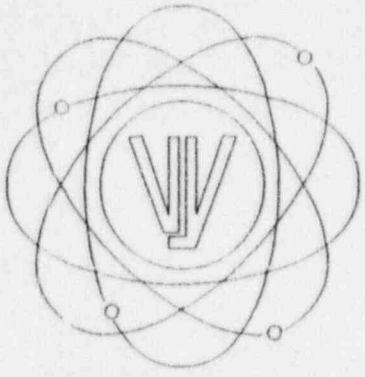
VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY PREPAREDNESS EXERCISE

1995



1995 EXERCISE MANUAL

EXERCISE MATERIAL

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VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY PREPAREDNESS EXERCISE

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1.1 EXERCISE SCHEDULE

NOTE: EXERCISE SCHEDULE TO BE ISSUED UNDER SEPARATE MEMO AND REVIEWED AT THE EXERCISE CONTROLLER BRIEFING SESSIONS.

VERMONT YANKEE NUCLEAR POWER STATION
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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 Center)
- Emergency Operations Facility/Recovery Center (1st floor of Training Center)
- News Media Center (1st and 2nd floor of Training Center)

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

Miscellaneous Participants/Facilities

Schools

- School Principal Interviews

Reception Center

- Bellows Falls Union High School
- Westminster EOC

Congregate Care Facilities

- Site Visits to designated facilities
- American Red Cross Interviews

Special Population Center

- Vernon Green Nursing Home

Radio Station

- WTSA, Brattleboro, VT

STATE OF NEW HAMPSHIRE

Key Participating State Agencies

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

Facilities

- State Police Communications Center - Concord, New Hampshire
- State Police Troop C - Keene, New Hampshire
- Southwestern NH District Fire Mutual Aid - 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 Fire Dept.
- 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

Miscellaneous Participants/Facilities

Schools

- School Administration Interviews

Reception Center

- Keene State College Reception/Decon Center

Radio Station

- WKNE, Keene, NH

COMMONWEALTH OF MASSACHUSETTS

Key Participating State Agencies and Radio Stations

- Massachusetts Emergency Management Agency
- Massachusetts Department of Public Health

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

Miscellaneous Participants/Facilities

Schools

- School Superintendents' Offices (Gill-Montague, Mohawk Trail and Pioneer Valley)
- Gill-Montague Regional School District - Gill Elementary School
- Mohawk Trail Regional School District - Colrain Central Elementary School
- Pioneer Valley Regional School District - Warwick Elementary School
- Northfield Mount Hermon School (Gill and Northfield Campus)
- Full Circle School (Bernardston, MA)
- Linden Hill School (Northfield, MA)
- Otter Pond Preschool (Gill, MA)
- School Transportation Providers: Laidlaw Transit, Inc., F.M. Kuzmeskus, Sullivan Bus Lines and Chapin & Sadler Bus Company

Reception Center

- Greenfield Community College Reception Center and Radiological Monitoring and Decontamination Station

Congregate Care Facilities

- Mass Care Shelters: Greenfield Armory, Greenfield High School, Federal Street School
- Host Facility: University of Massachusetts, Amherst Campus

Special Population Centers

- Camp Keewanee, Greenfield, MA
- Camp Lion Knoll, Greenfield, MA
- Camp Northfield
- Massachusetts Department of Environmental Management (District 9 Fire Warden)
- Massachusetts Department of Fisheries, Wildlife, and Environmental Law Enforcement, Division of Law Enforcement

Radio Station

- WHYN, Springfield

2.1 EXERCISE OBJECTIVES AND EXTENT OF PLAY - VERMONT YANKEE

	Extent of Play
A. Emergency Classification and Accident Assessment	
1. Demonstrate the ability of Control Room personnel to recognize emergency initiating events and properly classify the condition in accordance with pre-established emergency action levels.	A.1 Scenario events initiated on the simulator will provide the operational and radiological data to allow personnel to demonstrate this objective in accordance with Procedure AP 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. Early in-plant actions normally performed by the Control Room support personnel may be controlled and performed by Simulator Controllers until after the Alert classification when the Emergency Response Organization is fully activated. Demonstration of in-plant corrective actions are controlled in accordance with the defined exercise mini-scenarios (Refer to Section 7.2). Simulation of response activities will be controlled in accordance with the defined mini-scenarios and as specified in the exercise ground rules.
3. Demonstrate that information concerning plant conditions can be transmitted between the Control Room and the TSC in a timely manner.	A.3 Telephone communications and the Simulated Plant Process Computer System (SPPCS) data link will be established between the Simulator Control Room 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 Scenario events will enable the TSC to coordinate in-plant corrective actions through the use of OSC personnel.

*Indicates VY identified item from 1994 Exercise.

	Extent of Play
5. Demonstrate the ability of appropriate TSC staff to participate with the Control Room and the EOF/RC in EALs and classification discussions.	A.5 Scenario events will allow for the discussion between the SCR, TSC and EOF/RC staff on EALs and emergency classification decisions.
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 allow for Chemistry and Radiation Protection technicians to simulate taking reactor coolant, containment air, or plant vent stack samples to assess plant conditions. Actual sampling and actual manipulation of sampling system components will be simulated. Time frame to provide sample results will be controlled and compressed. Controllers will provide sample results after sampling activities are discussed by players.
7. Demonstrate the ability to effectively use the Emergency Response Facility Information System (ERFIS) in the assessment and trending of plant conditions.	A.7 ERFIS work stations in the TSC, EOF and ESC will be connected to the Simulator Control Room through the use of the Simulated Plant Process Computer System (SPPCS) to receive and display scenario-related data. (Controllers may also provide additional data to players as necessary.) This will allow Emergency Response Facility staff personnel the opportunity to demonstrate the use 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 established procedures. Communications and transfer of data between facilities will be evaluated for timeliness and completeness.

*Indicates VY identified item from 1994 Exercise.

	Extent of Play
2. Demonstrate the capability to notify federal and state authorities of emergency classification 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 using the FTS 2000 ENS telephone. 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 various emergency response facilities.	B.3 Status Boards (where provided) will be used 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 (if necessary) 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 locations for monitoring activities (if necessary).
6. Demonstrate the ability to provide adequate briefings (if necessary) 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 (if necessary).
7. Demonstrate the ability to adequately communicate plant updates to plant personnel as plant conditions and status information change.*	B.7 Scenario events will allow the TSC to update plant personnel on changing plant conditions and plant status information. Periodic plant announcements should be made to brief plant personnel on plant conditions and emergency status information.

*Indicates VY identified item from 1994 Exercise.

	Extent of Play
C. Direction and Control	
1. Demonstrate the proper transfer of responsibilities from SS/PED to the DCO, 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 personnel to activate and staff the emergency response facilities in a timely manner.	D.1 Scenario events will require activation and operation of D.2 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.
2. Demonstrate and test the adequacy and effectiveness of emergency response facilities, operations, and equipment.	

*Indicates VY identified item from 1994 Exercise.

	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 will 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 use 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 including dosimetry, equipment, and protective clothing.	F.1 Scenario events will allow OSC On-Site Assistance F.2 Teams to be dispatched to investigate problems with associated plant equipment. Investigation and repair activities in the plant will require implementation of radiation controls which include monitoring and tracking of radiation exposure of OSC On-site Assistance Teams. (Refer to Procedure OP 3507, " Emergency Radiation Exposure Control.") In addition, the exposure of the Off-Site Monitoring Teams will be monitored and tracked in the EOF.
2. Demonstrate the ability to monitor and track radiation exposure of on-site emergency response personnel.	
G. In-Plant Corrective and Repair Actions	
1. Demonstrate the ability to dispatch and deploy on-site assistance teams in a timely fashion, consistent with plant conditions and assigned function.	G.1 OSC On-site Assistance Teams should be dispatched G.2 to investigate problems associated with plant equipment. Briefings should be conducted with emergency teams to ensure that job requirements are clear and understood. OSC Team Work Status Forms (VYOPF 3501.06) should be used to keep track of team assignments and work tasks.
2. Demonstrate the ability to provide adequate briefings to on-site assistance teams on job assignments and tasks.	

*Indicates VY identified item from 1994 Exercise.

	Extent of Play
3. Demonstrate the ability of on-site assistance teams to perform corrective actions on plant equipment during emergency conditions.	G.3 OSC On-site Assistance Teams will be given the G.4 opportunity to perform corrective actions associated with plant equipment. Demonstration of in-plant corrective actions are controlled in accordance with defined exercise mini-scenarios (Refer to Section 7.2). Equipment mock-ups for some repair activities will be available to perform corrective actions on plant equipment in accordance with the established mini-scenario. Simulation of repair activities will be controlled in accordance with the defined mini-scenarios and as specified in the exercise ground rules. The exercise mini-scenarios will allow players to implement the appropriate emergency work controls in accordance with established procedures.
4. Demonstrate the ability to provide adequate administrative controls and documentation for necessary repairs of plant equipment and systems during an emergency situation.	
H. Radiological Assessment	
1. Demonstrate that adequate dose assessment activities can be performed to determine off-site radiological consequences.	H.1 The scenario will provide information on plant H.2 conditions and in-plant radiological conditions to H.3 players that will allow them to evaluate off-site H.4 potential radiological consequences. The scenario will H.5 provide off-site radiological data that will allow players to evaluate off-site radiological conditions (if necessary). Players will implement appropriate sections of Procedures OP 3513, "Evaluation of Off-Site Radiological Conditions" and OP 3511, " Off-Site Protective Action Recommendations," as may be required by scenario events.
2. Demonstrate that radiological assessment personnel at the EOF can obtain radiological and meteorological data in a timely manner.	
3. Demonstrate the ability to perform timely assessment of off-site radiological conditions to support the formulation of protective action recommendations for the plume exposure pathway.	
4. Demonstrate the ability to assess potential off-site radiological consequences based on plant conditions.	

*Indicates VY identified item from 1994 Exercise.

	Extent of Play
5. Demonstrate the ability to project plume trajectory and potentially affected downwind sectors (if necessary) using computer dose assessment model (METPAC).	
6. Demonstrate adequate staffing, equipment readiness check, and deployment (if necessary) of off-site monitoring teams.	H.6 Off-site monitoring teams will be assigned at the OSC. H.7 Players will implement appropriate sections of Procedure OP 3510, "Off-Site and Site Boundary Monitoring, "as may be required by scenario events.
7. Demonstrate the use of appropriate equipment and procedures to perform off-site radiological monitoring (if necessary).	
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, plant personnel and contractors/visitors not directly involved in the exercise may be allowed to return to work at the discretion of the TSC Coordinator.
2. Demonstrate the adequacy of the protective action decision making process to make appropriate recommendations concerning off-site radiological consequences.	I.2 Protective action decision making will be demonstrated in accordance with Procedure OP 3511, "Off-Site Protective Actions Recommendations".

*Indicates VY identified item from 1994 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 The News Media Center (NMC) will be activated and J.2 staffed.Information on the simulated scenario events J.3 occurring at the plant will be gathered, verified, and incorporated into news releases. After approval, information will be disseminated and briefings on the information will be conducted 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 for rumor control concerning the simulated accident.
5. Demonstrate the ability to coordinate news releases with the state's public information representatives.	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.

*Indicates VY identified item from 1994 Exercise.

	Extent of Play
K. Parallel and Other Actions	
1. Demonstrate 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 contractors/visitors will be implemented to test personnel accountability process within the protected area (Refer to Procedure OP 3524, "Emergency Actions to Ensure Initial Accountability and Security Response"). However, after the plant evacuation and initial accountability checks have been completed, contractors/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.	K.2 Exercise critique will be conducted with exercise controllers and players. Critique items will be compiled and documented in accordance with Procedure OP 3505, "Emergency Preparedness Exercises and Drills."

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

*Indicates VY identified item from 1994 Exercise.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
1995

3.1 EXERCISE GUIDELINES AND GROUND RULES

The Vermont Yankee Emergency Preparedness Exercise will be conducted on Wednesday, September 13, 1995. 1995 is a "full-participation biennial" exercise. The exercise will involve full participation from Vermont Yankee, State of Vermont, State of New Hampshire, Commonwealth of Massachusetts, and local towns within the plume exposure EPZ. All Vermont Yankee emergency response facilities will be fully activated, and the scenario will be driven by the simulator, as in past exercises. State and local off-site objectives will be demonstrated for FEMA observation and evaluation.

This section provides the guidance and ground rules for conducting the 1995 Vermont Yankee Emergency Preparedness Exercise. It provides the framework for conducting the exercise, demonstrating emergency response capabilities, and evaluating response activities.

I. Concepts of Operations and Control

A. Exercise Controller Operations

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

Vermont Yankee will supply Controllers for major locations where an emergency response action will be demonstrated. Prior to the exercise, the Controllers 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 designated Lead Controller will make judgment decisions to keep the action going in accordance with the scenario time line. The Lead Controllers will provide advice to other Controllers assigned to their facility to resolve minor exercise control issues or concerns that may occur. If a major exercise control problem arises, the Controller should first contact the Lead 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.

Controllers will observe the players as they perform their assigned emergency response functions. Controllers 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 Controller shall be cognizant of procedures associated with the action. If an activity is to be simulated (as identified within the specific mini-scenarios or exercise ground rules), the Controller shall request the players to describe the actions that would be initiated to effect the desired outcome of the assigned task within the scenario time sequence of events and constraints allowed. The Controllers will critique the effectiveness of the emergency response actions taken 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 message cards and scenario parameters will be provided by Controllers 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.

B. Avoiding Violations of Laws

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

1. 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.

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

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

C. 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.

D. 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 the 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 concluded with the words, "THIS IS A DRILL; THIS IS A DRILL."

II. General Guidance for the Conduct of the Exercise

A. Exercise Simulation

Since the exercise is intended to demonstrate actual capabilities as realistically as possible, participants will be instructed to act as they would in an actual emergency. Wherever possible, emergency response actions will be carried out. Some of the exercise objectives will be

demonstrated by simulating the associated emergency response actions. Simulation of response activities will occur when specific actions do not have to be performed, and when actions are outside of the defined mini-scenarios (refer to Section 7.2). When an emergency response is to be simulated, the Controller will provide verbal or written directions on actions that are to be simulated.

The following describes those specific actions that 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. Prior to the start of the exercise, specific work station terminals in the TSC, EOF/RC and ESC will be connected to the Simulated Plant Process Computer (SPPCS) via the simulator to receive and display scenario-related data. The Main Plant Control Room's work station terminals will remain tied to the plant process computer (ERFIS).

2. A number of individuals from the Vermont Yankee Emergency Response Organization will be pre-staged to facilitate exercise and simulator related logistics. Individuals that will be pre-staged include the following:

   a. The Operating crew in the Simulator Control Room, and the crew's exercise AOs and other personnel at the plant to compliment the operating crew at the Simulator.

   b. An Chemistry technician assigned as the Chemistry Communicator in the Simulator Control Room if requested by SS/PED.

   c. An individual assigned as an Alternate Communicator in the Simulator Control if requested by SS/PED.

   d. An R&CE person assigned to the Simulator Control Room for data acquisition if requested by TSC personnel.

   e. An RP person assigned to the Simulator Control Room for data acquisition if requested by TSC Coordinator.

   f. R&CE personnel to set up the ERFIS terminals in the SPPCS mode.

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 will not wear either protective clothing or respirators.

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

9. The plant GaiTronics is available between the Simulator Control Room and the plant through the use of an interface device. Although not a complete duplication it will allow a person in the plant to talk directly to the simulator over the plant GaiTronics. However, actual plant announcements will be coordinated by the controllers and made from the Vermont Yankee plant Main Control Room.

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

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

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

B. Player's Guidelines and Gamesmanship

The following is a list of general guidelines and instructions for the players regarding the exercise.

1. Participants will include Exercise Controllers, Players, and NRC and FEMA Evaluators. Exercise Controllers will provide players with command and message cards to initiate emergency response actions and evaluate player actions. NRC/FEMA Evaluators will also evaluate and note player actions. Exercise Controllers and NRC/FEMA Evaluators will be identified by badges.

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

3. You may ask the Exercise Controller 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 not ask the following from the Exercise Controllers:

   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 Exercise Controller 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 Exercise Controllers. This may seem artificial, but it will assist the controllers 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 Exercise Controller prior to performing the action. Let the Exercise Controllers prioritize which actions will be observed and which ones will not. If an Exercise Controller elects to observe your activity, ensure the Exercise Controller remains with you to observe the task (i.e don't lose the controller en-route to the area where the action will take place).

9. If you are in doubt about completing a response action, ask your Exercise Controller for clarification. The Exercise Controller will not prompt or coach you. Emergency response actions must not 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 Exercise Controller. In addition, the Exercise Controller may periodically issue messages or instructions designed to initiate response actions. You must accept these messages immediately. They are essential to the proper completion of the exercise scenario.

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

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

13. Respond to questions in a timely manner.

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

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. Exercise Controllers 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 plant radiological practices and procedures.

17. Use 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 Exercise Controller after the exercise. Areas for improvement or weaknesses when corrected will improve the overall emergency response capability.

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.).

C. Simulator Control Room (SCR) Information

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 Controller and communications link with the simulator. All Control Room exercise communications should be directed to the SCR.

2. An interface device has been installed to connect the Simulator Control Room in Brattleboro with the plant GaiTronics system. Although not a complete duplication it will allow a person in the plant to talk directly to the simulator over the plant GaiTronics. The Controller in the plant Main Control Room will monitored and manually actuated the interface, causing a slight delay between initial communications. CHANNEL 3 will be the designated line to be used for communications between the Simulator Control Room and the Plant. CHANNEL 1 and CHANNEL 2 will be the designated lines for all other plant exercise related communications and messages.

3. GaiTronics announcements done in the Simulator Control Room will be coordinated by the Simulator Control Room Controller and made from the Vermont Yankee plant Main Control Room. The announcements will be actual made and repeated by the Operating crew in the plant Main Control Room.

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

5. Personnel movement in and out of the SCR will be limited to the Exercise Controllers and designated exercise participants.

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. 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 will be requested to 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.

E. 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 EPZ. This is NRC's and FEMA's biennial look at the state of emergency preparedness of all three states, local towns and Vermont Yankee.

The NRC Emergency Incident Response Team is planning to "play" with us during this exercise. The extent of NRC participation will include limited staffing of the NRC Operations Center in Rockville, Maryland and the NRC Site Incident Response Team at Vermont Yankee emergency response facilities. It is expected that our play with the NRC will involve maintaining an open ENS line and an open HPN line; activating Emergency Response Data System (ERDS) with a data link to the Simulator Control Room through the Simulated Plant Process Computer System (SPPCS); and interfacing with the NRC Site Incident Response Team at our emergency response facilities.

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

1. NRC will be notified by using the FTS 2000 ENS telephone.

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

3. NRC Site Incident Response Team representatives and 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.

F. Exercise Critiques

The following is a brief description of the critique sessions that will be held after the exercise. The critique sessions are held to determine whether the stated exercise objectives were met, verify the effectiveness of 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

Lead Controller Debriefing

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

Exercise Critique

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

H. Exercise Termination

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

The following steps will be implemented to terminate the exercise:

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

2. The Lead 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 Lead 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 will terminate the exercise.

The exercise may also be terminated under the following circumstances:

1. **In the event of an actual plant emergency condition should occur, the following actions will be taken:**

   a. 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;

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

   c. Concurrent with the notification in Step b, 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.

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

2. **In the event that actual off-site emergency impacts the response actions of Vermont Yankee participants, the following actions should be taken:**

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

   b. 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.

   c. The Exercise Coordinator will be responsible for temporarily halting the exercise until such time a decision is made to terminate or continuing the exercise.

   d. If the final decision is to terminate 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.

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

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

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3.2 EMERGENCY PLAN IMPLEMENTING PROCEDURE EXECUTION LIST

Procedure Number	Rev. No.	Title
AP 3125	14	Emergency Plan Classification and Action Level Scheme
OP 3500	15	Unusual Event
OP 3501	16	Alert
OP 3502	28	Site Area Emergency
OP 3503	30	General Emergency
OP 3504	29	Emergency Communications
OP 3507	25	Emergency Radiation Exposure Control
OP 3510	21	Off-Site and Site Boundary Monitoring
OP 3511	9	Off-site Protective Action Recommendations
OP 3513	18	Evaluation of Off-Site Radiological Conditions
OP 3524	11	Emergency Actions to Ensure Initial Accountability and Security Response
OP 3525	6	Radiological Coordination
OP 3531	9	Emergency Call-In Method
OP 3533	1	Post Accident Sampling of Reactor Coolant
OP 3534	0	Post Accident Sampling of Plant Stack Gaseous Releases
OP 3535	0	Post Accident Sampling and Analysis of Primary Containment
OP 3536	0	In Plant Air Sample Analysis with Abnormal Condition

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4.1 CONTROLLER ASSIGNMENTS

NOTE: ASSIGNMENTS TO BE ISSUED UNDER SEPARATE MEMO AND REVIEWED AT THE EXERCISE CONTROLLER BRIEFING SESSION

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4.2 CONTROLLER EXERCISE GUIDANCE

Prior to the exercise, each Controller will be provided a scenario package that correspond to their respective assignments. It is the responsibility of the Controller to read the contents of the scenario package and understand their controller assignments.

Each Controller will be requested to attend appropriate briefing sessions prior to the exercise. Any questions regarding the scenario or assignments should be discussed at this time. Each Controller should ensure that they are familiar with location(s) required by their assignment.

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

Controllers 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 Controllers. Controllers 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 Controller is to document the emergency response activities of the players. In order to document emergency response activities, each Controller is required to complete the Emergency Exercise/Drill Controller's Evaluation Form (VYOPF 3505.02). When completing this form, each Controller should provide information on overall performance and observations (strength noted of positive actions taken or expected actions done well), comments/recommendations (specific areas that may warrant further evaluation for improvement), and recognized weaknesses or deficiencies (inadequate performance). **(Inadequate indicates that the demonstrated performance could have precluded effective implementation of plans or procedures.)** For comments/recommendations and recognized weaknesses or deficiencies (inadequate performance), the Controller should provide a clear written description of the finding or observation.

Controllers should not allow their biases to be documented as recognized weaknesses or deficiencies. Observations and comments may 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 Controller 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. Controllers 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.

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

Facility Layout 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.

Off-Site Monitoring 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.

Personnel Dosimetry/Exposure Control 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.

Controller's evaluation and documentation forms are found in Section 4.3. All documentation recorded must be provided to the Lead Controller after the exercise and prior to the critique.

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4.3 CONTROLLER EVALUATION CRITERIA

As discussed in Sections 4.1 and 4.2, each Controller has been assigned specific areas of response to observe and evaluate. This section has been developed to assist the Controllers 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 Controller should complete the appropriate checklist.

Procedural Form VYOPF 3505.02, "Emergency Exercise/Drill Controller's Evaluation Form," is provided to summarize major findings and observations. This form MUST BE completed by each Controller.

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

ATTACHMENT B

Vermont Yankee
Emergency Exercise/Drill Evaluation Checklist

INSTRUCTIONS

The following checklists are provided to assist the Controller with their evaluation of the drill/exercise. The Controller should complete the checklist(s) for their assigned locations(s). To complete the evaluation checklist(s), use the rating scale listed below. The completed checklist should be used as a "road map" to document your observations and comments on procedural form VYOPF 3505.02. Controllers should provide a clear written description of their findings and observations.

Rating	Symbol	Rating Explanation for Comments
Adequate	A	Adequate indicates that the demonstrated performance was consistent with plans and procedures. Comments may include strong positive strengths or expected actions done well.
Inadequate	I	Inadequate indicates that the demonstrated performance could have precluded effective implementation of plans and procedures. This also may include an aspect of player's response that warrants further evaluation for improvement or corrective action. Comments should provide a clear description of finding and observation noted. This may include recommendations for improvement, if possible.
Not Observed or Not Applicable	N	No comments are required.

CHECKLISTS

I. CONTROL ROOM

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

Controller 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
6. Did the TSC staff provide technically qualified individuals to man the open line of communications over the ENS and HPN phone links with the NRC as requested?	_____	Yes/No

Controller Name: _____

II. TECHNICAL SUPPORT CENTER (cont'd)

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
8. Did the TSC staff interface with the NRC site response team in an effective manner?	_____	Yes/No

Controller 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 Name: _____

III. OPERATIONS SUPPORT CENTER (cont'd)

	Rating	Comments Yes/No
8. Did the OSC staff demonstrate the ability to monitor and track radiation exposure of on-site emergency response personnel?	_____	
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 trouble-shoot 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 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 facilities 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
6. Did the EOF staff provide technically qualified individuals to man the open line of communications over the ENS and HPN phone links with the NRC as requested?	_____	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 Name: _____

IV. EMERGENCY OPERATIONS FACILITY/RECOVERY CENTER (cont'd)

	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
10. Did the EOF staff interface with the NRC site response team in an effective manner?	_____	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 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 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 Name: _____

VII. NEWS 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
7. Did the News Media staff interface with the NRC site response team in an effective manner?	_____	Yes/No

Controller Name: _____

EMERGENCY EXERCISE/DRILL
CONTROLLER'S EVALUATION FORM

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

Exercise/Drill Title:_____

Controller's Location:_____

Time Started:_____ Time Ended:_____

Observed:	Player	Function
	_____	_____
	_____	_____
	_____	_____

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

_____

_____

_____

_____

Comments and Recommendations (Specific):_____

_____

_____

_____

_____

Recognized Weaknesses and Deficiencies:_____

_____

_____

_____

_____

NOTE
Use additional pages as required.

Signature_____ Title_____

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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 fifteen months with no recent shutdowns. The core is nearing the end of the current operating cycle.

2. The Operations crew turnover log provides the following updated plant information:

   a. The Circulating Water System is operating in Closed/Hybrid Cycle.

   b. The semi-annual eight hour surveillance on the 'B' diesel generator was started on the previous shift and is scheduled to be completed at 1000 this morning.

3. The initial plant and reactor system parameters associated with the start of the exercise are shown on Table 5.1-1, "Initial Plant and Reactor System Values" and "Vermont Yankee Daily Plant Status Report."

4. The following on-site meteorological conditions exist at 0800:

Wind Speed, mph (upper/lower)	5.4/4.2
Wind Direction, degrees (upper/lower)	280/269
Delta Temperature, °F (upper/lower)	-0.4/-0.32
Ambient Temperature, °F	50.0
Precipitation, inches	0.00

5. Regional Meteorological Forecast Information:

   An upper air trough will pass over the area midday, causing cloudy skies and a wind shift from the west to the northwest. Partly cloudy this morning. Temperatures rising from current 50 's into the 60 's. Westerly winds from 3 to 6 mph becoming northwesterly around midday.

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)	156 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	-1.44 in H_2O
Drywell Pressure	17 psia
Drywell Temperature	125 °F
Torus Water Level	11.05 ft
Torus Temperature	74 °F
Drywell/Torus O_2 Concentration	0.14 %
High Range Containment Monitors	2.8 R/hr
Containment Gas/Particulate	540/25000 cpm
Reactor Building Vent Monitors Gas/Part	185/1481 cpm
Reactor Building Vent Exhaust N/S	1.0/1.0 mR/hr
Steam Jet Air Ejector (ARM)	60 mR/hr
SJAE Discharge Rate	3,450 μCi/sec
Stack Gas 1/2	20/20 cpm
High Range Noble Gas Monitor	0.1 mR/hr

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VERMONT YANKEE DAILY PLANT STATUS REPORT

DATE: SEPTEMBER 13, 1995

		VALUE	DATE	TIME
PLANT OPERATING STATUS				
1.	CORE THERMAL POWER (MWt)|(%)	1592|99.9	-----	0700
2.	GROSS MWe	547	-----	0700
3.	NET MWe	516	-----	0700
4.	GROSS MWh FOR PREVIOUS DAY	13178	-----	----
5.	CORE FLOW (Mlb/hr)|(%)	46.5/96.9	----	0700
REACTOR COOLANT SYSTEM				
6.	CONDUCTIVITY (umho/cm)(Panel)	0.092	09/13/95	0600
7.	UNIDENTIFIED LEAKAGE @ MIDNIGHT PREVIOUS DAY (gpm)	0.09	-----	----
8.	TOTAL LEAKAGE @ MIDNIGHT PREVIOUS DAY (gpm)	1.59	-----	----
9.	SPECIFIC ACTIVITY (uCi/ml)	6.57x10-2	09/12/95	0800
10.	IODINE - 131 DOSE EQUIVALENT (uCi/ml)	4.50x10-4	09/12/95	0800
STACK RELEASES				
11.	PARTICULATE (ci/period)	6.95x10-5	09/11/95	1135
12.	AVERAGE (uCi/sec)	<100	09/13/95	0050
13.	PEAK (uCi/sec)	None		
14.	DISCHARGE AVERAGE GAMMA ENERGY (E) (MeV)	0.862	09/11/95	1135
15.	DOSE RATE TO CRITICAL ORGANS (mrem/yr)	6.24x10-2	09/11/95	1135
16.	IODINE - 131 (uCi/sec)	2.11x10-5	09/11/95	1135
OFF GAS ANALYSIS				
17.	SJAE DISC. RELEASE RATE (MEASURED)(uCi/sec)	3450	09/13/95	0050
18.	SJAE DISCHARGE SLOPE OF MIXTURE	-0.0152	09/13/95	0050
19.	CONDENSER AIR INLEAKAGE (cfm)	21.5	09/11/95	0226
LIQUID RELEASES & RIVER TEMPERATURE				
20.	LIQUID RELEASE (gal)	NONE	-----	----
21.	LIQUID RELEASE (GROSS B.)(uCi/ml)	NONE	-----	----
22.	LIQUID RELEASE (TRITIUM)(uCi/ml)	NONE	-----	----
23.	LIQUID RELEASE (DISSOLVED NOBLE GAS) (uCi/ml)	NONE	-----	----
24.	RIVER MON. #3 HIGHEST TEMP. FOR PREVIOUS DAY (°F)	63.2	-----	1950
BURNUP				
25.	CORE AVG. BURNUP FOR PREVIOUS DAY (MWD/ST)	15569.56	-----	----
26.	CORE CYCLE BURNUP FOR PREVIOUS DAY (MWD/ST)	5452.20	-----	----

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NOTE: INITIAL DAILY PLANT STATUS FOR DRILL PURPOSES ONLY

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
1995

5.2 EXERCISE SEQUENCE OF EVENTS

The exercise begins at 0800 with the reactor (simulator) running at 100% power. The reactor has been in a steady state for the last fifteen months with no recent shutdowns. The core is nearing the end of the current operating cycle. The Circulating Water System is operating in Closed/Hybrid Cycle. The previous shift had begun the semi-annual eight hour surveillance on the 'B' diesel generator, which is scheduled to end at 1000.

