. Messages

All information will be communicated verbally by the observer. Responses will be appropriate to the activities of the players.

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7.2.7 Miniscenario - Loss of Electrical Bus #7

I. General Description

Sometime between 0700 and 0800, a spurious trip of the instantaneous overcurrent relay (K50) in breaker 27 occurs. This relay will cause breaker 27 to open, and on interlock the feeder breaker 77 will also open. The cause of the initial fault in the 27 breaker is postulated to be weakened spring fingers of the K50 relay, which failed some time after the jolting experienced during the earthquake. By procedure an electrical maintenance team should be dispatched to investigate the problem. If the operating crew attempts to cross-tie using 6T7 breaker to feed bus #7, the green light will go out and neither the red or amber light will illuminate. The 6T7 breaker does not close. The magnitude of the problem will not be realized until approximately 0900 when the lack of power on Bus #7 prevents closure of the hardened vent rupture disk isolation valve to terminate a radioactive release to the atmosphere. Once power is restored to Bus #7, the release may be terminated.

II. Description of Player Responses/Observations/Corrective Actions

The team sent from the OSC to investigate Bus #7 will go to the switchgear room to breaker 27. The team will be informed by the observer that there is an instantaneous overcurrent indicating flag showing on one phase. The maintenance team will follow standard procedure to ensure the bus is de-energized and attempt to locate any grounds using a megger. Results of these activities will reveal that no grounds exist on the bus. When the 6T7 breaker switch is operated from the SCR, fuses FU 30 and FU 6 are blown due to an electrical fault in the DC control circuit. The closing coil is burned up. The red, amber and green indicating lights for breaker 6T7 on CRP 9-8 and at the breaker are not lit due to lack of power. The team will pursue

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energizing Bus #7, taking appropriate ground readings as each step in the evolution is completed. Ultimately, Bus #7 will be returned to service.

III. Event Closeout

Once the maintenance team determines the problem and completes appropriate corrective actions to restore power to Bus #7, the event is terminated. This has to be coordinated with the Exercise Coordinator to ensure sufficient time has elapsed to produce the resultant radioactive release, consistent with the established sequence of events.

IV. Messages

All information will be communicated verbally by the observer. The observer must be prepared to extend the player response to be consistent with the established exercise sequence of events. Responses will be appropriate to the activities of the players.

Message Number	Approximate Time	Basic Description
7.2.7-1	0730	Observations at breaker 27
7.2.7-2	0735	6T7 breaker fuse conditions
7.2.7-3	0735	6T7 breaker indicating light status
7.2.7-4	0800	Electrical bus meggar readings

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7.2.8 Miniscenario - Investigation of Manual Isolation of Hardened Vent MOV

I. General Description

At about 0900, the primary containment pressure will reach approximately 5 psig due to the small steam leak in the drywell. Drywell pressure causes the rupture disk to fail, thereby venting the containment directly to the stack (failure of the rupture disk is due to weakening imposed due to the earthquake). The operators may attempt to shut the hardened vent isolation MOV, but power is not available to the MOV due to Bus #7 being de-energized.

II. Description of Player Responses/Observations/Corrective Actions

A team may be sent from the OSC to manually shut the hardened vent isolation valve. This valve is physically located on the south wall of the Reactor Building, elevation 252'. When the team reaches this location, they will encounter high radiation levels in the general area (refer to Table 9.3-5 and Figure 9.3-5) and extremely high dose rates at the valve (50 to 100 R/hr). The team should immediately back away from the area and inform the TSC of this situation.

III. Event Closeout

This event will be terminated when the team informs the TSC of the general area dose rates and they are directed to return to the OSC. Manual isolation of the hardened vent line will not be possible due to mechanical failure of the manual operator and inhibited by elevated dose rates in the area.

IV. Messages

All information will be communicated verbally by the observer. The observer must be prepared to extend the player response to be consistent with the established exercise sequence of events. Responses will be appropriate to the activities of the players.

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8.0 OPERATIONAL DATA

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

8.0 OPERATIONAL DATA

ITEM	PANEL	INSTR. ID	DESCRIPTION	SCENARIO TIME / CLOCK TIME / UNITS	00:00 / 02:45	00:15 / 03:00	00:30 / 03:15	00:45 / 03:30	01:00 / 03:45
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	1	1	1	1	1
3	9-3	FI-10-139B	RHR B FLOW	GPM	1	1	1	1	1
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	17	17	17	17	17
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	17	17	17	17	17
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	65	65	65	65	65
10	9-4	FI-12-141B	RWCU FLOW	GPM	65	65	65	65	65
11	9-4	2-165A	RX COOLANT TEMP	DEG F	527	527	527	527	527
12	9-4	2-165B	RX COOLANT TEMP	DEG F	527	527	527	527	527
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	29.7	29.7	29.7	29.7	29.7
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	29.7	29.7	29.7	29.7	29.7
15	9-5	7-46A	APRM/IRM A	%	99	99	99	99	99
16	9-5	7-46B	APRM/IRM B	%	100	100	100	100	100
17	9-5	7-46C	APRM/IRM C	%	98	98	98	98	98
18	9-5	7-46D	APRM/IRM D	%	99	99	99	99	99
19	9-5	7-46E	APRM/IRM E	%	100	100	100	100	100
20	9-5	7-46F	APRM/IRM F	%	100	100	100	100	100
21	9-5	7-43A	SRM A	CPS	.383E+06	.383E+06	.383E+06	.383E+06	.383E+06
22	9-5	7-43B	SRM B	CPS	.457E+06	.457E+06	.457E+06	.457E+06	.457E+06
23	9-5	7-43C	SRM C	CPS	.515E+06	.515E+06	.515E+06	.515E+06	.515E+06
24	9-5	7-43D	SRM D	CPS	.429E+06	.429E+06	.429E+06	.429E+06	.429E+06
25	9-5	2-3-95	CORE FLOW	MLB/HR	46	46	46	46	46
26	9-5	2-3-95	CORE DP	PSID	18	18	18	18	18
27	9-5	FI-3-310	CRD FLOW	GPM	46.6	46.6	46.6	46.6	46.6
28	9-5	6-96	WIDE RANGE PRESS	PSIG	1007	1007	1007	1007	1007
29	9-5	6-96	NAR RANGE PRESS	PSIG	1008	1008	1008	1008	1008
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	6.4	6.4	6.4	6.4	6.4
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	6.4	6.4	6.4	6.4	6.4
32	9-5	6-98	NAR RANGE LEVEL	INCHES	161	161	161	161	161
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	481	481	481	481	481
34	9-6	LI-107-5	CST LEVEL	%	49	49	49	49	49
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	60	60	60	60	60
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	58	58	58	58	58
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	1.7	1.7	1.7	1.7	1.7
38	9-8		D/G A BKR		OPEN	OPEN	OPEN	OPEN	OPEN
39	9-8		D/G B BKR		OPEN	OPEN	OPEN	OPEN	OPEN
40	9-23	16-19-33A/C	TORUS TEMP	DEG F	78	78	78	78	78
41	9-25	LI-46A	TORUS LEVEL	FEET	11.05	11.05	11.05	11.05	11.05
42	9-25	LI-46B	TORUS LEVEL	FEET	11.05	11.05	11.05	11.05	11.05
43	9-25	TR-16-19-44	TORUS PRESS	PSIA	14.6	14.6	14.6	14.6	14.6
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA	17	17	17	17	17
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	1.94	1.94	1.94	1.94	1.94
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	120	120	120	120	120
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-1.62	-1.62	-1.62	-1.62	-1.62
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-1.62	-1.62	-1.62	-1.62	-1.62
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	8	8	8	8	8
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	0	0	0	0	0
51	CAD		DW/TORUS O2 CONC	%	1.14	1.14	1.14	1.14	1.14

8.0 OPERATIONAL DATA

ITEM	PANEL	INSTR. ID	DESCRIPTION	SCENARIO TIME / CLOCK TIME / UNITS	01:15 / 04:00	01:30 / 04:15	01:45 / 04:30	02:00 / 04:45	02:15 / 05:00
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	1	1	1	1	1
3	9-3	FI-10-139B	RHR B FLOW	GPM	1	1	1	1	1
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	17	17	17	17	17
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	17	17	17	17	17
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	65	65	65	65	65
10	9-4	FI-12-141B	RWCU FLOW	GPM	65	65	65	65	65
11	9-4	2-165A	RX COOLANT TEMP	DEG F	527	527	527	527	527
12	9-4	2-165B	RX COOLANT TEMP	DEG F	527	527	527	527	527
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	29.7	29.7	29.7	29.7	29.7
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	29.7	29.7	29.7	29.7	29.7
15	9-5	7-46A	APRM/IRM A	%	99	99	99	99	99
16	9-5	7-46B	APRM/IRM B	%	100	100	100	100	100
17	9-5	7-46C	APRM/IRM C	%	98	98	98	98	98
18	9-5	7-46D	APRM/IRM D	%	99	99	99	99	99
19	9-5	7-46E	APRM/IRM E	%	100	100	100	100	100
20	9-5	7-46F	APRM/IRM F	%	100	100	100	100	100
21	9-5	7-43A	SRM A	CPS	.383E+06	.383E+06	.383E+06	.383E+06	.383E+06
22	9-5	7-43B	SRM B	CPS	.457E+06	.457E+06	.457E+06	.457E+06	.457E+06
23	9-5	7-43C	SRM C	CPS	.515E+06	.515E+06	.515E+06	.515E+06	.515E+06
24	9-5	7-43D	SRM D	CPS	.429E+06	.429E+06	.429E+06	.429E+06	.429E+06
25	9-5	2-3-95	CORE FLOW	MLB/HR	46	46	46	46	46
26	9-5	2-3-95	CORE DP	PSID	18	18	18	18	18
27	9-5	FI-3-310	CRD FLOW	GPM	46.6	46.6	46.6	46.6	46.6
28	9-5	6-96	WIDE RANGE PRESS	PSIG	1007	1007	1007	1007	1007
29	9-5	6-96	NAR RANGE PRESS	PSIG	1008	1008	1008	1008	1008
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	6.4	6.4	6.4	6.4	6.4
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	6.4	6.4	6.4	6.4	6.4
32	9-5	6-98	NAR RANGE LEVEL	INCHES	161	161	161	161	161
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	481	481	481	481	481
34	9-6	LI-107-5	CST LEVEL	%	49	49	49	49	49
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	60	60	60	60	60
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	58	58	58	58	58
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	1.7	1.7	1.7	1.7	1.7
38	9-8		D/G A BKR		OPEN	OPEN	OPEN	OPEN	OPEN
39	9-8		D/G B BKR		OPEN	OPEN	OPEN	OPEN	OPEN
40	9-23	16-19-33A/C	TORUS TEMP	DEG F	78	78	78	78	78
41	9-25	LI-46A	TORUS LEVEL	FEET	11.05	11.05	11.05	11.05	11.05
42	9-25	LI-46B	TORUS LEVEL	FEET	11.05	11.05	11.05	11.05	11.05
43	9-25	TR-16-19-44	TORUS PRESS	PSIA	14.6	14.6	14.6	14.6	14.6
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA	17	17	17	17	17
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	1.94	1.94	1.94	1.94	1.94
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	120	120	120	120	120
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-1.62	-1.62	-1.62	-1.62	-1.62
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-1.62	-1.62	-1.62	-1.62	-1.62
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	8	8	8	8	8
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	0	0	0	0	0
51	CAD		DW/TORUS O2 CONC	%	1.14	1.14	1.14	1.14	1.14

8.0 OPERATIONAL DATA

ITEM	PANEL	INSTR. ID	DESCRIPTION	SCENARIO TIME / CLOCK TIME / UNITS	02:30 / 05:15	02:45 / 05:30	03:00 / 05:45	03:15 / 06:00	03:30 / 06:15
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	1	1	1	1	1
3	9-3	FI-10-139B	RHR B FLOW	GPM	1	1	1	1	1
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	17	17	17	17	17
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	17	17	17	17	17
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	65	65	65	65	65
10	9-4	FI-12-141B	RWCU FLOW	GPM	65	65	65	65	65
11	9-4	2-165A	RX COOLANT TEMP	DEG F	527	527	527	527	527
12	9-4	2-165B	RX COOLANT TEMP	DEG F	527	527	527	527	527
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	29.7	29.7	29.7	29.7	29.7
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	29.7	29.7	29.7	29.7	29.7
15	9-5	7-46A	APRM/IRM A	%	99	99	99	99	99
16	9-5	7-46B	APRM/IRM B	%	100	100	100	100	100
17	9-5	7-46C	APRM/IRM C	%	98	98	98	98	98
18	9-5	7-46D	APRM/IRM D	%	99	99	99	99	99
19	9-5	7-46E	APRM/IRM E	%	100	100	100	100	100
20	9-5	7-46F	APRM/IRM F	%	100	100	100	100	100
21	9-5	7-43A	SRM A	CPS	.383E+06	.383E+06	.383E+06	.383E+06	.383E+06
22	9-5	7-43B	SRM B	CPS	.457E+06	.457E+06	.457E+06	.457E+06	.457E+06
23	9-5	7-43C	SRM C	CPS	.515E+06	.515E+06	.515E+06	.515E+06	.515E+06
24	9-5	7-43D	SRM D	CPS	.429E+06	.429E+06	.429E+06	.429E+06	.429E+06
25	9-5	2-3-95	CORE FLOW	MLB/HR	46	46	46	46	46
26	9-5	2-3-95	CORE DP	PSID	18	18	18	18	18
27	9-5	FI-3-310	CRD FLOW	GPM	46.6	46.6	46.6	46.6	46.6
28	9-5	6-96	WIDE RANGE PRESS	PSIG	1007	1007	1007	1007	1007
29	9-5	6-96	NAR RANGE PRESS	PSIG	1008	1008	1008	1008	1008
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	6.4	6.4	6.4	6.4	6.4
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	6.4	6.4	6.4	6.4	6.4
32	9-5	6-98	NAR RANGE LEVEL	INCHES	161	161	161	161	161
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	481	481	481	481	481
34	9-6	LI-107-5	CST LEVEL	%	49	49	49	49	49
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	60	60	60	60	60
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	58	58	58	58	58
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	1.7	1.7	1.7	1.7	1.7
38	9-8		D/G A BKR		OPEN	OPEN	OPEN	OPEN	OPEN
39	9-8		D/G B BKR		OPEN	OPEN	OPEN	OPEN	OPEN
40	9-23	16-19-33A/C	TORUS TEMP	DEG F	78	78	78	78	78
41	9-25	LI-46A	TORUS LEVEL	FEET	11.05	11.05	11.05	11.05	11.05
42	9-25	LI-46B	TORUS LEVEL	FEET	11.05	11.05	11.05	11.05	11.05
43	9-25	TR-16-19-44	TORUS PRESS	PSIA	14.6	14.6	14.6	14.6	14.6
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA	17	17	17	17	17
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	1.94	1.94	1.94	1.94	1.94
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	120	120	120	120	120
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-1.62	-1.62	-1.62	-1.62	-1.62
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-1.62	-1.62	-1.62	-1.62	-1.62
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	8	8	8	8	8
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	0	0	0	0	0
51	CAD		DW/TORUS O2 CONC.	%	1.14	1.14	1.14	1.14	1.14

8.0 OPERATIONAL DATA

ITEM	PANEL	INSTR. ID	DESCRIPTION	UNITS	SCENARIO TIME 03:45 / CLOCK TIME 06:30	SCENARIO TIME 04:00 / CLOCK TIME 06:45	SCENARIO TIME 04:15 / CLOCK TIME 07:00	SCENARIO TIME 04:30 / CLOCK TIME 07:15	SCENARIO TIME 04:45 / CLOCK TIME 07:30
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	1	5864	5864	5864	5864
3	9-3	FI-10-139B	RHR B FLOW	GPM	1	5576	5576	5576	5576
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	17	17	16	16	16
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	17	17	16	16	16
8	9-4	FI-13-91	RCIC FLOW	GPM	0	417	412	414	399
9	9-4	FI-12-141A	RWCU FLOW	GPM	65	0	0	0	0
10	9-4	FI-12-141B	RWCU FLOW	GPM	65	0	0	0	0
11	9-4	2-165A	RX COOLANT TEMP	DEG F	527	461	395	366	394
12	9-4	2-165B	RX COOLANT TEMP	DEG F	527	461	395	366	394
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	29.8	0	0	0	0
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	29.7	0	0	0	0
15	9-5	7-46A	APRM/IRM A	%	100	2	0	0	0
16	9-5	7-46B	APRM/IRM B	%	100	2	0	0	0
17	9-5	7-46C	APRM/IRM C	%	99	2	0	0	0
18	9-5	7-46D	APRM/IRM D	%	100	2	0	0	0
19	9-5	7-46E	APRM/IRM E	%	100	2	0	0	0
20	9-5	7-46F	APRM/IRM F	%	100	2	0	0	0
21	9-5	7-43A	SRM A	CPS	.386E+06	.377E+02	.300E+01	.300E+01	.300E+01
22	9-5	7-43B	SRM B	CPS	.460E+06	.403E+02	.300E+01	.300E+01	.300E+01
23	9-5	7-43C	SRM C	CPS	.519E+06	.370E+02	.300E+01	.300E+01	.300E+01
24	9-5	7-43D	SRM D	CPS	.432E+06	.391E+02	.300E+01	.300E+01	.300E+01
25	9-5	2-3-95	CORE FLOW	MLB/HR	46	16	16	12	12
26	9-5	2-3-95	CORE DP	PSID	18	3	3	3	3
27	9-5	FI-3-310	CRD FLOW	GPM	47	47	46.4	47	47
28	9-5	6-96	WIDE RANGE PRESS	PSIG	1008	784	973	819	444
29	9-5	6-96	NAR RANGE PRESS	PSIG	1008	DSL*	DSL*	DSL*	DSL*
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	6.4	0	0	0	0
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	6.4	0	0	0	0
32	9-5	6-98	NAR RANGE LEVEL	INCHES	161	-13	-2	40	106
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	486	-2	-2	49	136
34	9-6	LI-107-5	CST LEVEL	%	49	48	47	46	45
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	60	63	63	63	59
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	58	63	63	63	58
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	1.7	11.1	17.3	21.5	24.2
38	9-8		D/G A BKR		OPEN	CLOSED	CLOSED	CLOSED	CLOSED
39	9-8		D/G B BKR		OPEN	CLOSED	OPEN	OPEN	OPEN
40	9-23	16-19-33A/C	TORUS TEMP	DEG F	78	122	125	126	124
41	9-25	LI-46A	TORUS LEVEL	FEET	11.06	11.28	11.31	11.32	11.32
42	9-25	LI-46B	TORUS LEVEL	FEET	11.06	11.28	11.31	11.32	11.32
43	9-25	TR-16-19-44	TORUS PRESS	PSIA	14.6	16.1	16.2	16.3	16.3
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA	17	17	16	16	16
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	1.98	0.4	0.3	0	0
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	120	119	117	117	116
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-1.62	-0.68	-0.68	-0.68	-0.68
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-1.62	-0.68	-0.68	-0.68	-0.68
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	0	1500	1500	1500	1500
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	0	1500	1500	1500	1500
51	CAD		DW/TORUS O2 CONC.	%	1.14	1.14	1.14	1.14	1.14

* = Down Scale Low

8.0 OPERATIONAL DATA

ITEM	PANEL	INSTR. ID	DESCRIPTION	SCENARIO TIME / CLOCK TIME / UNITS	05:00 / 07:45	05:15 / 08:00	05:30 / 08:15	05:45 / 08:30	06:00 / 08:45
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	5864	5864	5864	5864	5864
3	9-3	FI-10-139B	RHR B FLOW	GPM	5576	5576	5576	5576	5576
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	16	16	16	16	19
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	16	16	16	16	19
8	9-4	FI-13-91	RCIC FLOW	GPM	392	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	0	0	0	0	0
10	9-4	FI-12-141B	RWCU FLOW	GPM	0	0	0	0	0
11	9-4	2-165A	RX COOLANT TEMP	DEG F	397	420	441	442	410
12	9-4	2-165B	RX COOLANT TEMP	DEG F	397	420	441	442	410
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	0	0	0	0	0
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	0	0	0	0	0
15	9-5	7-46A	APRM/IRM A	%	0	0	0	0	0
16	9-5	7-46B	APRM/IRM B	%	0	0	0	0	0
17	9-5	7-46C	APRM/IRM C	%	0	0	0	0	0
18	9-5	7-46D	APRM/IRM D	%	0	0	0	0	0
19	9-5	7-46E	APRM/IRM E	%	0	0	0	0	0
20	9-5	7-46F	APRM/IRM F	%	0	0	0	0	0
21	9-5	7-43A	SRM A	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
22	9-5	7-43B	SRM B	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
23	9-5	7-43C	SRM C	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
24	9-5	7-43D	SRM D	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
25	9-5	2-3-95	CORE FLOW	MLB/HR	12	12	12	12	12
26	9-5	2-3-95	CORE DP	PSID	3	3	3	3	3
27	9-5	FI-3-310	CRD FLOW	GPM	47	47	47	47	112
28	9-5	6-96	WIDE RANGE PRESS	PSIG	403	446	495	500	480
29	9-5	6-96	NAR RANGE PRESS	PSIG	DSL*	DSL*	DSL*	DSL*	DSL*
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	0	0	0	0	0
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	0	0	0	0	0
32	9-5	6-98	NAR RANGE LEVEL	INCHES	169	193	212	150	118
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	202	223	238	185	160
34	9-6	LI-107-5	CST LEVEL	%	44	44	44	44	40
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	59	58	58	58	82
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	59	58	58	58	82
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	26.1	27.4	28.2	28.8	24
38	9-8		D/G A BKR		CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
39	9-8		D/G B BKR		OPEN	OPEN	OPEN	OPEN	OPEN
40	9-23	16-19-33A/C	TORUS TEMP	DEG F	123	120	120	123	164
41	9-25	LI-46A	TORUS LEVEL	FEET	11.32	11.31	11.32	11.35	11.63
42	9-25	LI-46B	TORUS LEVEL	FEET	11.32	11.31	11.32	11.35	11.63
43	9-25	TR-16-19-44	TORUS PRESS	PSIA	16.8	17.2	17.8	18.2	18.7
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA	17	17	18	18	19
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	0	0.01	0.01	0	0.08
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	115	115	115	114	136
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-0.68	-0.68	-0.68	-0.68	-0.68
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-0.68	-0.68	-0.68	-0.68	-0.68
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	1500	1500	1500	1500	1500
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	1500	1500	1500	1500	1500
51	CAD		DW/TORUS O2 CONC.	%	1.14	1.14	1.14	1.14	1.13

* = Down Scale Low

8.0 OPERATIONAL DATA

				SCENARIO TIME	06:15	06:30	06:45	07:00	07:15
		INSTR.		CLOCK TIME	09:00	09:15	09:30	09:45	10:00
ITEM	PANEL	ID	DESCRIPTION	UNITS					
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	5864	5874	5873	5873	5873
3	9-3	FI-10-139B	RHR B FLOW	GPM	5576	5585	5585	5585	5585
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	19	18	18	17	17
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	19	18	18	17	17
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	0	0	0	0	0
10	9-4	FI-12-141B	RWCU FLOW	GPM	0	0	0	0	0
11	9-4	2-165A	RX COOLANT TEMP	DEG F	400	419	423	426	426
12	9-4	2-165B	RX COOLANT TEMP	DEG F	402	419	423	426	426
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	0	0	0	0	0
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	0	0	0	0	0
15	9-5	7-46A	APRM/IRM A	%	0	0	0	0	0
16	9-5	7-46B	APRM/IRM B	%	0	0	0	0	0
17	9-5	7-46C	APRM/IRM C	%	0	0	0	0	0
18	9-5	7-46D	APRM/IRM D	%	0	0	0	0	0
19	9-5	7-46E	APRM/IRM E	%	0	0	0	0	0
20	9-5	7-46F	APRM/IRM F	%	0	0	0	0	0
21	9-5	7-43A	SRM A	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
22	9-5	7-43B	SRM B	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
23	9-5	7-43C	SRM C	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
24	9-5	7-43D	SRM D	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
25	9-5	2-3-95	CORE FLOW	MLB/HR	12	12	12	12	12
26	9-5	2-3-95	CORE DP	PSID	3	3	3	3	3
27	9-5	FI-3-310	CRD FLOW	GPM	112	112	47	47	47
28	9-5	6-96	WIDE RANGE PRESS	PSIG	450	450	353	377	376
29	9-5	6-96	NAR RANGE PRESS	PSIG	DSL*	DSL*	DSL*	DSL*	DSL*
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	0	0	0	0	0
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	0	0	0	0	0
32	9-5	6-98	NAR RANGE LEVEL	INCHES	137	161	161	155	147
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	171	195	198	190	182
34	9-6	LI-107-5	CST LEVEL	%	40	41	41	41	41
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	82	82	82	82	82
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	82	82	82	82	82
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	26.1	27.4	28.3	28.9	29.2
38	9-8		D/G A BKR		CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
39	9-8		D/G B BKR		OPEN	OPEN	OPEN	OPEN	OPEN
40	9-23	16-19-33A/C	TORUS TEMP	DEG F	160	158	157	156	155
41	9-25	LI-46A	TORUS LEVEL	FEET	11.62	11.63	11.64	11.65	11.67
42	9-25	LI-46B	TORUS LEVEL	FEET	11.62	11.63	11.64	11.65	11.67
43	9-25	TR-16-19-44	TORUS PRESS	PSIA	18.6	18.3	17.8	17.2	16.7
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA	19	18	18	17	17
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	0.17	0.13	0.09	0.09	0.07
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	152	161	165	168	170
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-0.68	-0.68	-0.68	-0.68	-0.68
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-0.68	-0.68	-0.68	-0.68	-0.68
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	1500	1500	1500	1500	1500
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	1500	1500	1500	1500	1500
51	CAD		DW/TORUS O2 CONC.	%	1.06	0.99	0.94	0.91	0.88

* = Down Scale Low

8.0 OPERATIONAL DATA

ITEM	PANEL	INSTR. ID	DESCRIPTION	SCENARIO TIME / CLOCK TIME / UNITS	07:30 / 10:15	07:45 / 10:30	08:00 / 10:45	08:15 / 11:00	08:30 / 11:15
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	5873	5874	5873	5873	5873
3	9-3	FI-10-139B	RHR B FLOW	GPM	5585	5585	5585	5585	5585
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	16	16	16	16	16
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	16	16	16	16	16
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	0	0	0	0	0
10	9-4	FI-12-141B	RWCU FLOW	GPM	0	0	0	0	0
11	9-4	2-165A	RX COOLANT TEMP	DEG F	425	423	400	400	398
12	9-4	2-165B	RX COOLANT TEMP	DEG F	425	423	400	400	398
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	0	0	0	0	0
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	0	0	0	0	0
15	9-5	7-46A	APRM/IRM A	%	0	0	0	0	0
16	9-5	7-46B	APRM/IRM B	%	0	0	0	0	0
17	9-5	7-46C	APRM/IRM C	%	0	0	0	0	0
18	9-5	7-46D	APRM/IRM D	%	0	0	0	0	0
19	9-5	7-46E	APRM/IRM E	%	0	0	0	0	0
20	9-5	7-46F	APRM/IRM F	%	0	0	0	0	0
21	9-5	7-43A	SRM A	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
22	9-5	7-43B	SRM B	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
23	9-5	7-43C	SRM C	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
24	9-5	7-43D	SRM D	CPS	.300E+01	.300E+01	.300E+01	.300E+01	.300E+01
25	9-5	2-3-95	CORE FLOW	MLB/HR	12	12	12	12	12
26	9-5	2-3-95	CORE DP	PSID	3	3	3	3	3
27	9-5	FI-3-310	CRD FLOW	GPM	47.1	47	47.1	47	47
28	9-5	6-96	WIDE RANGE PRESS	PSIG	378	386	332	332	332
29	9-5	6-96	NAR RANGE PRESS	PSIG	DSL*	DSL*	DSL*	DSL*	DSL*
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	0	0.2	0	0	0
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	0	0	0	0	0
32	9-5	6-98	NAR RANGE LEVEL	INCHES	140	134	151	147	147
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	175	168	189	182	182
34	9-6	LI-107-5	CST LEVEL	%	41	41	42	41	41
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	82	79	68	66	66
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	82	79	68	66	66
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	29.5	29.5	29.3	29.3	29.2
38	9-8		D/G A BKR		CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
39	9-8		D/G B BKR		CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
40	9-23	16-19-33A/C	TORUS TEMP	DEG F	154	153	152	151	151
41	9-25	LI-46A	TORUS LEVEL	FEET	11.68	11.69	11.69	11.7	11.7
42	9-25	LI-46B	TORUS LEVEL	FEET	11.68	11.69	11.69	11.7	11.7
43	9-25	TR-16-19-44	TORUS PRESS	PSIA	16.2	15.9	15.6	15.6	15.5
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA	16	16	16	16	16
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	0.06	0.06	0.05	0.05	0.05
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	172	175	177	177	177
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-0.68	-0.68	-0.68	-0.68	-0.68
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-0.68	-0.68	-0.68	-0.68	-0.68
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	1500	1500	1500	1500	1500
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	1500	1500	1500	1500	1500
51	CAD		DW/TORUS O2 CONC.	%	0.86	0.84	0.83	0.83	0.82

* = Down Scale Low

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

9.0 RADIOLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

9.1 AREA RADIATION MONITORS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

9.1 AREA RADIATION MONITORS

ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS	SCENARIO TIME 00:00 / CLOCK TIME 02:45	00:15 / 03:00	00:30 / 03:15	00:45 / 03:30	01:00 / 03:45	01:15 / 04:00	01:30 / 04:15	01:45 / 04:30
RMS II-1	9-11	RB/252	RX BLDG HI RADS - N	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-2	9-11	RB/252	RX BLDG HI RADS - S	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-3	9-11	RB/252	TIP RM HI RAD	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
1	9-11	RB/232	SUPP CHAMB RB EXT CW	MR/HR	8	8	8	8	8	8	8	8
2	9-11	RB/252	N PERSONNEL RX BLDG	MR/HR	4	4	4	4	4	4	4	4
3	9-11	RB/252	S EQUIP RR RX BLDG	MR/HR	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
4	9-11	RB/252	RX BLD NEUTRON TIP	MR/HR	5	5	5	5	5	5	5	5
5	9-11	RB/252	PERSONNEL HATCH RX B	MR/HR	520	520	520	520	520	520	520	520
6	9-11	RB/280	ELEV ENTR 280FT RX	MR/HR	8	8	8	8	8	8	8	8
7	9-11	RB/252	CRD REPAIR RX BLDG	MR/HR	12	12	12	12	12	12	12	12
8	9-11	RB/303	ELEV ENTR 303FT RX	MR/HR	4	4	4	4	4	4	4	4
9	9-11	RB/303	H2O CLEANUP RX BLDG	MR/HR	4	4	4	4	4	4	4	4
10	9-11	RB/318	ELEV ENTR 318FT RX	MR/HR	7	7	7	7	7	7	7	7
11	9-11	RB/318	H2O CLEANUP RX BLDG	MR/HR	5	5	5	5	5	5	5	5
12	9-11	RB/345	ELEV ENTR 348FT RX	MR/HR	4	4	4	4	4	4	4	4
14	9-11	RB/345	WEST REFUEL RX BLDG	MR/HR	5	5	5	5	5	5	5	5
15	9-11	RB/345	SPENT FUEL POOL RX	MR/HR	15	15	15	15	15	15	15	15
16	9-11	RB/318	NEW FUEL VAULT RX B	MR/HR	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
17	9-11	RW/252	PUMP RM RADWASTE BL	MR/HR	1	1	1	1	1	1	1	1
18	9-11	RW/252	RADW OPER AREA RW B	MR/HR	1	1	1	1	1	1	1	1
19	9-11	RW/230	PUMP/TANK AREA RW B	MR/HR	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
20	9-11	TB/248	N ACCESS 248FT TURB	MR/HR	2	2	2	2	2	2	2	2
21	9-11	TB/248	MAIN STM VALVE TURB	MR/HR	200	200	200	200	200	200	200	200
22	9-11	TB/232	COND DEMIN TURB BLD	MR/HR	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
23	9-11	TB/252	DECON/MACH SHOP TB	MR/HR	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
24	9-11	TB/272	TURB STM IN TURB BL	MR/HR	9	9	9	9	9	9	9	9
25	9-11	AB/272	VIEW GALLERY CONT RM	MR/HR	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
26	9-11	TB/252	REAR GATE TURB WAREH	MR/HR	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
13	9-11	TB/228	MOIST SEP AREA TURB	MR/HR	150	150	150	150	150	150	150	150

9.1 AREA RADIATION MONITORS

ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS	SCENARIO TIME 02:00 / CLOCK TIME 04:45	02:15 / 05:00	02:30 / 05:15	02:45 / 05:30	03:00 / 05:45	03:15 / 06:00	03:30 / 06:15	03:45 / 06:30
RMS II-1	9-11	RB/252	RX BLDG HI RADS - N	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-2	9-11	RB/252	RX BLDG HI RADS - S	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-3	9-11	RB/252	TIP RM HI RAD	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
1	9-11	RB/232	SUPP CHAMB RB EXT CW	MR/HR	8	8	8	8	8	8	8	8
2	9-11	RB/252	N PERSONNEL RX BLDG	MR/HR	4	4	4	4	4	4	4	4
3	9-11	RB/252	S EQUIP RR RX BLDG	MR/HR	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
4	9-11	RB/252	RX BLD NEUTRON TIP	MR/HR	5	5	5	5	5	5	5	5
5	9-11	RB/252	PERSONNEL HATCH RX B	MR/HR	520	520	520	520	520	520	520	520
6	9-11	RB/280	ELEV ENTR 280FT RX B	MR/HR	8	8	8	8	8	8	8	8
7	9-11	RB/252	CRD REPAIR RX BLDG	MR/HR	12	12	12	12	12	12	12	12
8	9-11	RB/303	ELEV ENTR 303FT RX B	MR/HR	4	4	4	4	4	4	4	4
9	9-11	RB/303	H2O CLEANUP RX BLDG	MR/HR	4	4	4	4	4	4	4	4
10	9-11	RB/318	ELEV ENTR 318FT RX B	MR/HR	7	7	7	7	7	7	7	7
11	9-11	RB/318	H2O CLEANUP RX BLDG	MR/HR	5	5	5	5	5	5	5	5
12	9-11	RB/345	ELEV ENTR 348FT RX B	MR/HR	4	4	4	4	4	4	4	4
14	9-11	RB/345	WEST REFUEL RX BLDG	MR/HR	5	5	5	5	5	5	5	5
15	9-11	RB/345	SPENT FUEL POOL RX B	MR/HR	15	15	15	15	15	15	15	15
16	9-11	RB/318	NEW FUEL VAULT RX B	MR/HR	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
17	9-11	RW/252	PUMP RM RADWASTE BLD	MR/HR	1	1	1	1	1	1	1	1
18	9-11	RW/252	RADW OPER AREA RW B	MR/HR	1	1	1	1	1	1	1	1
19	9-11	RW/230	PUMP/TANK AREA RW B	MR/HR	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
20	9-11	TB/248	N ACCESS 248FT TURB	MR/HR	2	2	2	2	2	2	2	2
21	9-11	TB/248	MAIN STM VALVE TURB	MR/HR	200	200	200	200	200	200	200	200
22	9-11	TB/232	COND DEMIN TURB BLDG	MR/HR	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
23	9-11	TB/252	DECONTAM. TURB BLDG	MR/HR	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
24	9-11	TB/272	TURB STM IN TURB BLD	MR/HR	9	9	9	9	9	9	9	9
25	9-11	AB/272	VIEW GALLERY CONT RM	MR/HR	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
26	9-11	TB/252	REAR GATE TURB WAREH	MR/HR	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
13	9-11	TB/228	MOIST SEP AREA TURB	MR/HR	150	150	150	150	150	150	150	150

