

ORIGINAL
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of:

LONG ISLAND LIGHTING COMPANY

Docket No. 50-322-OL-3

(Shoreham Nuclear Power Station
Unit 1)

VOLUME II

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LILCO, April 2, 1984

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of)
LONG ISLAND LIGHTING COMPANY) Docket No. 50-322-OL-3
(Shoreham Nuclear Power Station,) (Emergency Planning Proceeding)
Unit 1))

TESTIMONY OF HARRY N. BABB, GARY J. BERGER,
MATTHEW C. CORDARO, CHARLES A. DAVERIO,
DENNIS S. MILETI, WILLIAM F. RENZ, AND
RONALD A. VARLEY ON BEHALF OF LONG ISLAND
LIGHTING COMPANY ON PHASE II EMERGENCY PLANNING
CONTENTIONS 39.A, B, 40, 41, 44.D, E, and F,
98, 99.C and G, 100.B, D, and G

Attachments 1 through 4 to Testimony
Volume 2 of 5

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ATTACHMENTS

- ATTACHMENT 1 Local EOC/ENC Activation Drill
- ATTACHMENT 2 LILCO Local Emergency Response Organization
Traffic Guidance Drill, Rev. 0
- ATTACHMENT 3 LILCO Local Emergency Response Organization
Transportation Coordination Drill, Rev. 0
- ATTACHMENT 4 LILCO Local Emergency Response Organization
Personnel Monitoring and Decontamination
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- ATTACHMENT 5 LILCO Local Emergency Response Organization
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- ATTACHMENT 7 Lesson Plan: Coast Guard Emergency
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A. Daverio, LILCO, to Captain E. W. Weigand,
U.S. Coast Guard
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*ATTACHMENT 30	Videotape, Module 8A
*ATTACHMENT 31	Videotape, Module 14

*Supplied to the Atomic Safety and Licensing Board, the State of New York, the Federal Emergency Management Agency, and the Nuclear Regulatory Commission under separate cover.

Suffolk County is already in possession of these videotapes.

ATTACHMENT 1

LOCAL EOC/ENC
ACTIVATION DRILL

LERO EXERCISE/DRILL SCENARIO

- Part 1 Objectives and Guidelines
- Part 2 Date/Time/Locations/Participants
- Part 3 Exercise Scenario - Narrative Summary
- Event Schedule
- Part 4 Messages
- Part 5 Initiating Conditions
- Part 6 Radiological Information
- Part 7 Observer/Controller Instructions
- Part 8 Glossary

Submitted by:

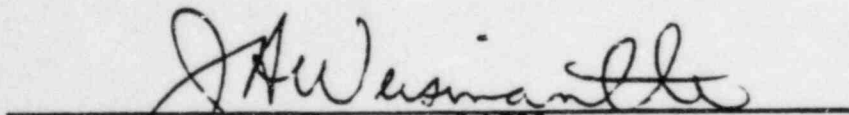


Emergency Planning Coordinator

10-14-83
Date

APPROVALS:

CAUTION
APPROVALS MUST BE SIGNED AT LEAST 24 HOURS
BEFORE ANY EXERCISE OR DRILL MAY BE PERFORMED.



Manager of LERO

10/14/83
Date

1.0 OBJECTIVES AND GUIDELINES

Two emergency response facilities and staffs are involved in the conduct of this drill:

- o The Local EOC and its associated personnel
- o The ENC and its associated personnel

Since the activities and responsibilities for these two groups differ significantly, two sets of objectives are provided.

- EOC Objectives

- A. Assess the adequacy of the staffing levels and equipping/layout of the Local EOC.
- B. Assess the ability of the Local EOC staff to conduct initial set-up and organization of the Local EOC.
- C. Assess the ability of the Local EOC staff to properly use the equipment in the facility and to follow the applicable Implementing Procedures in carrying out their responsibilities.
- D. Assess the ability of the Local EOC staff to effectively function as a team,
 - Exchanging information
 - Coordinating activities
 - Formulating positive courses of action
- E. Assess the ability of Local EOC management personnel to establish appropriate emergency management control for their respective areas of responsibility.
- F. Assess the proper utilization of status boards, forms and data sheets by Local EOC personnel throughout the drill.

- ENC Objectives

- A. Assess the ability of the LERO Public Information Group assigned to the ENC to properly use the equipment in the facility and to follow the applicable Implementing Procedures in carrying out their responsibilities.
- B. Assess the ability of the LERO Public Information Group to develop accurate news release information and to effectively communicate between the ENC and the Local EOC.
- C. Assess the proper utilization of status boards, forms and data sheets by the ENC staff throughout the drill.

2.0 DATE/TIME/LOCATIONS/PARTICIPANTS

Dates:

October 18, (Shift #1)
October 25, (Shift #2)
November 1, (Shift #3)

Time:

6:00 PM to 11:00 PM

Locations:

Local EOC, Brentwood
ENC, Old Mill Inn, Ronkonkoma

Participants:

- o EOC/ENC Staff Designated as Shift #1 on October 18
- o EOC/ENC Staff Designated as Shift #2 on October 25
- o EOC/ENC Staff Designated as Shift #3 on November 1

3.0 EXERCISE SCENARIO

Narrative Summary

This drill encompasses the activation and operation of the Local EOC and ENC, providing a basis for the staffs of both facilities to gain experience and expertise in the use of equipment and procedures and to allow the participants to develop a teamwork approach to carrying out their emergency action responsibilities.

This drill will be conducted with a full LERO staff in place at the Local EOC and ENC and will simulate the existence of LERO field personnel and supporting organizations. Qualified Controllers at each facility will present material from the scenario to the participants in a coordinated manner stimulating the facilities staff to take the appropriate response actions.

The scenario simulates a tornado striking electrical switchgear, initiating a series of plant complications resulting in a loss of coolant accident. Compounding the loss of coolant accident, a failure of a portion of the containment isolation system occurs, resulting in a release of radioactivity to the environment. Plant complications continue to occur leading to an uncovering of the reactor core and resultant fuel damage. The scenario provides background information for the Unusual Event classification to lay the ground work for the participants understanding of the events leading up to the activation of the Local EOC and ENC. The accident progresses from an Unusual Event declaration through a General Emergency classification.

This drill will require 4 hours to conduct and 1/2 hour to critique.

Event Schedule

Planned
Exercise Time
Hours/Minutes

Sequence of Events

T = -2/55

The Shoreham Nuclear Power Station (SNPS) is operating at 100% power and full electrical capacity.

Meteorological conditions:

- Winds from NW 315° @ 25 mph with gusts to 35 mph
- Temperature 67°F
- A tornado watch has been in effect for the Eastern Long Island area for the past two hours

T = -2/35

The National Weather Service issued a tornado warning for Eastern Long Island, and there are unconfirmed tornado sightings 5 miles south of the plant.

T = -2/18

A confirmed tornado touchdown occurs approximately 1/2 mile from SNPS damaging the Wildwood 69 KV Substation. The SNPS declares an UNUSUAL EVENT based on the meteorological and resultant electrical system conditions.

The LILCO Customer Service Operator is notified in accordance with OPIP 3.3.1, "Receipt and Verification of Messages."

T = -2/14

The LILCO Customer Service Operator completes notification verification callback to SNPS.

T = -2/10 to -2/05

The LILCO Customer Service Operator initiates the LERO notification process in accordance with OPIP 3.3.2, "Notification of Emergency Response Personnel."

Group Tone 1 pagers are activated with emergency code "1111."

T = -2/05 to -2/55

The Director of Local Response contacts the LILCO Customer Service Operator and completes Attachment 1 to OPIP 3.1.1.

Planned
Exercise Time
Hours/Minutes

Sequence of Events

T = -1/55

A tornado touchdown onsite occurs, striking the station switchyard causing extensive damage. As a result of the damage, equipment cycling occurs and a reactor scram follows.

Emergency Diesel Generators restore essential onsite power.

T = -1/35

The National Weather Service cancels the tornado watch as the leading edge of the front moves out to sea.

T = -1/20

Plant equipment transients occur resulting in an intermediate pipe break in the RWCU System (Reactor Water Clean Up).

T = -1/12

The SNPS declares an ALERT based on plant conditions.

Meteorological conditions:

- Winds from NW 315° @ 6 mph
- Temperature 70°F
- Stability Class D

T = -1/10 to -1/05

SNPS notifies the LILCO Customer Service Operator.

Actions as outlined in OPIP 3.3.1, "Receipt and Verification of Messages" are carried out by the Operator.

The LILCO Customer Service Operator completes notification verification callback to SNPS.

T = -1/05 to -1/00

The LILCO Customer Service Operator initiates the LERO notification process in accordance with OPIP 3.3.2, "Notification of Emergency Response Personnel."

Group Tone 1 and 2 pagers are activated with emergency code "2222."

Group Tone 3 pagers are activated with emergency code "2255."

BNL Security Station is notified.

Planned
Exercise Time
Hours/Minutes

Sequence of Events

T = -1/00 to -0/50

The Director of Local Response contacts the LILCO Customer Service Operator and completes Attachment 1 to OPIP 3.1.1.

T = -0/50 to -0/40

The Director of Local Response contacts the State of Connecticut and Nassau County, then proceeds to the Local EOC.

The Support Services Coordinator contacts the N.Y. Telephone Representative, then proceeds to the Local EOC.

The Evacuation Coordinator contacts the U.S. Coast Guard, Federal Aviation Administration and Long Island Railroad, then proceeds to the Local EOC.

Key LERO personnel conduct callouts in accordance with OPIP 3.3.2.

T = 0/00

Personnel begin arriving at the Local EOC.

At the direction of the Director of Local Response, RECS communication is transferred to the Local EOC RECS Communicator as outlined in OPIP 3.3.1, "Receipt and Verification of Messages."

T = 0/05

Upon establishing communications with the SNPS TSC, it is reported that further plant problems have resulted in a low level radiological release via the Containment Exhaust Isolation Valves into the Reactor Building Standby Ventilation System.

T = 0/10

The SNPS TSC reports that corrective action team mechanics are working to close the primary containment exhaust isolation valve. Earlier attempts at closing the valve manually have failed.

The release started at T = -1/20.

High range RBSVS effluent monitor is reading 300 uCi/cc.

Planned
Exercise Time
Hours/Minutes

Sequence of Events

Based on initial dose projection assessments, SNPS recommends a protective action of sheltering out to one mile.

T = 0/55

SNPS TSC reports that initial radiological monitoring field team reports confirm the release is occurring. Current projections and field data indicate that the plume is traveling to the southeast.

T = 1/10

SNPS TSC reports that conditions in the plant indicate a serious problem with maintaining reactor coolant inventory. They have received a reactor pressure vessel 10-10-10 level alarm. Reactor Core isolation cooling flow cannot maintain reactor pressure vessel water level due to the RWCU system pipeline break.

T = 1/25

SNPS TSC notifies the LERO RECS Communicator that a SITE AREA EMERGENCY has been declared based on a continuously decreasing reactor pressure vessel water level.

T = 1/35

SNPS TSC informs LERO that there has been an injury to a mechanic on the corrective action team. The mechanic has broken his left leg and severely cut his left arm. Medical response and transportation is underway.

T = 1/50

SNPS EOF informs LERO that the EOF has been activated. An updated status is as follows:

- Release is still in progress
- Attempts to close the Primary Containment Exhaust Isolation Valves continue
- Contaminated/injured man is in transport to the hospital
- Reactor Pressure Vessel Water is continuing to decrease

T = 2/10

SNPS EOF informs LERO that the RPV water level is below the top of the active fuel and there is indication of potential fuel damage.

T = 2/15

SNPS EOF informs the LERO RECS Communicator that a GENERAL EMERGENCY has been declared.

Planned
Exercise Time
Hours/Minutes

Sequence of Events

Based on dose projection assessments, SNPS recommends the following protective actions:

- Evacuation out to 5 miles
- Sheltering from 5 to 10 miles

T = 2/30

SNPS EOF informs LERO that the Reactor Pressure Vessel water level is beginning to respond to low pressure coolant injection/core spray flow. The situation is improving.

T = 2/40

SNPS EOF informs LERO that the Reactor Pressure Vessel water level is above the fuel and steadily increasing.

T = 2/45

SNPS EOF informs the LERO RECS Communicator that the primary containment exhaust isolation valves have been closed. The release path has been isolated.

T = 3/00

SNPS EOF informs LERO that the plant has been placed in a stabilized condition with no further radiological releases anticipated.

T = 3/05

SNPS EOF informs the LERO RECS Communicator that the EOF is downgrading the emergency classification to an ALERT.

4.0 MESSAGES

RADIOLOGICAL EMERGENCY DATA FORM

PART I - GENERAL INFORMATION

1. Date and Time of Message
Transmittal:
Date _____ Time T = -2/18
(24-hour clock)
2. Facility providing information:
A Indian Point Unit No. 2
B Indian Point Unit No. 3
C Ginna Station
D Nine Mile Point Unit No. 1
E FitzPatrick Plant
F Shoreham Station
G Other _____
3. Reported by:
A Name Joe Fanittany
B Title Plant Superintendent
4. This ... A is ... an exercise.
B is NOT
5. Emergency Classification
A Unusual Event
B Alert
C Site Area Emergency
D General Emergency
6. This classification occurred at
Date _____ Time T = -2/18
(24-hour clock)
7. Brief Event Description/
Initiating Condition:
Tornado in vicinity of the
station, electrical distri-
bution system. Disruptions
have occurred as a result.
8. There has:
A NOT been a release of
radioactivity.
B been a release of radio-
activity to the
ATMOSPHERE.
C been a release of radio-
activity to a BODY OF
WATER _____
D been a GROUND SPILL re-
lease of radioactivity.
9. The release is:
A continuing
B terminated
C NOT applicable.
10. Protective Actions:
A There is NO need for
Protective Actions out-
side the site boundary.
B Protective Actions are
under consideration.
C Recommended Protective
Actions:
Shelter within _____
miles/or _____
sectors/or ERPA's.
Evacuate within _____
miles/or _____
sectors/or ERPA's.
11. Weather:
A Wind speed 27 miles
per hour or --- meters
per second.
B Direction (from) 315°
degrees.
C Stability class (A-G) B
D General Weather Condi-
tion (if available)
Overcast

Message received by _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA

12. Prognosis for Worsening or Termination of the Emergency: _____

Not applicable at this time.

13. Inplant Emergency Response Actions Underway: _____

NUE Procedures

14. Utility Offsite Emergency Response Action Underway: _____

None.

15. Release Information

A. Atmospheric Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	_____	_____
Duration of Release	_____ hrs	_____ hrs
Noble Gas Release Rate	_____ Ci/sec	_____ Ci/sec
Radioiodine Release Rate	_____ Ci/sec	_____ Ci/sec
Elevated or Ground Release	_____	_____

B. Waterborne Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	_____	_____
Duration of Release	_____ hrs	_____ hrs
Volume of Release	_____ gal	_____ gal
Radioactivity Concentration (gross)	_____ uCi/ml	_____ uCi/ml
Total Radioactivity Released	_____ Ci	_____ Ci
Radionuclides in Release	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml

Basis for release data, e.g., effluent monitors, grab sample, composite sample, and sample location: _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA
(continued)

16. Dose and Measurements and Projections

A. Site Boundary

	<u>Actual</u>	<u>Projected</u>
Whole Body Dose Rate	_____ mR	_____ mR/hr
Whole Body Commitment (for duration)	_____ Rem	_____ Rem
Thyroid Dose Commitment (1 hr. exposure)	_____ Rem	_____ mRem
Thyroid Dose (for duration)	_____ Rem	_____ Rem

B. Projected Offsite

	<u>2 Miles</u>	<u>5 Miles</u>	<u>10 Miles</u>
Whole Body Dose Rate (mR/hr)	_____	_____	_____
Whole Body Dose (Rem)	_____	_____	_____
Thyroid Dose Commitment (1 hr. Exposure - mRem)	_____	_____	_____
Thyroid Dose (Total Commitment - Rem)	_____	_____	_____

17 Protective Action Recommendations and the basis for that recommendation: _____

No actions

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART III - DOE RADIOLOGICAL STATUS

No data from DOE at this time.

LOCAL EMERGENCY RESPONSE ORGANIZATION EVENT SUMMARY SHEET

To be completed by the Director and Manager of Local Response:

Director/Manager of Local Response: Joe Acker
(your name)

Initial Event Classification (Notification Fact Sheet - Item 5):

(circle one)

UNUSUAL EVENT ALERT SITE AREA GENERAL EMERGENCY

Initial Notification (Notification Fact Sheet - Item 6):

Time: T = -2/18 Date: _____

Nature of the Event (Notification Fact Sheet - Item 7):

Tornado in vicinity of plant, electrical distribution. System
disruptions.

Protective Action Recommendations suggested by the utility (Notification Fact Sheet - Item 10):

None

Name and Contact Number for the LERO Director/Manager of Local Response:

Local EOC Activation Necessary? (circle one) YES NO

*Utilize Local EOC Log for all further entries until emergency is terminated, then complete the below *.

Date and time this event was deescalated to below Unusual Event:

Summary of actions taken in response to this event:

Director/Manager of Local Response

Forward a copy of this sheet to the Emergency Planning Coordinator

RADIOLOGICAL EMERGENCY DATA FORM

PART I - GENERAL INFORMATION

1. Date and Time of Message
Transmittal:
Date _____ Time T = -1/12
(24-hour clock)
2. Facility providing information:
A Indian Point Unit No. 2
B Indian Point Unit No. 3
C Ginna Station
D Nine Mile Point Unit No. 1
E FitzPatrick Plant
F Shoreham Station
G Other _____
3. Reported by:
A Name Joe Fanittany
B Title Plant Superintendent
4. This ... A is ... an exercise.
B is NOT
5. Emergency Classification
A Unusual Event
B Alert
C Site Area Emergency
D General Emergency
6. This classification occurred at
Date _____ Time T = -1/12
(24-hour clock)
7. Brief Event Description/
Initiating Condition:
A pipe break in the Reactor
Water Clean Up System has
occurred.

8. There has:
A NOT been a release of radioactivity.
B been a release of radioactivity to the ATMOSPHERE.
C been a release of radioactivity to a BODY OF WATER
D been a GROUND SPILL release of radioactivity.
9. The release is:
A continuing
B terminated
C NOT applicable.
10. Protective Actions:
A There is NO need for Protective Actions outside the site boundary.
B Protective Actions are under consideration.
C Recommended Protective Actions:
Shelter within _____ miles/or _____ sectors/or ERPA's.
Evacuate within _____ miles/or _____ sectors/or ERPA's.
11. Weather:
A Wind speed 6 miles per hour or --- meters per second.
B Direction (from) 315° degrees.
C Stability class (A-G) D
D General Weather Condition (if available) Overcast

Message received by _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA

12. Prognosis for Worsening or Termination of the Emergency: _____

Not available at this time.

13. Inplant Emergency Response Actions Underway: _____

Alert Procedure

14. Utility Offsite Emergency Response Action Underway: _____

Alert status

15. Release Information

A. Atmospheric Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	_____	_____
Duration of Release	_____ hrs	_____ hrs
Noble Gas Release Rate	_____ Ci/sec	_____ Ci/sec
Radioiodine Release Rate	_____ Ci/sec	_____ Ci/sec
Elevated or Ground Release	_____	_____

B. Waterborne Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	_____	_____
Duration of Release	_____ hrs	_____ hrs
Volume of Release	_____ gal	_____ gal
Radioactivity Concentration (gross)	_____ uCi/ml	_____ uCi/ml
Total Radioactivity Released	_____ Ci	_____ Ci
Radionuclides in Release	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml

Basis for release data, e.g., effluent monitors, grab sample, composite sample, and sample location: _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA
(continued)

16. Dose and Measurements and Projections

A. Site Boundary

	<u>Actual</u>	<u>Projected</u>
Whole Body Dose Rate	_____ mR	_____ mR/hr
Whole Body Commitment (for duration)	_____ Rem	_____ Rem
Thyroid Dose Commitment (1 hr. exposure)	_____ Rem	_____ mRem
Thyroid Dose (for duration)	_____ Rem	_____ Rem

B. Projected Offsite

	<u>2 Miles</u>	<u>5 Miles</u>	<u>10 Miles</u>
Whole Body Dose Rate (mR/hr)	_____	_____	_____
Whole Body Dose (Rem)	_____	_____	_____
Thyroid Dose Commitment (1 hr. Exposure - mRem)	_____	_____	_____
Thyroid Dose (Total Commitment - Rem)	_____	_____	_____

17 Protective Action Recommendations and the basis for that recommendation: _____

No actions.

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART III - DOE RADIOLOGICAL STATUS

Information not available at present time.

LOCAL EMERGENCY RESPONSE ORGANIZATION EVENT SUMMARY SHEET

To be completed by the Director and Manager of Local Response:

Director/Manager of Local Response: Joe Acker
(your name)

Initial Event Classification (Notification Fact Sheet - Item 5):

(circle one)

UNUSUAL EVENT ALERT SITE AREA GENERAL EMERGENCY

Initial Notification (Notification Fact Sheet - Item 6):

Time: T = -1/12 Date: _____

Nature of the Event (Notification Fact Sheet - Item 7):

A pipe break in the Reactor Water Clean Up System has occurred.

Protective Action Recommendations suggested by the utility (Notification Fact Sheet - Item 10):

None

Name and Contact Number for the LERO Director/Manager of Local Response:

Local EOC Activation Necessary? (circle one) YES NO

*Utilize Local EOC Log for all further entries until emergency is terminated, then complete the below *.

Date and time this event was deescalated to below Unusual Event:

Summary of actions taken in response to this event:

Director/Manager of Local Response

Forward a copy of this sheet to the Emergency Planning Coordinator

RADIOLOGICAL EMERGENCY DATA FORM

PART I - GENERAL INFORMATION

1. Date and Time of Message
Transmittal:
Date _____ Time T = 0/05
(24-hour clock)
2. Facility providing information:
A Indian Point Unit No. 2
B Indian Point Unit No. 3
C Ginna Station
D Nine Mile Point Unit No. 1
E FitzPatrick Plant
F Shoreham Station
G Other _____
3. Reported by:
A Name Don Johnson
B Title TSC Communicator
4. This ... A is ... an exercise.
B is NOT
5. Emergency Classification
A Unusual Event
B Alert
C Site Area Emergency
D General Emergency
6. This classification occurred at
Date _____ Time T = -1/12
(24-hour clock)
7. Brief Event Description/
Initiating Condition:
Low level radiological
release in progress via the
Containment Exhaust Isolation
Valves.
8. There has:
A NOT been a release of
radioactivity.
B been a release of radio-
activity to the
ATMOSPHERE.
C been a release of radio-
activity to a BODY OF
WATER
D been a GROUND SPILL re-
lease of radioactivity.
9. The release is:
A continuing
B terminated
C NOT applicable.
10. Protective Actions:
A There is NO need for
Protective Actions out-
side the site boundary.
B Protective Actions are
under consideration.
C Recommended Protective
Actions:
Shelter within 3.0
miles/or D
sectors/or ERPA's.
Evacuate within 1
miles/or CDE
sectors/or ERPA's.
11. Weather:
A Wind speed 6 miles
per hour or --- meters
per second.
B Direction (from) 315°
degrees.
C Stability class (A-G) D
D General Weather Condi-
tion (if available)
Overcast

Message received by _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA

12. Prognosis for Worsening or Termination of the Emergency: _____
Anticipate release termination shortly.
13. Inplant Emergency Response Actions Underway: Corrective
action team mechanics working to close the Isolation Valves.
14. Utility Offsite Emergency Response Action Underway: _____
Radiological field monitoring teams dispatched.
15. Release Information

A. Atmospheric Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	<u>-1/20</u>	<u>-1/20</u>
Duration of Release	<u>----</u> hrs	<u>10</u> hrs
Noble Gas Release Rate	<u>-----</u> Ci/sec	<u>9.2 (1)</u> Ci/sec
Radioiodine Release Rate	<u>-----</u> Ci/sec	<u>1.2 (0)</u> Ci/sec
Elevated or Ground Release	<u>-----</u>	<u>Ground</u>

B. Waterborne Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	<u>-----</u>	<u>-----</u>
Duration of Release	<u>-----</u> hrs	<u>-----</u> hrs
Volume of Release	<u>-----</u> gal	<u>-----</u> gal
Radioactivity Concentration (gross)	<u>-----</u> uCi/ml	<u>-----</u> uCi/ml
Total Radioactivity Released	<u>-----</u> Ci	<u>-----</u> Ci
Radionuclides in Release	<u>-----</u> uCi/ml	<u>-----</u> uCi/ml
	<u>-----</u> uCi/ml	<u>-----</u> uCi/ml
	<u>-----</u> uCi/ml	<u>-----</u> uCi/ml

Basis for release data, e.g., effluent monitors, grab sample, composite sample, and sample location: Effluent monitors

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA
(continued)

16. Dose and Measurements and Projections

A. Site Boundary

	<u>Actual</u>	<u>Projected</u>
Whole Body Dose Rate	_____ mR	491 mR/hr
Whole Body Commitment (for duration)	_____ Rem	491 Rem
Thyroid Dose Commitment (1 hr. exposure)	_____ Rem	5,470 mRem
Thyroid Dose (for duration)	_____ Rem	54 Rem

B. Projected Offsite

	<u>2 Miles</u>	<u>5 Miles</u>	<u>10 Miles</u>
Whole Body Dose Rate (mR/hr)	108	25	10
Whole Body Dose (Rem)	1.08	.25	.10
Thyroid Dose Commitment (1 hr. Exposure - mRem)	871	183	75
Thyroid Dose (Total Commitment - Rem)	8.71	1.83	.75

17 Protective Action Recommendations and the basis for that recommendation: _____

Evacuate to 1 mile. Zones CDE shelter to 3.0 miles Zone D

No action past 3.0 miles

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART III - DOE RADIOLOGICAL STATUS

<u>Distance</u>	<u>Projected Dose Rates</u>
Site Boundary	100 mR/hr
2 miles	10 mR/hr
5 miles	2 mR/hr
10 miles	----

Recommendation - No action at this time - May consider site evacuation.

RADIOLOGICAL EMERGENCY DATA FORM

PART I - GENERAL INFORMATION

1. Date and Time of Message
Transmittal:
Date _____ Time T = 1/25
(24-hour clock)
2. Facility providing information:
A Indian Point Unit No. 2
B Indian Point Unit No. 3
C Ginna Station
D Nine Mile Point Unit No. 1
E FitzPatrick Plant
F Shoreham Station
G Other _____
3. Reported by:
A Name Don Johnson
B Title TSC Communicator
4. This ... A is ... an exercise.
B is NOT
5. Emergency Classification
A Unusual Event
B Alert
C Site Area Emergency
D General Emergency
6. This classification occurred at
Date _____ Time T = -1/12
(24-hour clock)
7. Brief Event Description/
Initiating Condition:
Ongoing radiological release
combined with a continuously
decreasing Reactor Vessel
water level.
8. There has:
A NOT been a release of
radioactivity.
B been a release of radio-
activity to the
ATMOSPHERE.
C been a release of radio-
activity to a BODY OF
WATER _____
D been a GROUND SPILL re-
lease of radioactivity.
9. The release is:
A continuing
B terminated
C NOT applicable.
10. Protective Actions:
A There is NO need for
Protective Actions out-
side the site boundary.
B Protective Actions are
under consideration.
C Recommended Protective
Actions:
Shelter within 1.5
miles/or C
sectors/or ERPA's.
Evacuate within ----
miles/or ----
sectors/or ERPA's.
11. Weather:
A Wind speed 6 miles
per hour or --- meters
per second.
B Direction (from) 315°
degrees.
C Stability class (A-G) D
D General Weather Condi-
tion (if available)
Overcast

Message received by _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA

12. Prognosis for Worsening or Termination of the Emergency: _____

Situation appears to be deteriorating, plant operators unable to prevent leakage from RPV

13. Inplant Emergency Response Actions Underway: Attempts to close

the isolation valves are still underway.

14. Utility Offsite Emergency Response Action Underway: Field

monitoring teams initial data confirms release offsite downwind from the plant.

15. Release Information

A. Atmospheric Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	<u>-1/20</u>	<u>-1/20</u>
Duration of Release	<u>----</u> hrs	<u>10</u> hrs
Noble Gas Release Rate	<u>1.0 (2)</u> Ci/sec	<u>1.0 (2)</u> Ci/sec
Radioiodine Release Rate	<u>3.7 (-2)</u> Ci/sec	<u>3.7 (-2)</u> Ci/sec
Elevated or Ground Release	<u>Ground</u>	<u>Ground</u>

B. Waterborne Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	_____	_____
Duration of Release	_____ hrs	_____ hrs
Volume of Release	_____ gal	_____ gal
Radioactivity Concentration (gross)	_____ uCi/ml	_____ uCi/ml
Total Radioactivity Released	_____ Ci	_____ Ci
Radionuclides in Release	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml

Basis for release data, e.g., effluent monitors, grab sample, composite sample, and sample location: Effluent monitor

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA
(continued)

16. Dose and Measurements and Projections

A. Site Boundary

	<u>Actual</u>	<u>Projected</u>
Whole Body Dose Rate	1,550 mR	324 mR/hr
Whole Body Commitment (for duration)	15.5 Rem	3.24 Rem
Thyroid Dose Commitment (1 hr. exposure)	_____ Rem	269 mRem
Thyroid Dose (for duration)	_____ Rem	2.69 Rem

B. Projected Offsite

	<u>2 Miles</u>	<u>5 Miles</u>	<u>10 Miles</u>
Whole Body Dose Rate (mR/hr)	71	16	6.7
Whole Body Dose (Rem)	.710	.16	.067
Thyroid Dose Commitment (1 hr. Exposure - mRem)	43	9	4
Thyroid Dose (Total Commitment - Rem)	.43	.09	.04

17 Protective Action Recommendations and the basis for that recommendation: _____

Shelter to 1.5 miles. No action beyond 1.5 miles based on
updated isotopic analysis.

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART III - DOE RADIOLOGICAL STATUS

<u>Distance</u>	<u>Projected Dose Rates</u>
Site Boundary	100 mR/hr
2 miles	10 mR/hr
5 miles	2 mR/hr

Recommendation - Consider site evacuation.