Command Cards — SCR-C-1 (0800): Guidelines provided to Simulator Control Room players on the use of GaiTronics and the plant evacuation alarm during the exercise. SCR-C-2 (0800): Instructions provided to Simulator Control Room players that early in-plant actions may be controlled and performed by the Simulator Controllers.

Message Cards — INITIAL-M-1 (start of exercise or facility activation): Exercise scenario initial conditions provided to the Simulator Control Room players and to appropriate Emergency Facility Coordinators upon activation. Security (0800): A list of Exercise Controllers and non-participants provided to Security Shift Supervisor who will not have to be accounted for during the exercise.

At approximately 0810, the 'B' diesel generator will trip due to a failure of the differential current trip relay. Shift Supervisor should request maintenance and I&C to investigate the cause of the 'B' diesel generator trip. Because of the loss of the 'B' diesel generator, the Shift Supervisor will enter a 7 day Limited Condition of Operation (LCO) with required testing of the 'A' diesel generator in accordance with Technical Specification 4.5.H.1.

At approximately 0910, shortly after surveillance testing of the 'A' diesel generator has begun, the turbine building Auxiliary Operator will report a fire in the 'A' diesel generator room (Refer to Mini-scenario 7.2.1). The 'A' diesel generator will trip and the fire brigade will be called to extinguish the fire. The cause of the fire will be found to be a loose fuel oil coupling near the air start solenoids. Damage to the coupling and the air start solenoids will render the 'A' diesel inoperable. At this time, the 'A' and the 'B' diesel generators are both inoperable.

An ALERT should be declared (approximately 0940) based on AP 3125, "Fire" (Any in-plant fire which affects or will likely affect safety system equipment required for continued operation in the current operating mode). Notifications should be made to appropriate plant personnel and off-site agencies.

Because both diesel generators are both inoperable, the plant will also be in a 24 hour LCO in accordance with Technical Specification 3.5.H.1. After consultation with the Technical Support Center Coordinator and Duty Call Officer, the Shift Supervisor should decide to remain at or near full power since the estimate to repair the 'B' diesel generator will be approximately 2 to 4 hours. (Manual scram of the reactor and level of power reduction will be controlled at this time.) Plant actions will continue to clean up the 'A' diesel generator room and repairs to the 'A' and 'B' diesel generators will be ongoing, with repair efforts on 'B' diesel generator the more likely first priority.

Command Cards

SCR-C-3 (0910 or when needed): Instructions to prevent manual scram of the reactor and control level of power reduction. SCR-C-4 (0955 or when needed): Instructions to control the declaration of the Alert. SEC-C-1 (0940 or when needed): Instructions provided to Security Shift Supervisor to simulate communications with the New England Hydro Power Station.

Message Cards

TSC-M-1 (0940 or when needed): Guidelines provided to TSC Coordinator on assignment of TSC Communicators to Control Room. SEC-M-1 (0940 or when needed): Guidelines provided to Security Shift Supervisor on YNSD pager activation.

Following the **ALERT** declaration, the Technical Support Center (TSC), Operations Support Center (OSC), Emergency Operations Facility/Recovery Center (EOF/RC), and Engineering Support Center (ESC) should be activated and staffed. The News Media Center has the option to activate at the Alert classification.

At approximately 1040, High Pressure Coolant Injection (HPCI) will isolate on a high steam flow signal caused by a failed steam flow detector. Plant should start to investigate the caused of HPCI isolation. Before any repair efforts or technical specification reviews can be completed, a large break loss of coolant accident will occur (approximately 1050). The reactor will automatically scram with one loop of Low Pressure Coolant Injection (LPCI) will fail to inject (Refer to Mini-scenario 7.2.2), and reactor water level will decrease to less than -48 inches. At this time, it is postulated that fuel clad failure begins due to loss of coolant and reactor water level below the top of the reactor fuel.

A **SITE AREA EMERGENCY** should be declared (approximately 1110) based on AP 3125, "Loss of Systems or Equipment" (Loss of systems or equipment such that reactor water level is below -48 inches) OR "Fuel Damage" (Containment radiation monitors reading greater than 1000 R/hr). Notifications should be made to appropriate plant personnel and off-site agencies on the escalation to the Site Area Emergency.

By 1115, drywell pressure and radiation levels have increased significantly. The shift will follow the appropriate procedures to mitigate the loss of coolant

accident. This should include alternative methods to restore reactor water above top of the reactor fuel and control drywell pressure. Off-site dose assessment activities should be initiated to determine potential off-site dose projections and off-site monitoring teams may be dispatched to pre-selected monitoring points based on meteorological conditions.

Command Cards — EOF-C-1 (1125 or when needed): Instructions to control the declaration of the Site Area Emergency.

Message Cards — EOF-M-1 (1115 or when requested): Information to be provided to EOF Rad Assessment staff on the National Weather Service forecast or plant site meteorological conditions.
ESC-M-1 (1115 or when requested): Information provided to ESC meteorologist on weather forecas for the Vermont Yankee site.

At approximately 1205, the Simulator Operator will insert a casualty that causes the Torus Vent System (TVS) rupture diaphragm to leak. A direct path from the Primary Containment (Torus) to the Plant Vent Stack exists.

By 1210, the Plant Vent Stack (PVS) is indicating a release of radioactivity to the environment. Plant Vent Stack radiation monitors will continue to increase as radioactivity inside the Primary Containment is transported through the hardened vent to the Plant Vent Stack. Operators will attempt to isolate the leak by closing the hardened vent isolation valve TVS-86 (refer to Mini-scenario 7.2.3). TVS-86 valve will not operate due to a failure of its supply breaker (V16-19-86). Local operation of the valve will not be possible due to mechanical failure and inhibited by high radiation levels in the area (refer to Mini-scenario 7.2.4).

A **GENERAL EMERGENCY** should be declared (approximately 1215) based on AP 3125, Fuel Damage" (Loss of 2 of 3 fission product barriers with potential loss of the third). Notifications should be made to appropriate plant personnel and off-site agencies on the escalation to the General Emergency. The Site Recovery Manager should formulate and provide protective action recommendations to State authorities based on plant and off-site radiological conditions.

Command Cards — EOF-C-2 (1230 or when needed): Instructions to control the declaration of the General Emergency.

By 1245, teams should be requested to be dispatched from the Operations Support Center (OSC) to investigate the problem associated with the TSV-86 isolation valve to isolate the hardened vent system.

Command Cards — TSC-C-1 (1245 or when needed): Instructions to control On-site Assistance Team to investigate problem with the TSV-86 supply breaker.

By 1345, repairs to TVS-86 supply breaker are completed, allowing closure of the hardened vent isolation valve. Upon valve closure, the release to the environment is terminated. The Plant Vent Stack high range monitor readings will start to decrease significantly. Plant conditions are stabilizing.

At 1400, the exercise may be terminated.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
1995

5.3 SCENARIO TIME LINE

CLOCK TIME	SCENARIO TIME		DESCRIPTION
0800	0:00	<---	Exercise starts with initial conditions established in the Simulator Control Room.
0810	0:10	<---	During surveillance testing, the 'B' Diesel Generator trips due to failure of the differential current trip relay. Plant enters a 7 day LCO with required testing of the 'A' Diesel Generator per technical specification.
0910	1:10	<---	AO reports fire in the 'A' Diesel Generator Room. 'A' diesel Generator trips. Fire Brigade respond to extinguish fire.
0930	1:30	<---	Fire in the 'A' Diesel Generator Room is out. Fire caused damage to the coupling and air start solenoids of the 'A' Diesel Generator. 'A' and 'B' Diesel Generators are inoperable.
0940	1:40	<---	ALERT (A.P. 3125, FIRE) - Any in-plant fire which affects or will likely affect safety system equipment required for continued operation in the current operating mode.
0945	1:45	<---	Plant actions continue to clean up the 'A' Diesel Generator Room. Operations initiate actions to repair the 'A' and 'B' Diesel Generators.
1040	2:40	<---	HPCI isolates on a high steam flow signal caused by a failed steam flow detector. Plant should start to investigate the caused of HPCI isolation.
1050	2:50	<---	Large break loss of coolant accident occurs. Reactor automatically scrams. One loop of LPCI fails to inject and reactor water level decreases to less than -48 inches. Fuel clad failure begins due to loss of coolant and reactor water level below the top of the reactor fuel.
1110	3:10	<---	SITE AREA EMERGENCY (AP 3125, Loss of Systems or Equipment) - Loss of systems or equipment such that reactor water level is below -48 inches OR (AP 3125, Fuel Damage) - Containment radiation monitors reading greater than 1000 R/hr.
1115	3:15	<---	Drywell pressure and radiation levels have increased significantly. Operators initiate actions to restore reactor water level and control drywell pressure.
1205	4:05	<---	Torus Vent System (TVS) rupture disk begins to leak. A direct path from the Torus to the Plant Vent Stack (PVS) exists. Operators attempt to isolate the leak by closing hardened vent isolation valve TVS-86. TSV-86 valve does not operate due to a failure of its supply breaker.
1210	4:10	<---	PVS indicating a release of radioactivity to the environment.
1215	4:15	<---	GENERAL EMERGENCY (AP 3125 - FUEL DAMAGE) - Loss of 2 of 3 fission product barriers with potential loss of the third.
1345	5:45	<---	Repairs to the TVS-86 supply breaker are complete. Hardened vent isolation valve TVS-86 is closed. The release to the environment is terminated.
1400	6:00	<---	EXERCISE MAY BE TERMINATED

VERMONT YANKEE NUCLEAR POWER STATION
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6.1 COMMAND CARDS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
1995

SCENARIO COMMAND CARD

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

TO: Shift Supervisor CLOCK TIME: Prior to 0800

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/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.

An interface device has been installed to connect the Simulator Control Room in Brattleboro with the plant GAITRONICS system. It will allow a person at the plant to talk directly to the simulator over the plant GAITRONICS. The Controller in the plant Main Control Room will monitored and manually actuated the interface, causing a slight delay between initial communications. CHANNEL 3 is the designated the line to be used for communications between the Simulator Control Room and the Plant. CHANNEL 1 and CHANNEL 2 are the designated lines for all other plant exercise related communications and messages.

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VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO COMMAND CARD

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

TO: Shift Supervisor CLOCK TIME: 0800 or when needed

LOCATION: Simulator Control Room SCENARIO TIME: 00:00

****

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

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VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO COMMAND CARD

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

TO: Shift Supervisor CLOCK TIME: 0910 or when needed

LOCATION: Simulator Control Room SCENARIO TIME: 01:10

****

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

****

For scenario purposes, DO NOT manually scram the reactor and keep reactor power at or near 80 percent at this time.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
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SCENARIO COMMAND CARD

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

TO: Security Shift Supervisor CLOCK TIME: 0940 or when needed

LOCATION: Security Gatehouse 2 SCENARIO TIME: 01:40

****

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

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VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO COMMAND CARD

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

TO: Shift Supervisor CLOCK TIME: 0955

LOCATION: Simulator Control Room SCENARIO TIME: 01:55

****

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

****

DECLARE AN **ALERT** BASED ON AP 3125, "FIRE - Any in-plant fire which affects or will likely affect safety system equipment required for continued operation in the current operating mode."

****

THIS IS A DRILL

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VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO COMMAND CARD

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

TO: Site Recovery Manager CLOCK TIME: 1125

LOCATION: EOF SCENARIO TIME: 03:25

****

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

****

DECLARE A **SITE AREA EMERGENCY** BASED ON AP 3125, "LOSS OF SYSTEMS OR EQUIPMENT - Loss of systems or equipment such that reactor water level is below -48 inches OR FUEL DAMAGE - Containment radiation monitors reading greater than 1000 R/hr."

****

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VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO COMMAND CARD

FROM: EOF Lead Controller COMMAND NO.: EOF-C-2

TO: Site Recovery Manager CLOCK TIME: 1230

LOCATION: EOF SCENARIO TIME: 04:30

****

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

****

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

****

THIS IS A DRILL

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VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO COMMAND CARD

FROM: TSC Lead Controller COMMAND NO.: TSC-C-1

TO: TSC Coordinator CLOCK TIME: 1245

LOCATION: TSC SCENARIO TIME: 04:45

****

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

****

Dispatch an OSC Assistance Team to investigate the problem with the TSV-86 supply breaker.

****

THIS IS A DRILL

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VERMONT YANKEE NUCLEAR POWER STATION

EMERGENCY PREPAREDNESS EXERCISE

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6.2 MESSAGE CARDS

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
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SCENARIO MESSAGE CARD

FROM: Facility Lead Controller
MESSAGE NO.: INITIAL-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, provide Section 5.1 of the exercise manual to players.

NOTE TO CONTROLLERS:

Please make sure that the initial conditions are given to the following individuals: Shift Supervisor, Duty Call Officer, Plant Manager, Operations Manager, Assistant Operations Manager, Operations Planning Coordinator, Operations Superintendent, and VP-Operations.

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THIS IS A DRILL

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VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO MESSAGE CARD

FROM: TSC Lead Controller

TO: TSC Coordinator

MESSAGE NO.: TSC-M-1

CLOCK TIME: 09:40 or upon assignment of Communicators

LOCATION: TSC

SCENARIO TIME: 01:40

****

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
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SCENARIO MESSAGE CARD

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

TO: Security Shift Supervisor — CLOCK TIME: 0940

LOCATION: Gatehouse 2 — SCENARIO TIME: 01:40

****

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

****

NOTE TO CONTROLLER:

FOR EXERCISE PURPOSES, direct the Security Shift Supervisor when using Procedure OP 3531, "Emergency Call- In Method" to implement the following instructions:

1. **WHEN ACTIVATING YNSD PERSONNEL PAGER SYSTEM**, use pager code as **DEFINED IN THE PROCEDURE** as the appropriate emergency classification code for YNSD Pager activation during this exercise.
2. Make sure that all EXERCISE-related notifications are preceded by and end with **"THIS IS A DRILL"**.

****

THIS IS A DRILL

****

VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO MESSAGE CARD

FROM: Rad Assessment Controller MESSAGE NO.: EOF-M-1

TO: Radiological Assistant CLOCK TIME: 1115 or as requested

LOCATION: EOF/Dose Assessment Area SCENARIO TIME: 03:15

****

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

****

NOTE TO CONTROLLER:

When EOF/RC personnel request weather information, provide the General Area NWS Forecasts information and Plant/EOF Weather observations as appropriate contained in Section 10.2 (Page 10.2-1) of the exercise manual.

****

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VERMONT YANKEE NUCLEAR POWER STATION
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SCENARIO MESSAGE CARD

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

TO: ESC Meteorologist
CLOCK TIME: 1115 or as requested

LOCATION: ESC
SCENARIO TIME: 03:15

****

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

****

NOTE TO CONTROLLER:

When the ESC Meteorologist request information about weather forecast or site specific meteorological information, provide the meteorological information contained in Section 10.2 of the exercise manual as follows:

1. Provide the general area NWS Forecast information contained in Section 10.2 (page 10.2-1) on ESC activation or when requested.

2. Provide Vermont Yankee Site Forecast information contained in Section 10.2 (page 10.2-2 through 10.2-4) at the appropriate time stated.

****

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VERMONT YANKEE NUCLEAR POWER STATION
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7.1 EVENTS SUMMARY

The following information and supplementary material are provided for those Controllers having in-plant control assignments to further ensure the proper development of the scenario. The information provided in this section assumes that the "players", who are dispatched to perform repair, rescue, or other activities, will take certain actions in response to the scenario. The Controller 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 Controller will be required to provide additional information to the players.

Mini-scenario	Approximate Time	Event	Location
7.2.1	0910	Fire in the 'A' Diesel Generator	'A' Diesel Generator Room
7.2.2	1050	Failure of RHR 27A	Reactor Building Elevation 252'
7.2.3	1205	Trip of Supply Breaker to Hardened Vent Isolation Valve TSV-86	Reactor Building Elevation 280'
7.2.4	1205	Investigation of Manual Isolation of Hardened Vent MOV	Reactor Building Elevation 252'
7.2.5	N/A	Chemistry Samples of Plant Systems and In-plant Radiological Surveys	Various Locations around Plant

VERMONT YANKEE NUCLEAR POWER STATION
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1995

7.2.1 Mini-scenario - Fire in the 'A' Diesel Generator Room

I. General Description

At approximately 0910, an Auxiliary Operator (AO) will report a fire in the 'A' Diesel Generator Room. The Control Room will announce the fire and the Fire Brigade will be directed to the scene. Upon arrival at the scene the Fire Brigade will observe flames in the vicinity of the air start solenoids and oil lines on the south side of the Diesel. The Fire Brigade Leader should request the Control Room to secure the Diesel. The Fire Brigade Leader will extinguish the fire in approximately 15 minutes and report this to the Control Room. Following extinguishment operations, the Fire Brigade Leader will report the apparent cause as a rupture in the oil line.

II. Description of Player Responses/Observations/Corrective Actions

AO will report to the Control Room that a fire has started in the 'A' Diesel Generator Room. Concurrently, the Control Room will receive a fire panel alarm for the 'A' Diesel Room. The Control Room should announce the fire and the Fire Brigade should be dispatched to the scene.

When the Fire Brigade arrives on the scene, flames and heavy smoke will be visible in the area of the air start solenoids. The Fire brigade should be directed to extinguish the fire concurrent with the direction to trip the Diesel. Hand held extinguishers will be successful in suppressing the fire after about 15 minutes.

After the fire emergency is announced, the Control Room Crew should review AP 3020, Fire Pre-Plans and the Safe Shutdown Capability Analysis as well as AP 3125, Emergency Plan Classification and Action Level Scheme. The Control Room should secure the 'A' Diesel at the request of the Fire Brigade Leader.

After the fire is out, approximately 0930, the Fire Brigade Leader will report that the cause was apparently a ruptured oil line and that the air start solenoids have been exposed to direct flame contact. The Fire Brigade Leader will order the establishment of a re-flash watch and request the Control Room to restart room ventilation.

After the notification from the Fire Brigade that the fire is out and that the air start solenoids may be damaged, the Control Room should contact maintenance to effect any necessary repairs to the 'A' Diesel.

CONTROLLER NOTES:

THE FIRE BRIGADE MAY CHOOSE TO FIGHT THE FIRE WITH WATER. IF THIS METHOD IS SELECTED THE FIRE SHOULD STILL BURN UNTIL 0930.

DAMAGE TO THE AIR START SOLENOIDS SHOULD BE DESCRIBED AS SIGNIFICANT CHARRING OF THE SOLENOIDS THEMSELVES AND SOME MINOR MELTING OF THE ASSOCIATED CABLES. DAMAGE TO THE OIL LINES IS LIMITED TO A RUPTURE OF THE FLEXIBLE LINE AND SOME ASSOCIATED SCORCHING OF THE PIPING. NO OTHER DAMAGE WILL BE APPARENT.

III. Event Closeout

This event will be terminated when the re-flash watch is established and the maintenance crew is on the scene investigating the extent of the damage to the solenoids and fuel lines.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
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IV. Messages

All information will be provided verbally by the Controller. Responses will be appropriate to the activities of the players. This may include the following expected activities:

AO report of fire to the Control Room.

Fire Brigade response to extinguish the fire.

Fire Brigade damage assessment after the fire is out.

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7.2.2 Mini-scenario - RHR 27A Fails to Open

I. General Description

At approximately 10:50, 2:50 scenario time, a large break loss of coolant accident occurs. One loop of LPCI fails to inject due to spurious trip of thermal overload of the relay that supplies control power to RHR 27A.

II. Description of Player Responses/Observations/Corrective Actions

A team may be sent to investigate the condition of supply breaker to RHR 27A on MCC panel 89A compartment 2B in the reactor building first floor east wall. Upon investigation the team will note that the breaker is in the tripped position indicating that it tripped on thermal overload. After relaying the condition of the breaker to the TSC, the TSC may direct the operator to reset the breaker. At that time the operator will reset the breaker and inform TSC that the breaker is reset.

CONTROLLER NOTE:

WHEN THE OPERATOR SIMULATES THE RESETTING OF SUPPLY BREAKER TO RHR 27A ON MCC PANEL 89A COMPARTMENT, THE COMPLETION OF TASK SHOULD FIRST BE REPORTED BY THE CONTROLLER TO THE SIMULATOR CONTROL ROOM CONTROLLER AND THEN REPORTED BY THE OPERATOR. THIS IS TO FACILITATE THE TIMING TO RESTORE POWER TO THE RHR27A VALVE IN THE SIMULATOR CONTROL ROOM.

III. Event Closeout

This event will be closed out when the team has informed the TSC that the breaker is reset and the team returns to OSC.

IV. Messages

All information will be provided verbally by the Controller. Responses will be appropriate to the activities of the players. This may include the following expected activities:

Initial results of inspection of supply breaker to RHR 27A on MCC panel 89A compartment 2B.

Results of operator resetting the supply breaker.

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7.2.3 Mini-scenario - Trip of Supply Breaker To TVS-86

I. General Description

At approximately 1205 or 4:05 Hrs into the scenario, the Torus Vent System (TVS) rupture disk begins to leak. At some point after it is determined that a leak exists, operators will attempt to isolate the source by closing the harden vent isolation valve TSV-86. TSV valve does not operate due to a failure of its supply breaker. The only indication the operators have at this point is that when the operator goes to close on the remote operator, the red open indicating light goes out and the green closed indication remains out. The cause of the failure to the breaker is determined to be a short within the breaker causing it to trip on internal over current. The face of the breaker shows signs of damage by black smoke stains. Further investigation determines that the breaker is physically damaged to a point that it needs replacing. Once the leads have been tested and replacement breaker inserted, the valve can be closed and the release terminated.

II. Description of Player Responses/Observations/Corrective Actions

The team sent from OSC to investigate the condition of the supply breaker to TSV-86, should proceed to the reactor building through the north door (to avoid unnecessary radiation exposure) up the north stairway to the first floor. They will proceed to bus 7A compartment 1F, located south end of first floor. The team will be informed by the Controller that the breaker is in the tripped condition and shows evidence of internal damage due to black charring around the breaker.

CONTROLLER NOTE:

A MOCK-UP OF A SIMILAR BREAKER AND BUS CUBICLE WILL BE USED TO ALLOW TEAM MEMBERS TO PHYSICALLY PERFORM BREAKER CHANGE OUT. A REPLACEMENT BREAKER WILL BE OBTAINED FROM MAINTENANCE, (SIMULATING THAT IT WAS OBTAINED FROM STORES) TRANSPORTED TO THE REACTOR BUILDING AND INSTALLED INTO THE MOCK-UP BUS CUBICLE.

AT SOME POINT THE TEAM MAY BE DIVERTED BY OSC TO PROCEED TO THE LOCAL LOCATION OF THE HARDEN VENT ISOLATION VALVE AND MANUALLY SHUT IT. (IF SO FOLLOW MINI-SCENARIO 7.2.4)

III. Event Closeout

The repair team will install a replacement breaker, and the breaker will be re-energized. Operations will close TSV-86. The event closeout will need to be coordinated with the Exercise Coordinator to ensure sufficient time has elapsed to produce the resultant radioactive releases and consistent with the established sequence of events (Refer to Controller Notes below).

CONTROLLER NOTES:

1. **CLOSURE OF THE TSV-86 VALVE WILL NEED TO BE COORDINATED WITH THE EXERCISE COORDINATOR TO ENSURE SUFFICIENT TIME HAS ELAPSED TO PRODUCE THE RESULTANT RADIOACTIVE RELEASE AND ESTABLISHED OBJECTIVES HAVE BEEN MET. THEREFORE, THE CONTROLLER WILL NEED TO CONTACT THE EXERCISE COORDINATOR WHETHER THE TASK NEEDS TO BE DELAYED OR CAN BE COMPLETED.**

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2. **AFTER TASK COMPLETION OF REPLACING THE BREAKER, THE COMPLETION OF TASK SHOULD FIRST BE REPORTED BY THE CONTROLLER TO THE SIMULATOR CONTROL ROOM CONTROLLER AND THEN REPORTED BY THE OSC TEAM. THIS IS TO FACILITATE THE TIMING TO ALLOW OPERATORS TO CLOSE TSV-86 AND SHOW THAT TSV-86 VALVE INDICATION IS CLOSED ON THE SIMULATOR CONTROL ROOM BOARD.**

IV. Messages

All information will be provided verbally by the Controller. The Controller must be prepared to allow repairs to be completed consistent with the established exercise sequence of events. Responses will be appropriate to the activities of the players.

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7.2.4 Mini-scenario - Investigation of Manual Isolation of Harden Vent MOV

I. General Description

At about 10:50, 2:50 scenario time, a large break loss of coolant accident occurs causing Drywell pressure to escalate significantly resulting in weakening the Torus Vent System rupture disk. Approximately 1:15 minutes later the disk begins to leak creating a direct path from the Torus to the Plant Stack. The operators will attempt to shut the hardened vent isolation MOV, but due to failure to supply breaker the valve will not operate.

II. Description of Player Responses/Observations/Corrective Actions

A team may be sent from the OSC to manually shut the hardened vent isolation valve. The 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. If the team is authorized to proceed with the manual closure of the valve, the handwheel does not engage.

CONTROLLER NOTE:

A MOCK-UP OF A SIMILAR VALVE THAT IS USED FOR TRAINING WILL BE AVAILABLE TO DEMONSTRATE THE MANUALLY CLOSURE OF THE HARDEN VENT ISOLATION VALVE.

THE CONTROLLER SHOULD PROVIDE THE NECESSARY INFORMATION TO IDENTIFY THAT THE TEAM CAN NOT MANUALLY SHUT THE HARDEN VENT ISOLATION VALVE DUE TO MECHANICAL FAILURE OF THE MANUAL OPERATOR. THE VALVE SHOULD NOT BE ALLOWED TO BE MANUALLY CLOSED.

III. Event Closeout

This event will be terminated when the team informs the TSC of the general area dose rates and are directed to return to the OSC or the team may attempt to shut the valve manually, but the handwheel does not engage. (Manual isolation of the hardened vent line will not be possible due to mechanical failure of the manual operator.)

IV. Messages

All information will be provided verbally by the Controller. Responses will be appropriate to the activities of the players.

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7.2.5 Mini-scenario - Chemistry Samples of Plant Systems and In-plant Radiological Surveys

I. General Description

Scenario events postulated for the exercise require that samples of plant systems will need to be taken and analyzed to assess plant conditions and support accident assessment activities. Additional in-plant radiological surveys will also be done to monitor and assess plant radiological conditions. This mini-scenario outlines the extent of play and players' expected actions to be demonstrated.

II. Description of Player Responses/Observations/Corrective Actions

A. Chemistry Samples of Plant Systems

Samples of plant systems may be requested throughout the exercise scenario. It is expected that system samples of reactor coolant, primary containment and plant stack effluent will be requested. Plant systems sampling may be initially directed from the Simulator Control Room and then transferred to the TSC after activation. Depending on the plant radiological conditions at the time of the sample request, samples may be taken using established routine sampling procedures or post accident sampling techniques as specified in post accident sampling procedures (OP 3533, OP 3534, OP 3535 and OP 3536). When samples of plant systems are requested, qualified personnel from Radiation Protection and Chemistry will be dispatched to obtain and analyze the requested sample. The assigned sample team or technician should be familiar with the procedural requirements and administrative controls to obtain and analyze the requested sample.