9.1 AREA RADIATION MONITORS

ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS	04:00	04:15	04:30	04:45	05:00	05:15	05:30	05:45
				SCENARIO TIME	04:00	04:15	04:30	04:45	05:00	05:15	05:30	05:45
				CLOCK TIME	06:45	07:00	07:15	07:30	07:45	08:00	08:15	08:30
RMS II-1	9-11	RB/252	RX BLDG HI RADS - N	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-2	9-11	RB/252	RX BLDG HI RADS - S	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-3	9-11	RB/252	TIP RM HI RAD	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
1	9-11	RB/232	SUPP CHAMB RB EXT CW	MR/HR	250	500	850	1500	5000	8500	OSH	OSH
2	9-11	RB/252	N PERSONNEL RX BLDG	MR/HR	0.3	0.3	40	90	120	140	165	175
3	9-11	RB/252	S EQUIP RR RX BLDG	MR/HR	0.2	0.2	4	9	12	14	16	17
4	9-11	RB/252	RX BLD NEUTRON TIP	MR/HR	5	5	43	95	120	150	168	180
5	9-11	RB/252	PERSONNEL HATCH RX B	MR/HR	4000	5000	8000	OSH	OSH	OSH	OSH	OSH
6	9-11	RB/280	ELEV ENTR 280FT RX B	MR/HR	5	5	5	5	5	5	5	5
7	9-11	RB/252	CRD REPAIR RX BLDG	MR/HR	4	4	4	4	4	4	4	4
8	9-11	RB/303	ELEV ENTR 303FT RX B	MR/HR	1	1	1	1	1	1	1	1
9	9-11	RB/303	H2O CLEANUP RX BLDG	MR/HR	4	4	4	4	4	4	4	4
10	9-11	RB/318	ELEV ENTR 318FT RX B	MR/HR	3	3	3	3	3	3	3	3
11	9-11	RB/318	H2O CLEANUP RX BLDG	MR/HR	2	2	2	2	2	2	2	2
12	9-11	RB/345	ELEV ENTR 348FT RX B	MR/HR	1	1	1	1	1	1	1	1
14	9-11	RB/345	WEST REFUEL RX BLDG	MR/HR	1	1	1	1	1	1	1	1
15	9-11	RB/345	SPENT FUEL POOL RX B	MR/HR	8	8	8	8	8	8	8	8
16	9-11	RB/318	NEW FUEL VAULT RX B	MR/HR	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3
17	9-11	RW/252	PUMP RM RADWASTE BLD	MR/HR	1	1	1	1	1	1	1	1
18	9-11	RW/252	RADW OPER AREA RW B	MR/HR	1	1	1	1	1	1	1	1
19	9-11	RW/230	PUMP/TANK AREA RW B	MR/HR	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6
20	9-11	TB/248	N ACCESS 248FT TURB	MR/HR	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
21	9-11	TB/248	MAIN STM VALVE TURB	MR/HR	4	4	4	4	4	4	4	4
22	9-11	TB/232	COND DEMIN TURB BLDG	MR/HR	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
23	9-11	TB/252	DECONTAM. TURB BLDG	MR/HR	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
24	9-11	TB/272	TURB STM IN TURB BLD	MR/HR	7	7	7	7	7	7	7	7
25	9-11	AB/272	VIEW GALLERY CONT RM	MR/HR	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
26	9-11	TB/252	REAR GATE TURB WAREH	MR/HR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
13	9-11	TB/228	MOIST SEP AREA TURB	MR/HR	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

9.1 AREA RADIATION MONITORS

ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS	06:00 / 08:45	06:15 / 09:00	06:30 / 09:15	06:45 / 09:30	07:00 / 09:45	07:15 / 10:00	07:30 / 10:15	07:45 / 10:30
				SCENARIO TIME	06:00	06:15	06:30	06:45	07:00	07:15	07:30	07:45
				CLOCK TIME	08:45	09:00	09:15	09:30	09:45	10:00	10:15	10:30
RMS II-1	9-11	RB/252	RX BLDG HI RADS - N	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-2	9-11	RB/252	RX BLDG HI RADS - S	R/HR	<1	1	10	25	25	25	25	25
RMS II-3	9-11	RB/252	TIP RM HI RAD	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
1	9-11	RB/232	SUPP CHAMB RB EXT CW	MR/HR	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
2	9-11	RB/252	N PERSONNEL RX BLDG	MR/HR	175	175	175	175	175	180	185	185
3	9-11	RB/252	S EQUIP RR RX BLDG	MR/HR	17	200	2000	5000	5000	5000	5000	5000
4	9-11	RB/252	RX BLD NEUTRON TIP	MR/HR	180	180	180	180	180	185	190	190
5	9-11	RB/252	PERSONNEL HATCH RX B	MR/HR	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
6	9-11	RB/280	ELEV ENTR 280FT RX B	MR/HR	5	5	5	5	5	5	5	5
7	9-11	RB/252	CRD REPAIR RX BLDG	MR/HR	4	4	4	4	4	4	4	4
8	9-11	RB/303	ELEV ENTR 303FT RX B	MR/HR	1	1	1	1	1	1	1	1
9	9-11	RB/303	H2O CLEANUP RX BLDG	MR/HR	4	4	4	4	4	4	4	4
10	9-11	RB/318	ELEV ENTR 318FT RX B	MR/HR	3	3	3	3	3	3	3	3
11	9-11	RB/318	H2O CLEANUP RX BLDG	MR/HR	2	2	2	2	2	2	2	2
12	9-11	RB/345	ELEV ENTR 348FT RX B	MR/HR	1	1	1	1	1	1	1	1
14	9-11	RB/345	WEST REFUEL RX BLDG	MR/HR	1	1	1	1	1	1	1	1
15	9-11	RB/345	SPENT FUEL POOL RX B	MR/HR	8	8	8	[illegible]	8	8	8	8
16	9-11	RB/318	NEW FUEL VAULT RX B	MR/HR	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
17	9-11	RW/252	PUMP RM RADWASTE BLD	MR/HR	1	1	1	1	1	1	1	1
18	9-11	RW/252	RADW OPER AREA RW B	MR/HR	1	1	1	1	1	1	1	1
19	9-11	RW/230	PUMP/TANK AREA RW B	MR/HR	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
20	9-11	TB/248	N ACCESS 248FT TURB	MR/HR	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
21	9-11	TB/248	MAIN STM VALVE TURB	MR/HR	4	4	4	4	4	4	4	4
22	9-11	TB/232	COND DEMIN TURB BLDG	MR/HR	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
23	9-11	TB/252	DECONTAM. TURB BLDG	MR/HR	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
24	9-11	TB/272	TURB STM IN TURB BLD	MR/HR	7	7	7	7	7	7	7	7
25	9-11	AB/272	VIEW GALLERY CONT RM	MR/HR	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
26	9-11	TB/252	REAR GATE TURB WAREH	MR/HR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
13	9-11	TB/228	MOIST SEP AREA TURB	MR/HR	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

9.1 AREA RADIATION MONITORS

			SCENARIO TIME		08:00	08:15	08:30	08:45	09:00	09:15	09:30	09:45
			CLOCK TIME		10:45	11:00	11:15	11:30	11:45	12:00	12:15	12:30
ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS								
RMS II-1	9-11	RB/252	RX BLDG HI RADS - N	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-2	9-11	RB/252	RX BLDG HI RADS - S	R/HR	10	1	<1	<1	<1	<1	<1	<1
RMS II-3	9-11	RB/252	TIP RM HI RAD	R/HR	<1	<1	<1	<1	<1	<1	<1	<1
1	9-11	RB/232	SUPP CHAMB RB EXT CW	MR/HR	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
2	9-11	RB/252	N PERSONNEL RX BLDG	MR/HR	185	185	185	185	185	185	185	185
3	9-11	RB/252	S EQUIP RR RX BLDG	MR/HR	2000	200	200	200	200	200	200	200
4	9-11	RB/252	RX BLD NEUTRON TIP	MR/HR	190	190	190	190	190	190	190	190
5	9-11	RB/252	PERSONNEL HATCH RX B	MR/HR	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
6	9-11	RB/280	ELEV ENTR 280FT RX B	MR/HR	5	5	5	5	5	5	5	5
7	9-11	RB/252	CRD REPAIR RX BLDG	MR/HR	4	4	4	4	4	4	4	4
8	9-11	RB/303	ELEV ENTR 303FT RX B	MR/HR	1	1	1	1	1	1	1	1
9	9-11	RB/303	H2O CLEANUP RX BLDG	MR/HR	4	4	4	4	4	4	4	4
10	9-11	RB/318	ELEV ENTR 318FT RX B	MR/HR	3	3	3	3	3	3	3	3
11	9-11	RB/318	H2O CLEANUP RX BLDG	MR/HR	2	2	2	2	2	2	2	2
12	9-11	RB/345	ELEV ENTR 348FT RX B	MR/HR	1	1	1	1	1	1	1	1
14	9-11	RB/345	WEST REFUEL RX BLDG	MR/HR	1	1	1	1	1	1	1	1
15	9-11	RB/345	SPENT FUEL POOL RX B	MR/HR	8	8	8	8	8	8	8	8
16	9-11	RB/318	NEW FUEL VAULT RX B	MR/HR	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
17	9-11	RW/252	PUMP RM RADWASTE BLD	MR/HR	1	1	1	1	1	1	1	1
18	9-11	RW/252	RADW OPER AREA RW B	MR/HR	1	1	1	1	1	1	1	1
19	9-11	RW/230	PUMP/TANK AREA RW B	MR/HR	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
20	9-11	TB/248	N ACCESS 248FT TURB	MR/HR	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
21	9-11	TB/248	MAIN STM VALVE TURB	MR/HR	4	4	4	4	4	4	4	4
22	9-11	TB/232	COND DEMIN TURB BLDG	MR/HR	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
23	9-11	TB/252	DECONTAM. TURB BLDG	MR/HR	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
24	9-11	TB/272	TURB STM IN TURB BLD	MR/HR	7	7	7	7	7	7	7	7
25	9-11	AB/272	VIEW GALLERY CONT RM	MR/HR	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
26	9-11	TB/252	REAR GATE TURB WAREH	MR/HR	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
13	9-11	TB/228	MOIST SEP AREA TURB	MR/HR	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

9.2 PROCESS MONITORS

9.2 PROCESS MONITORS

			SCENARIO TIME		00:00	00:15	00:30	00:45	01:00	01:15	01:30	01:45
			CLOCK TIME		02:45	03:00	03:15	03:30	03:45	04:00	04:15	04:30
ARM NO.	PANEL	BLDG/ELV	DESCRIPTION	UNITS								
	9-2	ST/257	STACK GAS MON-GAS 1	CPM	20	20	20	20	20	20	20	20
	9-2	ST/257	STACK GAS MON-GAS 2	CPM	20	20	20	20	20	20	20	20
	9-2	RB/280	CONTAINMENT MON GAS	CPM	535	535	535	535	535	535	535	535
	9-2	RB/280	CONTAINMENT MON-PART	CPM	24981	24981	24981	24981	24981	24981	24981	24981
	9-2	ST/257	STACK HI RANGE	MR/HR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
27	9-2	DW/252	DRYWELL CH A	R/HR	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
28	9-2	DW/252	DRYWELL CH B	R/HR	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
	9-2	RB/280	RX BLDG VENT GAS	CPM	185	185	185	185	185	185	185	185
	9-2	RB/280	RX BLDG VENT - PART	CPM	1478	1478	1478	1478	1478	1478	1478	1478
31	9-10	RB/280	RX BLDG VENT NORTH	MR/HR	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
32	9-10	RB/280	RX BLDG VENT SOUTH	MR/HR	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
453A	9-10	RB/345	SPENT FUEL POOL A	MR/HR	16	16	16	16	16	16	16	16
453B	9-10	RB/345	SPENT FUEL POOL B	MR/HR	16	16	16	16	16	16	16	16
	9-10	RB/256	MAIN STM LINE A	MR/HR	172	172	172	172	172	172	172	172
	9-10	RB/256	MAIN STM LINE B	MR/HR	166	166	166	166	166	166	166	166
	9-10	RB/256	MAIN STM LINE C	MR/HR	168	168	168	168	168	168	168	168
	9-10	RB/256	MAIN STM LINE D	MR/HR	175	175	175	175	175	175	175	175
38	9-10	TB/248	SJAE(AIR EJECTOR)	MR/HR	61	61	61	61	61	61	61	61

NOTE: OSH = Offscale High

9.2 PROCESS MONITORS

ARM NO.	PANEL	BLDG/ELV	DESCRIPTION	UNITS	02:00	02:15	02:30	02:45	03:00	03:15	03:30	03:45
			CLOCK TIME		04:45	05:00	05:15	05:30	05:45	06:00	06:15	06:30
	9-2	ST/257	STACK GAS MON-GAS 1	CPM	20	20	20	20	20	20	20	20
	9-2	ST/257	STACK GAS MON-GAS 2	CPM	20	20	20	20	20	20	20	20
	9-2	RB/280	CONTAINMENT MON GAS	CPM	535	535	535	535	535	535	535	535
	9-2	RB/280	CONTAINMENT MON-PART	CPM	24981	24981	24981	24981	24981	24981	24981	24959
	9-2	ST/257	STACK HI RANGE	MR/HR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
27	9-2	DW/252	DRYWELL CH A	R/HR	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
28	9-2	DW/252	DRYWELL CH B	R/HR	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
	9-2	RB/280	RX BLDG VENT GAS	CPM	185	185	185	185	185	185	185	185
	9-2	RB/280	RX BLDG VENT - PART	CPM	1478	1478	1478	1478	1478	1478	1478	1480
31	9-10	RB/280	RX BLDG VENT NORTH	MR/HR	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
32	9-10	RB/280	RX BLDG VENT SOUTH	MR/HR	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
453A	9-10	RB/345	SPENT FUEL POOL A	MR/HR	16	16	16	16	16	16	16	16
453B	9-10	RB/345	SPENT FUEL POOL B	MR/HR	16	16	16	16	16	16	16	16
	9-10	RB/256	MAIN STM LINE A	MR/HR	172	172	172	172	172	172	172	172
	9-10	RB/256	MAIN STM LINE B	MR/HR	166	166	166	166	166	166	166	166
	9-10	RB/256	MAIN STM LINE C	MR/HR	168	168	168	168	168	168	168	168
	9-10	RB/256	MAIN STM LINE D	MR/HR	175	175	175	175	175	175	175	175
38	9-10	TB/248	SJAE(AIR EJECTOR)	MR/HR	61	61	61	61	61	61	61	61

NOTE: OSH = Offscale High

9.2 PROCESS MONITORS

ARM NO.	PANEL	BLDG/ELV	DESCRIPTION	UNITS	04:00 / 06:45	04:15 / 07:00	04:30 / 07:15	04:45 / 07:30	05:00 / 07:45	05:15 / 08:00	05:30 / 08:15	05:45 / 08:30
			SCENARIO TIME		04:00	04:15	04:30	04:45	05:00	05:15	05:30	05:45
			CLOCK TIME		06:45	07:00	07:15	07:30	07:45	08:00	08:15	08:30
	9-2	ST/257	STACK GAS MON-GAS 1	CPM	20	20	20	20	20	20	20	20
	9-2	ST/257	STACK GAS MON-GAS 2	CPM	20	20	20	20	20	20	20	20
	9-2	RB/280	CONTAINMENT MON GAS	CPM	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	RB/280	CONTAINMENT MON-PART	CPM	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	ST/257	STACK HI RANGE	MR/HR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
27	9-2	DW/252	DRYWELL CH A	R/HR	28	36	56	92	115	140	160	170
28	9-2	DW/252	DRYWELL CH B	R/HR	28	36	56	92	115	140	160	170
	9-2	RB/280	RX BLDG VENT GAS	CPM	25	25	29	34	37	40	42	43
	9-2	RB/280	RX BLDG VENT - PART	CPM	197	198	230	275	296	317	333	342
31	9-10	RB/280	RX BLDG VENT NORTH	MR/HR	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
32	9-10	RB/280	RX BLDG VENT SOUTH	MR/HR	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
453A	9-10	RB/345	SPENT FUEL POOL A	MR/HR	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
453B	9-10	RB/345	SPENT FUEL POOL B	MR/HR	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
	9-10	RB/256	MAIN STM LINE A	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE B	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE C	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE D	MR/HR	1	1	1	1	1	1	1	1
38	9-10	TB/248	SJAE(AIR EJECTOR)	MR/HR	0	0	0	0	0	0	0	0

NOTE: OSH = Offscale High

9.2 PROCESS MONITORS

			SCENARIO TIME		06:00	06:15	06:30	06:45	07:00	07:15	07:30	07:45
			CLOCK TIME		08:45	09:00	09:15	09:30	09:45	10:00	10:15	10:30
ARM NO.	PANEL	BLDG/ELV	DESCRIPTION	UNITS								
	9-2	ST/257	STACK GAS MON-GAS 1	CPM	20	100000	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	ST/257	STACK GAS MON-GAS 2	CPM	20	100000	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	RB/280	CONTAINMENT MON GAS	CPM	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	RB/280	CONTAINMENT MON-PART	CPM	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	ST/257	STACK HI RANGE	MR/HR	0.1	5	470	450	450	450	440	440
27	9-2	DW/252	DRYWELL CH A	R/HR	170	170	170	170	170	170	170	170
28	9-2	DW/252	DRYWELL CH B	R/HR	170	170	170	170	170	170	170	170
	9-2	RB/280	RX BLDG VENT GAS	CPM	44	44	44	44	44	44	44	44
	9-2	RB/280	RX BLDG VENT - PART	CPM	350	350	350	350	350	350	350	350
31	9-10	RB/280	RX BLDG VENT NORTH	MR/HR	0.5	100	1000	OSH	OSH	OSH	OSH	OSH
32	9-10	RB/280	RX BLDG VENT SOUTH	MR/HR	0.5	100	1000	OSH	OSH	OSH	OSH	OSH
453A	9-10	RB/345	SPENT FUEL POOL A	MR/HR	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
453B	9-10	RB/345	SPENT FUEL POOL B	MR/HR	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
	9-10	RB/256	MAIN STM LINE A	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE B	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE C	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE D	MR/HR	1	1	1	1	1	1	1	1
38	9-10	TB/248	SJAE(AIR EJECTOR)	MR/HR	0	0	0	0	0	0	0	0

NOTE: OSH = Offscale High

9.2 PROCESS MONITORS

ARM NO	PANEL	BLDG/ELV	DESCRIPTION	UNITS	08:00	08:15	08:30	08:45	09:00	09:15	09:30	09:45
			CLOCK TIME		10:45	11:00	11:15	11:30	11:45	12:00	12:15	12:30
	9-2	ST/257	STACK GAS MON-GAS 1	CPM	OSH	100000	30000	20	20	20	20	20
	9-2	ST/257	STACK GAS MON-GAS 2	CPM	OSH	100000	30000	20	20	20	20	20
	9-2	RB/280	CONTAINMENT MON GAS	CPM	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	RB/280	CONTAINMENT MON-PART	CPM	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	ST/257	STACK HI RANGE	MR/HR	420	4	1	0.1	0.1	0.1	0.1	0.1
27	9-2	DW/252	DRYWELL CH A	R/HR	170	170	170	170	170	170	170	170
28	9-2	DW/252	DRYWELL CH B	R/HR	170	170	170	170	170	170	170	170
	9-2	RB/280	RX BLDG VENT GAS	CPM	44	44	44	44	44	44	44	44
	9-2	RB/280	RX BLDG VENT - PART	CPM	350	350	350	350	350	350	350	350
31	9-10	RB/280	RX BLDG VENT NORTH	MR/HR	1000	100	10	10	10	10	10	10
32	9-10	RB/280	RX BLDG VENT SOUTH	MR/HR	1000	100	10	10	10	10	10	10
453A	9-10	RB/345	SPENT FUEL POOL A	MR/HR	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
453B	9-10	RB/345	SPENT FUEL POOL B	MR/HR	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
	9-10	RB/256	MAIN STM LINE A	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE B	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE C	MR/HR	1	1	1	1	1	1	1	1
	9-10	RB/256	MAIN STM LINE D	MR/HR	1	1	1	1	1	1	1	1
38	9-10	TB/248	SJAE(AIR EJECTOR)	MR/HR	0	0	0	0	0	0	0	0

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

9.3 IN-PLANT RADIATION LEVELS

TABLE 9.3-1

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

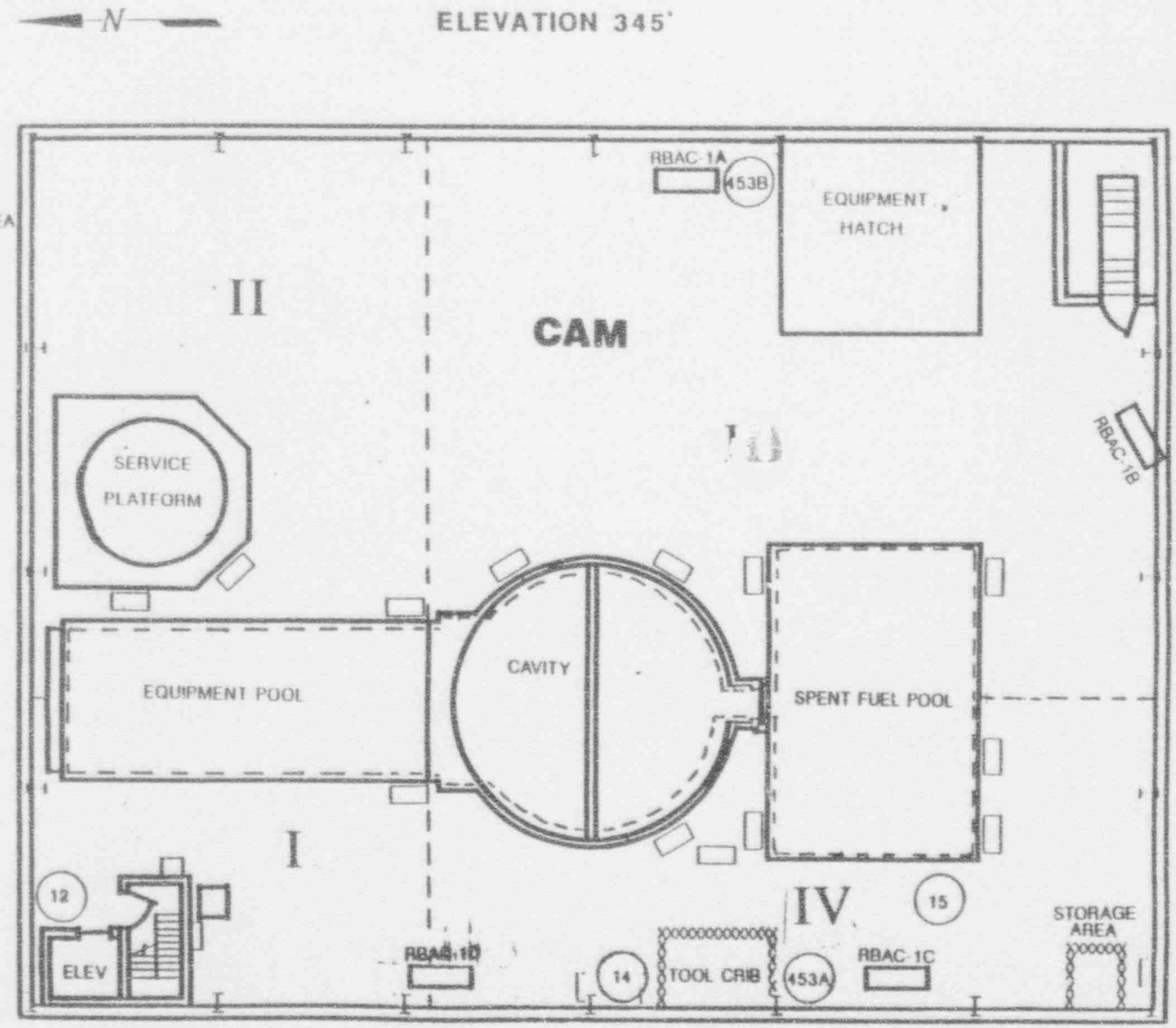
Clock Time	Scenario Time	ARM 12	ARM 14	ARM 15	453 A	453 B	Zone I	Zone II	Zone III	Zone IV
0245	0:00	4	5	15	16	16	5	16	16	16
0630	3:45	4	5	15	16	16	5	16	16	16
0645	4:00	1	1	8	4	4	1	4	4	4
0700	4:15	1	1	8	4	4	1	4	4	4
0715	4:30	1	1	8	4	4	1	4	4	4
0730	4:45	1	1	8	4	4	1	4	4	4
0745	5:00	1	1	8	4	4	1	4	4	4
0800	5:15	1	1	8	4	4	1	4	4	4
0815	5:30	1	1	8	4	4	1	4	4	4
0830	5:45	1	1	8	4	4	1	4	4	4
0845	6:00	1	1	8	4	4	1	4	4	4
0900	6:15	1	1	8	4	4	1	4	4	4
0915	6:30	1	1	8	4	4	1	4	4	4
0930	6:45	1	1	8	4	4	1	4	4	4
0945	7:00	1	1	8	4	4	1	4	4	4
1000	7:15	1	1	8	4	4	1	4	4	4
1015	7:30	1	1	8	4	4	1	4	4	4
1030	7:45	1	1	8	4	4	1	4	4	4
1045	8:00	1	1	8	4	4	1	4	4	4
1100	8:15	1	1	8	4	4	1	4	4	4
1115	8:30	1	1	8	4	4	1	4	4	4
1130	8:45	1	1	8	4	4	1	4	4	4
1145	9:00	1	1	8	4	4	1	4	4	4
1200	9:15	1	1	8	4	4	1	4	4	4
1215	9:30	1	1	8	4	4	1	4	4	4
1230	9:45	1	1	8	4	4	1	4	4	4

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

FIGURE 9.3-1

REACTOR BUILDING

ELEVATION 345'



MONITORS

- (12) REACTOR BUILDING ELEVATOR ENTRANCE
- (14) REACTOR BUILDING WEST REFUELING AREA
- (453A) FUEL POOL WEST
- (15) SPENT FUEL POOL
- (453B) FUEL POOL EAST

TABLE 9.3-2

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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
0245	0:00	7	5	.5	7	5	300	5	80	.5	.5
0630	3:45	7	5	.5	7	5	300	5	80	.5	.5
0645	4:00	3	2	.5	3	2	200	2	60	.5	.5
0700	4:15	3	2	.3	3	2	100	2	60	.3	.3
0715	4:30	3	2	.3	3	2	100	2	60	.3	.3
0730	4:45	3	2	.3	3	2	100	2	60	.3	.3
0745	5:00	3	2	.3	3	2	100	2	60	.3	.3
0800	5:15	3	2	.3	3	2	100	2	60	.3	.3
0815	5:30	3	2	.3	3	2	100	2	60	.3	.3
0830	5:45	3	2	.3	3	2	100	2	60	.3	.3
0845	6:00	3	2	.3	3	2	100	2	60	.3	.3
0900	6:15	3	2	.3	3	2	100	2	60	.3	.3
0915	6:30	3	2	.3	3	2	100	2	60	.3	.3
0930	6:45	3	2	.3	3	2	100	2	60	.3	.3
0945	7:00	3	2	.3	3	2	100	2	60	.3	.3
1000	7:15	3	2	.3	3	2	100	2	60	.3	.3
1015	7:30	3	2	.3	3	2	100	2	60	.3	.3
1030	7:45	3	2	.3	3	2	100	2	60	.3	.3
1045	8:00	3	2	.3	3	2	100	2	60	.3	.3
1100	8:15	3	2	.3	3	2	100	2	60	.3	.3
1115	8:30	3	2	.3	3	2	100	2	60	.3	.3
1130	8:45	3	2	.3	3	2	100	2	60	.3	.3
1145	9:00	3	2	.3	3	2	100	2	60	.3	.3
1200	9:15	3	2	.3	3	2	100	2	60	.3	.3
1215	9:30	3	2	.3	3	2	100	2	60	.3	.3
1230	9:45	3	2	.3	3	2	100	2	60	.3	.3

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

FIGURE 9.3-2

REACTOR BUILDING

ELEVATION 318'

MONITORS

(10) REACTOR BUILDING ELEVATOR ENTRANCE

(11) REACTOR BUILDING REACTOR WATER CLEANUP AREA

(16) REACTOR BUILDING NEW FUEL VAULT

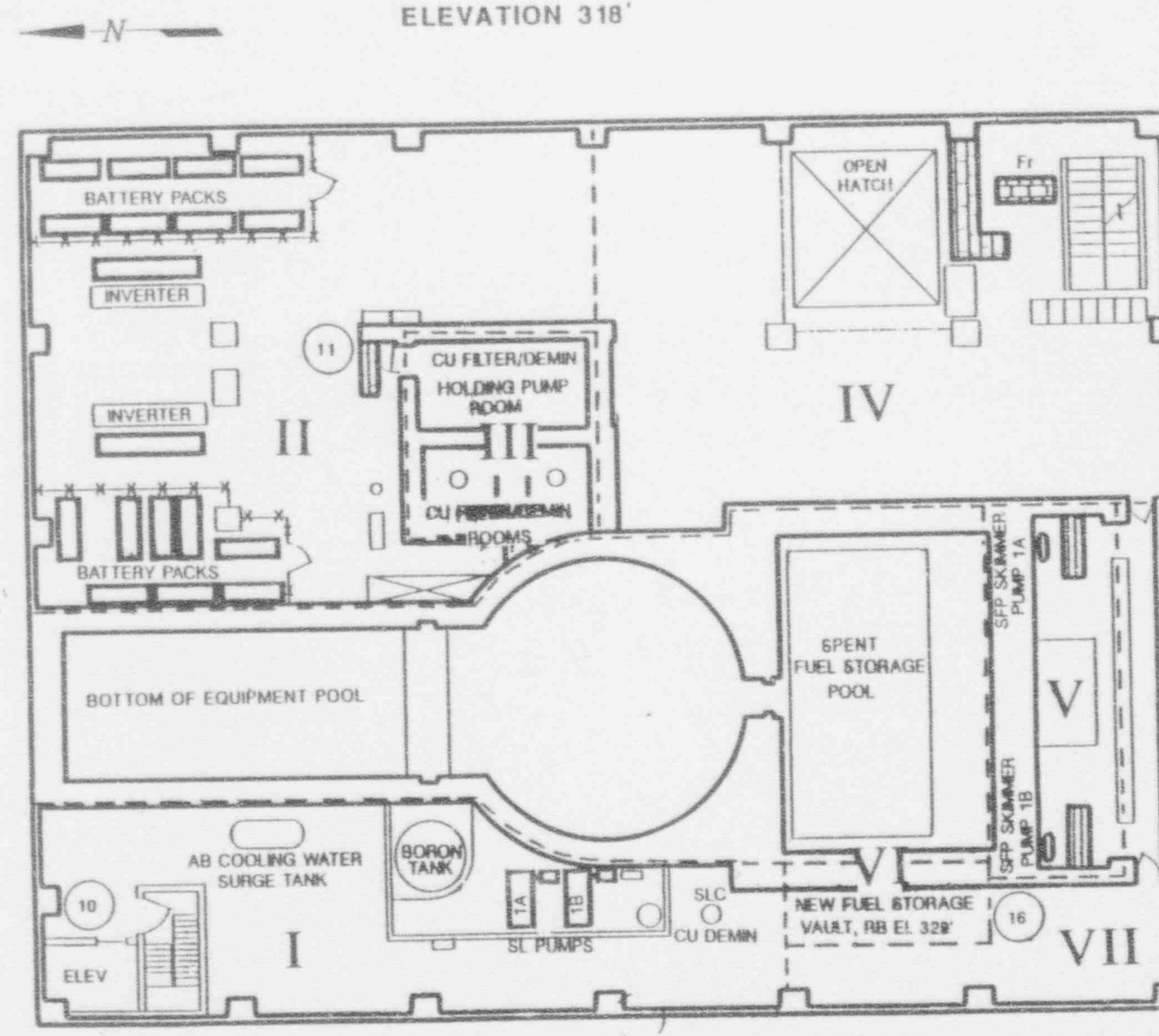


TABLE 9.3-3

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
0245	0:00	4	4	4	3	600	3	60	0.1	0.2
0630	3:45	4	4	4	3	600	3	60	0.1	0.2
0645	4:00	1	4	4	3	800	3	80	0.1	0.2
0700	4:15	1	4	4	3	850	3	80	0.1	0.2
0715	4:30	1	4	4	3	900	3	80	0.1	0.2
0730	4:45	1	4	4	3	950	3	80	0.1	0.2
0745	5:00	1	4	4	3	1000	3	80	0.1	0.2
0800	5:15	1	4	4	3	1100	3	80	0.1	0.2
0815	5:30	1	4	4	3	1200	3	80	0.1	0.2
0830	5:45	1	4	4	3	1200	3	80	0.1	0.2
0845	6:00	1	4	4	3	1200	3	80	0.1	0.2
0900	6:15	1	4	4	3	1200	3	80	0.1	0.2
0915	6:30	1	4	4	3	1200	3	80	0.1	0.2
0930	6:45	1	4	4	3	1200	3	80	0.1	0.2
0945	7:00	1	4	4	3	1200	3	80	0.1	0.2
1000	7:15	1	4	4	3	1200	3	80	0.1	0.2
1015	7:30	1	4	4	3	1200	3	80	0.1	0.2
1030	7:45	1	4	4	3	1200	3	80	0.1	0.2
1045	8:00	1	4	4	3	1200	3	80	0.1	0.2
1100	8:15	1	4	4	3	1200	3	80	0.1	0.2
1115	8:30	1	4	4	3	1200	3	80	0.1	0.2
1130	8:45	1	4	4	3	1200	3	80	0.1	0.2
1145	9:00	1	4	4	3	1200	3	80	0.1	0.2
1200	9:15	1	4	4	3	1200	3	80	0.1	0.2
1215	9:30	1	4	4	3	1200	3	80	0.1	0.2
1230	9:45	1	4	4	3	1200	3	80	0.1	0.2

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

FIGURE 9.3-3

REACTOR BUILDING

ELEVATION 303'