RADIOLOGICAL EMERGENCY DATA FORM

PART I - GENERAL INFORMATION

1. Date and Time of Message
Transmittal:
Date _____ Time T = 2/15
(24-hour clock)
2. Facility providing information:
A Indian Point Unit No. 2
B Indian Point Unit No. 3
C Ginna Station
D Nine Mile Point Unit No. 1
E FitzPatrick Plant
F Shoreham Station
G Other _____
3. Reported by:
A Name Ralph Moore
B Title EOF Communicator
4. This ... A is ... an exercise.
B is NOT
5. Emergency Classification
A Unusual Event
B Alert
C Site Area Emergency
D General Emergency
6. This classification occurred at
Date _____ Time T = 2/12
(24-hour clock)
7. Brief Event Description/
Initiating Condition:
Continuing decrease in RPV.
Water level has resulted in
fuel uncovering and potential
fuel damage.
8. There has:
A NOT been a release of radioactivity.
B been a release of radioactivity to the ATMOSPHERE.
C been a release of radioactivity to a BODY OF WATER _____
D been a GROUND SPILL re-lease of radioactivity.
9. The release is:
A continuing
B terminated
C NOT applicable.
10. Protective Actions:
A There is NO need for Protective Actions outside the site boundary.
B Protective Actions are under consideration.
C Recommended Protective Actions:
Shelter within 10
miles/or I and O
sectors/or ERPA's.
Evacuate within 3.5
miles/or CDE
sectors/or ERPA's.
11. Weather:
A Wind speed 6 miles per hour or --- meters per second.
B Direction (from) 315° degrees.
C Stability class (A-G) D
D General Weather Condition (if available)
Overcast

Message received by _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA

12. Prognosis for Worsening or Termination of the Emergency: _____
Situation continuing to deteriorate.

13. Inplant Emergency Response Actions Underway: Containment
isolation valve work continuing in an attempt to terminate the release

14. Utility Offsite Emergency Response Action Underway: Field
monitoring personnel continuing to track the plume.

15. Release Information

A. Atmospheric Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	-1/20	-1/20
Duration of Release	10 hrs	10 hrs
Noble Gas Release Rate	3.1 (3) Ci/sec	3.1 (3) Ci/sec
Radioiodine Release Rate	1.1 (0) Ci/sec	1.1 (0) Ci/sec
Elevated or Ground Release	<u>Ground</u>	<u>Ground</u>

B. Waterborne Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	_____	_____
Duration of Release	_____ hrs	_____ hrs
Volume of Release	_____ gal	_____ gal
Radioactivity Concentration (gross)	_____ uCi/ml	_____ uCi/ml
Total Radioactivity Released	_____ Ci	_____ Ci
Radionuclides in Release	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml

Basis for release data, e.g., effluent monitors, grab sample, composite sample, and sample location: _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA
(continued)

16. Dose and Measurements and Projections

A. Site Boundary

	<u>Actual</u>	<u>Projected</u>
Whole Body Dose Rate	_____ mR	9,720 mR/hr
Whole Body Commitment (for duration)	_____ Rem	<u>97.2</u> Rem
Thyroid Dose Commitment (1 hr. exposure)	_____ Rem	8,070 mRem
Thyroid Dose (for duration)	_____ Rem	<u>80.7</u> Rem

B. Projected Offsite

	<u>2 Miles</u>	<u>5 Miles</u>	<u>10 Miles</u>
Whole Body Dose Rate (mR/hr)	<u>2,140</u>	<u>489</u>	<u>203</u>
Whole Body Dose (Rem)	<u>21.4</u>	<u>4.89</u>	<u>2.03</u>
Thyroid Dose Commitment (1 hr. Exposure - mRem)	<u>1,290</u>	<u>270</u>	<u>111</u>
Thyroid Dose (Total Commitment - Rem)	<u>12.9</u>	<u>2.7</u>	<u>1.1</u>

17 Protective Action Recommendations and the basis for that recommendation: _____

Based upon actual isotopic analysis. Shelter to 10 miles

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART III - DOE RADIOLOGICAL STATUS

<u>Distance</u>	<u>Projected Dose Rates</u>	<u>Actual Dose Rates</u>
Site Boundary	3.9 R/hr	----
2 miles	1.28 R/hr	900 mR/hr
5 miles	251 mR/hr	200 mR/hr
10 miles	60 mR/hr	10 mR/hr

Evacuate to 5 miles.

Shelter to 10 miles.

RADIOLOGICAL EMERGENCY DATA FORM

PART I - GENERAL INFORMATION

1. Date and Time of Message
Transmittal:
Date _____ Time T = 2/45
(24-hour clock)
2. Facility providing information:
A Indian Point Unit No. 2
B Indian Point Unit No. 3
C Ginna Station
D Nine Mile Point Unit No. 1
E FitzPatrick Plant
F Shoreham Station
G Other _____
3. Reported by:
A Name Ralph Moore
B Title EOF Communicator
4. This ... A is ... an exercise.
B is NOT
5. Emergency Classification
A Unusual Event
B Alert
C Site Area Emergency
D General Emergency
6. This classification occurred at
Date _____ Time T = 2/12
(24-hour clock)
7. Brief Event Description/
Initiating Condition:
Primary Containment Exhaust
Isolation Valves have been
closed. The release has been
terminated into secondary
containment.
8. There has:
A NOT been a release of
radioactivity.
B been a release of radio-
activity to the
ATMOSPHERE.
C been a release of radio-
activity to a BODY OF
WATER _____
D been a GROUND SPILL re-
lease of radioactivity.
9. The release is:
A continuing
B terminated
C NOT applicable.
10. Protective Actions:
A There is NO need for
Protective Actions out-
side the site boundary.
B Protective Actions are
under consideration.
C Recommended Protective
Actions:
Shelter within 10
miles/or I and O
sectors/or ERPA's.
Evacuate within 3.5
miles/or CDE
sectors/or ERPA's.
11. Weather:
A Wind speed 6 miles
per hour or --- meters
per second.
B Direction (from) 315°
degrees.
C Stability class (A-G) D
D General Weather Condi-
tion (if available)
Overcast

Message received by _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA
(continued)

16. Dose and Measurements and Projections

A. Site Boundary

	<u>Actual</u>	<u>Projected</u>
Whole Body Dose Rate	_____ mR	9,720 mR/hr
Whole Body Commitment (for duration)	_____ Rem	<u>97.2</u> Rem
Thyroid Dose Commitment (1 hr. exposure)	_____ Rem	8,070 mRem
Thyroid Dose (for duration)	_____ Rem	<u>80.7</u> Rem

B. Projected Offsite

	<u>2 Miles</u>	<u>5 Miles</u>	<u>10 Miles</u>
Whole Body Dose Rate (mR/hr)	<u>2,140</u>	<u>489</u>	<u>203</u>
Whole Body Dose (Rem)	<u>21.4</u>	<u>4.89</u>	<u>2.03</u>
Thyroid Dose Commitment (1 hr. Exposure - mRem)	<u>1,290</u>	<u>270</u>	<u>111</u>
Thyroid Dose (Total Commitment - Rem)	<u>12.9</u>	<u>2.7</u>	<u>1.1</u>

17 Protective Action Recommendations and the basis for that recommendation: _____

Evacuate to 3.5 miles Zones C and D. Shelter to 10 miles

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART III - DOE RADIOLOGICAL STATUS

<u>Distance</u>	<u>Projected Dose Rates</u>	<u>Actual Dose Rates</u>
Site Boundary	3.9 R/hr	----
2 miles	1.28 R/hr	900 mR/hr
5 miles	251 mR/hr	200 mR/hr
10 miles	60 mR/hr	10 mR/hr

Evacuate to 5 miles.

Shelter to 10 miles.

RADIOLOGICAL EMERGENCY DATA FORM

PART I - GENERAL INFORMATION

1. Date and Time of Message
Transmittal:
Date _____ Time T = 3/05
(24-hour clock)
2. Facility providing information:
A Indian Point Unit No. 2
B Indian Point Unit No. 3
C Ginna Station
D Nine Mile Point Unit No. 1
E FitzPatrick Plant
F Shoreham Station
G Other _____
3. Reported by:
A Name Ralph Moore
B Title EOF Communicator
4. This ... A is ... an exercise.
B is NOT
5. Emergency Classification
A Unusual Event
B Alert
C Site Area Emergency
D General Emergency
6. This classification occurred at
Date _____ Time T = 3/02
(24-hour clock)
7. Brief Event Description/
Initiating Condition:
Plant conditions have
improved considerably.

8. There has:
A NOT been a release of
radioactivity.
B been a release of radio-
activity to the
ATMOSPHERE.
C been a release of radio-
activity to a BODY OF
WATER
D been a GROUND SPILL re-
lease of radioactivity.
9. The release is:
A continuing
B terminated
C NOT applicable.
10. Protective Actions:
A There is NO need for
Protective Actions out-
side the site boundary.
B Protective Actions are
under consideration.
C Recommended Protective
Actions:
Shelter within _____
miles/or _____
sectors/or ERPA's.
Evacuate within _____
miles/or _____
sectors/or ERPA's.
11. Weather:
A Wind speed 6 miles
per hour or _____ meters
per second.
B Direction (from) 315°
degrees.
C Stability class (A-G) D
D General Weather Condi-
tion (if available)
Clearing

Message received by _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA

12. Prognosis for Worsening or Termination of the Emergency: _____
Considerations for recovery actions are underway.
13. Inplant Emergency Response Actions Underway: Continuing to
restore plant systems.
14. Utility Offsite Emergency Response Action Underway: Field
monitoring teams are conducting environmental sampling.
15. Release Information

A. Atmospheric Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	_____	_____
Duration of Release	_____ hrs	_____ hrs
Noble Gas Release Rate	_____ Ci/sec	_____ Ci/sec
Radioiodine Release Rate	_____ Ci/sec	_____ Ci/sec
Elevated or Ground Release	_____	_____

B. Waterborne Release

	<u>Actual</u>	<u>Projected</u>
Date and Time Release Started	_____	_____
Duration of Release	_____ hrs	_____ hrs
Volume of Release	_____ gal	_____ gal
Radioactivity Concentration (gross)	_____ uCi/ml	_____ uCi/ml
Total Radioactivity Released	_____ Ci	_____ Ci
Radionuclides in Release	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml
	_____ uCi/ml	_____ uCi/ml

Basis for release data, e.g., effluent monitors, grab sample, composite sample, and sample location: _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART II - RADIOLOGICAL ASSESSMENT DATA
(continued)

16. Dose and Measurements and Projections

A. Site Boundary

	<u>Actual</u>	<u>Projected</u>
Whole Body Dose Rate	_____ mR	_____ mR/hr
Whole Body Commitment (for duration)	_____ Rem	_____ Rem
Thyroid Dose Commitment (1 hr. exposure)	_____ Rem	_____ mRem
Thyroid Dose (for duration)	_____ Rem	_____ Rem

B. Projected Offsite

	<u>2 Miles</u>	<u>5 Miles</u>	<u>10 Miles</u>
Whole Body Dose Rate (mR/hr)	_____	_____	_____
Whole Body Dose (Rem)	_____	_____	_____
Thyroid Dose Commitment (1 hr. Exposure - mRem)	_____	_____	_____
Thyroid Dose (Total Commitment - Rem)	_____	_____	_____

17 Protective Action Recommendations and the basis for that recommendation: _____

RADIOLOGICAL EMERGENCY DATA FORM
(continued)

PART III - DOE RADIOLOGICAL STATUS

Initiating Recovery/Entry sample gathering. No data available at
this time.

5.0 INITIATING CONDITIONS

This drill will require advance notification for the participants, informing them of the date and time for the conduct of the drill. Drill participants will be required to appear at the facility as indicated in the notification message. The LERO notification and mobilization process is not to be utilized as part of this drill.

With the participants in place at the facility, the assigned Drill Controllers will inform the assembled facility staff of the objectives and ground rules for conducting the drill. Additionally, the participants will be briefed by the Drill Controllers on the outlined scenario conditions simulated to have occurred prior to their arrival at the facility.

As the drill progresses, Drill Controllers will provide the incoming information as shown on the message forms and scenario time table to stimulate the participants response actions.

6.0 RADIOLOGICAL INFORMATION

This information is available to assist the Controller/Observer in the event a technical question rises that additional information is needed.

TABLE OF CONTENTS

TITLE

- A. Meteorological Conditions
- B. Contaminated Individual
- C. Radioactivity Sample Information (Reactor Water, Suppression Pool Water, and Drywell Air Sample)
- D. Radioactive Release Rates and Plume Monitoring Data

LIST OF TABLES

<u>TABLE NO.</u>	<u>TITLE</u>
6-1	Meteorological Data
6-2	Personnel Contamination Information
6-3.1 - 6-3.5	Reactor Water Sample Analysis
6-4.1 - 6-4.4	Suppression Pool Water Sample Analysis
6-5.1 - 6-5.6	Drywell Air Sample Analysis
6-6	Area Radiation Monitor Readings
6-7	Process and Effluent Radiation Monitors
6-8	Plume Monitoring Data (1st and 2nd Release)
6-9	Onsite Radiological Information
6-10	Zone Dose Rates

LIST OF FIGURES

<u>FIGURE NO.</u>	<u>TITLE</u>
6-1	Contaminated Mechanic
6-2	Xe-133 Equivalent Gas Release Rate vs. Time
6-3	Gross Iodine Release Rate vs. Time
6-4	Gross Noble Gas Release Rate vs. Time
6.5.1 - 6.5.4	Onsite Radiation Zone Maps
6.6.1 - 6.6.3	One-Mile Radiation Zone Maps
6.7.1 - 6.7.3	Ten-Mile Radiation Zone Maps

A. METEOROLOGICAL CONDITIONS

Meteorological conditions during the drill scenario will vary from intense thunderstorms to neutral stability class D. Local weather conditions prior to T=00:00 include forecasts of heavy thunderstorm activity, rain--heavy at times with the possibility of damaging hail. Winds are from 315° at 25 mph with gusts to 35 mph. The temperature is 67°F/19.4°C. By (T +01:00), a tornado will have passed near the site causing heavy damage to the station switchyard. At this time, winds are from 315°, 6 mph, with heavy overcast conditions. The temperature is now 70°, 21.1°C. Meteorological data will remain constant for the hour considered. Hourly meteorological data is listed in Table 6-1. These conditions will yield a stability class D.

B. CONTAMINATED AND INJURED MECHANIC

A technician will simulate an injured and contaminated mechanic. Upon survey, the controller will indicate the extent of the injuries and contamination as shown in Figure 6-1 and in Table 6-2. Radiological decontamination, emergency first aid, and handling techniques should then be demonstrated.

C. RADIOACTIVITY SAMPLE INFORMATION (REACTOR WATER, SUPPRESSION POOL WATER, AND DRYWELL AIR SAMPLE)

Reactor Water, Suppression Pool Water, and Drywell Air Sample specific activities (gross) were derived from the following references:

EPIP 1-14
NUREG-0588
NUREG-0578
LILCO FSAR, Chapters 1 and 5

Times chosen represent key system response times in regard to scenario events. No decay is assumed for the 30-minute sample count delay time. The low level release corresponds to a 1% fuel failure. The high level release will correspond to a 30% fuel failure.

Table 6-3.1 lists the Reactor Water Sample Analysis for the entire scenario. Tables 6-3.2 to 6-3.5 are the reactor water sample analysis for the times listed at the top of the table. Data should be provided to the Radiochemistry people thirty (30) minutes after the sample is taken to allow for analysis. Table

6-4.1 lists the Suppression Pool Water Sample Analysis for the entire scenario. Tables 6-4.2 to 6-4.4 are to be provided to Radiochemistry thirty (30) minutes after the sample is taken. Table 6-5.1 is the entire Drywell Air Sample Analysis for the exercise. Tables 6-5.2 to 6-5.6 are to be provided to Radiochemistry thirty (30) minutes after the sample is withdrawn.

D. RADIOACTIVE RELEASE RATES

There will be two (2) separate radioactive releases (see Figures 1, 2, and 3). The first release is a low level release with the intermediate-range RBSVS effluent monitor reading 8.6×10^8 cpm, wholebody gamma. The iodine dose rates are projected at $1/1000 \text{ TH}$, the Xe-133 equivalent release rate. The protective action expected for the low level release is sheltered out to one mile and no action past that. The low level release will last for two (2) hours and escalate to a high level release.

The high level release will cause a reading on the RBSVS High Range effluent monitor of 9000 uCi/oc. Projected release rates are:

Gross Noble Gas	= 3.08×10^3 Ci/sec
Gross Iodine	= 1.1 ci/sec

The protective action required for the high level release is shelter to 3.5 miles. Projected iodine to noble gas ratio is 10^{-3} . Evaluation of the percent of core failure (30%) produces an iodine to noble gas ratio in the field of 10^{-5} .

Actual data as found in the drywell on activity samples were used, assuming that 99.99% of the iodines will be adsorbed before release.

Inplant area radiation monitor readings are listed in Table 6-6.

Process and effluent radiation monitor readings are listed in Table 6-7.

Table 6-8 lists the dose rates for iodines and noble gases at the emergency monitoring location in the SE sector. The dose rates for onsite monitoring locations are listed in Table 6-9.

If the field monitoring personnel are not at an emergency monitoring location, a series of radiation zone maps are provided. Figures 5.1 to 5.4 are the Site Arrangement Maps, Figures 7.1 to 7.3 are 10-Mile Emergency Planning Zone Maps. The letters listed in each zone represent radiation dose rates which are listed in Table 6-10.

For personnel dosimetry information, the incremental dose rate should be used to determine the field monitor's exposure.

TABLE 6-1

METEOROLOGICAL DATA

Date: _____

Scenario Time	Wind Speed 150°/33°	Wind Direction 150°/33°	Temperature	Temperature
T-09/00	17	310	66.0	-1.5
T-08/00	15	309	66.0	-1.5
T-07/00	20	311	66.0	-1.6
T-06/00	18	310	66.5	-1.5
T-05/00	26	310	66.5	-1.5
T-04/00	29	313	66.5	-1.5
T-03/00	25	315	67.0	-1.0
T-02/00	6	315	70.0	-0.5
T-01/00	6	315	70.0	-0.5
T+00/00	6	316	70.5	-0.5
T+01/00	6	315	70.5	-0.5
T+02/00	7	315	71.0	-0.5
T+03/00	9	317	71.0	-0.5
T+04/00	11	316	71.0	0.0
T+05/00	10	315	72.0	-0.5
T+06/00	10	315	72.0	-0.5
T+07/00	12	317	72.0	0.0
T+08/00	11	320	72.0	0.0
T+09/00	12	319	72.0	-1.0
T+10/00	12	319	72.0	-1.0
T+11/00	10	315	71.5	-1.5
T+12/00	14	308	71.0	-1.0
T+13/00	17	302	70.0	-1.5
T+14/00	20	294	69.5	-1.0

* Data to be provided to Station Shift Supervisor, Radiological Assessment Coordinator, Environmental Survey Team Coordinator, or Meteorological Advisor.

TABLE 6-2

PERSONNEL CONTAMINATION INFORMATION

* <u>Individual Name</u>	* <u>Maximum RM-14 CPM</u>	* <u>Description of Area With Reading</u>
Injured and Contaminated Mechanic (Figure 6-1)	2,000	Left leg, up to thigh
	800**	Same area after removal of any clothing and initial decontamination
	Note/	Left leg, above knee, is broken
	1,500	Left arm, including part of chest
	300**	Same area after removal of any clothing and initial decontamination
Note:	Severe laceration, left arm below elbow	

* Data to be provided to Monitoring Team, or Health Physics Personnel.

** Decontamination of arm and leg cannot be fully accomplished to a satisfactory level, due to the injuries.

TABLE 6-3.1

REACTOR WATER SAMPLE ANALYSIS

Total Concentration uci/ml *

Nuclide	T - 03/00	T + 00/10	T + 00/30	T + 01:45
I-131	8.46×10^{-5}	145	4,290	4,265
132	4.43×10^{-3}	102	2,700	1,738
133	1.43×10^{-3}	280	8,400	7,877
134	1.57×10^{-2}	40	900	275
135	2.92×10^{-3}	220	6,300	5,389
Xe-133	1.67×10^{-4}	--	--	--
135	5.09×10^{-3}	--	--	--
Kr-85m	---	--	--	--
87	---	--	--	--
88	---	--	--	--
Te-132	---	4	114	110
Cs-134	3.59×10^{-6}	.5	15	15
137	---	.4	12	12
Co-58	1.89×10^{-4}	.6	18	18
60	2.67×10^{-4}	.3	9	9
Ce-141	---	7	210	209
Ba-140	1.18×10^{-4}	5	150	149
La-140	1.18×10^{-4}	5	149	145

* Data provided reflects analysis results from samples taken at the indicated times.

TABLE 6-3.2

EQUILIBRIUM REACTOR COOLANT SAMPLE ACTIVITY (T -3/00)

* <u>Nuclide</u>	* <u>Total Concentration (uCi/ml)</u>
I-131	8.46×10^{-5}
132	4.43×10^{-3}
133	1.43×10^{-3}
134	1.57×10^{-2}
135	2.92×10^{-3}
Xe-133	1.67×10^{-4}
135	5.09×10^{-3}
Kr-85m	---
87	---
88	---
Te-132	---
Cs-134	3.59×10^{-6}
137	---
Co-58	1.89×10^{-4}
-60	2.67×10^{-4}
Ce-141	---
Ba-140	1.18×10^{-4}
La-140	1.18×10^{-4}

* Data to be provided to Chemistry personnel.

TABLE 6-3.3

REACTOR WATER SAMPLE ACTIVITY (T +0/10)

*	*
<u>Nuclide</u>	<u>Total Concentration</u> (uCi/cc)
I-131	145
132	102
133	280
134	40
135	220
Xe-133	--
135	--
Kr-85m	--
87	--
88	--
Te-132	4
Cs-134	.5
137	.4
Co-58	.6
-60	.3
Ce-141	7
Ba-140	5
La-140	5

* Data to be provided to Chemistry personnel.

TABLE 6-3.4

REACTOR WATER SAMPLE ACTIVITY (T +0/30)

*	*
<u>Nuclide</u>	<u>Total Concentration (uCi/cc)</u>
I-131	4,290
132	2,700
133	8,400
134	900
135	6,300
Xe-133	--
135	--
Kr-85m	--
87	--
88	--
Te-132	114
Cs-134	15
137	12
Co-58	18
-60	9
Ce-141	210
Ba-140	150
La-140	149

* Data to be provided to Chemistry personnel.

TABLE 6-3.5

REACTOR WATER SAMPLE ACTIVITY (T +1/45)

* <u>Nuclide</u>	* <u>Total Concentration (uCi/cc)</u>
I-131	4,265
132	1,738
133	7,877
134	275
135	5,389
Xe-133	--
135	--
Kr-85m	--
87	--
88	--
Te-132	110
Cs-134	15
137	12
Co-58	18
-60	9
Ce-141	209
Ba-140	149
La-140	145

* Data to be provided to Chemistry personnel.

TABLE 6-4.1

SUPPRESSION POOL WATER SAMPLE ANALYSIS

Total Concentration uci/ml *

Nuclide	T - 03/00	T + 00/30	T + 01/45		
I-131	1.65×10^{-5}	4,290	4,265		
132	2.33×10^{-5}	2,700	1,738		
133	3.30×10^{-5}	8,400	7,877		
134	3.69×10^{-5}	900	275		
135	2.91×10^{-5}	6,300	5,389		
Xe-133	---	--	--		
135	---	--	--		
Kr-85m	---	--	--		
87	---	--	--		
88	---	--	--		
Te-132	2.33×10^{-5}	114	110		
Cs-134	1.46×10^{-6}	15	15		
137	9.13×10^{-7}	12	12		
Co-58	1.52×10^{-7}	18	18		
60	5.63×10^{-8}	9	9		
Ce-141	2.91×10^{-5}	210	209		
Ba-140	3.11×10^{-5}	150	149		
La-140	3.11×10^{-5}	149	145		

* Data provided reflects analysis results from samples taken at the indicated times.

TABLE 6-4.2

SUPPRESSION POOL WATER SAMPLE ACTIVITY (T -3/00)

*	*
<u>Nuclide</u>	<u>Total Concentration (uCi/ml)</u>
I-131	1.65×10^{-5}
132	2.33×10^{-5}
133	3.30×10^{-5}
134	3.69×10^{-5}
135	2.91×10^{-5}
Xe-133	---
135	---
Kr-85m	---
87	---
88	---
Te-132	2.33×10^{-5}
Cs-134	1.46×10^{-6}
137	9.13×10^{-7}
Co-58	1.52×10^{-7}
-60	5.63×10^{-8}
Ce-141	2.91×10^{-5}
Ba-140	3.11×10^{-5}
La-140	3.11×10^{-5}

* Data to be provided to Chemistry personnel.

TABLE 6-4.3

SUPPRESSION POOL WATER SAMPLE ACTIVITY (T +0/30)

*	*
<u>Nuclide</u>	<u>Total Concentration (uCi/cc)</u>
I-131	4,290
132	2,700
133	8,400
134	900
135	6,300
Xe-133	--
135	--
Kr-85m	--
87	--
88	--
Te-132	114
Cs-134	15
137	12
Co-58	18
-60	9
Ce-141	210
Ba-140	150
La-140	149

* Data to be provided to Chemistry personnel.

TABLE 6-4.4

SUPPRESSION POOL WATER SAMPLE ACTIVITY (T +01/45)

* <u>Nuclide</u>	* <u>Total Concentration (uCi/cc)</u>
I-131	4,265
132	1,738
133	7,877
134	275
135	5,389
Xe-133	--
135	--
Kr-85m	--
87	--
88	--
Te-132	110
Cs-134	15
137	12
Co-58	18
-60	9
Ce-141	209
Ba-140	149
La-140	145

* Data to be provided to Chemistry personnel.

TABLE 6-5.1

DRYWELL AIR SAMPLE ANALYSIS

Total Concentration uci/ml *

Nuclide	T - 03/00	T - 01/40	T + 00/10	T + 00/20	T + 01/45
I-131	3.3×10^{-10}	3.3×10^{-10}	17	522	519
132	4.8×10^{-10}	4.8×10^{-10}	12	365	235
133	7.2×10^{-10}	7.2×10^{-10}	35	1,044	979
134	8.1×10^{-10}	8.1×10^{-10}	6	170	52
135	6.6×10^{-10}	6.6×10^{-10}	27	809	692
Xe-133	8.6×10^{-9}	8.6×10^{-9}	151	4,515	4,463
135	4.1×10^{-9}	4.1×10^{-9}	34	1,018	914
Kr-85m	1.9×10^{-9}	1.9×10^{-9}	17	525	418
87	4.1×10^{-9}	4.1×10^{-9}	13	392	183
88	5.9×10^{-9}	5.9×10^{-9}	41	1,227	862
Te-132	---	---	.9	30	29
Cs-134	---	---	.1	4	4
137	---	---	.1	3	3
Co-58	---	---	.03	2	2
60	---	---	.02	1	1
Ce-141	---	---	1.7	50	50
Ba-140	---	---	1.3	40	40
La-140	---	---	1.3	38	37

* Data provided reflects analysis results from samples taken at the indicated times.

TABLE 6-5.2

DRYWELL AIR SAMPLE ACTIVITY (T -3/00)

*	*
<u>Nuclide</u>	<u>Total Concentration (uCi/cc)</u>
I-131	3.3×10^{-10}
132	4.8×10^{-10}
133	7.2×10^{-10}
134	8.1×10^{-10}
135	6.6×10^{-10}
Xe-133	8.6×10^{-9}
135	4.1×10^{-9}
Kr-85m	1.9×10^{-9}
87	4.1×10^{-9}
88	5.9×10^{-9}
Te-132	---
Cs-134	---
137	---
Co-58	---
-60	---
Ce-141	---
Ba-140	---
La-140	---

* Data to be provided to Chemistry personnel.

TABLE 6-5.3

DRYWELL AIR SAMPLE ACTIVITY (T -1/40)

*	*
<u>Nuclide</u>	<u>Total Concentration</u> <u>(uCi/cc)</u>
I-131	3.3×10^{-10}
132	4.8×10^{-10}
133	7.2×10^{-10}
134	8.1×10^{-10}
135	6.6×10^{-10}
Xe-133	8.6×10^{-9}
135	4.1×10^{-9}
Kr-85m	1.9×10^{-9}
87	4.1×10^{-9}
88	5.9×10^{-9}
Te-132	---
Cs-134	---
137	---
Co-58	---
-60	---
Ce-141	---
Ba-140	---
La-140	---

* Data to be provided to Chemistry personnel.

TABLE 6-5.4

DRYWELL AIR SAMPLE ACTIVITY (T +00/10)

*	*
<u>Nuclide</u>	<u>Total Concentration (uCi/cc)</u>
I-131	17
132	12
133	35
134	6
135	27
Xe-133	151
135	34
Kr-85m	17
87	13
88	41
Te-132	.9
Cs-134	.1
137	.1
Co-58	.03
-60	.02
Ce-141	1.7
Ba-140	1.3
La-140	1.3

* Data to be provided to Chemistry personnel.

TABLE 6-5.5

DRYWELL AIR SAMPLE ACTIVITY (T +00/20)

* <u>Nuclide</u>	* <u>Total Concentration (uCi/cc)</u>
I-131	522
132	365
133	1,044
134	170
135	809
Xe-133	4,515
135	1,018
Kr-85m	525
87	392
88	1,227
Te-132	30
Cs-134	4
137	3
Co-58	2
-60	1
Ce-141	50
Ba-140	40
La-140	38

* Data to be provided to Chemistry personnel.

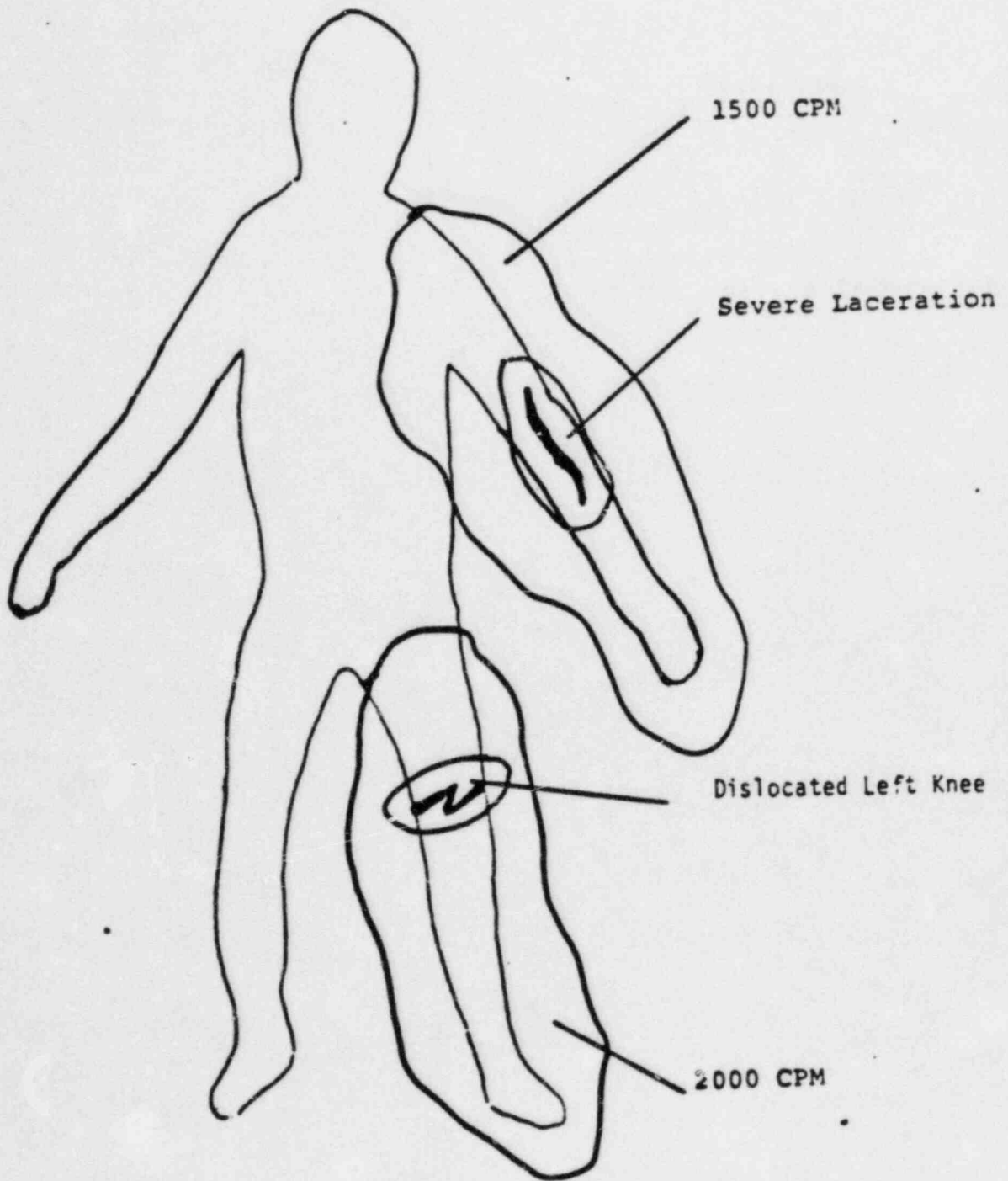
TABLE 6-5.6

DRYWELL AIR SAMPLE ACTIVITY (T +01/45)

* <u>Nuclide</u>	* <u>Total Concentration (uCi/cc)</u>
I-131	519
132	235
133	979
134	52
135	692
Xe-133	4,463
135	914
Kr-85m	418
87	183
88	862
Te-132	29
Cs-134	4
137	3
Co-58	2
-60	1
Ce-141	50
Ba-140	40
La-140	37

* Data to be provided to Chemistry personnel.