Once the TSC and OSC is activated and staffed, all sample requests should be coordinated through the OSC. The assigned sample team should consult with the OSC Coordinator or alternate for specific instructions and obtain a dose commitment limit for the sampling evolution to be conducted. After the team is briefed, the sampling team should be able to locate the required equipment and then go or simulate going to the sample location. (For purpose of timeliness, these actions may be simulated after discussions and approval of the Controller.) Once there or simulated there, the sample team or technician should be instructed to briefly discuss the actions necessary to obtain and analyze the sample.

CONTROLLER NOTES:

1. **ALL ACTIONS TO OBTAIN AND ANALYZE THE SAMPLE SHOULD BE SIMULATED. NO MANIPULATION OF EQUIPMENT OR SAMPLING SYSTEM COMPONENTS SHOULD BE DONE. THE APPROPRIATE EQUIPMENT AND TOOLS SHOULD BE AVAILABLE, BUT NOT USED. NO ACTIONS SHOULD BE TAKEN THAT WILL AFFECT THE SAFETY OF PERSONNEL OR ONGOING OPERATION OF THE PLANT.**

2. **BECAUSE OF THE TIME COMPRESSION OF THE EXERCISE AND THE NEED FOR PLANT SYSTEM SAMPLE RESULTS TO BE USED TO DEMONSTRATE THE ABILITY TO ASSESS THE DATA IN SUPPORT OF ACCIDENT ASSESSMENT ACTIVITIES, THE TIME FRAME TO OBTAIN AND ANALYZE THE ACTUAL SAMPLE WILL BE SIMULATED AND COMPRESSED. THE ASSUMED SAMPLING PROCESS TIME WILL BE APPROXIMATELY 15 MINUTES PER SAMPLE TAKEN UNLESS THE ACTUAL SAMPLE TIME IS SHORTER. THEREFORE, AFTER THE ASSUMED SAMPLING PROCESS TIME OF 15 MINUTES AND THE SAMPLE TEAM BRIEFLY DISCUSSES THE SAMPLING ACTIVITIES TO OBTAIN AND ANALYZE THE SAMPLE, THE CONTROLLER SHOULD PROVIDE THE APPROPRIATE INFORMATION ON SAMPLE DOSE RATES AND SAMPLE RESULTS TO THE SAMPLE TEAM. THE SAMPLING TEAM SHOULD THEN REPORT AND LOG SAMPLE RESULTS IN ACCORDANCE WITH THE SAMPLING PROCEDURE REQUIREMENTS.**

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B. In-Plant Radiological Surveys

Plant radiological surveys (general area dose rates and air samples) will be conducted to establish the necessary radiation protection controls for on-site personnel. Radiation Protection and Chemistry technicians and other qualified personnel will conduct radiological surveys to verify plant habitability and to define the necessary radiation protection controls to support in-plant corrective actions and repair activities. While conducting these radiological surveys, plant personnel should be instructed that they should actual demonstrate these activities to earn information about scenario-related area radiation and airborne activity levels. Controllers should provide the dose rate and airborne levels after surveys or air samples have been properly obtained. (Information on in-plant radiation levels is contained in Section 9.3 of the manual.) Players should be told that they should respond as if the scenario-related radiation and airborne levels are actually present based on the information that they received.

CONTROLLER NOTE:

ALL ACTIONS TO CONDUCT RADIOLOGICAL SURVEYS SHOULD NOT BE SIMULATED UNLESS DIRECTED BY THE EXERCISE COORDINATOR OR LEAD CONTROLLER. THE APPROPRIATE EQUIPMENT SHOULD BE USED TO OBTAIN THE INFORMATION. HOWEVER, NO ACTIONS SHOULD BE TAKEN THAT WILL AFFECT THE SAFETY OF PERSONNEL OR ONGOING OPERATION OF THE PLANT.

III. Event Closeout

This event will be terminated when the sampling teams report sample results of plant system samples requested or when radiological surveys are conducted and completed throughout the exercise scenario.

IV. Messages

All information will be provided verbally by the Controller. 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 / 08:00	00:15 / 08:15	00:30 / 08:30	00:45 / 08:45	01:00 / 09:00
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	526	527	527	527	527
12	9-4	2-165B	RX COOLANT TEMP	DEG F	526	527	527	527	527
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	28.8	29.3	29.3	29.3	29.3
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	28.8	29.3	29.3	29.3	29.3
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	99	99	99
18	9-5	7-46D	APRM/IRM D	%	99	99	100	100	100
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	3.84E+05	3.82E+05	3.84E+05	3.84E+05	3.84E+05
22	9-5	7-43B	SRM B	CPS	4.59E+05	4.56E+05	4.58E+05	4.58E+05	4.58E+05
23	9-5	7-43C	SRM C	CPS	5.17E+05	5.14E+05	5.16E+05	5.16E+05	5.16E+05
24	9-5	7-43D	SRM D	CPS	4.30E+05	4.27E+05	4.29E+05	4.29E+05	4.29E+05
25	9-5	2-3-95	CORE FLOW	MLB/HR	46	46	46	46	46
26	9-5	2-3-95	CORE DP	PSID	17	18	18	18	18
27	9-5	FI-3-310	CRD FLOW	GPM	53.8	55.8	55.7	55.7	55.7
28	9-5	6-96	WIDE RANGE PRESS	PSIG	1007	1007	1007	1007	1007
29	9-5	6-96	NAR RANGE PRESS	PSIG	1008	1007	1006	1008	1008
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	6.4	6.3	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	159	159	159	159
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	476	487	480	480	480
34	9-6	LI-107-5	CST LEVEL	%	49	50	50	50	50
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	58	57	57	57	57
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	56	55	55	55	55
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	1.9	2.5	2.5	2.5	2.5
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	1.93	1.96	1.96	1.96	1.96
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	122	141	141	141	141
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-1.44	-1.47	-1.47	-1.47	-1.47
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-1.44	-1.47	-1.47	-1.47	-1.47
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.	%	1.16	1.16	1.16	1.16	1.16

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ITEM	PANEL	INSTR. ID	DESCRIPTION	SCENARIO TIME / CLOCK TIME / UNITS	01:15 / 09:15	01:30 / 09:30	01:45 / 09:45	02:00 / 10:00	02:15 / 10:15
1	9-3	FT-23-108-1	HPCI FLOW	GPM	0	0	0	0	0
2	9-3	FI-10-139A	RHR A FLOW	GPM	1	1	1	1	1
3	9-3	FI-10-139B	RHR B FLOW	GPM	1	1	1	1	1
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	0	0	0
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	0	0	0
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	17	17	17	17	17
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	17	17	17	17	17
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	65	65	65	65	65
10	9-4	FI-12-141B	RWCU FLOW	GPM	65	65	65	65	65
11	9-4	2-165A	RX COOLANT TEMP	DEG F	527	527	525	522	522
12	9-4	2-165B	RX COOLANT TEMP	DEG F	527	527	525	522	522
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	29.3	29.3	25.4	21.5	21.5
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	29.3	29.3	25.3	21.5	21.5
15	9-5	7-46A	APRM/IRM A	%	99	99	91	82	82
16	9-5	7-46B	APRM/IRM B	%	100	100	91	82	82
17	9-5	7-46C	APRM/IRM C	%	99	99	90	81	81
18	9-5	7-46D	APRM/IRM D	%	100	100	91	82	82
19	9-5	7-46E	APRM/IRM E	%	100	100	92	82	82
20	9-5	7-46F	APRM/IRM F	%	100	100	91	82	82
21	9-5	7-43A	SRM A	CPS	3.84E+05	3.84E+05	3.16E+05	2.51E+05	2.51E+05
22	9-5	7-43B	SRM B	CPS	4.58E+05	4.58E+05	3.76E+05	2.99E+05	2.99E+05
23	9-5	7-43C	SRM C	CPS	5.16E+05	5.16E+05	4.24E+05	3.37E+05	3.37E+05
24	9-5	7-43D	SRM D	CPS	4.29E+05	4.29E+05	3.53E+05	2.80E+05	2.80E+05
25	9-5	2-3-95	CORE FLOW	MLB/HR	46	46	41	35	35
26	9-5	2-3-95	CORE DP	PSID	18	18	15	12	12
27	9-5	FI-3-310	CRD FLOW	GPM	55.7	55.7	55.6	55.8	55.8
28	9-5	6-96	WIDE RANGE PRESS	PSIG	1007	1007	996	985	985
29	9-5	6-96	NAR RANGE PRESS	PSIG	1008	1008	997	985	985
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	6.4	6.4	5.8	5.2	5.2
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	6.4	6.4	5.8	5.2	5.2
32	9-5	6-98	NAR RANGE LEVEL	INCHES	159	159	159	159	159
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	480	480	415	354	354
34	9-6	LI-107-5	CST LEVEL	%	50	50	49	49	49
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	57	57	57	57	57
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	55	55	55	55	55
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	2.5	2.5	2.4	2.2	2.2
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	1.96	1.96	1.97	1.97	1.97
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	141	141	141	142	142
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-1.47	-1.47	-1.48	-1.48	-1.48
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-1.47	-1.47	-1.48	-1.48	-1.48
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	8	8	10	10	10
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	0	0	0	0	0
51	CAD		DW/TORUS O2 CONC.	%	1.16	1.16	1.16	1.16	1.16

8.0 OPERATIONAL DATA

ITEM	PANEL	INSTR ID	DESCRIPTION	SCENARIO TIME / CLOCK TIME / UNITS	02:30 / 10:30	02:45 / 10:45	03:00 / 11:00	03:15 / 11:15	03:30 / 11:30
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	1	1249	6613	6615
3	9-3	FI-10-139B	RHR B FLOW	GPM	1	1	11982	11204	11159
4	9-3	FI-14-50A	CS A FLOW	GPM	0	0	3609	3438	3418
5	9-3	FI-14-50B	CS B FLOW	GPM	0	0	3609	3438	3418
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	17	17	37	18	18
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	17	17	37	18	18
8	9-4	FI-13-91	RCIC FLOW	GPM	0	0	0	0	0
9	9-4	FI-12-141A	RWCU FLOW	GPM	65	65	0	0	0
10	9-4	FI-12-141B	RWCU FLOW	GPM	65	65	0	0	0
11	9-4	2-165A	RX COOLANT TEMP	DEG F	522	522	157	140	142
12	9-4	2-165B	RX COOLANT TEMP	DEG F	522	522	157	140	142
13	9-4	2-159A	RECIRC A LOOP FLOW	KGPM	21.5	21.5	0	0	0
14	9-4	2-159B	RECIRC B LOOP FLOW	KGPM	21.5	21.5	0	0	0
15	9-5	7-46A	APRM/IRM A	%	82	82	0	0	0
16	9-5	7-46B	APRM/IRM B	%	82	82	0	0	0
17	9-5	7-46C	APRM/IRM C	%	81	81	0	0	0
18	9-5	7-46D	APRM/IRM D	%	82	82	0	0	0
19	9-5	7-46E	APRM/IRM E	%	82	82	0	0	0
20	9-5	7-46F	APRM/IRM F	%	82	82	0	0	0
21	9-5	7-43A	SRM A	CPS	2.51E+05	2.51E+05	1.24E+04	4.50E+01	4.47E+01
22	9-5	7-43B	SRM B	CPS	2.99E+05	2.99E+05	1.46E+04	4.40E+01	4.45E+01
23	9-5	7-43C	SRM C	CPS	3.37E+05	3.37E+05	1.63E+04	4.40E+01	4.45E+01
24	9-5	7-43D	SRM D	CPS	2.80E+05	2.80E+05	1.37E+04	4.50E+01	4.46E+01
25	9-5	2-3-95	CORE FLOW	MLB/HR	35	35	15	15	15
26	9-5	2-3-95	CORE DP	PSID	12	12	4	5	4
27	9-5	FI-3-310	CRD FLOW	GPM	55.8	55.8	124.5	124.5	124.5
28	9-5	6-96	WIDE RANGE PRESS	PSIG	985	985	22	30	33
29	9-5	6-96	NAR RANGE PRESS	PSIG	985	985	950	950	950
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	5.2	5.2	0	0	0
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	5.2	5.2	0	0	0
32	9-5	6-98	NAR RANGE LEVEL	INCHES	159	159	137	187	187
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	354	354	200	200	200
34	9-6	LI-107-5	CST LEVEL	%	49	49	48	43	39
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	57	57	0	0	0
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	55	55	0	0	0
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	2.2	2.2	5	12.7	18
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	120	136	139
41	9-25	LI-46A	TORUS LEVEL	FEET	11.05	11.05	11.3	11.19	11.48
42	9-25	LI-46B	TORUS LEVEL	FEET	11.05	11.05	11.3	11.51	11.48
43	9-25	TR-16-19-44	TORUS PRESS	PSIA	14.6	14.6	36.3	18.4	18.7
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA	17	17	37	17	18
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	1.97	1.97	0.71	-0.38	-0.38
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	142	142	262	150	149
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-1.48	-1.48	-4.42	-10.49	-12.55
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-1.48	-1.48	-4.22	-10.49	-12.55
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	10	10	1500	1500	956
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	0	0	1500	1500	956
51	CAD		DW/TORUS O2 CONC.	%	1.16	1.16	1.36	3.27	3.29

8.0 OPERATIONAL DATA

ITEM	PANEL	INSTR ID	DESCRIPTION	SCENARIO TIME / CLOCK TIME / UNITS	03:45 / 11:45	04:00 / 12:00	04:15 / 12:15	04:30 / 12:30	04:45 / 12:45
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	10207	9629	9650	9594	9545
3	9-3	FI-10-139B	RHR B FLOW	GPM	10249	9668	9689	9633	9545
4	9-3	FI-14-50A	CS A FLOW	GPM	3148	2961	2957	2923	2876
5	9-3	FI-14-50B	CS B FLOW	GPM	3148	2961	2957	2923	2876
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	19	20	21	21	21
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	19	20	21	21	21
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	141	146	150	153	157
12	9-4	2-165B	RX COOLANT TEMP	DEG F	141	146	150	153	157
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	4.45E+01	4.42E+01	4.40E+01	4.37E+01	4.34E+01
22	9-5	7-43B	SRM B	CPS	4.43E+01	4.40E+01	4.37E+01	4.34E+01	4.29E+01
23	9-5	7-43C	SRM C	CPS	4.43E+01	4.40E+01	4.37E+01	4.34E+01	4.29E+01
24	9-5	7-43D	SRM D	CPS	4.43E+01	4.40E+01	4.38E+01	4.35E+01	4.30E+01
25	9-5	2-3-95	CORE FLOW	MLB/HR	9	8	8	0	0
26	9-5	2-3-95	CORE DP	PSID	4	4	4	3	3
27	9-5	FI-3-310	CRD FLOW	GPM	124.5	124.5	124.5	130.7	130.7
28	9-5	6-96	WIDE RANGE PRESS	PSIG	72	97	97	29	29
29	9-5	6-96	NAR RANGE PRESS	PSIG	950	950	950	950	950
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	2	3.1	3	3	3
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	0	0	0	0	0
32	9-5	6-98	NAR RANGE LEVEL	INCHES	187	187	187	187	187
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	200	200	200	200	200
34	9-6	LI-107-5	CST LEVEL	%	36	32	29	26	23
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	0	1	1	1	1
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	0	1	1	1	1
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	21	23.8	25.7	27	27
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	143	148	151	155	157
41	9-25	LI-46A	TORUS LEVEL	FEET	11.66	12.5	13.6	14.5	15.6
42	9-25	LI-46B	TORUS LEVEL	FEET	11.66	12.5	13.6	14.5	15.6
43	9-25	TR-16-19-44	TORUS PRESS	PSIA	19.2	20.5	19.5	18	17
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA	19	20	21	21	21
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	0.13	-0.42	0.91	6.35	6.35
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	182	183	183	183	183
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-12.63	-12.62	-12.4	-12.47	-12.47
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-12.63	-12.62	-12.4	-12.47	-12.47
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	920	925	1026	993	993
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	920	925	1026	993	993
51	CAD		DW/TORUS O2 CONC.	%	3.29	3.31	3.33	3.34	3.34

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
1995

8.0 OPERATIONAL DATA

ITEM	PANEL	INSTR ID	DESCRIPTION	SCENARIO TIME / CLOCK TIME / UNITS	05:00 / 13:00	05:15 / 13:15	05:30 / 13:30	05:45 / 13:45	06:00 / 14:00
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	9545	9545	9545	9545	9545
3	9-3	FI-10-139B	RHR B FLOW	GPM	9545	9545	9545	9545	9545
4	9-3	FI-14-50A	CS A FLOW	GPM	2876	2876	2876	2876	2876
5	9-3	FI-14-50B	CS B FLOW	GPM	2876	2876	2876	2876	2876
6	9-3	PI-16-19-12A	DRYWELL PRESS	PSIA	21	21	21	21	21
7	9-3	PI-16-19-12B	DRYWELL PRESS	PSIA	21	21	21	21	21
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	159	161	164	166	167
12	9-4	2-165B	RX COOLANT TEMP	DEG F	159	161	164	166	167
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	4.29E+01	4.24E+01	4.19E+01	4.14E+01	4.09E+01
22	9-5	7-43B	SRM B	CPS	4.24E+01	4.19E+01	4.14E+01	4.09E+01	4.04E+01
23	9-5	7-43C	SRM C	CPS	4.24E+01	4.19E+01	4.14E+01	4.09E+01	4.04E+01
24	9-5	7-43D	SRM D	CPS	4.25E+01	4.20E+01	4.15E+01	4.10E+01	4.05E+01
25	9-5	2-3-95	CORE FLOW	MLB/HR	8	8	8	8	8
26	9-5	2-3-95	CORE DP	PSID	3	3	3	3	3
27	9-5	FI-3-310	CRD FLOW	GPM	124.5	124.5	124.5	124.5	124.5
28	9-5	6-96	WIDE RANGE PRESS	PSIG	29	28	28	28	28
29	9-5	6-96	NAR RANGE PRESS	PSIG	950	950	950	950	950
30	9-5	6-97	FEEDWATER FLOW	MLB/HR	3	3	3	3	2.9
31	9-5	6-97	MAIN STEAM FLOW	MLB/HR	0	0	0	0	0
32	9-5	6-98	NAR RANGE LEVEL	INCHES	187	187	187	187	187
33	9-5	6-98	WIDE RANGE LEVEL	INCHES	200	200	200	200	200
34	9-6	LI-107-5	CST LEVEL	%	22	21	21	20	20
35	9-6	LI-102-5A	HOTWELL LEVEL N	%	1	1	1	1	1
36	9-6	LI-102-5B	HOTWELL LEVEL S	%	1	1	1	1	1
37	9-7	PI-101-29	CONDENSER VACUUM	IN HG	27	27	27	27	27
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	163	165	167	168	169
41	9-25	LI-46A	TORUS LEVEL	FEET	15.2	15.1	15.1	15.1	14.9
42	9-25	LI-46B	TORUS LEVEL	FEET	15.2	15.1	15.1	15.1	14.9
43	9-25	TR-16-19-44	TORUS PRESS	PSIA	16.5	15.9	15.4	15	16
44	9-25	TR-16-19-44	DRYWELL PRESS	PSIA	21	21	21	21	21
45	9-25	PR-1-156-3	DW/TORUS DP	PSID	6.35	6.35	6.35	6.35	5.05
46	9-25	TR-16-19-45	DRYWELL TEMP	DEG F	183	183	183	183	183
47	9-26	PI-1-125-3A	RX BUILDING DP	IN H2O	-12.47	-12.47	-12.4	-12.47	-12.47
48	9-26	PI-1-125-3B	RX BUILDING DP	IN H2O	-12.47	-12.47	-12.4	-12.47	-12.47
49	9-26	FI-1-125-1A	SGTS FLOW	CFM	993	993	993	993	993
50	9-26	FI-1-125-1B	SGTS FLOW	CFM	993	993	993	993	993
51	CAD		DW/TORUS O2 CONC.	%	3.44	3.44	3.44	3.44	3.44

9.1 AREA RADIATION MONITORS

			SCENARIO TIME	00:00	00:15	00:30	00:45	01:00	01:15	01:30	01:45
			CLOCK TIME	08:00	08:15	08:30	08:45	09:00	09:15	09:30	09:45
ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS							
RMS II-1	9-11	RB/252	RX BLDG HI RADS - N	R/hr	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-2	9-11	RB/252	RX BLDG HI RADS - S	R/hr	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-3	9-11	RB/252	TIP RM HI RAD	R/hr	<1	<1	<1	<1	<1	<1	<1	<1
1	9-11	RB/232	SUPP CHAMB RB EXT CW	mR/hr	8	8	8	8	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	470
6	9-11	RB/280	ELEV ENTR 280FT RX	mR/hr	8	8	8	8	8	7	7	8
7	9-11	RB/252	CRD REPAIR RX BLDG	mR/hr	10	10	10	10	10	10	10	10
8	9-11	RB/303	ELEV ENTR 303FT RX	mR/hr	4	4	4	4	3	3	3	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	6	6	6	6	6
11	9-11	RB/318	H2O CLEANUP RX BLDG	mR/hr	4	4	4	4	4	3	3	4
12	9-11	RB/345	ELEV ENTR 348FT RX	mR/hr	4	4	4	4	4	4	4	3
14	9-11	RB/345	WEST REFUEL F. BLDG	mR/hr	5	5	5	4	4	4	4	4
15	9-11	RB/345	SPENT FUEL POOL RX	mR/hr	15	15	15	15	15	15	15	14
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	0.4
17	9-11	RW/252	PUMP RM RADWASTE BL	mR/hr	1	1	1	1	1	1	1	1
18	9-11	RW/252	RADW OPER AREA RW B	mR/hr	1	1	1	1	1	1	1	1
19	9-11	RW/230	PUMP/TANK AREA RW B	mR/hr	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
20	9-11	TB/248	N ACCESS 248FT TURB	mR/hr	2	2	2	2	2	2	2	2
21	9-11	TB/248	MAIN STM VALVE TURB	mR/hr	200	200	200	200	200	200	200	190
22	9-11	TB/232	COND DEMIN TURB BLD	mR/hr	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
23	9-11	TB/252	DECON/MACH SHOP TB	mR/hr	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
24	9-11	TB/272	TURB STM IN TURB BL	mR/hr	8	8	8	8	8	8	8	8
25	9-11	AB/272	VIEW GALLERY CONT RM	mR/hr	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.42
26	9-11	TB/252	REAR GATE TURB WAREH	mR/hr	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.08
13	9-11	TB/228	MOIST SEP AREA TURB	mR/hr	110	110	110	110	110	110	110	100

9.1 AREA RADIATION MONITORS

			SCENARIO TIME	02:00	02:15	02:30	02:45	03:00	03:15	03:30	03:45
			CLOCK TIME	10:00	10:15	10:30	10:45	11:00	11:15	11:30	11:45
ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS							
RMS II-1	9-11	RB/252	RX BLDG HI RADS - N	R/hr	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-2	9-11	RB/252	RX BLDG HI RADS - S	R/hr	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-3	9-11	RB/252	TIP RM HI RAD	R/hr	<1	<1	<1	<1	<1	<1	<1	<1
1	9-11	RB/232	SUPP CHAMB RB EXT CW	mR/hr	8	8	8	8	OSH (>1E4)	OSH	OSH	OSH
2	9-11	RB/252	N PERSONNEL RX BLDG	mR/hr	3	3	3	3	0.3	0.3	0.3	0.3
3	9-11	RB/252	S EQUIP RR RX BLDG	mR/hr	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
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	430	430	430	430	OSH (>1E4)	OSH	OSH	OSH
6	9-11	RB/280	ELEV ENTR 280FT RX B	mR/hr	8	8	8	8	5	5	5	5
7	9-11	RB/252	CRD REPAIR RX BLDG	mR/hr	10	10	10	10	4	4	4	4
8	9-11	RB/303	ELEV ENTR 303FT RX B	mR/hr	3	3	3	3	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	6	6	6	6	3	3	3	3
11	9-11	RB/318	H2O CLEANUP RX BLDG	mR/hr	4	4	4	4	2	2	2	2
12	9-11	RB/345	ELEV ENTR 348FT RX B	mR/hr	3	3	3	3	1	1	1	1
14	9-11	RB/345	WEST REFUEL RX BLDG	mR/hr	4	4	4	4	1	1	1	1
15	9-11	RB/345	SPENT FUEL POOL RX B	mR/hr	14	14	14	14	8	8	8	8
16	9-11	RB/318	NEW FUEL VAULT RX B	mR/hr	0.4	0.4	0.4	0.4	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	1.5	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	1	1	1	1
21	9-11	TB/248	MAIN STM VALVE TURB	mR/hr	180	180	180	180	4	4	4	4
22	9-11	TB/232	COND DEMIN TURB BLDG	mR/hr	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.1
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	8	8	8	8	7	7	7	7
25	9-11	AB/272	VIEW GALLERY CONT RM	mR/hr	0.38	0.38	0.38	0.38	0.11	0.11	0.11	0.11
26	9-11	TB/252	REAR GATE TURB WAREH	mR/hr	0.07	0.07	0.07	0.07	0.01	0.01	0.01	0.01
13	9-11	TB/228	MOIST SEP AREA TURB	mR/hr	100	100	100	100	1	1	1	1

OSH = Off-scale High

9.1 AREA RADIATION MONITORS

			SCENARIO TIME	04:00	04:15	04:30	04:45	05:00	05:15	05:30	05:45	06:00
			CLOCK TIME	12:00	12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00
ARM No.	PANEL	BLDG/ELV	DESCRIPTION	UNITS								
RMS II-1	9-11	RB/252	RX BLDG HI RADS - N	R/hr	<1	<1	<1	<1	<1	<1	<1	<1	<1
RMS II-2	9-11	RB/252	RX BLDG HI RADS - S	R/hr	<1	10	25	25	25	25	25	25	10
RMS II-3	9-11	RB/252	TIP RM HI RAD	R/hr	<1	<1	<1	<1	<1	<1	<1	<1	<1
1	9-11	RB/232	SUPP CHAMB RB EXT CW	mR/hr	OSH(1E>4)	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
2	9-11	RB/252	N PERSONNEL RX BLDG	mR/hr	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
3	9-11	RB/252	S EQUIP RR RX BLDG	mR/hr	0.3	OSH(>1E3)	OSH	OSH	OSH	OSH	OSH	OSH	500
4	9-11	RB/252	RX BLD NEUTRON TIP	mR/hr	5	5	5	5	5	5	5	5	5
5	9-11	RB/252	PERSONNEL HATCH RX B	mR/hr	OSH(1E>4)	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
6	9-11	RB/280	ELEV ENTR 280FT RX B	mR/hr	5	5	5	5	5	5	5	5	5
7	9-11	RB/252	CRD REPAIR RX BLDG	mR/hr	4	200	500	500	500	500	500	500	100
8	9-11	RB/303	ELEV ENTR 303FT RX B	mR/hr	1	1	1	1	1	1	1	1	1
9	9-11	RB/303	H2O CLEANUP RX BLDG	mR/hr	4	4	4	4	4	4	4	4	4
10	9-11	RB/318	ELEV ENTR 318FT RX B	mR/hr	3	3	3	3	3	3	3	3	3
11	9-11	RB/318	H2O CLEANUP RX BLDG	mR/hr	2	2	2	2	2	2	2	2	2
12	9-11	RB/345	ELEV ENTR 348FT RX B	mR/hr	1	1	1	1	1	1	1	1	1
14	9-11	RB/345	WEST REFUEL RX BLDG	mR/hr	1	1	1	1	1	1	1	1	1
15	9-11	RB/345	SPENT FUEL POOL RX B	mR/hr	8	8	8	8	8	8	8	8	8
16	9-11	RB/318	NEW FUEL VAULT RX B	mR/hr	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
17	9-11	RW/252	PUMP RM RADWASTE BLD	mR/hr	1	1	1	1	1	1	1	1	1
18	9-11	RW/252	RADW OPER AREA RW B	mR/hr	1	1	1	1	1	1	1	1	1
19	9-11	RW/230	PUMP/TANK AREA RW B	mR/hr	1.6	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	1	1	1	1	1	1	1	1
21	9-11	TB/248	MAIN STM VALVE TURB	mR/hr	4	4	4	4	4	4	4	4	4
22	9-11	TB/232	COND DEMIN TURB BLDG	mR/hr	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
23	9-11	TB/252	DECONTAM. TURB BLDG	mR/hr	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
24	9-11	TB/272	TURB STM IN TURB BLD	mR/hr	7	7	7	7	7	7	7	7	7
25	9-11	AB/272	VIEW GALLERY CONT RM	mR/hr	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
26	9-11	TB/252	REAR GATE TURB WAREH	mR/hr	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
13	9-11	TB/228	MOIST SEP AREA TURB	mR/hr	1	1	1	1	1	1	1	1	1