MONITORS

8 REACTOR BUILDING ELEVATOR ENTRANCE

9 REACTOR BUILDING REACTOR WATER CLEANUP AREA

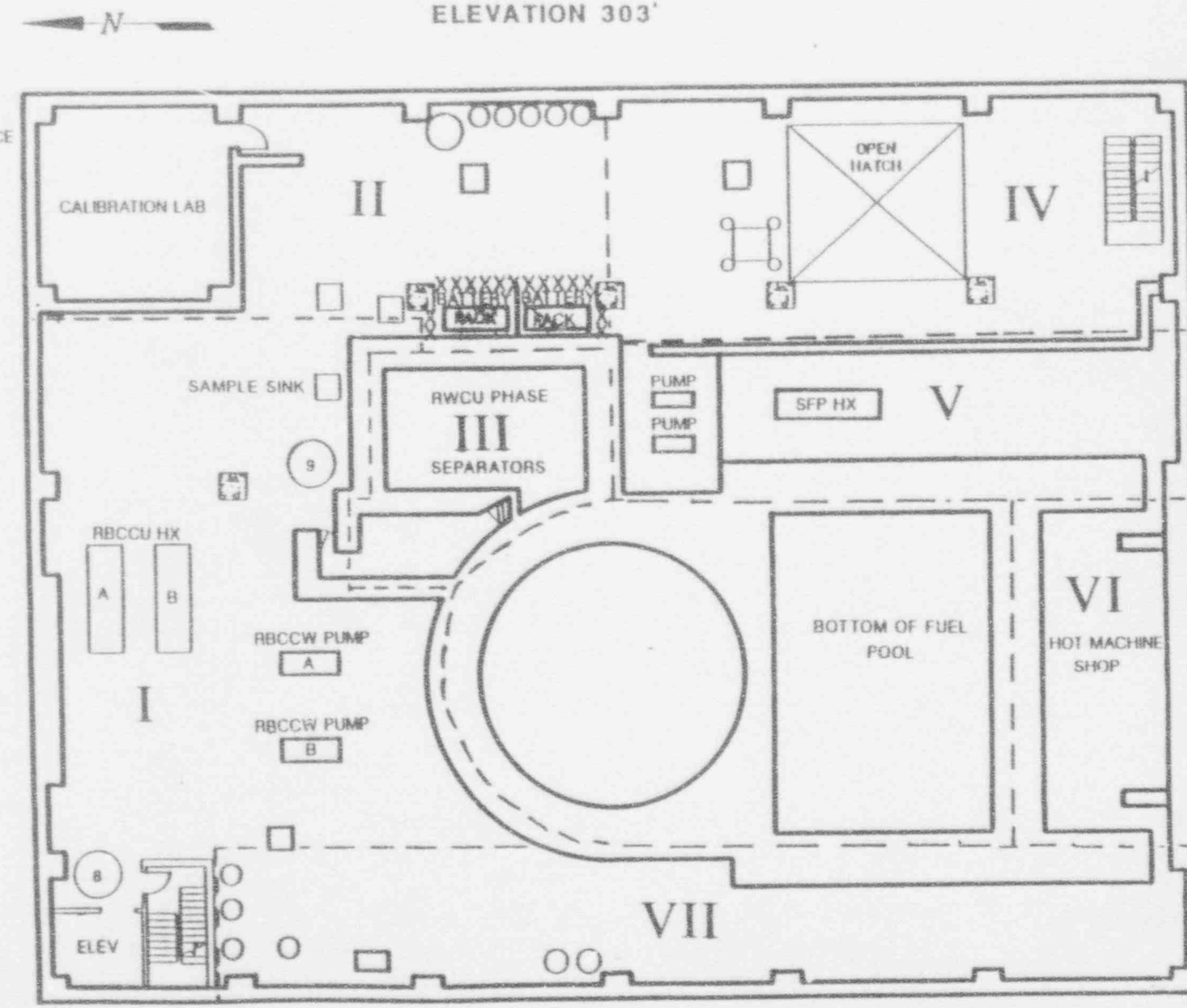


TABLE 9.3-4

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

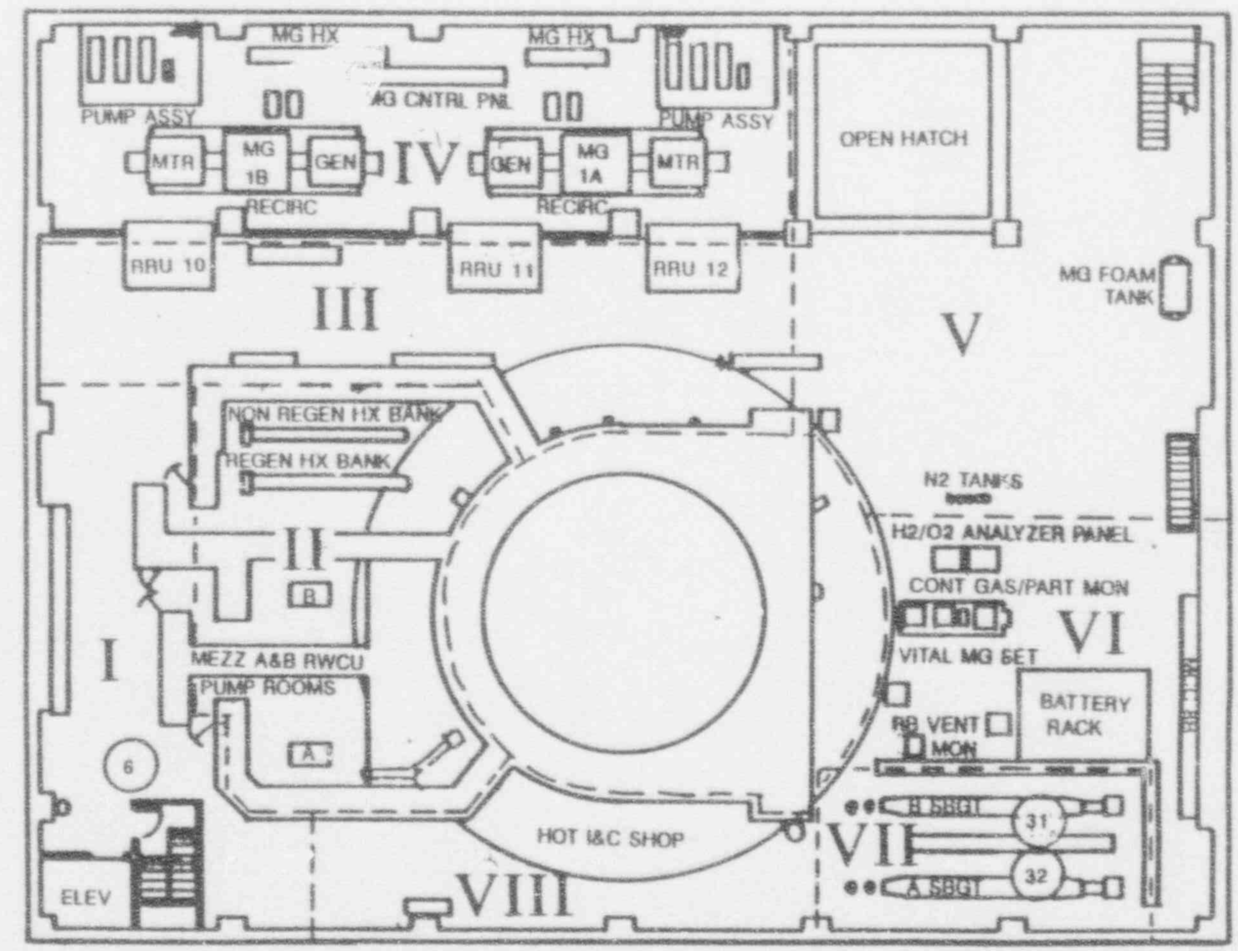
Clock Time	Scenario Time	ARM 6	RB Vent North ARM 31	RB Vent South ARM 32	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI	Zone VII	Zone VIII
0245	0:00	8	2	2	8	25	9	7	3	1	2	8
0630	3:45	8	2	2	8	20	9	7	3	1	2	8
0645	4:00	5	2	2	8	20	8	7	2	1	2	8
0700	4:15	5	2	2	7	20	8	7	2	1	2	7
0715	4:30	5	1	1	7	20	8	7	2	1	1	7
0730	4:45	5	1	1	5	20	8	5	2	1	1	5
0745	5:00	5	1	1	5	20	8	5	2	1	1	5
0800	5:15	5	1	1	5	20	8	5	2	1	1	5
0815	5:30	5	1	1	5	20	8	5	2	1	1	5
0830	5:45	5	1	1	5	20	8	5	2	1	1	5
0845	6:00	5	1	1	5	15	8	5	2	1	1	5
0900	6:15	5	100	100	5	15	8	5	2	1	50	5
0915	6:30	5	1000	1000	5	15	8	5	2	1	500	5
0930	6:45	5	(OSH)>1E4	(OSH)>1E4	5	15	8	5	2	1	5000	5
0945	7:00	5	(OSH)	(OSH)	5	15	8	5	2	1	5000	5
1000	7:15	5	(OSH)	(OSH)	5	15	8	5	2	1	5000	5
1015	7:30	5	(OSH)	(OSH)	5	15	8	5	2	1	5000	5
1030	7:45	5	(OSH)	(OSH)	5	15	8	5	2	1	5000	5
1045	8:00	5	1000	1000	5	15	8	5	2	1	500	5
1100	8:15	5	100	100	5	15	8	5	2	1	50	5
1115	8:30	5	10	10	5	15	8	5	2	1	5	5
1130	8:45	5	10	10	5	15	8	5	2	1	5	5
1145	9:00	5	10	10	5	15	8	5	2	1	5	5
1200	9:15	5	10	10	5	15	8	5	2	1	5	5
1215	9:30	5	10	10	5	15	8	5	2	1	5	5
1230	9:45	5	10	10	5	15	8	5	2	1	5	[illegible]

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

FIGURE 9.3-4

Rx BUILDING

ELEVATION 280'



MONITORS

(6) REACTOR BUILDING ELEVATOR ENTRANCE

(31) REACTOR BUILDING VENT EXHAUST MONITOR (NORTH)

(32) REACTOR BUILDING VENT EXHAUST MONITOR (SOUTH)

TABLE 9.3-5

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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
0245	0:00	4	.3	5	520	12	100	5	4	.3	50	.3	12	24
0630	3:45	4	.3	5	520	12	100	5	4	.3	50	.3	12	24
0645	4:00	.3	.2	5	4000	4	100	5	.3	.2	40	.2	4	8
0700	4:15	.3	.2	5	5000	4	100	5	.3	.2	50	.2	4	8
0715	4:30	40	4	45	8000	4	100	43	40	4	780	4	4	8
0730	4:45	90	9	95	(OSH)>1E4	4	100	95	90	9	1300	9	4	8
0745	5:00	120	12	120	(OSH)	4	100	120	120	12	1600	12	4	8
0800	5:15	140	14	150	(OSH)	4	100	150	140	14	2000	14	4	8
0815	5:30	165	16	168	(OSH)	4	100	168	165	16	2300	16	4	8
0830	5:45	175	17	180	(OSH)	4	100	180	175	17	2400	17	4	8
0845	6:00	175	17	180	(OSH)	4	100	180	175	17	2400	17	4	8
0900	6:15	175	200	180	(OSH)	4	100	180	175	200	2400	1000	4	8
0915	6:30	175	2000	180	(OSH)	4	100	180	175	2000	2400	10000	4	8
0930	6:45	175	5000	180	(OSH)	4	100	180	175	5000	2400	25000	4	8
0945	7:00	175	5000	180	(OSH)	4	100	180	175	5000	2400	25000	4	8
1000	7:15	180	5000	185	(OSH)	4	100	185	180	5000	2400	25000	4	8
1015	7:30	185	5000	190	(OSH)	4	100	190	185	5000	2400	25000	4	8
1030	7:45	185	5000	190	(OSH)	4	100	190	185	5000	2400	25000	4	8
1045	8:00	185	2000	190	(OSH)	4	100	190	185	2000	2400	10000	4	8
1100	8:15	185	200	190	(OSH)	4	100	190	185	200	2400	1000	4	8
1115	8:30	185	200	190	(OSH)	4	100	190	185	200	2400	500	4	8
1130	8:45	185	200	190	(OSH)	4	100	190	185	200	2400	500	4	8
1145	9:00	185	200	190	(OSH)	4	100	190	185	200	2400	500	4	8
1200	9:15	185	200	190	(OSH)	4	100	190	185	200	2400	500	4	8
1215	9:30	185	200	190	(OSH)	4	100	190	185	200	2400	500	4	8
1230	9:45	185	200	190	(OSH)	4	100	190	185	200	2400	500	4	8

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

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

Clock Time	Scenario Time	NORTH ** RMS II-1	SOUTH ** RMS II-2	TIP ** RMS II-3	RHR A QUAD	RHR B QUAD	RCIC QUAD	HPCI QUAD
0245	0:00	<1.0	<1.0	<1.0	5	5	50	50
0630	3:45	<1.0	<1.0	<1.0	5	5	50	50
0645	4:00	<1.0	<1.0	<1.0	5	5	50	50
0700	4:15	<1.0	<1.0	<1.0	5	5	50	50
0715	4:30	<1.0	<1.0	<1.0	40	40	500	500
0730	4:45	<1.0	<1.0	<1.0	100	100	1000	1000
0745	5:00	<1.0	<1.0	<1.0	120	120	2400	2400
0800	5:15	<1.0	<1.0	<1.0	150	150	3000	3000
0815	5:30	<1.0	<1.0	<1.0	168	168	3500	3500
0830	5:45	<1.0	<1.0	<1.0	180	180	3600	3600
0845	6:00	<1.0	<1.0	<1.0	180	180	3600	3600
0900	6:15	<1.0	1.0	<1.0	180	180	3600	3600
0915	6:30	<1.0	10.0	<1.0	180	180	3600	3600
0930	6:45	<1.0	25.0	<1.0	180	180	3600	3600
0945	7:00	<1.0	25.0	<1.0	180	180	3600	3600
1000	7:15	<1.0	25.0	<1.0	185	185	3800	3800
1015	7:30	<1.0	25.0	<1.0	190	190	3800	3800
1030	7:45	<1.0	25.0	<1.0	190	190	3800	3800
1045	8:00	<1.0	10.0	<1.0	190	190	3800	3800
1100	8:15	<1.0	1.0	<1.0	190	190	3800	3800
1115	8:30	<1.0	<1.0	<1.0	190	190	3800	3800
1130	8:45	<1.0	<1.0	<1.0	190	190	3800	3800
1145	9:00	<1.0	<1.0	<1.0	190	190	3800	3800
1200	9:15	<1.0	<1.0	<1.0	190	190	3800	3800
1215	9:30	<1.0	<1.0	<1.0	190	190	3800	3800
1230	9:45	<1.0	<1.0	<1.0	190	190	3800	3800

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

REACTOR BUILDING ELEVATION 252'

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

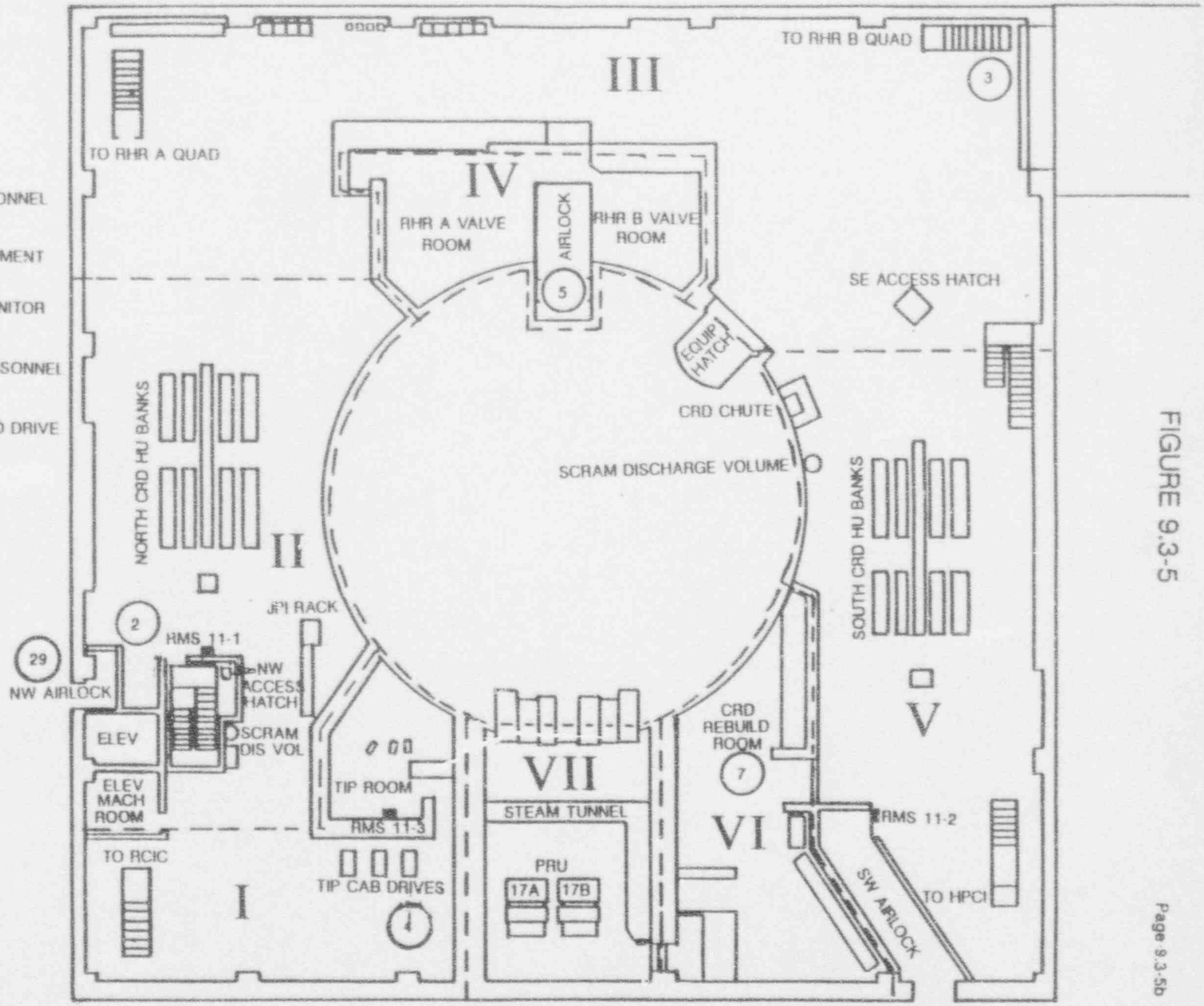


FIGURE 9.3-5

TABLE 9.3-6

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
0245	0:00	9	100	150	9	250	900
0630	3:45	9	75	120	9	250	900
0645	4:00	7	40	60	7	250	900
0700	4:15	7	20	35	7	250	900
0715	4:30	7	20	35	7	250	900
0730	4:45	7	16	30	7	250	900
0745	5:00	7	16	22	7	250	900
0800	5:15	7	16	22	7	250	900
0815	5:30	7	11	22	7	250	900
0830	5:45	7	11	22	7	250	900
0845	6:00	7	11	22	7	250	900
0900	6:15	7	10	20	7	250	900
0915	6:30	7	10	20	7	250	900
0930	6:45	7	10	20	7	250	900
0945	7:00	7	10	20	7	250	900
1000	7:15	7	10	20	7	250	900
1015	7:30	7	10	20	7	250	900
1030	7:45	7	10	20	7	250	900
1045	8:00	7	10	20	7	250	900
1100	8:15	7	10	20	7	250	900
1115	8:30	7	10	20	7	250	900
1130	8:45	7	10	20	7	250	900
1145	9:00	7	10	20	7	250	900
1200	9:15	7	10	20	7	250	900
1215	9:30	7	10	20	7	250	900
1230	9:45	7	10	20	7	250	900

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

TURBINE DECK

ELEVATION 272'

MONITOR

24 TURBINE BUILDING TURBINE STEAM INLET

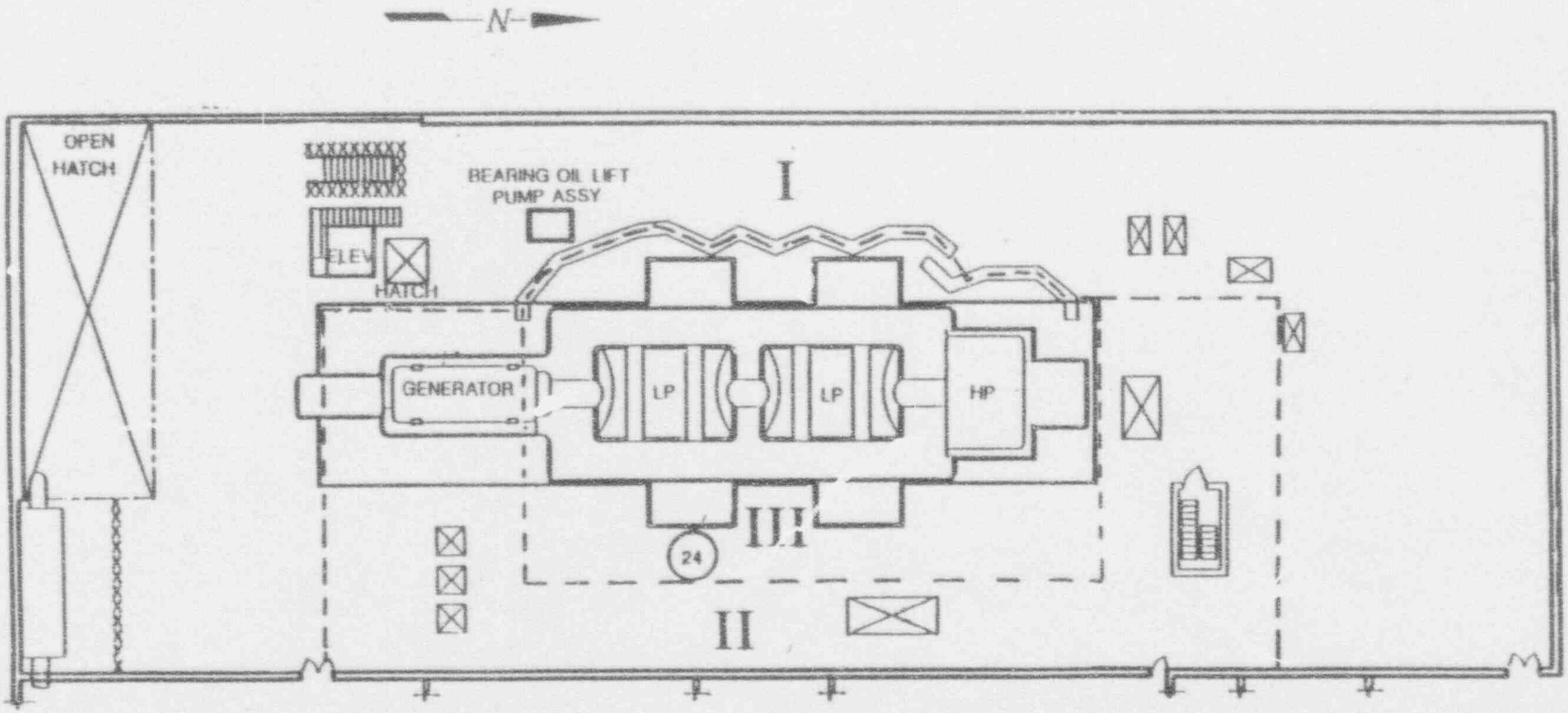


FIGURE 9.3-6

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
0245	0:00	150	0.17	150	0.2	0.2	0.1	0.2
0630	3:45	150	0.17	150	0.5	0.3	0.2	0.2
0645	4:00	150	0.01	150	0.5	0.3	0.2	0.2
0700	4:15	150	0.01	150	0.6	0.3	0.2	0.2
0715	4:30	150	0.01	150	0.6	0.3	0.2	0.2
0730	4:45	150	0.01	150	0.7	0.3	0.2	0.2
0745	5:00	150	0.01	150	0.7	0.3	0.2	0.2
0800	5:15	150	0.01	150	0.7	0.3	0.2	0.2
0815	5:30	150	0.01	150	0.7	0.3	0.2	0.2
0830	5:45	150	0.01	150	0.7	0.3	0.2	0.2
0845	6:00	150	0.01	150	0.7	0.3	0.2	0.2
0900	6:15	150	0.01	150	0.7	0.3	0.2	0.2
0915	6:30	150	0.01	150	0.7	0.3	0.2	0.2
0930	6:45	150	0.01	150	0.7	0.3	0.2	0.2
0945	7:00	150	0.01	150	0.7	0.3	0.2	0.2
1000	7:15	150	0.01	150	0.7	0.3	0.2	0.2
1015	7:30	150	0.01	150	0.7	0.3	0.2	0.2
1030	7:45	150	0.01	150	0.7	0.3	0.2	0.2
1045	8:00	150	0.01	150	0.7	0.3	0.2	0.2
1100	8:15	150	0.01	150	0.7	0.3	0.2	0.2
1115	8:30	150	0.01	150	0.7	0.3	0.2	0.2
1130	8:45	150	0.01	150	0.7	0.3	0.2	0.2
1145	9:00	150	0.01	150	0.7	0.3	0.2	0.2
1200	9:15	150	0.01	150	0.7	0.3	0.2	0.2
1215	9:30	150	0.01	150	0.7	0.3	0.2	0.2
1230	9:45	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 BILDING RAILROAD DOOR

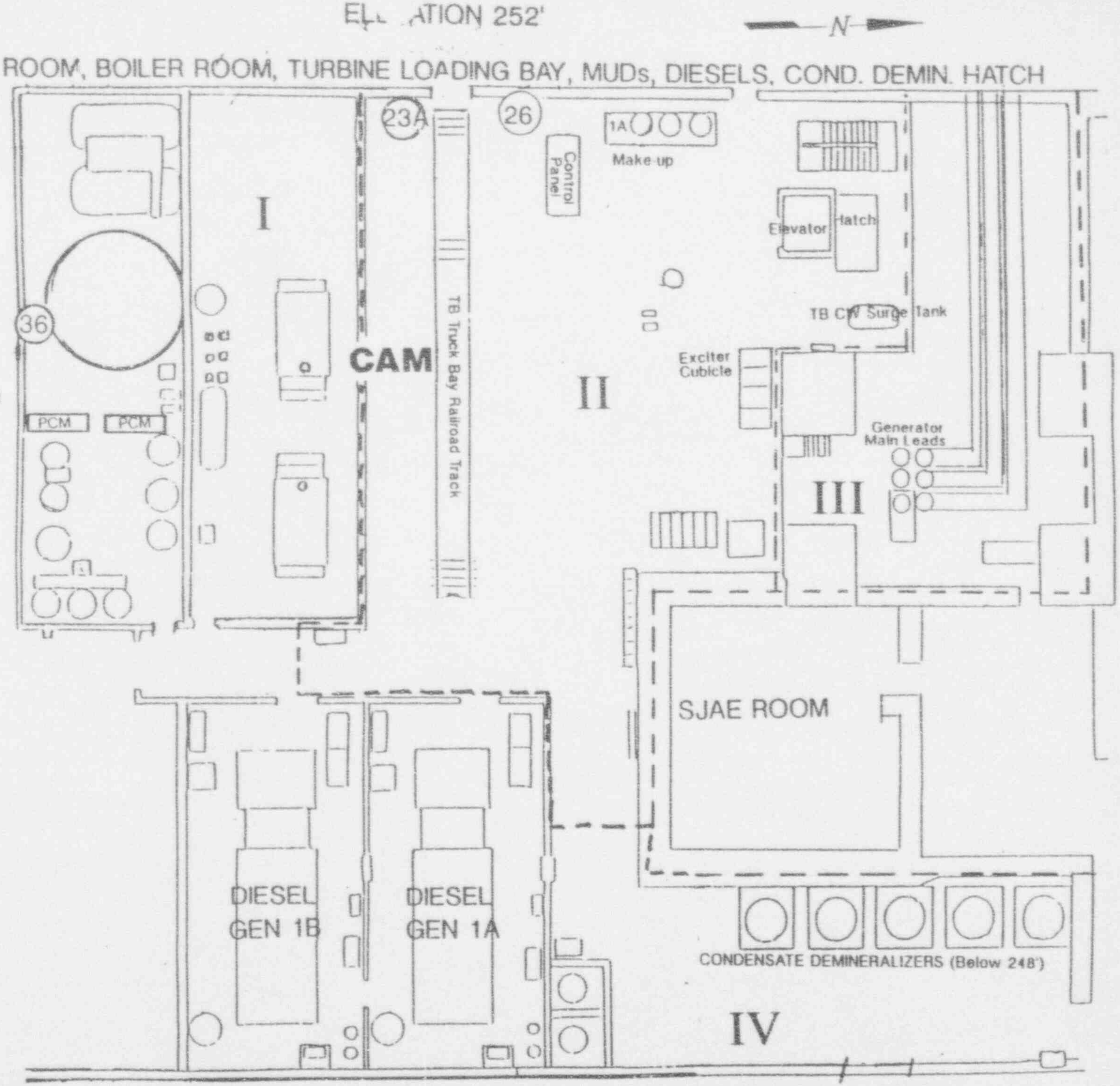


FIGURE 9.3-7

TABLE 9.3-8

Rev. 0
Page 9.3-8a

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
0245	0:00	2	200	2	2	4	8	200	2
0630	3:45	2	200	2	2	4	4	200	2
0645	4:00	1	4	2	2	3	4	4	2
0700	4:15	1	4	2	1	3	3	4	2
0715	4:30	1	4	1	1	3	3	4	2
0730	4:45	1	4	1	1	2	3	4	1
0745	5:00	1	4	1	1	2	3	4	1
0800	5:15	1	4	1	1	2	2	4	1
0815	5:30	1	4	1	1	2	2	4	1
0830	5:45	1	4	1	1	1	1	4	1
0845	6:00	1	4	1	1	1	1	4	1
0900	6:15	1	4	1	1	1	1	4	1
0915	6:30	1	4	1	1	1	1	4	1
0930	6:45	1	4	1	1	1	1	4	1
0945	7:00	1	4	1	1	1	1	4	1
1000	7:15	1	4	1	1	1	1	4	1
1015	7:30	1	4	1	1	1	1	4	1
1030	7:45	1	4	1	1	1	1	4	1
1045	8:00	1	4	1	1	1	1	4	1
1100	8:15	1	4	1	1	1	1	4	1
1115	8:30	1	4	1	1	1	1	4	1
1130	8:45	1	4	1	1	1	1	4	1
1145	9:00	1	4	1	1	1	1	4	1
1200	9:15	1	4	1	1	1	1	4	1
1215	9:30	1	4	1	1	1	1	4	1
1230	9:45	1	4	1	1	1	1	4	1

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

FIGURE 9.3-8

TURBINE BUILDING ELEVATION 248'

MONITORS

(20) TURBINE BUILDING NORTH PERSONNEL ACCESS

(21) TURBINE BUILDING MAIN STEAM STOP VALVE AREA

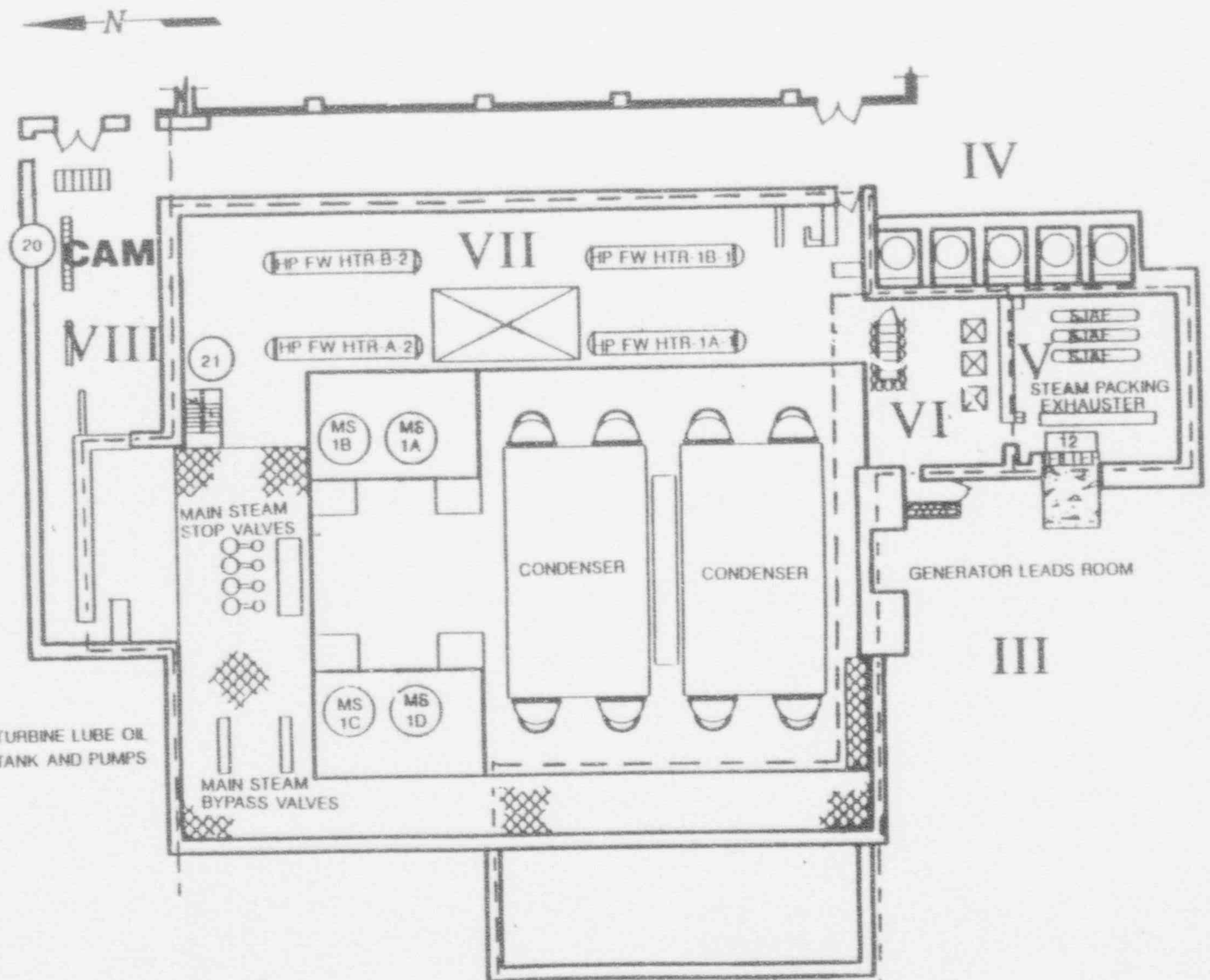


TABLE 9.3-9

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
0245	0:00	0.3	60	0.2	0.5	0.2
0630	3:45	0.3	60	0.2	0.5	0.2
0645	4:00	0.1	D/S	0.2	0.5	0.2
0700	4:15	0.1	D/S	0.2	0.5	0.2
0715	4:30	0.1	D/S	0.2	0.5	0.2
0730	4:45	0.1	D/S	0.2	0.5	0.2
0745	5:00	0.1	D/S	0.2	0.5	0.2
0800	5:15	0.1	D/S	0.2	0.5	0.2
0815	5:30	0.1	D/S	0.2	0.5	0.2
0830	5:45	0.1	D/S	0.2	0.5	0.2
0845	6:00	0.1	D/S	0.2	0.5	0.2
0900	6:15	0.1	D/S	0.2	0.5	0.2
0915	6:30	0.1	D/S	0.2	0.5	0.2
0930	6:45	0.1	D/S	0.2	0.5	0.2
0945	7:00	0.1	D/S	0.2	0.5	0.2
1000	7:15	0.1	D/S	0.2	0.5	0.2
1015	7:30	0.1	D/S	0.2	0.5	0.2
1030	7:45	0.1	D/S	0.2	0.5	0.2
1045	8:00	0.1	D/S	0.2	0.5	0.2
1100	8:15	0.1	D/S	0.2	0.5	0.2
1115	8:30	0.1	D/S	0.2	0.5	0.2
1130	8:45	0.1	D/S	0.2	0.5	0.2
1145	9:00	0.1	D/S	0.2	0.5	0.2
1200	9:15	0.1	D/S	0.2	0.5	0.2
1215	9:30	0.1	D/S	0.2	0.5	0.2
1230	9:45	0.1	D/S	0.2	0.5	0.2

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

FIGURE 9.3-9

TURBINE BUILDING

ELEVATION 232'