FIGURE 6-1
INJURED AND CONTAMINATED MECHANIC



AREA RADIATION MONITORS

mRem/Hr

Elevation	Location	RE No.	Y - 03/00	Y - 02/45	Y - 02/30	Y - 02/15	Y - 02/00	Y - 01:45	Y - 01/30	Y - 01:15
8'	Reactor Bldg.	001	5	5	5	5	5	30	30	30
8'	Reactor Bldg.	002	5	5	5	5	5	30	30	30
8'	Reactor Bldg.	003	5	5	5	5	5	30	40	40
8'	Reactor Bldg.	005	5	5	5	5	5	10	30	30
40'	Reactor Bldg.	004	5	5	5	5	5	10	20	20
40'	Reactor Bldg.	005	5	5	5	5	5	10	20	20
63'	Reactor Bldg.	006	100	100	100	100	15	15	30	30
63'	Reactor Bldg.	007	100	100	100	100	15	15	30	30
78'	Reactor Bldg.	008	1	1	1	1	1	2	3	5
78'	Reactor Bldg.	009	1	1	1	1	1	2	3	5
78'	Reactor Bldg.	036	1	1	1	1	1	25	25	30
78'	Reactor Bldg.	037	1	1	1	1	1	25	25	30
78'	Reactor Bldg.	085A	5	5	5	5	5	200*	4 x 10 ³ *	7 x 10 ³ *
78'	Reactor Bldg.	085B	5	5	5	5	5	200*	4 x 10 ³ *	7 x 10 ³ *
112' - 9"	Reactor Bldg.	010	1	1	1	1	1	1	2	2
112' - 9"	Reactor Bldg.	011	1	1	1	1	1	1	2	2
160' - 9"	Reactor Bldg.	012	1	1	1	1	1	1	2	2
160' - 9"	Reactor Bldg.	013	1	1	1	1	1	1	2	2
175' - 9"	Reactor Bldg.	014	2	2	2	2	2	2	3	3
175' - 9"	Reactor Bldg.	015	2	2	2	2	2	2	3	3
175' - 9"	Reactor Bldg.	038	2	2	2	2	2	2	3	3
63'	Turbine Bldg.	019	1	1	1	1	1	3	4	4
63'	Turbine Bldg.	020	1	1	1	1	1	3	4	4
63'	Turbine Bldg.	021	1	1	1	1	1	3	4	4
	Post-Accident Sampling	043	1	1	1	1	1	2	2	3
		044	1	1	1	1	1	2	2	3

* R/hr

TABLE 6

AREA RADIATION MONITORS

 $\mu\text{Rem}/\text{Hr}$

(continued)

Elevation	Location	RE No.	T - 01/00	T - 00/45	T - 00/30	T - 00/15	T + 00/00	T + 00/15	T + 00/30	T + 00/45
8'	Reactor Bldg.	001	30	30	30	30	30	250	OSH	OSH
8'	Reactor Bldg.	002	30	40	40	40	40	500	OSH	OSH
8'	Reactor Bldg.	003	40	40	40	40	40	500	OSH	OSH
8'	Reactor Bldg.	005	30	30	30	30	30	200	OSH	OSH
40'	Reactor Bldg.	004	30	30	30	30	30	100	OSH	OSH
40'	Reactor Bldg.	005	30	30	30	30	30	100	OSH	OSH
63'	Reactor Bldg.	006	30	30	30	30	30	OSH	OSH	OSH
63'	Reactor Bldg.	007	30	30	30	30	30	OSH	OSH	OSH
78'	Reactor Bldg.	008	5	5	5	5	5	10	OSH	OSH
78'	Reactor Bldg.	009	5	5	5	5	5	10	OSH	OSH
78'	Reactor Bldg.	036	30	30	30	30	30	100	OSH	OSH
78'	Reactor Bldg.	037	30	30	30	30	30	100	OSH	OSH
78'	Reactor Bldg.	085A	$1.4 \times 10^{4*}$	$2 \times 10^{4*}$	$2.5 \times 10^{4*}$	$3 \times 10^{4*}$	$3.6 \times 10^{4*}$	$5 \times 10^{4*}$	$2 \times 10^{6*}$	$1.1 \times 10^{6*}$
78'	Reactor Bldg.	085B	$1.4 \times 10^{4*}$	$2 \times 10^{4*}$	$2.5 \times 10^{4*}$	$3 \times 10^{4*}$	$3.6 \times 10^{4*}$	$5 \times 10^{4*}$	$2 \times 10^{6*}$	$1.1 \times 10^{6*}$
112' - 9"	Reactor Bldg.	010	2	2	2	2	2	3	OSH	OSH
112' - 9"	Reactor Bldg.	011	2	2	2	2	2	3	OSH	OSH
160' - 9"	Reactor Bldg.	012	2	2	2	2	2	3	OSH	OSH
160' - 9"	Reactor Bldg.	013	2	2	2	2	2	3	OSH	OSH
175' - 9"	Reactor Bldg.	014	3	3	3	3	3	5	OSH	OSH
175' - 9"	Reactor Bldg.	015	3	3	3	3	3	5	OSH	OSH
175' - 9"	Reactor Bldg.	038	3	3	3	3	3	5	OSH	OSH
63'	Turbine Bldg.	019	4	4	4	4	4	5	OSH	OSH
63'	Turbine Bldg.	020	4	4	4	4	4	5	OSH	OSH
63'	Turbine Bldg.	021	4	4	4	4	4	5	OSH	OSH
	Post-Accident Sampling	043	3	3	3	3	3	5	6	6
		044	3	3	3	3	3	5	6	6

* - R/hr
OSH - Off Scale High

TABLE
AREA RADIATION MONITORS

mRem/Hr
(continued)

Elevation	Location	RE No.	02/00	02/15	02/30	02/45	03/00	03/15	03/30	03/45
8'	Reactor Bldg.	001	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
8'	Reactor Bldg.	002	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
8'	Reactor Bldg.	003	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
8'	Reactor Bldg.	005	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
40'	Reactor Bldg.	004	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
40'	Reactor Bldg.	004	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
63'	Reactor Bldg.	006	OSH	OSH	OSH	OSH	500	300	200	30
63'	Reactor Bldg.	007	OSH	OSH	OSH	OSH	500	300	200	30
78'	Reactor Bldg.	008	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
78'	Reactor Bldg.	009	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
78'	Reactor Bldg.	036	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
78'	Reactor Bldg.	037	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
78'	Reactor Bldg.	065A	1 x 10 ⁶ *	1 x 10 ⁶ *	1 x 10 ⁶ *	1 x 10 ⁶ *	9 x 10 ⁵ *	8.7 x 10 ⁵ *	8.3 x 10 ⁵ *	8 x 10 ⁵ *
78'	Reactor Bldg.	065A	1 x 10 ⁶ *	1 x 10 ⁶ *	1 x 10 ⁶ *	1 x 10 ⁶ *	9 x 10 ⁵ *	8.7 x 10 ⁵ *	8.3 x 10 ⁵ *	8 x 10 ⁵ *
78'	Reactor Bldg.	085B	1 x 10 ⁶ *	1 x 10 ⁶ *	1 x 10 ⁶ *	1 x 10 ⁶ *	9 x 10 ⁵ *	8.7 x 10 ⁵ *	8.3 x 10 ⁵ *	8 x 10 ⁵ *
112' - 9"	Reactor Bldg.	010	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
112' - 9"	Reactor Bldg.	011	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
160' - 9"	Reactor Bldg.	012	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
160' - 9"	Reactor Bldg.	013	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
175' - 9"	Reactor Bldg.	014	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
175' - 9"	Reactor Bldg.	015	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
175' - 9"	Reactor Bldg.	038	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
63'	Turbine Bldg.	019	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
63'	Turbine Bldg.	020	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
63'	Turbine Bldg.	021	OSH	OSH	OSH	OSH	OSH	OSH	OSH	OSH
	Post-Accident Sampling	043	6	6	6	6	4	3	2	1
	Post-Accident Sampling	044	6	6	6	6	4	3	2	1

* - R/hr
OSH - Off Scale High

PROCESS & EFFLUENT RADIATION MONITORS

System	1 - 03/00	1 - 02/45	1 - 02/30	1 - 02/15	1 - 02/00	1 - 01/45	1 - 01/30	1 - 01/15
Containment Drywell Filter Train Exhaust A B	MDA MDA	MDA MDA	MDA MDA	MDA MDA	10^{-4} uci/cc 10^{-4} uci/cc	OSH OSH	OSH OSH	OSH OSH
Main Steam Line A B C D	1 m/hr 1 m/hr 1 m/hr 1 m/hr	1 m/hr 1 m/hr 1 m/hr 1 m/hr	1 m/hr 1 m/hr 1 m/hr 1 m/hr	1 m/hr 1 m/hr 1 m/hr 1 m/hr	2 m/hr 2 m/hr 2 m/hr 2 m/hr	20 m/hr 20 m/hr 20 m/hr 20 m/hr	OSH OSH OSH OSH	OSH OSH OSH OSH
Station Vent Exhaust (HI-Range)	--	--	--	--	--	10 uci/cc	280 uci/cc	280 uci/cc
Station Vent Exhaust (Normal)	MDA	MDA	MDA	MDA	10^{-1} uci/cc	10 uci/cc	76 uci/cc	76 uci/cc
Reactor Standby Vent Exhaust (Intermediate Range) cps	N	N	N	N	N	8.6×10^8	8.6×10^8	8.6×10^8

MDA - Minimum Detectable Activity
OSH - Off Scale High
N - Normal

PROCESS & EFFLUENT RADIATION MONITORS

(continued)

System	T - 01/00	T - 00/45	T - 00/30	T - 00/15	T + 00/00	T + 00/15	T + 00/30	T + 00/45
Containment Drywell Filter Train Exhaust A B	OSH OSH	OSH OSH	OSH OSH	OSH OSH	OSH OSH	OSH OSH	OSH OSH	OSH OSH
Main Steam Line A B C D	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH
Station Vent Exhaust (HI-Range)	280 uci/cc	280 uci/cc	280 uci/cc	280 uci/cc	280 uci/cc	8400 uci/cc	8400 uci/cc	8400 uci/cc
Station Vent Exhaust (Normal)	150 uci/cc	150 uci/cc	150 uci/cc	150 uci/cc	150 uci/cc	OSH	OSH	OSH
Reactor Standby Vent Exhaust (Intermediate Range) cpm	8.6×10^0	8.6×10^0	8.6×10^0	8.6×10^0	8.6×10^0	2.6×10^8	2.6×10^{10}	2.6×10^{10}

MDA - Minimum Detectable
OSH - Off Scale High
N - Normal

PROCESS & EFFLUENT RADIATION MONITORS

(continued)

System	T + 01/00	T + 01/15	T + 01/30	T + 01/45	T + 02/00	T + 02/15	T + 02/30	T + 02/45
Containment Drywell Filter Train Exhaust A B	OSH OSH	OSH OSH	OSH OSH	OSH OSH	OSH OSH	OSH OSH	OSH OSH	OSH OSH
Main Steam Line A B C D	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH OSH
Station Vent Exhaust (HI-Range)	8400 uci/cc	8400 uci/cc	8400 uci/cc	10 ⁻² uci/cc	10 ⁻² uci/cc	10 ⁻² uci/cc	10 ⁻² uci/cc	10 ⁻² uci/cc
Station Vent Exhaust (Normal)	OSH	OSH	OSH	10 ⁻² uci/cc	10 ⁻²	10 ⁻² uci/cc	10 ⁻² uci/cc	10 ⁻² uci/cc
Reactor Standby Vent Exhaust (Intermediate Range) cps	2.6 x 10 ¹⁰	2.6 x 10 ¹⁰	2.6 x 10 ¹⁰	2.6 x 10 ¹⁰	N	N	N	N

MDA - Minimum Detectable Activity
OSH - Off Scale High
N - Normal

TABLE 6-8

FIELD MONITORING DOSE RATES (mR/Hr) *

Location	I/NG	$\frac{X_u}{Q}$ m-2	T + 03/00 through T - 01/55	T - 01/45	T - 01/30	T - 01/15	T - 01/00	T - 00/45	T - 00/30
1SE1	NG	6.373	0	80	80	80	80	80	80
1SE2	I	9.560	0	8	8	8	8	8	8
1SE3	NG	46.750	0	565	565	565	565	565	565
2SE1	I	85.010	0	75	75	75	75	75	75
4SE1	NG	33.000	0	400	400	400	400	400	400
5SE1	I	56.000	0	50	50	50	50	50	50
6SE1	NG	15.292	0	187	187	187	187	187	187
7SE1	I	21.492	0	0	18	18	18	18	18
8SE1	NG	3.650	0	0	0	0	45	45	45
9SE1	I	4.214	0	0	0	0	5	5	5
10SE1	NG	0.077	0	0	0	0	1	1	1
11SE1	I	0.085	0	0	0	0	0	0	0
11SE2	NG	4.293	0	0	0	0	0	52	52
11SE3	I	4.385	0	0	0	0	0	4	4
	NG	0.209	0	0	0	0	0	3	3
	I	0.225	0	0	0	0	0	0	0
	NG	1.998	0	0	0	0	0	0	25
	I	1.822	0	0	0	0	0	0	2
	NG	0.581	0	0	0	0	0	0	7
	I	0.586	0	0	0	0	0	0	0
	NG	1.570	0	0	0	0	0	0	0
	I	1.721	0	0	0	0	0	0	0
	NG	0.047	0	0	0	0	0	0	0
	I	0.050	0	0	0	0	0	0	0
	NG	0.046	0	0	0	0	0	0	0
	I	0.049	0	0	0	0	0	0	0
	NG	0.049	0	0	0	0	0	0	0
	I	0.051	0	0	0	0	0	0	0
	NG	0.108	0	0	0	0	0	0	0
	I	0.114	0	0	0	0	0	0	0
	NG	2.002	0	0	0	0	0	0	0
	I	1.953	0	0	0	0	0	0	0
	NG	0.520	0	0	0	0	0	0	0
	I	0.494	0	0	0	0	0	0	0

NG - Noble Gases

I - Iodines

* - Data to be provided to Field Monitoring personnel

TABLE 6-8

FIELD MONITORING DOSE RATES (mR/Hr) *
(continued)

Location	I/NG	\bar{X}_u m-2	T - 00/15	T + 00/00	T + 00/15	T + 00/30	T + 00/45	T + 01/00	T + 01/15
1SE1	NG	6.373	80	80	80	235	235	235	235
	I	9.560	8	8	8	250	250	250	250
1SE2	NG	46.750	565	565	565	565	565	565	565
	I	85.010	75	75	75	17,226	17,226	17,226	17,226
1SE3	NG	33.000	400	400	400	12,160	12,160	12,160	12,160
	I	56.000	50	50	50	1,457	1,457	1,457	1,457
2SE1	NG	15.292	187	187	187	187	5,635	5,635	5,635
	I	21.492	18	18	18	18	560	560	18
4SE1	NG	3.650	45	45	45	45	45	1,344	1,344
	I	4.214	5	5	5	5	5	110	110
5SE1	NG	0.077	1	1	1	1	1	30	30
	I	0.085	0	0	0	0	0	2	2
6SE1	NG	4.293	52	52	52	52	52	52	1,581
	I	4.385	4	4	4	4	4	4	114
6SE2	NG	0.209	3	3	3	3	3	3	80
	I	0.225	0	0	0	0	0	0	5
7SE1	NG	1.998	25	25	25	25	25	25	25
	I	1.822	2	2	2	2	2	2	2
7SE2	NG	0.581	7	7	7	7	7	7	7
	I	0.586	0	0	0	0	0	0	0
8SE1	NG	1.570	20	20	20	20	20	20	20
	I	1.721	1	1	1	1	1	1	1
8SE2	NG	0.047	1	1	1	1	1	1	1
	I	0.050	0	0	0	0	0	0	0
9SE1	NG	0.046	1	1	1	1	1	1	1
	I	0.049	0	0	0	0	0	0	0
10SE1	NG	0.049	1	1	1	1	1	1	1
	I	0.051	0	0	0	0	0	0	0
11SE1	NG	0.108	0	1	1	1	1	1	1
	I	0.114	0	0	0	0	0	0	0
11SE2	NG	2.002	0	25	25	25	25	25	25
	I	1.953	0	2	2	2	2	2	2
11SE3	NG	0.520	0	23	23	23	23	23	23
	I	0.494	0	1	1	1	1	1	1

I - Iodines

NG - Noble Gases

* - Data to be provided to Field Monitoring personnel

TABLE 6-8

FIELD MONITORING DOSE RATES (mR/Hr) *
(continued)

Location	I/NG	$\frac{X_u}{Q}$ m-2	T + 01/30	T + 01/45	T + 02/00	T + 02/15	T + 02/30	T + 02/45	T + 03/00
1SE1	NG	6.373	235	235	0	0	0	0	0
	I	9.560	250	250	0	0	0	0	0
1SE2	NG	46.750	565	565	0	0	0	0	0
	I	85.010	17,226	17,226	0	0	0	0	0
1SE3	NG	33.000	12,160	12,160	0	0	0	0	0
	I	56.000	1,457	1,457	0	0	0	0	0
2SE1	NG	15.292	5,635	5,635	0	0	0	0	0
	I	21.492	560	560	0	0	0	0	0
4SE1	NG	3.650	1,344	1,344	0	0	0	0	0
	I	4.214	110	110	0	0	0	0	0
5SE1	NG	0.077	30	30	0	0	0	0	0
	I	0.085	2	2	0	0	0	0	0
6SE1	NG	4.293	1,581	1,581	0	0	0	0	0
	I	4.385	114	114	0	0	0	0	0
6SE2	NG	0.209	80	80	0	0	0	0	0
	I	0.225	5	5	0	0	0	0	0
7SE1	NG	1.998	740	740	0	0	0	0	0
	I	1.822	50	50	0	0	0	0	0
7SE2	NG	0.581	215	215	0	0	0	0	0
	I	0.586	15	15	0	0	0	0	0
8SE1	NG	1.570	20	580	0	0	0	0	0
	I	1.721	1	45	0	0	0	0	0
8SE2	NG	0.047	1	20	0	0	0	0	0
	I	0.050	0	2	0	0	0	0	0
9SE1	NG	0.046	1	1	0	0	0	0	0
	I	0.049	0	0	0	0	0	0	0
10SE1	NG	0.049	1	1	0	0	0	0	0
	I	0.051	0	0	0	0	0	0	0
11SE1	NG	0.108	1	0	0	0	0	0	0
	I	0.114	0	0	0	0	0	0	0
11SE2	NG	2.002	25	25	0	0	0	0	0
	I	1.953	2	2	0	0	0	0	0
11SE3	NG	0.520	23	23	0	0	0	0	0
	I	0.494	1	1	0	0	0	0	0

I - Iodines

NG - Noble Gases

* - Data to be provided to Field Monitoring personnel

TABLE 6-9

ONSITE MONITORING DOSE RATES (mR/Hr) *

Location	I/NG	$\frac{X_u}{Q}$ (m-2)	T - 03/00 through T - 02/00		T - 01/45	T - 01/30	T - 01/15	T - 01/00	T - 00/45	T - 00/30
SB5	NG	47.3	0	600	600	600	600	600	600	600
	I	189.0	0	500	500	500	500	500	500	500
SB6	NG	87.2	0	1,100	1,100	1,100	1,100	1,100	1,100	1,100
	I	348.7	0	1,200	1,200	1,200	1,200	1,200	1,200	1,200
SB7	NG	113.0	0	1,390	1,390	1,390	1,390	1,390	1,390	1,390
	I	451.9	0	1,550	1,550	1,550	1,550	1,550	1,550	1,550
SB8	NG	87.9	0	1,100	1,100	1,100	1,100	1,100	1,100	1,100
	I	348.7	0	1,200	1,200	1,200	1,200	1,200	1,200	1,200
SB9	NG	47.3	0	600	600	600	600	600	600	600
	I	189.0	0	500	500	500	500	500	500	500
SB10	NG	17.8	0	200	200	200	200	200	200	200
	I	71.0	0	100	100	100	100	100	100	100

* Data to be provided to Onsite Monitoring Team.

TABLE 6-9

ONSITE MONITORING DOSE RATES (mR/Hr) *

(continued)

Location	I/NG	$\frac{Xu}{Q}$ m-2	T - 00/15	T + 00/00	T + 00/15	T + 00/30	T + 00/45	T + 01/00	T + 01/15
SB5	NG	47.3	600	600	20,000	20,000	20,000	20,000	20,000
	I	189.0	500	500	2,500	2,500	2,500	2,500	2,500
SB6	NG	87.2	1,100	1,100	32,000	32,000	32,000	32,000	32,000
	I	348.7	1,200	1,200	5,500	5,500	5,500	5,500	5,500
SB7	NG	113.0	1,390	1,390	49,000	49,000	49,000	49,000	49,000
	I	451.9	1,550	1,550	8,000	8,000	8,000	8,000	8,000
SB8	NG	87.9	1,100	1,100	32,000	32,000	32,000	32,000	32,000
	I	348.7	1,200	1,200	5,500	5,500	5,500	5,500	5,500
SB9	NG	47.3	600	600	20,000	20,000	20,000	20,000	20,000
	I	189.0	500	500	2,500	2,500	2,500	2,500	2,500
SB10	NG	17.8	200	200	7,700	7,700	7,700	7,700	7,700
	I	71.0	100	100	600	600	600	600	600

* Data to be provided to Onsite Monitoring Team.

TABLE 6-9

ON-SITE MONITORING DOSE RATES (mR/Hr) *

(continued)

Location	I/NG	$\frac{X_u}{Q}$ m-2	T + 01/30	T + 01/45	T + 02/00 through T + 03/00				
SB5	NG	47.3	20,000	20,000	0				
	I	189.0	19,000	19,000	0				
SB6	NG	87.2	32,000	32,000	0				
	I	348.7	36,300	36,300	0				
SB7	NG	113.0	49,000	49,000	0				
	I	451.9	47,000	47,000	0				
SB8	NG	87.9	32,000	32,000	0				
	I	348.7	36,300	36,300	0				
SB9	NG	47.3	20,000	20,000	0				
	I	189.0	19,000	19,000	0				
SB10	NG	17.8	7,700	7,700	0				
	I	71.0	6,000	6,000	0				

* Data to be provided to Onsite Monitoring Team.

TABLE 6-10
ZONE DOSE RATES *

Zone Location	Dose Rate (mr/hr)	Open Window (mr/hr)	Closed Window (mr/hr)	Incremental Dose Rate (mr/min)
A	50,000	OSH	50,000	800
B	30,000	OSH	30,000	500
C	20,000	OSH	20,000	300
D	8,000	24,000	8,000	130
E	4,000	6,000	4,000	65
F	2,000	2,500	2,000	35
G	1,200	5,000	1,200	20
H	750	3,700	750	15
I	400	2,000	400	10
J	200	300	200	5
K	75	100	75	1
L	25	25	25	5

* Data to be provided to Field Monitoring personnel when not at emergency monitoring locations.