OSH = Off-scale High

9.2 PROCESS MONITORS

ARM NO.	PANEL	BLDG/ELV	DESCRIPTION	UNITS	SCENARIO TIME 00:00 / CLOCK TIME 08:00	00:15 / 08:15	00:30 / 08:30	00:45 / 08:45	01:00 / 09:00	01:15 / 09:15	01:30 / 09:30	01:45 / 09:45
	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	650	650	650	650	650	650	650	590
	9-2	RB/280	CONTAINMENT MON-PART	cpm	26000	26000	26000	26000	26000	26000	26000	24000
	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	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.5
28	9-2	DW/252	DRYWELL CH B	R/hr	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.5
	9-2	RB/280	RX BLDG VENT GAS	cpm	150	150	150	150	150	150	150	150
	9-2	RB/280	RX BLDG VENT - PART	cpm	1500	1500	1500	1500	1500	1500	1500	1500
31	9-10	RB/280	RX BLDG VENT NORTH	mR/hr	2	2	2	2	2	2	2	1.7
32	9-10	RB/280	RX BLDG VENT SOUTH	mR/hr	2	2	2	2	2	2	2	1.7
453A	9-10	RB/345	SPENT FUEL POOL A	mR/hr	3	3	3	3	3	3	3	3
453B	9-10	RB/345	SPENT FUEL POOL B	mR/hr	3	3	3	3	3	3	3	3
	9-10	RB/256	MAIN STM LINE A	mR/hr	180	180	180	180	180	180	180	170
	9-10	RB/256	MAIN STM LINE B	mR/hr	180	180	180	180	180	180	180	170
	9-10	RB/256	MAIN STM LINE C	mR/hr	180	180	180	180	180	180	180	170
	9-10	RB/256	MAIN STM LINE D	mR/hr	180	180	180	180	180	180	180	170
38	9-10	TB/248	SJAE(AIR EJECTOR)	mR/hr	60	60	60	60	60	60	60	58

9.2 PROCESS MONITORS

ARM NO.	PANEL	BLDG/ELV	DESCRIPTION	UNITS	SCENARIO TIME / CLOCK TIME 02:00 / 10:00	02:15 / 10:15	02:30 / 10:30	02:45 / 1045	03:00 / 11:00	03:15 / 11:15	03:30 / 11:30	03:45 / 11:45
	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	540	540	540	540	DSL	DSL	DSL	DSL
	9-2	RB/280	CONTAINMENT MON-PART	cpm	21000	21000	21000	21000	DSL	DSL	DSL	DSL
	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	2.5	2.5	2.5	2.5	2400	3500	4200	6300
28	9-2	DW/252	DRYWELL CH B	R/hr	2.5	2.5	2.5	2.5	2400	3500	4200	6300
	9-2	RB/280	RX BLDG VENT GAS	cpm	150	150	150	150	150	150	150	150
	9-2	RB/280	RX BLDG VENT - PART	cpm	1500	1500	1500	1500	1500	1500	1500	1500
31	9-10	RB/280	RX BLDG VENT NORTH	mR/hr	1.5	1.5	1.5	1.5	0.1	0.1	0.1	0.1
32	9-10	RB/280	RX BLDG VENT SOUTH	mR/hr	1.5	1.5	1.5	1.5	0.1	0.1	0.1	0.1
453A	9-10	RB/345	SPENT FUEL POOL A	mR/hr	3	3	3	3	3	3	3	3
453B	9-10	RB/345	SPENT FUEL POOL B	mR/hr	3	3	3	3	3	3	3	3
	9-10	RB/256	MAIN STM LINE A	mR/hr	120	120	120	120	<1	<1	<1	<1
	9-10	RB/256	MAIN STM LINE B	mR/hr	120	120	120	120	<1	<1	<1	<1
	9-10	RB/256	MAIN STM LINE C	mR/hr	120	120	120	120	<1	<1	<1	<1
	9-10	RB/256	MAIN STM LINE D	mR/hr	120	120	120	120	<1	<1	<1	<1
38	9-10	TB/248	SJAE(AIR EJECTOR)	mR/hr	56	56	56	56	<1	<1	<1	<1

NOTE: DSL = Down Scale Low

9.2 PROCESS MONITORS

ARM NO.	PANEL	BLDG/ELV	DESCRIPTION	UNITS	SCENARIO TIME / CLOCK TIME 04:00 / 12:00	04:15 / 12:15	04:30 / 12:30	04:45 / 12:45	05:00 / 13:00	05:15 / 13:15	05:30 / 13:30	05:45 / 13:45	06:00 / 14:00
	9-2	ST/257	STACK GAS MON-GAS 1	cpm	20	OSH>1E6	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	ST/257	STACK GAS MON-GAS 2	cpm	20	OSH>1E6	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	9-2	RB/280	CONTAINMENT MON GAS	cpm	DSL	DSL	DSL	DSL	DSL	DSL	DSL	DSL	DSL
	9-2	RB/280	CONTAINMENT MON-PART	cpm	DSL	DSL	DSL	DSL	DSL	DSL	DSL	DSL	DSL
	9-2	ST/257	STACK HI RANGE	mR/hr	0.1	1200	12000	11000	10000	10000	9200	8400	8
27	9-2	DW/252	DRYWELL CH A	R/hr	6100	5800	5300	4800	4300	3800	3500	3100	2800
28	9-2	DW/252	DRYWELL CH B	R/hr	6100	5800	5300	4800	4300	3900	3500	3100	2800
	9-2	RB/280	RX BLDG VENT GAS	cpm	150	150	150	150	150	150	150	150	150
	9-2	RB/280	RX BLDG VENT - PART	cpm	1500	1500	1500	1500	1500	1500	1500	1500	1500
31	9-10	RB/280	RX BLDG VENT NORTH	mR/hr	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
32	9-10	RB/280	RX BLDG VENT SOUTH	mR/hr	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
453A	9-10	RB/345	SPENT FUEL POOL A	mR/hr	3	3	3	3	3	3	3	3	3
453B	9-10	RB/345	SPENT FUEL POOL B	mR/hr	3	3	3	3	3	3	3	3	3
	9-10	RB/256	MAIN STM LINE A	mR/hr	<1	<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	<1
	9-10	RB/256	MAIN STM LINE C	mR/hr	<1	<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	<1
38	9-10	TB/248	SJAE(AIR EJECTOR)	mR/hr	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTE: OSH = Off Scale High DSL = Down Scale Low

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
1995

9.3 IN-PLANT RADIATION LEVELS

TABLE 9.3-1
Reactor Building, Elevation 345'
(mR/hr unless otherwise noted)

Clock Time	ARM 12	ARM 14	ARM 15	ARM 453 A	ARM 453 B	Zone I	Zone II	Zone III	Zone IV
08:00 to 10:50	4	5	15	3	3	5	3	3	3
10:50 to 14:00	4	5	15	3	3	5	3	3	3

Zone Readings are average throughout zone.
General area contamination levels <1K dpm/100 cm2.

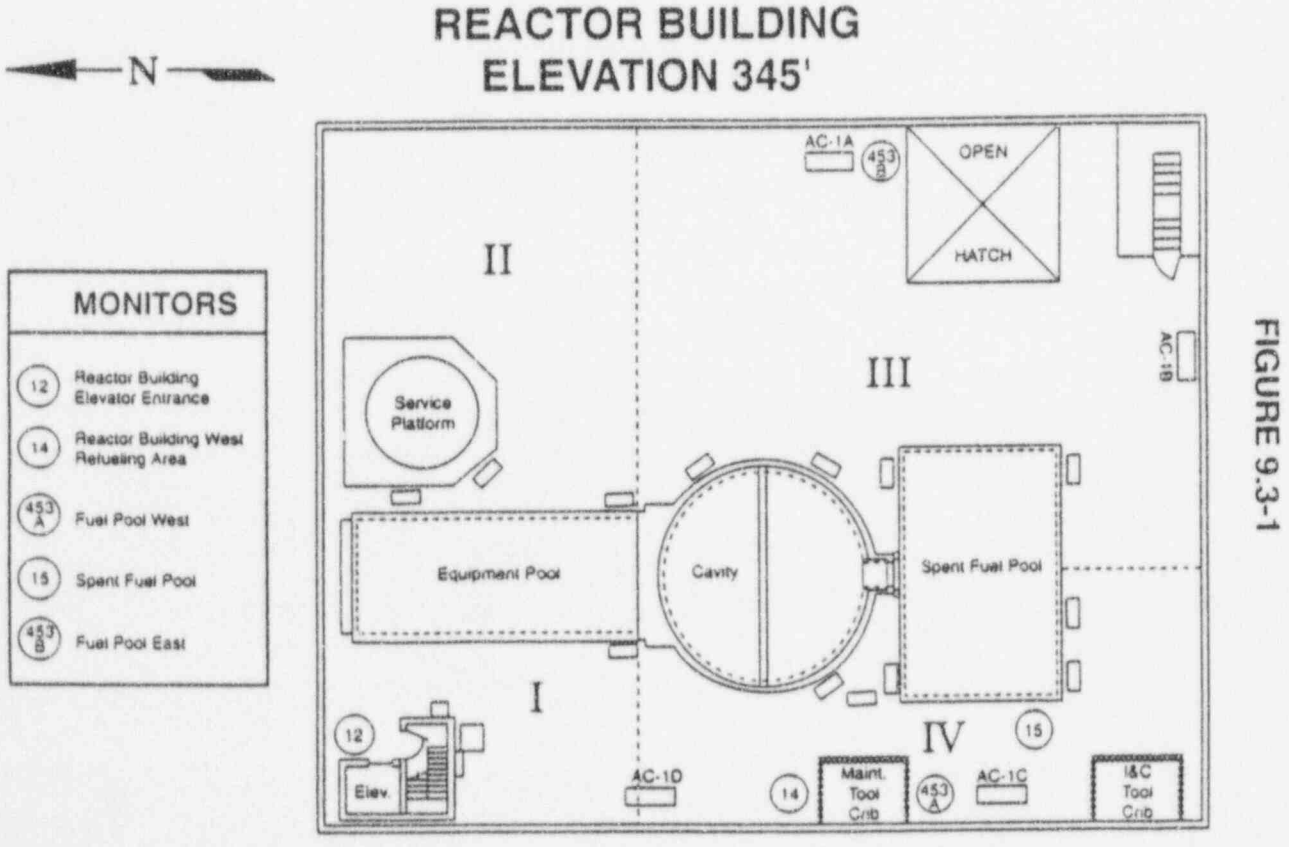

FIGURE 9.3-1

TABLE 9.3-2
Reactor Building, Elevation 318'
(mR/hr unless otherwise noted)

Clock Time	ARM 10	ARM 11	ARM 16	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI	Zone VII
08:00 to 10:50	7	4	0.5	7	4	300	4	80	0.5	0.5
10:50 to 14:00	3	2	0.3	3	2	100	2	60	0.3	0.3

Zone Readings are average throughout zone.
General area contamination levels <1K dpm/100 cm2.

REACTOR BUILDING
ELEVATION 318'

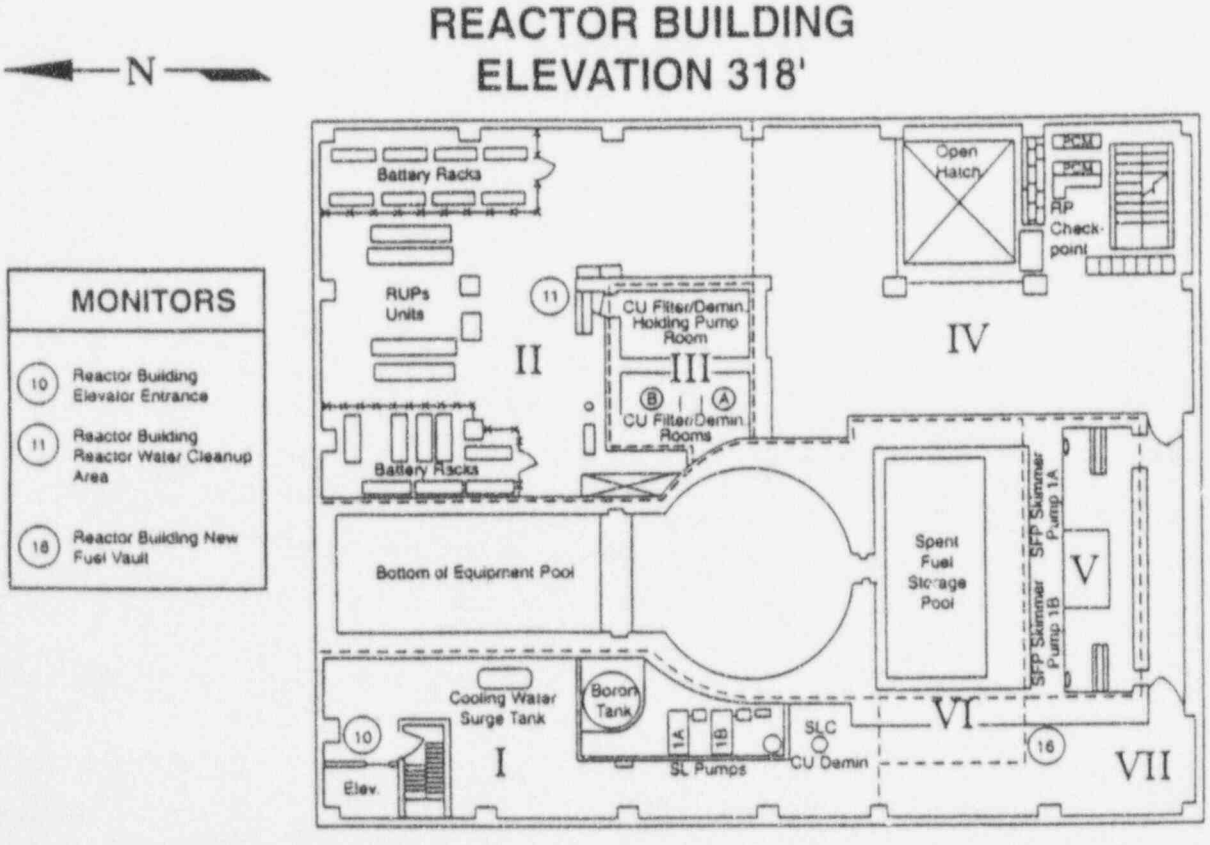

FIGURE 9.3-2

TABLE 9.3-3
Reactor Building, Elevation 303'
(mR/hr unless otherwise noted)

Clock Time	ARM 8	ARM 9	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI	Zone VII
08:00 to 10:50	4	4	4	3	600	3	60	0.1	0.2
10:50 to 11:30	1	4	4	3	800 ↑	3	80	0.1	0.2
11:30 to 14:00	1	4	4	3	1200 ↑	3	80	0.1	0.2

Zone Readings are average throughout zone.
General area contamination levels <1K dpm/100 cm2.

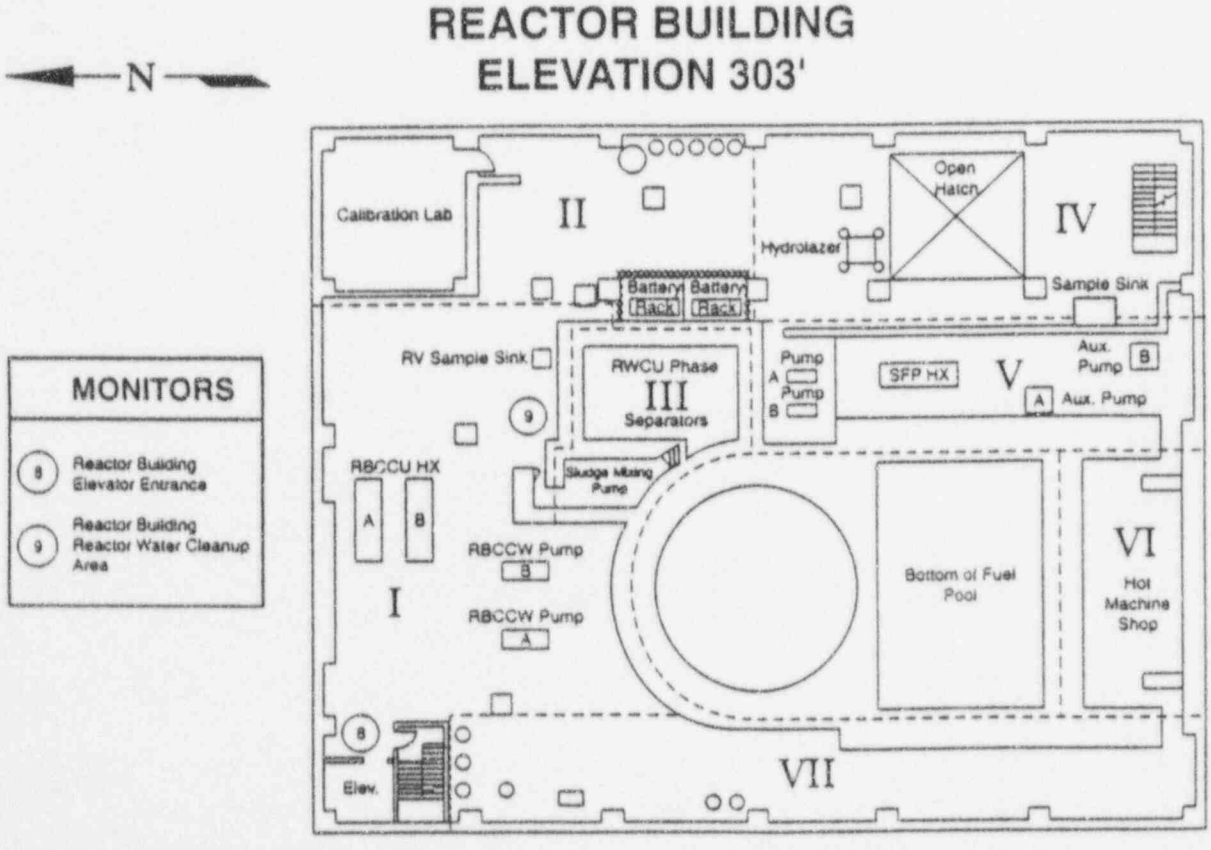

FIGURE 9.3-3

TABLE 9.3-4
Reactor Building, Elevation 280'
(mR/hr unless otherwise noted)

Clock Time	ARM 6	RB Vent N ARM 31	RB Vent S ARM 32	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI	Zone VII	Zone VIII
08:00 to 10:50	8	2	2	8	25	9	7	3	1	2	8
10:50 to 1400	5	0.1	0.1	5	150	8	5	2	1	1	5

Zone Readings are average throughout zone.
General area contamination levels <1K dpm/100 cm2.

REACTOR BUILDING
ELEVATION 280'

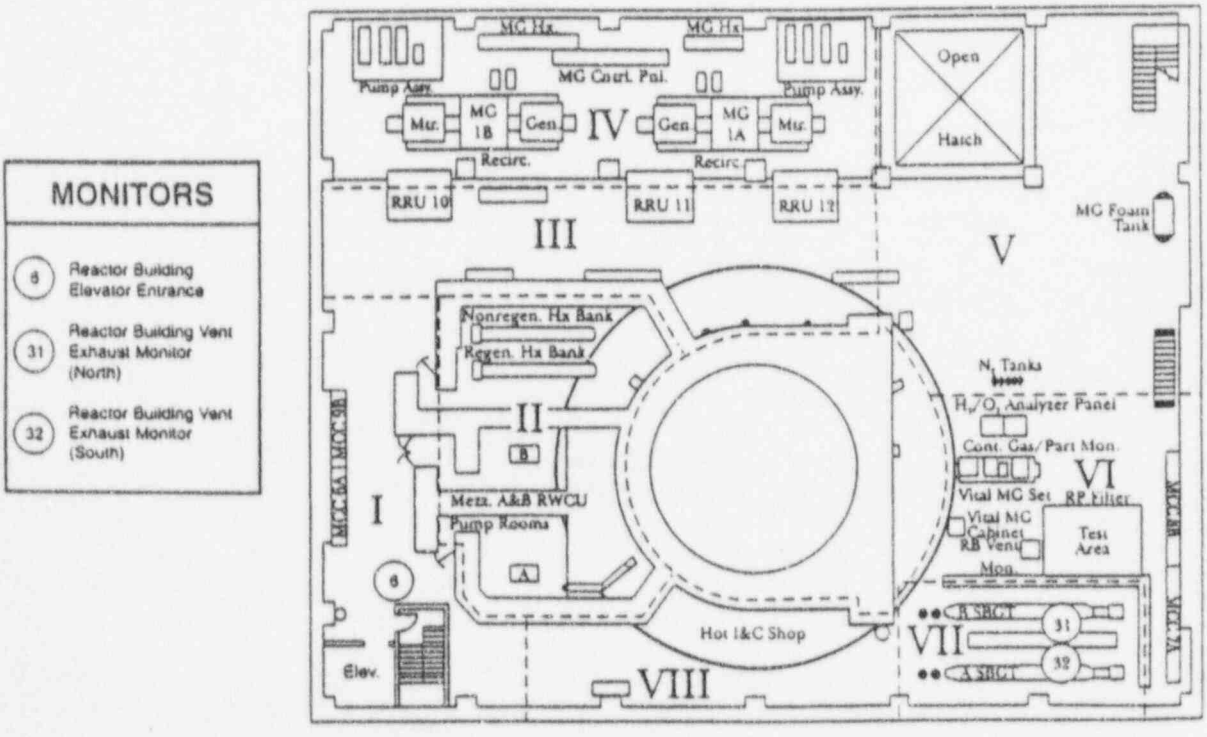

FIGURE 9.3-4

TABLE 9.3-5
Reactor Building, Elevation 252'
(mR/hr unless otherwise noted)

Clock Time	ARM 2	ARM 3	ARM 4	ARM 5	ARM 7	RM-14-29	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI	Zone VII
08:00 to 10:50	4	0.3	5	520	10	100	5	4	0.3	50	0.3	10	25
10:50 to 12:05	0.3	0.2	5	OSH (>1E4)	4	100	5	20	120	100000	20	4	800
12:05 to 12:15	0.3	OSH(>1E3)	5	OSH	200	100	5	20	2000	100000	10000	200	800
12:15 to 13:45	0.3	OSH	5	OSH	500	100	5	20	5000	110000	25000	500	800
13:45 to 14:00	0.3	500	5	OSH	100	100	5	20	500	70000	10000	100	800

Clock Time	NORTH ** RMS II-1	SOUTH ** RMS II-2	TIP ** RMS II-3	RHR A*** QUAD	RHR B*** QUAD	RCIC*** QUAD	HPCI*** QUAD
08:00 to 10:50	<1	<1	<1	5	5	1	5
10:50 to 11:00	<1	<1	<1	5	80	1	5
11:00 to 11:30	<1	<1	<1	5	200	1	5
11:30 to 11:45	<1	<1	<1	800	800	1	5
11:45 to 12:05	<1	<1	<1	3000	3000	1	5
12:05 to 12:15	<1	10	<1	2000	2000	1	5
12:15 to 13:45	<1	25	<1	2000	2000	1	5
13:45 to 14:00	<1	10	<1	1800	1800	1	5

NOTES:
Zone Readings are average throughout zone.
General area contamination levels <1K dpm/100 cm2.
** RMS II Readings in R/hr (High-Range Accident ARMs - 1R/hr to 10,000 R/hr)
*** Zone Readings are average dose rates throughout the RHR, RCIC and HPCI Quad elevation areas.

REACTOR BUILDING
ELEVATION 252'

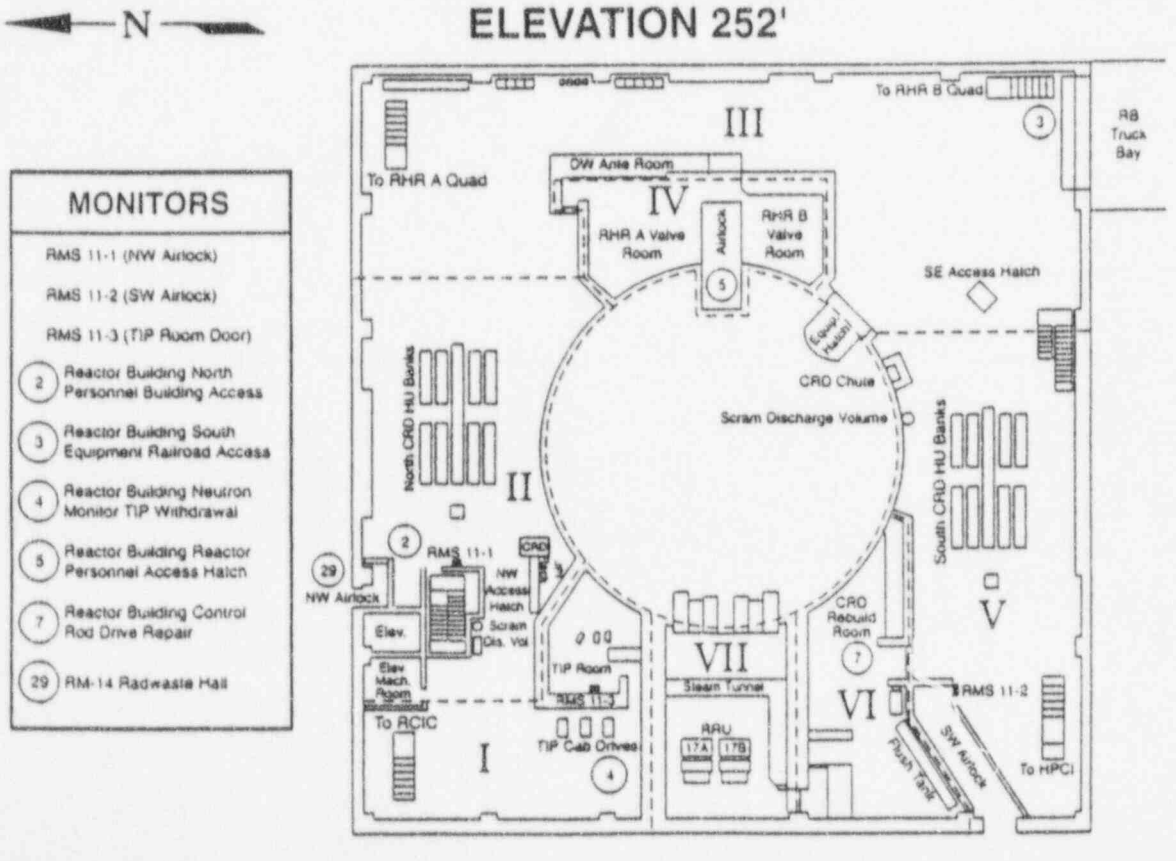

FIGURE 9.3-5

TABLE 9.3-6
Turbine Deck, Elevation 272'
(mR/hr unless otherwise noted)

Clock	ARM	Zone	Zone	Zone	Turbine Deck CAM (cpm)	
Time	ARM 24	I	II	III	NG	Particulate
08:00 to 10:50	8	100	150	8	250	900
10:50 to 14:00	7	10	20	7	250	900

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

TURBINE DECK
ELEVATION 272'

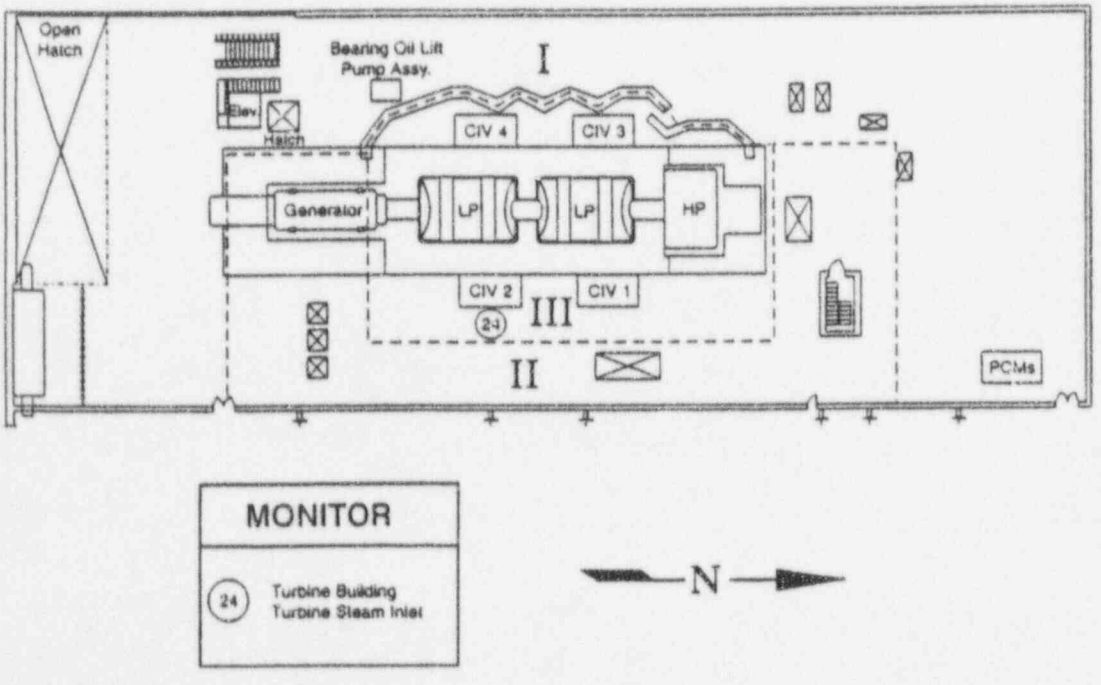

FIGURE 9.3-6

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

Clock Time	RM-14-23A (cpm)	ARM 26	RM-14-36 (cpm)	Zone I	Zone II	Zone III	Zone IV
08:00 to 10:50	150	0.09	150	0.2	0.2	0.1	0.2
10:50 to 14:00	150	0.01	150	0.7	0.3	0.2	0.2