MONITORS

(22) TURBINE BUILDING CONDENSATE DEMINERALIZERS

(38) OFFGAS RADIATION MONITORS

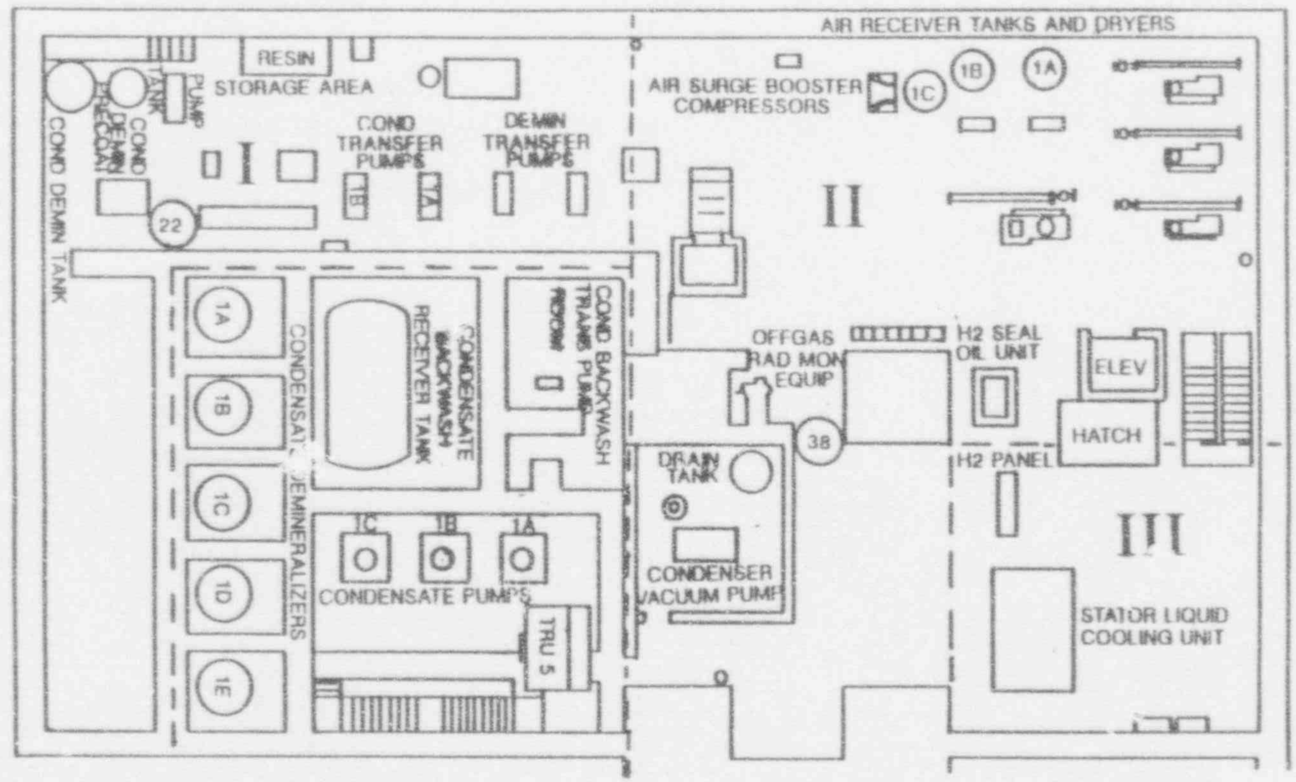


TABLE 9.3-10

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

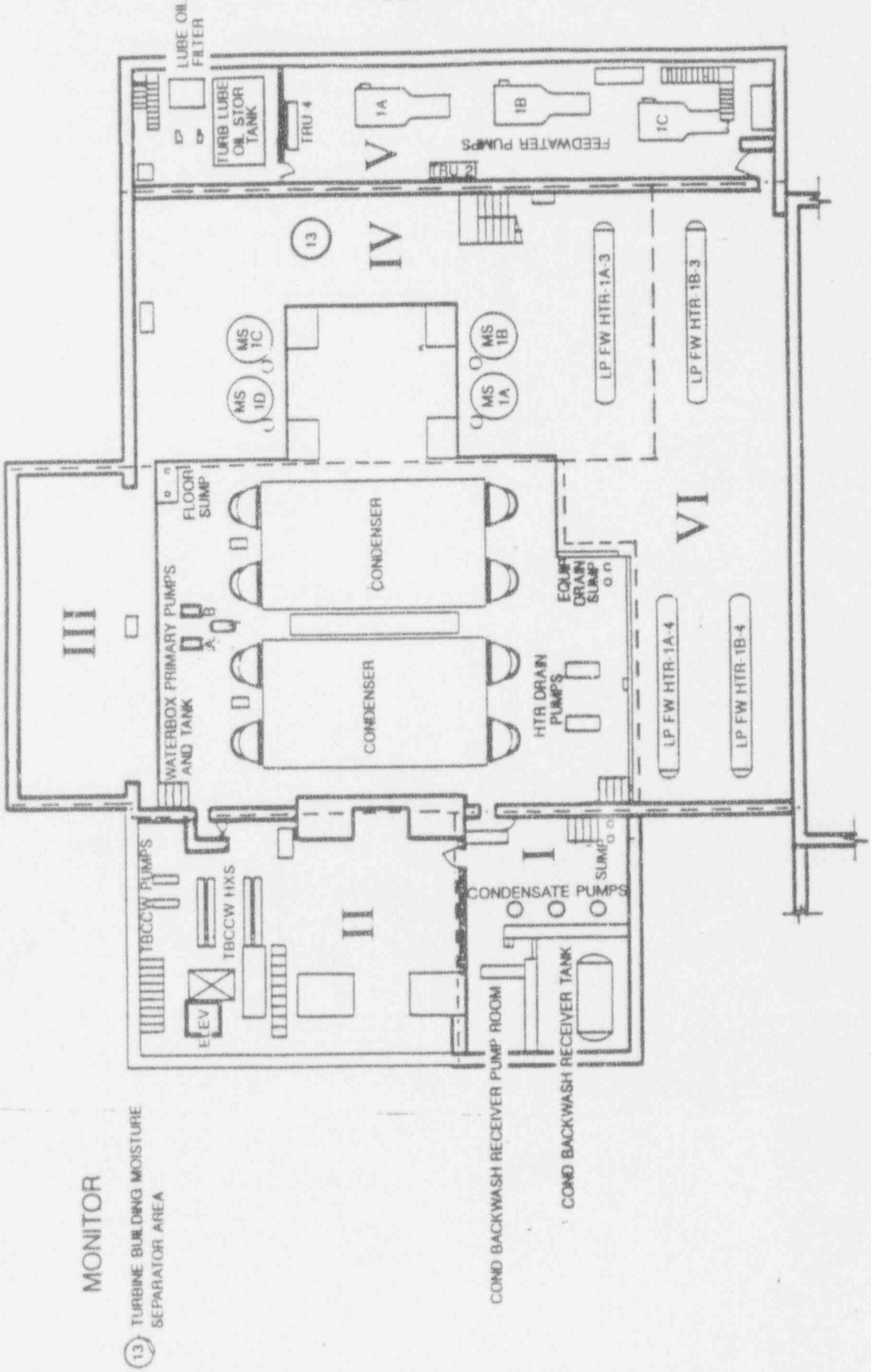
Clock Time	Time	Scenario ARM 13	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI
0245	0:00	150	3	1	50	150	2	75
0630	3:45	150	3	1	35	110	2	55
0645	4:00	1	1	1	5	15	2	7
0700	4:15	1	1	1	5	15	2	7
0715	4:30	1	1	1	5	15	2	7
0730	4:45	1	1	1	5	15	2	7
0745	5:00	1	1	1	5	15	2	7
0800	5:15	1	1	1	5	15	2	7
0815	5:30	1	1	1	5	15	2	7
0830	5:45	1	1	1	5	15	2	7
0845	6:00	1	1	1	5	15	2	7
0900	6:15	1	1	1	5	15	2	7
0915	6:30	1	1	1	5	15	2	7
0930	6:45	1	1	1	5	15	2	7
0945	7:00	1	1	1	5	15	2	7
1000	7:15	1	1	1	5	15	2	7
1015	7:30	1	1	1	5	15	2	7
1030	7:45	1	1	1	5	15	2	7
1045	8:00	1	1	1	5	15	2	7
1100	8:15	1	1	1	5	15	2	7
1115	8:30	1	1	1	5	15	2	7
1130	8:45	1	1	1	5	15	2	7
1145	9:00	1	1	1	5	15	2	7
1200	9:15	1	1	1	5	15	2	7
1215	9:30	1	1	1	5	15	2	7
1230	9:45	1	1	1	5	15	2	7

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

FIGURE 9.3-10

TURBINE BUILDING

ELEVATION 222' & 228'



N

MONITOR

(13) TURBINE BUILDING MOISTURE SEPARATOR AREA

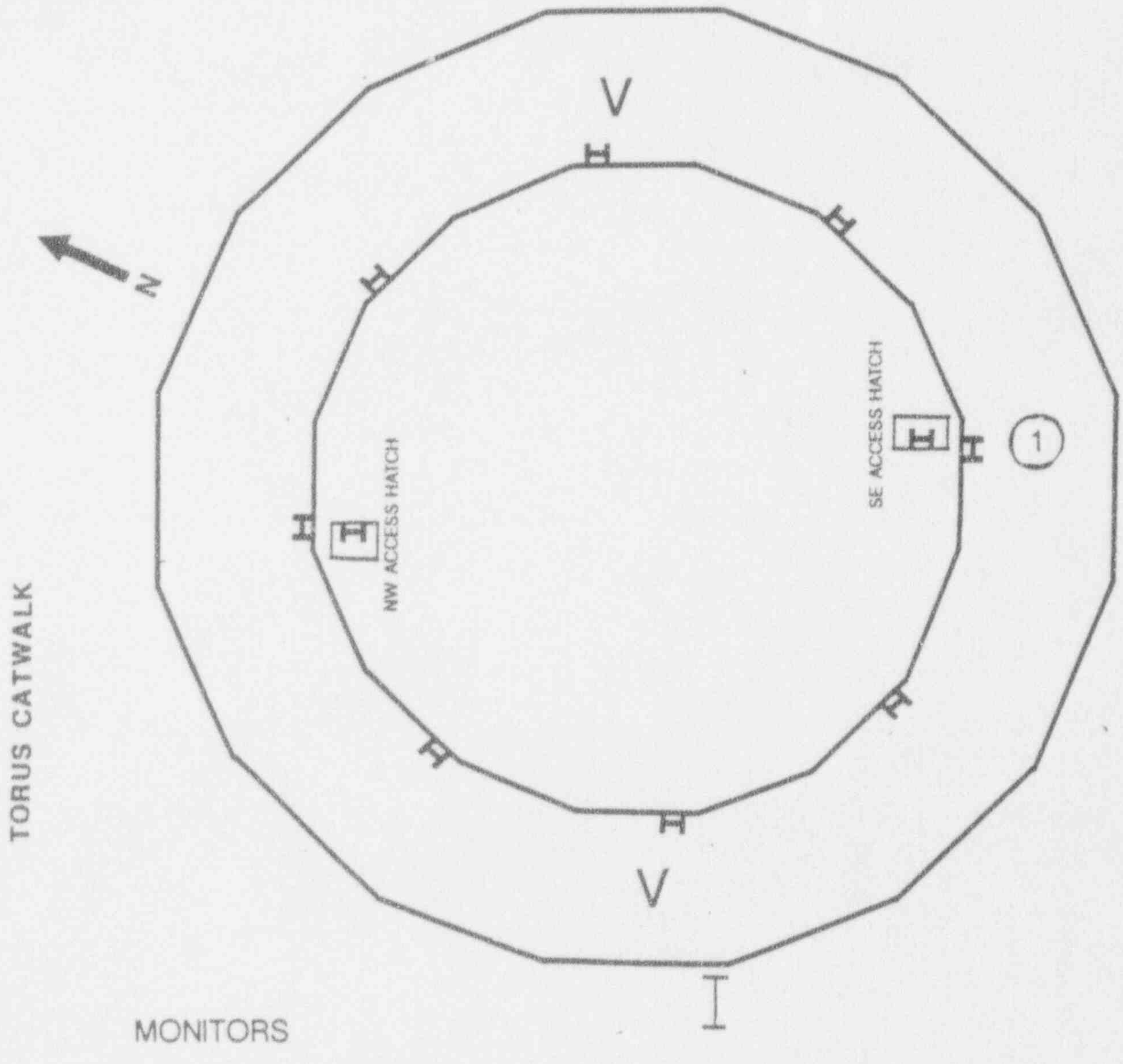
TABLE 9.3-11

Torus Catwalk
(mR/hr unless otherwise noted)

Clock Time	Scenario Time	ARM 1	Zone 5
0245	0:00	8	8
0630	3:45	8	8
0645	4:00	250	250
0700	4:15	500	500
0715	4:30	850	850
0730	4:45	1500	1500
0745	5:00	5000	5000
0800	5:15	8500	8500
0815	5:30	OSH>10000	12000
0830	5:45	OSH	14000
0845	6:00	OSH	16000
0900	6:15	OSH	17000
0915	6:30	OSH	17000
0930	6:45	OSH	17000
0945	7:00	OSH	17000
1000	7:15	OSH	17000
1015	7:30	OSH	17000
1030	7:45	OSH	17000
1045	8:00	OSH	17000
1100	8:15	OSH	17000
1115	8:30	OSH	17000
1130	8:45	OSH	17000
1145	9:00	OSH	17000
1200	9:15	OSH	17000
1215	9:30	OSH	17000
1230	9:45	OSH	17000

Notes: Zone readings are average dose rates throughout zone.

FIGURE 9.3-11



(1) REACTOR BUILDING SUPPRESSION CHAMBER EXT. CATWALK

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

9.4 PLANT CHEMISTRY DATA

SECTION	PAGE
9.4.1 Reactor Coolant Activity Data	9.4.1-1
9.4.2 Primary Containment Air Activity Data	9.4.2-1
9.4.3 Reactor Building Air Activity Data	9.4.3-1

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

9.4.1 REACTOR COOLANT ACTIVITY DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Prior to 0630	0630-0645	0645-0700	0700-0715
I-131	2.5E-03	2.3E-02	2.0E-01	1.8E+00
I-132	2.8E-03	2.5E-02	2.3E-01	2.0E+00
I-133	5.2E-03	4.7E-02	4.2E-01	3.8E+00
I-134	4.1E-03	3.7E-02	3.3E-01	3.0E+00
I-135	4.5E-03	4.1E-02	3.6E-01	3.3E+00
Total Iodine	1.9E-02	1.7E-01	1.5E+00	1.4E+01
I-131 Dose Equiv.	4.5E-03	4.0E-02	3.6E-01	3.2E+00
Kr-83m	1.2E-03	5.4E-03	2.4E-02	1.1E-01
Kr-85m	2.5E-02	1.1E-01	5.1E-01	2.3E+00
Kr-85	4.8E-03	2.2E-02	9.7E-02	4.4E-01
Kr-87	2.9E-03	1.3E-02	5.9E-02	2.6E-01
Kr-88	1.0E-03	4.5E-03	2.0E-02	9.1E-02
Xe-133m	7.3E-04	3.3E-03	1.5E-02	6.6E-02
Xe-133	5.3E-03	2.4E-02	1.1E-01	4.8E-01
Xe-135m	5.8E-03	2.6E-02	1.2E-01	5.3E-01
Xe-135	2.2E-03	9.9E-03	4.5E-02	2.0E-01
Total Noble Gas	4.9E-02	2.2E-01	9.9E-01	4.5E+00

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

VERMONT YANKEE NUCLEAR POWER STATION
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9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	0715-0730	0730-0745	0745-0800	0800-0815
I-131	2.1E+01	2.1E+02	2.1E+02	2.1E+02
I-132	3.0E+01	3.0E+02	2.7E+02	2.5E+02
I-133	4.2E+01	4.2E+02	4.2E+02	4.1E+02
I-134	4.1E+01	4.1E+02	3.4E+02	2.7E+02
I-135	3.9E+01	3.9E+02	3.8E+02	3.6E+02
Total Iodine	1.7E+02	1.7E+03	1.6E+03	1.5E+03
I-131 Dose Equiv.	3.7E+01	3.7E+02	3.7E+02	3.6E+02
Kr-83m	2.3E+00	2.3E+01	2.3E+01	2.3E+01
Kr-85m	5.0E+00	5.0E+01	4.8E+01	4.6E+01
Kr-85	2.4E-01	2.4E+00	2.4E+00	2.4E+00
Kr-87	8.6E+00	8.6E+01	7.5E+01	6.5E+01
Kr-88	1.3E+01	1.3E+02	1.2E+02	1.1E+02
Xe-133m	1.3E+00	1.3E+01	1.3E+01	1.2E+01
Xe-133	4.3E+01	4.3E+02	4.2E+02	4.2E+02
Xe-135m	8.1E+00	8.1E+01	7.0E+01	6.3E+01
Xe-135	9.7E+00	9.7E+01	1.0E+02	1.1E+02
Total Noble Gas	9.1E+01	9.1E+02	8.7E+02	8.5E+02

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	0815-0830	0830-0845	0845-0900	0900-0915
I-131	2.1E+02	2.1E+02	2.0E+02	2.0E+02
I-132	2.3E+02	2.1E+02	2.1E+02	2.0E+02
I-133	4.0E+02	4.0E+02	3.9E+02	3.9E+02
I-134	2.2E+02	1.8E+02	1.6E+02	1.5E+02
I-135	3.5E+02	3.4E+02	3.3E+02	3.3E+02
Total Iodine	1.4E+03	1.3E+03	1.3E+03	1.3E+03
I-131 Dose Equiv.	3.6E+02	3.6E+02	3.4E+02	3.4E+02
Kr-83m	2.2E+01	2.1E+01	2.1E+01	2.1E+01
Kr-85m	4.4E+01	4.2E+01	4.1E+01	4.0E+01
Kr-85	2.3E+00	2.3E+00	2.3E+00	2.3E+00
Kr-87	5.6E+01	4.8E+01	4.5E+01	4.2E+01
Kr-88	1.0E+02	9.6E+01	9.2E+01	8.9E+01
Xe-133m	1.2E+01	1.2E+01	1.2E+01	1.2E+01
Xe-133	4.2E+02	4.1E+02	4.1E+02	4.1E+02
Xe-135m	5.9E+01	5.6E+01	5.4E+01	5.3E+01
Xe-135	1.1E+02	1.1E+02	1.2E+02	1.2E+02
Total Noble Gas	8.3E+02	8.0E+02	8.0E+02	7.9E+02

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	0915-0930	0930-0945	0945-1000	1000-1015
I-131	2.0E+02	2.0E+02	2.0E+02	2.0E+02
I-132	1.8E+02	1.7E+02	1.5E+02	1.4E+02
I-133	3.9E+02	3.8E+02	3.7E+02	3.7E+02
I-134	1.2E+02	9.8E+01	8.0E+01	6.5E+01
I-135	3.2E+02	3.1E+02	3.0E+02	2.9E+02
Total Iodine	1.2E+03	1.2E+03	1.1E+03	1.1E+03
I-131 Dose Equiv.	3.4E+02	3.4E+02	3.3E+02	3.3E+02
Kr-83m	2.0E+01	1.9E+01	1.9E+01	1.8E+01
Kr-85m	3.8E+01	3.6E+01	3.5E+01	3.3E+01
Kr-85	2.3E+00	2.3E+00	2.3E+00	2.3E+00
Kr-87	3.6E+01	3.2E+01	2.7E+01	2.4E+01
Kr-88	8.4E+01	7.8E+01	7.3E+01	6.8E+01
Xe-133m	1.2E+01	1.2E+01	1.2E+01	1.2E+01
Xe-133	4.1E+02	4.1E+02	4.0E+02	4.0E+02
Xe-135m	5.1E+01	5.0E+01	4.8E+01	4.6E+01
Xe-135	1.2E+02	1.2E+02	1.3E+02	1.3E+02
Total Noble Gas	7.7E+02	7.6E+02	7.5E+02	7.3E+02

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	1015-1030	1030-1045	1045-1100	POST 1100
I-131	2.0E+02	2.0E+02	1.9E+02	1.9E+02
I-132	1.3E+02	1.2E+02	1.1E+02	1.0E+02
I-133	3.6E+02	3.6E+02	3.5E+02	3.5E+02
I-134	5.3E+01	4.4E+01	3.6E+01	2.9E+01
I-135	2.8E+02	2.7E+02	2.6E+02	2.5E+02
Total Iodine	1.0E+03	9.9E+02	9.5E+02	9.2E+02
I-131 Dose Equiv.	3.3E+02	3.3E+02	3.1E+02	3.1E+02
Kr-83m	1.7E+01	1.6E+01	1.6E+01	1.5E+01
Kr-85m	3.2E+01	3.0E+01	2.9E+01	2.8E+01
Kr-85	2.2E+00	2.2E+00	2.2E+00	2.2E+00
Kr-87	2.1E+01	1.8E+01	1.6E+01	1.3E+01
Kr-88	6.4E+01	6.0E+01	5.6E+01	5.2E+01
Xe-133m	1.2E+01	1.2E+01	1.2E+01	1.2E+01
Xe-133	4.0E+02	4.0E+02	4.0E+02	3.9E+02
Xe-135m	4.5E+01	4.3E+01	4.2E+01	4.1E+01
Xe-135	1.3E+02	1.3E+02	1.4E+02	1.4E+02
Total Noble Gas	7.2E+02	7.1E+02	7.1E+02	6.9E+02

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

VERMONT YANKEE NUCLEAR POWER STATION

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9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

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	Prior to 0630	0630-0645	0645-0700	0700-0715
I-131	*	6.1E-07	5.5E-06	4.9E-05
I-132	*	8.4E-07	7.6E-06	6.8E-05
I-133	*	1.2E-06	1.1E-05	1.0E-04
I-134	*	1.1E-06	1.0E-05	9.2E-05
I-135	*	1.1E-06	1.0E-05	9.2E-05
Total Iodine	*	4.9E-06	4.5E-05	4.0E-04
I-131 Dose Equiv.	*	1.1E-06	9.8E-06	8.8E-05
Kr-83m	*	6.5E-06	5.8E-05	5.3E-04
Kr-85m	*	1.4E-05	1.3E-04	1.2E-03
Kr-85	*	6.8E-07	6.1E-06	5.5E-05
Kr-87	*	2.5E-05	2.2E-04	2.0E-03
Kr-88	*	3.6E-05	3.2E-04	2.9E-03
Xe-133m	*	3.6E-06	3.2E-05	2.9E-04
Xe-133	*	1.2E-04	1.1E-03	1.0E-02
Xe-135m	*	2.1E-05	1.9E-04	1.7E-03
Xe-135	*	2.7E-05	2.4E-04	2.2E-03
Total Noble Gas	*	2.6E-04	2.3E-03	2.1E-02

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

* Prior to 0630 containment air activity is below MDA.

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	0715-0730	0730-0745	0745-0800	0800-0815
I-131	5.9E-04	5.9E-03	1.1E-02	1.6E-02
I-132	8.2E-04	8.2E-03	1.4E-02	1.9E-02
I-133	1.2E-03	1.2E-02	2.1E-02	3.1E-02
I-134	1.1E-03	1.1E-02	1.7E-02	2.1E-02
I-135	1.1E-03	1.1E-02	1.9E-02	2.8E-02
Total Iodine	4.8E-03	4.8E-02	8.2E-02	1.2E-01
I-131 Dose Equiv.	1.1E-03	1.1E-02	1.9E-02	2.8E-02
Kr-83m	6.3E-03	6.3E-02	1.1E-01	1.5E-01
Kr-85m	1.4E-02	1.4E-01	2.4E-01	3.5E-01
Kr-85	6.6E-04	6.6E-03	1.2E-02	1.8E-02
Kr-87	2.4E-02	2.4E-01	3.8E-01	4.9E-01
Kr-88	3.5E-02	3.5E-01	6.0E-01	8.4E-01
Xe-133m	3.5E-03	3.5E-02	6.3E-02	9.5E-02
Xe-133	1.2E-01	1.2E+00	2.2E+00	3.2E+00
Xe-135m	2.0E-02	2.0E-01	2.3E-01	2.4E-01
Xe-135	2.6E-02	2.6E-01	4.9E-01	7.5E-01
Total Noble Gas	2.5E-01	2.5E+00	4.3E+00	6.1E+00

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	0815-0830	0830-0845	0845-0900	0900-0915
I-131	2.1E-02	2.6E-02	3.0E-02	3.2E-02
I-132	2.4E-02	2.7E-02	2.9E-02	2.8E-02
I-133	4.1E-02	5.0E-02	5.7E-02	6.0E-02
I-134	2.3E-02	2.3E-02	2.2E-02	1.9E-02
I-135	3.6E-02	4.3E-02	4.8E-02	5.0E-02
Total Iodine	1.5E-01	1.7E-01	1.9E-01	1.9E-01
I-131 Dose Equiv.	3.6E-02	4.4E-02	5.1E-02	5.4E-02
Kr-83m	1.9E-01	2.2E-01	2.4E-01	2.4E-01
Kr-85m	4.5E-01	5.3E-01	5.8E-01	5.9E-01
Kr-85	2.4E-02	2.9E-02	3.4E-02	3.6E-02
Kr-87	5.7E-01	6.1E-01	6.1E-01	5.7E-01
Kr-88	1.1E+00	1.2E+00	1.3E+00	1.3E+00
Xe-133m	1.3E-01	1.5E-01	1.8E-01	1.9E-01
Xe-133	4.3E+00	5.2E+00	6.0E+00	6.4E+00
Xe-135m	2.4E-01	2.2E-01	1.9E-01	1.7E-01
Xe-135	1.0E+00	1.3E+00	1.5E+00	1.6E+00
Total Noble Gas	8.0E+00	9.5E+00	1.1E+01	1.1E+01

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

VERMONT YANKEE NUCLEAR POWER STATION
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9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Activity Concentrations (uCi/

Isotope	0915-0930	0930-0945	0945-1000	1000-1015
I-131	3.3E-02	3.5E-02	3.7E-02	3.8E-02
I-132	2.8E-02	2.7E-02	2.6E-02	2.5E-02
I-133	6.3E-02	6.6E-02	6.8E-02	7.0E-02
I-134	1.6E-02	1.4E-02	1.2E-02	1.0E-02
I-135	5.1E-02	5.2E-02	5.3E-02	5.4E-02
Total Iodine	1.9E-01	1.9E-01	2.0E-01	2.0E-01
I-131 Dose Equiv.	5.0E-02	5.8E-02	6.1E-02	6.3E-02
Kr-83m	2.4E-01	2.4E-01	2.4E-01	2.3E-01
Kr-85m	6.0E-01	6.1E-01	6.1E-01	6.1E-01
Kr-85	3.8E-02	[illegible].0E-02	4.2E-02	4.3E-02
Kr-87	5.2E-01	4.[illegible]E-01	4.4E-01	4.0E-01
Kr-88	1.3E+00	1.3E+00	1.3E+00	1.2E+00
Xe-133m	2.0E-01	2.1E-01	2.1E-01	2.2E-01
Xe-133	6.7E+00	7.0E+00	7.3E+00	7.6E+00
Xe-135m	1.5E-01	1.4E-01	1.4E-01	1.3E-01
Xe-135	1.7E+00	1.8E+00	1.9E+00	2.0E+00
Total Noble Gas	1.1E+01	1.2E+01	1.2E+01	1.2E+01

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

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	1015-1030	1030-1045	1045-1100	POST-1100
I-131	3.9E-02	4.0E-02	4.1E-02	4.1E-02
I-132	2.4E-02	2.3E-02	2.2E-02	2.2E-02
I-133	7.2E-02	7.3E-02	7.5E-02	7.5E-02
I-134	8.7E-03	7.4E-03	6.2E-03	6.2E-03
I-135	5.4E-02	5.4E-02	5.4E-02	5.4E-02
Total Iodine	2.0E-01	2.0E-01	2.0E-01	2.0E-01
I-131 Dose Equiv.	6.4E-02	6.5E-02	6.7E-02	6.7E-02
Kr-83m	2.3E-01	2.3E-01	2.2E-01	2.2E-01
Kr-85m	6.1E-01	6.0E-01	6.0E-01	6.0E-01
Kr-85	4.5E-02	4.6E-02	4.7E-02	4.7E-02
Kr-87	3.6E-01	3.2E-01	2.9E-01	2.9E-01
Kr-88	1.2E+00	1.2E+00	1.1E+00	1.1E+00
Xe-133m	2.3E-01	2.4E-01	2.4E-01	2.4E-01
Xe-133	7.9E+00	8.1E+00	8.3E+00	8.3E+00
Xe-135m	1.3E-01	1.3E-01	1.2E-01	1.2E-01
Xe-135	2.1E+00	2.1E+00	2.2E+00	2.2E+00
Total Noble Gas	1.3E+01	1.3E+01	1.3E+01	1.3E+01

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

VERMONT YANKEE NUCLEAR POWER STATION

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9.4.3 <u>REACTOR BUILDING AIR ACTIVITY DATA</u>

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)
All elevations - See Notes Below

Isotope	0245 to END
I-131	*
I-132	*
I-133	*
I-134	*
I-135	*
Total Iodine	*
I-131 Dose Equiv.	*
Kr-83m	*
Kr-85m	*
Kr-85	*
Kr-87	*
Kr-88	*
Xe-131m	*
Xe-133m	*
Xe-133	*
Xe-135m	*
Xe-135	*
Total Noble Gas	*

Notes:

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

VERMONT YANKEE NUCLEAR POWER STATION

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9.5 RADIOLOGICAL SAMPLE DOSE RATES

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9.5.1 Reactor Coolant Sample Dose Rates 9.5.1-1

9.5.2 Primary Containment Sample Dose Rates 9.5.2-1

9.5.3 Reactor Building Air Sample Dose Rates 9.5.3-1

9.5.4 Plant Vent Stack Sample Dose Rates 9.5.4-1

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9.5.1 REACTOR COOLANT SAMPLE DOSE RATES

VERMONT 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 0630 **	1.4E-02	9.8E-05	1.7E-04	1.2E-06
0630-0645	6.4E-02	4.4E-04	7.8E-04	5.5E-06
0645-0700	2.9E-01	2.0E-03	3.5E-03	2.5E-05
0700-0715	1.3E+00	9.0E-03	1.6E-02	1.1E-04
0715-0730	2.6E+01	1.8E-01	3.2E-01	2.3E-03
0730-0745	2.6E+02	1.8E+00	3.2E+00	2.3E-02
0745-0800	2.5E+02	1.7E+00	3.1E+00	2.2E-02
0800-0815	2.5E+02	1.7E+00	3.0E+00	2.1E-02
0815-0830	2.4E+02	1.7E+00	2.9E+00	2.1E-02
0830-0845	2.3E+02	1.6E+00	2.8E+00	2.0E-02
0845-0900	2.3E+02	1.6E+00	2.8E+00	2.0E-02
0900-0915	2.3E+02	1.6E+00	2.8E+00	2.0E-02
0915-0930	2.2E+02	1.5E+00	2.7E+00	1.9E-02
0930-0945	2.2E+02	1.5E+00	2.7E+00	1.9E-02
0945-1000	2.2E+02	1.5E+00	2.7E+00	1.9E-02
1000-1015	2.1E+02	1.5E+00	2.6E+00	1.8E-02
1015-1030	2.1E+02	1.4E+00	2.6E+00	1.8E-02
1030-1045	2.1E+02	1.4E+00	2.5E+00	1.8E-02
1045-1100	2.1E+02	1.4E+00	2.5E+00	1.8E-02
POST 1100	2.0E+02	1.4E+00	2.4E+00	1.7E-02

Note: * 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 0630 **	1.5E-02	1.0E-04	1.9E-04	1.3E-06
0630-0645	1.3E-01	9.2E-04	1.7E-03	1.1E-05
0645-0700	1.2E+00	8.1E-03	1.5E-02	9.9E-05
0700-0715	1.1E+01	7.6E-02	1.4E-01	9.3E-04
0715-0730	1.3E+02	9.2E-01	1.7E+00	1.1E-02
0730-0745	1.3E+03	9.2E+00	1.7E+01	1.1E-01
0745-0800	1.2E+03	8.7E+00	1.6E+01	1.1E-01
0800-0815	1.2E+03	8.1E+00	1.5E+01	9.9E-02
0815-0830	1.1E+03	7.6E+00	1.4E+01	9.3E-02
0830-0845	1.0E+03	7.0E+00	1.3E+01	8.6E-02
0845-0900	1.0E+03	7.0E+00	1.3E+01	8.6E-02
0900-0915	1.0E+03	7.0E+00	1.3E+01	8.6E-02
0915-0930	9.4E+02	6.5E+00	1.2E+01	7.9E-02
0930-0945	9.4E+02	6.5E+00	1.2E+01	7.9E-02
0945-1000	8.6E+02	6.0E+00	1.1E+01	7.3E-02
1000-1015	8.6E+02	6.0E+00	1.1E+01	7.3E-02
1015-1030	7.8E+02	5.4E+00	9.8E+00	6.6E-02
1030-1045	7.7E+02	5.4E+00	9.7E+00	6.5E-02
1045-1100	7.4E+02	5.1E+00	9.3E+00	6.3E-02
POST 1100	7.2E+02	5.0E+00	9.0E+00	6.1E-02

Note: * 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

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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 0630 **	As Read	As Read	As Read	As Read
0630-0645	7.5E-05	5.2E-07	9.2E-07	6.5E-09
0645-0700	6.6E-04	4.6E-06	8.2E-06	5.8E-08
0700-0715	6.0E-03	4.2E-05	7.5E-05	5.3E-07
0715-0730	7.2E-02	5.0E-04	8.9E-04	6.3E-06
0730-0745	7.2E-01	5.0E-03	8.9E-03	6.3E-05
0745-0800	1.2E+00	8.6E-03	1.5E-02	1.1E-04
0800-0815	1.8E+00	1.2E-02	2.2E-02	1.5E-04
0815-0830	2.3E+00	1.6E-02	2.8E-02	2.0E-04
0830-0845	2.7E+00	1.9E-02	3.4E-02	2.4E-04
0845-0900	3.2E+00	2.2E-02	3.9E-02	2.8E-04
0900-0915	3.2E+00	2.2E-02	3.9E-02	2.8E-04
0915-0930	3.2E+00	2.2E-02	3.9E-02	2.8E-04
0930-0945	3.5E+00	2.4E-02	4.3E-02	3.0E-04
0945-1000	3.5E+00	2.4E-02	4.3E-02	3.0E-04
1000-1015	3.5E+00	2.4E-02	4.3E-02	3.0E-04
1015-1030	3.7E+00	2.6E-02	4.6E-02	3.3E-04
1030-1045	3.7E+00	2.6E-02	4.6E-02	3.3E-04
1045-1100	3.7E+00	2.6E-02	4.6E-02	3.3E-04
POST 1100	3.7E+00	2.6E-02	4.6E-02	3.3E-04

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

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

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9.5.3 REACTOR BUILDING AIR SAMPLE DOSE RATES

VERMONT YANKEE NUCLEAR POWER STATION
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9.5.3 Reactor Building Air Sample Dose Rates (Iodine Cartridge Only)
All elevations - See Notes Below

	Unshielded (mR/hr per cc)*		Shielded (1 in. lead in mR/hr per cc)*	
Time	Contact	1 ft	Contact	1 ft
0245-END	As Read	As Read	As Read	As Read

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

VERMONT YANKEE NUCLEAR POWER STATION
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9.5.4 <u>PLANT VENT STACK SAMPLE DOSE RATES</u>

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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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 0845 **	As Read	As Read	As Read	As Read
0845-0900	3.1E-04	2.2E-06	3.9E-06	2.8E-08
0900-0915	3.1E-02	2.2E-04	3.9E-04	2.8E-06
0915-0930	3.1E-02	2.2E-04	3.9E-04	2.8E-06
0930-0945	3.4E-02	2.4E-04	4.2E-04	3.0E-06
0945-1000	3.4E-02	2.4E-04	4.2E-04	3.0E-06
1000-1015	3.4E-02	2.4E-04	4.2E-04	3.0E-06
1015-1030	3.4E-02	2.4E-04	4.2E-04	3.0E-06
1030-1045	3.7E-02	2.6E-04	4.6E-04	3.3E-06
1045-1100	3.7E-04	2.6E-06	4.6E-06	3.3E-08
POST 1100	As Read	As Read	As Read	As Read

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 0245-0845 given the same sample volume.