FIGURE 6-2

Xe 133 EQUIV. RELEASE RATE vs. TIME

Ci/Sec

TIME

505A

REPRODUCED BY THE U.S. GOVERNMENT FROM THE NATIONAL ARCHIVES AT COLLEGE PARK, MARYLAND

FIGURE 6-3

GROSS IODINE RELEASE RATE vs. TIME

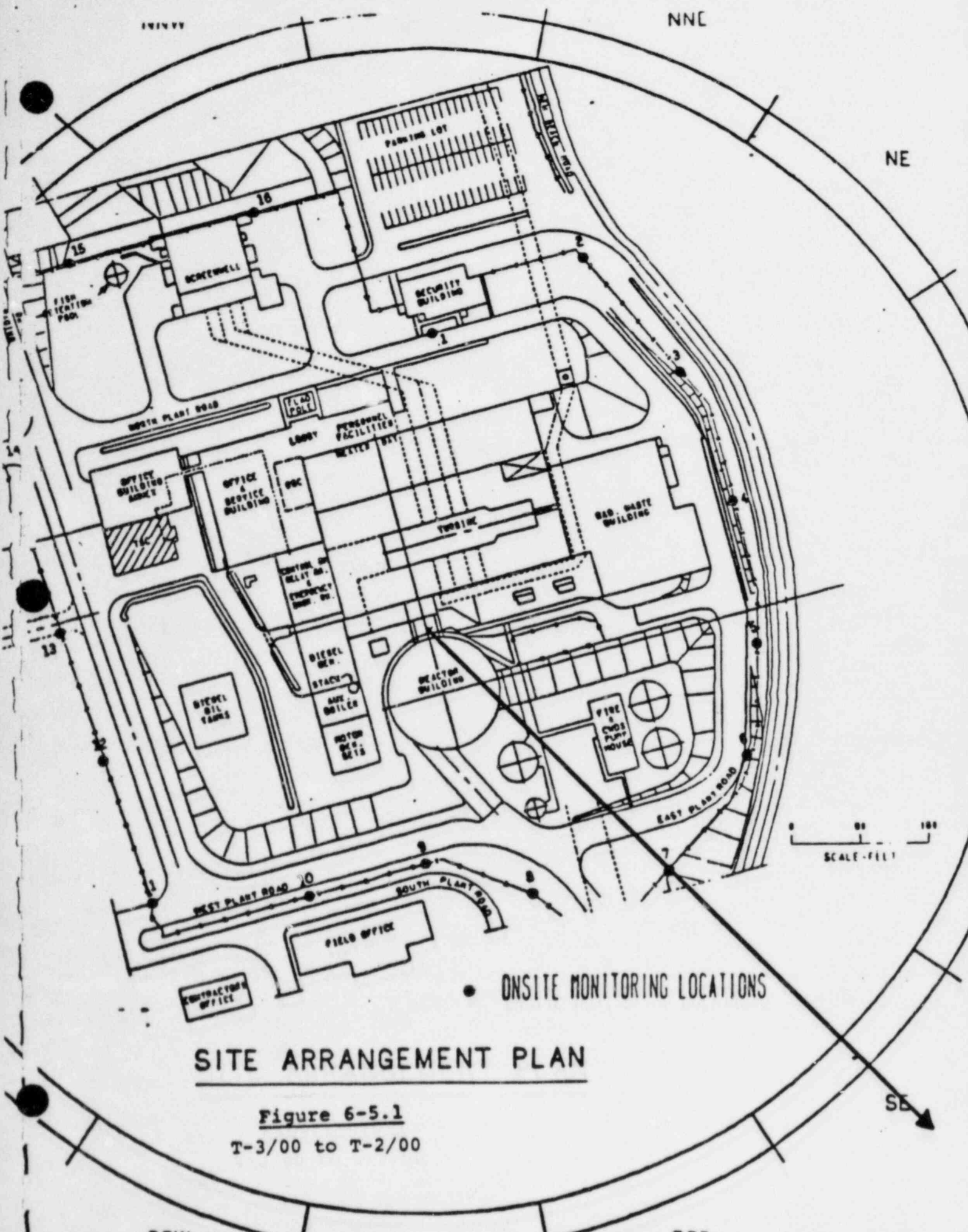
Ci/Sec

TIME

2/00 3/00 -1/00 -0/00 +1/00 +2/00 +3/00 +4/00

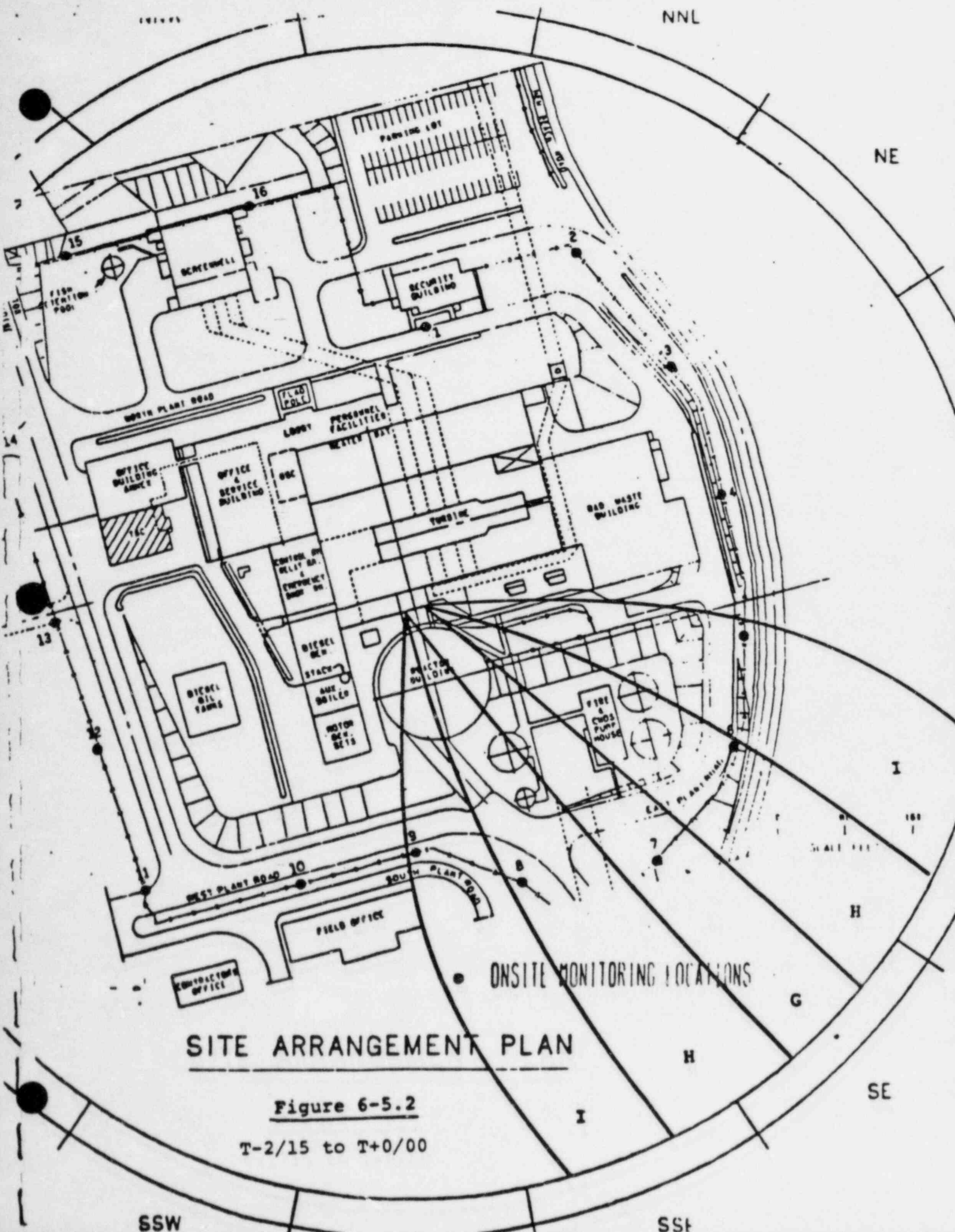
5 DR

K'E STURVO, & SONS CO. NEW YORK



SITE ARRANGEMENT PLAN

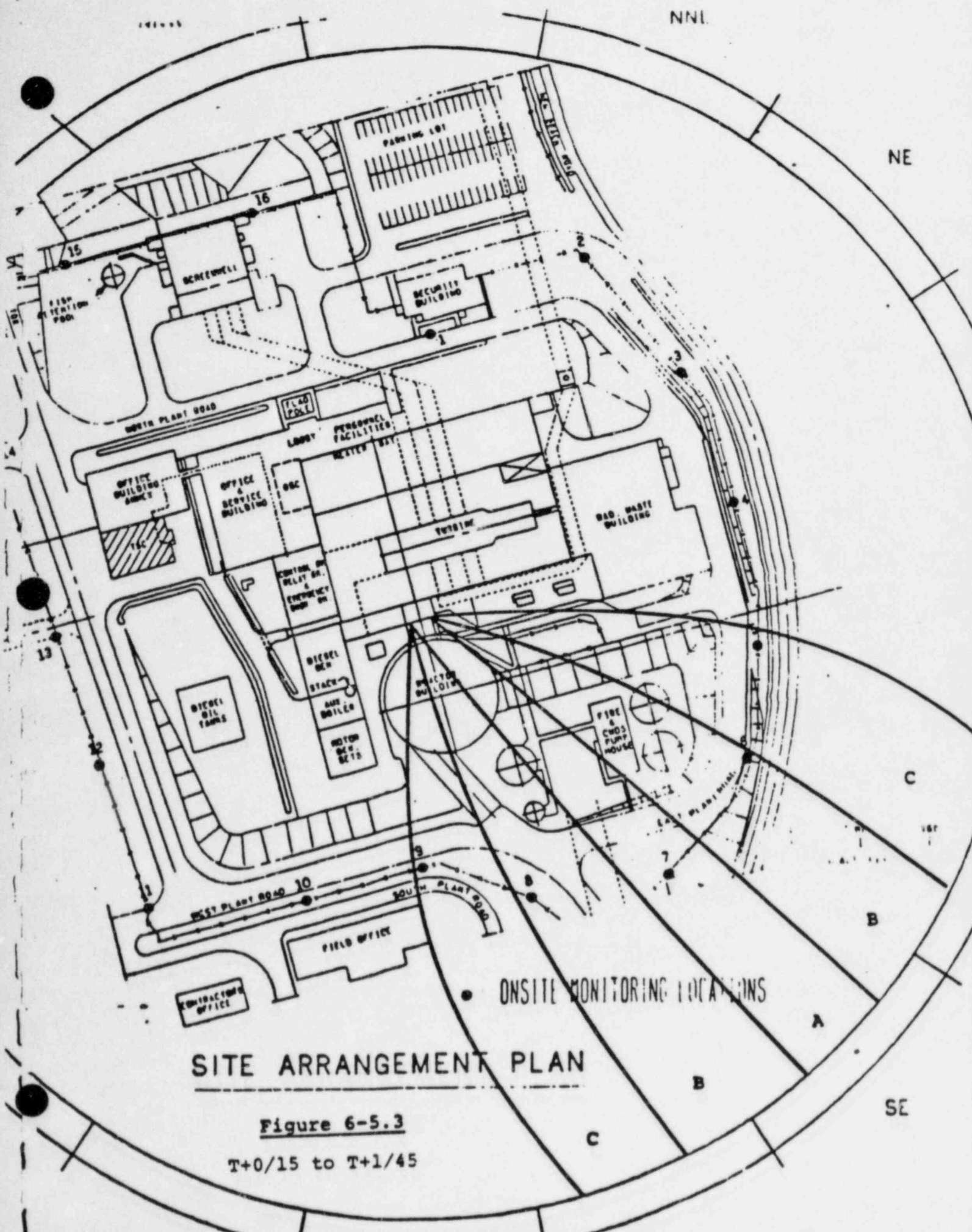
Figure 6-5.1
T-3/00 to T-2/00



SITE ARRANGEMENT PLAN

Figure 6-5.2

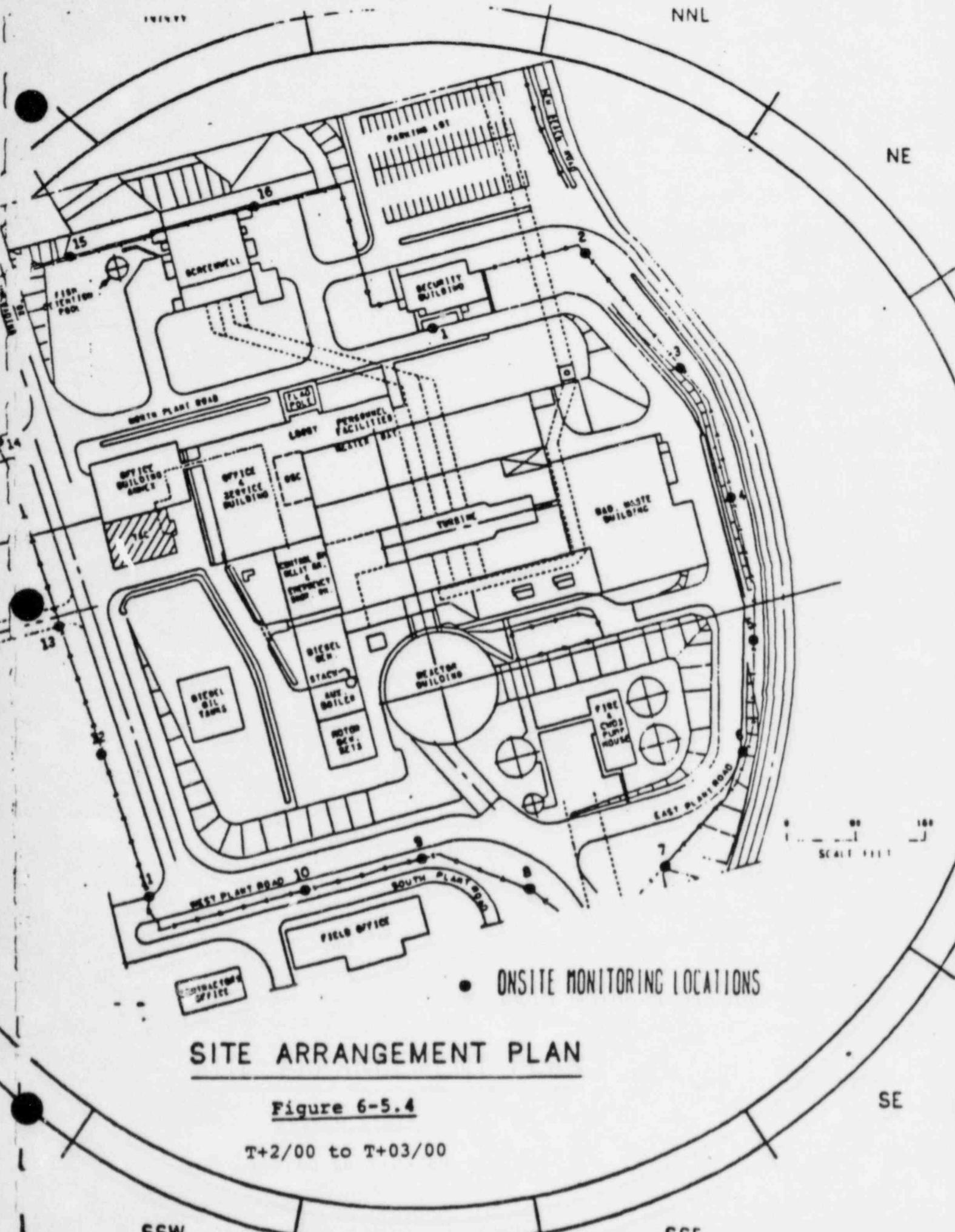
T-2/15 to T+0/00



SITE ARRANGEMENT PLAN

Figure 6-5.3

T+0/15 to T+1/45



SITE ARRANGEMENT PLAN

Figure 6-5.4

T+2/00 to T+03/00

● ONSITE MONITORING LOCATIONS

SSW

SSE

SE

NNL

NE

1 MILE RADIUS OF SNPS

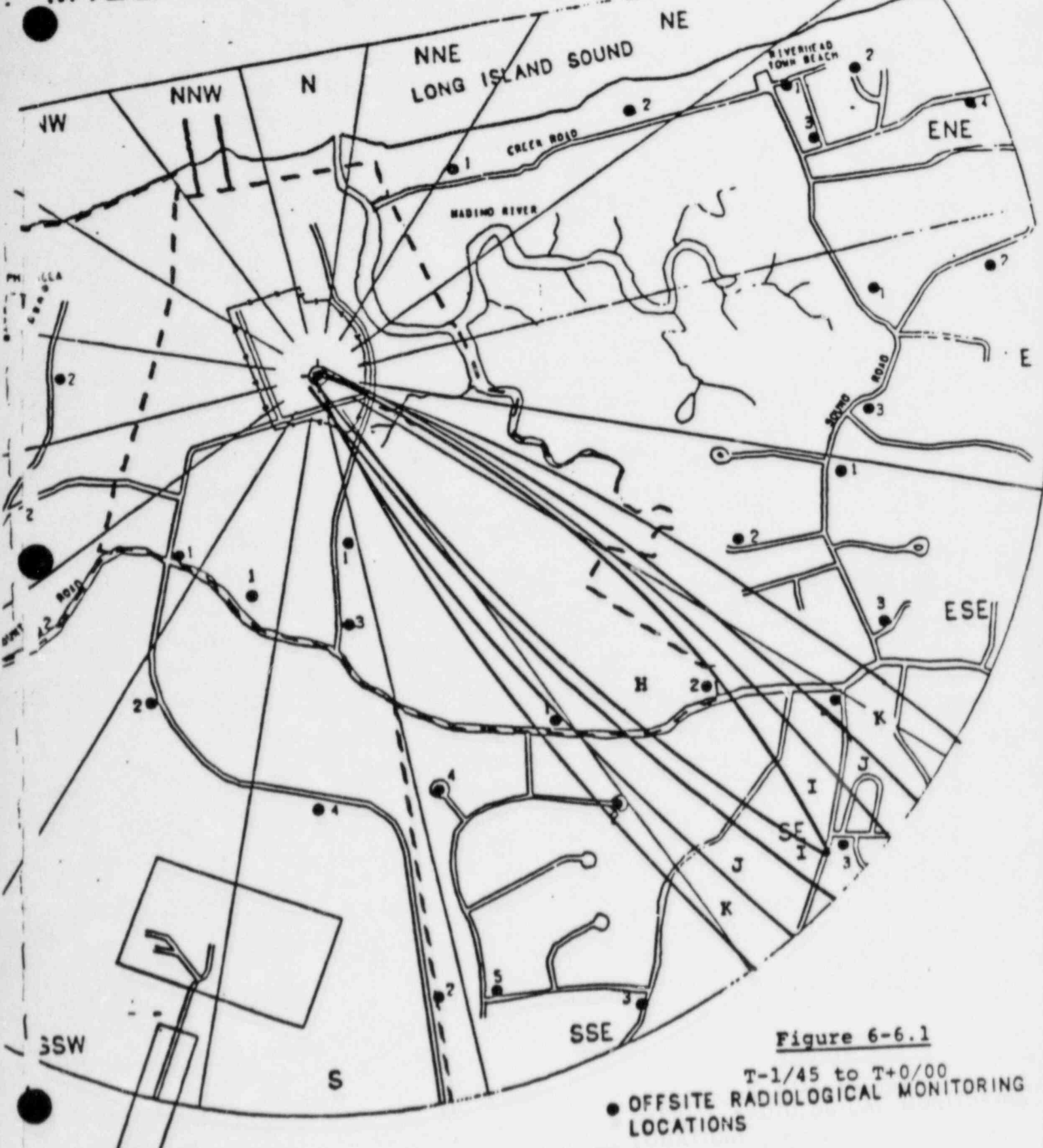


Figure 6-6.1

● OFFSITE RADIOLOGICAL MONITORING LOCATIONS

--- SECURITY FENCE

... PROPERTY LINE

0 200 500 1000 1500 2000 2500

SCALE IN FEET

- MILE RADIUS OF SNPS

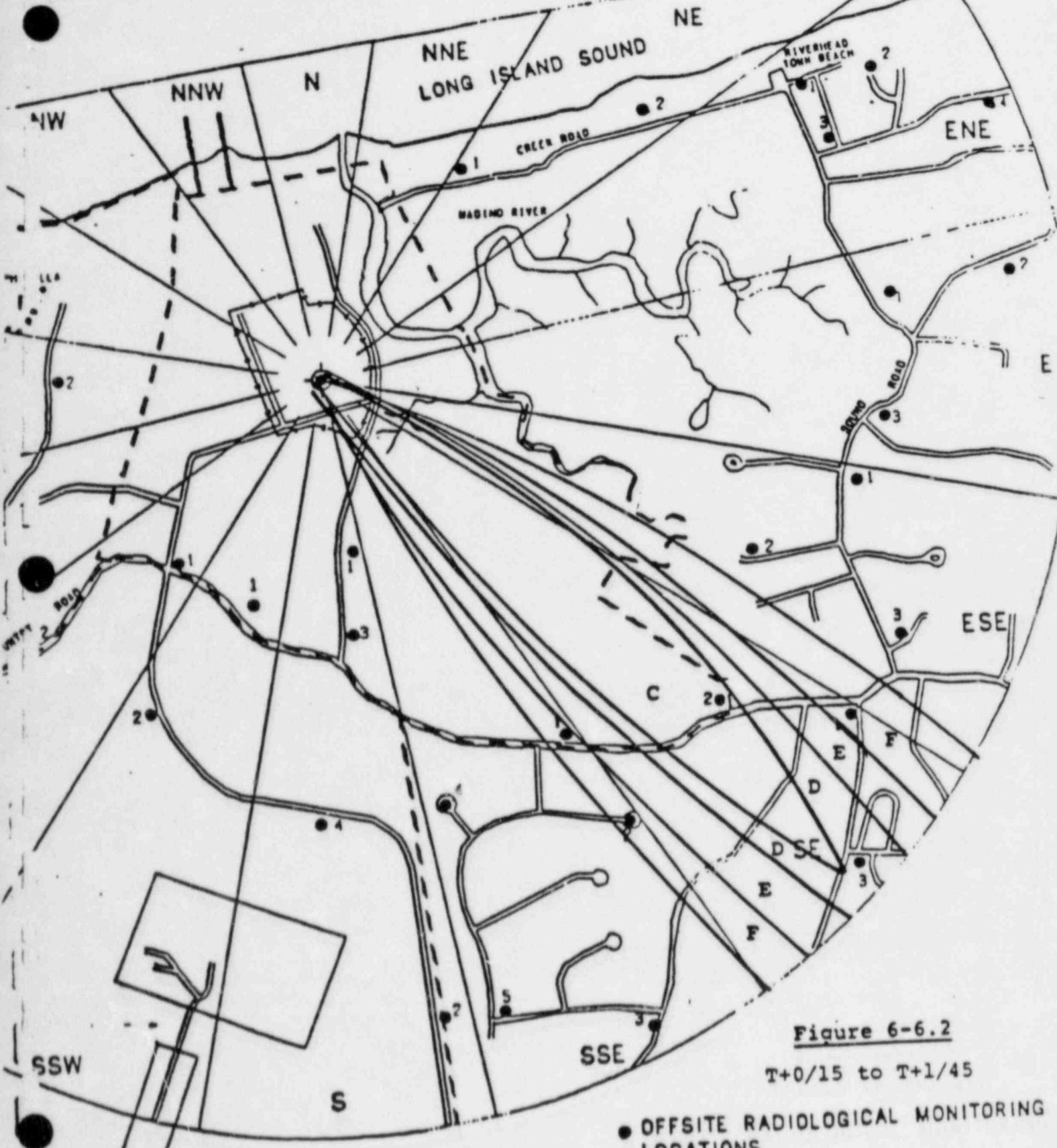


Figure 6-6.2

T+0/15 to T+1/45

● OFFSITE RADIOLOGICAL MONITORING LOCATIONS

- - - SECURITY FENCE

— — — PROPERTY LINE

0 200 500 1000 1500 2000 2500

SCALE IN FEET

-MILE RADIUS OF SNPS

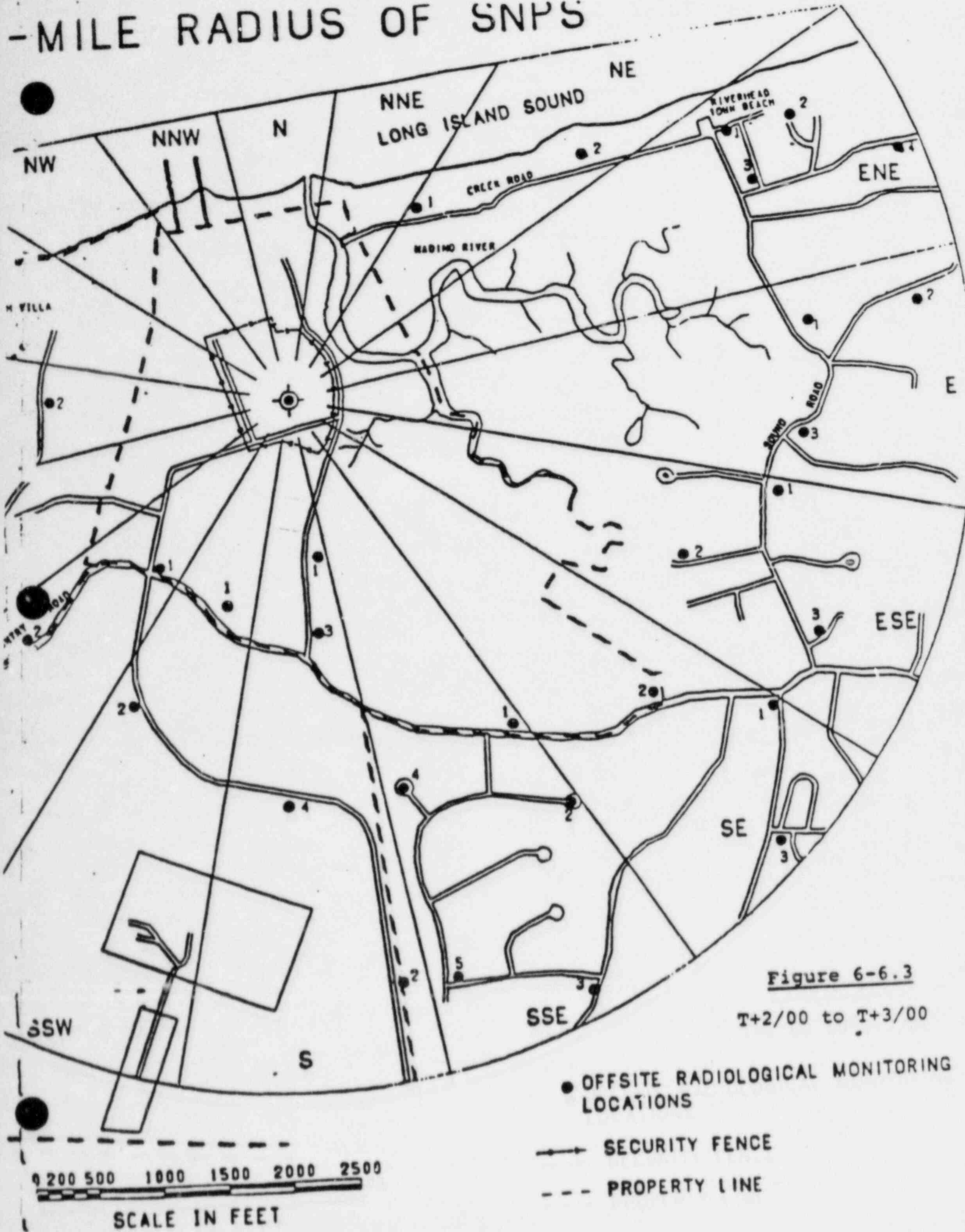


Figure 6-6.3

T+2/00 to T+3/00

● OFFSITE RADIOLOGICAL MONITORING LOCATIONS

— SECURITY FENCE

- - - PROPERTY LINE

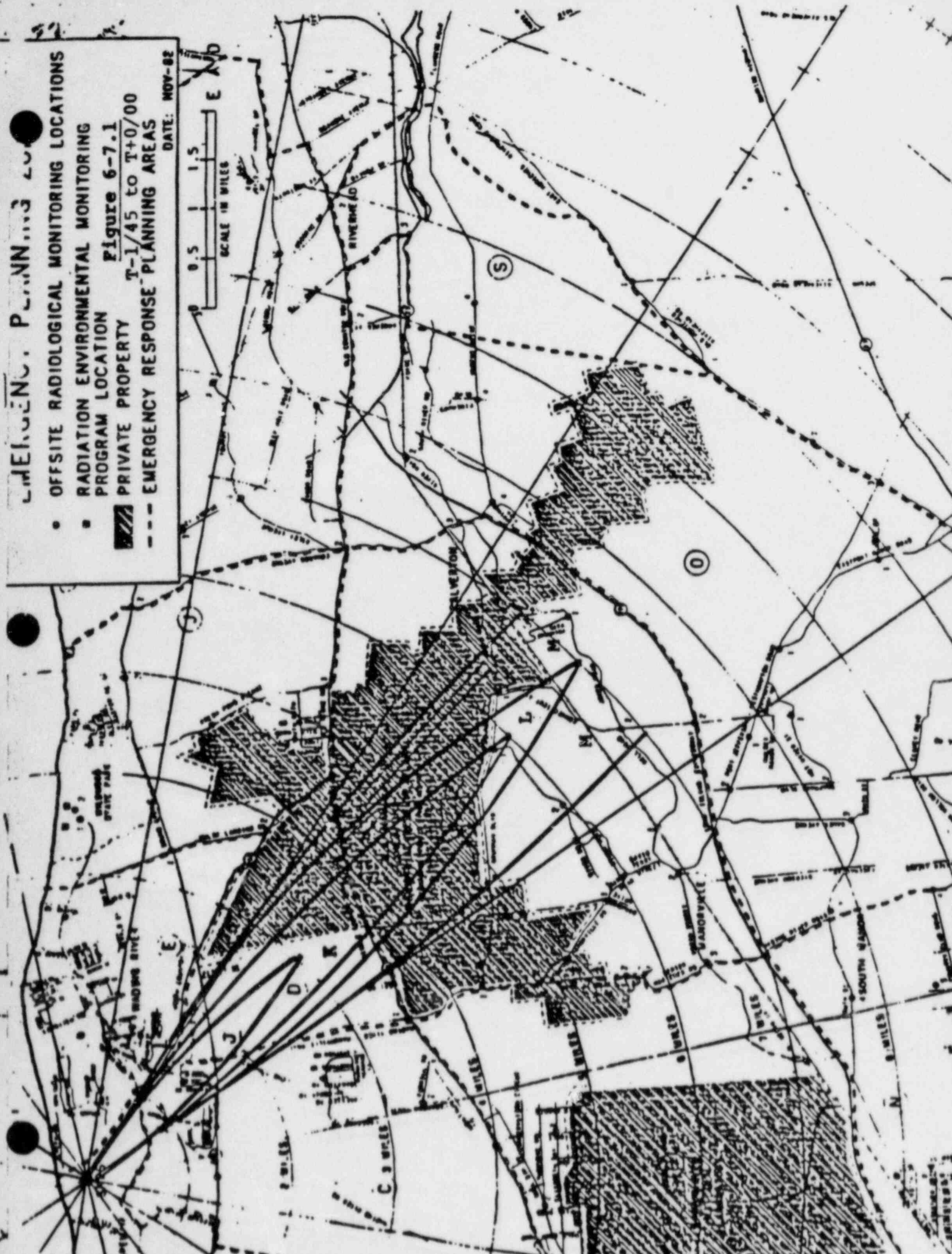
0 200 500 1000 1500 2000 2500
SCALE IN FEET

WHEATON, PLANNING

- OFFSITE RADIOLOGICAL MONITORING LOCATIONS
- RADIATION ENVIRONMENTAL MONITORING PROGRAM LOCATION
- ▨ PRIVATE PROPERTY T-1/45 TO T+0/00
- - - EMERGENCY RESPONSE PLANNING AREAS

DATE: NOV-82

SCALE IN MILES
0 0.5 1 1.5

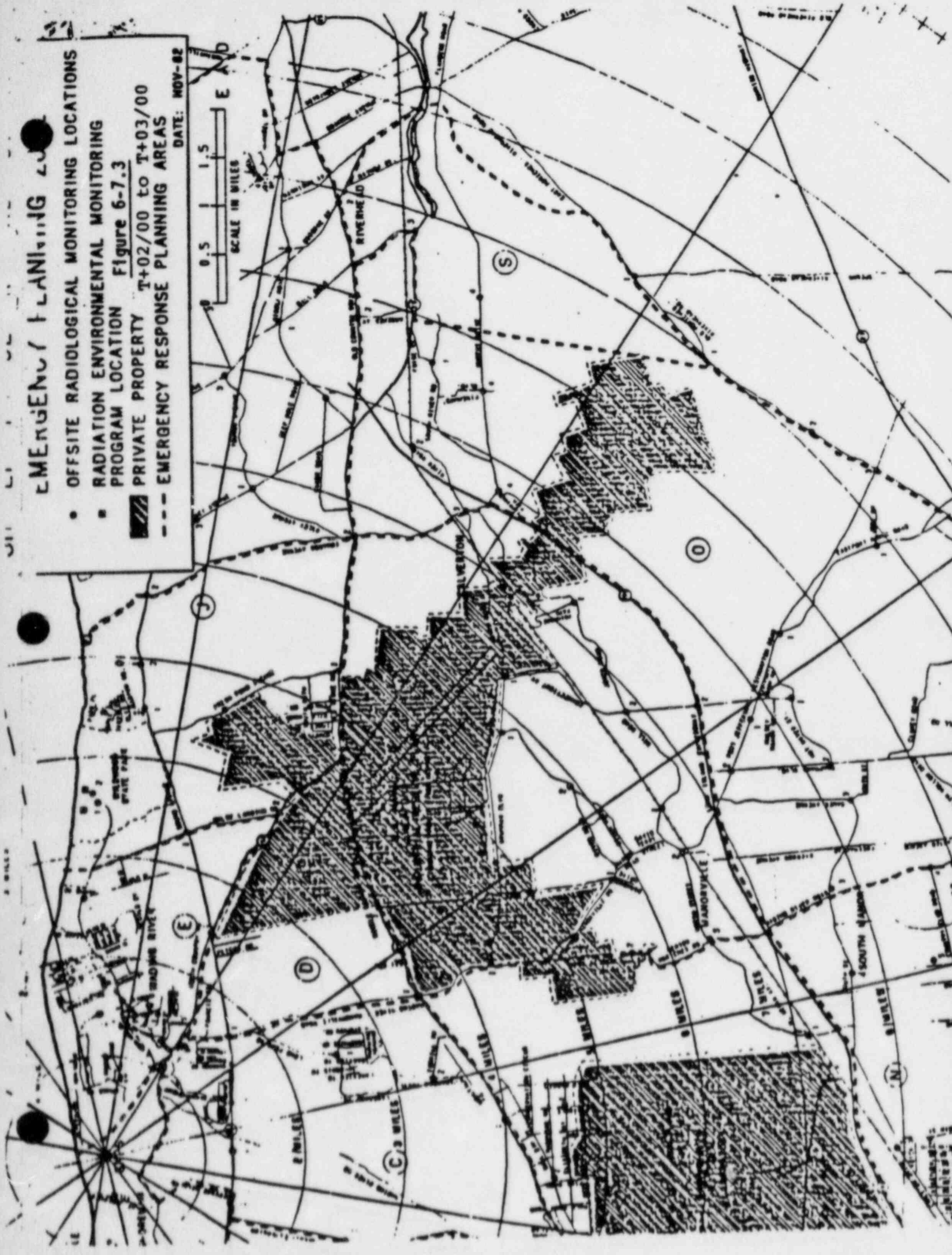


EMERGENCY PLANNING

- OFFSITE RADIOLOGICAL MONITORING LOCATIONS
- RADIATION ENVIRONMENTAL MONITORING PROGRAM LOCATION Figure 6-7.3
- ▨ PRIVATE PROPERTY T+02/00 TO T+03/00
- - - EMERGENCY RESPONSE PLANNING AREAS

DATE: NOV-82

SCALE IN MILES
0 0.5 1.5



7.0 CONTROLLER/OBSERVER INSTRUCTIONS

Exercise Controller/Observer Conduct

- A. Each Controller/Observer should be familiar with the following:
 - 1. The basic objectives of the exercise.
 - 2. The assumptions and precautions being taken.
 - 3. The exercise scenario, including the initiating events and the expected course of action to be taken.
 - 4. The various locations that will be involved and the specific items to be observed when at those locations.
- B. Controllers/Observers are assigned to various locations as indicated in this section.
- C. If Controllers are to provide information via "cue cards," (e.g., initiating events, instrument readings, monitoring results, etc.) to the drill participants, the information must be provided exactly as and when prescribed. Failure to provide information appropriately may invalidate the results of the drill.
- D. Controllers/Observers shall maintain an accurate chronological record of activities for the locations observed.

A Lead Exercise Controller has been designated for this drill. Those Controllers responsible for initiating an action should coordinate their action times closely with the Lead Controller. Provisions will be made available for necessary communications with this designated individual should scenario variations warrant.

- E. The Controller/Observer must remain cognizant of all the events and circumstances at their assigned locations. These should include, but not be limited to: Participants' actions and reactions, communications methods and record keeping, chain of command, equipment performance and the overall ability to interface with other emergency facilities.
- F. Controller/Observers should record all times (both start and finish), actions and comments or suggestions, as complete and precise as possible, in a chronological order.
- G. Significant items, both major deficiencies and strong performance points, should be highlighted upon occurrence and condensed for presentation in the subsequent critique.