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

PRETREATMENT ROOM, BOILER ROOM, TURBINE LOADING BAY, MUDs, DIESELS, COND. DEMIN. HATCH
ELEVATION 252'

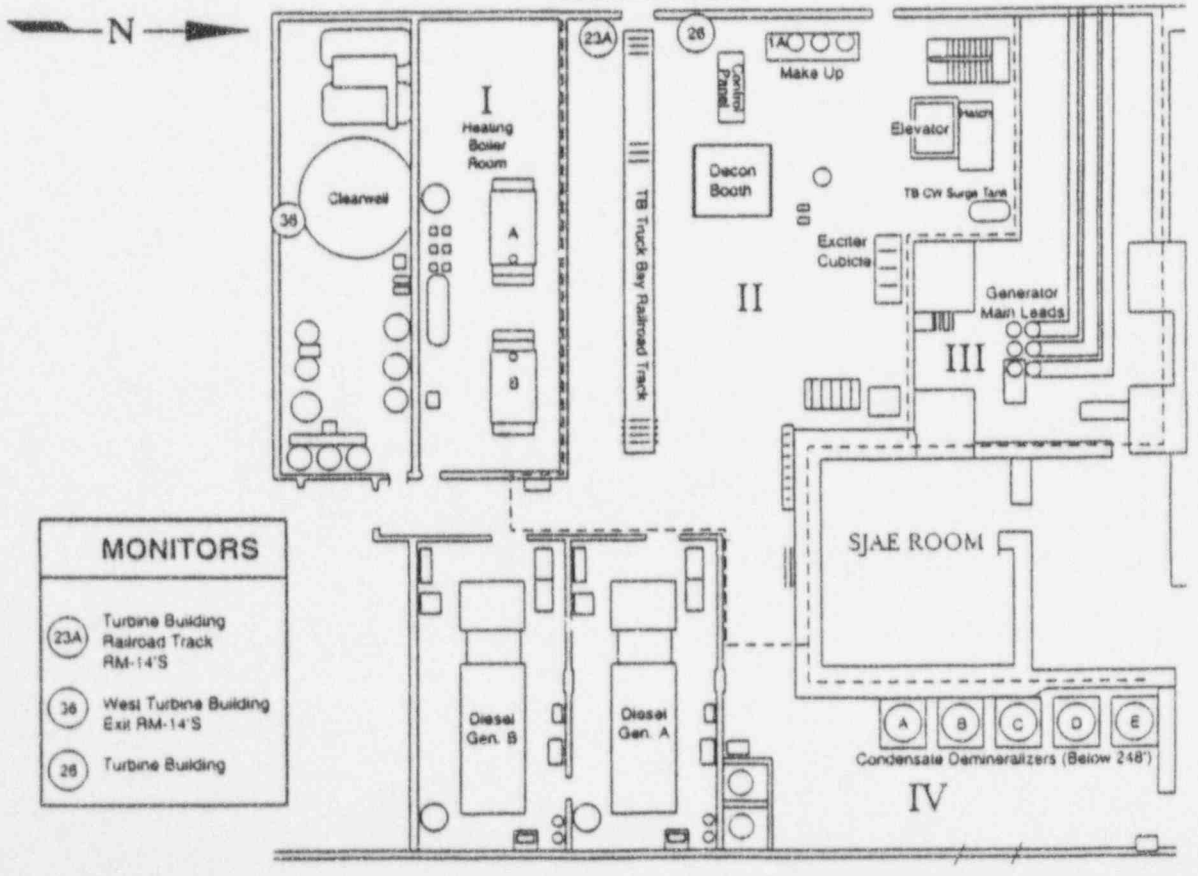

FIGURE 9.3-7

TABLE 9.3-8
Turbine Building Cond. Bay, Elevation 248'
(mR/hr unless otherwise noted)

Clock Time	ARM 20	ARM 21	Zone III	Zone IV	Zone V	Zone VI	Zone VII	Zone VIII
08:00 to 10:50	2	200	2	2	4	8	200	2
10:50 to 1400	1	4	1	1	2	3	4	1

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

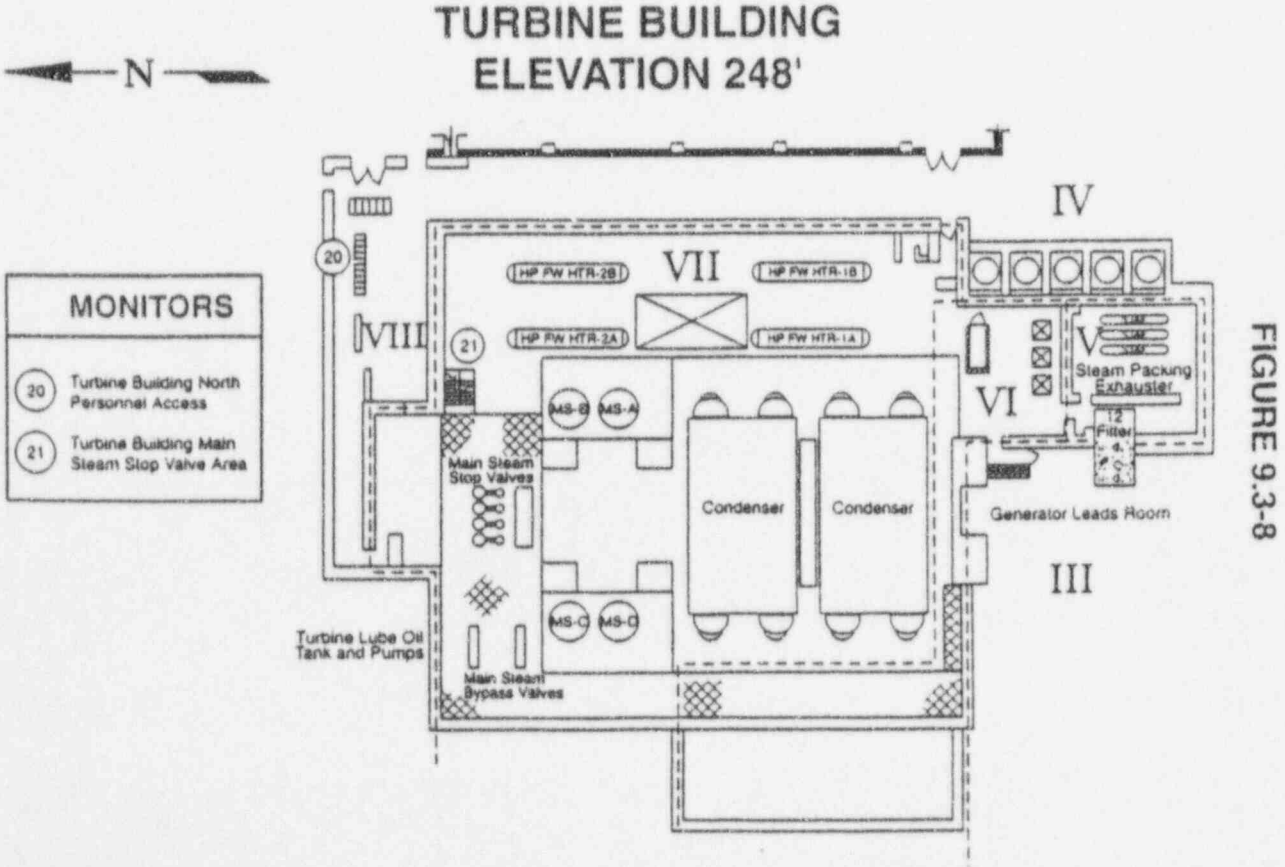

FIGURE 9.3-8

TABLE 9.3-9 Rev. 1
Turbine Building, Demineralization/OG Areas, Elevation 232' Page 9.3-9
(mR/hr unless otherwise noted)

Clock Time	ARM 22	ARM 38	Zone I	Zone II	Zone III
08:00 to 10:50	0.3	60	0.2	0.5	0.2
10:50 to14:00	0.1	D/S	0.2	0.5	0.2

Zone Readings are average dose rates throughout zone.
General area contamination levels <1K dpm/100 cm2.
D/S = Downscale Reading

TURBINE BUILDING
ELEVATION 232'

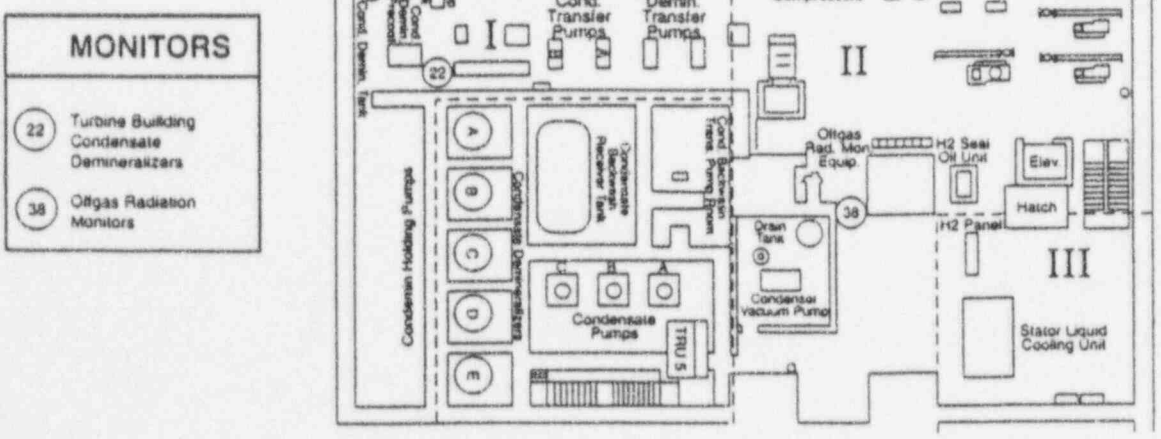

FIGURE 9.3-9

TABLE 9.3-10
Turbine Building Cond. Bay, Elevation 222'6" 228'6"
(mR/hr unless otherwise noted)

Clock Time	ARM 13	Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI
08:00 to 10:50	110	3	1	50	150	2	75
10:50 to 14:00	1	3	1	5	15	2	10

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

TURBINE BUILDING
ELEVATIONS 222' AND 228'

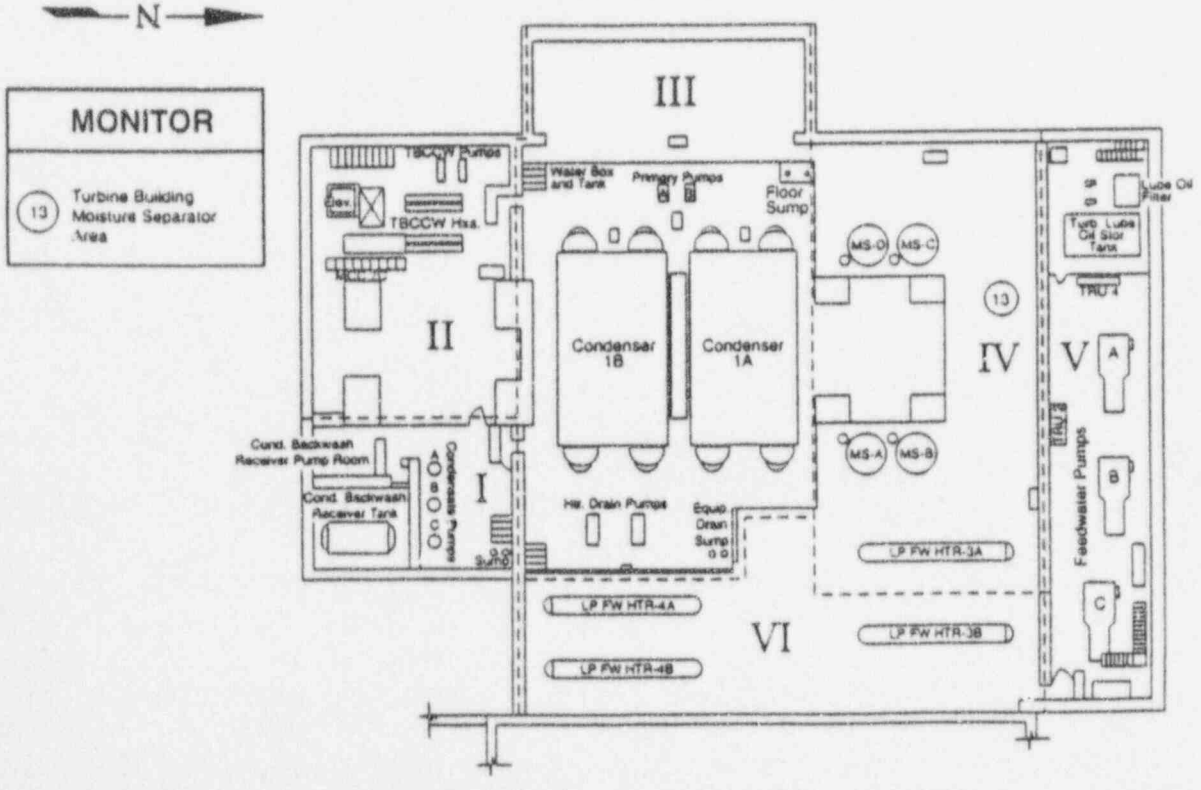

FIGURE 9.3-10

TABLE 9.3-11
Torus Area (Catwalk and Torus Elevation Areas)
(mR/hr unless otherwise noted)

Clock Time	ARM 1	Zone V*
08:00 to 10:50	8	8
10:50 to 14:00	OSH(>1E4)	50 R/hr

Zone readings are average dose rates throughout the Torus Catwalk and Torus elevation areas.

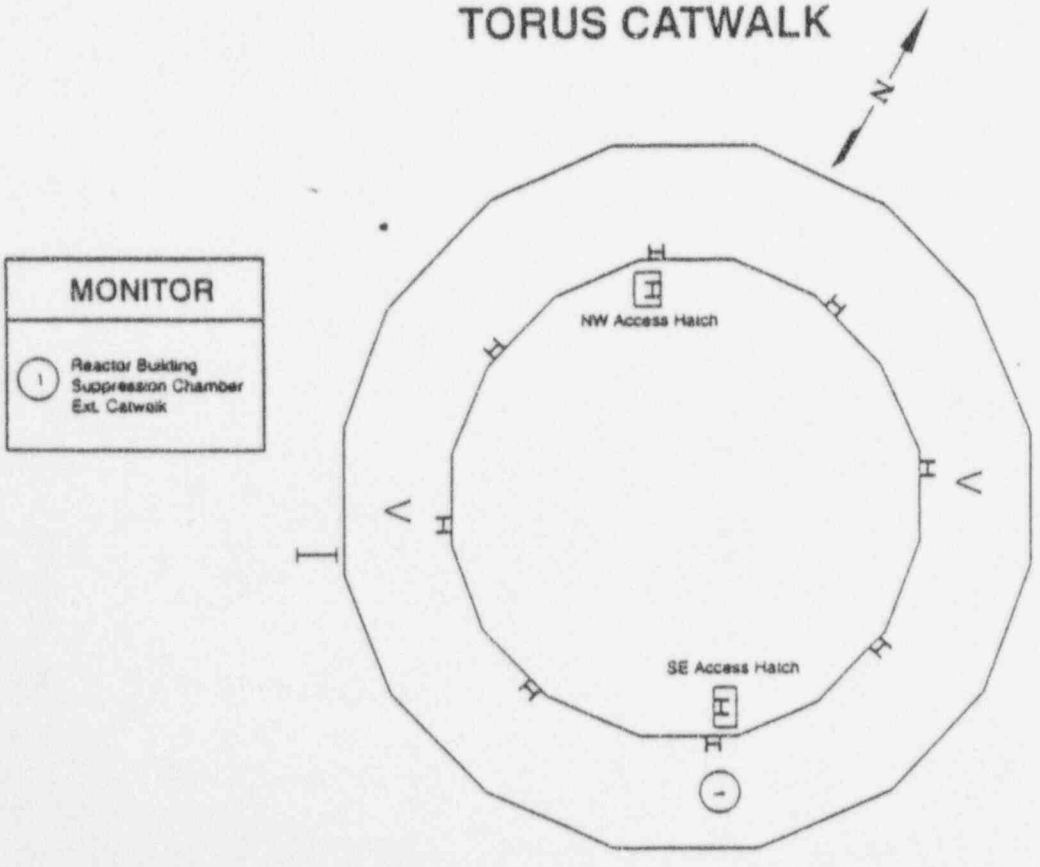

FIGURE 9.3-11

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
1995

9.4 PLANT CHEMISTRY DATA

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
1995

9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	Prior to 1050	1050-1100	1100-1115	1115-1130
I-131	2.5E-04	2.1E+02	2.1E+02	2.1E+02
I-132	2.8E-04	3.0E+02	2.8E+02	2.6E+02
I-133	5.2E-04	4.3E+02	4.2E+02	4.2E+02
I-134	4.1E-04	4.2E+02	3.4E+02	2.8E+02
I-135	4.5E-04	3.9E+02	3.8E+02	3.7E+02
Total Iodine	1.9E-03	1.8E+03	1.6E+03	1.5E+03
I-131 D.E.	4.5E-04	3.8E+02	3.7E+02	3.7E+02

Kr-83m	1.2E-03	3.3E+00	5.0E+00	6.4E+00
Kr-85m	2.5E-02	5.4E+00	5.3E+00	5.1E+00
Kr-85	4.8E-03	2.4E-01	2.4E-01	2.4E-01
Kr-87	2.9E-03	9.5E+00	8.3E+00	7.2E+00
Kr-88	1.0E-03	1.3E+01	1.2E+01	1.1E+01
Xe-131m	9.1E-05	1.4E-01	1.4E-01	1.4E-01
Xe-133m	7.3E-04	1.3E+00	1.3E+00	1.4E+00
Xe-133	5.3E-03	4.3E+01	4.4E+01	4.4E+01
Xe-135m	5.8E-03	2.4E+01	4.2E+01	5.0E+01
Xe-135	2.2E-03	1.3E+01	1.9E+01	2.6E+01
Xe-138	3.8E-03	2.3E+01	1.1E+01	5.4E+00
Total Gas	5.3E-02	1.4E+02	1.5E+02	1.6E+02

Reactor coolant sample dose rates are provided in Section 9.5.1

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9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	1130-1145	1145-1200	1200-1215	1215-1230
I-131	2.1E+02	2.1E+02	2.1E+02	2.1E+02
I-132	2.4E+02	2.2E+02	2.1E+02	1.9E+02
I-133	4.2E+02	4.1E+02	4.1E+02	4.1E+02
I-134	2.3E+02	1.9E+02	1.5E+02	1.3E+02
I-135	3.6E+02	3.5E+02	3.4E+02	3.4E+02
Total Iodine	1.5E+03	1.4E+03	1.3E+03	1.3E+03
I-131 D.E.	3.7E+02	3.6E+02	3.6E+02	3.6E+02

Kr-83m	7.5E+00	8.4E+00	9.1E+00	9.7E+00
Kr-85m	4.9E+00	4.7E+00	4.6E+00	4.4E+00
Kr-85	2.4E-01	2.4E-01	2.4E-01	2.4E-01
Kr-87	6.3E+00	5.5E+00	4.8E+00	4.2E+00
Kr-88	1.1E+01	9.9E+00	9.4E+00	8.8E+00
Xe-131m	1.4E-01	1.4E-01	1.5E-01	1.5E-01
Xe-133m	1.4E+00	1.4E+00	1.5E+00	1.5E+00
Xe-133	4.5E+01	4.5E+01	4.6E+01	4.6E+01
Xe-135m	5.3E+01	5.4E+01	5.4E+01	5.3E+01
Xe-135	3.2E+01	3.8E+01	4.4E+01	5.0E+01
Xe-138	2.6E+00	1.2E+00	6.0E-01	2.9E-01
Total Gas	1.6E+02	1.7E+02	1.7E+02	1.8E+02

Reactor coolant sample dose rates are provided in Section 9.5.1

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9.4.1 REACTOR COOLANT ACTIVITY DATA

A. Reactor Coolant Activity Concentrations (uCi/ml)

Isotope	1230-1245	1245-1300	1300-1315	1315-1330
I-131	2.1E+02	2.1E+02	2.1E+02	2.1E+02
I-132	1.8E+02	1.6E+02	1.5E+02	1.4E+02
I-133	4.0E+02	4.0E+02	4.0E+02	3.9E+02
I-134	1.0E+02	8.6E+01	7.0E+01	5.8E+01
I-135	3.3E+02	3.2E+02	3.1E+02	3.0E+02
Total Iodine	1.2E+03	1.2E+03	1.1E+03	1.1E+03
I-131 D.E.	3.5E+02	3.5E+02	3.5E+02	3.5E+02

Kr-83m	1.0E+01	1.0E+01	1.1E+01	1.1E+01
Kr-85m	4.2E+00	4.1E+00	3.9E+00	3.8E+00
Kr-85	2.4E-01	2.4E-01	2.4E-01	2.4E-01
Kr-87	3.7E+00	3.2E+00	2.8E+00	2.4E+00
Kr-88	8.3E+00	7.8E+00	7.3E+00	6.9E+00
Xe-131m	1.5E-01	1.5E-01	1.5E-01	1.5E-01
Xe-133m	1.5E+00	1.6E+00	1.6E+00	1.6E+00
Xe-133	4.7E+01	4.7E+01	4.8E+01	4.8E+01
Xe-135m	5.2E+01	5.1E+01	5.0E+01	4.8E+01
Xe-135	5.5E+01	6.0E+01	6.5E+01	7.0E+01
Xe-138	1.4E-01	6.6E-02	3.2E-02	1.5E-02
Total Gas	1.8E+02	1.9E+02	1.9E+02	1.9E+02

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	1330-1345	1345-1400
I-131	2.1E+02	2.1E+02
I-132	1.3E+02	1.2E+02
I-133	3.9E+02	3.9E+02
I-134	4.7E+01	3.9E+01
I-135	2.9E+02	2.9E+02
Total Iodine	1.1E+03	1.0E+03
I-131 D.E.	3.5E+02	3.4E+02

Kr-83m	1.1E+01	1.1E+01
Kr-85m	3.6E+00	3.5E+00
Kr-85	2.4E-01	2.4E-01
Kr-87	2.1E+00	1.9E+00
Kr-88	6.5E+00	6.1E+00
Xe-131m	1.5E-01	1.5E-01
Xe-133m	1.7E+00	1.7E+00
Xe-133	4.9E+01	4.9E+01
Xe-135m	4.7E+01	4.6E+01
Xe-135	7.4E+01	7.8E+01
Xe-138	7.3E-03	3.5E-03
Total Gas	2.0E+02	2.0E+02

Reactor coolant sample dose rates are provided in Section 9.5.1

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9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Concentrations (uCi/cc)

Isotope	Prior to 1050	1050-1100	1100-1115	1115-1130
I-131	5.0E-10	1.6E-01	3.7E-01	5.0E-01
I-132	2.0E-10	2.2E-01	4.8E-01	6.0E-01
I-133	7.6E-10	3.1E-01	7.3E-01	9.7E-01
I-134	1.2E-10	3.0E-01	5.9E-01	6.5E-01
I-135	4.6E-10	2.9E-01	6.6E-01	8.6E-01
Total Iodine	2.0E-09	1.3E+00	2.8E+00	3.6E+00
I-131 D.E.	7.5E-10	2.8E-01	6.5E-01	8.7E-01

KR-83M	2.4E-07	3.4E+00	7.6E+00	9.9E+00
KR-85M	5.7E-07	7.3E+00	1.7E+01	2.2E+01
KR-85	3.3E-08	3.5E-01	8.3E-01	1.1E+00
KR-87	6.0E-07	1.3E+01	2.6E+01	3.1E+01
KR-88	1.3E-06	1.9E+01	4.1E+01	5.2E+01
XE-131M	1.9E-08	2.0E-01	4.8E-01	6.4E-01
XE-133M	1.8E-07	1.9E+00	4.4E+00	5.9E+00
XE-133	5.9E-06	6.3E+01	1.5E+02	2.0E+02
XE-135M	1.9E-07	1.1E+01	1.8E+01	1.8E+01
XE-135	1.5E-06	1.4E+01	3.4E+01	4.8E+01
XE-138	3.6E-06	3.4E+01	3.9E+01	2.5E+01
Total Gas	1.4E-05	1.7E+02	3.4E+02	4.1E+02

Primary containment air sample dose rates are provided in Section 9.5.2

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9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Concentrations (uCi/cc)

Isotope	1130-1145	1145-1200	1200-1215	1215-1230
I-131	5.7E-01	6.1E-01	6.4E-01	6.3E-01
I-132	6.4E-01	6.4E-01	6.2E-01	5.7E-01
I-133	1.1E+00	1.2E+00	1.2E+00	1.2E+00
I-134	6.1E-01	5.4E-01	4.6E-01	3.8E-01
I-135	9.7E-01	1.0E+00	1.0E+00	1.0E+00
Total Iodine	3.9E+00	4.0E+00	3.9E+00	3.8E+00
I-131 D.E.	9.8E-01	1.1E+00	1.1E+00	1.1E+00

KR-83M	1.1E+01	1.2E+01	1.2E+01	1.1E+01
KR-85M	2.4E+01	2.5E+01	2.5E+01	2.4E+01
KR-85	1.3E+00	1.4E+00	1.5E+00	1.4E+00
KR-87	3.1E+01	2.9E+01	2.6E+01	2.3E+01
KR-88	5.6E+01	5.7E+01	5.6E+01	5.2E+01
XE-131M	7.3E-01	7.9E-01	8.3E-01	8.2E-01
XE-133M	6.7E+00	7.3E+00	7.6E+00	7.5E+00
XE-133	2.3E+02	2.5E+02	2.6E+02	2.6E+02
XE-135M	1.8E+01	1.7E+01	1.6E+01	1.4E+01
XE-135	5.7E+01	6.3E+01	6.8E+01	6.9E+01
XE-133	1.4E+01	7.1E+00	3.6E+00	1.7E+00
Total Gas	4.5E+02	4.7E+02	4.8E+02	4.6E+02

Primary containment air sample dose rates are provided in Section 9.5.2

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9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Concentrations (uCi/cc)

Isotope	1230-1245	1245-1300	1300-1315	1315-1330
I-131	6.2E-01	6.1E-01	5.9E-01	5.8E-01
I-132	5.2E-01	4.7E-01	4.2E-01	3.8E-01
I-133	1.2E+00	1.1E+00	1.1E+00	1.1E+00
I-134	3.0E-01	2.4E-01	2.0E-01	1.6E-01
I-135	9.5E-01	9.1E-01	8.6E-01	8.2E-01
Total Iodine	3.6E+00	3.3E+00	3.2E+00	3.0E+00
I-131 D.E.	1.0E+00	1.0E+00	9.8E-01	9.6E-01

KR-83M	1.1E+01	1.0E+01	9.5E+00	9.0E+00
KR-85M	2.3E+01	2.1E+01	2.0E+01	1.9E+01
KR-85	1.4E+00	1.4E+00	1.3E+00	1.3E+00
KR-87	2.0E+01	1.7E+01	1.4E+01	1.2E+01
KR-88	4.8E+01	4.5E+01	4.1E+01	3.7E+01
XE-131M	8.1E-01	7.9E-01	7.7E-01	7.5E-01
XE-133M	7.4E+00	7.2E+00	7.0E+00	6.8E+00
XE-133	2.5E+02	2.5E+02	2.4E+02	2.3E+02
XE-135M	1.3E+01	1.3E+01	1.2E+01	1.2E+01
XE-135	7.0E+01	7.1E+01	7.1E+01	7.2E+01
XE-138	8.0E-01	3.8E-01	1.8E-01	8.2E-02
Total Gas	4.5E+02	4.4E+02	4.2E+02	4.0E+02

Primary containment air sample dose rates are provided in Section 9.5.2

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9.4.2 PRIMARY CONTAINMENT AIR ACTIVITY DATA

A. Primary Containment Air Concentrations (uCi/cc)

Isotope	1330-1345	1345-1400
I-131	5.6E-01	5.4E-01
I-132	3.5E-01	3.1E-01
I-133	1.0E+00	9.9E-01
I-134	1.2E-01	9.9E-02
I-135	7.8E-01	7.3E-01
Total Iodine	2.8E+00	2.7E+00
I-131 D.E.	9.1E-01	8.8E-01

KR-83M	8.5E+00	8.1E+00
KR-85M	1.7E+01	1.6E+01
KR-85	1.3E+00	1.2E+00
KR-87	1.0E+01	8.7E+00
KR-88	3.4E+01	3.1E+01
XE-131M	7.3E-01	7.1E-01
XE-133M	6.6E+00	6.5E+00
XE-133	2.3E+02	2.2E+02
XE-135M	1.2E+01	1.1E+01
XE-135	7.2E+01	7.2E+01
XE-138	3.8E-02	1.8E-02
Total Gas	3.9E+02	3.8E+02

Primary containment air sample dose rates are provided in Section 9.5.2

VERMONT YANKEE NUCLEAR POWER STATION
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9.4.3 REACTOR BUILDING AIR ACTIVITY DATA

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

Isotope	0800-1400
I-131	*
I-132	*
I-133	*
I-134	*
I-135	*
Total Iodine	*
I-131 D.E.	*

Kr-83m	*
Kr-85m	*
Kr-85	*
Kr-87	*
Kr-88	*
Xe-131m	*
Xe-133m	*
Xe-133	*
Xe-135m	*
Xe-135	*
Xe-138	*
Total Noble Gas	*

(*) Indicates activity concentration below MDL.