VERMONT YANKEE NUCLEAR POWER STATION
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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 0845 **	As Read	As Read	As Read	As Read
0845-0900	1.4E-05	9.7E-08	1.7E-07	1.2E-09
0900-0915	1.4E-03	9.7E-06	1.7E-05	1.2E-07
0915-0930	1.5E-03	1.0E-05	1.8E-05	1.3E-07
0930-0945	1.5E-03	1.0E-05	1.8E-05	1.3E-07
0945-1000	1.5E-03	1.0E-05	1.8E-05	1.3E-07
1000-1015	1.5E-03	1.0E-05	1.8E-05	1.3E-07
1015-1030	1.5E-03	1.0E-05	1.8E-05	1.3E-07
1030-1045	1.5E-03	1.0E-05	1.8E-05	1.3E-07
1045-1100	1.5E-05	1.0E-07	1.8E-07	1.3E-09
POST 1100	As Read	As Read	As Read	As Read

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 0245-0845 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 0845	As Read *	As Read*
0845-0900	1	10
0900-0915	10	100
0915-0930	10	100
0930-0945	10	100
0945-1000	10	100
1000-1015	10	100
1015-1030	10	100
1030-1045	10	100
1045-1100	1	10
POST 1100	As Read *	As Read*

* Background as read on survey meter.

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9.6 PLANT VENT STACK RELEASE DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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9.6 PLANT VENT STACK RELEASE DATA

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

Isotope	Prior to 0845	0845-0900	0900-0915
I-131	3.3E-13	3.1E-06	3.1E-04
I-132	4.8E-13	2.8E-06	2.8E-04
I-133	7.5E-13	5.9E-06	5.9E-04
I-134	6.6E-13	1.8E-06	1.8E-04
I-135	6.3E-13	4.9E-06	4.9E-04
Total Iodine	2.9E-12	1.8E-05	1.8E-03
I-131 Dose Equiv.	6.1E-13	5.2E-06	5.2E-04
Kr-83m	**	2.4E-05	2.4E-03
Kr-85m	**	5.8E-05	5.8E-03
Kr-85	**	3.5E-06	3.5E-04
Kr-87	**	5.6E-05	5.6E-03
Kr-88	**	1.3E-04	1.3E-02
Xe-131m	**	2.0E-06	2.0E-04
Xe-133m	**	1.8E-05	1.8E-03
Xe-133	**	6.2E-04	6.2E-02
Xe-135m	**	1.6E-05	1.6E-03
Xe-135	**	1.5E-04	1.5E-02
Total Noble Gas	**	1.1E-03	1.1E-01

* 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 are provided in Section 9.5.4.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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9.6 PLANT VENT STACK RELEASE DATA

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

Isotope	0915-0930	0930-0945	0945-1000	1000-1015
I-131	3.3E-04	3.4E-04	3.6E-04	3.7E-04
I-132	2.7E-04	2.6E-04	2.5E-04	2.5E-04
I-133	6.2E-04	6.4E-04	6.6E-04	6.8E-04
I-134	1.6E-04	1.4E-04	1.2E-04	1.0E-04
I-135	5.0E-04	5.1E-04	5.2E-04	5.2E-04
Total Iodine	1.9E-03	1.9E-03	1.9E-03	1.9E-03
I-131 Dose Equiv.	5.5E-04	5.7E-04	5.9E-04	6.1E-04
Kr-83m	2.4E-03	2.3E-03	2.3E-03	2.3E-03
Kr-85m	5.9E-03	5.9E-03	6.0E-03	6.0E-03
Kr-85	3.7E-04	3.9E-04	4.0E-04	4.2E-04
Kr-87	5.1E-03	4.7E-03	4.3E-03	3.9E-03
Kr-88	1.3E-02	1.2E-02	1.2E-02	1.2E-02
Xe-131m	2.1E-04	2.2E-04	2.3E-04	2.4E-04
Xe-133m	1.9E-03	2.0E-03	2.1E-03	2.2E-03
Xe-133	6.6E-02	6.9E-02	7.2E-02	7.4E-02
Xe-135m	1.5E-03	1.4E-03	1.4E-03	1.3E-03
Xe-135	1.6E-02	1.7E-02	1.8E-02	1.9E-02
Total Noble Gas	1.1E-01	1.2E-01	1.2E-01	1.2E-01

* 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.

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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9.6 PLANT VENT STACK RELEASE DATA

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

Isotope	1015-1030	1030-1045	1045-1100**
I-131	3.8E-04	3.9E-04	3.9E-06
I-132	2.4E-04	2.3E-04	2.3E-06
I-133	7.0E-04	7.1E-04	7.1E-06
I-134	8.5E-05	7.2E-05	7.2E-07
I-135	5.3E-04	5.3E-04	5.3E-06
Total Iodine	1.9E-03	1.9E-03	1.9E-05
I-131 Dose Equiv.	6.2E-04	6.4E-04	6.4E-06
Kr-83m	2.2E-03	2.2E-03	2.2E-05
Kr-85m	5.9E-03	5.9E-03	5.9E-05
Kr-85	4.3E-04	4.5E-04	4.5E-06
Kr-87	3.5E-03	3.1E-03	3.1E-05
Kr-88	1.2E-02	1.1E-02	1.1E-04
Xe-131m	2.5E-04	2.5E-04	2.5E-06
Xe-133m	2.2E-03	2.3E-03	2.3E-05
Xe-133	7.7E-02	7.9E-02	7.9E-04
Xe-135m	1.3E-03	1.2E-03	1.2E-05
Xe-135	2.0E-02	2.1E-02	2.1E-04
Total Noble Gas	1.2E-01	1.3E-01	1.3E-03

* 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.

** Post 1100 values as read.

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

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE

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9.7 FIELD MONITORING MAPS AND DATA

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EMERGENCY RESPONSE PREPAREDNESS EXERCISE
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9.7 FIELD MONITORING MAPS AND DATA

Plume whole body dose rates and radioiodine concentrations have been estimated as a function of time and distance from the plant site using a variable trajectory dose assessment model (METPAC). Geographical representations of the plume are provided in this section for each 15 minute average of the meteorological conditions, starting at clock time 0850 (scenario time 6:05). During the exercise, field team observers will use the information contained in this section to provide field monitoring teams with the appropriate survey results and radiological data for various times and locations.

The designated field monitoring teams will be directed to monitor and track the plume relative to the meteorological conditions postulated for the scenario. Figures 9.7-1 through 9.7-14 depict the plume location at various times throughout the scenario. 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, survey results were calculated for various color coded map areas (blue, yellow, and green). Field data tables have been developed for Vermont Yankee, State of Vermont and State of New Hamphsire field monitoring teams. The tables contained the radiological data to be provided to the field monitoring teams for various times and locations. (The tables follow the figure for a given scenario time period.) Radiological data on the tables have been provided for each plume segment and colored map area shown on the associated figures. Radiological data for locations between two plume segments can be estimated by interpolating between the values for those segments.

Prior to the exercise, training will be provided to field monitoring observers on the use of the figures and tables. The field monitoring observers should use the following specific instructions:

1. As field monitoring teams are designated , check that the appropriate procedures are followed by team members. This will include the initial equipment check.

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

3. Attempt to estimate the team's accrued radiation exposure as a function of time spent in an affected area. Use the values provided for the PIC-6 or the closed window, waist level reading for the gamma dose rate. Do not issue pocket dosimeter results to team members, unless they actually simulate checking their dosimeter reading. The pocket dosimeters have specific ranges and intervals in mR or R values. Ask them the ranges associated with the pocket dosimeter utilized. Attempt to provide values that reflect the team's accrued exposure and range of the pocket dosimeter.

4. Ask the field monitoring teams what equipment they have available for their use. Ask them the scales associated with the equipment; log the answers to ensure that you do not provide them with data which is not consistent with the range of the equipment. If a situation occurs where the lower range or upper range of the equipment is exceeded, issue them an "off-scale low" value and "off-scale high" value, respectively.

5. For gamma (whole body dose rates) survey readings taken by field monitoring teams, the following information should be use:

   a. If an RM-14/HP-210 is used to track the plume, the meter count rate of 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." The upper range of the RM-14/HP-210 is 50,000 cpm.

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

   c. Certain field monitoring teams may take open window <u>and</u> closed window readings with their dose rate survey meters. If a team is located in the plume and air concentration is greater than zero, assume the open window reading is <u>two times</u> the closed window reading for the gamma dose rate reading.

6. For air sample measurements taken by field monitoring teams, the following information should be use:

   a. The field monitoring teams will substitute a charcoal cartridge instead of the adsorber media cartridge (silver zeolite) contained in the field monitoring kits. All air sample data will be given as though the adsorber media cartridges (silver zeolite) were being used in the kits.

   b. Air sample volume assumptions have been used in the calculation of the net count rates for the air sample results. The sample volume was assumed to be 100 liters for Vermont Yankee, 177 liters for State of Vermont and 20-cubic foot (566 liters) for State of New Hamphsire field monitoring teams. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally.

c. Air sample net count rates for the absorber media cartridges (silver zeolite) provided in the field data tables have been developed using METPAC thyroid dose rate projections. The formula used is as follows:

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

where: E = Instrument Detector Efficiency in cpm/dpm (counts per disintegration)

F = Flow rate of sample in lpm (liters per minute)

T = Sample collection time in minutes

d. For air sample net count rate for the particulate filter paper, it is assumed that a G-M survey meter is used to obtain the sample count rates. Filter count rates (cpm) were estimated from the I-131 air concentration for the respective standard air sample volume taken.

NOTE: THE PLUME PLOT FIGURES ARE GRAPHIC REPRESENTATIVES OF ATMOSPHERIC DISPERSION. LARGER FIGURES WILL BE AVAILABLE TO OBSERVERS FOR THEIR USE ON PROVIDING DATA TO FIELD MONITORING TEAMS.

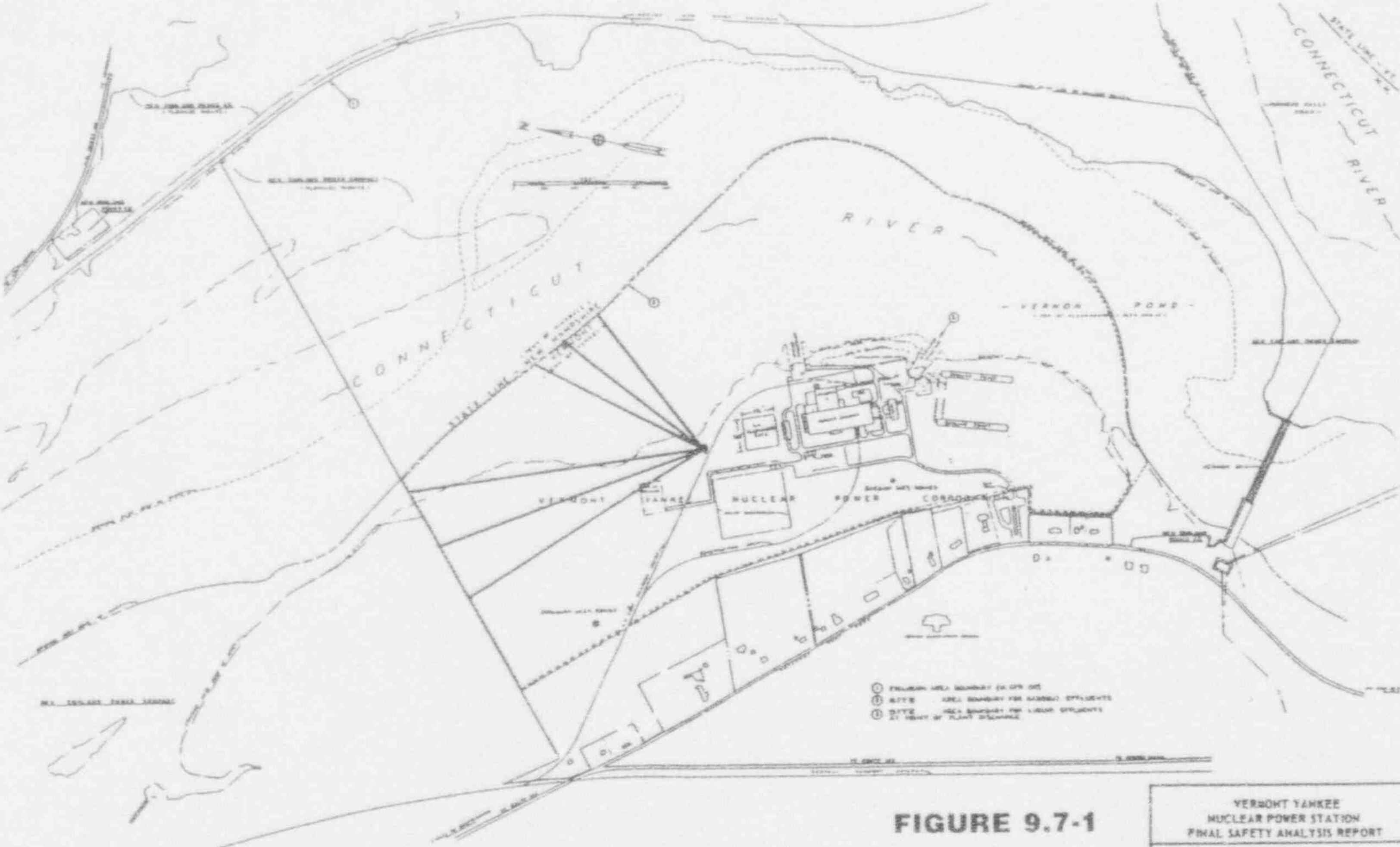

FIGURE 9.7-1

CLOCK TIME: 0850 to 0915

VERMONT YANKEE
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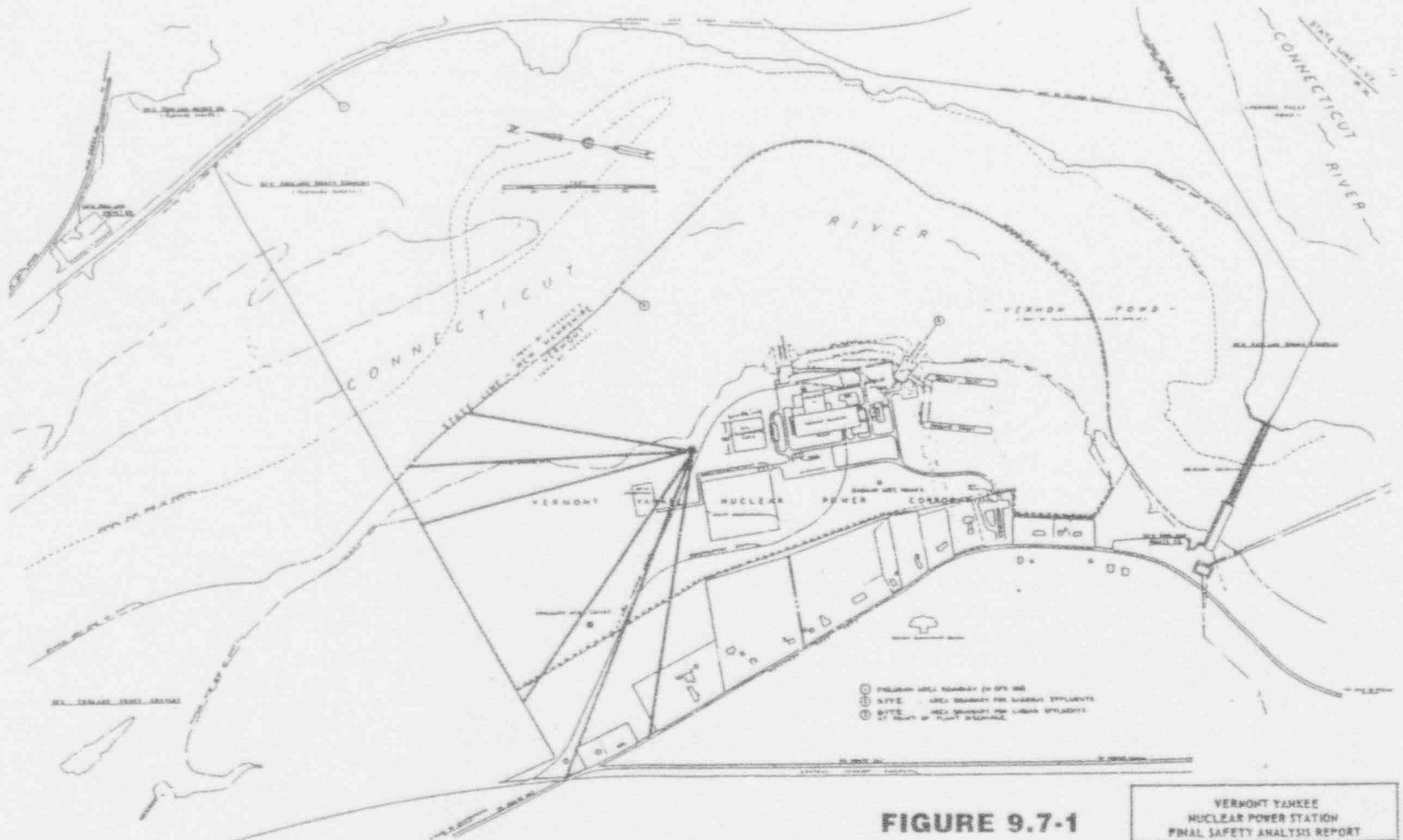
FINAL SAFETY ANALYSIS REPORT

PLAN SHOWING
EXCLUSION AREA AND RESTRICTED
AREA BOUNDARIES

FIGURE 2.2-5



VERMONT YANKEE
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FINAL SAFETY ANALYSIS REPORT

PLAN SHOWING
EXCLUSION AREA AND RESTRICTED
AREA BOUNDARIES

FIGURE 2.2-3

FIGURE 9.7-1

CLOCK TIME: 0915 to END

TABLE 9.7.1

ON-SITE VERMONT YANKEE FIELD DATA

CLOCK TIME	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER ZEOLITE (NET CPM)	SAM-II SILVER ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
0850-0900	BLUE	<1	210	0.00E+00	<40	AS READ	<40
	YELLOW	<1	AS READ	0.00E+00	<40	AS READ	<40
	GREEN	<1	AS READ	0.00E+00	<40	AS READ	<40
0900-0915	BLUE	6	21000	0.00E+00	<40	AS READ	<40
	YELLOW	<1	2100	0.00E+00	<40	AS READ	<40
	GREEN	<1	210	0.00E+00	<40	AS READ	<40
0915-0930	BLUE	6.5	22750	0.00E+00	<40	AS READ	<40
	YELLOW	<1	2275	0.00E+00	<40	AS READ	<40
	GREEN	<1	228	0.00E+00	<40	AS READ	<40
0930-0945	BLUE	6.5	22750	0.00E+00	<40	AS READ	<40
	YELLOW	<1	2275	0.00E+00	<40	AS READ	<40
	GREEN	<1	228	0.00E+00	<40	AS READ	<40
0945-1000	BLUE	7	24500	0.00E+00	<40	AS READ	<40
	YELLOW	<1	2450	0.00E+00	<40	AS READ	<40
	GREEN	<1	245	0.00E+00	<40	AS READ	<40
1000-1015	BLUE	7	24500	0.00E+00	<40	AS READ	<40
	YELLOW	<1	2450	0.00E+00	<40	AS READ	<40
	GREEN	<1	245	0.00E+00	<40	AS READ	<40
1015-1030	BLUE	8	28000	0.00E+00	<40	AS READ	<40
	YELLOW	<1	2800	0.00E+00	<40	AS READ	<40
	GREEN	<1	280	0.00E+00	<40	AS READ	<40
1030-1045	BLUE	7	24500	0.00E+00	<40	AS READ	<40
	YELLOW	<1	2450	0.00E+00	<40	AS READ	<40
	GREEN	<1	245	0.00E+00	<40	AS READ	<40
1045-1100	BLUE	<1	245	0.00E+00	<40	AS READ	<40
	YELLOW	<1	AS READ	0.00E+00	<40	AS READ	<40
	GREEN	<1	AS READ	0.00E+00	<40	AS READ	<40
1100-END	BLUE	<1	AS READ	0.00E+00	<40	AS READ	<40
	YELLOW	<1	AS READ	0.00E+00	<40	AS READ	<40
	GREEN	<1	AS READ	0.00E+00	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

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NOTE: STATE OF VERMONT AND STATE OF NEW HAMPSHIRE FIELD DATA IS NOT REQUIRED FOR ONSITE (PROTECTED AREA) PLANT SURVEYS.

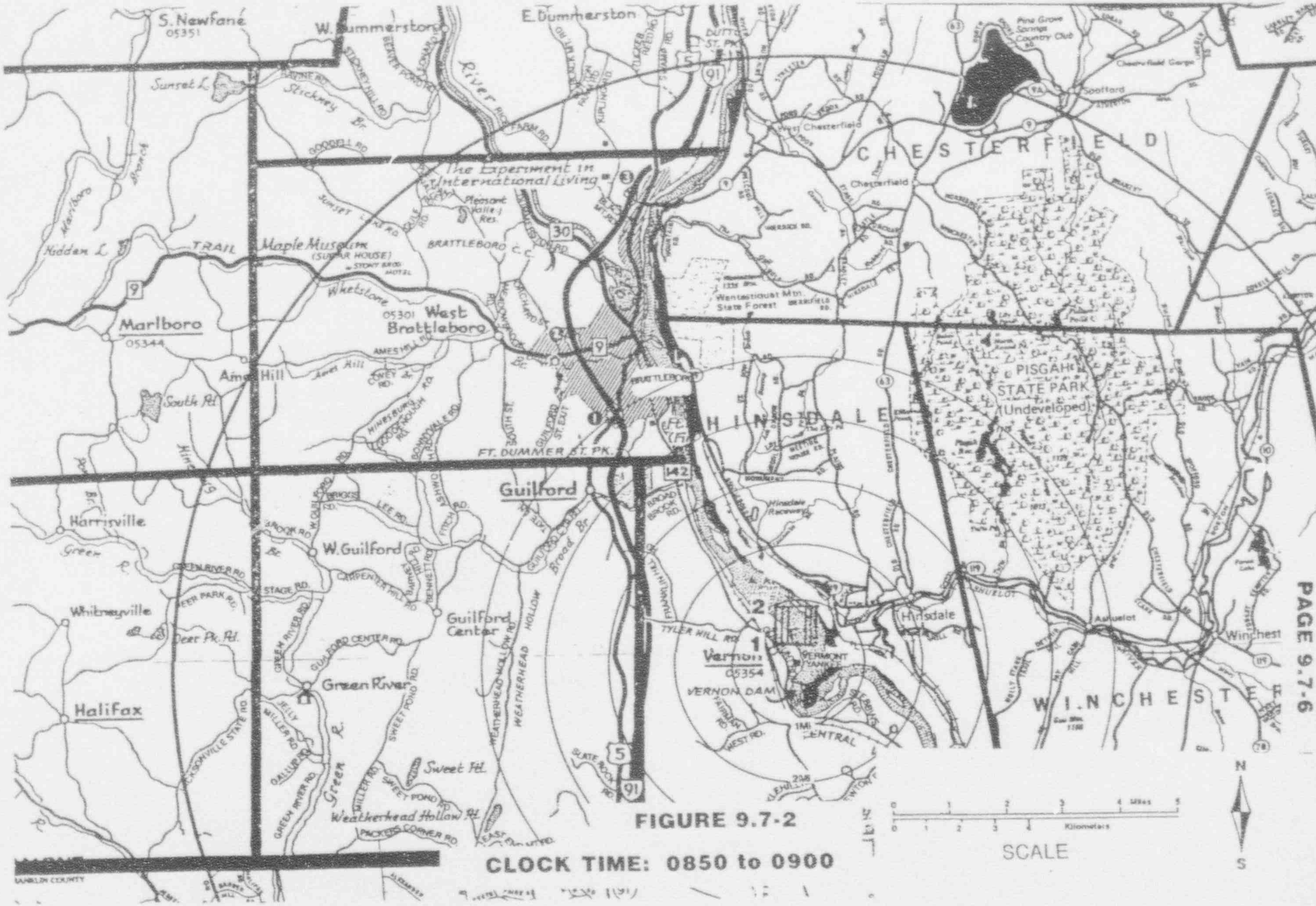


FIGURE 9.7-2

CLOCK TIME: 0850 to 0900

TABLE 9.7.2a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 0850-0900 (SCENARIO TIME 6:05 - 6:15)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER ZEOLITE (NET CPM)	SAM-II ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	<1	210	4.26E-17	<40	AS READ	<40
		YELLOW	<1	21	4.26E-18	<40	AS READ	<40
		GREEN	<1	AS READ	4.26E-19	<40	AS READ	<40
2.00	0.80	BLUE	<1	350	2.54E-10	<40	AS READ	<40
		YELLOW	<1	35	2.54E-11	<40	AS READ	<40
		GREEN	<1	AS READ	2.54E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

TABLE 9.7.2b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 0850-0900 (SCENARIO TIME 6:05 - 6:15)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (177 LITERS)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	0.06	0.12	4.26E-17	AS READ	<50
		YELLOW	AS READ	AS READ	4.26E-18	AS READ	<50
		GREEN	AS READ	AS READ	4.26E-19	AS READ	<50
2.00	0.80	BLUE	0.10	0.20	2.53E-10	AS READ	<50
		YELLOW	AS READ	AS READ	2.53E-11	AS READ	<50
		GREEN	AS READ	AS READ	2.53E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

TABLE 9.7.2c

STATE OF NEW HAMPSHIRE FIELD DATA AT CLOCK TIME 0850-0900 (SCENARIO TIME 6:05 - 6:15)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	AIR SAMPLE DATA (20 CU FT)* CONC. I-131 uCi/cc	E-140/HP-210 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	0.06	0.12	4.26E-17	AS READ	<50
		YELLOW	AS READ	AS READ	4.26E-18	AS READ	<50
		GREEN	AS READ	AS READ	4.26E-19	AS READ	<50
2.00	0.80	BLUE	0.10	0.20	2.53E-10	AS READ	<50
		YELLOW	AS READ	AS READ	2.53E-11	AS READ	<50
		GREEN	AS READ	AS READ	2.53E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 20 cu ft. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 10 cu ft sample was collected instead of 20 cu ft, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The E-140/HP-210 detector efficiency for I-131 was assumed to be 0.0024 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.1E+09 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 20 cu foot sample volume.

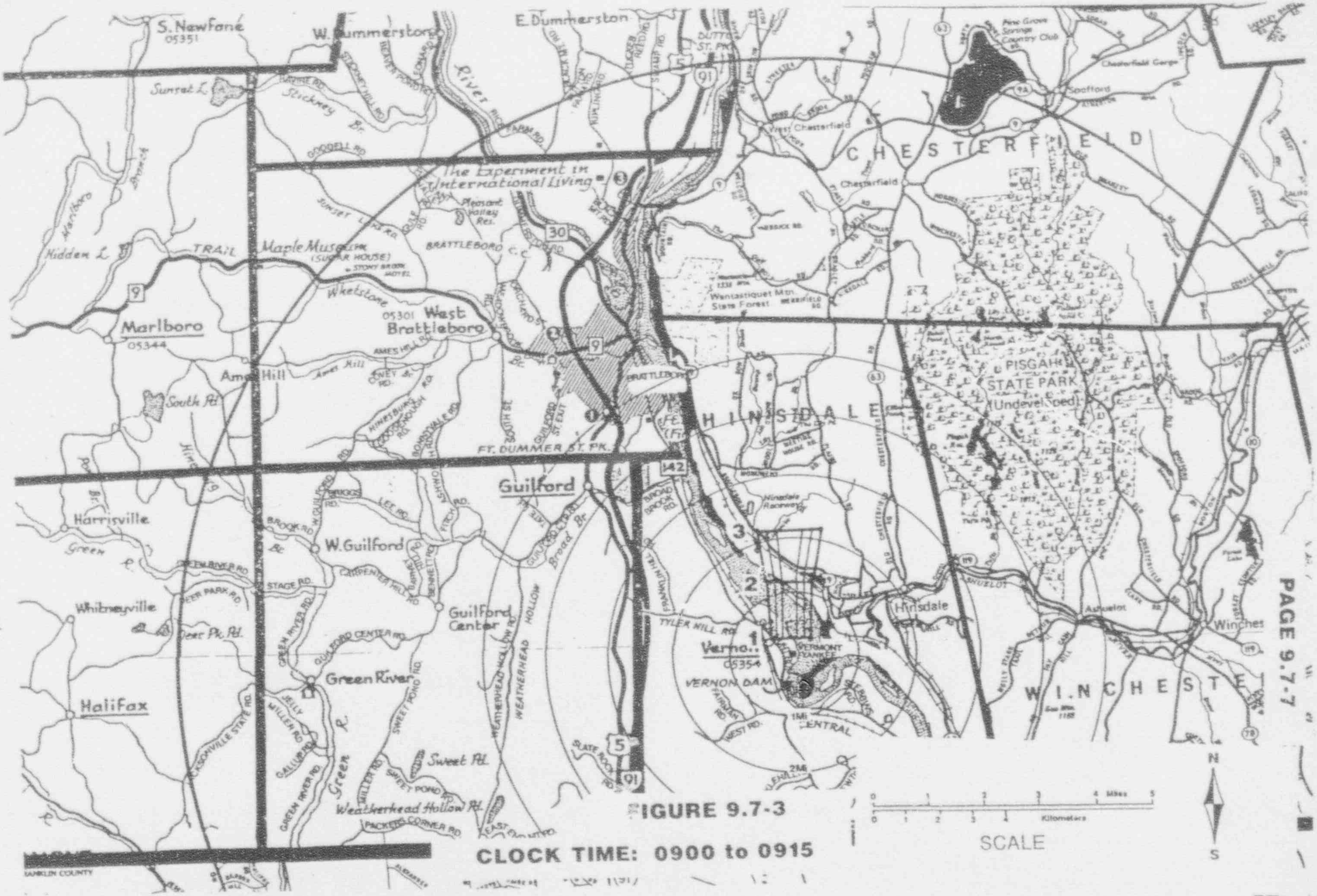


FIGURE 9.7-3

CLOCK TIME: 0900 to 0915

TABLE 9.7.3a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 0900-0915 (SCENARIO TIME 6:15 - 6:30)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER ZEOLITE (NET CPM)	SAM-II SILVER ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	<1	210	4.26E-15	<40	AS READ	<40
		YELLOW	<1	21	4.26E-16	<40	AS READ	<40
		GREEN	<1	2	4.26E-17	<40	AS READ	<40
2.00	1.20	BLUE	14	49000	2.04E-07	1141	3422	204
		YELLOW	1	4900	2.04E-08	114	342	<40
		GREEN	<1	490	2.04E-09	<40	AS READ	<40
3.00	2.10	BLUE	<1	315	1.42E-09	<40	AS READ	<40
		YELLOW	<1	32	1.42E-10	<40	AS READ	<40
		GREEN	<1	3	1.42E-11	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 [illegible]ector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeol[illegible] cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sam[illegible] count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration f[illegible] a 100 liter sample.

TABLE 9.7.3b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 0900-0915 (SCENARIO TIME 6:15 - 6:30)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (177 LITERS)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	0.06	0.12	4.26E-15	AS READ	<50
		YELLOW	AS READ	AS READ	4.26E-16	AS READ	<50
		GREEN	AS READ	AS READ	4.26E-17	AS READ	<50
2.00	1.20	BLUE	14.00	28.00	2.04E-07	6519	367
		YELLOW	1.40	2.80	2.04E-08	652	<50
		GREEN	0.14	0.28	2.04E-09	65	<50
3.00	2.10		0.09	0.18	1.42E-09	AS READ	<50
			AS READ	AS READ	1.42E-10	AS READ	<50
			AS READ	AS READ	1.42E-11	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

TABLE 9.7.3c

STATE OF NEW HAMPSHIRE FIELD DATA AT CLOCK TIME 0900-0915 (SCENARIO TIME 6:15 - 6:30)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (20 CU FT)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	E-140/HP-210 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	6.00	12.00	4.26E-15	AS READ	<50
		YELLOW	0.60	1.20	4.26E-16	AS READ	<50
		GREEN	0.06	0.12	4.26E-17	AS READ	<50
2.00	1.20	BLUE	14.00	28.00	2.04E-07	640	1161
		YELLOW	1.40	2.80	2.04E-08	64	116
		GREEN	0.14	0.28	2.04E-09	AS READ	<50
3.00	2.10	BLUE	0.09	0.18	1.42E-09	AS READ	<50
		YELLOW	AS READ	0.00	1.42E-10	AS READ	<50
		GREEN	AS READ	0.00	1.42E-11	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 20 cu ft. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 10 cu ft sample was collected instead of 20 cu ft, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The E-140/HP-210 detector efficiency for I-131 was assumed to be 0.0024 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.1E+09 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 20 cu foot sample volume.