Precautions and Limitations

This section provides information for all Drill Controllers and Observers related to the rules and guidelines to be followed throughout the conduct of this drill. Prior to initiation of the drill, a pre-drill briefing will be held to review the entire drill process with all the Drill Controllers and Observers identified in this section of this package.

- A. Should, at any time during the course of the conduct of this drill, an actual emergency situation arise, all activities and communications related to the drill will be suspended. It will be the responsibility of any Drill Controller or Observer that becomes aware of an actual emergency to suspend drill response in his/her immediate area and to inform the Lead Drill Controller of the situation. Upon notification of an actual emergency, the Lead Drill Controller will notify all other Controllers/Observers to suspend all drill activities.
- B. Should, at any time during the course of the conduct of this drill, a Drill Controller or Observer witness a drill participant undertake any action which would, in the opinion of the Controller/Observer, place either an individual or component in an unsafe condition, the Controller/Observer is responsible for intervening in the individuals actions and terminating the unsafe activity immediately. Upon termination of the activity, the Controller/Observer is responsible for contacting the Lead Drill Controller and informing him of the situation. The Lead Drill Controller will make a determination at that point whether to continue, place a temporary hold on, or terminate the drill.
- C. Pressurization of fire hoses, discharging of fire extinguishers, or initiation of any fire suppression systems, is not to occur in response to any simulated fires during this drill.
- D. Manipulation of any plant operating system, valves, breakers or controls in response to this drill are only to be simulated. There is to be no alteration of any plant operating equipment, systems or circuits during the response to this drill.
- E. All telephone communications, radio transmissions and public address announcements related to the drill must begin and end with the statement, "This is a drill." Should a Controller or Observer witness a drill participant not observing this practice, it is the Controllers/Observers responsibility to remind the individual of the need to follow this procedure.

- F. Any motor vehicle response to this drill whether it be ambulance, fire fighting equipment, security vehicles or field monitoring teams, should observe all normal motor vehicle operating laws including posted speed limits, stop lights/signs, one way streets, etc.
- G. Drill participants are to inject as much realism into the drill as is consistent with its safe performance, however, caution must be used to prevent overreaction.
- H. Care must be taken to assure that any non-participating individuals who may observe drill activities or overhear drill communications are not misled into believing that an actual emergency exists. Any Drill Controller or Observer who is aware of an individual or group of individuals in the immediate vicinity who may have become alarmed or confused about the situation, should approach that individual or group and explain the nature of the exercise and its intent.

Drill Evaluation

<u>Area Evaluated</u>	<u>Monitors Rating</u>					
A. <u>Activation and Response</u>						
1. Was the activation/initiation efficient and organized?	5	4	3	2	1	N.O.
2. Were personnel familiar with their responsibilities and respond in a timely manner?	5	4	3	2	1	N.O.
3. Was the person in charge clearly identifiable?	5	4	3	2	1	N.O.
4. Was the transfer of responsibilities accomplished effectively and efficiently?	5	4	3	2	1	N.O.
B. <u>Communications</u>						
1. Were all required and specified communications circuits operable?	5	4	3	2	1	N.O.
2. Were personnel familiar with communications available and the intended use of each?	5	4	3	2	1	N.O.
3. Were there sufficient personnel to conduct communications tasks?	5	4	3	2	1	N.O.
4. Was incoming information effectively and efficiently distributed to appropriate personnel?	5	4	3	2	1	N.O.
5. Were periodic updates made by the senior individual?	5	4	3	2	1	N.O.
6. Were accurate communication logs kept?	5	4	3	2	1	N.O.
7. Were the status boards properly utilized and updated?	5	4	3	2	1	N.O.
8. Did individuals in charge spend an inordinate amount of time on communications, such that their attention was diverted from the incident? (No = 5, Yes = 1)	5	4	3	2	1	N.O.

<u>Area Evaluated</u>	<u>Monitors Rating</u>
9. Was the correct private lines used and did non-emergency communications interfere with emergency transmissions? (No = 5, Yes = 1)	5 4 3 2 1 N.O.
10. Were logs used effectively by personnel to review past events and to trend data?	5 4 3 2 1 N.O.
11. Were appropriate communications techniques followed? (Phonetic alphabet, sign-on, sign-off, no abbreviations or acronyms)	5 4 3 2 1 N.O.
<u>C. Procedures</u>	
1. Were personnel generally familiar with the relevant procedures?	5 4 3 2 1 N.O.
2. Were procedures followed?	5 4 3 2 1 N.O.
3. Were personnel so overwhelmed with procedural requirements that they were distracted from the appropriate response?	5 4 3 2 1 N.O.
4. Were the procedures appropriate?	5 4 3 2 1 N.O.
<u>D. Direction and Control</u>	
1. Could the response be categorized as a team effort or a group of individual efforts? (Team = 5, Individuals = 1)	5 4 3 2 1 N.O.
2. Was there an effective mechanism for resolving differences of opinion regarding technical issues and actions to be taken?	5 4 3 2 1 N.O.
3. Was there excessive noise and loitering in the response facility? (No = 5, Yes = 1)	5 4 3 2 1 N.O.
<u>E. Material and Equipment</u>	
1. Was all the required material and equipment available?	5 4 3 2 1 N.O.

Area EvaluatedMonitors Rating

- | | | | | | | |
|--|---|---|---|---|---|------|
| 2. Did personnel check to ensure that all equipment was available and functional early in the activation process? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. If equipment was inoperable or failed in use, were appropriate actions taken to resolve the deficiency? (spares/ backup equipment) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were there any situations in which the lack of equipment, or a lack of ability to operate the equipment, prevented personnel from completing their tasks? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were there any situations in which additional equipment or materials, or different types of equipment could have made the activity more effective? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 6. Could the area support the personnel assigned to it? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 7. Were there sufficient resource materials readily available to support the conduct of the response? (maps, reference documents, copies of plans and procedures, data sheets, etc.) | 5 | 4 | 3 | 2 | 1 | N.O. |

F. Protective Measures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were appropriate protective measures implemented for response personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel properly wear protective clothing and dosimetry? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were appropriate radiological practices observed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were field personnel kept apprised of radiological conditions? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were response activities conducted with regard for personnel safety, consistent with the need to complete the activity? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Monitors Rating

G. Access Control

- | | | | | | | |
|---|---|---|---|---|---|------|
| 1. Was an appropriate access control posture established? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Was there an identifiable system implemented that effectively identified authorized personnel within the facility? | 5 | 4 | 3 | 2 | 1 | N.O. |

H. Summary

1. Describe any problems noted by the area being evaluated. Provide a description of the problem, its outcome or effect and any recommended corrective courses of action to alleviate or correct the deficiency. Any of the previously listed areas that receive an evaluation grade of 2 or 1 require a written explanation on this page.

Evaluators Signature / Date

Evaluation Standards

- "5" Excellent - Personnel and equipment always functioned without error. There were no problems encountered and all personnel and equipment functioned at a superior level.
 - "4" Good - Personnel and equipment generally performed as expected. Any errors or problems were minor and did not detract from completion of the task.
 - "3" Satisfactory - Personnel and equipment performed at an acceptable level. Errors noted were not severe and completion of the task was achieved within acceptable limits.
 - "2" Poor - Personnel and equipment generally performed below expectations. There were deficiencies of a significant nature. The areas ability to carry out its function was diminished.
 - "1" Failure - Personnel and equipment consistently failed to perform as required. Acceptable completion of the task was not achieved.
- N.O. Not Observed

DRILL PARTICIPANT COMMENT SHEET

Now that you've participated in this LERO drill we would like you to spend a moment and provide us with any comments or concerns related to your ability to carry out your LERO tasks. If you can identify a particular problem that you encountered in implementing your responsibilities please indicate below, under the appropriate heading, the nature of the problem and give a suggested solution, if possible.

Procedural:

Equipment/Facility:

Personnel:

Training:

Scenario:

LERO Job Title

CONTROLLER/OBSERVER LOCATIONS

1. Lead Drill Controller _____ R. Varley
Local EOC (Management/Roving)
2. Drill Controller #1 _____ G. Krieger
Local EOC, Radiological/Protective Actions
3. Drill Controller #2 _____ N. Molter
Local EOC, Transportation
4. Drill Controller #3 _____ C. Heitz
Local EOC, Traffic Guidance
5. Drill Controller #4 _____ C. Garcia
Local EOC, Communications
6. Drill Controller #5 _____ D. Berres
Local EOC, Roving
7. Drill Controller #6 _____ C. Starkman
ENC

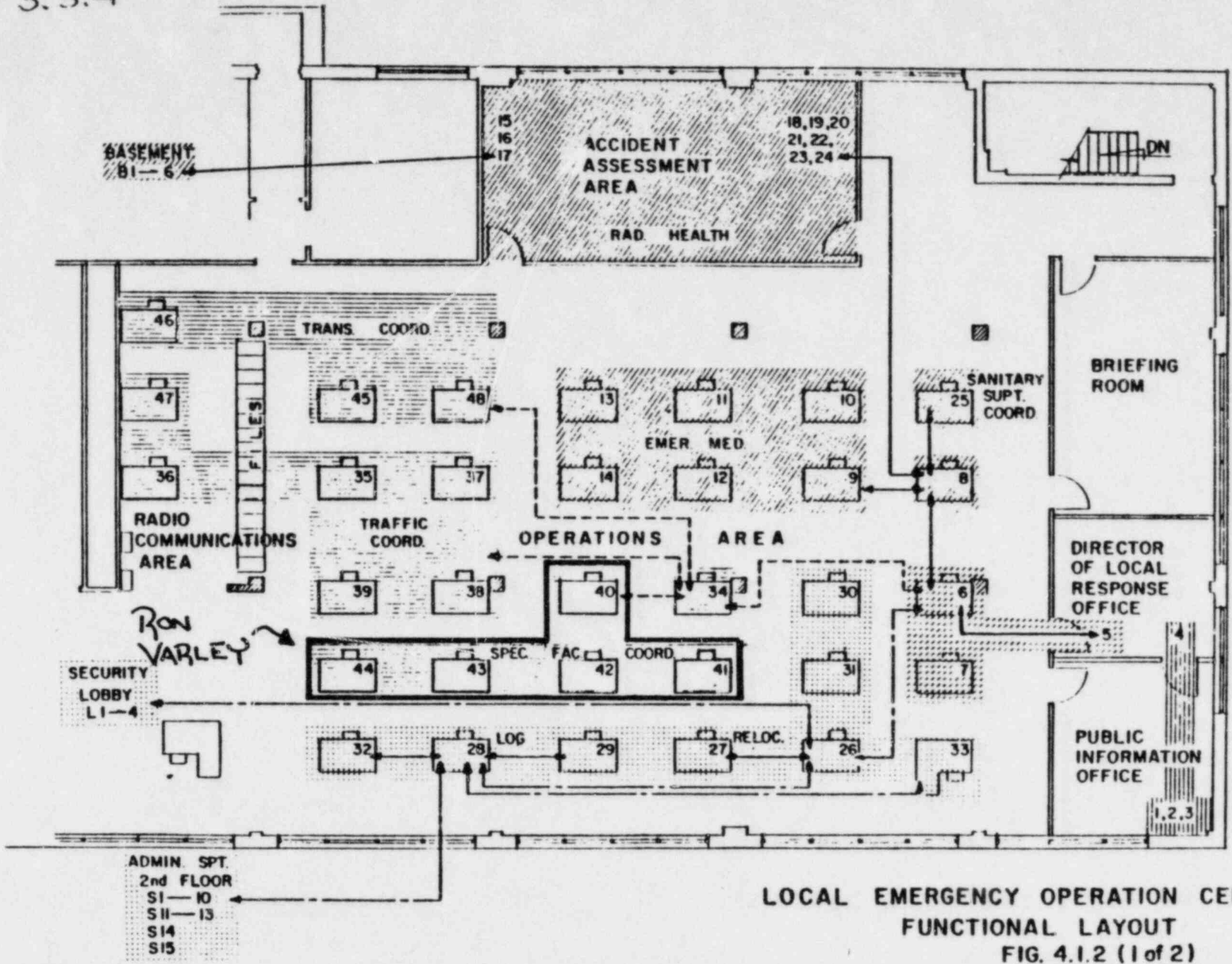
EOC/ENC DRILL
CONTROLLERS KEY EVENTS TIME LINE

<u>REAL TIME</u>	<u>SCENARIO TIME</u>	<u>DESCRIPTION OF EVENTS</u>
1700-1745	--	Drill participants' evening meal
1745-1800	--	Show ECC activation videotape in cafeteria
1800-1815	--	Assemble EOC staff in the facility and conduct pre-drill briefing
1815-1830	--	EOC staff log in on status board and sign drill attendance sheets
1830-1845	T = -2/18 thru T = 0/00	EOC staff in place at their respective desks. Drill controllers discuss how individuals would have been notified and mobilized. (REF: OPIP-3.3.2 & 3.3.3)
1845-1900	T = 0/00	Drill controllers discuss arrival of EOC staff at the facility and the EOC Activation Proces. (REF: OPIP-4.1.1) EOC management conduct arrival meeting in director's office.
1900-1905	T = 0/00 thru T = 0/00	Director of Local Response conducts first EOC staff briefing covering events leading up to EOC activation.
1905	T = 0/05	Communicator provided with 0/05 communication data form. (Carlos Garcia)
1905-1925	T = 0/05	Drill controllers discuss with their respective EOC staff groups activities related to their job functions at an alert.
1910-1920	T = 0/10	Based upon 0/05 communication. Director of Local Response conducts a management meeting to discuss LERO course of actions.
1920-1925	--	Director of Local Response conducts second EOC staff briefing detailing LERO response to current accident events.

<u>REAL TIME</u>	<u>SCENARIO TUNE</u>	<u>DESCRIPTION OF EVENTS</u>
1925-2030	T = 0/05 thru T = 1/25	EOC staff walks thru actions as outlined in OPIP's based upon directions given by EOC management in response to current accident events.
2030	T = 1/25	Communicator provided with 1/25 communication data form (Carlos Garcia)
2030-2040	--	Based upon 1/25 communication. Director of Local Response conducts a management meeting to discuss LERO course of actions.
2040-2045	--	Director of Local Response conducts third EOC staff briefing detailing LERO response to current accident events.
2045-2125	T = 1/25 thru 2/15	EOC staff walks thru actions as outlined in OPIP's based upon directions given by EOC management in response to current accident events.
2125	T = 2/15	Communicator provided with 2/15 communication data form (Carlos Garcia)
2125-2135	--	Based upon 2/15 communication, Director of Local Response conducts a management meeting to discuss LERO course of actions.
2135-2140	--	Director of Local Response conducts fourth EOC staff briefing detailing LERO response to current accident events.
2140-2210	T = 2/15 thru 2/45	EOC staff walks thru actions as outlined in OPIP's based upon directions given by EOC management in response to current accident events.
2210	T = 2/45	Communicator provided with 2/45 communication data form (Carlos Garcia)
2210-2220	--	Based upon 2/45 communication, Director of Local Response conducts a management meeting to discuss LERO course of actions.

<u>REAL TIME</u>	<u>SCENARIO TUNE</u>	<u>DESCRIPTION OF EVENTS</u>
2230	T = 3/05	Communicator provided with 3/05 communication data form
2230-2240	--	EOC staff and management walk thru actions related to de-escalation of an emergency. EOC management meets to discuss re-entry/recovery activities.
2240	--	Drill terminated
2240-2245	--	EOC staff break. Pass out caps and patches. Drill controllers pre-critique meeting.
2245-2300	--	Critique by controllers
2300	--	Drill participants comment session

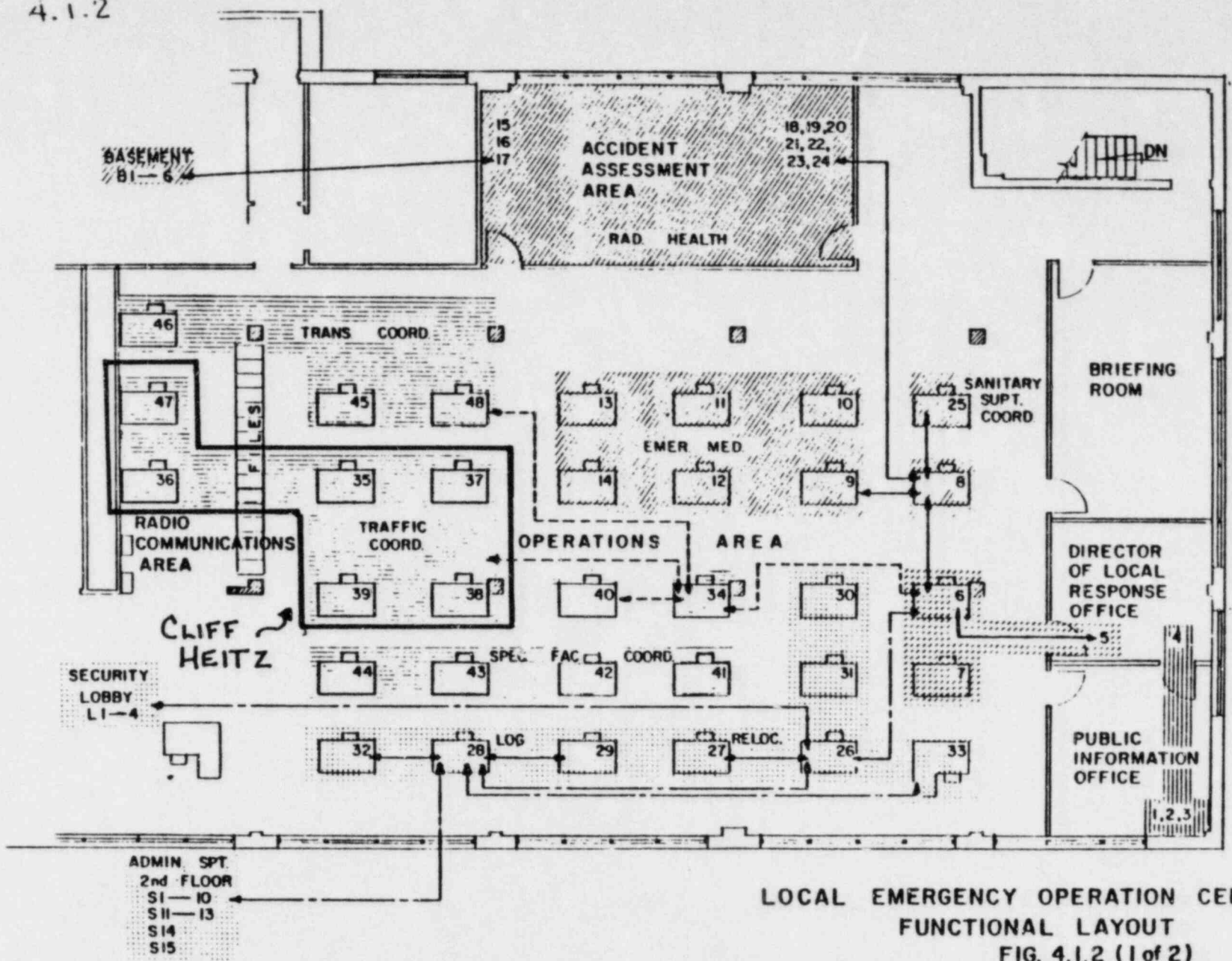
APPLICABLE PROCEDURES
 OPIP- 3.6.5
 4.1.2
 3.3.4



LOCAL EMERGENCY OPERATION CENTER
 FUNCTIONAL LAYOUT
 FIG. 4.1.2 (1 of 2)

REV. C

APPLICABLE PROCEDURES
 OPIP - 3.3.2
 3.3.3
 3.6.3
 4.1.2

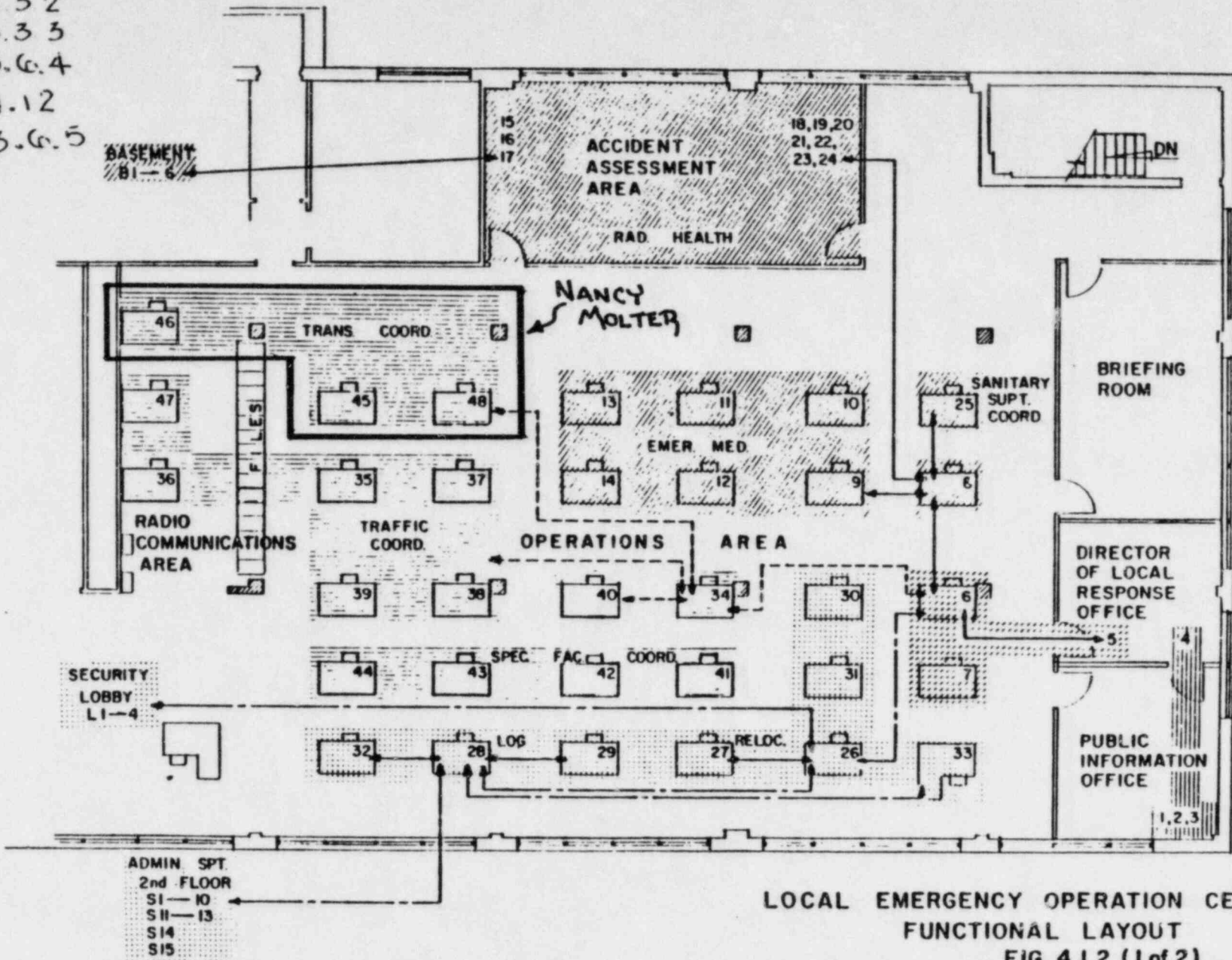


LOCAL EMERGENCY OPERATION CENTER
 FUNCTIONAL LAYOUT
 FIG. 4.1.2 (1 of 2)

REV. 0

APPLICABLE PROCEDURES

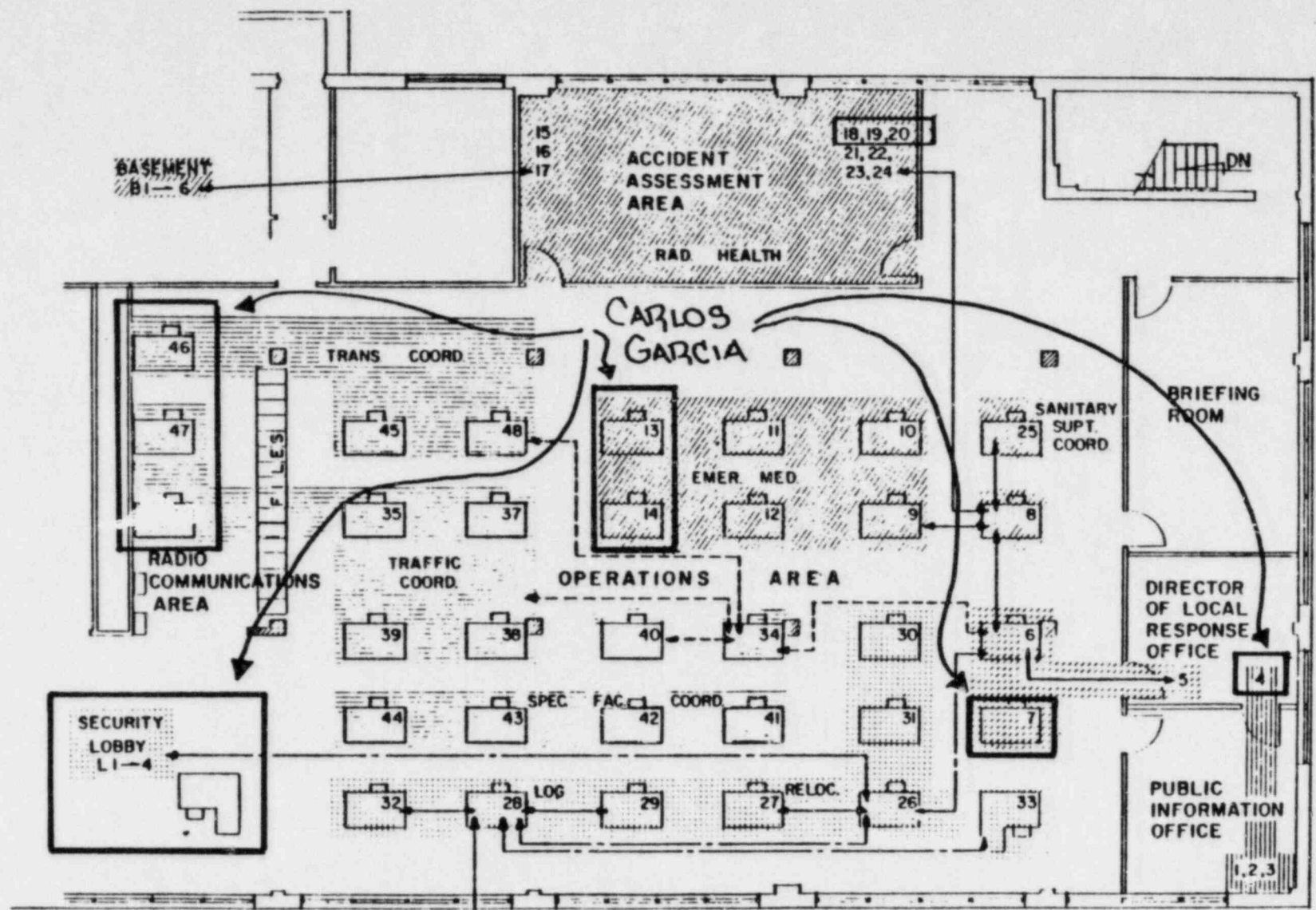
- CPDP - 3.3.2
- 3.3.3
- 3.6.4
- 4.1.2
- 3.6.5



LOCAL EMERGENCY OPERATION CENTER
 FUNCTIONAL LAYOUT
 FIG. 4.1.2 (1 of 2)

REV. 0

APPLY TO THE RE...
 OPIP- 4.1.2

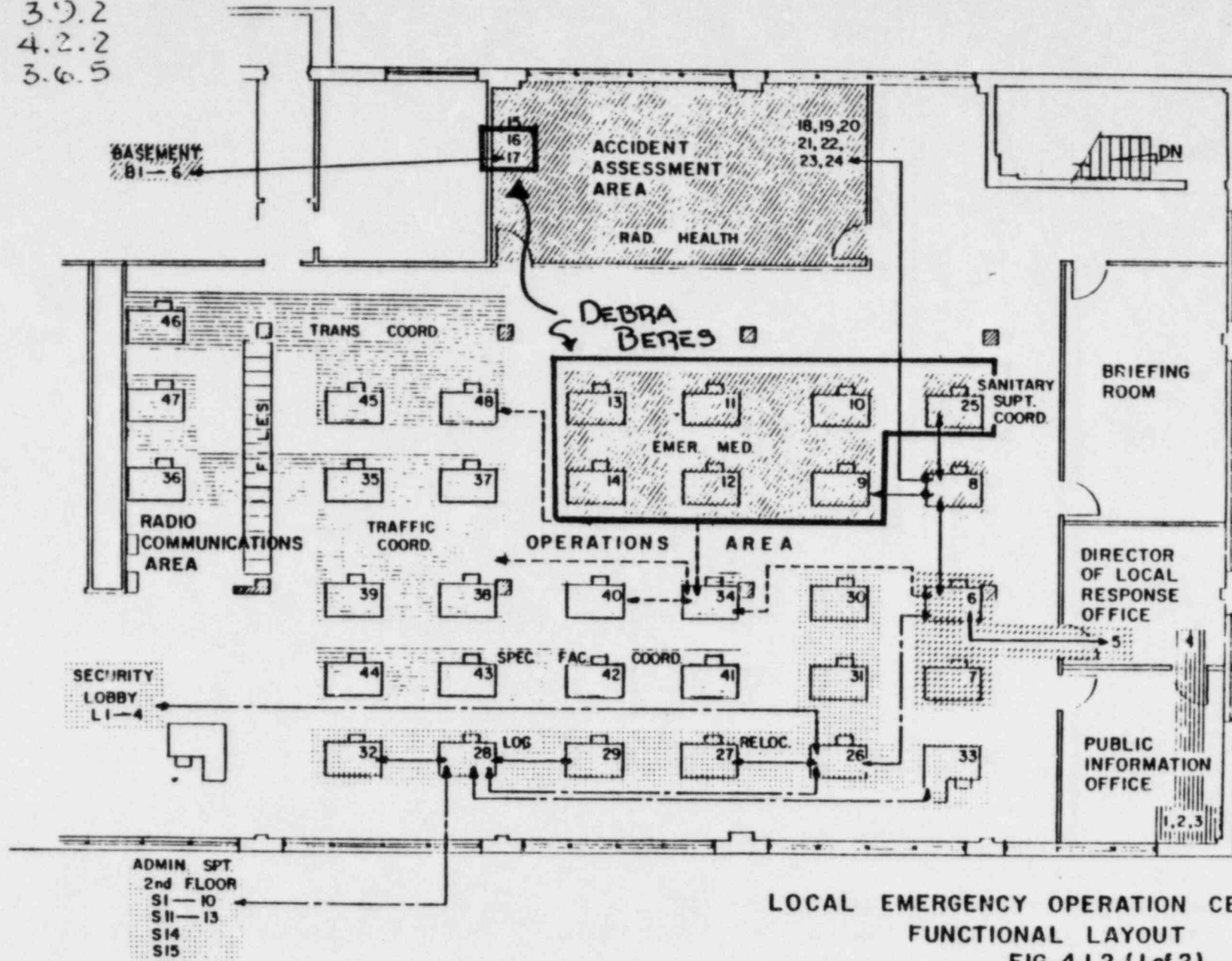


LOCAL EMERGENCY OPERATION CENTER
 FUNCTIONAL LAYOUT
 FIG. 4.1.2 (1 of 2)