For Reactor Building sample dose rates see Section 9.5.3.

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9.5 RADIOLOGICAL SAMPLE DOSE RATES

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9.5.1 Reactor Coolant Sample Dose Rates

A. Gas Samples

	Unshielded (mR/hr per cc)*		Shielded (1 inch lead) (mR/hr per cc)*	
Time	Contact	1 ft	Contact	1 ft
Prior to 1050	1.5E-02	1.1E-04	1.9E-04	1.3E-06
1050-1100	4.0E+01	2.7E-01	4.8E-01	3.4E-03
1100-1115	4.3E+01	3.0E-01	5.3E-01	3.7E-03
1115-1130	4.6E+01	3.1E-01	5.6E-01	3.9E-03
1130-1145	4.8E+01	3.3E-01	5.8E-01	4.1E-03
1145-1200	4.9E+01	3.4E-01	6.0E-01	4.2E-03
1200-1215	5.1E+01	3.5E-01	6.2E-01	4.4E-03
1215-1230	5.2E+01	3.6E-01	6.3E-01	4.5E-03
1230-1245	5.3E+01	3.6E-01	6.5E-01	4.6E-03
1245-1300	5.4E+01	3.7E-01	6.6E-01	4.6E-03
1300-1315	5.5E+01	3.8E-01	6.7E-01	4.8E-03
1315-1330	5.6E+01	3.8E-01	6.8E-01	4.8E-03
1330-1345	5.7E+01	3.9E-01	6.9E-01	4.9E-03
1345-1400	5.7E+01	3.9E-01	7.0E-01	5.0E-03

* Values must be multiplied by the sample volume in cubic centimeters 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 inch lead) (mR/hr per cc)*	
Time	Contact	1 ft	Contact	1 ft
Prior to 1050	1.5E-03	1.0E-05	1.9E-05	1.3E-07
1050-1100	1.4E+03	9.5E+00	1.7E+01	1.2E-01
1100-1115	1.3E+03	8.8E+00	1.6E+01	1.1E-01
1115-1130	1.2E+03	8.3E+00	1.5E+01	1.0E-01
1130-1145	1.1E+03	7.9E+00	1.4E+01	9.7E-02
1145-1200	1.1E+03	7.5E+00	1.3E+01	9.1E-02
1200-1215	1.0E+03	7.2E+00	1.3E+01	8.7E-02
1215-1230	1.0E+03	6.9E+00	1.2E+01	8.5E-02
1230-1245	9.5E+02	6.6E+00	1.2E+01	8.1E-02
1245-1300	9.2E+02	6.4E+00	1.1E+01	7.8E-02
1300-1315	8.9E+02	6.2E+00	1.1E+01	7.5E-02
1315-1330	8.6E+02	5.9E+00	1.1E+01	7.3E-02
1330-1345	8.3E+02	5.8E+00	1.0E+01	7.1E-02
1345-1400	8.2E+02	5.7E+00	1.0E+01	6.9E-02

* Values must be multiplied by the sample volume in milliliters to obtain the sample dose rate in mR/hr.

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9.5.2 Primary Containment Sample Dose Rates

A. Gas Samples

	Unshielded (mR/hr per cc)*		Shielded (1 inch lead) (mR/hr per cc)*	
Time	Contact	1 ft	Contact	1 ft
Prior to 1050	4.1E-06	2.8E-08	5.0E-08	3.5E-10
1050-1100	4.8E+01	3.3E-01	5.9E-01	4.2E-03
1100-1115	9.7E+01	6.8E-01	1.2E+00	8.5E-03
1115-1130	1.2E+02	8.3E-01	1.5E+00	1.0E-02
1130-1145	1.3E+02	9.0E-01	1.6E+00	1.1E-02
1145-1200	1.4E+02	9.4E-01	1.7E+00	1.2E-02
1200-1215	1.4E+02	9.5E-01	1.7E+00	1.2E-02
1215-1230	1.3E+02	9.3E-01	1.7E+00	1.2E-02
1230-1245	1.3E+02	8.9E-01	1.6E+00	1.1E-02
1245-1300	1.3E+02	8.7E-01	1.6E+00	1.1E-02
1300-1315	1.2E+02	8.3E-01	1.5E+00	1.0E-02
1315-1330	1.2E+02	8.0E-01	1.4E+00	1.0E-02
1330-1345	1.1E+02	7.8E-01	1.4E+00	9.8E-03
1345-1400	1.1E+02	7.5E-01	1.3E+00	9.4E-03

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

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

All Elevations

	Unshielded (mR/hr per cc)*			Shielded (1 inch lead) (mR/hr per cc)*	
Time	Contact	1 ft		Contact	1 ft
0800-1400	As Read	As Read		As Read	As Read

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

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9.5.4 Plant Vent Stack Sample Dose Rates

A. Gas (Grab Sample)

	Unshielded (mR/hr per cc)*			Shielded (1 inch lead) (mR/hr per cc)*	
Time	Contact	1 ft		Contact	1 ft
PRIOR TO 1210	As Read	As Read		As Read	As Read
1210-1215	7.7E-02	5.4E-04		9.5E-04	6.8E-06
1215-1230	7.7E-01	5.4E-03		9.5E-03	6.8E-05
1230-1245	7.5E-01	5.3E-03		9.3E-03	6.7E-05
1245-1300	7.2E-01	5.0E-03		8.9E-03	6.4E-05
1300-1315	7.1E-01	4.9E-03		8.7E-03	6.2E-05
1315-1330	6.7E-01	4.7E-03		8.3E-03	6.0E-05
1330-1345	6.4E-01	4.5E-03		7.9E-03	5.7E-05
1345-1400	6.3E-04	4.4E-06		7.8E-06	5.6E-08
1400-1415	As Read	As Read		As Read	As Read

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

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9.5.4 Plant Vent Sample Dose Rates

B. Air Sample (Iodine Cartridge)

	Unshielded (mR/hr per cc)*			Shielded (1 inch lead) (mR/hr per cc)*	
Time	Contact	1 ft		Contact	1 ft
PRIOR TO 1210	As Read	As Read		As Read	As Read
1210-1215	1.7E-03	1.2E-05		2.1E-05	1.5E-07
1215-1230	1.7E-02	1.2E-04		2.1E-04	1.5E-06
1230-1245	1.6E-02	1.1E-04		2.0E-04	1.4E-06
1245-1300	1.5E-02	1.1E-04		1.9E-04	1.3E-06
1300-1315	1.4E-02	1.0E-04		1.8E-04	1.3E-06
1315-1330	1.4E-02	9.5E-05		1.7E-04	1.2E-06
1330-1345	1.3E-02	9.0E-05		1.6E-04	1.1E-06
1345-1400	1.2E-05	8.5E-08		1.5E-07	1.1E-09
1400-1415	As Read	As Read		As Read	As Read

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

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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 1210	As Read *		As Read *
1210-1215	40		120
1215-1230	400		1200
1230-1245	360		1100
1245-1300	330		1000
1300-1315	330		1000
1315-1330	300		920
1330-1345	280		840
1345-1400	0.3		0.8
1400-1415	As Read *		As Read *

* Background as read on survey meter.

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9.6 PLANT VENT STACK DATA

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

Isotope	PRIOR TO 1210	1210-1215	1215-1230	1230-1245
I-131	3.3E-13	3.[illegible]4	3.8E-03	3.7E-03
I-132	4.8E-13	3.4E-04	3.4E-03	3.1E-03
I-133	7.5E-13	6.8E-04	6.8E-03	6.8E-03
I-134	6.6E-13	2.2E-04	2.2E-03	1.8E-03
I-135	6.3E-13	5.9E-04	5.9E-03	5.6E-03
Total Iodine	2.9E-12	2.2E-03	2.2E-02	2.1E-02
I-131 D.E.	6.1E-13	6.3E-04	6.3E-03	6.2E-03

Kr-83m	**	6.6E-03	6.6E-02	6.2E-02
Kr-85m	**	1.4E-02	1.4E-01	1.3E-01
Kr-85	**	8.2E-04	8.2E-03	8.2E-03
Kr-87	**	1.4E-02	1.4E-01	1.2E-01
Kr-88	**	3.1E-02	3.1E-01	2.9E-01
Xe-131m	**	4.8E-04	4.8E-03	4.7E-03
Xe-133m	**	4.4E-03	4.4E-02	4.3E-02
Xe-133	**	1.5E-01	1.5E+00	1.5E+00
Xe-135m	**	8.2E-03	8.2E-02	7.5E-02
Xe-135	**	4.1E-02	4.1E-01	4.1E-01
Xe-138	**	1.0E-03	1.0E-02	4.7E-03
Total Gas	**	2.7E-01	2.7E+00	2.6E+00

* To convert concentration (uCi/cc) to release rate (uCi/sec) multiply by the assumed stack flow rate of 4.1E+07 cc/sec.

** Indicates activity concentration below MDL.

For plant vent stack sample dose rates see Section 9.5.4.

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9.6 PLANT VENT STACK DATA

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

Isotope	1245-1300	1300-1315	1315-1330	1330-1345
I-131	3.6E-03	3.5E-03	3.4E-03	3.3E-03
I-132	2.7E-03	2.5E-03	2.3E-03	2.1E-03
I-133	6.7E-03	6.5E-03	6.3E-03	6.0E-03
I-134	1.4E-03	1.2E-03	8.9E-04	7.5E-04
I-135	5.3E-03	5.1E-03	4.8E-03	4.6E-03
Total Iodine	2.0E-02	1.9E-02	1.8E-02	1.7E-02
I-131 D.E.	5.9E-03	5.8E-03	5.6E-03	5.4E-03

Kr-83m	6.0E-02	5.6E-02	5.3E-02	5.0E-02
Kr-85m	1.2E-01	1.2E-01	1.1E-01	1.0E-01
Kr-85	8.2E-03	8.2E-03	7.5E-03	7.5E-03
Kr-87	9.6E-02	8.2E-02	6.8E-02	6.0E-02
Kr-88	2.6E-01	2.4E-01	2.2E-01	2.0E-01
Xe-131m	4.7E-03	4.5E-03	4.4E-03	4.3E-03
Xe-133m	4.2E-02	4.1E-02	4.0E-02	3.9E-02
Xe-133	1.4E+00	1.4E+00	1.4E+00	1.3E+00
Xe-135m	7.5E-02	7.5E-02	6.8E-02	6.8E-02
Xe-135	4.2E-01	4.2E-01	4.2E-01	4.2E-01
Xe-138	2.2E-03	1.0E-03	4.9E-04	2.3E-04
Total Gas	2.5E+00	2.5E+00	2.4E+00	2.3E+00

* To convert concentration (uCi/cc) to release rate (uCi/sec) multiply by the assumed stack flow rate of 4.1E+07 cc/sec.

** Indicates activity concentration below MDL.

For plant vent stack sample dose rates see Section 9.5.4.

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9.6 PLANT VENT STACK DATA

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

Isotope	1345-1400	1400-1415
I-131	3.2E-06	1.7E-12
I-132	1.8E-06	2.4E-12
I-133	5.8E-06	3.8E-12
I-134	5.8E-07	3.3E-12
I-135	4.3E-06	3.2E-12
Total Iodine	1.6E-05	1.4E-11
I-131 D.E.	5.2E-06	3.1E-12

Kr-83m	4.7E-05	**
Kr-85m	9.6E-05	**
Kr-85	7.5E-06	**
Kr-87	5.1E-05	**
Kr-88	1.8E-04	**
Xe-131m	4.2E-06	**
Xe-133m	3.8E-05	**
Xe-133	1.3E-03	**
Xe-135m	6.6E-05	**
Xe-135	4.2E-04	**
Xe-138	1.0E-07	**
Total Gas	2.2E-03	**

* To convert concentration (uCi/cc) to release rate (uCi/sec) multiply by the assumed stack flow rate of 4.1E+07 cc/sec.

** Indicates activity concentration below MDL.

For plant vent stack sample dose rates see Section 9.5.4.

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EMERGENCY PREPAREDNESS EXERCISE
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9.7 FIELD MONITORING MAPS AND DATA

Plume gamma 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 1210 (scenario time 4:10). During the exercise, Controllers 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 9.7-11 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, State of New Hampshire and Commonwealth of Massachusetts 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 Controllers on the use of the figures and tables. The Controllers 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 (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 and closed window readings with their dose rate survey meters. If a team is located in the plume and air concentration is greater than zero, assume the open window reading is two times 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 absorber media cartridge (silver zeolite) contained in the field monitoring kits. All air sample data will be given as though the absorber 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 and 10-cubic foot (283 liters) for Vermont Yankee; 354 liters for State of Vermont; and 20-cubic foot (566 liters) for State of New Hampshire and Massachusetts 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 adsorber 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:

$$ConcI\text{-}131\,(uCi/cc) = \frac{netcpm \times ConversionFactor}{E \times F \times T}$$

where: E = Instrument Detector Efficiency in cpm/dpm (counts per disintegration)

F = Flow rate of sample in lpm or cfm

T = Sample collection time in minutes

CF = Conversion Factor (4.5 E-10 μCi-liter/dpm-cc for flow rate in lpm OR 1.6 E-11 μCI-ft^3/dpm-cc for flow rate in cfm

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 SITE AND OFF-SITE MONITORING CONTROLLERS FOR THEIR USE ON PROVIDING DATA TO FIELD MONITORING TEAMS.

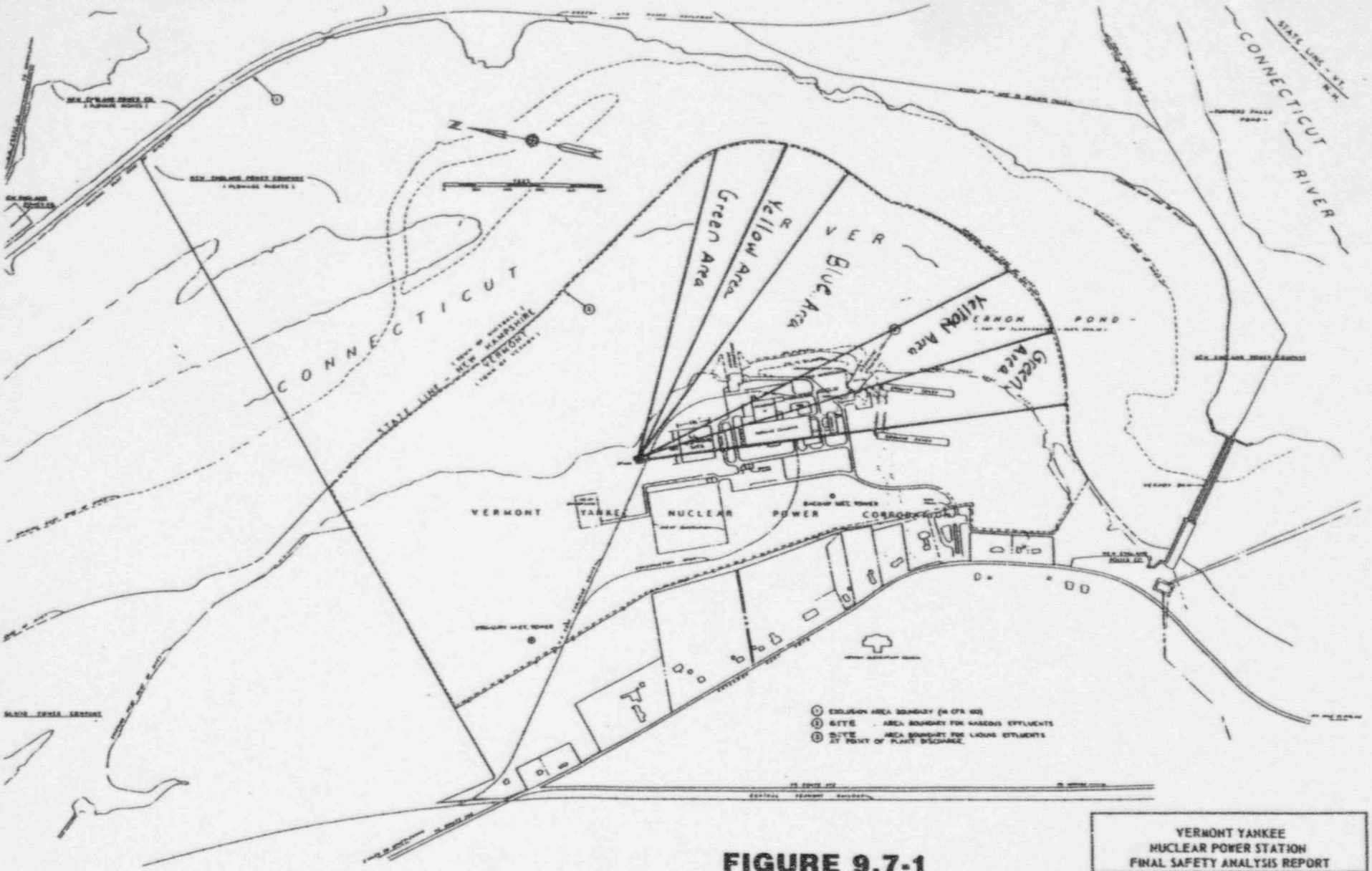

FIGURE 9.7-1

VERMONT YANKEE NUCLEAR POWER STATION FINAL SAFETY ANALYSIS REPORT
PLAN SHOWING EXCLUSION AREA AND RESTRICTED AREA BOUNDARIES

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* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1210-1215	BLUE	8	29260	0.00E+00	<40	<40	<40
	YELLOW	<1	AS READ	0.00E+00	<40	<40	<40
	GREEN	<1	AS READ	0.00E+00	<40	<40	<40
1215-1230	BLUE	83	OSH	0.00E+00	<40	<40	<40
	YELLOW	8	29050	0.00E+00	<40	<40	<40
	GREEN	<1	AS READ	0.00E+00	<40	<40	<40
1230-1245	BLUE	76	OSH	0.00E+00	<40	<40	<40
	YELLOW	8	26740	0.00E+00	<40	<40	<40
	GREEN	<1	AS READ	0.00E+00	<40	<40	<40
1245-1300	BLUE	68	OSH	0.00E+00	<40	<40	<40
	YELLOW	7	23730	0.00E+00	<40	<40	<40
	GREEN	<1	AS READ	0.00E+00	<40	<40	<40
1300-1315	BLUE	63	OSH	0.00E+00	<40	<40	<40
	YELLOW	6	21945	0.00E+00	<40	<40	<40
	GREEN	<1	AS READ	0.00E+00	<40	<40	<40
1315-1330	BLUE	57	OSH	0.00E+00	<40	<40	<40
	YELLOW	6	20090	0.00E+00	<40	<40	<40
	GREEN	<1	AS READ	0.00E+00	<40	<40	<40
1330-1345	BLUE	54	OSH	0.00E+00	<40	<40	<40
	YELLOW	5	18760	0.00E+00	<40	<40	<40
	GREEN	<1	1876	0.00E+00	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

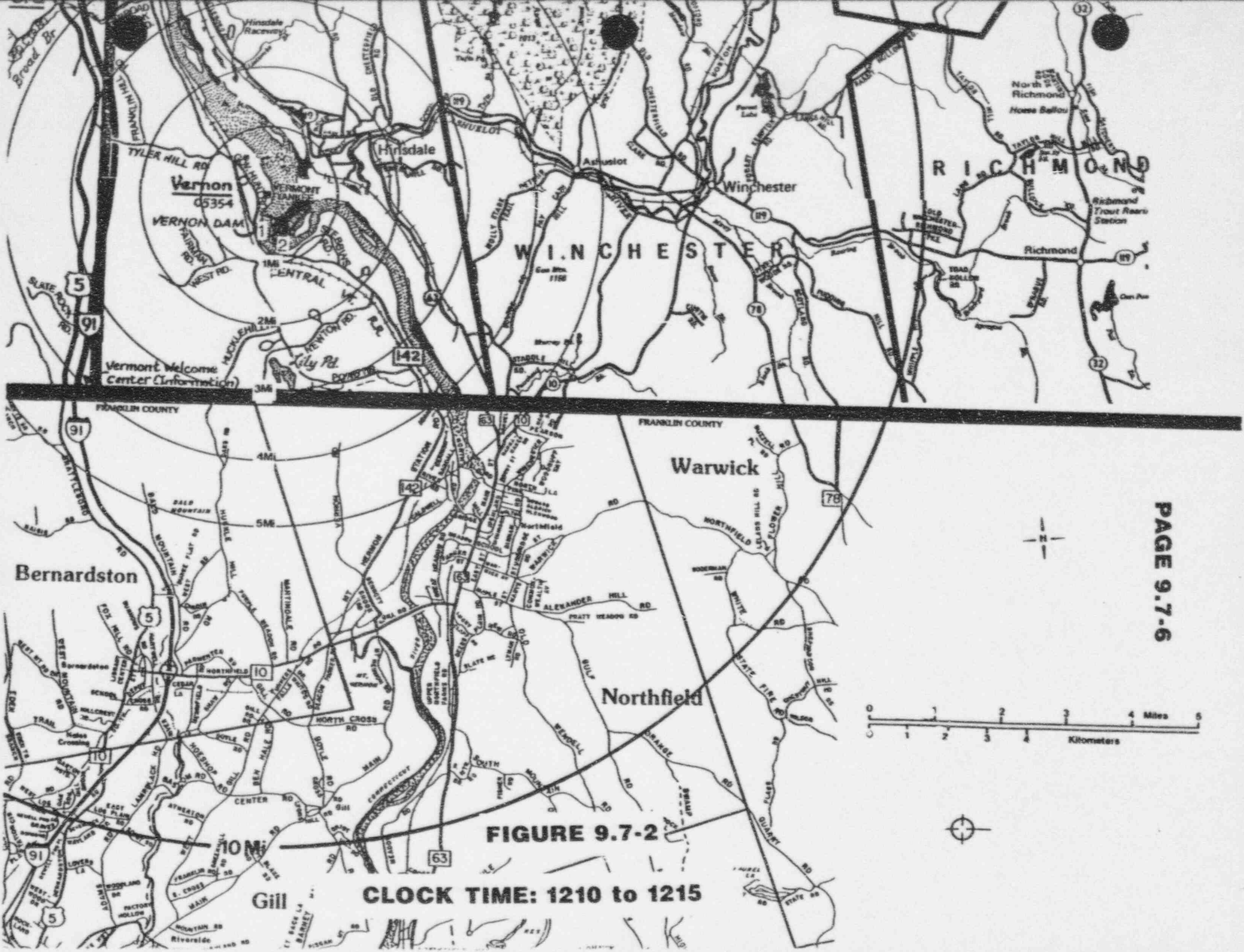

FIGURE 9.7-2

CLOCK TIME: 1210 to 1215

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1210-1215 (SCENARIO TIME 0410-0415)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1.00	SITE BOUNDARY	BLUE	11	38850	4.03E-11	<40	<40	<40
		YELLOW	1	3885	4.03E-12	<40	<40	<40
		GREEN	<1	389	4.03E-13	<40	<40	<40
2.00	0.60	BLUE	11	39550	1.04E-10	<40	<40	<40
		YELLOW	1	3955	1.04E-11	<40	<40	<40
		GREEN	<1	396	1.04E-12	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

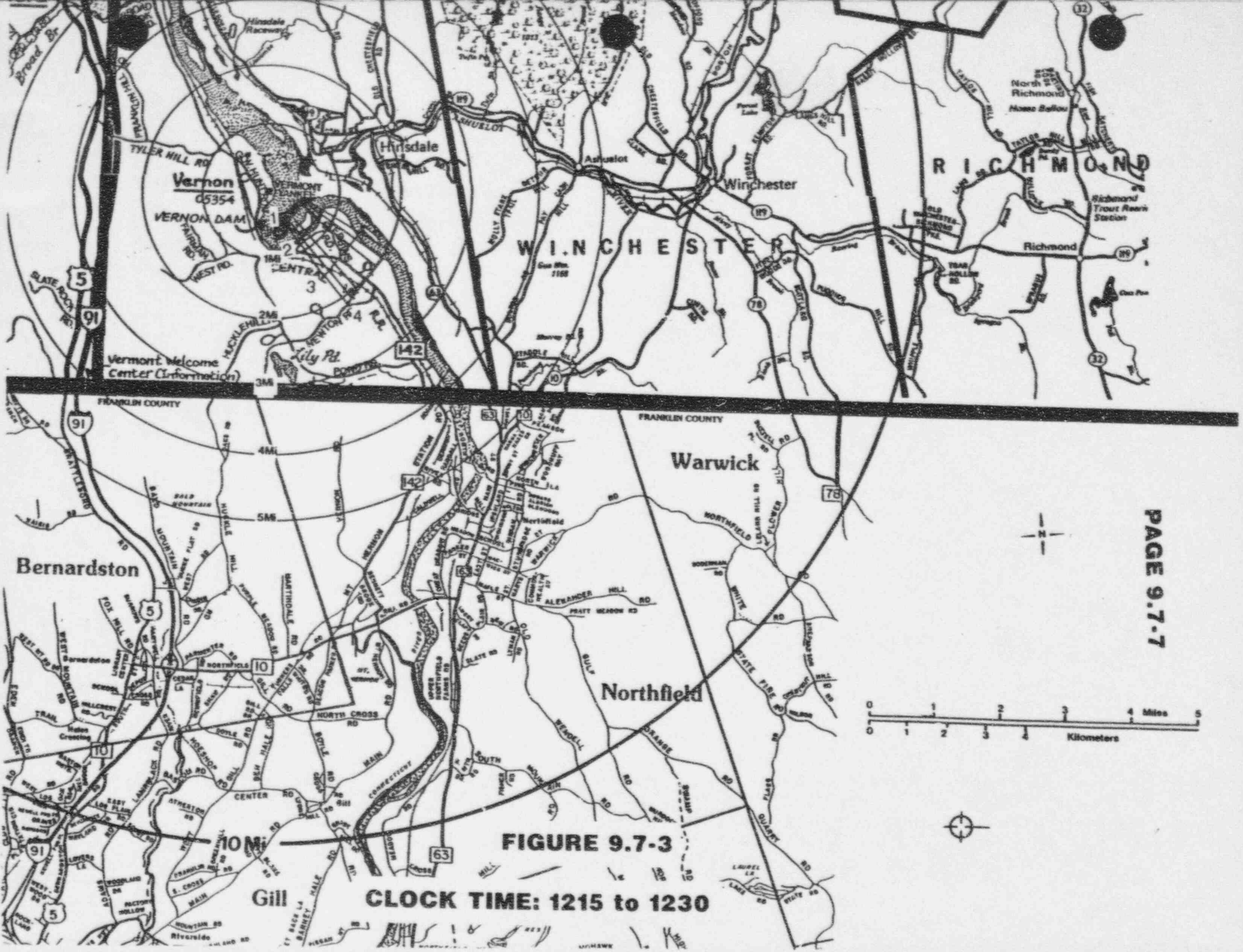

FIGURE 9.7-3

CLOCK TIME: 1215 to 1230

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1215-1230 (SCENARIO TIME 0415-0430)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF SILVER ZEOLITE (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1.00	SITE BOUNDARY	BLUE	110	OSH	4.30E-10	<40	<40	<40
		YELLOW	11	38500	4.30E-11	<40	<40	<40
		GREEN	1	3850	4.30E-12	<40	<40	<40
2.00	0.80	BLUE	129	OSH	3.98E-08	223	620	80
		YELLOW	13	45150	3.98E-09	<40	32	<40
		GREEN	1	4515	3.98E-10	<40	<40	<40
3.00	1.50	BLUE	172	OSH	6.17E-07	3457	9630	1235
		YELLOW	17	OSH	6.17E-08	346	963	123
		GREEN	2	6020	6.17E-09	<40	96	<40
4.00	2.00	BLUE	16	OSH	8.08E-08	452	1260	162
		YELLOW	2	5740	8.08E-09	45	126	<40
		GREEN	<1	574	8.08E-10	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