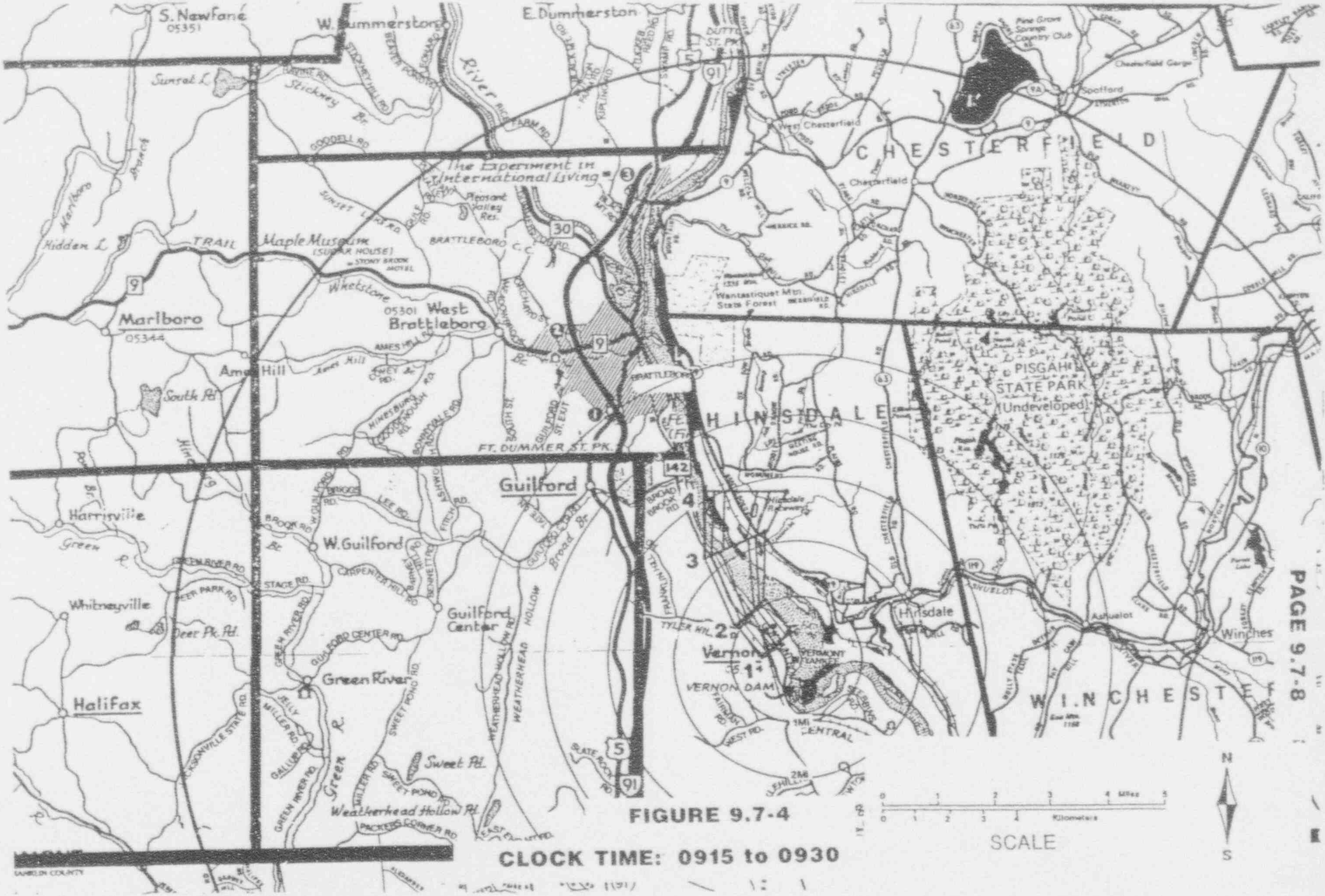


FIGURE 9.7-4

CLOCK TIME: 0915 to 0930

PAGE 9.7-8

TABLE 9.7.4a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 0915-0930 (SCENARIO TIME 6:30 - 6:45)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER (NET CPM)	SAM-II ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7	24500	1.67E-15	<40	AS READ	<40
		YELLOW	<1	2450	1.67E-16	<40	AS READ	<40
		GREEN	<1	245	1.67E-17	<40	AS READ	<40
2.00	1.00	BLUE	10	35000	1.60E-08	90	270	<40
		YELLOW	1	3500	1.60E-09	<40	AS READ	<40
		GREEN	<1	350	1.60E-10	<40	AS READ	<40
3.00	2.10	BLUE	8	28000	1.36E-07	760	2281	136
		YELLOW	<1	2800	1.36E-08	76	228	<40
		GREEN	<1	280	1.36E-09	<40	AS READ	<40
4.00	2.90	BLUE	<1	210	9.26E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	9.26E-11	<40	AS READ	<40
		GREEN	<1	AS READ	9.26E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

TABLE 9.7.4b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 0915-0930 (SCENARIO TIME 6:30 - 6:45)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (177 LITERS)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7.00	14.00	1.67E-15	AS READ	<50
		YELLOW	0.70	1.40	1.67E-16	AS READ	<50
		GREEN	0.07	0.14	1.67E-17	AS READ	<50
2.00	1.00	BLUE	10.00	20.00	1.60E-08	514	<50
		YELLOW	1.00	2.00	1.60E-09	51	<50
		GREEN	0.10	0.20	1.60E-10	AS READ	<50
3.00	2.10	BLUE	8.00	16.00	1.36E-07	4346	244
		YELLOW	0.80	1.60	1.36E-08	435	<50
		GREEN	0.08	0.16	1.36E-09	AS READ	<50
4.00	2.90	BLUE	0.06	0.12	9.26E-10	AS READ	<50
		YELLOW	AS READ	AS READ	9.26E-11	AS READ	<50
		GREEN	AS READ	AS READ	9.26E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

TABLE 9.7.4c

STATE OF NEW HAMPSHIRE FIELD DATA AT CLOCK TIME 0915-0930 (SCENARIO TIME 6:30 - 6:45)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (20 CU FT)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	E-140/HP-210 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7.00	14.00	1.67E-15	AS READ	<50
		YELLOW	0.70	1.40	1.67E-16	AS READ	<50
		GREEN	0.07	0.14	1.67E-17	AS READ	<50
2.00	1.00	BLUE	10.00	20.00	1.60E-08	50	91
		YELLOW	1.00	2.00	1.60E-09	AS READ	<50
		GREEN	0.10	0.20	1.60E-10	AS READ	<50
3.00	2.10	BLUE	8.00	16.00	1.36E-07	426	774
		YLLLOW	0.80	1.60	1.36E-08	AS READ	77
		GREEN	0.08	0.16	1.36E-09	AS READ	<50
4.00	2.90	BLUE	0.06	0.12	9.26E-10	AS READ	<50
		YELLOW	AS READ	AS READ	9.26E-11	AS READ	<50
		GREEN	AS READ	AS READ	9.26E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 20 cu ft. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 10 cu ft sample was collected instead of 20 cu ft, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The E-140/HP-210 detector efficiency for I-131 was assumed to be 0.0024 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.1E+09 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 20 cu foot sample volume.

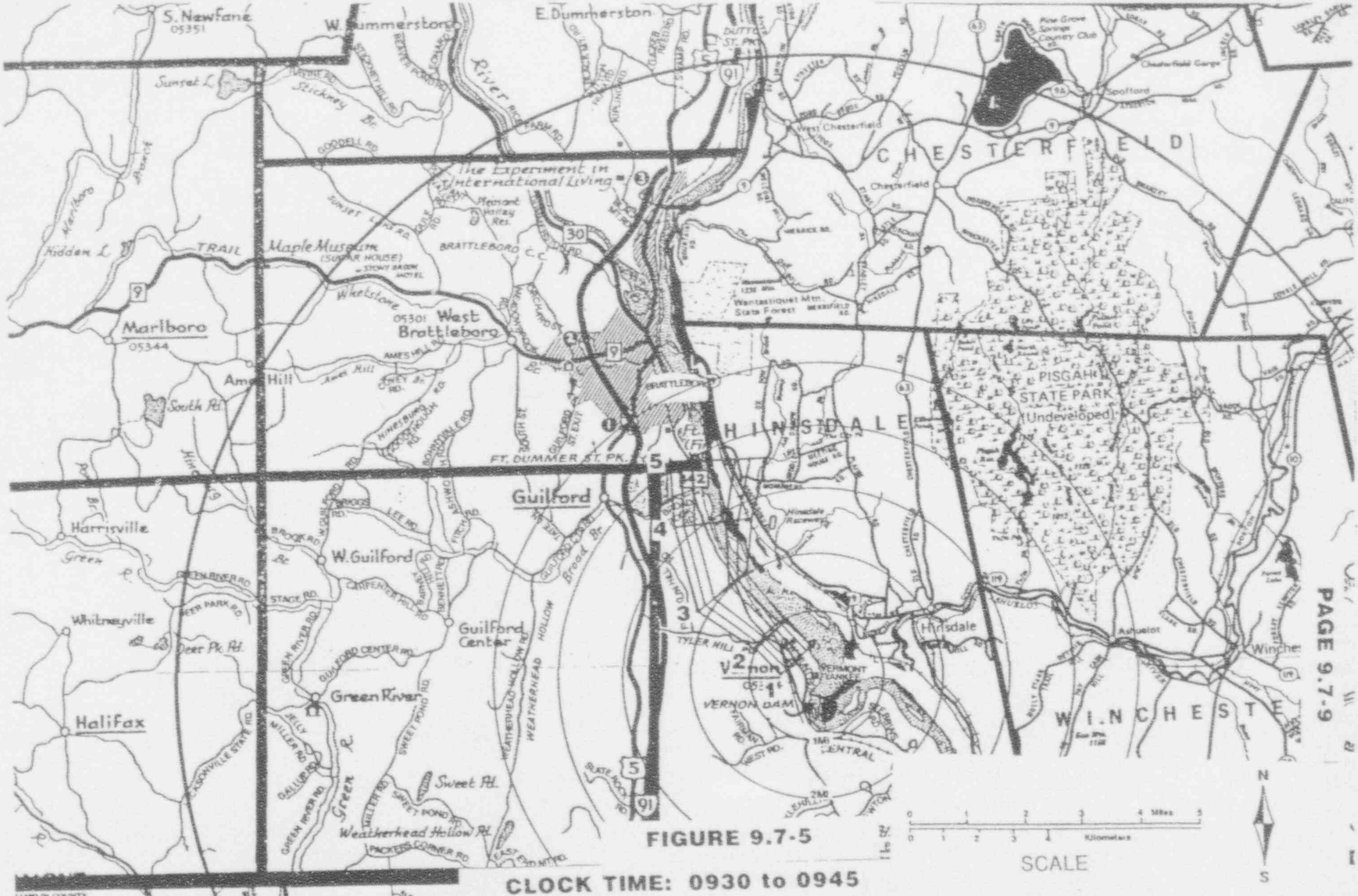


FIGURE 9.7-5

CLOCK TIME: 0930 to 0945

TABLE 9.7.5a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 0930-0945 (SCENARIO TIME 6:45 - 7:00)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER ZEOLITE (NET CPM)	SAM-II (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7	24500	1.79E-16	<40	AS READ	<40
		YELLOW	<1	2450	1.79E-17	<40	AS READ	<40
		GREEN	<1	245	1.79E-18	<40	AS READ	<40
2.00	0.90	BLUE	10	35000	6.17E-09	<40	104	<40
		YELLOW	1	3500	6.17E-10	<40	AS READ	<40
		GREEN	<1	350	6.17E-11	<40	AS READ	<40
3.00	1.90	BLUE	12	42000	1.91E-07	1072	3215	191
		YELLOW	1	4200	1.91E-08	107	321	<40
		GREEN	<1	420	1.91E-09	<40	AS READ	<40
4.00	2.90	BLUE	6	21000	9.26E-08	519	1556	93
		YELLOW	<1	2100	9.26E-09	52	156	<40
		GREEN	<1	210	9.26E-10	<40	AS READ	<40
5.00	3.70	BLUE	<1	175	7.41E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	7.41E-11	<40	AS READ	<40
		GREEN	<1	AS READ	7.41E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

TABLE 9.7.5b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 0930-0945 (SCENARIO TIME 6:45 - 7:00)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (177 LITERS)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7.00	14.00	1.79E-16	AS READ	<50
		YELLOW	0.70	1.40	1.79E-17	AS READ	<50
		GREEN	0.07	0.14	1.79E-18	AS READ	<50
2.00	0.90	BLUE	10.00	20.00	6.17E-09	198	<50
		YELLOW	1.00	2.00	6.17E-10	AS READ	<50
		GREEN	0.10	0.20	6.17E-11	AS READ	<50
3.00	1.90	BLUE	12.00	24.00	1.91E-07	6123	344
		YELLOW	1.20	2.40	1.91E-08	612	<50
		GREEN	0.12	0.24	1.91E-09	61	<50
4.00	2.90	BLUE	6.00	12.00	9.26E-08	2963	167
		YELLOW	0.60	1.20	9.26E-09	296	<50
		GREEN	0.06	0.12	9.26E-10	AS READ	<50
5.00	3.70	BLUE	0.05	0.10	7.41E-10	AS READ	<50
		YELLOW	AS READ	AS READ	7.41E-11	AS READ	<50
		GREEN	AS READ	AS READ	7.41E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

TABLE 9.7.5c

STATE OF NEW HAMPSHIRE FIELD DATA AT CLOCK TIME 0930-0945 (SCENARIO TIME 6:45 - 7:00)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	AIR SAMPLE DATA (20 CU FT)* CONC. I-131 uCi/cc	E-140/HP-210 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7.00	14.00	1.79E-16	AS READ	<50
		YELLOW	0.70	1.40	1.79E-17	AS READ	<50
		GREEN	0.07	0.14	1.79E-18	AS READ	<50
2.00	0.90	BLUE	10.00	20.00	6.17E-09	AS READ	<50
		YELLOW	1.00	2.00	6.17E-10	AS READ	<50
		GREEN	0.10	0.20	6.17E-11	AS READ	<50
3.00	1.90	BLUE	12.00	24.00	1.91E-07	601	1091
		YELLOW	1.20	2.40	1.91E-08	60	109
		GREEN	0.12	0.24	1.91E-09	AS READ	<50
4.00	2.90	BLUE	6.00	12.00	9.26E-08	291	528
		YELLOW	0.60	1.20	9.26E-09	AS READ	53
		GREEN	0.06	0.12	9.26E-10	AS READ	<50
5.00	3.70	BLUE	0.05	0.10	7.41E-10	AS READ	<50
		YELLOW	AS READ	AS READ	7.41E-11	AS READ	<50
		GREEN	AS READ	AS READ	7.41E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 20 cu ft. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 10 cu ft sample was collected instead of 20 cu ft, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The E-140/HP-210 detector efficiency for I-131 was assumed to be 0.0024 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.1E+09 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 20 cu foot sample volume.

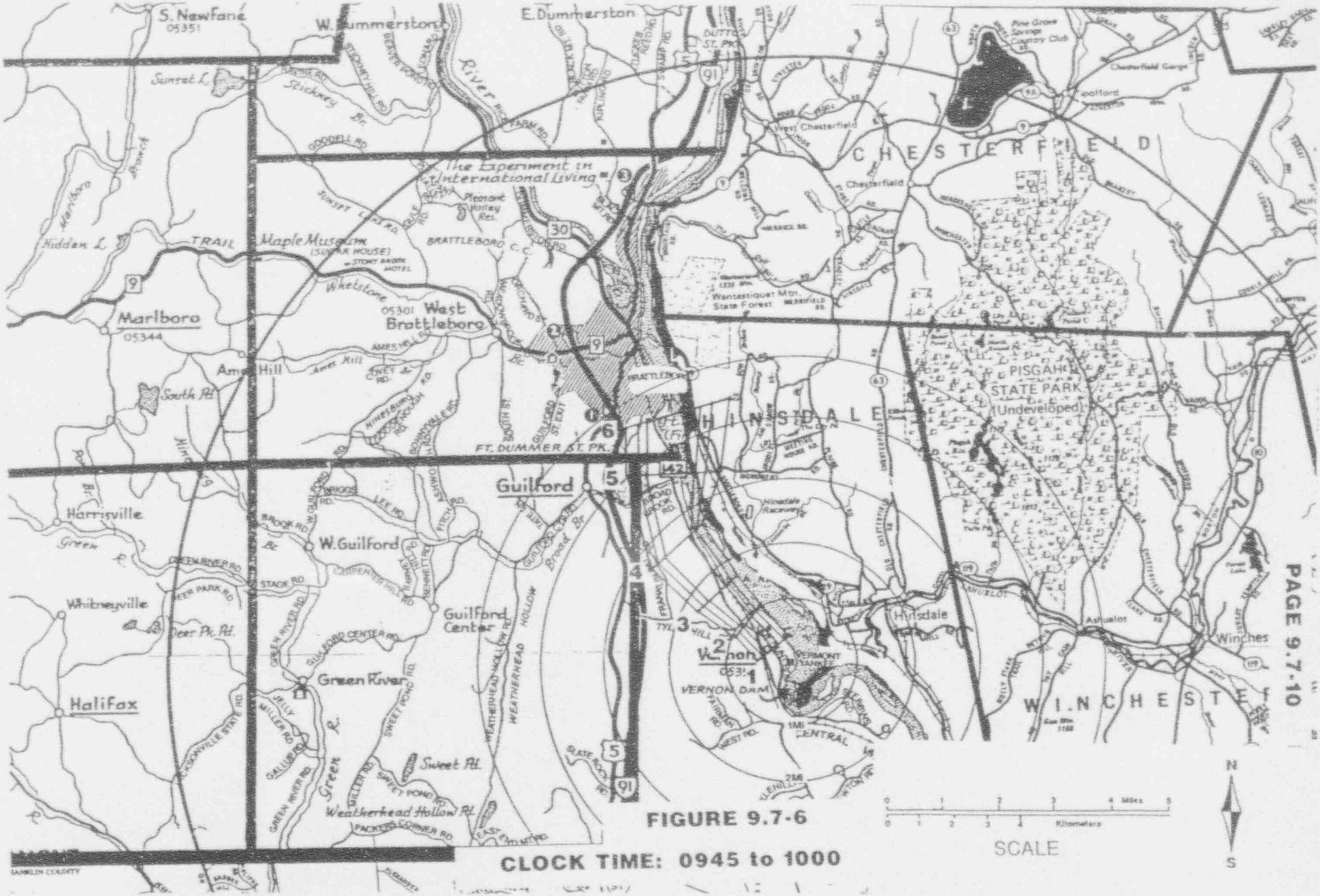


FIGURE 9.7-6

CLOCK TIME: 0945 to 1000

TABLE 9.7.6a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 0945-1000 (SCENARIO TIME 7:00 - 7:15)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER ZEOLITE (NET CPM)	SAM-II SILVER ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7	24500	1.79E-16	<40	AS READ	<40
		YELLOW	<1	2450	1.79E-17	<40	AS READ	<40
		GREEN	<1	245	1.79E-18	<40	AS READ	<40
2.00	0.80	BLUE	10	35000	6.17E-09	<40	104	<40
		YELLOW	1	3500	6.17E-10	<40	AS READ	<40
		GREEN	<1	350	6.17E-11	<40	AS READ	<40
3.00	1.60	BLUE	14	49000	1.91E-07	1072	3215	191
		YELLOW	1.5	4900	1.91E-08	107	321	<40
		GREEN	<1	490	1.91E-09	<40	AS READ	<40
4.00	2.60	BLUE	8	28000	9.26E-08	519	1556	93
		YELLOW	<1	2800	9.26E-09	52	156	<40
		GREEN	<1	280	9.26E-10	<40	AS READ	<40
5.00	3.60	BLUE	5	17500	7.41E-10	<40	AS READ	<40
		YELLOW	<1	1750	7.41E-11	<40	AS READ	<40
		GREEN	<1	175	7.41E-12	<40	AS READ	<40
6.00	4.40	BLUE	<1	140	5.74E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	5.74E-11	<40	AS READ	<40
		GREEN	<1	AS READ	5.74E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

TABLE 9.7.6b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 0945-1000 (SCENARIO TIME 7:00 - 7:15)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	AIR SAMPLE DATA (177 LITERS)* CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7.00	14.00	1.79E-16	AS READ	<50
		YELLOW	0.70	1.40	1.79E-17	AS READ	<50
		GREEN	0.07	0.14	1.79E-18	AS READ	<50
2.00	0.80	BLUE	10.00	20.00	6.17E-09	198	<50
		YELLOW	1.00	2.00	6.17E-10	AS READ	<50
		GREEN	0.10	0.20	6.17E-11	AS READ	<50
3.00	1.60	BLUE	14.00	28.00	1.91E-07	6123	344
		YELLOW	1.40	2.80	1.91E-08	612	<50
		GREEN	0.14	0.28	1.91E-09	61	<50
4.00	2.60	BLUE	8.00	16.00	9.26E-08	2963	167
		YELLOW	0.80	1.60	9.26E-09	296	<50
		GREEN	0.08	0.16	9.26E-10	AS READ	<50
5.00	3.60	BLUE	5.00	10.00	7.41E-10	AS READ	<50
		YELLOW	0.50	1.00	7.41E-11	AS READ	<50
		GREEN	0.05	0.10	7.41E-12	AS READ	<50
6.00	4.40	BLUE	0.04	0.08	5.74E-10	AS READ	<50
		YELLOW	AS READ	AS READ	5.74E-11	AS READ	<50
		GREEN	AS READ	AS READ	5.74E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

TABLE 9.7.6c

STATE OF NEW HAMPSHIRE FIELD DATA AT CLOCK TIME 0945-1000 (SCENARIO TIME 7:00 - 7:15)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	AIR SAMPLE DATA (20 CU FT)* CONC. I-131 uCi/cc	E-140/HP-210 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7.00	14.00	8.02E-18	AS READ	<50
		YELLOW	0.70	1.40	8.02E-19	AS READ	<50
		GREEN	0.07	0.14	8.02E-20	AS READ	<50
2.00	0.80	BLUE	10.00	20.00	9.88E-10	AS READ	<50
		YELLOW	1.00	2.00	9.88E-11	AS READ	<50
		GREEN	0.10	0.20	9.88E-12	AS READ	<50
3.00	1.60	BLUE	14.00	28.00	2.47E-07	775	1407
		YELLOW	1.40	2.80	2.47E-08	78	141
		GREEN	0.14	0.28	2.47E-09	AS READ	<50
4.00	2.60	BLUE	8.00	16.00	1.36E-07	426	774
		YELLOW	0.80	1.60	1.36E-08	AS READ	77
		GREEN	0.08	0.16	1.36E-09	AS READ	<50
5.00	3.60	BLUE	5.00	10.00	7.41E-08	233	422
		YELLOW	0.50	1.00	7.41E-09	AS READ	<50
		GREEN	0.05	0.10	7.41E-10	AS READ	<50
6.00	4.40	BLUE	0.04	0.08	5.74E-10	AS READ	<50
		YELLOW	AS READ	AS READ	5.74E-11	AS READ	<50
		GREEN	AS READ	AS READ	5.74E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 20 cu ft. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 10 cu ft sample was collected instead of 20 cu ft, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The E-140/HP-210 detector efficiency for I-131 was assumed to be 0.0024 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.1E+09 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 20 cu foot sample volume.

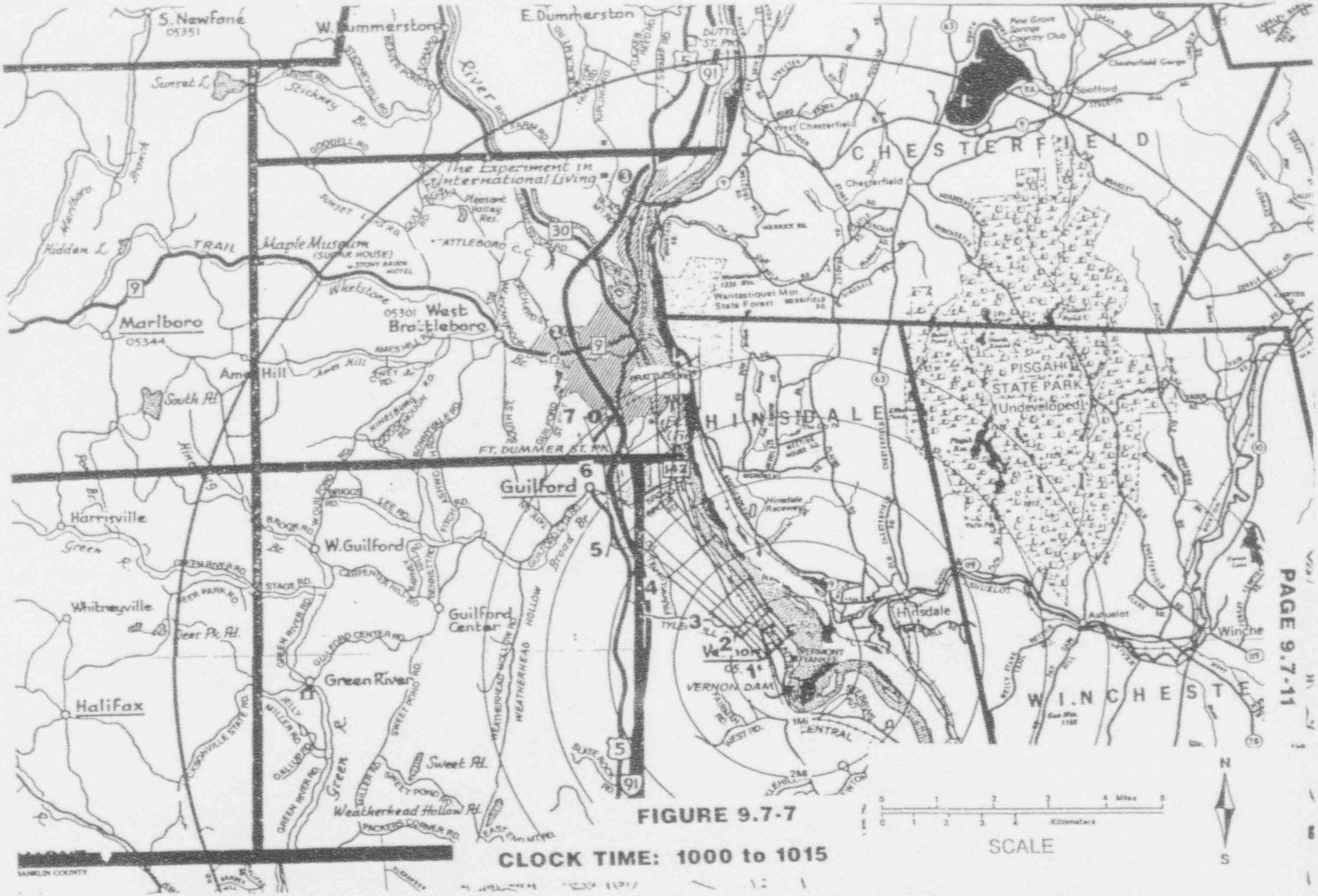


FIGURE 9.7-7

CLOCK TIME: 1000 to 1015

TABLE 9.7.7a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1000-1015 (SCENARIO TIME 7:15 - 7:30)

			GAMMA DOSE RATE		AIR SAMPLE DATA (100 LITERS)*			
						RM-14**	SAM-II	RM-14***
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	PIC-6 (mR/hr)	RM-14 (CPM)	CONC. I-131 uCi/cc	SILVER (NET CPM)	ZEOLITE (NET CPM)	PARTICULATE FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7	24500	8.02E-18	<40	AS READ	<40
		YELLOW	<1	2450	8.02E-19	<40	AS READ	<40
		GREEN	<1	245	8.02E-20	<40	AS READ	<40
2.00	0.80	BLUE	10	35000	1.11E-09	<40	AS READ	<40
		YELLOW	1	3500	1.11E-10	<40	AS READ	<40
		GREEN	<1	350	1.11E-11	<40	AS READ	<40
3.00	1.50	BLUE	17	OSH	2.72E-07	1521	4563	272
		YELLOW	2	5950	2.72E-08	152	456	<40
		GREEN	<1	595	2.72E-09	<40	AS READ	<40
4.00	2.40	BLUE	10	35000	1.85E-07	1037	3111	185
		YELLOW	1	3500	1.85E-08	104	311	<40
		GREEN	<1	350	1.85E-09	<40	AS READ	<40
5.00	3.40	BLUE	6	21000	1.05E-07	588	1763	105
		YELLOW	<1	2100	1.05E-08	59	176	<40
		GREEN	<1	210	1.05E-09	<40	AS READ	<40
6.00	4.30	BLUE	4	14000	5.56E-08	311	933	56
		YELLOW	<1	1400	5.56E-09	<40	93	<40
		GREEN	<1	140	5.56E-10	<40	AS READ	<40
7.00	5.10	BLUE	<1	105	4.63E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	4.63E-11	<40	AS READ	<40
		GREEN	<1	AS READ	4.63E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

OSH Off-Scale High (Count rate higher than upper scale of the instrumentation)

TABLE 9.7.7b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 1000-1015 (SCENARIO TIME 7:15 - 7:30)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	AIR SAMPLE DATA (177 LITERS)* CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7.00	14.00	8.02E-18	AS READ	<50
		YELLOW	0.70	1.40	8.02E-19	AS READ	<50
		GREEN	0.07	0.14	8.02E-20	AS READ	<50
2.00	0.80	BLUE	10.00	20.00	1.11E-09	AS READ	<50
		YELLOW	1.00	2.00	1.11E-10	AS READ	<50
		GREEN	0.10	0.20	1.11E-11	AS READ	<50
3.00	1.50	BLUE	17.00	34.00	2.72E-07	8691	489
		YELLOW	1.70	3.40	2.72E-08	869	<50
		GREEN	0.17	0.34	2.72E-09	87	<50
4.00	2.40	BLUE	10.00	20.00	1.85E-07	5926	333
		YELLOW	1.00	2.00	1.85E-08	593	<50
		GREEN	0.10	0.20	1.85E-09	59	<50
5.00	3.40	BLUE	6.00	12.00	1.05E-07	3358	189
		YELLOW	0.60	1.20	1.05E-08	336	<50
		GREEN	0.06	0.12	1.05E-09	AS READ	<50
6.00	4.30	BLUE	4.00	8.00	5.56E-08	1778	100
		YELLOW	0.40	0.80	5.56E-09	178	<50
		GREEN	0.04	0.08	5.56E-10	AS READ	<50
7.00	5.10	BLUE	0.03	0.06	4.63E-10	AS READ	<50
		YELLOW	AS READ	AS READ	4.63E-11	AS READ	<50
		GREEN	AS READ	AS READ	4.63E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

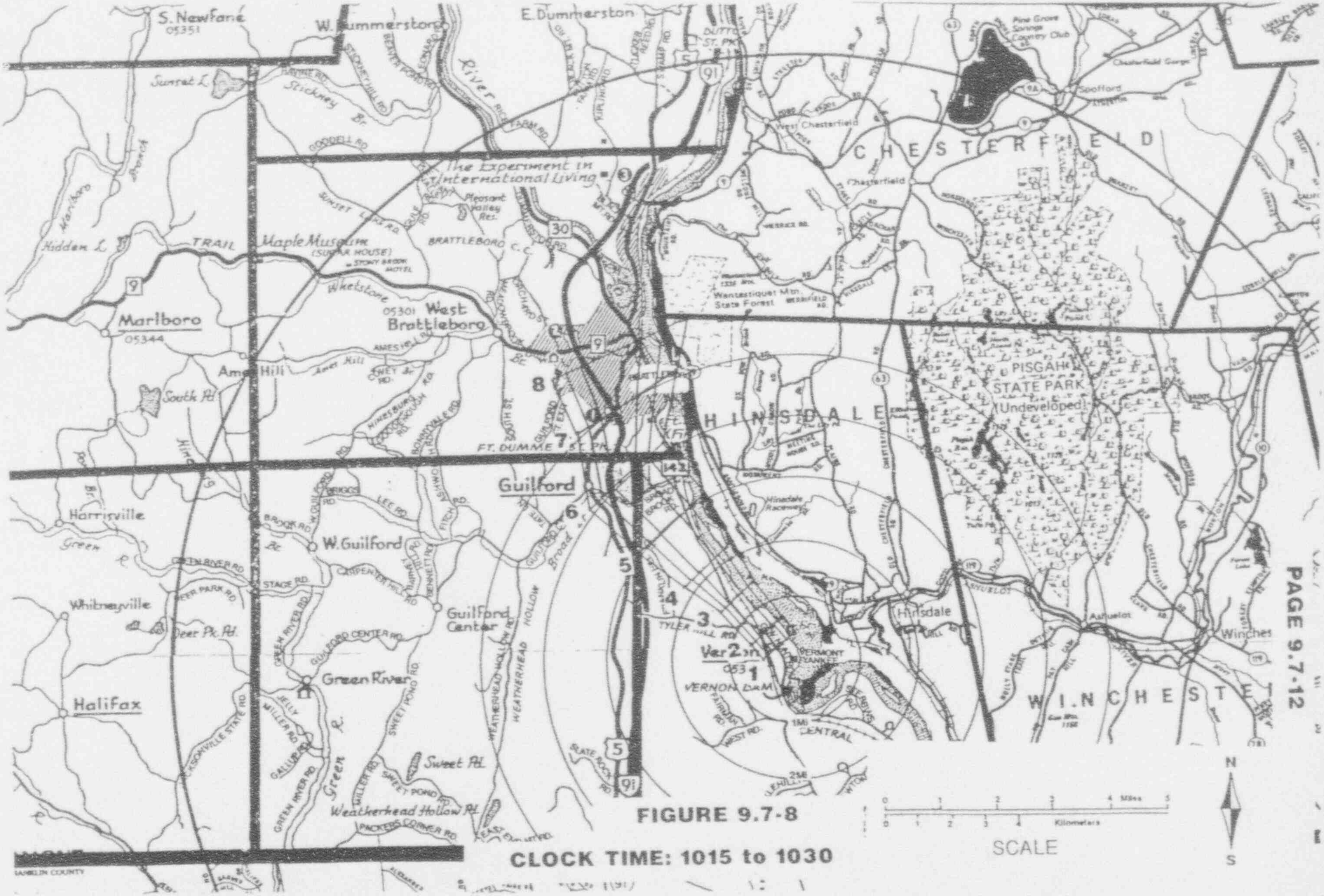


FIGURE 9.7-8

CLOCK TIME: 1015 to 1030

TABLE 9.7.8a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1015-1030 (SCENARIO TIME 7:30 - 7:45)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER ZEOLITE (NET CPM)	SAM-II SILVER ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7	24500	6.17E-20	<40	AS READ	<40
		YELLOW	<1	2450	6.17E-21	<40	AS READ	<40
		GREEN	<1	245	6.17E-22	<40	AS READ	<40
2.00	0.60	BLUE	9	31500	2.47E-11	<40	AS READ	<40
		YELLOW	<1	3150	2.47E-12	<40	AS READ	<40
		GREEN	<1	315	2.47E-13	<40	AS READ	<40
3.00	1.40	BLUE	20	OSH	3.09E-07	1728	5185	309
		YELLOW	2	7000	3.09E-08	173	519	<40
		GREEN	<1	700	3.09E-09	<40	52	<40
4.00	2.10	BLUE	12	42000	2.47E-07	1383	4148	247
		YELLOW	1	4200	2.47E-08	138	415	<40
		GREEN	<1	420	2.47E-09	<40	AS READ	<40
5.00	3.00	BLUE	8	28000	1.42E-07	795	2385	142
		YELLOW	<1	2800	1.42E-08	80	239	<40
		GREEN	<1	280	1.42E-09	<40	AS READ	<40
6.00	4.00	BLUE	5	17500	8.02E-08	449	1348	80
		YELLOW	<1	1750	8.02E-09	45	135	<40
		GREEN	<1	175	8.02E-10	<40	AS READ	<40
7.00	5.00	BLUE	3	10500	4.88E-08	273	819	49
		YELLOW	<1	1050	4.88E-09	<40	82	<40
		GREEN	<1	105	4.88E-10	<40	AS READ	<40
8.00	5.70	BLUE	<1	105	3.95E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	3.95E-11	<40	AS READ	<40
		GREEN	<1	AS READ	3.95E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

OSH Off-scale High (Count rate higher than upper scale of the instrumentation)

TABLE 9.7.8b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 1015-1030 (SCENARIO TIME 7:30 - 7:45)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	AIR SAMPLE DATA (177 LITERS)* CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7.00	14.00	6.17E-20	AS READ	<50
		YELLOW	0.70	1.40	6.17E-21	AS READ	<50
		GREEN	0.07	0.14	6.17E-22	AS READ	<50
2.00	0.60	BLUE	9.00	18.00	2.47E-11	AS READ	<50
		YELLOW	0.90	1.80	2.47E-12	AS READ	<50
		GREEN	0.09	0.18	2.47E-13	AS READ	<50
3.00	1.40	BLUE	20.00	40.00	3.09E-07	9877	556
		YELLOW	2.00	4.00	3.09E-08	988	56
		GREEN	0.20	0.40	3.09E-09	99	<50
4.00	2.10	BLUE	12.00	24.00	2.47E-07	7901	444
		YELLOW	1.20	2.40	2.47E-08	790	<50
		GREEN	0.12	0.24	2.47E-09	79	<50
5.00	3.00	BLUE	8.00	16.00	1.42E-07	4543	256
		YELLOW	0.80	1.60	1.42E-08	454	<50
		GREEN	0.08	0.16	1.42E-09	AS READ	<50
6.00	4.00	BLUE	5.00	10.00	8.02E-08	2568	144
		YELLOW	0.50	1.00	8.02E-09	257	<50
		GREEN	0.05	0.10	8.02E-10	AS READ	<50
7.00	5.00	BLUE	3.00	6.00	4.88E-08	1560	88
		YELLOW	0.30	0.60	4.88E-09	156	<50
		GREEN	0.03	0.06	4.88E-10	AS READ	<50
8.00	5.70	BLUE	0.03	0.06	3.95E-10	AS READ	<50
		YELLOW	AS READ	AS READ	3.95E-11	AS READ	<50
		GREEN	AS READ	AS READ	3.95E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