REV. C

APPLICABLE PROCEDURES

- OPIP - 3.6.2
- 3.7.1
- 4.1.2
- 3.7.2
- 4.2.2
- 3.6.5

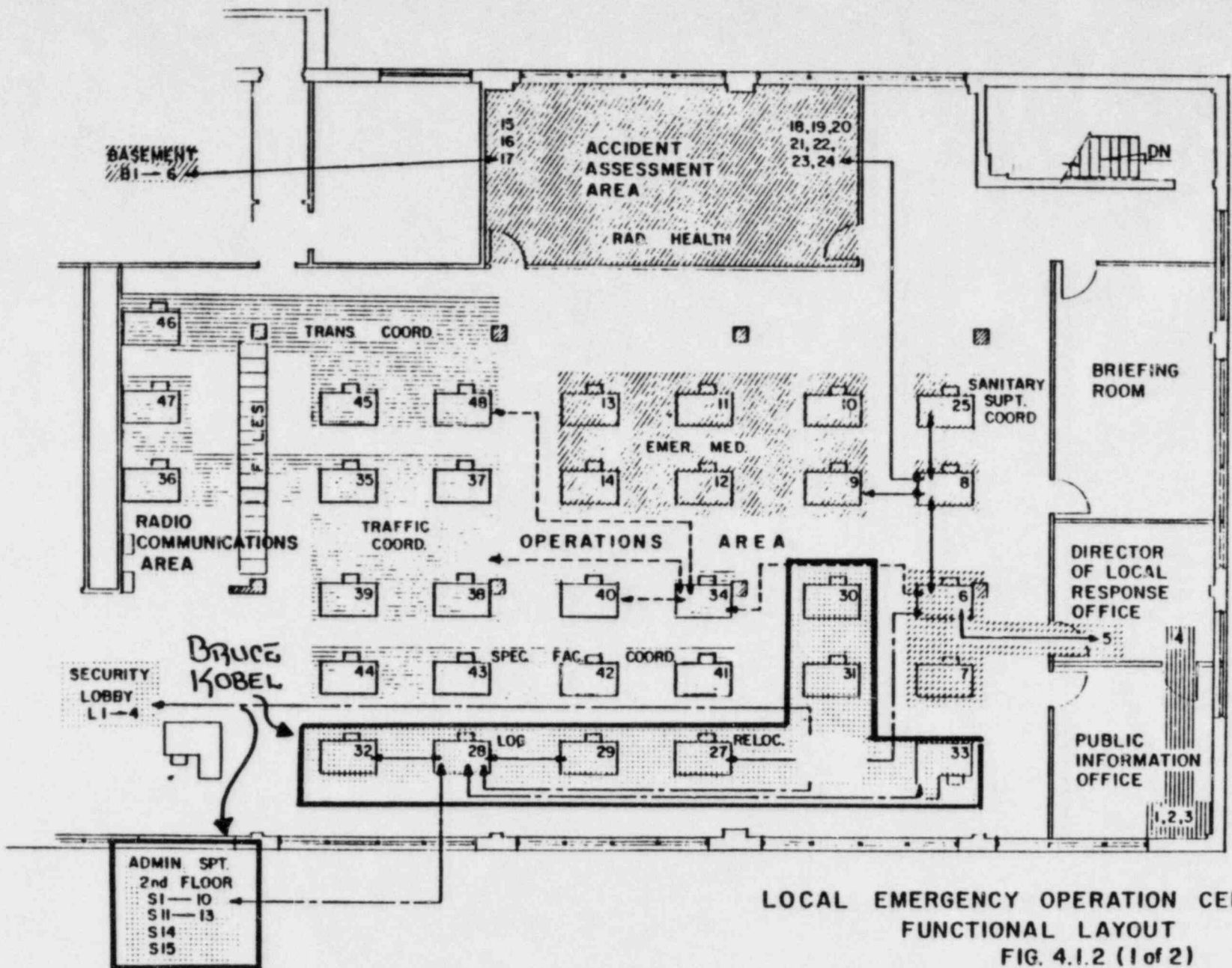


LOCAL EMERGENCY OPERATION CENTER
FUNCTIONAL LAYOUT
FIG. 4.1.2 (1 of 2)

REV. 0

APPLICABLE PROCEDURES

CRIP - 4.1.2
3.7.1
4.2.1



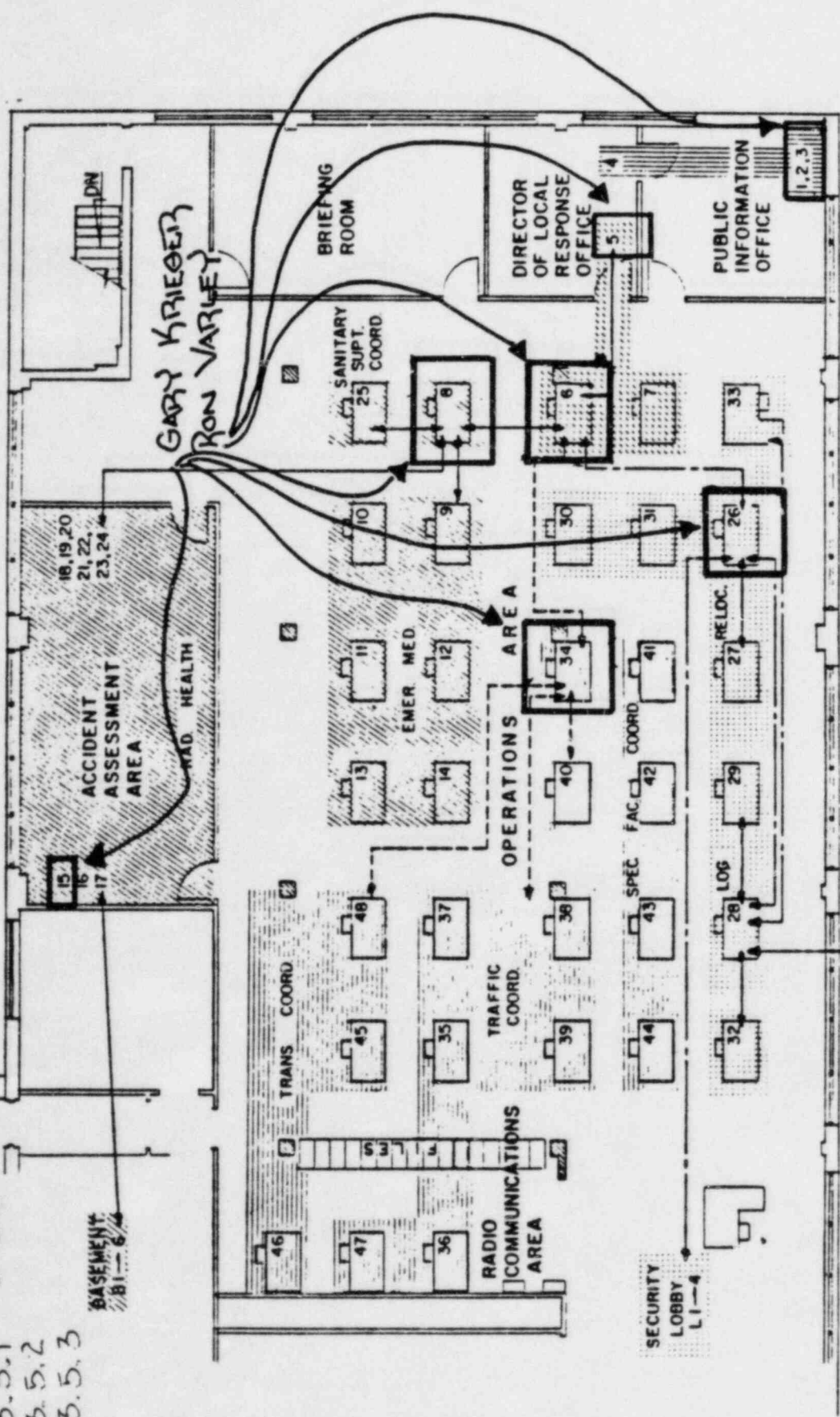
LOCAL EMERGENCY OPERATION CENTER
FUNCTIONAL LAYOUT
FIG. 4.1.2 (1 of 2)

REV. 0

APPLICABLE
 CIP- 2.1.1
 3.3.2
 3.3.3
 3.3.4
 3.5.1
 3.5.2
 3.5.3

PROCEDURES
 3.6.1
 3.6.3
 3.6.4
 3.6.5
 3.6.6

3.10.1
 4.1.1
 4.1.2



LOCAL EMERGENCY OPERATION CENTER
 FUNCTIONAL LAYOUT
 FIG. 4.1.2 (1 of 2)

LOCAL EMERGENCY OPERATION CENTER
 FUNCTIONAL LAYOUT
 FIGURE 4.1.2 (2 of 2)

- | | |
|---|---|
| 1. Coordinator of Public Information | 30. Administrative Support |
| 2. Public Information Support Staff | 31. Administrative Support |
| 3. Public Information Support Staff | 32. Administrative Support |
| 4. <i>IND. RELATIONS COORD.</i> | 33. Administrative Support |
| 5. Director of Local Response | 34. Evacuation Coordinator |
| 6. Manager of Local Response | 35. Traffic Control Coordinator |
| 7. Lead Communicator | 36. Communicator-Traffic Control |
| 8. Health Services Coordinator | 37. Traffic Control Point Coordinator |
| 9. Emergency Medical/Public Service Coordinator | 38. Road Logistics Coordinator |
| 10. Hospital Coordinator | 39. Evacuation Route Coordinator |
| 11. Public Service Liaison | 40. Special Facilities Evacuation Coordinator |
| 12. Ambulance Coordinator | 41. Public Schools Coordinator |
| 13. <i>MEDICAL/PUBLIC SERVICE COMM.</i> | 42. Private Schools Coordinator |
| 14. <i>MEDICAL/PUBLIC SERVICE COMM.</i> | 43. Health Facilities Coordinator |
| 15. Radiation Health Coordinator | 44. Home Coordinator |
| 16. Dosimetry Coordinator | 45. Transportation Support Coordinator |
| 17. Decontamination Coordinator | 46. Communicator-Transportation Support |
| 18. Communicator | 47. Communicator-Traffic Control |
| 19. Communicator | 48. Bus Coordinator |
| 20. Communicator | B 1-6 Decontamination Workers |
| 21. Environmental Assessment Coordinator | S 1-10 Administrative Support |
| 22. Dose Assessment Staff | S 11-13 Materials Purchasing Personnel |
| 23. Dose Assessment Staff | S 14 Maintenance Representative |
| 24. Environmental Assessment Coordinator | S 15 N.Y. Telephone Representative |
| 25. Sanitary Support Coordinator | L 2-4 Security Personnel |
| 26. Support Services Coordinator | |
| 27. Relocation Center Coordinator | |
| 28. Logistics Support Coordinator | |
| 29. Administrative Support | |

8.0 GLOSSARY

A - Glossary of Terms

Brief definitions of many of the terms used in this plan are given here. For more exact and detailed information, standard reference works can be consulted.

Absorbed Dose: The quantity of energy absorbed from ionization per unit mass of tissue. The rad is the unit of absorbed dose.

Airborne Radioactive Material: Any radioactive material dispersed in the air in the form of dusts, fumes, mists, vapors or gases.

Alpha Particle: Positively charged particles identical with the nuclei of helium atoms. They penetrate tissues to usually less than 0.1 mm (1/250 inch), but create dense ionization and heavy absorbed doses along these short tracks.

Background Radiation: Radiation arising from material other than the one directly under consideration. Cosmic rays and natural radioactivity are always present, and man-made sources may also contribute to the background radiation level.

Beta Particles: Electrons ejected from the nuclei of atoms; extremely tiny bits of matter traveling at nearly the speed of light. Their range in air can be several feet. In heavier material, such as the human body, they expend their energy within about 2 mm (1/10 inch).

Contamination (Radioactive): Deposition of radioactive material in any place where it may harm persons, spoil experiments or make products of equipment unsuitable or unsafe for some specific use. The presence of unwanted radioactive matter.

Decay: Disintegration of the nucleus of the radionuclide in a radioactive process.

Decay Product: A nuclide, either radioactive or stable, resulting from the disintegration of a radioactive material.

Decontamination: The reduction or removal of contaminating radioactive material from a structure, area, object or person.

Dose: The quantity of energy absorbed from ionization per unit mass of tissue. The rad is the unit of absorbed dose.

Dose Equivalent: A quantity that expresses all types of nuclear radiation on a common scale to indicate relative biological effects. The rem is the unit of dose equivalent.

Dose Rate: Absorbed dose delivered per unit time, as rads per seconds or rads per hour.

Dosimeter: A device that measures radiation dose, such as a film badge or ionization chamber.

Emergency Director: A highly trained individual totally responsible for directing onsite actions during an emergency at the nuclear plant site. Position occupied by the Shift Supervisor until relieved by a higher ranking individual.

Emergency Operations Facility: A facility operated by the licensee for the purpose of evaluating and controlling emergency situations and coordinating emergency responses.

Emergency Planning Zone (EPZ): The area surrounding the nuclear plant site for which planning has been done to assure that prompt and effective actions can be taken to protect the public in the event of a radiological incident. The EPZ is usually a radius of about ten (10) miles for the plume exposure pathway and a radius of about fifty (50) miles for the ingestion exposure pathway.

Evacuation: The process of removing people from a hazardous or potentially hazardous area to a safe area.

Evacuation Time Estimate: The roadway travel time required to leave the plume exposure emergency planning zone after mobilization has been completed.

Exposure: A measure of the ionization produced in air by X-ray or gamma radiation. The roentgen (R) is the unit of exposure. The term "dose" sometimes used interchangeably with exposure, actually refers to absorbed radiation.

Film Badge: A light-tight package of photographic film worn like a badge by workers in the nuclear industry or research, used to measure possible exposure to ionizing radiation. The absorbed dose can be calculated by the degree of film darkening caused by the irradiation.

Gamma Rays: Electromagnetic radiation comparable to light. They are similar to X-rays except for their origin. They are emitted with energies characteristic of each nuclide, and many are highly penetrating. Although their intensity decreases exponentially with thickness of the absorbing material, they can travel hundreds of feet in air and penetrate completely through the body.

General Population: People permanently residing within the plume exposure emergency planning zone (not including residents of nursing homes and long-term health-care facilities).

Geiger-Muller Counter (Geiger-Muller Tube): A radiation detection and measuring instrument. It consists of a gas-filled (Geiger-Muller) tube containing electrodes, between which there is an electrical voltage but not current flowing. When ionizing radiation passes through the tube, a short intense pulse of current passes from the negative electrode to the positive electrode and is measured or counted. The number of pulses per second measures the intensity of radiation. It is also often known as a Geiger Counter.

Incident: An occurrence that results in the loss of control of radioactive materials and involves a potential hazard to life, health or property.

Ingestion Exposure Pathway (50-mile EPZ): For planning purposes, the area within about a fifty (50) mile radius surrounding a nuclear plant site. The principal exposure from this pathway would be from the ingestion of contaminated water or foods.

Internal Radiation: Radiation (including alpha and beta particles and gamma radiation) resulting from radioactive substances within the body.

Isotopes: Forms of the same element having identical chemical properties but differing in their atomic masses. A radioisotope is an unstable isotope of an element that decays or disintegrates spontaneously, emitting radiation.

Local Emergency Operations Center: A location at the headquarters of each offsite response agency or some other designated location that may be used to direct the action taken by designated agencies under its jurisdiction during an emergency at the Shoreham Nuclear Power Station.

Millirem (mrem): One-thousandth (1/1000) of a rem.

Milliroentgen (mR): One-thousandth (1/1000) of a Roentgen.

Monitoring, Radiological: The operation of locating and measuring radioactive contamination by means of survey instruments that can detect and measure (as dose rates) ionizing radiations.

Nuclear Reactor: A device in which a fission chain reaction can be initiated, maintained, and controlled. Its essential component is a core with fissionable fuel.

Plume Exposure Pathway (10-mile EPZ): For planning purposes, the area within a ten (10) mile radius surrounding a nuclear plant site. The principal exposure sources from this pathway are: (a) whole body exposure to gamma radiation from the plume and from deposit material, and (b) inhalation exposure from the passing radioactive plume.

Protective Action Guide: The projected radiological dose, or dose commitment, values to individuals in the general population which warrants a protective action response following a release of radiological material.

Rad: The unit of absorbed dose in body tissue or other material.

Radiation Area: Any accessible area in which the level of radiation is such that a major portion of an individual's body could receive, in any one hour, a dose in excess of 5 millirem, or in any 5 consecutive days, a dose in excess of 100 millirem.

Radioactivity: The property of certain nuclides of spontaneously emitting nuclear particles or gamma or X-ray radiation, or of undergoing spontaneous fission.

Radioassay: The analysis of any substance (food, water, soil, etc.) to determine the presence and magnitude of radioactive contamination.

Radiological: A general term referring to processes that involve nuclear radiation.

Relocation Center: A pre-designated facility outside the plume exposure emergency planning zone at which evacuees can receive directions to congregate care centers, reunite with others, receive general information and, if necessary, receive radiological monitoring and decontamination and provide temporary housing, food and other necessities to evacuees needing them.

Release: Escape of radioactive materials into the environment.

Rem: The unit of radiation dose affecting body tissue. It is equal to the absorbed dose (measured in rads) multiplied by the quality factor (which takes into account the effectiveness of different types of radiation) and by other multiplying factors. For beta and gamma radiation the quality factor is 1.

Roentgen (R): The unit of radiation exposure in air. Roentgens are the units for quantities of X-ray or gamma radiation measured by detection and survey meters.

Scenarios: Time-based characterizations of plume exposure emergency planning zone populations and their variations by time of day, day of week and season.

Shelter: A structure or other location offering shielding from nuclear radiation in the environment.

Shielding: Any material or barrier that attenuates radiation.

Site Boundary: Area surrounding the nuclear plant site in which the Nuclear Facility Operator (NFO) has the authority to determine and control all activities including exclusion or removal of personnel and property from the area.

Source Term: A particular type or amount of radionuclide originating at the source of a nuclear incident. In its broadest sense, source term also describes the conditions and mode of emission.

Special Facility: Institution or location having either a residential population of fifteen or more people or having sizeable, but temporary, attendance at predictable times (e.g., nursing homes, hospitals, schools, parks).

Survey Meter: A portable instrument used in radiological monitoring to detect and measure ionizing radiation.

Thermoluminescent Dosimeter: A dosimetry badge worn by workers in the nuclear industry or research, used to measure possible exposure to ionizing radiation. It is characteristic of thermoluminescent material that radiation causes internal changes which make the material, when subsequently heated, give off an amount of light directly proportional to the radiation dose, which can be measured.

Thyroid Exposure: Exposure of the thyroid gland to radiation from radioactive isotopes of iodine which have been either absorbed or ingested.

Traffic Zone: A sub-division of an emergency response planning area associated with one specified primary evacuation route and particular reception center.

Transient Population: Those people who are only temporarily in, but do not permanently reside in, the plume exposure emergency planning zone.

Transient-dependents: People without access to an automobile for the purpose of leaving the plume exposure emergency planning zone at the time of an evacuation.

Whole Body Counter: A device used to identify and measure the radiation in the body (body burden) of human beings and animals; it uses heavy shielding to keep out background radiation and ultrasensitive scintillation detectors and electronic equipment.

ATTACHMENT 2

LONG ISLAND LIGHTING COMPANY
LOCAL EMERGENCY RESPONSE ORGANIZATION
TRAFFIC GUIDANCE DRILL
REV. 0

Prepared by:

Impell Corporation
October, 1983

1.0 OBJECTIVES AND GUIDELINES

1. Assess the adequacy of the Traffic Control and Route Alert Driver staffing levels and supporting procedures.
2. Assess the ability of field groups to respond to the staging areas and field assignment areas in a proper and timely manner.
3. (a) Assess the ability of Traffic Guides to use communication equipment and to perform traffic control, (b) Evacuation Route Spotters to perform route observation, (c) Road Crews to respond to disabled vehicles and perform their duties, (d) Assess ability of Route Alert Drivers to drive routes in a timely and effective manner.
4. Assess adequate information exchange between the Staging Area and Field Groups.

2.0 DATE/TIME/LOCATIONS/PARTICIPANTS

Dates:

October 28, 1983
November 4, 1983
November 10, 1983

Time:

1:00 PM to 5:00 PM

Locations:

Riverhead Staging Area (October 28)
Patchogue Staging Area (November 4)
Port Jefferson Staging Area (November 10)

Participants:

Number per Drill

	<u>Riverhead</u>	<u>Patchogue</u>	<u>Port Jefferson</u>	
o Traffic Control Coordinator	3	3	3	(Observer)
o Traffic Control Point Coordinator	3	3	3	(Observer)
o Road Logistics Coordinator	3	3	3	(Observer)
o Evacuation Route Coordinator	3	3	3	(Observer)
o Traffic Control Communicator	6	6	6	(Observer)
o Evacuation Route Spotters	4	4	4	(Participant)
o Staging Area Coordinators	3	4	3	(Participant)
o Lead Traffic Guide	3	3	3	(Participant)
o Traffic Guides	81	131	106	(Participant)
o Road Crews	17	17	17	(Participant)
o Dosimetry Record Keepers	4	4	4	(Participant)
o Route Alert Drivers	30	30	30	(Participant)

3.0 EXERCISE SCENARIO

Narrative Summary

This drill encompasses the mobilization, deployment and coordination of the stated participants. It provides a basis for those involved with Traffic Control members and Route Alerting Drivers to gain experience in the use of procedures and allows the development of both teamwork and independent approach in carrying out their emergency action responsibilities.

The messages will supply information to the Staging Area as if coming from a fully staffed EOC, although only the Traffic Control Communicator will be present in the EOC. Field members will be sent into the field with their equipment, during which radiological conditions will not be considered.

Planned
Exercise Time
Hours/Minutes

Sequence of Events

<u>Start</u>	<u>Finish</u>	
		The Traffic Guides inventory packets, install radio and checks its operation, then depart for assigned locations.
T = 0/45	1/10	Second group of Traffic Guides.
T = 1/00	1/25	Third group of Traffic Guides.
T = 1/15	1/22	The Road Crew members are called in to briefing. The Staging Area Coordinator briefs group on drill plans and radiological conditions. The Lead Traffic Guide assigns reporting locations and distributes packets according to the content of Message No. 2.
T = 1/22	1/40	Field participants pass through dosimetry distribution whereby all records shall be initiated and dosimetry distributed. Each field member will complete Part I of the required dosimetry forms and retain a copy of their Daily Dose Record Card and Permanent Dose Record Form. All participants shall don their dosimetry. The Road Crew members inventory packet and depart for assigned location. The Lead Traffic Guide will obtain and record information on status of Traffic Control teams. The Staging Area Coordinator will obtain and record information on Route Alert Driver status.
T = 1/30	2/30	The Route Alert Drivers drive to the starting point of Alert Route and note the arrival time. Then drive for 45 minutes, note the finish time and estimate coverage of zone. They then report back to the Staging Area for a briefing.

TRAFFIC GUIDE

1:30 to 1:55

- All coordinators remain in briefing area. One third of the Traffic Guides are sent to the briefing area.
- The assigned Staging Area Coordinator briefs the Traffic Guides using Message No. 1.
- Give assigned Lead Traffic Guide Message No. 2. Lead Traffic Guide briefs Traffic Guides and distributes packets.
- Guides are assigned to the points shown on Message No. 2. The numbers per vehicle are shown. Lead Traffic Guide may reassign traffic guide teams to accommodate lack of expected vehicles.
- Traffic Guides are dismissed and sent to dosimetry for processing.
- After dosimetry processing, Traffic Guides pick up radio, install them, check operation and depart for traffic control point.

Maximum

-40 Traffic Guides per Record Keeper.

1:45 to 2:10

- Second group of Traffic Guides.

2:00 to 2:25

- Third group of Traffic Guides.

COMMENT SHEET FOR TRAFFIC GUIDES

1. DID YOU HAVE ANY RADIO TRANSMISSION OR RECEPTION DIFFICULTIES?
IF SO PLEASE DESCRIBE.

2. WAS THERE ENOUGH 'FREE' TIME (CLEAR CHANNEL TIME) ON THE
RADIO SO YOU COULD TRANSMIT WITHOUT LONG WAITS FOR THE
CHANNEL TO CLEAR? IF NOT PLEASE DESCRIBE.

3. WHAT TRAFFIC CONTROL POST DID YOU REPORT TO?

4. HOW LONG DID IT TAKE YOU TO GET THERE? _____ MINUTES

PLEASE WRITE DOWN ANY PROBLEMS YOU HAD ENCOUNTERED WHILE PARTICIPATING
IN THE DRILL. RETURN THIS FORM TO THE STAGING AREA AT THE END OF
THE DRILL.

ATTACHMENT 3

LONG ISLAND LIGHTING COMPANY
LOCAL EMERGENCY RES: JNSE ORGANIZATION
TRANSPORTATION COORDINATION DRILL
REV. 0

Prepared by:

Impell Corporation -
October, 1983

LO1317

LERO EXERCISE/DRILL SCENARIO

- Part 1 Objectives and Guidelines
- Part 2 Date/Time/Locations/Participants
- Part 3 Exercise Scenario - Narrative Summary
- Event Schedule
- Part 4 Messages
- Part 5 Initiating Conditions
- Part 6 Radiological Information
- Part 7 Observer/Controller Instructions/Drill Evaluation
- Part 8 Glossary

Submitted by: _____

Emergency Planning Coordinator

_____ Date

APPROVALS:

CAUTION

APPROVALS MUST BE SIGNED AT LEAST 24 HOURS
BEFORE ANY EXERCISE OR DRILL MAY BE PERFORMED.

Manager of LERO

Date

1.0 OBJECTIVES AND GUIDELINES

The purpose of this drill is to demonstrate LILCO's ability to effectively implement the Transportation Coordination portion of the SNPS Local Offsite Radiological Emergency Response Plan. This scenario has been prepared to aid the Observers and Controllers to conduct the drill in a coordinated and efficient manner. It will be done to meet the objectives of the drill which are basically to:

- o Assess the ability of Bus Dispatchers to process Bus Drivers through the Staging Area and provide them with the necessary emergency packages and briefings as necessary.
- o Assess the ability of Bus Drivers and Transfer Point Coordinators to be dispatched to begin their jobs.
- o Evaluate the adequacy of the emergency packages that show locations of transfer points, relocation centers, bus companies and the directions through the evacuation routes.
- o Demonstrate the communication capabilities between field members (Transfer Point Coordinators) and Staging Area personnel (Bus Dispatchers).

2.0 DATE/TIME/LOCATIONS/PARTICIPANTS

Dates:

October 26, 1983, Wednesday
November 3, 1983, Thursday
November 9, 1983, Wednesday

Time:

1:00 PM - 5:00 PM

Locations (Each Staging Area):

Riverhead Power Station (10/26)
Patchogue District Office (11/3)
Port Jefferson Power Station (11/9)

LERO members will be notified to report to their Staging Areas on a particular date and time. The Staging Areas are the meeting places where the drill is to begin and end. LERO members will drive into the field (zones) to carry out the main portion of the drill.

Participants:

- o Transportation Support Coordinator
- o Transportation Support Communicator
- o Staging Area Coordinators
- o Bus Dispatchers
- o Bus Drivers
- o Transfer Point Coordinators
- o Dosimetry Record Keepers

3.0 EXERCISE SCENARIO

Narrative Summary

An accident at the Shoreham Nuclear Power Station has occurred and has been escalated from a Notification of Unusual Event through each class of emergency to a General Emergency. As escalation of the emergency progressed, Transportation Coordination personnel report for duty, then an evacuation is ordered.

For the purposes of this drill, participants will report for duty at a pre-assigned time. These participants will be briefed as they are brought to briefing areas at the Staging Area. Emergency packages, including route assignments for the drill, and dosimetry will be disseminated. Routes will be driven by participants using their own vehicles. Participants driving to bus companies and transfer points will also use their own vehicles. Upon completion of assignment, participants will return to the Staging Area for a de-briefing and discussion on the transportation process.

Duration of the drill is to be four hours.

Simulated Actions/Notes

1. Not all Bus Drivers will report to a bus company to enact bus pickup; only those who have been designated to do so will drive these routes. These participants then drive to their designated transfer point.
2. Transfer bus routes (those which run from transfer points to Relocation Centers) will not be run.
3. Routes will be driven with two (2) Bus Drivers per car; at least two (2) Transfer Point Coordinators are to be sent to each transfer point.
4. For drill purposes, four (4) transfer points (and their corresponding bus routes) per Staging Area have been activated.
5. Drill participants will park in designated areas.
6. Bus routes will be driven in entirety or until 2 hours has elapsed from the time the participant leaves the Staging Area, until the participant returns to his transfer point. All participants will return to Staging Area.

Event Schedule

Planned
Exercise Time
Hours/Minutes

Sequence of Events

T = -3/30

The Shoreham Nuclear Power Station (SNPS) is operating at 100% power and full electrical capacity.

T = -3/15

An Unusual Event is declared at SNPS due to unscheduled turbine trip.

T = -1/55

An Alert is declared at SNPS based on plant conditions.

T = -1/54

SNPS notifies the LILCO Customer Service Operator.

Actions as outlined in OPIP 3.3.1, "Receipt and Verification of Messages" are carried out by the Operator.

T = -1/52

The LILCO Customer Service Operator completes notification verification callback to SNPS.

T = -1/50

The LILCO Customer Service Operator initiates the LERO notification process in accordance with OPIP 3.3.2, "Notification of Emergency Response Personnel."

Group Tone 1 and 2 pagers are activated with emergency code "2222."

Group Tone 3 pagers are activated with emergency code "2255."

The Staging Area Coordinator is notified to be on standby. The selected notifying Bus Drivers, Transfer Point Coordinators and Bus Dispatchers also go on standby.

T = -0/55

A Site Area Emergency is declared at SNPS.

T = -0/53

The LILCO Customer Service Operator completes notification verification callback to SNPS.

Planned
Exercise Time
Hours/Minutes

Sequence of Events

T = -0/51

The LILCO Customer Service Operator initiates the LERO notification process in accordance with OPIP 3.3.2, "Notification of Emergency Response Personnel."

Group 1, 2 and 3 pagers are activated with emergency code "3333."

The Transfer Point Coordinators and Bus Drivers who have pagers will commence notifying other Bus Drivers to report to their Staging Areas. Staging Area Coordinators and Bus Dispatchers will be paged to report to their Staging Areas.

All participants report to the Staging Area. Upon arrival, all shall pass through Security who shall check off names on Staging Area rosters and give the roster to the Dosimetry Record Keeper.

T = 0/0

The assigned Drill Controllers will inform the assembled participants of the objectives and ground rules for the drill.