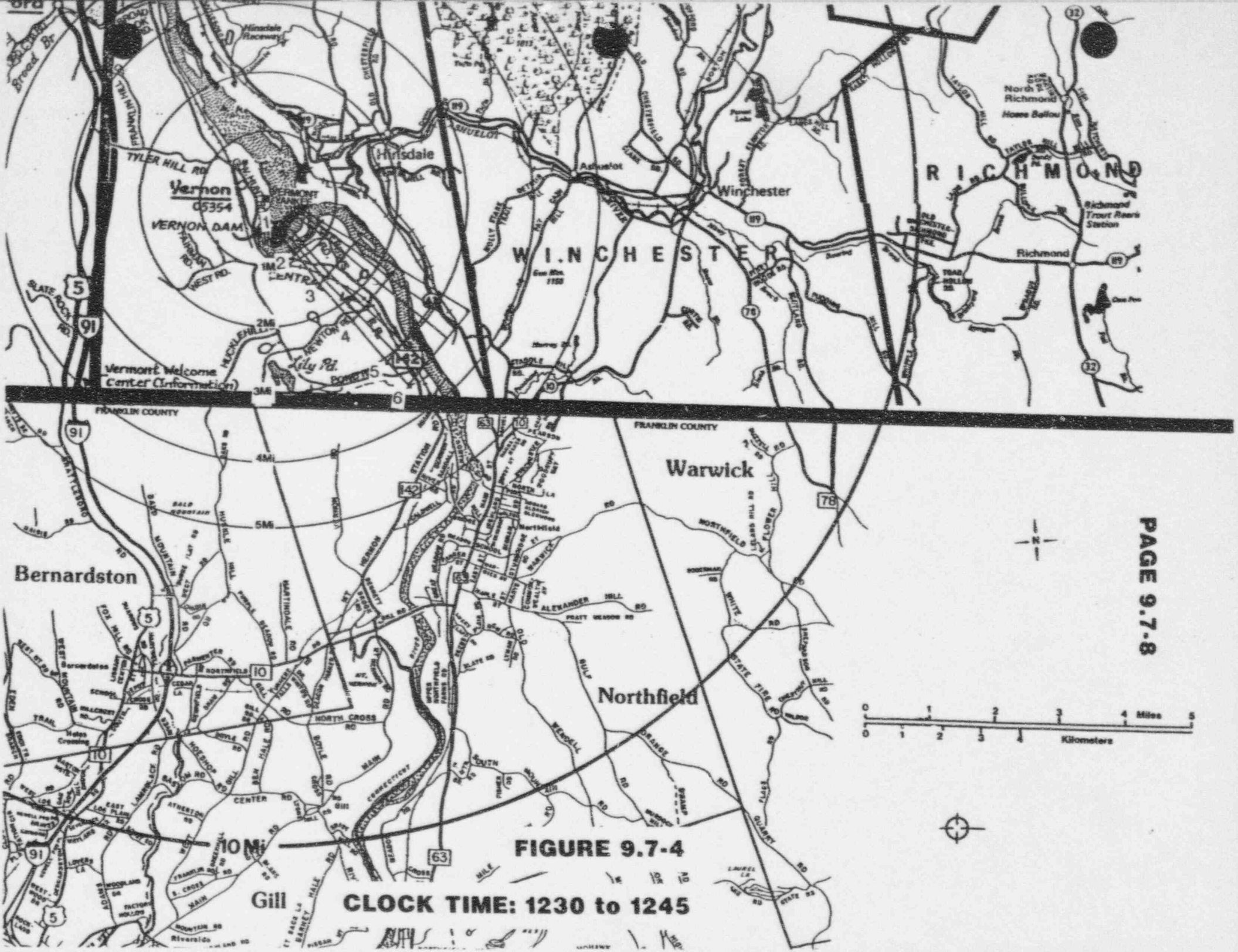

FIGURE 9.7-4

CLOCK TIME: 1230 to 1245

TABLE 9.7.4a

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1230-1245 (SCENARIO TIME 0430-0445)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF SILVER ZEOLITE (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1.00	SITE BOUNDARY	BLUE	101	OSH	4.47E-10	<40	<40	<40
		YELLOW	10	35350	4.47E-11	<40	<40	<40
		GREEN	1	3535	4.47E-12	<40	<40	<40
2.00	0.80	BLUE	119	OSH	4.32E-08	242	674	86
		YELLOW	12	41650	4.32E-09	<40	67	<40
		GREEN	1	4165	4.32E-10	<40	<40	<40
3.00	1.50	BLUE	149	OSH	5.14E-07	2879	8019	1028
		YELLOW	15	OSH	5.14E-08	288	802	103
		GREEN	1	5215	5.14E-09	<40	80	<40
4.00	2.30	BLUE	140	OSH	6.87E-07	3845	10710	1373
		YELLOW	14	49000	6.87E-08	384	1071	137
		GREEN	1	4900	6.87E-09	<40	107	<40
5.00	3.10	BLUE	112	OSH	5.94E-07	3328	9270	1188
		YELLOW	11	39200	5.94E-08	333	927	119
		GREEN	1	3920	5.94E-09	<40	93	<40
6.00	3.60	BLUE	9	29855	3.89E-08	218	608	78
		YELLOW	<1	2986	3.89E-09	<40	61	<40
		GREEN	<1	299	3.89E-10	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

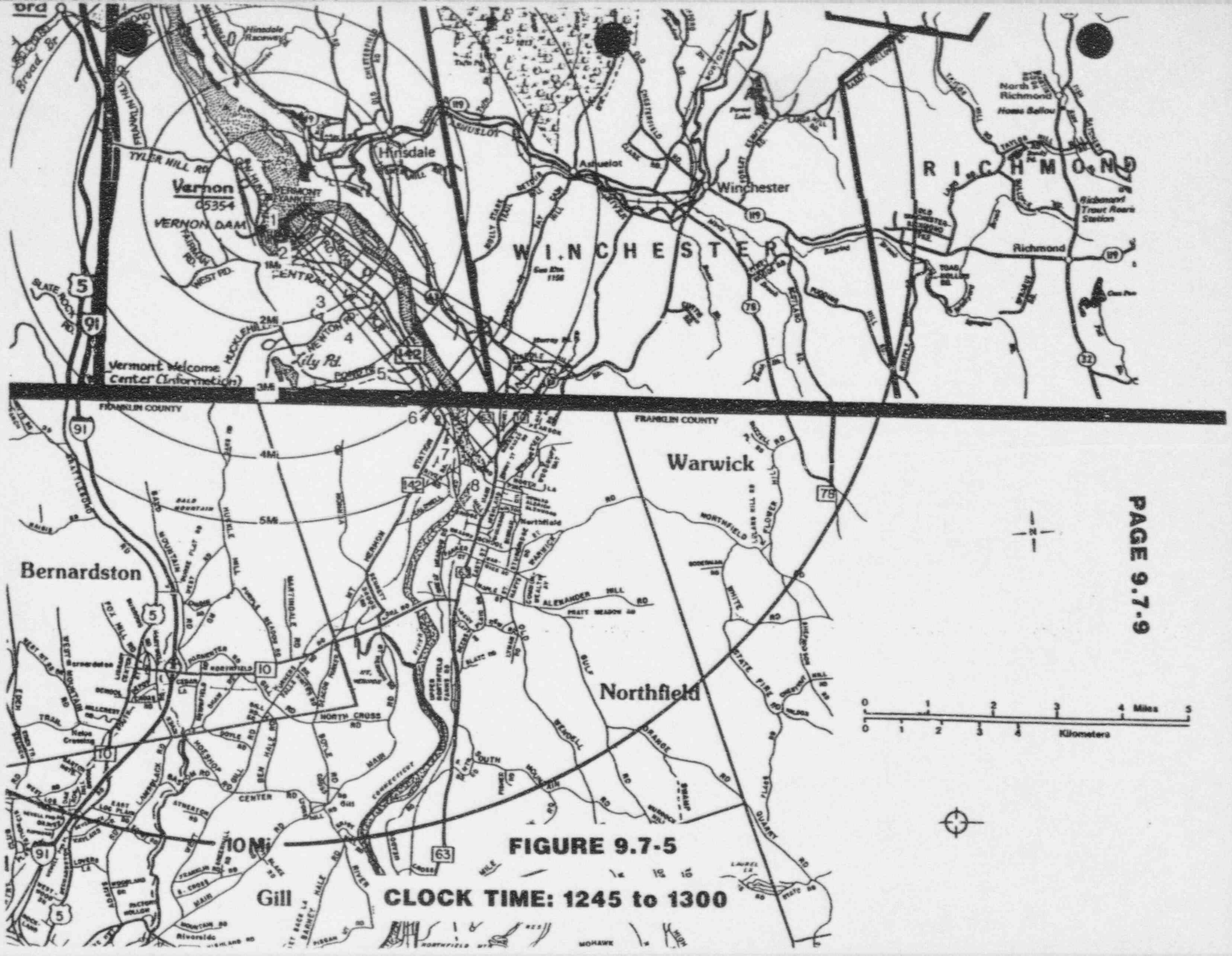

FIGURE 9.7-5

CLOCK TIME: 1245 to 1300

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1245-1300 (SCENARIO TIME 0445-0500)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF ZEOLITE (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1.00	SITE BOUNDARY	BLUE	90	OSH	4.88E-10	<40	<40	<40
		YELLOW	9	31570	4.88E-11	<40	<40	<40
		GREEN	<1	3157	4.88E-12	<40	<40	<40
2.00	0.80	BLUE	107	OSH	5.09E-08	285	794	102
		YELLOW	11	37450	5.09E-09	<40	79	<40
		GREEN	1	3745	5.09E-10	<40	<40	<40
3.00	1.60	BLUE	132	OSH	4.98E-07	2791	7776	997
		YELLOW	13	46200	4.98E-08	279	778	100
		GREEN	1	4620	4.98E-09	<40	78	<40
4.00	2.40	BLUE	127	OSH	6.40E-07	3586	9990	1281
		YELLOW	13	44450	6.40E-08	359	999	128
		GREEN	1	4445	6.40E-09	<40	100	<40
5.00	3.10	BLUE	101	OSH	5.48E-07	3066	8541	1095
		YELLOW	10	35350	5.48E-08	307	854	110
		GREEN	1	3535	5.48E-09	<40	85	<40
6.00	3.90	BLUE	75	OSH	3.41E-07	1909	5319	682
		YELLOW	8	26355	3.41E-08	191	532	68
		GREEN	<1	2636	3.41E-09	<40	53	<40
7.00	4.70	BLUE	63	OSH	2.98E-07	1670	4653	597
		YELLOW	6	22120	2.98E-08	167	465	60
		GREEN	<1	2212	2.98E-09	<40	<40	<40
8.00	5.20	BLUE	5	18620	2.28E-08	128	356	46
		YELLOW	<1	1862	2.28E-09	<40	<40	<40
		GREEN	<1	186	2.28E-10	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

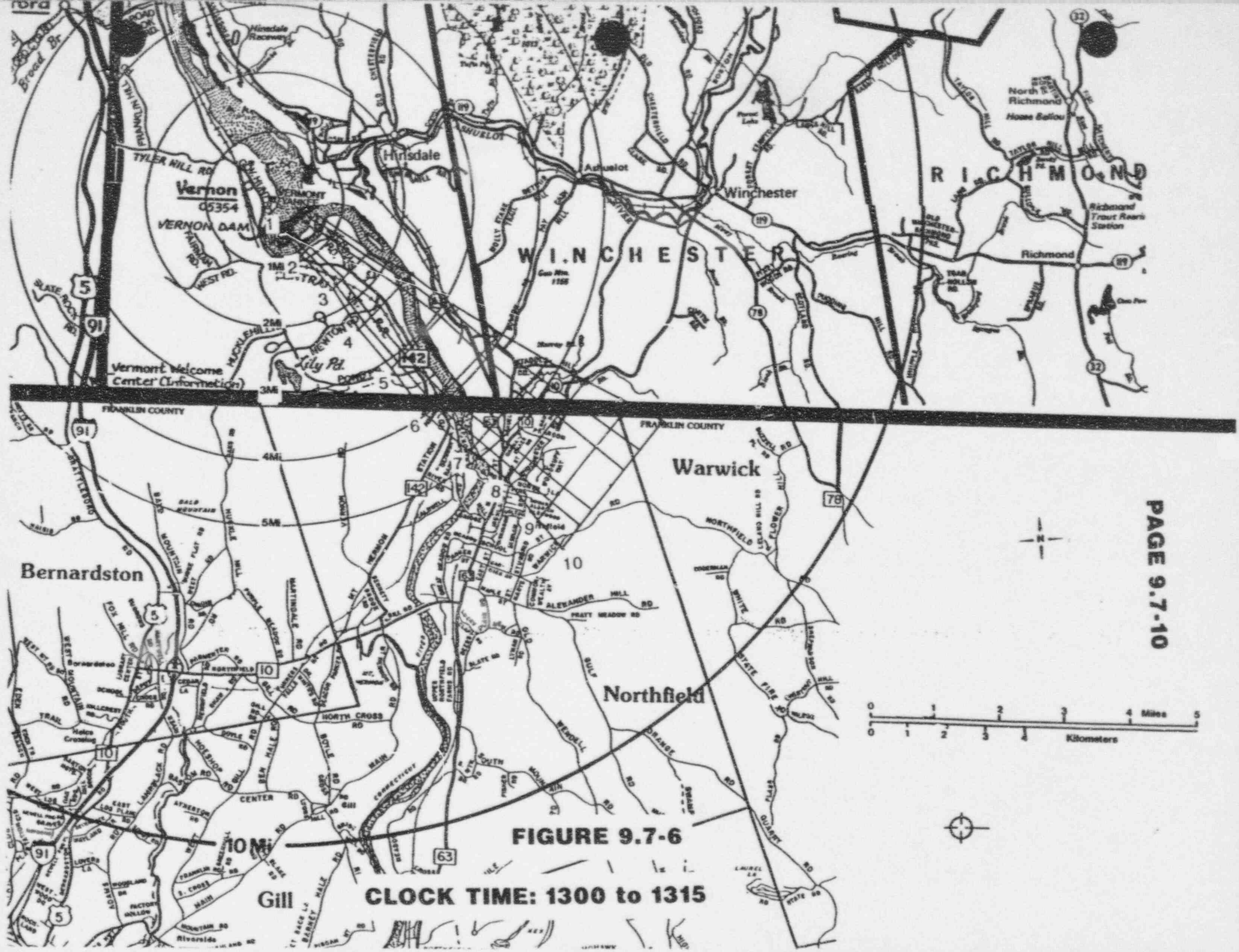

FIGURE 9.7-6

CLOCK TIME: 1300 to 1315

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1300-1315 (SCENARIO TIME 0500-0515)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1.00	SITE BOUNDARY	BLUE	84	OSH	5.00E-10	<40	<40	<40
		YELLOW	8	29225	5.00E-11	<40	<40	<40
		GREEN	<1	2923	5.00E-12	<40	<40	<40
2.00	0.80	BLUE	99	OSH	5.39E-08	302	841	108
		YELLOW	10	34650	5.39E-09	<40	84	<40
		GREEN	<1	3465	5.39E-10	<40	<40	<40
3.00	1.60	BLUE	122	OSH	4.77E-07	2672	7443	954
		YELLOW	12	42700	4.77E-08	267	744	95
		GREEN	1	4270	4.77E-09	<40	74	<40
4.00	2.40	BLUE	112	OSH	5.94E-07	3328	9270	1188
		YELLOW	11	39200	5.94E-08	333	927	119
		GREEN	1	3920	5.94E-09	<40	93	<40
5.00	3.20	BLUE	89	OSH	5.03E-07	2817	7848	1006
		YELLOW	9	31010	5.03E-08	282	785	101
		GREEN	<1	3101	5.03E-09	<40	78	<40
6.00	4.00	BLUE	68	OSH	3.20E-07	1790	4986	639
		YELLOW	7	23870	3.20E-08	179	499	64
		GREEN	<1	2387	3.20E-09	<40	<40	<40
7.00	4.80	BLUE	57	OSH	2.80E-07	1567	4365	560
		YELLOW	6	20055	2.80E-08	157	437	56
		GREEN	<1	2006	2.80E-09	<40	<40	<40
8.00	5.50	BLUE	48	OSH	2.05E-07	1147	3195	410
		YELLOW	5	16730	2.05E-08	115	320	41
		GREEN	<1	1673	2.05E-09	<40	<40	<40
9.00	6.30	BLUE	42	OSH	1.82E-07	1018	2835	363
		YELLOW	4	14595	1.82E-08	102	284	<40
		GREEN	<1	1460	1.82E-09	<40	<40	<40
10.00	6.80	BLUE	4	12985	1.50E-08	84	234	<40
		YELLOW	<1	1299	1.50E-09	<40	<40	<40
		GREEN	<1	130	1.50E-10	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

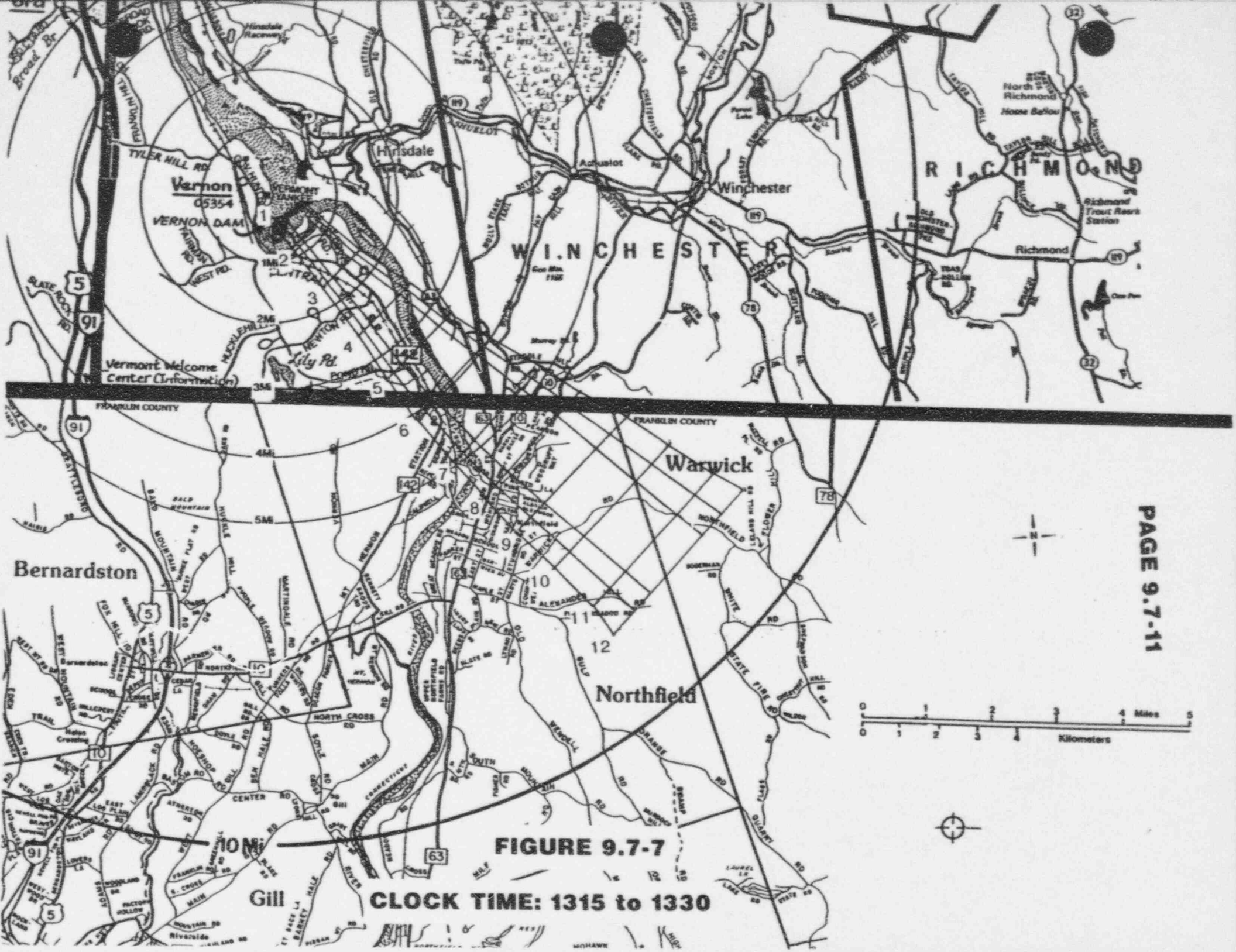

FIGURE 9.7-7

CLOCK TIME: 1315 to 1330

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1315-1330 (SCENARIO TIME 0515-0530)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF ZEOLITE (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1.00	SITE BOUNDARY	BLUE	77	OSH	5.11E-10	<40	<40	<40
		YELLOW	8	26810	5.11E-11	<40	<40	<40
		GREEN	<1	2681	5.11E-12	<40	<40	<40
2.00	0.80	BLUE	91	OSH	5.67E-08	317	884	113
		YELLOW	9	31885	5.67E-09	<40	88	<40
		GREEN	<1	3189	5.67E-10	<40	<40	<40
3.00	1.60	BLUE	112	OSH	4.59E-07	2568	7155	917
		YELLOW	11	39200	4.59E-08	257	716	92
		GREEN	1	3920	4.59E-09	<40	72	<40
4.00	2.50	BLUE	103	OSH	5.59E-07	3131	8721	1118
		YELLOW	10	36050	5.59E-08	313	872	112
		GREEN	1	3605	5.59E-09	<40	87	<40
5.00	3.30	BLUE	81	OSH	4.67E-07	2614	7281	933
		YELLOW	8	28315	4.67E-08	261	728	93
		GREEN	<1	2832	4.67E-09	<40	73	<40
6.00	4.10	BLUE	59	OSH	2.95E-07	1651	4599	590
		YELLOW	6	20790	2.95E-08	165	460	59
		GREEN	<1	2079	2.95E-09	<40	<40	<40
7.00	4.90	BLUE	50	OSH	2.58E-07	1447	4032	517
		YELLOW	5	17640	2.58E-08	145	403	52
		GREEN	<1	1764	2.58E-09	<40	<40	<40
8.00	5.60	BLUE	43	OSH	1.92E-07	1076	2997	384
		YELLOW	4	15120	1.92E-08	108	300	<40
		GREEN	<1	1512	1.92E-09	<40	<40	<40
9.00	6.40	BLUE	38	OSH	1.71E-07	960	2673	343
		YELLOW	4	13265	1.71E-08	96	267	<40
		GREEN	<1	1327	1.71E-09	<40	<40	<40
10.00	7.20	BLUE	34	OSH	1.37E-07	766	2133	273
		YELLOW	3	11760	1.37E-08	77	213	<40
		GREEN	<1	1176	1.37E-09	<40	<40	<40
11.00	7.90	BLUE	30	OSH	1.23E-07	688	1917	246
		YELLOW	3	10500	1.23E-08	69	192	<40
		GREEN	<1	1050	1.23E-09	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1315-1330 (SCENARIO TIME 0515-0530)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF ZEOLITE (NET CPM)	PARTICULATE FILTER*** (NET CPM)
12.00	8.40	BLUE	3	9625	1.07E-08	60	167	<40
		YELLOW	<1	963	1.07E-09	<40	<40	<40
		GREEN	<1	96	1.07E-10	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

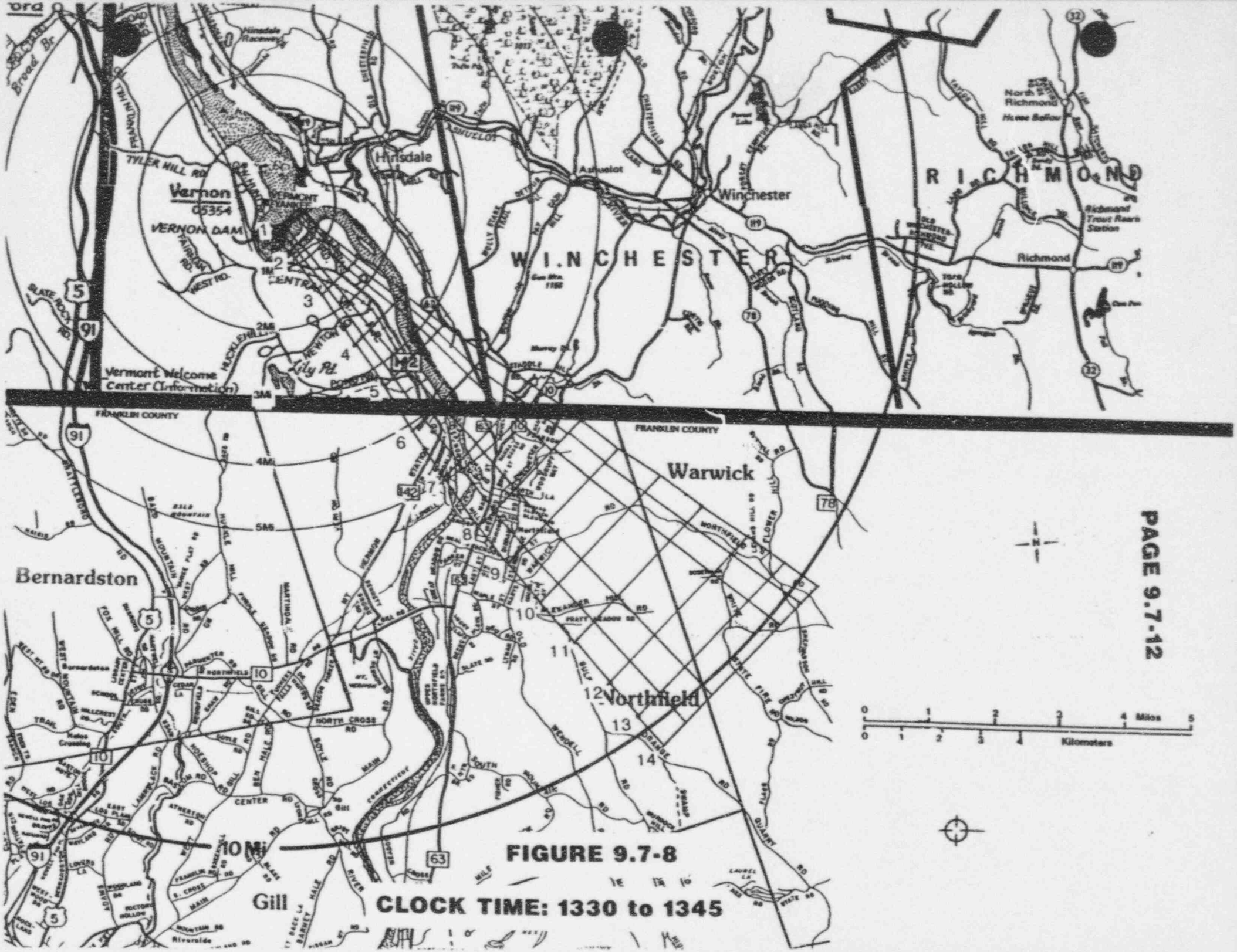

FIGURE 9.7-8

CLOCK TIME: 1330 to 1345

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1330-1345 (SCENARIO TIME 0530-0545)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF ZEOLITE (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1.00	SITE BOUNDARY	BLUE	71	OSH	4.68E-10	<40	<40	<40
		YELLOW	7	24990	4.68E-11	<40	<40	<40
		GREEN	<1	2499	4.68E-12	<40	<40	<40
2.00	0.80	BLUE	85	OSH	5.05E-08	283	788	101
		YELLOW	8	29715	5.05E-09	<40	79	<40
		GREEN	<1	2972	5.05E-10	<40	<40	<40
3.00	1.60	BLUE	106	OSH	4.40E-07	2462	6858	879
		YELLOW	11	37100	4.40E-08	246	686	88
		GREEN	1	3710	4.40E-09	<40	69	<40
4.00	2.50	BLUE	96	OSH	5.38E-07	3014	8397	1077
		YELLOW	10	33565	5.38E-08	301	840	108
		GREEN	<1	3357	5.38E-09	<40	84	<40
5.00	3.30	BLUE	75	OSH	4.46E-07	2497	6957	892
		YELLOW	8	26390	4.46E-08	250	696	89
		GREEN	<1	2639	4.46E-09	<40	70	<40
6.00	4.10	BLUE	55	OSH	2.81E-07	1573	4383	562
		YELLOW	6	19285	2.81E-08	157	438	56
		GREEN	<1	1929	2.81E-09	<40	<40	<40
7.00	4.90	BLUE	46	OSH	2.43E-07	1363	3798	487
		YELLOW	5	16240	2.43E-08	136	380	49
		GREEN	<1	1624	2.43E-09	<40	<40	<40
8.00	5.70	BLUE	38	OSH	1.79E-07	1005	2799	359
		YELLOW	4	13370	1.79E-08	100	280	<40
		GREEN	<1	1337	1.79E-09	<40	<40	<40
9.00	6.50	BLUE	34	OSH	1.60E-07	898	2502	321
		YELLOW	3	11795	1.60E-08	90	250	<40
		GREEN	<1	1180	1.60E-09	<40	<40	<40
10.00	7.30	BLUE	31	OSH	1.30E-07	727	2025	260
		YELLOW	3	10710	1.30E-08	73	203	<40
		GREEN	<1	1071	1.30E-09	<40	<40	<40
11.00	8.00	BLUE	27	OSH	1.17E-07	656	1827	234
		YELLOW	3	9590	1.17E-08	66	183	<40
		GREEN	<1	959	1.17E-09	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1330-1345 (SCENARIO TIME 0530-0545)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF SILVER ZEOLITE (NET CPM)	PARTICULATE FILTER*** (NET CPM)
12.00	8.80	BLUE	25	OSH	9.92E-08	556	1548	198
		YELLOW	3	8355	9.92E-09	56	155	<40
		GREEN	<1	886	9.92E-10	<40	<40	<40
13.00	9.60	BLUE	23	OSH	8.94E-08	501	1395	179
		YELLOW	2	8015	8.94E-09	50	140	<40
		GREEN	<1	802	8.94E-10	<40	<40	<40
14.00	10.10	BLUE	2	8225	8.02E-09	45	125	<40
		YELLOW	<1	823	8.02E-10	<40	<40	<40
		GREEN	<1	82	8.02E-11	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