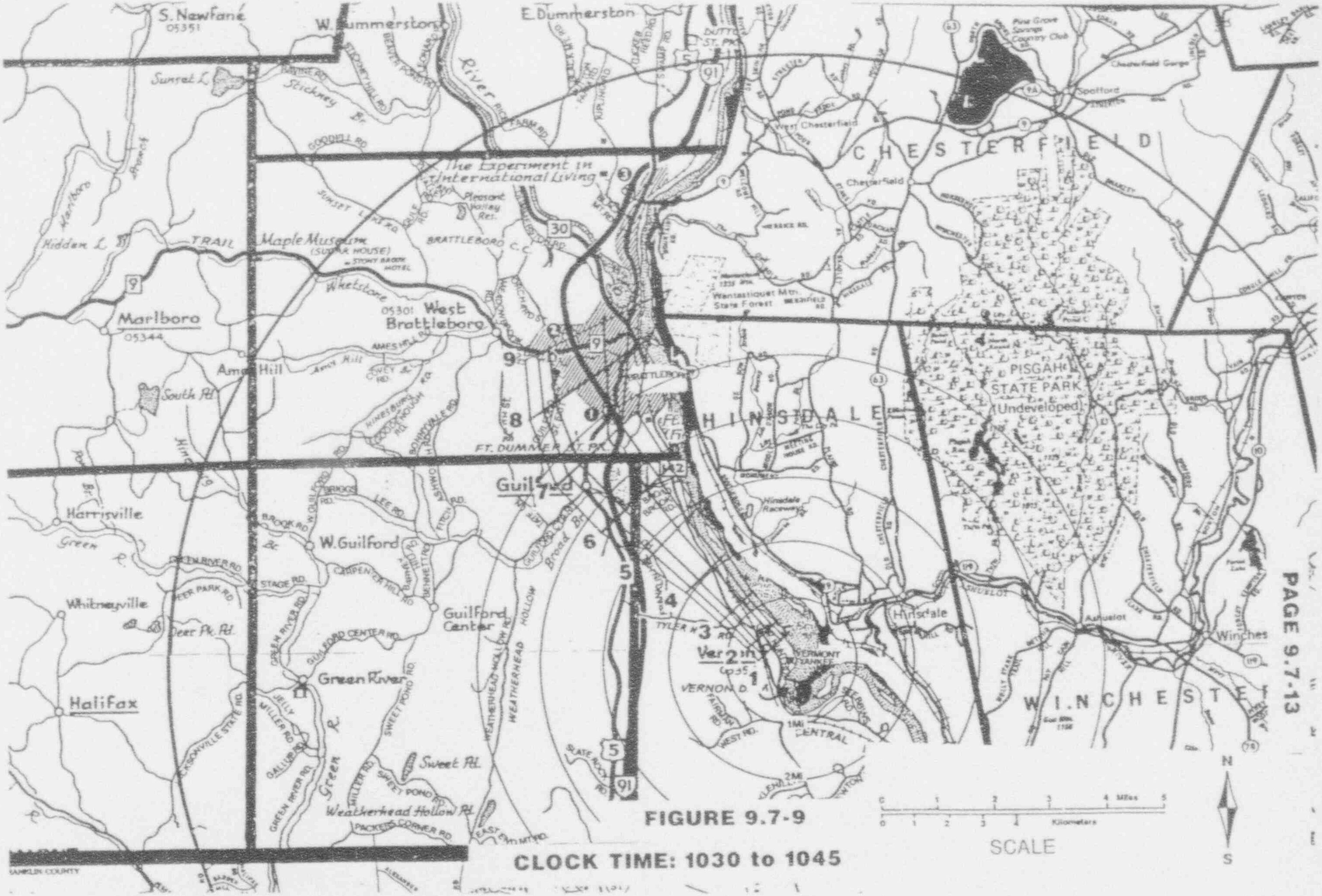


FIGURE 9.7-9

CLOCK TIME: 1030 to 1045

TABLE 9.7.9a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1030-1045 (SCENARIO TIME 7:45 - 8:00)

			GAMMA DOSE RATE		AIR SAMPLE DATA (100 LITERS)*			
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	PIC-6 (mR/hr)	RM-14 (CPM)	CONC. I-131 uCi/cc	RM-14** SILVER (NET CPM)	SAM-II ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7	24500	6.17E-20	<40	AS READ	<40
		YELLOW	<1	2450	6.17E-21	<40	AS READ	<40
		GREEN	<1	245	6.17E-22	<40	AS READ	<40
2.00	0.60	BLUE	9	31500	2.47E-11	<40	AS READ	<40
		YELLOW	<1	3150	2.47E-12	<40	AS READ	<40
		GREEN	<1	315	2.47E-13	<40	AS READ	<40
3.00	1.20	BLUE	22	OSH	2.84E-07	1590	4770	280
		YELLOW	2	7700	2.84E-08	159	477	<40
		GREEN	<1	770	2.84E-09	<40	AS READ	<40
4.00	2.00	BLUE	14	49000	2.47E-07	1383	4148	250
		YELLOW	1	4900	2.47E-08	138	415	<40
		GREEN	<1	490	2.47E-09	<40	AS READ	<40
5.00	2.80	BLUE	10	35000	1.79E-07	1000	3007	180
		YELLOW	1	3500	1.79E-08	100	301	<40
		GREEN	<1	350	1.79E-09	<40	AS READ	<40
6.00	3.60	BLUE	6	21000	1.11E-07	620	1867	110
		YELLOW	<1	2100	1.11E-08	60	187	<40
		GREEN	<1	210	1.11E-09	<40	AS READ	<40
7.00	4.60	BLUE	4	14000	6.17E-08	350	1037	60
		YELLOW	<1	1400	6.17E-09	<40	104	<40
		GREEN	<1	140	6.17E-10	<40	AS READ	<40
8.00	5.60	BLUE	3	10500	4.14E-08	230	695	40
		YELLOW	<1	1050	4.14E-09	<40	69	<40
		GREEN	<1	105	4.14E-10	<40	AS READ	<40
9.00	6.30	BLUE	<1	70	3.40E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	3.40E-11	<40	AS READ	<40
		GREEN	<1	AS READ	3.40E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

OSH Off-Scale High (Count rate higher than upper scale of the instrumentation)

TABLE 9.7.9b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 1030-1045 (SCENARIO TIME 7:45 - 8:00)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (177 LITERS)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	7.00	14.00	6.17E-20	AS READ	<50
		YELLOW	0.70	1.40	6.17E-21	AS READ	<50
		GREEN	0.07	0.14	6.17E-22	AS READ	<50
2.00	0.60	BLUE	9.00	18.00	2.47E-11	AS READ	<50
		YELLOW	0.[illegible]0	1.80	2.47E-12	AS READ	<50
		GREEN	0.09	0.18	2.47E-13	AS READ	<50
3.00	1.20	BLUE	22.00	44.00	2.84E-07	9086	511
		YELLOW	2.20	4.40	2.84E-08	909	51
		GREEN	0.22	0.44	2.84E-09	91	<50
4.00	2.00	BLUE	14.00	28.00	2.47E-07	7901	444
		YELLOW	1.40	2.80	2.47E-08	790	<50
		GREEN	0.14	0.28	2.47E-09	79	<50
5.00	2.80	BLUE	10.00	20.00	1.79E-07	5728	322
		YELLOW	1.00	2.[illegible]	1.79E-08	573	<50
		GREEN	0.10	0.20	1.79E-09	57	<50
6.00	3.60	BLUE	6.00	12.00	1.11E-07	3556	200
		YELLOW	0.60	1.20	1.11E-08	356	<50
		GREEN	0.06	0.12	1.11E-09	AS READ	<50
7.00	4.60	BLUE	4.00	8.00	6.17E-08	1975	111
		YELLOW	0.40	0.80	6.17E-09	198	<50
		GREEN	0.04	0.08	6.17E-10	AS READ	<50
8.00	5.60	BLUE	3.00	6.00	4.14E-08	1323	74
		YELLOW	0.30	0.60	4.14E-09	132	<50
		GREEN	0.03	0.06	4.14E-10	AS READ	<50
9.00	6.30	BLUE	0.02	0.04	3.40E-10	AS READ	<50
		YELLOW	AS READ	AS READ	3.40E-11	AS READ	<50
		GREEN	AS READ	AS READ	3.40E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the [illegible]mple count rates. The filter count rate was estimated from the I-131 air [illegible]tration for a 177 liter sample volume.

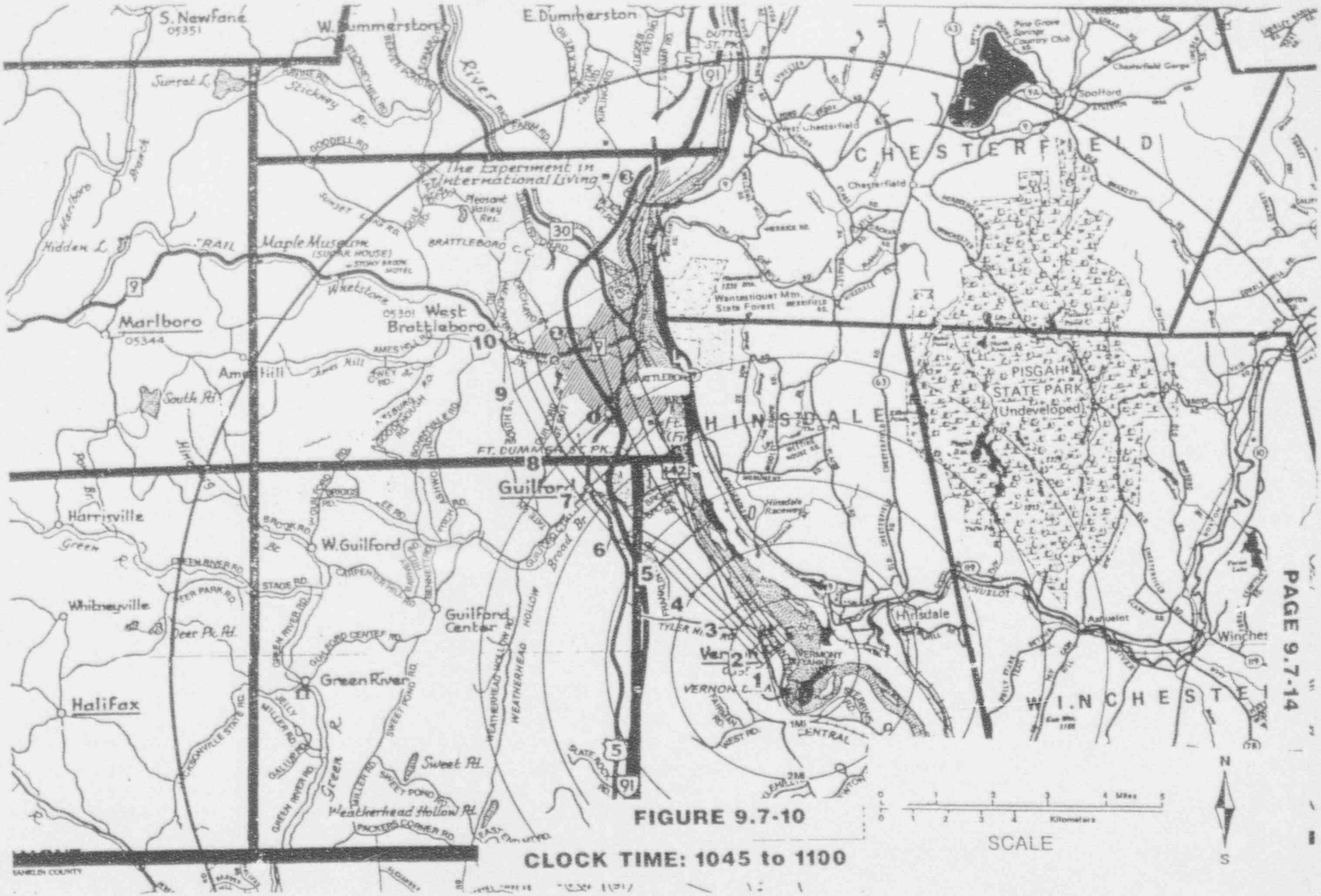


FIGURE 9.7-10

CLOCK TIME: 1045 to 1100

TABLE 9.7.10a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1045-1100 (SCENARIO TIME 8:00 - 8:15)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER ZEOLITE (NET CPM)	SAM-II SILVER ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	<1	245	6.17E-22	<40	AS READ	<40
		YELLOW	<1	25	6.17E-23	<40	AS READ	<40
		GREEN	<1	2	6.17E-24	<40	AS READ	<40
2.00	0.60	BLUE	<1	315	2.47E-13	<40	AS READ	<40
		YELLOW	<1	32	2.47E-14	<40	AS READ	<40
		GREEN	<1	3	2.47E-15	<40	AS READ	<40
3.00	1.20	BLUE	22	OSH	3.21E-07	1800	5.93	320
		YELLOW	2	7700	3.21E-08	180	539	<40
		GREEN	<1	770	3.21E-09	<40	54	<40
4.00	1.90	BLUE	15	OSH	2.65E-07	1500	4459	265
		YELLOW	2	5250	2.65E-08	150	446	<40
		GREEN	<1	525	2.65E-09	<40	AS READ	<40
5.00	2.60	BLUE	10	35000	2.04E-07	1140	3422	200
		YELLOW	1	3500	2.04E-08	114	342	<40
		GREEN	<1	350	2.04E-09	<40	AS READ	<40
6.00	3.40	BLUE	8	28000	1.42E-07	800	2385	140
		YELLOW	<1	2800	1.42E-08	80	239	<40
		GREEN	<1	280	1.42E-09	<40	AS READ	<40
7.00	4.20	BLUE	5	17500	9.26E-08	520	1556	90
		YELLOW	<1	1750	9.26E-09	50	156	<40
		GREEN	<1	175	9.26E-10	<40	AS READ	<40
8.00	5.20	BLUE	4	14000	5.62E-08	315	944	55
		YELLOW	<1	1400	5.62E-09	<40	94	<40
		GREEN	<1	140	5.62E-10	<40	AS READ	<40
9.00	6.20	BLUE	3	8750	3.52E-08	200	591	<40
		YELLOW	<1	875	3.52E-09	<40	59	<40
		GREEN	<1	88	3.52E-10	<40	AS READ	<40
10.00	6.90	BLUE	<1	70	2.96E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	2.96E-11	<40	AS READ	<40
		GREEN	<1	AS READ	2.96E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

OSH Off-Scale High (Count rate higher than upper scale of the instrumentation)>

TABLE 9.7.10b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 1045-1100 (SCENARIO TIME 8:00 - 8:15)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (177 LITERS)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	SITE BOUNDARY	BLUE	0.07	0.14	6.17E-22	AS READ	<50
		YELLOW	AS READ	0.00	6.17E-23	AS READ	<50
		GREEN	AS READ	0.00	6.17E-24	AS READ	<50
2.00	0.60	BLUE	0.09	0.18	2.47E-13	AS READ	<50
		YELLOW	AS READ	0.00	2.47E-14	AS READ	<50
		GREEN	AS READ	0.00	2.47E-15	AS READ	<50
3.00	1.20	BLUE	22.00	44.00	3.21E-07	10272	578
		YELLOW	2.20	4.40	3.21E-08	1027	58
		GREEN	0.22	0.44	3.21E-09	103	<50
4.00	1.90	BLUE	1[illegible].00	30.00	2.65E-07	8494	478
		YELLOW	1.50	3.00	2.65E-08	849	<50
		GREEN	0.15	0.30	2.65E-09	85	<50
5.00	2.60	BLUE	10.00	20.00	2.04E-07	6519	367
		YELLOW	1.00	2.00	2.04E-08	652	<50
		GREEN	0.10	0.20	2.04E-09	65	<50
6.00	3.40	BLUE	8.00	16.00	1.42E-07	4543	256
		YELLOW	0.80	1.60	1.42E-08	454	<50
		GREEN	0.08	0.16	1.42E-09	AS READ	<50
7.00	4.20	BLUE	5.00	10.00	9.26E-08	2963	167
		YELLOW	0.50	1.00	9.26E-09	296	<50
		GREEN	0.05	0.10	9.26E-10	AS READ	<50
8.00	5.20	BLUE	4.00	8.00	5.62E-08	1798	101
		YELLOW	0.40	0.80	5.62E-09	180	<50
		GREEN	0.04	0.08	5.62E-10	AS READ	<50
9.00	6.20	BLUE	2.50	5.00	3.52E-08	1126	63
		YELLOW	0.25	0.50	3.52E-09	113	<50
		GREEN	0.03	0.05	3.52E-10	AS READ	<50
10.00	6.90	BLUE	0.02	0.04	2.96E-10	AS READ	<50
		YELLOW	AS READ	AS READ	2.96E-11	AS READ	<50
		GREEN	AS READ	AS READ	2.96E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

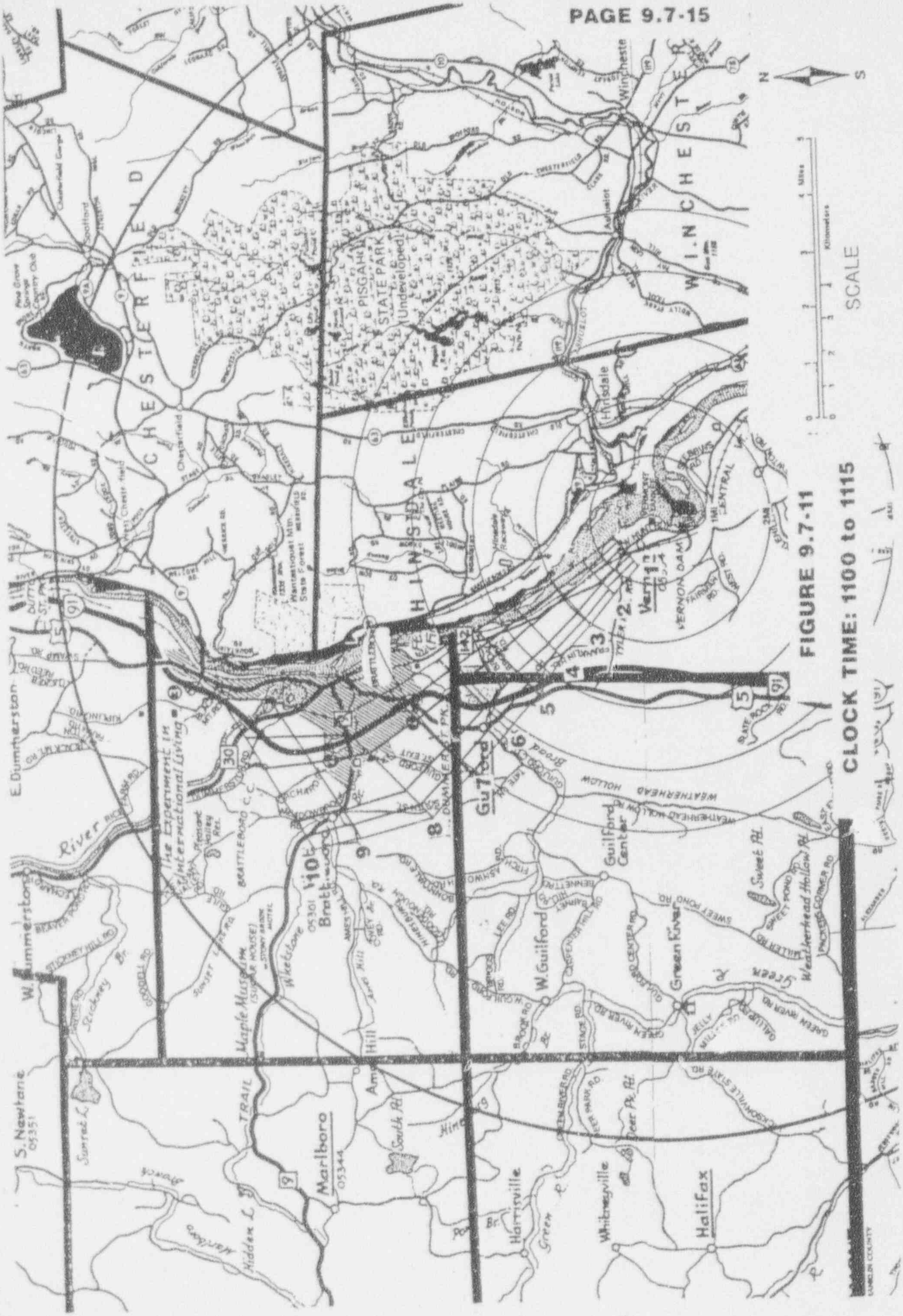


FIGURE 9.7-11

CLOCK TIME: 1100 to 1115

TABLE 9.7.11a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1100-1115 (SCENARIO TIME 8:15 - 8:30)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER ZEOLITE (NET CPM)	SAM-II SILVER ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	0.70	BLUE	<1	350	4.01E-12	<40	AS READ	<40
		YELLOW	<1	35	4.01E-13	<40	AS READ	<40
		GREEN	<1	AS READ	4.01E-14	<40	AS READ	<40
2.00	1.30	BLUE	<1	700	3.21E-09	<40	54	<40
		YELLOW	<1	70	3.21E-10	<40	AS READ	<40
		GREEN	<1	AS READ	3.21E-11	<40	AS READ	<40
3.00	1.90	BLUE	16	OSH	2.96E-07	1660	4978	300
		YELLOW	2	5600	2.96E-08	166	498	<40
		GREEN	<1	560	2.96E-09	<40	AS READ	<40
4.00	2.60	BLUE	10	35000	2.16E-07	1210	3630	215
		YELLOW	1	3500	2.16E-08	120	363	<40
		GREEN	<1	350	2.16E-09	<40	AS READ	<40
5.00	3.30	BLUE	9	31500	1.60E-07	900	2696	160
		YELLOW	<1	3150	1.60E-08	90	270	<40
		GREEN	<1	315	1.60E-09	<40	AS READ	<40
6.00	4.10	BLUE	6	21000	1.11E-07	620	1867	110
		YELLOW	<1	2100	1.11E-08	60	187	<40
		GREEN	<1	210	1.11E-09	<40	AS READ	<40
7.00	5.00	BLUE	4	14000	7.41E-08	415	1244	75
		YELLOW	<1	1400	7.41E-09	45	124	<40
		GREEN	<1	140	7.41E-10	<40	AS READ	<40
8.00	6.00	BLUE	3	10500	4.69E-08	260	788	50
		YELLOW	<1	1050	4.69E-09	<40	79	<40
		GREEN	<1	105	4.69E-10	<40	AS READ	<40
9.00	6.90	BLUE	2	7000	3.09E-08	170	519	<40
		YELLOW	<1	700	3.09E-09	<40	52	<40
		GREEN	<1	70	3.09E-10	<40	AS READ	<40
10.00	7.60	BLUE	<1	70	2.59E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	2.59E-11	<40	AS READ	<40
		GREEN	<1	AS READ	2.59E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

OSH Off-Scale High (Count rate higher than upper scale of the instrumentation)

TABLE 9.7.11b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 1100-1115 (SCENARIO TIME 8:15 - 8:30)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA SURVEY DATA, WAIST AND GROUND LEVEL READINGS: CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	AIR SAMPLE DATA (177 LITERS)*: CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	0.70	BLUE	0.10	0.20	4.01E-12	AS READ	<50
		YELLOW	0.01	0.02	4.01E-13	AS READ	<50
		GREEN	AS READ	AS READ	4.01E-14	AS READ	<50
2.00	1.30	BLUE	0.20	0.40	3.21E-09	103	<50
		YELLOW	0.02	0.04	3.21E-10	AS READ	<50
		GREEN	AS READ	AS READ	3.21E-11	AS READ	<50
3.00	1.90	BLUE	16.00	32.00	2.96E-07	9481	533
		YELLOW	1.60	3.20	2.96E-08	948	53
		GREEN	0.16	0.32	2.96E-09	95	<50
4.00	2.60	BLUE	10.00	20.00	2.16E-07	6914	389
		YELLOW	1.00	2.00	2.16E-08	691	<50
		GREEN	0.10	0.20	2.16E-09	69	<50
5.00	3.30	BLUE	9.00	18.00	1.60E-07	5136	289
		YELLOW	0.90	1.80	1.60E-08	514	<50
		GREEN	0.09	0.18	1.60E-09	51	<50
6.00	4.10	BLUE	6.00	12.00	1.11E-07	3556	200
		YELLOW	0.60	1.20	1.11E-08	356	<50
		GREEN	0.06	0.12	1.11E-09	AS READ	<50
7.00	5.00	BLUE	4.00	8.00	7.41E-08	2370	133
		YELLOW	0.40	0.80	7.41E-09	237	<50
		GREEN	0.04	0.08	7.41E-10	AS READ	<50
8.00	6.00	BLUE	3.00	6.00	4.69E-08	1501	84
		YELLOW	0.30	0.60	4.69E-09	150	<50
		GREEN	0.03	0.06	4.69E-10	AS READ	<50
9.00	6.90	BLUE	2.00	4.00	3.09E-08	988	56
		YELLOW	0.20	0.40	3.09E-09	99	<50
		GREEN	0.02	0.04	3.09E-10	AS READ	<50
10.00	7.60	BLUE	0.02	0.04	2.59E-10	AS READ	<50
		YELLOW	AS READ	AS READ	2.59E-11	AS READ	<50
		GREEN	AS READ	AS READ	2.59E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

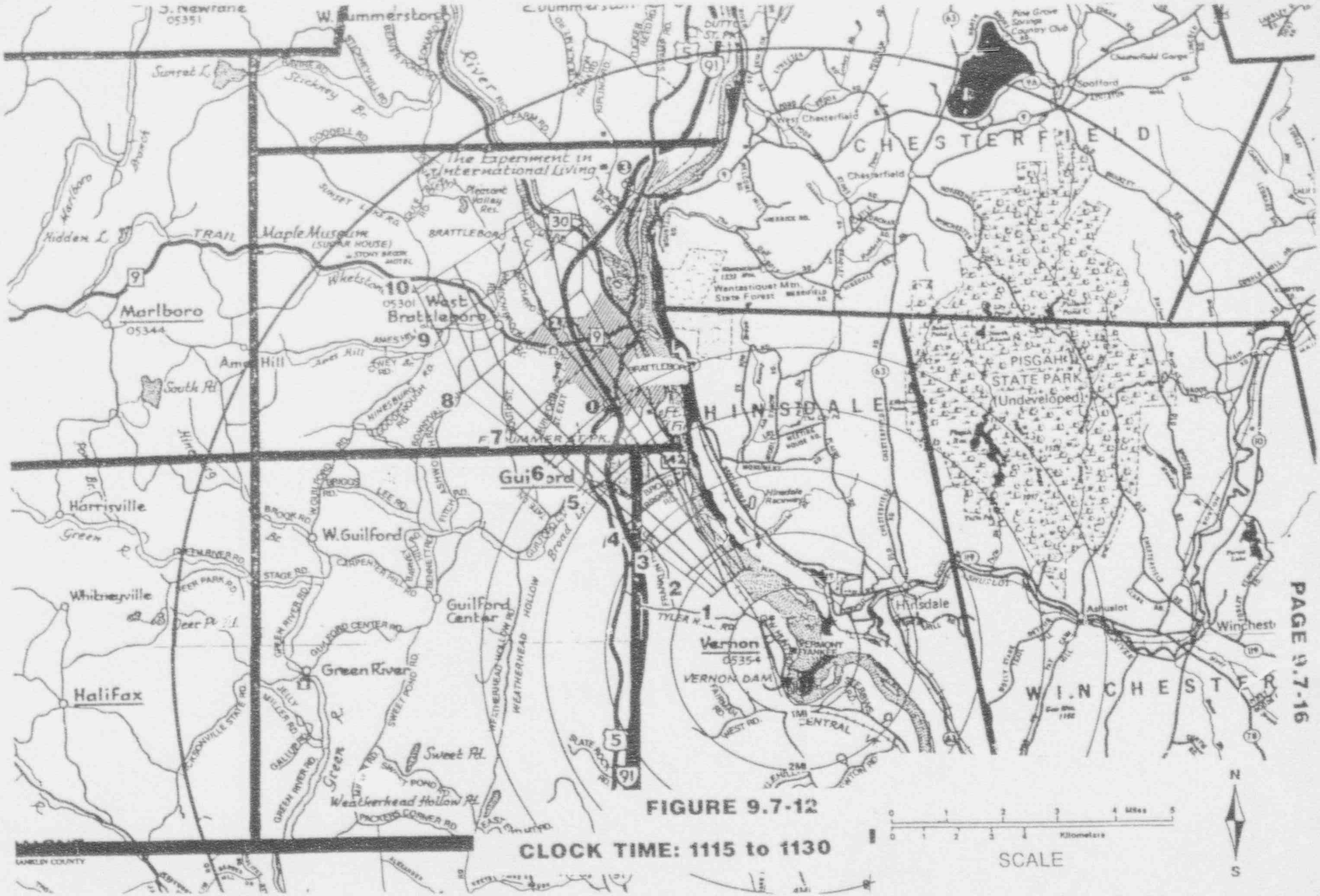


FIGURE 9.7-12

CLOCK TIME: 1115 to 1130

TABLE 9.7.12a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1115-1130 (SCENARIO TIME 8:30 - 8:45)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER ZEOLITE (NET CPM)	SAM-II SILVER ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	1.50	BLUE	<1	700	3.64E-09	<40	61	<40
		YELLOW	<1	70	3.64E-10	<40	AS READ	<40
		GREEN	<1	AS READ	3.64E-11	<40	AS READ	<40
2.00	2.10	BLUE	<1	525	2.84E-09	<40	AS READ	<40
		YELLOW	<1	53	2.84E-10	<40	AS READ	<40
		GREEN	<1	AS READ	2.84E-11	<40	AS READ	<40
3.00	2.70	BLUE	12	42000	2.28E-07	1270	3837	230
		YELLOW	1	4200	2.28E-08	130	384	<40
		GREEN	<1	420	2.28E-09	<40	AS READ	<40
4.00	3.30	BLUE	9	31500	1.67E-07	930	2800	170
		YELLOW	<1	3150	1.67E-08	90	280	<40
		GREEN	<1	315	1.67E-09	<40	AS READ	<40
5.00	4.10	BLUE	7	24500	1.23E-07	690	2074	125
		YELLOW	<1	2450	1.23E-08	70	207	<40
		GREEN	<1	245	1.23E-09	<40	AS READ	<40
6.00	4.80	BLUE	5	17500	9.26E-08	520	1556	90
		YELLOW	<1	1750	9.26E-09	52	156	<40
		GREEN	<1	175	9.26E-10	<40	AS READ	<40
7.00	5.70	BLUE	4	14000	6.05E-08	340	1016	60
		YELLOW	<1	1400	6.05E-09	<40	102	<40
		GREEN	<1	140	6.05E-10	<40	AS READ	<40
8.00	6.70	BLUE	3	10500	3.95E-08	220	664	<40
		YELLOW	<1	1050	3.95E-09	<40	66	<40
		GREEN	<1	105	3.95E-10	<40	AS READ	<40
9.00	7.60	BLUE	2	7000	2.59E-08	145	436	<40
		YELLOW	<1	700	2.59E-09	<40	AS READ	<40
		GREEN	<1	70	2.59E-10	<40	AS READ	<40
10.00	8.30	BLUE	<1	70	2.28E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	2.28E-11	<40	AS READ	<40
		GREEN	<1	AS READ	2.28E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

TABLE 9.7.12b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 1115-1130 (SCENARIO TIME 8:30 - 8:45)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (177 LITERS)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	1.50	BLUE	0.20	0.40	3.64E-09	117	<50
		YELLOW	0.02	0.04	3.64E-10	AS READ	<50
		GREEN	AS READ	AS READ	3.64E-11	AS READ	<50
2.00	2.10	BLUE	0.15	0.30	2.84E-09	91	<50
		YELLOW	0.02	0.03	2.84E-10	AS READ	<50
		GREEN	AS READ	AS READ	2.84E-11	AS READ	<50
3.00	2.70	BLUE	12.00	24.00	2.28E-07	7309	411
		YELLOW	1.20	2.40	2.28E-08	731	<50
		GREEN	0.12	0.24	2.28E-09	73	<50
4.00	3.30	BLUE	9.00	18.00	1.67E-07	5333	300
		YELLOW	0.90	1.80	1.67E-08	533	<50
		GREEN	0.09	0.18	1.67E-09	53	<50
5.00	4.10	BLUE	7.00	14.00	1.23E-07	3951	222
		YELLOW	0.70	1.40	1.23E-08	395	<50
		GREEN	0.07	0.14	1.23E-09	AS READ	<50
6.00	4.80	BLUE	5.00	10.00	9.26E-08	2963	167
		YELLOW	0.50	1.00	9.26E-09	296	<50
		GREEN	0.05	0.10	9.26E-10	AS READ	<50
7.00	5.70	BLUE	4.00	8.00	6.05E-08	1936	109
		YELLOW	0.40	0.80	6.05E-09	194	<50
		GREEN	0.04	0.08	6.05E-10	AS READ	<50
8.00	6.70	BLUE	3.00	6.00	3.95E-08	1264	71
		YELLOW	0.30	0.60	3.95E-09	126	<50
		GREEN	0.03	0.06	3.95E-10	AS READ	<50
9.00	7.60	BLUE	2.00	4.00	2.59E-08	830	<50
		YELLOW	0.20	0.40	2.59E-09	83	<50
		GREEN	0.02	0.04	2.59E-10	AS READ	<50
10.00	8.30	BLUE	0.02	0.04	2.28E-10	AS READ	<50
		YELLOW	AS READ	AS READ	2.28E-11	AS READ	<50
		GREEN	AS READ	AS READ	2.28E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