T = 0/5 - 0/35

Participants will receive specialized briefings by the following groups in separate areas of the Staging Area:

- Dosimetry Record Keepers, Staging Area Coordinators
- Bus Drivers
- Transfer Point Coordinators, Bus Dispatchers, Bus Coordinators, Transportation Support Coordinators, Transportation Support Communicator

The Bus Dispatcher gives out the driving instructions to designated transfer points to Transfer Point Coordinators. He also gives Transfer Point Coordinators Bus Driver Route Packages (assigned by transfer point) and Transfer Point Coordinator Kits.

Planned
Exercise Time
Hours/Minutes

Sequence of Events

T = 0/20

The Bus Dispatcher dispatches Transfer Point Coordinators.

The first group of 40 Bus Drivers will pass through dosimetry distribution whereby records shall be initiated and pocket dosimetry distributed by the Dosimetry Record Keepers.

The Bus Coordinator is notified that a General Emergency has been declared and an evacuation is the recommended protective action. (He is given one of these messages: Message A for Port Jefferson Staging Area, B for Patchogue Staging Area and C for Riverhead Staging Area.)

The Bus Dispatcher is given a message by the Bus Coordinator detailing escalation of the emergency to a General Emergency requiring evacuation.

The Bus Coordinator notifies the Bus Dispatcher to outline for the Bus Drivers and Transfer Point Coordinators the areas that are to be evacuated. (Use one of the following messages: Message A for Port Jefferson Staging Area, Message B for Patchogue Staging Area, Message C for Riverhead Staging Area.)

T = 0/35 - 1/20

A short briefing is conducted for Bus Drivers, in groups of 40, outlining the zones that are to be evacuated.

The Bus Dispatcher gives out the driving instructions to the to Bus Drivers.

T = 0/50 - 1/35

The Bus Dispatcher dispatches above Bus Drivers as each groups briefing is complete.

T = 0/50 - 1/35

Bus Drivers depart from the Staging Area. All Bus Drivers drive past the transfer point, then go to the temporary transfer point (using transfer point map supplement) and report to the Transfer Point Coordinator at the temporary transfer point to receive route assignment.

Planned
Exercise Time
Hours/Minutes

Sequence of Events

T = 0/35 - 1/10

Transfer Point Coordinators, upon arrival at their transfer point, will call in to the Bus Dispatcher at the Staging Area.

Upon Transfer Point Coordinators contact with the Bus Dispatcher, he will place road cone upon roof of car, identifying him as the Transfer Point Coordinator at that transfer point.

Upon arrival at transfer point, Bus Drivers who drove to bus companies shall note time it took from Staging Area to bus company to transfer point. These drivers will then return to Staging Area for de-briefing.

As each route Bus Driver reports to the transfer point, the Transfer Point Coordinator will give out route maps and dispatch drivers in accordance with times noted on the Transfer Point Coordinator Dispatch Form.

Bus Drivers will drive routes and return to transfer point, noting time it took to drive route. Bus Driver will then report to the temporary transfer point.

Upon Bus Drivers returning to the temporary transfer point, the Transfer Point Coordinator marks return time on Transfer Point Coordinator Dispatch Form, and instructs Bus Drivers to return to Staging Area.

T = 1/40 - 4/00

All Bus Drivers assemble at Staging Area and return dosimetry to Record Keepers and Emergency Packages to Staging Area Coordinators.

Upon Bus Drivers returning Emergency Packages and dosimetry, drivers will be assembled and de-briefed in groups of 40.

Transfer Point Coordinators return to Staging Areas and return dosimetry and emergency packages. All will be de-briefed at end of drill.

4.0 MESSAGES

Message A for Port Jefferson Staging Area:

"Zones F, K, Q must be evacuated. That area in Bus Route G3 must also be evacuated."

Message B for Patchogue Staging Area:

"Zones A, B, C, D, E, L, R must be evacuated. That area in Bus Route G1 and G2 must also be evacuated."

Message C for Riverhead Staging Area:

"Zones H, I, J, M, N, O, P and S must be evacuated."

5.0 INITIATING CONDITIONS

This drill will require advance notification for the participants, informing them of the date and time for the conduct of the drill. Drill participants will be required to appear at the facility as indicated in the notification message. The LERO notification and mobilization process is not to be utilized as part of this drill.

With the participants in place at the facility, the assigned Drill Controllers will inform the assembled facility staff of the objectives and ground rules for conducting the drill. Additionally, the participants will be briefed by the Drill Controllers on the outlined scenario conditions simulated to have occurred prior to their arrival at the facility.

As the drill progresses, Drill Controllers will provide the incoming information as shown on the message forms and scenario time table to stimulate the participants response actions.

6.0 RADIOLOGICAL INFORMATION

This section contains information for providing personnel monitoring data to Bus Drivers and Transfer Point Coordinators. To simulate actual conditions during a radiological release, the following method should be used to determine personnel exposure while in the affected area.

1. Refer to either Figure 6-4.4 (1-mile radius) or Figure 6-5.6 (10-mile Emergency Planning Zone) depending upon your location.
2. Read the letter in the area of the plume based on your location.
3. Estimate how long you'll be in that area.
4. Read the incremental Dose Rate (mR/min) for the zone location from Table 6-1.
5. Multiply the Dose Rate by the time in minutes spent in the area.
6. Display on the dosimeter scale the incremental increase in personnel dose to either the Bus Driver or Transfer Point Coordinator.

TABLE 6-1
ZONE DOSE RATES*

<u>Zone Location</u>	<u>* Incremental Dose Rate (mr/min)</u>
A	800
B	500
C	300
D	130
E	65
F	35
G	20
H	15
I	10
J	5
K	1
L	.5
M	.16
N	.08
P	.02

*Data to be multiplied by time in area to determine personnel dose. Data should be displayed on dosimeter reader scale.

FIGURE 6-4.4

INSERT FIGURE

FIGURE 6-5.6

INSERT FIGURE

7.0 CONTROLLER/OBSERVER INSTRUCTIONS

Exercise Controller/Observer Conduct

A. Each Controller/Observer should be familiar with the following:

1. The basic objectives of the exercise.
2. The assumptions and precautions being taken.
3. The exercise scenario, including the initiating events and the expected course of action to be taken.
4. The various locations that will be involved and the specific items to be observed when at those locations.

B. Controllers/Observers are assigned to various locations as indicated in this section.

C. If Controllers are to provide information via "cue cards," (e.g., initiating events, instrument readings, monitoring results, etc.) to the drill participants, the information must be provided exactly as and when prescribed. Failure to provide information appropriately may invalidate the results of the drill.

D. Controllers/Observers shall maintain an accurate chronological record of activities for the locations observed.

A Lead Exercise Controller has been designated for this drill. Those Controllers responsible for initiating an action should coordinate their action times closely with the Lead Controller. Provisions will be made available for necessary communications with this designated individual should scenario variations warrant.

E. The Controller/Observer must remain cognizant of all the events and circumstances at their assigned locations. These should include, but not be limited to: Participants' actions and reactions, communications methods and record keeping, chain of command, equipment performance and the overall ability to interface with other emergency facilities.

F. Controller/Observers should record all times (both start and finish), actions and comments or suggestions, as complete and precise as possible, in a chronological order.

G. Significant items, both major deficiencies and strong performance points, should be highlighted upon occurrence and condensed for presentation in the subsequent critique.

Precautions and Limitations

This section provides information for all Drill Controllers and Observers related to the rules and guidelines to be followed throughout the conduct of this drill. Prior to initiation of the drill, a pre-drill briefing will be held to review the entire drill process with all the Drill Controllers and Observers identified in this section of this package.

- A. Should, at any time during the course of the conduct of this drill, an actual emergency situation arise, all activities and communications related to the drill will be suspended. It will be the responsibility of any Drill Controller or Observer that becomes aware of an actual emergency to suspend drill response in his/her immediate area and to inform the Lead Drill Controller of the situation. Upon notification of an actual emergency, the Lead Drill Controller will notify all other Controllers/Observers to suspend all drill activities.
- B. Should, at any time during the course of the conduct of this drill, a Drill Controller or Observer witness a drill participant undertake any action which would, in the opinion of the Controller/Observer, place either an individual or component in an unsafe condition, the Controller/Observer is responsible for intervening in the individual's actions and terminating the unsafe activity immediately. Upon termination of the activity, the Controller/Observer is responsible for contacting the Lead Drill Controller and informing him of the situation. The Lead Drill Controller will make a determination at that point whether to continue, place a temporary hold on, or terminate the drill.
- C. Pressurization of fire hoses, discharging of fire extinguishers, or initiation of any fire suppression systems, is not to occur in response to any simulated fires during this drill.
- D. Manipulation of any plant operating system, valves, breakers or controls in response to this drill are only to be simulated. There is to be no alteration of any plant operating equipment, systems or circuits during the response to this drill.
- E. All telephone communications, radio transmissions and public address announcements related to the drill must begin and end with the statement, "This is a drill." Should a Controller or Observer witness a drill participant not observing this practice, it is the Controllers/Observers responsibility to remind the individual of the need to follow this procedure.

- F. Any motor vehicle response to this drill whether it be ambulance, fire fighting equipment, security vehicles or field monitoring teams, should observe all normal motor vehicle operating laws including posted speed limits, stop lights/signs, one way streets, etc.
- G. Drill participants are to inject as much realism into the drill as is consistent with its safe performance, however, caution must be used to prevent overreaction.
- H. Care must be taken to assure that any non-participating individuals who may observe drill activities or overhear drill communications are not misled into believing that an actual emergency exists. Any Drill Controller or Observer who is aware of an individual or group of individuals in the immediate vicinity who may have become alarmed or confused about the situation, should approach that individual or group and explain the nature of the exercise and its intent.

Drill Evaluation

<u>Area Evaluated</u>	<u>Monitors Rating</u>					
A. - <u>Activation and Response</u>						
1. Was the activation/initiation efficient and organized?	5	4	3	2	1	N.O.
2. Were personnel familiar with their responsibilities and respond in a timely manner?	5	4	3	2	1	N.O.
3. Was the person in charge clearly identifiable?	5	4	3	2	1	N.O.
4. Was the transfer of responsibilities accomplished effectively and efficiently?	5	4	3	2	1	N.O.
B. <u>Communications</u>						
1. Were all required and specified communications circuits operable?	5	4	3	2	1	N.O.
2. Were personnel familiar with communications available and the intended use of each?	5	4	3	2	1	N.O.
3. Were there sufficient personnel to conduct communications tasks?	5	4	3	2	1	N.O.
4. Was incoming information effectively and efficiently distributed to appropriate personnel?	5	4	3	2	1	N.O.
5. Were periodic updates made by the senior individual?	5	4	3	2	1	N.O.
6. Were accurate communication logs kept?	5	4	3	2	1	N.O.
7. Were the status boards properly utilized and updated?	5	4	3	2	1	N.O.
8. Did individuals in charge spend an inordinate amount of time on communications, such that their attention was diverted from the incident? (No = 5, Yes = 1)	5	4	3	2	1	N.O.

<u>Area Evaluated</u>	<u>Monitors Rating</u>					
9. Were the correct private lines used and did non-emergency communications interfere with emergency transmissions? (No = 5, Yes = 1)	5	4	3	2	1	N.O.
10. Were logs used effectively by personnel to review past events and to trend data?	5	4	3	2	1	N.O.
11. Were appropriate communications techniques followed? (Phonetic alphabet, sign-on, sign-off, no abbreviations or acronyms)	5	4	3	2	1	N.O.
<u>C. Procedures</u>						
1. Were personnel generally familiar with the relevant procedures?	5	4	3	2	1	N.O.
2. Were procedures followed?	5	4	3	2	1	N.O.
3. Were personnel so overwhelmed with procedural requirements that they were distracted from the appropriate response?	5	4	3	2	1	N.O.
4. Were the procedures appropriate?	5	4	3	2	1	N.O.
<u>D. Direction and Control</u>						
1. Could the response be categorized as a team effort or a group of individual efforts? (Team = 5, Individuals = 1)	5	4	3	2	1	N.O.
2. Was there an effective mechanism for resolving differences of opinion regarding technical issues and actions to be taken?	5	4	3	2	1	N.O.
3. Was there excessive noise and loitering in the response facility? (No = 5, Yes = 1)	5	4	3	2	1	N.O.
<u>E. Material and Equipment</u>						
1. Was all the required material and equipment available?	5	4	3	2	1	N.O.

Area Evaluated

Monitors Rating

- | | | | | | | |
|--|---|---|---|---|---|------|
| 2. Did personnel check to ensure that all equipment was available and functional early in the activation process? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. If equipment was inoperable or failed in use, were appropriate actions taken to resolve the deficiency? (spares/ backup equipment) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were there any situations in which the lack of equipment, or a lack of ability to operate the equipment, prevented personnel from completing their tasks? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were there any situations in which additional equipment or materials, or different types of equipment could have made the activity more effective? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 6. Could the area support the personnel assigned to it? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 7. Were there sufficient resource materials readily available to support the conduct of the response? (maps, reference documents, copies of plans and procedures, data sheets, etc.) | 5 | 4 | 3 | 2 | 1 | N.O. |
|
<u>F. Protective Measures</u> | | | | | | |
| 1. Were appropriate protective measures implemented for response personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel properly wear protective clothing and dosimetry? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were appropriate radiological practices observed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were field personnel kept apprised of radiological conditions? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were response activities conducted with regard for personnel safety, consistent with the need to complete the activity? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Monitors Rating

G. Access Control

- | | | | | | | |
|---|---|---|---|---|---|------|
| 1. Was an appropriate access control posture established? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Was there an identifiable system implemented that effectively identified authorized personnel within the facility? | 5 | 4 | 3 | 2 | 1 | N.O. |

H. Summary

1. Describe any problems noted by the area being evaluated. Provide a description of the problem, its outcome or effect and any recommended corrective courses of action to alleviate or correct the deficiency. Any of the previously listed areas that receive an evaluation grade of 2 or 1 require a written explanation on this page.

Evaluators Signature / Date

Evaluation Standards

- "5" Excellent - Personnel and equipment always functioned without error. There were no problems encountered and all personnel and equipment functioned at a superior level.
- "4" Good - Personnel and equipment generally performed as expected. Any errors or problems were minor and did not detract from completion of the task.
- "3" Satisfactory - Personnel and equipment performed at an acceptable level. Errors noted were not severe and completion of the task was achieved within acceptable limits.
- "2" Poor - Personnel and equipment generally performed below expectations. There were deficiencies of a significant nature. The areas ability to carry out its function was diminished.
- "1" Failure - Personnel and equipment consistently failed to perform as required. Acceptable completion of the task was not achieved.
- N.O. Not Observed

CONTROLLER/OBSERVER LOCATIONS

1. Lead Drill Controller #1
Staging Area (TPC)/Roving) Nancy Lee Molter
2. Lead Drill Controller #2
Staging Area (Bus Drivers)/Roving Ronald Varley
3. Drill Controller #1
Transfer Point Carlos Garcia
4. Drill Controller #2
Transfer Point Clifford Heitz
5. Drill Controller #3
Transfer Point Bruce Kobel
6. Drill Controller #4
Transfer Point Gary Krieger
7. Drill Controller #5
Staging Area - Dosimetry Distribution Debra Beres
8. Drill Communications
LILCO Representative _____
9. Evacuation Time Study
KLD Representative _____

DRILL CONTROLLERS KEY EVENTS TIME LINE

11:30-12:45		Meal for drill participants.
1:00-1:05	T = 0/0	Initial briefing.
1:05-1:35	T = 0/5-0/35	Specialized briefings: - Dosimetry - TPCs, Bus Dispatcher, etc.
1:20-1:35	T = 0/20	First group of 40 Bus Drivers processed through dosimetry.
1:35-1:50	T = 0/35-0/50	First group of 40 Bus Drivers briefed and given packets. Second group of 40 processed through dosimetry.
1:50-2:05	T = 0/50-1/05	Second group of 40 briefed and given packets. Third group of 40 processed through dosimetry.
2:05-2:20	T = 1/05-1/20	Third group of 40 briefed and given packets. Fourth group of 40 processed through dosimetry.
2:20-2:35	T = 1/20-1/35	Fourth group of 40 briefed and given packets.
2:40-5:00	T = 1/40-4/00	Receive returning drill participants. Conduct de-briefing in groups of 30.

DRILL PARTICIPANT FORM

FOR THIS DRILL, PLEASE FILL IN THE FOLLOWING INFORMATION:

1. What was the route number you drove?
-
2. How long did it take you to drive this route (i.e., from the time you left the transfer point until the time you reported back to it? Use school transfer point time).

PLEASE WRITE DOWN ANY PROBLEMS YOU HAD ENCOUNTERED WHILE PARTICIPATING IN THE DRILL. RETURN THIS FORM TO THE STAGING AREA AT THE END OF THE DRILL.

BD-ROUTE

DRILL PARTICIPANT FORM

FOR THIS DRILL, PLEASE FILL IN THE TIME IT TOOK YOU TO DRIVE FROM THE:

1. Staging Area to the bus company:

What was the name of the bus company you drove to?

2. Bus company to your assigned transfer point (use school transfer point name).

What was the name of your transfer point (use school transfer point name).

PLEASE WRITE DOWN ANY PROBLEMS YOU HAD ENCOUNTERED WHILE PARTICIPATING IN THE DRILL. RETURN THIS FORM TO THE STAGING AREA AT THE END OF THE DRILL.

BD-ROUTE

DRILL PARTICIPANT FORM

FOR THIS DRILL, PLEASE FILL IN THE FOLLOWING INFORMATION:

1. What was the name of the transfer point you reported to (use school transfer point name)?

2. How long did it take you to drive there from the Staging Area?

PLEASE WRITE DOWN ANY PROBLEMS YOU HAD ENCOUNTERED WHILE PARTICIPATING IN THE DRILL. RETURN THIS FORM TO THE STAGING AREA AT THE END OF THE DRILL.

BD-ROUTE

DRILL PARTICIPANT COMMENT SHEET

Now that you've participated in this LERO drill, we would like you to spend a moment and provide us with any comments or concerns related to your ability to carry out your LERO tasks. If you can identify a particular problem that you encountered in implementing your responsibilities please indicate below, under the appropriate heading, the nature of the problem and give a suggested solution, if possible.

Procedural:

Equipment/Facility:

Personnel:

Training:

Scenario:

LERO Job Title

This sheet may be handed in at the end of this session or mailed in.
Mail to:

LERO
100 Old Country Road
Hicksville, New York

ATTN: R. Varley

DRILL BRIEFING ATTENDANCE SHEET - Use Drill Attendance Sheet

8.0 GLOSSARY

A - Glossary of Terms

Brief definitions of many of the terms used here are given.

Absorbed Dose: The quantity of energy absorbed from ionization per unit mass of tissue. The rad is the unit of absorbed dose.

Airborne Radioactive Material: Any radioactive material dispersed in the air in the form of dusts, fumes, mists, vapors or gases.

Alpha Particle: Positively charged particles identical with the nuclei of helium atoms. They penetrate tissues to usually less than 0.1 mm (1/250 inch), but create dense ionization and heavy absorbed doses along these short tracks.

Background Radiation: Radiation arising from material other than the one directly under consideration. Cosmic rays and natural radioactivity are always present, and man-made sources may also contribute to the background radiation level.

Beta Particles: Electrons ejected from the nuclei of atoms; extremely tiny bits of matter traveling at nearly the speed of light. Their range in air can be several feet. In heavier material, such as the human body, they expend their energy within about 2 mm (1/10 inch).

Contamination (Radioactivity): Deposition of radioactive material in any place where it may harm persons, spoil experiments or make products of equipment unsuitable or unsafe for some specific use. The presence of unwanted radioactive matter.

Decay: Disintegration of the nucleus of the radionuclide in a radioactive process.

Decay Product: A nuclide, either radioactive or stable, resulting from the disintegration of a radioactive material.

Decontamination: The reduction or removal of contaminating radioactive material from a structure, area, object or person.

Dose: The quantity of energy absorbed from ionization per unit mass of tissue. The rad is the unit of absorbed dose.

Dose Equivalent: A quantity that expresses all types of nuclear radiation on a common scale to indicate relative biological effects. The rem is the unit of dose equivalent.

Dose Rate: Absorbed dose delivered per unit time, as rads per seconds or rads per hour.

Dosimeter: A device that measures radiation dose, such as a film badge or ionization chamber.

Emergency Director: A highly trained individual totally responsible for directing onsite actions during an emergency at the nuclear plant site. Position occupied by the Shift Supervisor until relieved by a higher ranking individual.

Emergency Operations Facility: A facility operated by the licensee for the purpose of evaluating and controlling emergency situations and coordinating emergency responses.

Emergency Planning Zone (EPZ): The area surrounding the nuclear plant site for which planning has been done to assure that prompt and effective actions can be taken to protect the public in the event of a radiological incident. The EPZ is usually a radius of about ten (10) miles for the plume exposure pathway and a radius of about fifty (50) miles for the ingestion exposure pathway.

Evacuation: The process of removing people from a hazardous or potentially hazardous area to a safe area.

Evacuation Time Estimate: The roadway travel time required to leave the plume exposure emergency planning zone after mobilization has been completed.

Exposure: A measure of the ionization produced in air by X-ray or gamma radiation. The roentgen (R) is the unit of exposure. The term "dose" sometimes used interchangeably with exposure, actually refers to absorbed radiation.

Film Badge: A light-tight package of photographic film worn like a badge by workers in the nuclear industry or research, used to measure possible exposure to ionizing radiation. The absorbed dose can be calculated by the degree of film darkening caused by the irradiation.

Gamma Rays: Electromagnetic radiation comparable to light. They are similar to X-rays except for their origin. They are emitted with energies characteristic of each nuclide, and many are highly penetrating. Although their intensity decreases exponentially with thickness of the absorbing material, they can travel hundreds of feet in air and penetrate completely through the body.

General Population: People permanently residing within the plume exposure emergency planning zone (not including residents of nursing homes and long-term health-care facilities).

Geiger-Muller Counter (Geiger-Muller Tube): A radiation detection and measuring instrument. It consists of a gas-filled (Geiger-Muller) tube containing electrodes, between which there is an electrical voltage but not current flowing. When ionizing radiation passes through the tube, a short intense pulse of current passes from the negative electrode to the positive electrode and is measured or counted. The number of pulses per second measures the intensity of radiation. It is also often known as a Geiger Counter.

Incident: An occurrence that results in the loss of control of radioactive materials and involves a potential hazard to life, health or property.

Ingestion Exposure Pathway (50-mile EPZ): For planning purposes, the area within about a fifty (50) mile radius surrounding a nuclear plant site. The principal exposure from this pathway would be from the ingestion of contaminated water or foods.

Internal Radiation: Radiation (including alpha and beta particles and gamma radiation) resulting from radioactive substances within the body.

Isotopes: Forms of the same element having identical chemical properties but differing in their atomic masses. A radioisotope is an unstable isotope of an element that decays or disintegrates spontaneously, emitting radiation.

Local Emergency Operations Center: A location at the headquarters of each offsite response agency or some other designated location that may be used to direct the action taken by designated agencies under its jurisdiction during an emergency at the Shoreham Nuclear Power Station.

Millirem (mrem): One-thousandth (1/1000) of a rem.

Milliroentgen (mR): One-thousandth (1/1000) of a Roentgen.

Monitoring, Radiological: The operation of locating and measuring radioactive contamination by means of survey instruments that can detect and measure (as dose rates) ionizing radiations.

Nuclear Reactor: A device in which a fission chain reaction can be initiated, maintained, and controlled. Its essential component is a core with fissionable fuel.

Plume Exposure Pathway (10-mile EPZ): For planning purposes, the area within a ten (10) mile radius surrounding a nuclear plant site. The principal exposure sources from this pathway are:- (a) whole body exposure to gamma radiation from the plume and from deposit material, and (b) inhalation exposure from the passing radioactive plume.

Protective Action Guide: The projected radiological dose, or dose commitment, values to individuals in the general population which warrants a protective action response following a release of radiological material.

Rad: The unit of absorbed dose in body tissue or other material.

Radiation Area: Any accessible area in which the level of radiation is such that a major portion of an individual's body could receive, in any one hour, a dose in excess of 5 millirem, or in any 5 consecutive days, a dose in excess of 100 millirem.

Radioactivity: The property of certain nuclides of spontaneously emitting nuclear particles or gamma or X-ray radiation, or of undergoing spontaneous fission.

Radioassay: The analysis of any substance (food, water, soil, etc.) to determine the presence and magnitude of radioactive contamination.

Radiological: A general term referring to processes that involve nuclear radiation.

Relocation Center: A pre-designated facility outside the plume exposure emergency planning zone at which evacuees can receive directions to congregate care centers, reunite with others, receive general information and, if necessary, receive radiological monitoring and decontamination and provide temporary housing, food and other necessities to evacuees needing them.

Release: Escape of radioactive materials into the environment.

Rem: The unit of radiation dose affecting body tissue. It is equal to the absorbed dose (measured in rads) multiplied by the quality factor (which takes into account the effectiveness of different types of radiation) and by other multiplying factors. For beta and gamma radiation the quality factor is 1.

Roentgen (R): The unit of radiation exposure in air. Roentgens are the units for quantities of X-ray or gamma radiation measured by detection and survey meters.

Scenarios: Time-based characterizations of plume exposure emergency planning zone populations and their variations by time of day, day of week and season.

Shelter: A structure or other location offering shielding from nuclear radiation in the environment.

Shielding: Any material or barrier that attenuates radiation.

Site Boundary: Area surrounding the nuclear plant site in which the Nuclear Facility Operator (NFO) has the authority to determine and control all activities including exclusion or removal of personnel and property from the area.

Source Term: A particular type or amount of radionuclide originating at the source of a nuclear incident. In its broadest sense, source term also describes the conditions and mode of emission.

Special Facility: Institution or location having either a residential population of fifteen or more people or having sizeable, but temporary, attendance at predictable times (e.g., nursing homes, hospitals, schools, parks).

Survey Meter: A portable instrument used in radiological monitoring to detect and measure ionizing radiation.

Thermoluminescent Dosimeter: A dosimetry badge worn by workers in the nuclear industry or research, used to measure possible exposure to ionizing radiation. It is characteristic of thermoluminescent material that radiation causes internal changes which make the material, when subsequently heated, give off an amount of light directly proportional to the radiation dose, which can be measured.

Thyroid Exposure: Exposure of the thyroid gland to radiation from radioactive isotopes of iodine which have been either absorbed or ingested.

Traffic Zone: A sub-division of an emergency response planning area associated with one specified primary evacuation route and particular reception center.

Transfer Point: A location serving as a temporary depot or Staging Area for bus service in that zone.

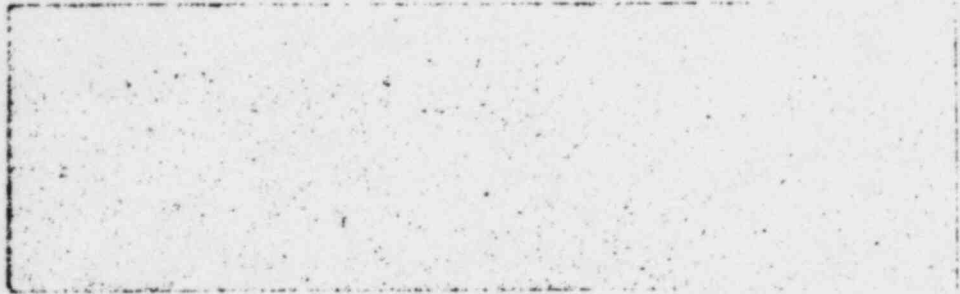
Transient Population: Those people who are only temporarily in, but do not permanently reside in, the plume exposure emergency planning zone.

Transient-dependents: People without access to an automobile for the purpose of leaving the plume exposure emergency planning zone at the time of an evacuation.

Whole Body Counter: A device used to identify and measure the radiation in the body (body burden) of human beings and animals; it uses heavy shielding to keep out background radiation and ultrasensitive scintillation detectors and electronic equipment.

Whole Body Exposure: Exposure of the whole body to radiation.

ATTACHMENT 4



LONG ISLAND LIGHTING COMPANY
LOCAL EMERGENCY RESPONSE ORGANIZATION
PERSONNEL MONITORING AND
DECONTAMINATION FACILITIES DRILL
REV. 0

Prepared by:
Impell Corporation
October, 1983

LERO EXERCISE/DRILL SCENARIO

- Part 1 Objectives and Guidelines
- Part 2 Date/Time/Locations/Participants
- Part 3 Exercise Scenario - Narrative Summary
- Event Schedule
- Part 4 Messages and Simulated Events
- Part 5 Initiating Conditions
- Part 6 Radiological Information
- Part 7 Observer/Controller Instructions
- Part 8 Glossary

Submitted by:

Chas A. Lane
Emergency Planning Coordinator

10/19/83
Date

APPROVALS:

CAUTION

APPROVALS MUST BE SIGNED AT LEAST 24 HOURS
BEFORE ANY EXERCISE OR DRILL MAY BE PERFORMED.

J. A. Weismantle
Manager of LERO

10/19/83
Date

1.0 OBJECTIVES AND GUIDELINES

The objectives for this drill have been separated into those involving the activation of a decontamination facility and those involving the operation of a decontamination facility.

- Familiarize the participants with the activation of a decontamination facility. This will include the following:
 - A. Distribution of dosimeters
 - B. Establishment of controlled areas
 - C. Establishment of monitoring stations
 - D. Establishment of decontamination stations
 - E. Establishment of communications with the Local Emergency Operations Center

- Familiarize the participants with the operation of a decontamination facility. This will include the following:
 - A. Monitoring arriving vehicles for contamination
 - B. Registering arriving evacuees or emergency workers
 - C. Monitoring evacuees or emergency workers for external contamination
 - D. Decontamination of a contaminated person
 - E. Monitoring evacuees or emergency workers for internal contamination
 - F. Handling a contaminated minor injury
 - G. Monitoring and decontamination of a vehicle
 - H. Correct handling of contaminated clothes, rags, sponges, and other items

2.0 DATE/TIME/LOCATIONS/PARTICIPANTS

2.1 Stony Brook Monitoring/Decontamination Personnel

Date:

October 20, 1983

Time:

8:00 AM to Noon

Location:

Brentwood

Participants:

- o Radiation Health Coordinator
- o Decontamination Coordinator
- o Dosimetry Coordinator
- o Radiation Health Communicator
- o Decontamination Leader
- o Monitoring Personnel
- o Decontamination Personnel
- o Dosimetry Record Keepers
- o Security Personnel

2.2 Selden Monitoring/Decontamination Personnel

Date:

October 20, 1983

Time:

1:00 PM to 5:00 PM

Location:

Brentwood

Participants:

- o Radiation Health Coordinator
- o Decontamination Coordinator
- o Dosimetry Coordinator
- o Radiation Health Communicator
- o Decontamination Leader
- o Monitoring Personnel
- o Decontamination Personnel
- o Dosimetry Record Keepers
- o Security Personnel

2.3 Boces Monitoring/Decontamination Personnel

Date:

October 27, 1983

Time:

8:00 AM to Noon

Location:

Brentwood

Participants:

- o Radiation Health Coordinator
- o Decontamination Coordinator
- o Dosimetry Coordinator
- o Radiation Health Communicator
- o Decontamination Leader
- o Monitoring Personnel
- o Decontamination Personnel
- o Dosimetry Record Keepers
- o Security Personnel

2.4 Emergency Worker Decontamination Facility Personnel

Date:

October 27, 1983

Time:

1:00 PM to 5:00 PM

Location:

Brentwood

Participants:

- o Radiation Health Coordinator
- o Decontamination Coordinator
- o Dosimetry Coordinator
- o Radiation Health Communicator
- o Monitoring Personnel
- o Decontamination Personnel
- o Dosimetry Record Keeper

3.0 EXERCISE SCENARIO

3.1 Narrative Summary

This drill encompasses the activation and operation of a Decontamination Facility. The object is to provide the staff of the facility with an opportunity to gain experience and expertise in the use of the equipment and procedures and to allow the participants to develop a teamwork approach to carry out their emergency action responsibilities.