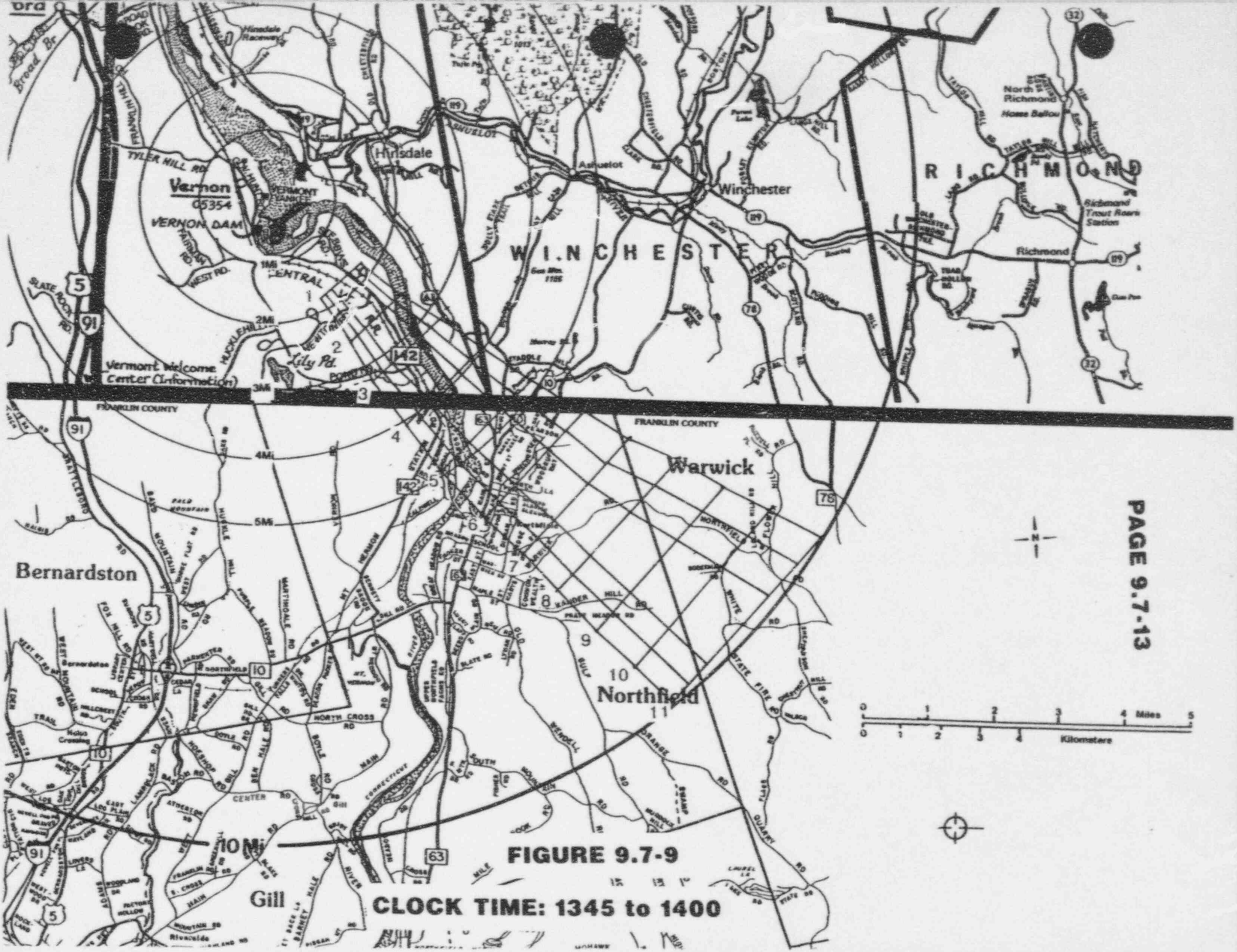

FIGURE 9.7-9

CLOCK TIME: 1345 to 1400

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1345-1400 (SCENARIO TIME 0545-0600)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1.00	1.70	BLUE	106	OSH	4.49E-07	2514	7002	898
		YELLOW	11	37100	4.49E-08	251	700	90
		GREEN	1	3710	4.49E-09	<40	70	<40
2.00	2.50	BLUE	90	OSH	5.18E-07	2898	8073	1035
		YELLOW	9	31500	5.18E-08	290	807	104
		GREEN	<1	3150	5.18E-09	<40	81	<40
3.00	3.30	BLUE	70	OSH	4.26E-07	2384	6642	852
		YELLOW	7	24640	4.26E-08	238	664	85
		GREEN	<1	2464	4.26E-09	<40	66	<40
4.00	4.10	BLUE	50	OSH	2.65E-07	1486	4140	531
		YELLOW	5	17605	2.65E-08	149	414	53
		GREEN	<1	1761	2.65E-09	<40	<40	<40
5.00	4.90	BLUE	43	OSH	2.29E-07	1283	3573	458
		YELLOW	4	14875	2.29E-08	128	357	46
		GREEN	<1	1488	2.29E-09	<40	<40	<40
6.00	5.80	BLUE	35	OSH	1.69E-07	947	2637	338
		YELLOW	4	12285	1.69E-08	95	264	<40
		GREEN	<1	1229	1.69E-09	<40	<40	<40
7.00	6.60	BLUE	30	OSH	1.49E-07	837	2331	299
		YELLOW	3	10640	1.49E-08	84	233	<40
		GREEN	<1	1064	1.49E-09	<40	<40	<40
8.00	7.40	BLUE	27	OSH	1.21E-07	675	1881	241
		YELLOW	3	9415	1.21E-08	68	188	<40
		GREEN	<1	942	1.21E-09	<40	<40	<40
9.00	8.20	BLUE	24	OSH	1.09E-07	611	1701	218
		YELLOW	2	8435	1.09E-08	61	170	<40
		GREEN	<1	844	1.09E-09	<40	<40	<40
10.00	8.90	BLUE	23	OSH	9.35E-08	523	1458	187
		YELLOW	2	8050	9.35E-09	52	146	<40
		GREEN	<1	805	9.35E-10	<40	<40	<40
11.00	9.70	BLUE	21	OSH	8.48E-08	475	1323	170
		YELLOW	2	7315	8.48E-09	47	132	<40
		GREEN	<1	732	8.48E-10	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1345-1400 (SCENARIO TIME 0545-0600)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF (NET CPM)	PARTICULATE FILTER*** (NET CPM)
12.00	10.50	BLUE	20	OSH	7.50E-08	420	1170	150
		YELLOW	2	7035	7.50E-09	42	117	<40
		GREEN	<1	704	7.50E-10	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

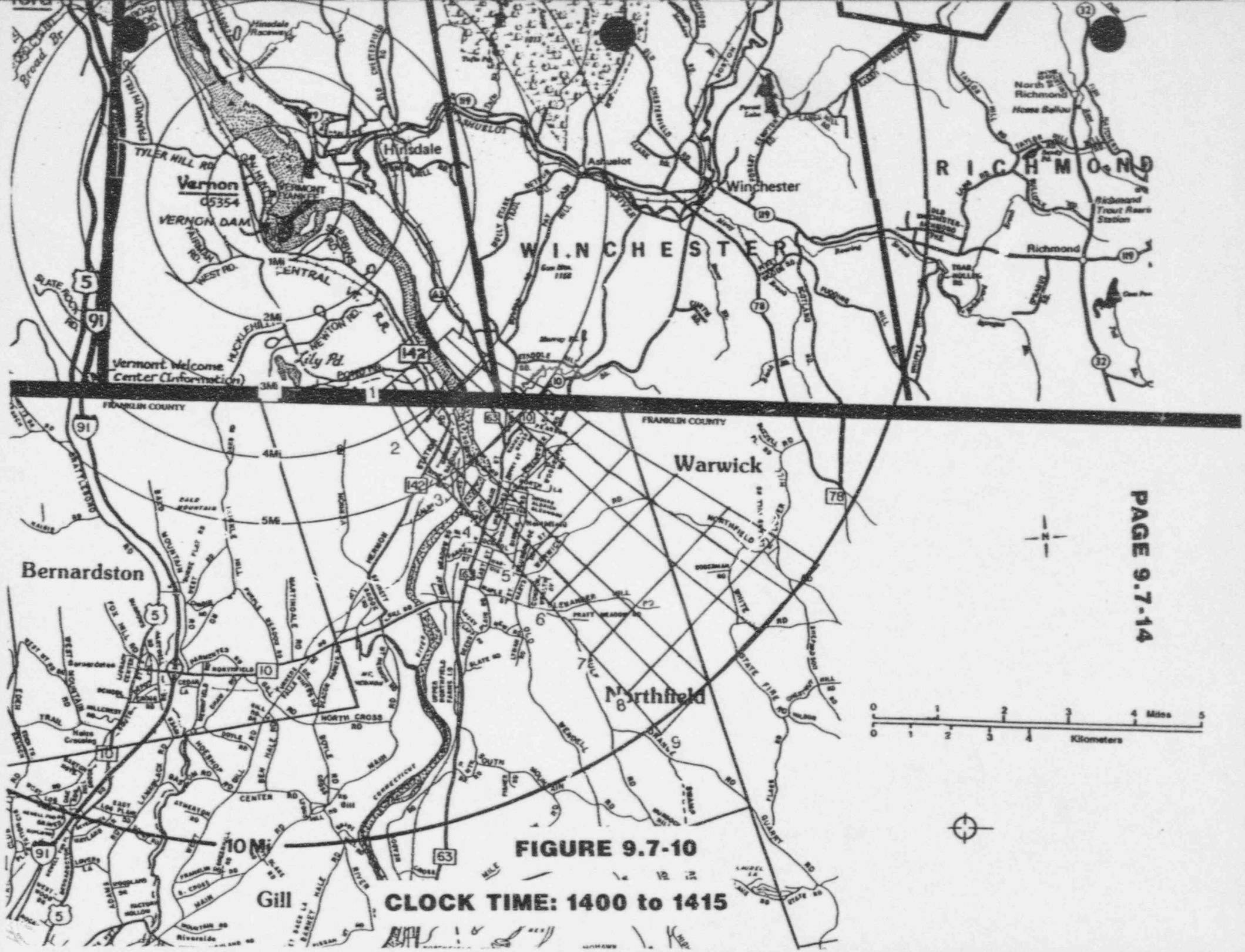

FIGURE 9.7-10

CLOCK TIME: 1400 to 1415

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1400-1415 (SCENARIO TIME 0600-0615)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1.00	3.40	BLUE	69	OSH	4.11E-07	2300	6408	822
		YELLOW	7	23975	4.11E-08	230	641	82
		GREEN	<1	2398	4.11E-09	<40	64	<40
2.00	4.20	BLUE	47	OSH	2.53E-07	1418	3951	507
		YELLOW	5	16345	2.53E-08	142	395	51
		GREEN	<1	1635	2.53E-09	<40	<40	<40
3.00	5.00	BLUE	39	OSH	2.17E-07	1215	3384	434
		YELLOW	4	13580	2.17E-08	121	338	43
		GREEN	<1	1358	2.17E-09	<40	<40	<40
4.00	5.80	BLUE	32	OSH	1.58E-07	885	2466	316
		YELLOW	3	11165	1.58E-08	89	247	<40
		GREEN	<1	1117	1.58E-09	<40	<40	<40
5.00	6.70	BLUE	28	OSH	1.40E-07	782	2178	279
		YELLOW	3	9660	1.40E-08	78	218	<40
		GREEN	<1	966	1.40E-09	<40	<40	<40
6.00	7.50	BLUE	25	OSH	1.13E-07	630	1755	225
		YELLOW	2	8575	1.13E-08	63	176	<40
		GREEN	<1	858	1.13E-09	<40	<40	<40
7.00	8.30	BLUE	22	OSH	1.01E-07	565	1575	202
		YELLOW	2	7630	1.01E-08	57	158	<40
		GREEN	<1	763	1.01E-09	<40	<40	<40
8.00	9.10	BLUE	20	OSH	8.65E-08	485	1350	173
		YELLOW	2	7000	8.65E-09	48	135	<40
		GREEN	<1	700	8.65E-10	<40	<40	<40
9.00	9.90	BLUE	18	OSH	7.90E-08	443	1233	158
		YELLOW	2	6405	7.90E-09	44	123	<40
		GREEN	<1	641	7.90E-10	<40	<40	<40
10.00	10.70	BLUE	18	OSH	7.04E-08	394	1098	141
		YELLOW	2	6405	7.04E-09	<40	110	<40
		GREEN	<1	641	7.04E-10	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

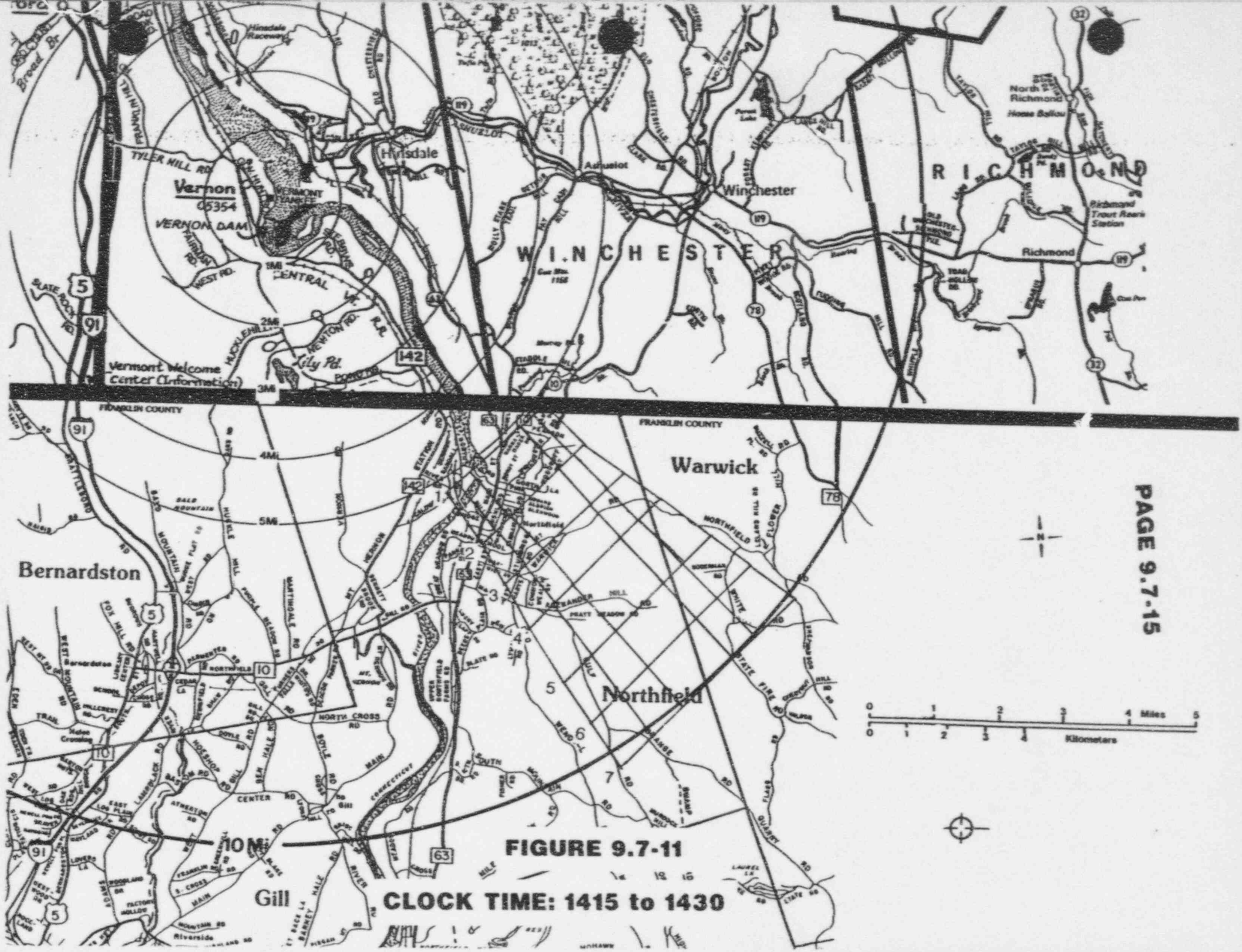

FIGURE 9.7-11

CLOCK TIME: 1415 to 1430

VERMONT YANKEE FIELD DATA AT CLOCK TIME 1415-1430 (SCENARIO TIME 0615-0630)

PLUME SEGMENT NO.	DISTANCE (MILES)	MAP AREA	GAMMA DOSE RATE PIC-6 (mR/hr)	GAMMA DOSE RATE RM-14 (CPM)	AIR SAMPLE DATA* (RM-14)** CONC. I-131 uCi/cc	MONROE 100 L SILVER ZEOLITE (NET CPM)	RADECO 10 CF (NET CPM)	PARTICULATE FILTER*** (NET CPM)
1.00	5.20	BLUE	38	OSH	2.11E-07	1179	3285	421
		YELLOW	4	13265	2.11E-08	118	329	42
		GREEN	<1	1327	2.11E-09	<40	<40	<40
2.00	6.00	BLUE	30	OSH	1.51E-07	846	2358	302
		YELLOW	3	10395	1.51E-08	85	236	<40
		GREEN	<1	1040	1.51E-09	<40	<40	<40
3.00	6.80	BLUE	25	OSH	1.32E-07	740	2061	264
		YELLOW	3	8890	1.32E-08	74	206	<40
		GREEN	<1	889	1.32E-09	<40	<40	<40
4.00	7.60	BLUE	22	OSH	1.06E-07	591	1647	211
		YELLOW	2	7770	1.06E-08	59	165	<40
		GREEN	<1	777	1.06E-09	<40	<40	<40
5.00	8.40	BLUE	20	OSH	9.46E-08	530	1476	189
		YELLOW	2	6930	9.46E-09	53	148	<40
		GREEN	<1	693	9.46E-10	<40	<40	<40
6.00	9.20	BLUE	18	OSH	8.08E-08	452	1260	162
		YELLOW	2	6370	8.08E-09	45	126	<40
		GREEN	<1	637	8.08E-10	<40	<40	<40
7.00	10.00	BLUE	17	OSH	7.33E-08	410	1143	147
		YELLOW	2	5950	7.33E-09	41	114	<40
		GREEN	<1	595	7.33E-10	<40	<40	<40

NOTES:

* Air sample data are based on a sample volume of 100 liters for the Monroe sampler and 10 cubic feet for the Radeco sampler. 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.

*** The particulate filter sample count rate (cpm) was estimated from the I-131 air concentration for a 100 liter sample.

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY RESPONSE PREPAREDNESS EXERCISE
1995

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
08:00	5.40E+00	2.80E+02	-4.00E-01	4.20E+00	2.69E+02	-3.20E-01	0.00E+00	5.00E+01	2.00E-01
08:15	5.30E+00	2.85E+02	-5.00E-01	4.00E+00	2.74E+02	-4.00E-01	0.00E+00	5.10E+01	2.50E-01
08:30	5.20E+00	2.87E+02	-4.00E-01	4.00E+00	2.76E+02	-3.20E-01	0.00E+00	5.30E+01	2.70E-01
08:45	5.20E+00	2.89E+02	-6.00E-01	4.00E+00	2.77E+02	-4.80E-01	0.00E+00	5.50E+01	3.00E-01
09:00	5.30E+00	2.90E+02	-8.00E-01	4.00E+00	2.78E+02	-6.40E-01	0.00E+00	5.60E+01	3.10E-01
09:15	5.10E+00	2.94E+02	-9.00E-01	4.30E+00	2.82E+02	-7.20E-01	0.00E+00	5.60E+01	3.50E-01
09:30	5.10E+00	2.92E+02	-1.00E+00	4.30E+00	2.80E+02	-8.00E-01	0.00E+00	5.80E+01	4.30E-01
09:45	5.20E+00	2.96E+02	-1.10E+00	4.30E+00	2.84E+02	-8.80E-01	0.00E+00	6.00E+01	4.80E-01
10:00	5.10E+00	3.00E+02	-1.20E+00	4.20E+00	2.88E+02	-9.60E-01	0.00E+00	6.20E+01	5.50E-01
10:15	5.20E+00	3.04E+02	-1.20E+00	4.20E+00	2.92E+02	-9.60E-01	0.00E+00	6.30E+01	6.00E-01
10:30	5.30E+00	3.06E+02	-1.20E+00	3.40E+00	2.94E+02	-9.60E-01	0.00E+00	6.40E+01	6.80E-01
10:45	5.40E+00	3.08E+02	-1.50E+00	3.00E+00	2.96E+02	-1.20E+00	0.00E+00	6.50E+01	7.50E-01
11:00	5.60E+00	3.10E+02	-1.50E+00	2.60E+00	2.95E+02	-1.20E+00	0.00E+00	6.53E+01	8.00E-01
11:15	5.60E+00	3.09E+02	-1.50E+00	3.00E+00	2.97E+02	-1.20E+00	0.00E+00	6.54E+01	7.50E-01
11:30	5.80E+00	3.11E+02	-1.50E+00	4.00E+00	2.99E+02	-1.20E+00	0.00E+00	6.58E+01	7.20E-01
11:45	5.80E+00	3.10E+02	-1.50E+00	5.00E+00	2.95E+02	-1.20E+00	0.00E+00	6.60E+01	7.00E-01
12:00	6.00E+00	3.10E+02	-1.80E+00	4.00E+00	2.98E+02	-1.44E+00	0.00E+00	6.63E+01	7.20E-01
12:15	6.10E+00	3.10E+02	-1.80E+00	3.60E+00	2.91E+02	-1.44E+00	0.00E+00	6.65E+01	7.10E-01
12:30	6.20E+00	3.12E+02	-1.80E+00	2.60E+00	3.00E+02	-1.44E+00	0.00E+00	6.60E+01	7.00E-01
12:45	6.40E+00	3.13E+02	-1.80E+00	2.70E+00	2.97E+02	-1.44E+00	0.00E+00	6.70E+01	6.80E-01
13:00	6.50E+00	3.15E+02	-1.90E+00	2.60E+00	3.02E+02	-1.52E+00	0.00E+00	6.80E+01	7.10E-01
13:15	6.60E+00	3.15E+02	-1.90E+00	2.60E+00	2.99E+02	-1.52E+00	0.00E+00	6.80E+01	7.20E-01
13:30	6.50E+00	3.15E+02	-1.90E+00	2.40E+00	2.99E+02	-1.52E+00	0.00E+00	6.76E+01	7.30E-01
13:45	6.70E+00	3.20E+02	-1.90E+00	2.70E+00	3.04E+02	-1.52E+00	0.00E+00	6.71E+01	7.10E-01
14:00	6.90E+00	3.20E+02	-1.90E+00	2.90E+00	3.04E+02	-1.52E+00	0.00E+00	6.68E+01	7.00E-01
14:15	7.00E+00	3.20E+02	-1.80E+00	2.80E+00	3.04E+02	-1.44E+00	0.00E+00	6.65E+01	7.00E-01
14:30	7.20E+00	3.25E+02	-1.80E+00	2.70E+00	3.09E+02	-1.44E+00	0.00E+00	6.63E+01	6.90E-01
14:45	7.50E+00	3.25E+02	-1.70E+00	2.80E+00	3.09E+02	-1.36E+00	0.00E+00	6.60E+01	6.80E-01
15:00	7.10E+00	3.27E+02	-1.70E+00	2.60E+00	3.11E+02	-1.36E+00	0.00E+00	6.59E+01	6.60E-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 PREPAREDNESS EXERCISE
1995

10.2 GENERAL AREA NWS FORECASTS (See Note) -

Synopsis (08:00)

An upper air trough will pass over the area midday, causing cloudy skies and a wind shift from the west to the northwest.

Valid (08:00-12:00)

Partly cloudy this morning. Temperatures rising from current 50's into the 60's. Westerly winds from 3 to 6 MPH becoming northwesterly around midday.

Valid (12:00-16:00)

Mostly cloudy. Temperatures rising to the upper 60's. Northwesterly winds from 4 to 8 MPH.

Valid (16:00-23:00)

Partly cloudy. Low temperatures in the upper 40's. Winds light and variable.

PLANT/EOF WEATHER OBSERVATIONS (See Note) - Valid (08:00-17:00)

Time	General Observations
08:00-11:00	Partly cloudy with light to moderate winds.
11:00-14:00	Mostly cloudy with light to moderate winds.
14:00-17:00	Partly cloudy 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 PREPAREDNESS EXERCISE
1995

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: 09-13-95
Time of Forecast: 10:00

Current Site Meteorology (as of 10:00):

Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
Lower	4.2 MPH	288 DEG FROM	-1.0 DEG F	D	0.00 IN/15 MIN
Upper	5.1 MPH	300 DEG FROM	-1.2 DEG F	D	

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
10:00-12:00	Lower	3.5 MPH	295 DEG FROM	-1.2 DEG F	D	0.00 IN/15 MIN
	Upper	5.5 MPH	305 DEG FROM	-1.5 DEG F	D	
12:00-14:00	Lower	3.0 MPH	300 DEG FROM	-1.4 DEG F	C	0.00 IN/15 MIN
	Upper	6.5 MPH	320 DEG FROM	-1.8 DEG F	D	
14:00-16:00	Lower	3.0 MPH	310 DEG FROM	-1.3 DEG F	D	0.00 IN/15 MIN
	Upper	7.0 MPH	325 DEG FROM	-1.7 DEG F	D	

National Weather Service Forecast for site region:

Partly cloudy with temperatures rising from the 50's to the upper 60's. Light northerly winds becoming northwesterly midday.

Special Weather Statements:

None

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE
1995

10.2 VERMONT YANKEE SITE FORECAST

To be provided to the ESC Meteorologist by the ESC Controller at 12:00.

WEATHER FORECAST FOR SITE: VY - VERNON

Date of Forecast: 09-13-95
Time of Forecast: 12:00

Current Site Meteorology (as of 12:00):

Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
Lower	4.0 MPH	298 DEG FROM	-1.4 DEG F	C	0.00 IN/15 MIN
Upper	6.0 MPH	310 DEG FROM	-1.8 DEG F	D	

Forecast Site Meteorology:

Time	Sensor	Wind Speed	Wind Direction	Delta Temperature	Stab. Class	Precipitation
12:00-14:00	Lower	3.0 MPH	300 DEG FROM	-1.4 DEG F	C	0.00 IN/15 MIN
	Upper	6.5 MPH	320 DEG FROM	-1.8 DEG F	D	
14:00-16:00	Lower	3.0 MPH	310 DEG FROM	-1.3 DEG F	D	0.00 IN/15 MIN
	Upper	7.0 MPH	325 DEG FROM	-1.7 DEG F	D	
16:00-18:00	Lower	2.0 MPH	315 DEG FROM	-0.5 DEG F	D	0.00 IN/15 MIN
	Upper	5.5 MPH	330 DEG FROM	-1.1 DEG F	D	

National Weather Service Forecast for site region:

Mostly cloudy with temperatures rising into the upper 60's. Light northerly winds becoming northwesterly midday.

Special Weather Statements:

None