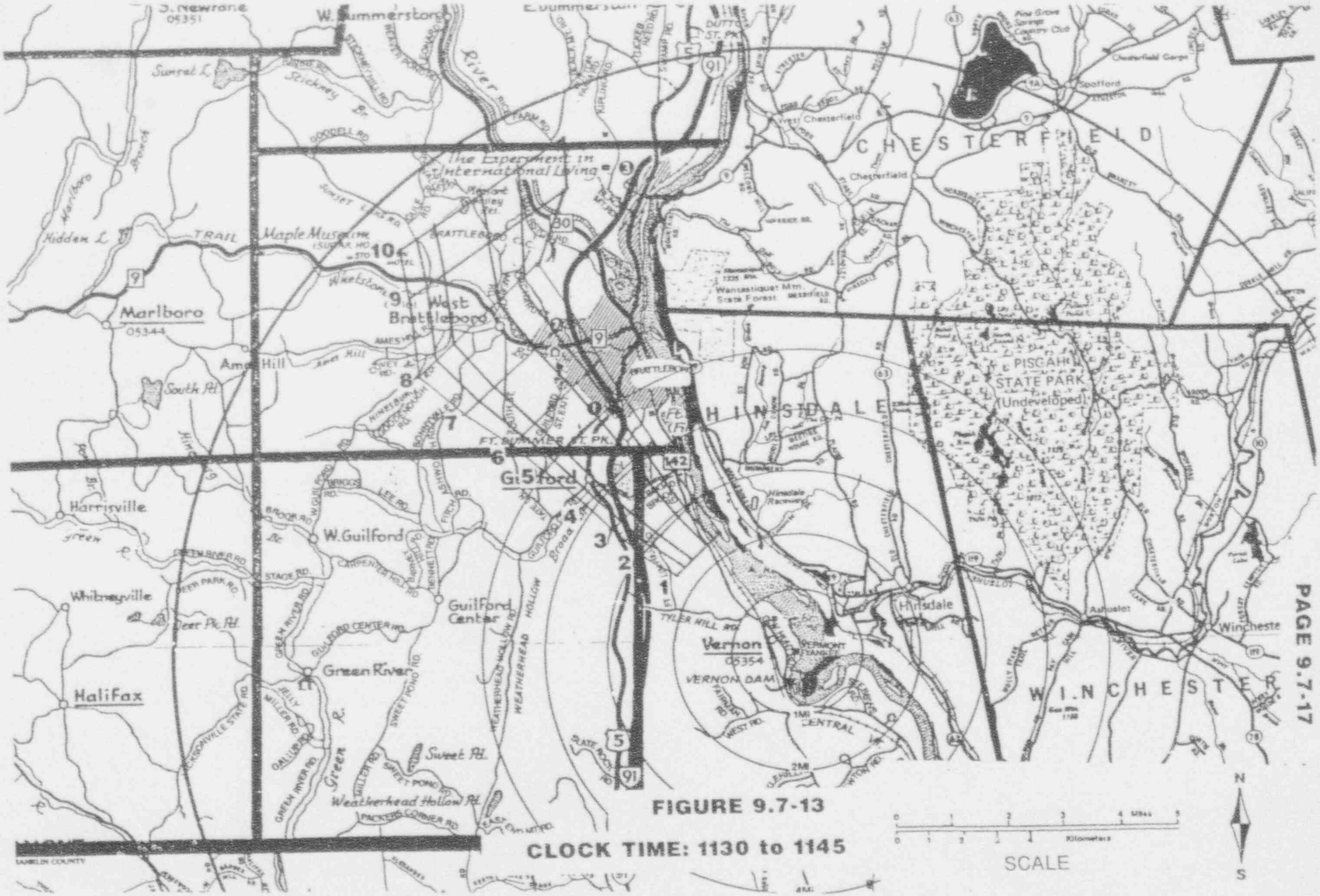


FIGURE 9.7-13

CLOCK TIME: 1130 to 1145

TABLE 9.7.13a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1130-1145 (SCENARIO TIME 8:45 - 9:00)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA (100 LITERS)* CONC. I-131 uCi/cc	RM-14** SILVER ZEOLITE (NET CPM)	SAM-II SILVER ZEOLITE (NET CPM)	RM-14*** PARTICULATE FILTER (NET CPM)
1.00	2.20	BLUE	<1	525	2.84E-09	<40	AS READ	<40
		YELLOW	<1	53	2.84E-10	<40	AS READ	<40
		GREEN	<1	AS READ	2.84E-11	<40	AS READ	<40
2.00	2.90	BLUE	<1	350	2.16E-09	<40	AS READ	<40
		YELLOW	<1	35	2.16E-10	<40	AS READ	<40
		GREEN	<1	AS READ	2.16E-11	<40	AS READ	<40
3.00	3.50	BLUE	9	31500	1.79E-07	1000	3007	179
		YELLOW	<1	3150	1.79E-08	100	301	<40
		GREEN	<1	315	1.79E-09	<40	AS READ	<40
4.00	4.10	BLUE	7	24500	1.30E-07	726	2178	130
		YELLOW	<1	2450	1.30E-08	73	218	<40
		GREEN	<1	245	1.30E-09	<40	AS READ	<40
5.00	4.90	BLUE	5	17500	9.88E-08	553	1659	100
		YELLOW	<1	1750	9.88E-09	55	166	<40
		GREEN	<1	175	9.88E-10	<40	AS READ	<40
6.00	5.60	BLUE	4	14000	7.41E-08	415	1244	74
		YELLOW	<1	1400	7.41E-09	41	124	<40
		GREEN	<1	140	7.41E-10	<40	AS READ	<40
7.00	6.50	BLUE	3	10500	5.06E-08	283	850	51
		YELLOW	<1	1050	5.06E-09	<40	85	<40
		GREEN	<1	105	5.06E-10	<40	AS READ	<40
8.00	7.50	BLUE	2	7000	3.33E-08	187	560	<40
		YELLOW	<1	700	3.33E-09	<40	56	<40
		GREEN	<1	70	3.33E-10	<40	AS READ	<40
9.00	8.40	BLUE	2	5250	2.22E-08	124	373	<40
		YELLOW	<1	525	2.22E-09	<40	AS READ	<40
		GREEN	<1	53	2.22E-10	<40	AS READ	<40
10.00	9.10	BLUE	<1	35	1.98E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	1.98E-11	<40	AS READ	<40
		GREEN	<1	AS READ	1.98E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

TABLE 9.7.13b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 1130-1145 (SCENARIO TIME 8:45 - 9:00)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (177 LITERS)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	2.20	BLUE	0.15	0.30	2.84E-09	91	<50
		YELLOW	0.02	0.03	2.84E-10	AS READ	<50
		GREEN	AS READ	AS READ	2.84E-11	AS READ	<50
2.00	2.90	BLUE	0.10	0.20	2.16E-09	69	<50
		YELLOW	0.01	0.02	2.16E-10	AS READ	<50
		GREEN	AS READ	AS READ	2.16E-11	AS READ	<50
3.00	3.50	BLUE	9.00	18.00	1.79E-07	5728	322
		YELLOW	0.90	1.80	1.79E-08	573	<50
		GREEN	0.09	0.18	1.79E-09	57	<50
4.00	4.10	BLUE	7.00	14.00	1.30E-07	4148	233
		YELLOW	0.70	1.40	1.30E-08	415	<50
		GREEN	0.07	0.14	1.30E-09	AS READ	<50
5.00	4.90	BLUE	5.00	10.00	9.88E-08	3160	178
		YELLOW	0.50	1.00	9.88E-09	316	<50
		GREEN	0.05	0.10	9.88E-10	AS READ	<50
6.00	5.60	BLUE	4.00	8.00	7.41E-08	2370	133
		YELLOW	0.40	0.80	7.41E-09	237	<50
		GREEN	0.04	0.08	7.41E-10	AS READ	<50
7.00	6.50	BLUE	3.00	6.00	5.06E-08	1620	91
		YELLOW	0.30	0.60	5.06E-09	162	<50
		GREEN	0.03	0.06	5.06E-10	AS READ	<50
8.00	7.50	BLUE	2.00	4.00	3.33E-08	1067	60
		YELLOW	0.20	0.40	3.33E-09	107	<50
		GREEN	0.02	0.04	3.33E-10	AS READ	<50
9.00	8.40	BLUE	1.50	3.00	2.22E-08	711	<50
		YELLOW	0.15	0.30	2.22E-09	71	<50
		GREEN	0.02	0.03	2.22E-10	AS READ	<50
10.00	9.10	BLUE	0.01	0.02	1.98E-10	AS READ	<50
		YELLOW	AS READ	AS READ	1.98E-11	AS READ	<50
		GREEN	AS READ	AS READ	1.98E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

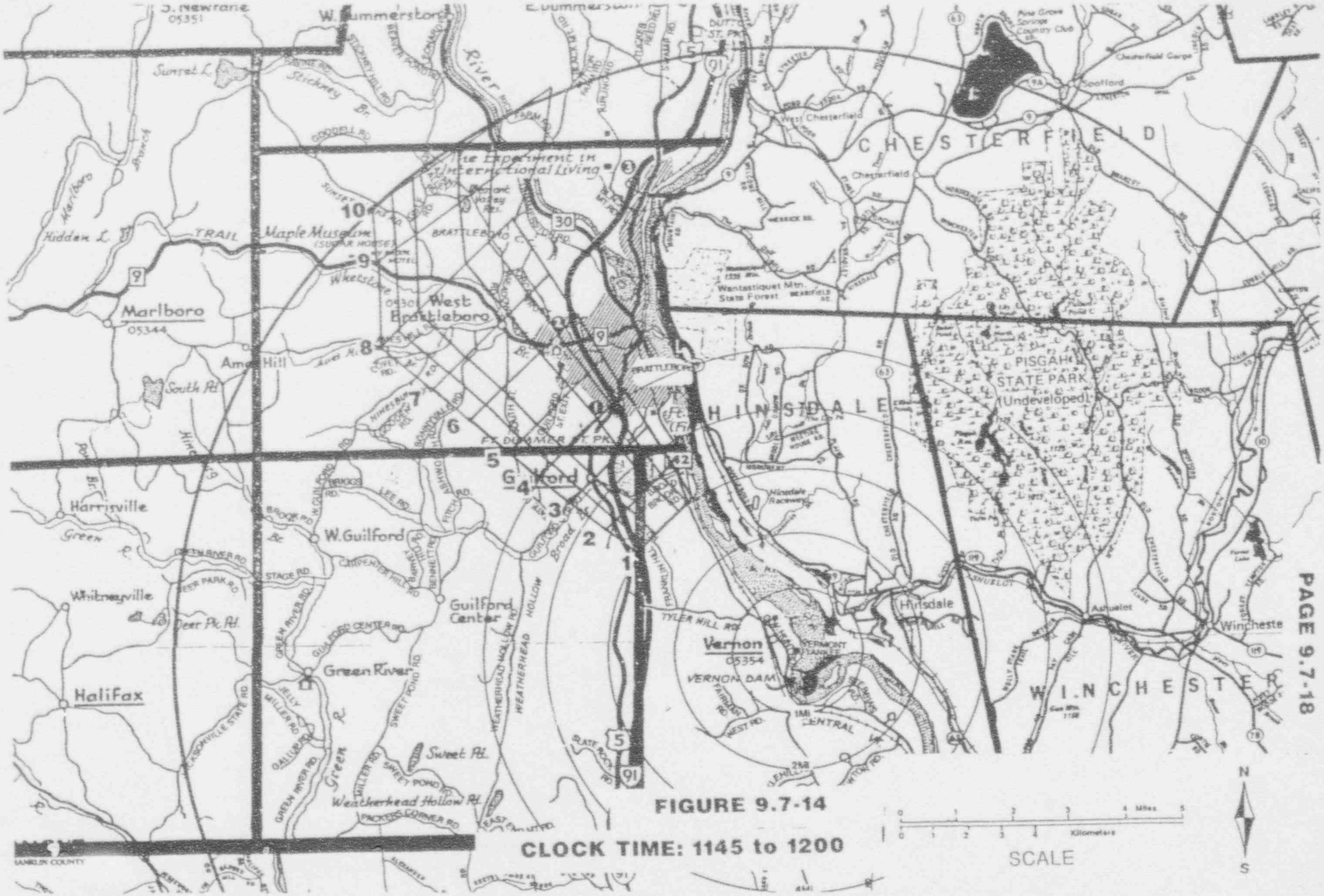


FIGURE 9.7-14

CLOCK TIME: 1145 to 1200

TABLE 9.7.14a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1145-1200 (SCENARIO TIME 9:00 - 9:15)

			GAMMA DOSE RATE		AIR SAMPLE DATA (100 LITERS)*			
						RM-14**	SAM-II	RM-14***
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	PIC-6 (mR/hr)	RM-14 (CPM)	CONC. I-131 uCi/cc	SILVER ZEOLITE (NET CPM)	(NET CPM)	PARTICULATE FILTER (NET CPM)
1.00	3.00	BLUE	<1	350	2.16E-09	<40	AS READ	<40
		YELLOW	<1	35	2.16E-10	<40	AS READ	<40
		GREEN	<1	AS READ	2.16E-11	<40	AS READ	<40
2.00	3.60	BLUE	<1	315	1.73E-09	<40	AS READ	<40
		YELLOW	<1	32	1.73E-10	<40	AS READ	<40
		GREEN	<1	AS READ	1.73E-11	<40	AS READ	<40
3.00	4.30	BLUE	7	24500	1.42E-07	795	2385	142
		YELLOW	<1	2450	1.42E-08	80	239	<40
		GREEN	<1	245	1.42E-09	<40	AS READ	<40
4.00	4.90	BLUE	6	21000	1.05E-07	588	1763	105
		YELLOW	<1	2100	1.05E-08	59	176	<40
		GREEN	<1	210	1.05E-09	<40	AS READ	<40
5.00	5.60	BLUE	5	17500	8.02E-08	449	1348	80
		YELLOW	<1	1750	8.02E-09	45	135	<40
		GREEN	<1	175	8.02E-10	<40	AS READ	<40
6.00	6.40	BLUE	4	14000	6.11E-08	342	1027	61
		YELLOW	<1	1400	6.11E-09	<40	103	<40
		GREEN	<1	140	6.11E-10	<40	AS READ	<40
7.00	7.20	BLUE	3	10500	4.32E-08	242	726	43
		YELLOW	<1	1050	4.32E-09	<40	73	<40
		GREEN	<1	105	4.32E-10	<40	AS READ	<40
8.00	8.20	BLUE	2	7000	2.90E-08	162	487	<40
		YELLOW	<1	700	2.90E-09	<40	AS READ	<40
		GREEN	<1	70	2.90E-10	<40	AS READ	<40
9.00	9.20	BLUE	2	5250	1.98E-08	111	332	<40
		YELLOW	<1	525	1.98E-09	<40	AS READ	<40
		GREEN	<1	53	1.98E-10	<40	AS READ	<40
10.00	9.80	BLUE	<1	35	1.73E-10	<40	AS READ	<40
		YELLOW	<1	AS READ	1.73E-11	<40	AS READ	<40
		GREEN	<1	AS READ	1.73E-12	<40	AS READ	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 50 liter sample was collected instead of 100 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The RM-14 detector efficiency for I-131 was assumed to be 0.025 cpm/dpm with the silver zeolite cartridge. Therefore, I-131 conc. (uCi/cc) X 5.6E+09 will calculate the net sample count rate in cpm on the silver zeolite cartridge.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

TABLE 9.7.14b

STATE OF VERMONT FIELD DATA AT CLOCK TIME 1145-1200 (SCENARIO TIME 9:00 - 9:15)

			GAMMA SURVEY DATA WAIST AND GROUND LEVEL READINGS		AIR SAMPLE DATA (177 LITERS)*		
PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	CLOSED WINDOW (mR/hr)	OPEN WINDOW (mR/hr)	CONC. I-131 uCi/cc	LUDLUM 2220 AGX-2** CARTRIDGE (NET CPM)	G-M METER PARTICULATE*** FILTER (NET CPM)
1.00	3.00	BLUE	0.10	0.20	2.16E-09	69	<50
		YELLOW	0.01	0.02	2.16E-10	AS READ	<50
		GREEN	AS READ	AS READ	2.16E-11	AS READ	<50
2.00	3.60	BLUE	0.09	0.18	1.73E-09	55	<50
		YELLOW	AS READ	AS READ	1.73E-10	AS READ	<50
		GREEN	AS READ	AS READ	1.73E-11	AS READ	<50
3.00	4.30	BLUE	7.00	14.00	1.42E-07	4543	256
		YELLOW	0.70	1.40	1.42E-08	454	<50
		GREEN	0.07	0.14	1.42E-09	AS READ	<50
4.00	4.90	BLUE	6.00	12.00	1.05E-07	3358	189
		YELLOW	0.60	1.20	1.05E-08	336	<50
		GREEN	0.06	0.12	1.05E-09	AS READ	<50
5.00	5.60	BLUE	5.00	10.00	8.02E-08	2568	144
		YELLOW	0.50	1.00	8.02E-09	257	<50
		GREEN	0.05	0.10	8.02E-10	AS READ	<50
6.00	6.40	BLUE	4.00	8.00	6.11E-08	1956	110
		YELLOW	0.40	0.80	6.11E-09	196	<50
		GREEN	0.04	0.08	6.11E-10	AS READ	<50
7.00	7.20	BLUE	3.00	6.00	4.32E-08	1383	78
		YELLOW	0.30	0.60	4.32E-09	138	<50
		GREEN	0.03	0.06	4.32E-10	AS READ	<50
8.00	8.20	BLUE	2.00	4.00	2.90E-08	928	52
		YELLOW	0.20	0.40	2.90E-09	93	<50
		GREEN	0.02	0.04	2.90E-10	AS READ	<50
9.00	9.20	BLUE	1.50	3.00	1.98E-08	632	<50
		YELLOW	0.15	0.30	1.98E-09	63	<50
		GREEN	0.02	0.03	1.98E-10	AS READ	<50
10.00	9.80	BLUE	0.01	0.02	1.73E-10	AS READ	<50
		YELLOW	AS READ	AS READ	1.73E-11	AS READ	<50
		GREEN	AS READ	AS READ	1.73E-12	AS READ	<50

NOTES:

* Air sample data are based on a sample volume of 177 liters. If different volumes are collected, the air sample data provided in the tables should be adjusted proportionally. For example, if a 89 liter sample was collected instead of 177 liters, divide the value given in the table by 2 (two) and provide the resulting value to the players.

** The Ludlum 2220 detector efficiency for I-131 was assumed to be 0.080 cpm/dpm with the AGX-2 cartridge. Therefore, I-131 conc. (uCi/cc) X 3.2E+10 will calculate the the net sample count rate in cpm on the AGX-2 cartridge.

*** For analysis of the particulate filter, it is assumed that a G-M survey meter is used to obtain the sample count rates. The filter count rate was estimated from the I-131 air concentration for a 177 liter sample volume.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

10.0 METEOROLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

10.1 ON-SITE METEOROLOGICAL DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

10.1 ON-SITE METEOROLOGICAL DATA

CLOCK TIME	UPPER SPEED MPH	UPPER DIR DEGREES	UPPER DELTAT DEGF (Note 1)	LOWER SPEED MPH	LOWER DIR DEGREES	LOWER DELTAT DEGF (Note 2)	RAIN INCHES 1/4 HR	LOWER TEMP DEGF	SOLAR RAD LANGS
02:45	3.50E+00	1.70E+02	1.20E+00	3.00E+00	1.63E+02	-5.00E-01	0.00E+00	3.20E+01	0.00E+00
03:00	3.80E+00	1.75E+02	1.50E+00	3.20E+00	1.68E+02	-5.00E-01	0.00E+00	3.20E+01	0.00E+00
03:15	4.00E+00	1.80E+02	1.80E+00	3.40E+00	1.73E+02	-5.00E-01	0.00E+00	3.20E+01	0.00E+00
03:30	3.90E+00	1.85E+02	1.00E+00	3.30E+00	1.78E+02	-5.00E-01	0.00E+00	3.20E+01	0.00E+00
03:45	4.00E+00	1.70E+02	1.20E+00	3.40E+00	1.63E+02	-8.00E-01	0.00E+00	3.20E+01	0.00E+00
04:00	4.50E+00	1.75E+02	1.00E+00	3.80E+00	1.68E+02	-8.00E-01	0.00E+00	3.20E+01	0.00E+00
04:15	4.00E+00	1.65E+02	1.20E+00	3.40E+00	1.58E+02	-8.00E-01	0.00E+00	3.20E+01	0.00E+00
04:30	3.80E+00	1.60E+02	1.20E+00	3.20E+00	1.54E+02	-8.00E-01	0.00E+00	3.20E+01	0.00E+00
04:45	3.90E+00	1.68E+02	1.00E+00	3.30E+00	1.61E+02	-9.00E-01	0.00E+00	3.20E+01	0.00E+00
05:00	4.00E+00	1.70E+02	1.00E+00	3.40E+00	1.63E+02	-9.00E-01	0.00E+00	3.20E+01	0.00E+00
05:15	4.20E+00	1.75E+02	1.50E+00	3.60E+00	1.68E+02	-9.00E-01	0.00E+00	3.30E+01	1.00E-01
05:30	4.50E+00	1.75E+02	1.00E+00	3.80E+00	1.68E+02	-9.00E-01	0.00E+00	3.30E+01	1.00E-01
05:45	4.80E+00	1.70E+02	1.00E+00	4.00E+00	1.63E+02	-9.00E-01	0.00E+00	3.40E+01	1.00E-01
06:00	4.80E+00	1.70E+02	1.00E+00	4.00E+00	1.63E+02	-9.00E-01	0.00E+00	3.40E+01	1.50E-01
06:15	4.50E+00	1.72E+02	-5.00E-01	3.80E+00	1.65E+02	-9.00E-01	0.00E+00	3.40E+01	1.50E-01
06:30	4.50E+00	1.75E+02	-5.00E-01	3.80E+00	1.68E+02	-9.00E-01	0.00E+00	3.40E+01	2.00E-01
06:45	4.80E+00	1.75E+02	-5.00E-01	4.00E+00	1.68E+02	-9.00E-01	0.00E+00	3.40E+01	2.00E-01
07:00	4.90E+00	1.75E+02	-8.00E-01	4.20E+00	1.68E+02	-1.40E+00	0.00E+00	3.40E+01	2.00E-01
07:15	4.80E+00	1.78E+02	-1.00E+00	4.00E+00	1.71E+02	-1.40E+00	0.00E+00	3.50E+01	2.00E-01
07:30	4.80E+00	1.78E+02	-1.00E+00	4.00E+00	1.71E+02	-1.40E+00	0.00E+00	3.50E+01	2.00E-01
07:45	4.80E+00	1.80E+02	-1.00E+00	4.00E+00	1.73E+02	-1.40E+00	0.00E+00	3.50E+01	2.00E-01
08:00	4.80E+00	1.80E+02	-1.20E+00	4.00E+00	1.73E+02	-1.40E+00	0.00E+00	3.70E+01	2.00E-01
08:15	5.00E+00	1.80E+02	-1.20E+00	4.30E+00	1.73E+02	-1.40E+00	0.00E+00	3.70E+01	2.00E-01

NOTES:

1. The height differential for the upper delta temperature on the primary tower is 262 ft.

2. The height differential for the lower delta temperature on the primary tower is 165 ft.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

10.1 ON-SITE METEOROLOGICAL DATA

CLOCK TIME	UPPER SPEED MPH	UPPER DIR DEGREES	UPPER DELTAT DEGF (Note 1)	LOWER SPEED MPH	LOWER DIR DEGREES	LOWER DELTAT DEGF (Note 2)	RAIN INCHES 1/4 HR	LOWER TEMP DEGF	SOLAR RAD LANGS
08:30	5.00E+00	1.80E+02	-1.20E+00	4.30E+00	1.73E+02	-1.50E+00	0.00E+00	3.80E+01	2.00E-01
08:45	5.00E+00	1.80E+02	-1.20E+00	4.30E+00	1.73E+02	-1.50E+00	0.00E+00	3.90E+01	3.00E-01
09:00	5.00E+00	1.80E+02	-1.20E+00	4.20E+00	1.73E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
09:15	5.00E+00	1.80E+02	-1.20E+00	4.20E+00	1.73E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
09:30	4.00E+00	1.35E+02	-1.20E+00	3.40E+00	1.30E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
09:45	3.50E+00	1.35E+02	-1.50E+00	3.00E+00	1.30E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
10:00	3.00E+00	1.35E+02	-1.50E+00	2.60E+00	1.28E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
10:15	3.00E+00	1.35E+02	-1.50E+00	2.60E+00	1.30E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
10:30	2.50E+00	1.35E+02	-1.50E+00	2.10E+00	1.30E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
10:45	2.50E+00	1.35E+02	-1.50E+00	2.10E+00	1.28E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
11:00	2.50E+00	1.35E+02	-1.80E+00	2.10E+00	1.30E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
11:15	2.80E+00	1.35E+02	-1.80E+00	2.40E+00	1.27E+02	-1.40E+00	0.00E+00	4.00E+01	3.00E-01
11:30	3.00E+00	1.35E+02	-1.80E+00	2.60E+00	1.30E+02	-1.40E+00	0.00E+00	4.00E+01	3.00E-01
11:45	3.20E+00	1.35E+02	-1.80E+00	2.70E+00	1.28E+02	-1.40E+00	0.00E+00	4.00E+01	3.00E-01
12:00	3.00E+00	1.35E+02	-1.90E+00	2.60E+00	1.30E+02	-1.40E+00	0.00E+00	4.00E+01	3.00E-01
12:15	3.00E+00	1.35E+02	-1.90E+00	2.60E+00	1.28E+02	-1.40E+00	0.00E+00	4.00E+01	3.00E-01
12:30	2.80E+00	1.35E+02	-1.90E+00	2.40E+00	1.30E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
12:45	3.20E+00	1.35E+02	-1.90E+00	2.70E+00	1.28E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01
13:00	3.50E+00	1.35E+02	-1.90E+00	2.90E+00	1.30E+02	-1.50E+00	0.00E+00	4.00E+01	3.00E-01

NOTES:

1. The height differential for the upper delta temperature on the primary tower is 262 ft.

2. The height differential for the lower delta temperature on the primary tower is 165 ft.

VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

10.2 <u>GENERAL AREA NATIONAL WEATHER SERVICE (NWS) FORECASTS</u>

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

10.2 GENERAL AREA NWS FORECASTS (See Note) -

Synopsis (03:00)

A low pressure system is currently centered over Pennsylvania.

Valid (03:00-05:00)

Southerly winds from 3 to 6 MPH. Temperatures in the low to mid 30's.

Valid (05:00-11:00)

Overcast this morning. Temperatures rising to the low 40's. Southerly winds becoming southeasterly late in the morning; wind speeds around 5 MPH will diminish to 2 - 3 MPH.

Valid (11:00-17:00)

Continued overcast with rain, possibly heavy at times, likely in the early afternoon. High temperatures in the low 40's. Light southeasterly winds.

Valid (17:00-23:00)

Rain continuing tonight, possibly heavy at times. Temperatures dropping into the 30's. Light southeasterly winds.

PLANT/EOF WEATHER OBSERVATIONS (See Note) - Valid (03:00-15:00)

Time	General Observations
03:00	Overcast with light to moderate winds.
04:00	Overcast with light to moderate winds.
05:00	Overcast with light to moderate winds.
06:00	Overcast with light to moderate winds.
07:00	Overcast with light to moderate winds.
08:00	Overcast with light to moderate winds.
09:00	Overcast with light to moderate winds.
10:00	Overcast with light winds.
11:00	Overcast with light winds.
12:00	Overcast with light winds.
13:00	Rain with light winds.
14:00	Rain with light winds.
15:00	Rain with light winds.

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

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

10.2 VERMONT YANKEE SITE FORECAST

To be provided to the ESC Meteorologist by the ESC Controller at 04:00.

WEATHER FORECAST FOR SITE: VY - VERNON

Date of Forecast: 04-__-93
Time of Forecast: 04:00

Current Site Meteorology (as of 04:00):

Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
Lower	3.4 MPH	180 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
Upper	4.0 MPH	180 DEG FROM	-1.5 DEG F	D	

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
04:00-06:00	Lower	3.0 MPH	180 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	3.5 MPH	180 DEG FROM	-1.5 DEG F	D	
06:00-08:00	Lower	3.5 MPH	180 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	4.0 MPH	180 DEG FROM	-1.5 DEG F	D	
08:00-10:00	Lower	4.0 MPH	160 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	5.0MPH	160 DEG FROM	-1.5 DEG F	D	

National Weather Service Forecast for site region:

Overcast with temperatures rising into the mid to upper 30's. Light southerly winds becoming southeasterly mid morning.

Special Weather Statements:

NONE

1

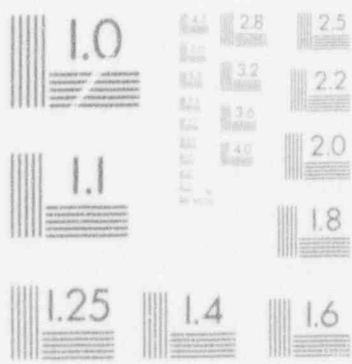
IMAGE EVALUATION TEST TARGET (MT-3)

150mm

6"

1

IMAGE EVALUATION TEST TARGET (MT-3)



150mm

6″

1

IMAGE EVALUATION TEST TARGET (MT-3)

150mm

6"

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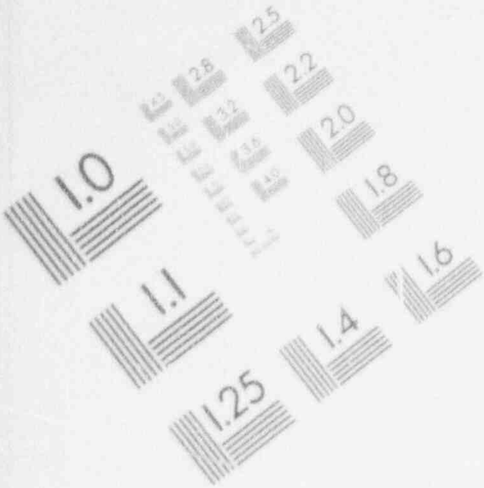
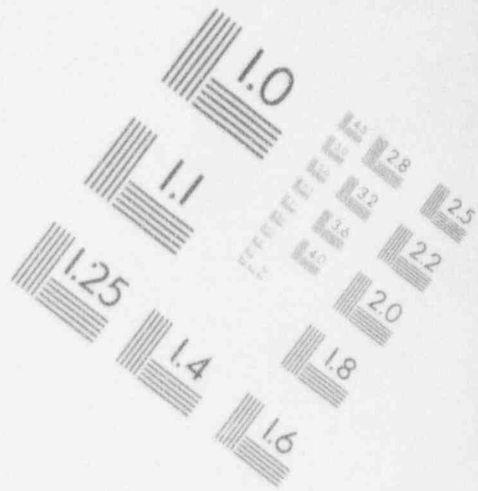
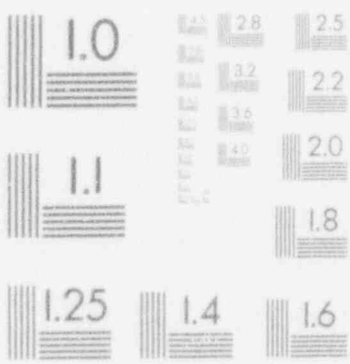
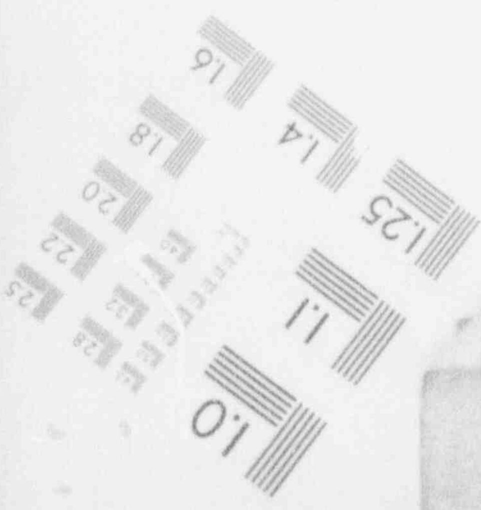
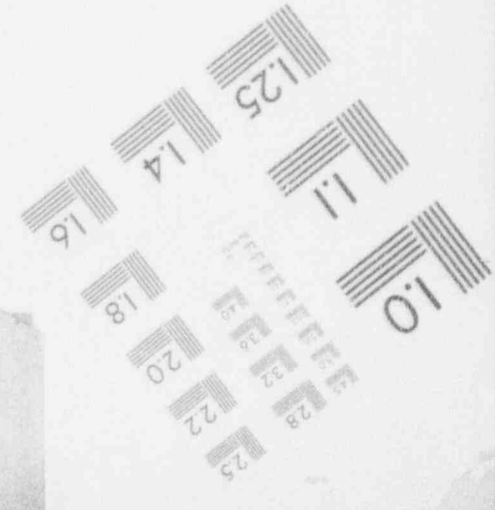
IMAGE EVALUATION TEST TARGET (MT-3)



150mm

6″

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

10.2 VERMONT YANKEE SITE FORECAST

To be provided to the ESC Meteorologist by the ESC Controller at 06:00.

WEATHER FORECAST FOR SITE: VY - VERNON

Date of Forecast: 04-__-93
Time of Forecast: 06:00

Current Site Meteorology (as of 06:00):

Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
Lower	3.4 MPH	180 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
Upper	4.0 MPH	180 DEG FROM	-1.5 DEG F	D	

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
06:00-08:00	Lower	3.5 MPH	180 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	4.0 MPH	180 DEG FROM	-1.5 DEG F	D	
08:00-10:00	Lower	3.5 MPH	180 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	4.0 MPH	180 DEG FROM	-1.5 DEG F	D	
10:00-12:00	Lower	1.5 MPH	180 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	2.5 MPH	180 DEG FROM	-1.5 DEG F	D	

National Weather Service Forecast for site region:

Overcast with temperatures rising into the mid to upper 30's. Light southerly winds becoming southeasterly mid morning.

Special Weather Statements:

NONE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

10.2 VERMONT YANKEE SITE FORECAST

To be provided to the ESC Meteorologist by the ESC Controller at 08:00.

WEATHER FORECAST FOR SITE: VY - VERNON

Date of Forecast: 04-__-93
Time of Forecast: 08:00

Current Site Meteorology (as of 08:00):

Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
Lower	3.4 MPH	180 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
Upper	4.0 MPH	180 DEG FROM	-1.5 DEG F	D	

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
08:00-10:00	Lower	3.5 MPH	160 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	4.0 MPH	160 DEG FROM	-1.5 DEG F	D	
10:00-12:00	Lower	2.0 MPH	135 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	2.5 MPH	135 DEG FROM	-1.5 DEG F	D	
12:00-14:00	Lower	2.0 MPH	135 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	2.5 MPH	135 DEG FROM	-1.5 DEG F	D	

National Weather Service Forecast for site region:

Overcast with temperatures rising into the mid to upper 30's. Light southerly winds becoming southeasterly mid morning.

Special Weather Statements:

NONE

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1993

10.2 VERMONT YANKEE SITE FORECAST

To be provided to the ESC Meteorologist by the ESC Controller at 10:00.

WEATHER FORECAST FOR SITE: VY - VERNON

Date of Forecast: 04-__-93
Time of Forecast: 10:00

Current Site Meteorology (as of 10:00):

Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
Lower	2.6 MPH	135 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
Upper	3.0 MPH	135 DEG FROM	-1.5 DEG F	D	

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
10:00-12:00	Lower	2.0 MPH	135 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	2.5 MPH	135 DEG FROM	-1.5 DEG F	D	
12:00-14:00	Lower	2.0 MPH	135 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	2.5 MPH	135 DEG FROM	-1.5 DEG F	D	
14:00-16:00	Lower	2.0 MPH	135 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
	Upper	2.5 MPH	135 DEG FROM	-1.5 DEG F	D	

National Weather Service Forecast for site region:

Overcast with temperatures rising into the low 40's. Light southeasterly winds. Rain, possibly heavy at times, starting in the late afternoon and continuing tonight.

Special Weather Statements:

NONE

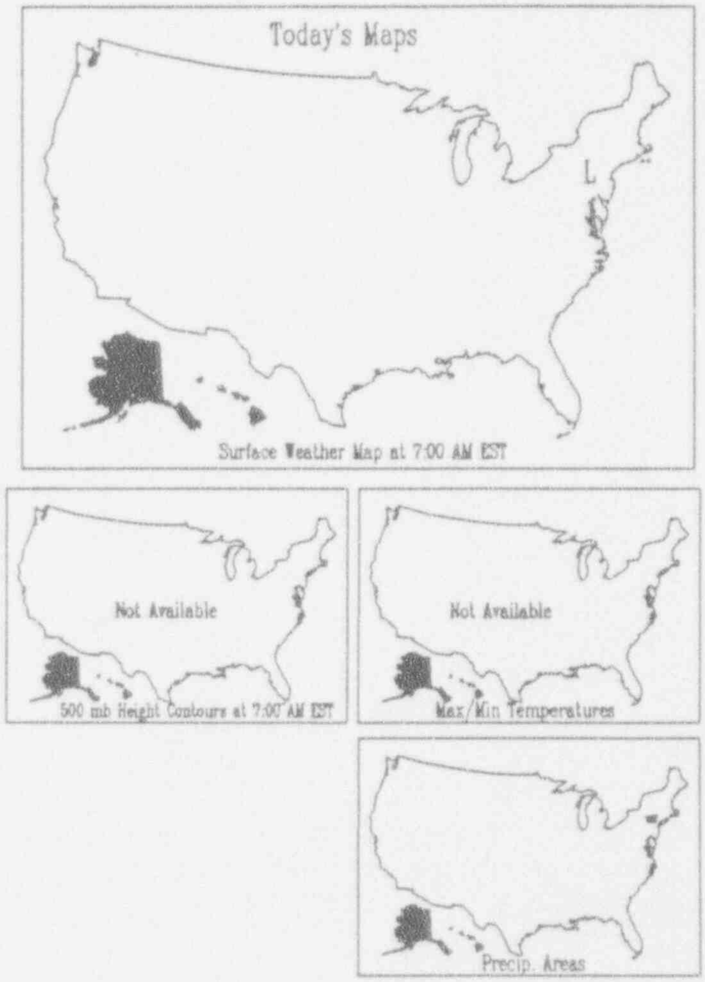
VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY RESPONSE PREPAREDNESS EXERCISE

1993

10.3 NATIONAL WEATHER SERVICE SURFACE MAPS

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



10.3 NATIONAL WEATHER SERVICE SURFACE MAP (19:00 EST)