This drill will be conducted with a full LERO staff in place at the decontamination facility and will simulate the existence of LERO field personnel and supporting organizations. Qualified Instructors/Controllers at each facility will present material from the scenario to the participants in a coordinated manner stimulating the facilities staff to take the appropriate response actions.

The scenario simulates a tornado striking electrical switchgear, initiating a series of plant complications resulting in a loss of coolant accident. A failure in a portion of the containment isolation system results in a release of radioactivity to the environment. The accident progresses from an Unusual Event declaration through a General Emergency classification. Due to the projected doses, the decision is made to evacuate a portion of the ten-mile EPZ. The decision is made to activate the decontamination facility.

This drill will require 3-1/2 hours to conduct and 1/2 hour to critique.

3.2 Event Schedule

Planned
Exercise Time
Hours/Minutes

Pre-Drill Sequence of Events

- T = -4/20
The Shoreham Nuclear Power Station (SNPS) is operating at 100% power and full electrical capacity. A tornado watch has been in effect for the Eastern Long Island area for the past two hours.
- T = -3/45
A confirmed tornado touchdown occurs approximately 1/2 mile from SNPS, damaging the Wildwood 69KV substation. An Unusual Event is declared based on the meteorological and electrical system condition.
- T = -3/43
The LILCO Customer Service Operator is notified in accordance with OPIP 3.3.1, "Receipt and Verification of Messages."
- T = -3/40
Tone Group 1 pagers are activated with emergency code "1111" in accordance with OPIP 3.3.2, "Notification of Emergency Response Personnel."
- T = -3/30
A tornado touches down onsite causing extensive damage to the station switchyard. Equipment cycling occurs followed by a reactor scram. Emergency Diesel Generators restore essential onsite power.
- T = -3/20
Plant equipment transients occur resulting in an intermediate pipe break in the RWC System (Reactor Water Cleanup).
- T = -3/15
The SNPS declares an ALERT based on plant conditions.
- T = -3/14
SNPS notifies the LILCO Customer Service Operator. The LERO notification process is initiated in accordance with OPIP 3.3.2, "Notification of Emergency Response Personnel."

Group Tone 1 and 2 pagers are activated with emergency code 2222. At this time, the following personnel report for duty:

Planned
Exercise Time
Hours/Minutes

Pre-Drill Sequence of Events

- Radiation Health Coordinator
- Decontamination Coordinator
- Dosimetry Coordinator
- Radiation Health Communicator
- Local EOC Dosimetry Record Keepers
- Emergency Worker Decontamination Facility
Dosimetry Record Keepers
- Emergency Worker Decontamination Facility
Monitoring/Decontamination Personnel

Group Tone 3 pagers are activated with emergency code "2255." The following personnel are put on standby:

- Relocation Center Decontamination Leaders
- Relocation Center Monitoring/Decontamination Personnel
- Relocation Center Dosimetry Record Keepers
- Relocation Center Security

BNL Security Station is notified.

T = -2/20

Personnel begin arriving at the Local EOC. RECS communications are transferred to the Local EOC at the direction of the Director of Local Response.

Based on initial dose projection assessments, SNPS recommends a protective action of sheltering out to one mile.

T = 1/15

SNPS TSC reports that initial radiological monitoring field team reports confirm the release is occurring. Current projections and field data indicate that the plume is traveling to the southeast.

T = -0/50

SNPS TSC notifies the LERO RECS Communicator that a SITE AREA EMERGENCY has been declared based on a continuously decreasing reactor pressure vessel water level.

T = -0/40

Selected Group Tone 2 and Group Tone 3 pagers are activated. The following personnel report for duty:

Planned
Exercise Time
Hours/Minutes

Pre-Drill Sequence of Events

- Relocation Center Decontamination Leader
- Relocation Center Monitoring/Decontamination Personnel
- Relocation Center Dosimetry Record Keepers
- Relocation Center Security

T = -0/35

SNPS EOF informs LERO that the EOF has been activated. An updated status is as follows:

- Release is still in progress
- Attempts to close the Primary Containment Exhaust Isolation Valves continue
- Contaminated/injured man is in transport to the hospital
- Reactor Pressure Vessel Water is continuing to decrease

T = -0/15

SNPS EOF informs LERO that the RPV water level is below the top of the active fuel and there is indication of potential fuel damage.

T = -0/05

A General Emergency is declared. Based on dose projection assessments, SNPS recommends the following protective actions:

- Evacuation out to 2 miles
- Sheltering from two to five miles

T = 0/00

The Local EOC Support Services Coordinator directs the Relocation Center Coordinator to evaluate the number of relocation centers needed and to activate them in accordance with OPIP 4.2.1, "Relocation Center Operations."

Planned
Exercise Time
Hours/Minutes

Sequence of Events During the Drill

T = -1/00 - 0/00

Coffee and donuts served for players.
Briefing conducted for Controllers.

T = 0/00 - 0/30

Player briefing.

T = 0/30 - 1/30

All personnel receive dosimeters, decontamination facility prepared for operation.

T = 1/30 - 3/30

Simulate arrival of either evacuees or emergency workers as appropriate.

T = 3/30 - 4/00

Conduct drill critique; discuss problems observed.

T = 4/00

Terminate the drill.

4.0 SIMULATED MESSAGES AND EVENTS

4.1 Activation of a Decontamination Facility

4.1.1 Simulated Messages

A message from the Relocation Center to the Decontamination Leader informing him that the Relocation Center is to be activated will be simulated.

4.1.2 Simulated Events

Not applicable.

4.2 Operation of a Decontamination Facility

4.2.1 Simulated Messages

A message from the Decontamination Leader to the Decontamination Coordinator informing him/her that the Decontamination Facility is operational will be simulated.

4.2.2 Simulated Events

Contamination on people, vehicles, and equipment will be simulated to allow the participants to gain experience in the use of monitoring and decontamination procedures. The first of the following two sections provides a list of situations which will be used to simulate the arrival of evacuees at a Relocation Center. The second section provides a list of situations which will be used to simulate the arrival of emergency workers at the Emergency Worker Decontamination Facility. Each situation includes a description of where the person has been in the Emergency Planning Zone and the contamination levels on the people, their vehicles and their equipment.

Section I - Situations to be used to simulate the arrival of evacuees at a Relocation Center.

This section includes the following simulated histories and contamination reports:

- o Anthony J. Marcell - Contaminated
- o Franklin P. Pierce - Contaminated
- o Robert J. Randal - Not contaminated
- o David D. Kenner - Not contaminated; injured
- o John J. Miller - Not contaminated

NAME: Anthony J. Marcell
ADDRESS: 15 Hill Street
Wading River, New York 11792
ZONE: A

Mr. Marcell left home shortly after hearing the message asking the people in his zone to leave the area. Shortly after leaving home, Mr. Marcell sustains a flat tire which he fixes before proceeding to the center. He cut his hand while changing the tire.

Upon arriving at the Relocation Center, he follows signs to the area where arriving cars are monitored. Contamination ranging from 100-200 CPM is detected on Mr. Marcell's vehicle. Monitoring personnel direct him to park in the contaminated parking area. Inside, contamination is found on Mr. Marcell's clothing, on his hands and his hair. The levels range from 100-250 CPM. The contamination level of the cut is 100 CPM. The Decontamination Leader is sent for and Mr. Marcell is requested to proceed to the Decontamination Area.

After having Mr. Marcell disrobe only reveals contamination on his hands (100-170 CPM) and his hair (150 CPM). Showering with warm water and soap removes all traces of contamination, including the cut. He is given clean clothing. The Decontamination Leader questions him and is told about the tire changing. Since it is a strong possibility that the man became contaminated while changing the tire, the Decontamination Leader determines as near as possible where the tire changing occurred and phones this information to the Decontamination Coordinator at the Local EOC.

Mr. Marcell is directed to proceed to the Thyroid Monitoring Station. Monitoring does not indicate that he has ingested any radioactive iodines. He is allowed to proceed into the Relocation Center.

Mr. Marcell's luggage was contaminated on the handle (150 CPM). Although this is below the levels where equipment is normally considered contaminated, the handles are wiped down with a damp cloth by decontamination personnel. The luggage is then sent to the main part of the Relocation Center to be given to Mr. Marcell.

In the contaminated parking area, Mr. Marcell's car is scanned inside and out and the contaminated areas mapped. Inside, the driver's seat, the floor, the door handles and steering wheel are all contaminated (100-250 CPM). The tools Mr. Marcell used to change the tire and the flat tire are also contaminated (100-400 CPM). The tools and tire are bagged and tagged for decontamination later. The trunk and the inside of the car are vacuumed. The car is wiped down both inside and out with damp sponges. Wipers do not reveal any areas with levels greater than 50 CPM above background. The car is moved to the clean parking area and the key returned to Mr. Marcell.

FIGURE 2

VEHICLE CONTAMINATION REPORT

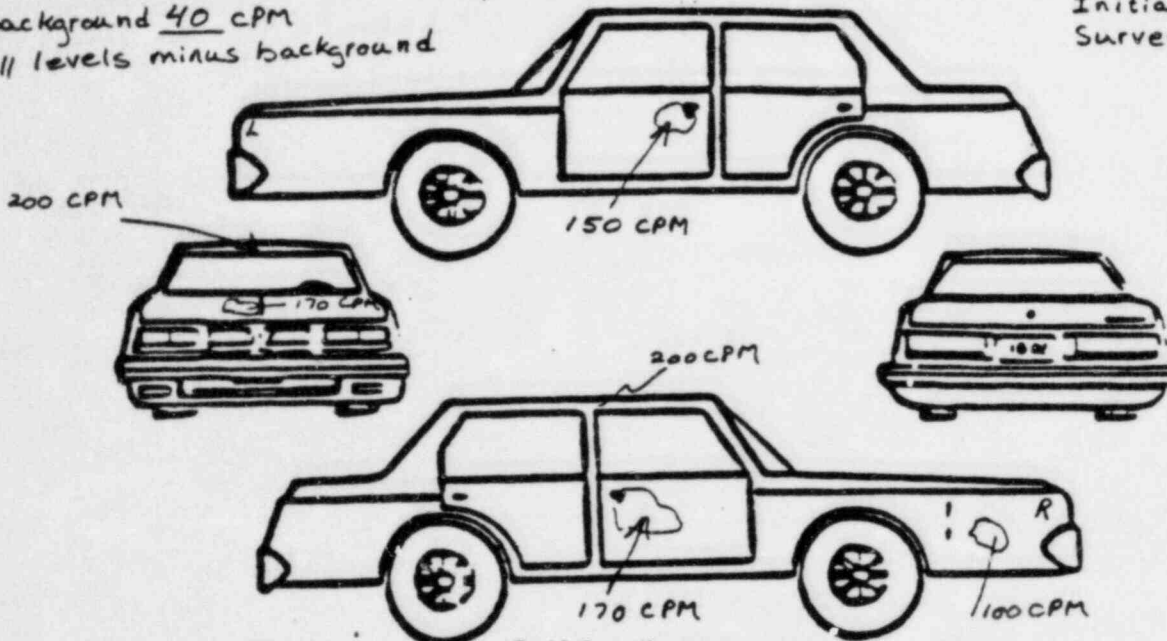
License # 427-ALK State NY
 Name of Driver Anthony J. Marcell
 Address (if Non-LERO) 15 Hill St. Wading River NY 11792
 Number Street City State Zip

INITIAL SURVEY RESULTS

Instrument Used: Model No. RM-14 S/N 5079 - Right Side Probe Type HP-270
5127 - Left Side
 Date Today's Time Present Surveyed by CPH & EAT

Background 40 cpm
 All levels minus background

Initial Vehicle Survey Area



Clear - Authorized for Release from Site
 Contamination Detected - Release Denied

COMMENTS

levels on hood, roof, & sides ranging from 100-200 cpm above background
driver's seat, steering wheel - 100-200 cpm a.b.; trunk - 100 cpm a.b.

Signature Albert Johnson / Decon Area

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated by John Jacob Harrison Today's Present
 Name Date Time

Decontamination Methods Used: wiped outside, seat, steering wheel,
and trunk with wet sponges. vacuumed seat, floor, and trunk

Post-Decontamination Survey Results: swipes of outside: 0-10 cpm
above background; swipes of inside: 0-30 cpm above background;
trunk: 0-15 cpm above background

Instrument Used: RM14 5072 HP-270 Date Today's Time Present
 Model No. S/N Probe Type

Followup Action Required: None Special Followup (Specify)

Send Completed Form to Radiation Health Coordinator

EVAGUEE EXPOSURE RECORD

I. REGISTRATION (EMERGENCY WORKER-PLEASE PRINT)

DATE Today's TIME Present DECONTAMINATION CENTER Current Location
 1. NAME Marcell Anthony J
 (LAST) (FIRST) (MIDDLE INT.)
 2. AGE 50 3. SEX MALE FEMALE 4. PREGNANT YES NO
 5. HOME ADDRESS 15 Hill St
 6. CITY Udдинг River 7. STATE NY 8. ZIP CODE 11792
 9. TELEPHONE NUMBER (HOME) (516) 929-7665
 10. TELEPHONE NUMBER (BUSINESS) (516) 420-2782
 11. SOCIAL SECURITY NUMBER 536-86-4297

II. BRIEFLY DESCRIBE YOUR WHEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.

LOCATION	INDOORS/OUTDOORS	TIME SPENT (HRS)	ACTIVITY
1. <u>Home</u>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<u>From previous evening till evacuation</u>	
2. <u>In Car</u>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<u>≈ 0.5</u>	<u>driving to Relocation Center</u>
3. <u>Manorville Rd</u>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<u>0.5</u>	<u>changing tire</u>
4. <u>In Car</u>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<u>≈ 3.5</u>	<u>driving to Relocation Center</u>
5. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____

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III. PERSONNEL MONITORING (TO BE COMPLETED BY CENTER PERSONNEL) BACKGROUND 40 CPM

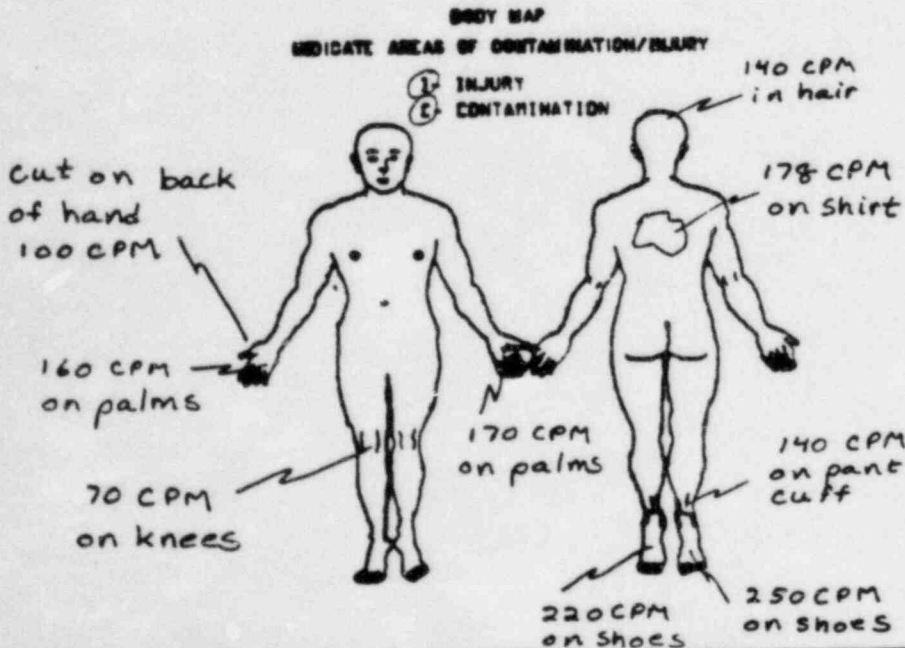
MONITOR'S INITIALS	INITIAL COUNTS MINUS BACKGROUND		COUNTS MINUS BACKGROUND AFTER DECONTAMINATION				THYROID MONITORING
	CLOTHED	UNCLOTHED	FIRST METHOD	SECOND METHOD	THIRD METHOD	FOURTH METHOD	
<u>GRM</u>	<u>TJL</u>	<u>PHS</u>					<u>TJW</u>
WHOLE BODY	<u>140-180 cpm</u>	<u>140 cpm</u>	<u>0 cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>45 cpm</u>
FEET	<u>220-250 cpm</u>	<u>0 cpm</u>	<u>0 cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<input checked="" type="checkbox"/>
HANDS	<u>160 cpm</u>	<u>160-170 cpm</u>	<u>0 cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<input checked="" type="checkbox"/>

CHECK DECONTAMINATION METHOD(S) USED:

- WASH (ISOLATED AREAS) METHOD: 1. WARM WATER/MILD SOAP/ SOFT BRUSH
 SHOWER (WIDE SPREAD) 2. WATERLESS HAND CLEANER
 3. PASTE MADE FROM MILD DETERGENT
 4. LAVA SOAP

DECONTAMINATION PERSONNEL'S INITIALS CAD

All levels minus background



- CHECK APPROPRIATE FINAL ACTION:
- INDIVIDUAL DECONTAMINATED
- INDIVIDUAL SENT TO _____ HOSPITAL
- DUE TO:
- INJURY Cut on hand Decontam
- THYROID CONTAMINATION ABOVE 0.13mR/hr OR 250cpm ABOVE BACKGROUND
- CONTINUED WHOLE BODY CONTAMINATION ABOVE 120cpm ABOVE BACKGROUND
- CAD INITIALS PAGE 1 OF 1

FIGURE 3

EQUIPMENT CONTAMINATION REPORT

OWNER'S NAME Anthony J. Marcell
Home Address
LERO ORGANIZATION 15 Hill St.; Wading River, NY 11792
EQUIPMENT DESCRIPTION Brown Suitcase
MODEL NO. NA S/N NA

INITIAL SURVEY RESULTS

INSTRUMENT USED: MODEL NO. RM-14 S/N 5027 PROBE TYPE HP-270

DATE Today's TIME Present SURVEYED BY GAK / Initial Personnel
Clear - Authorized for Release from Site Monitoring Area

160 CPM above background on handles; background - 40 CPM Contamination Detected - Release Denied
COMMENTS

POST DECONTAMINATION SURVEY RESULTS

Decontaminated by Charles L. Parrison Today's Date Present Time
Name Date Time

Decontaminated Methods Used: Handles wiped with wet soapy sponge

Post-Decontamination Survey Results Survey of swipes show all levels at background

Instrument Used: RM-14 / 5172 / HP-270 Date Today's Time Present
Model No. S/N Probe type

Followup Action Required: None Special Followup (Specify)

Send Completed Form to Radiation Health Coordinator

FIGURE 3

EQUIPMENT CONTAMINATION REPORT

OWNER'S NAME Anthony J. Marcell
Home Address _____
~~LERO ORGANIZATION~~ 15 Hill St; Wading River, NY 11792
EQUIPMENT DESCRIPTION Tire, Tire Jack, Lug Wrench
MODEL NO. NA S/N NA

INITIAL SURVEY RESULTS

INSTRUMENT USED: MODEL NO. RM-14 S/N 5027 PROBE TYPE HP-270

DATE Today's TIME Present SURVEYED BY A.J / Decon Area

Clear - Authorized for Release from Site

Contamination Detected - Release Denied

levels range from 100-400 CPM
above background
background - 40 CPM

COMMENTS

POST DECONTAMINATION SURVEY RESULTS

Decontaminated by _____
Name Date Time

Decontaminated Methods Used: _____

Post-Decontamination Survey Results _____

Instrument Used: _____ Date _____ Time _____
Model No. S/N Probe Type

Followup Action Required: _____ None _____ Special Followup (Specify)

Send Completed Form to Radiation Health Coordinator

NAME: Franklin P. Pierce
ADDRESS: 14 Oliver Street
Wading River, New York 11792
ZONE: A

Mr. Pierce lives within the two mile zone southeast of the Shoreham Nuclear Power Station. Mr. Pierce was home when the sirens sounded. After receiving the message from WALK radio that his area (Zone C) was requested to evacuate, he reported to the Relocation Center.

Mr. Pierce left his home after the release began. Monitoring his vehicle revealed contamination on the hood and sides ranging from 150-500 CPM above background (see attached report). Mr. Pierce is directed to leave his car in the contaminated parking area.

Initial monitoring of Mr. Pierce revealed contamination on his palms and shoes ranging from 200-300 CPM (see attached sheet). Monitoring Mr. Pierce after he has remove his shoes and scrubbed his hands shows him to be free of contamination. Monitoring his thyroid gland indicates no intake of radioiodine. Mr. Pierce is allowed to proceed to the Relocation Center.

FIGURE 2

VEHICLE CONTAMINATION REPORT

License # 4498-AXK State NY
 Name of Driver Franklin P Pierce
 Address (if Non-LERO) 14 Oliver St. Wading River NY 11792
Number Street City State Zip

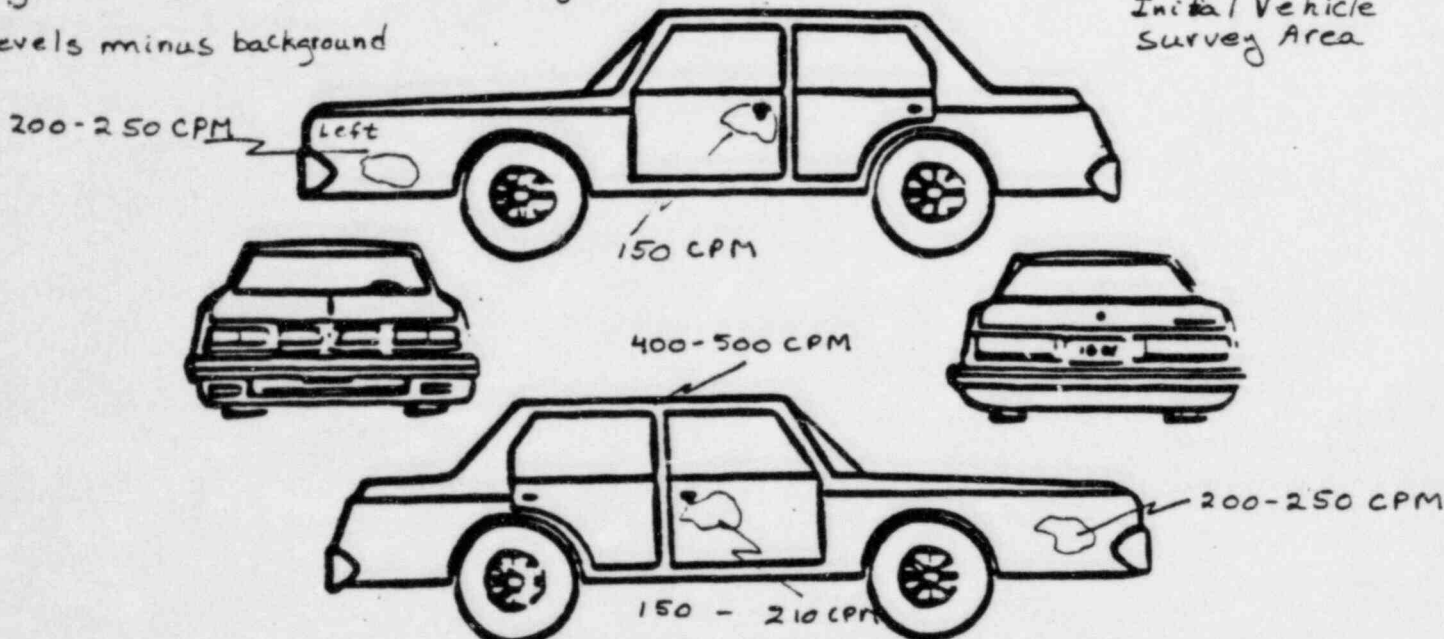
INITIAL SURVEY RESULTS

Instrument Used: Model No. RM-14 S/N 5079 - Right Side Probe Type HP-270
5127 - Left Side
 Date Today's Time Present Surveyed by CAH, EAT

Background - 40 CPM

All levels minus background

Initial Vehicle Survey Area



Clear - Authorized for Release from Site
 Contamination Detected - Release Denied

COMMENTS

hood & roof = 400-500 CPM, sides = 150-210 CPM; inside - steering wheel, seats: 50-300 CPM

Signature Albert Johnson/Decon Area

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated by John Jacob Harrison Today's Present
Name Date Time

Decontamination Methods Used: outside & steering wheel wiped with wet soapy sponges; seats vacuumed

Post-Decontamination Survey Results: swipes taken on all smooth surfaces - 0 CPM above background; seats surveyed - 0 CPM above background

Instrument Used: RM-14 / 5082 / HP-270 Date Today's Time Present
Model No. S/N Probe Type

Followup Action Required: None Special Followup (Specify)

Send Completed Form to Radiation Health Coordinator

EVACUEE EXPOSURE RECORD

I. REGISTRATION (EVACUEE WORKER-PLEASE PRINT)

DATE Today's TIME Present DECONTAMINATION CENTER Current Location

1. NAME Pierce Franklin P.
(LAST) (FIRST) (MIDDLE INT.)

2. AGE 29 3. SEX MALE FEMALE 4. PREGNANT YES NO

5. HOME ADDRESS 14 Oliver St

6. CITY Wading River 7. STATE NY 8. ZIP CODE 11792

9. TELEPHONE NUMBER (HOME) (516) 929 - 9949

10. TELEPHONE NUMBER (BUSINESS) (516) 744 - 3112

11. SOCIAL SECURITY NUMBER 192-64-5368

II. BRIEFLY DESCRIBE YOUR WHEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.

LOCATION	INDOORS/OUTDOORS	TIME SPENT (HRS)	ACTIVITY
1. <u>Home</u>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<u>From previous evening, till evacuation</u>	
2. <u>Car</u>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<u>≈ 4 hrs</u>	<u>driving to Relocation Center</u>
3. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
4. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
5. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____

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III. PERSONNEL MONITORING (TO BE COMPLETED BY CENTER PERSONNEL) BACKGROUND _____ CPM

MONITOR'S INITIALS	INITIAL COUNTS MINUS BACKGROUND		COUNTS MINUS BACKGROUND AFTER DECONTAMINATION				THYROID MONITORING
	CLOTHED	UNCLOTHED	FIRST METHOD	SECOND METHOD	THIRD METHOD	FOURTH METHOD	
<u>GAK</u>	<u>TJL</u>	<u>PHS</u>					<u>ITW</u>
WHOLE BODY	<u>0 cpm</u>	<u>0 cpm</u>	<u>- cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>
FEET	<u>300 cpm</u>	<u>0 cpm</u>	<u>- cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>
HANDS	<u>200 cpm</u>	<u>200 cpm</u>	<u>0 cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>

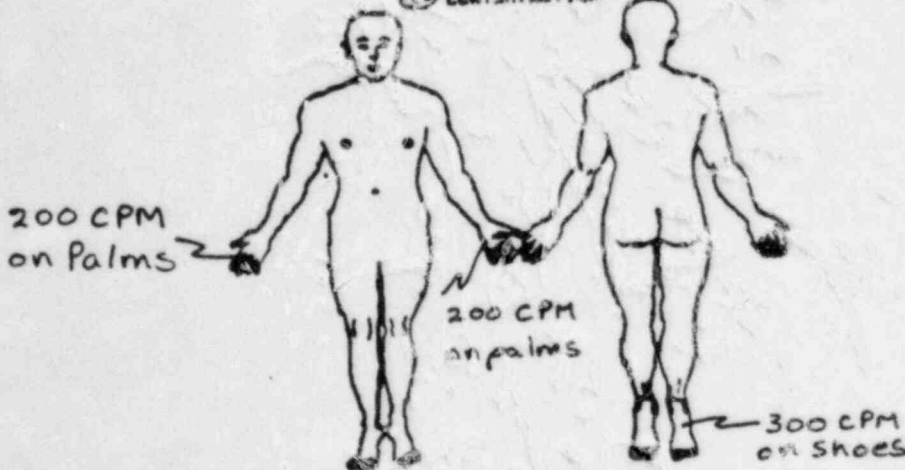
CHECK DECONTAMINATION METHOD(S) USED:

- WASH (ISOLATED AREAS) METHOD: 1. WARM WATER/MILD SOAP/ SOFT BRUSH
- SHOWER (WIDE SPREAD) 2. WATERLESS HAND CLEANER
3. PASTE MADE FROM MILD DETERGENT
4. LAVA SOAP

DECONTAMINATION PERSONNEL'S INITIALS CAF

BODY MAP
 MEDICATE AREAS OF CONTAMINATION/INJURY

1- INJURY
 2- CONTAMINATION



CHECK APPROPRIATE FINAL ACTION:

- INDIVIDUAL DECONTAMINATED
- INDIVIDUAL SENT TO _____ HOSPITAL
- DUE TO: _____
- INJURY _____
- THYROID CONTAMINATION
- ABOVE 0.15mR/hr OR 150cpm
- ABOVE BACKGROUND
- CONTINUED WHOLE BODY CONTAMINATION ABOVE 120cpm
- ABOVE BACKGROUND

CAF INITIALS

PAGE 1 OF 1

FIGURE 3

EQUIPMENT CONTAMINATION REPORT

OWNER'S NAME Franklin P. Pierce

Home Address

~~LERO ORGANIZATION~~ 14 Oliver St., Wading River, NY 11792

EQUIPMENT DESCRIPTION Black Suitcase

MODEL NO. NA S/N NA

INITIAL SURVEY RESULTS

INSTRUMENT USED: MODEL NO. RM-14 S/N 5048 PROBE TYPE HP-270

DATE Today's TIME Present SURVEYED BY GAK/Initial

Clear - Authorized for Release from Site ^{Personnel} Monitoring Area

120-300 cpm a. b. on bottom

00-230 cpm a. b. on handle

Contamination Detected - Release Denied

background - 40 cpm

COMMENTS

POST DECONTAMINATION SURVEY RESULTS

Decontaminated by Charles L. Davinson Today's Present
Name Date Time

Decontaminated Methods Used: Bottom, handles wiped with damp, soapy sponge

Post-Decontamination Survey Results swipes taken - 0 cpm above background

Instrument Used: RM-14 / 5030 / HP-270 Date Today's Time Present
Model No. S/N Probe Type

Followup Action Required: None Special Followup (Specify)

Send Completed Form to Radiation Health Coordinator

NAME: Robert J. Randal
ADDRESS: 310 Central Avenue
Wading River, New York 11792
ZONE: E

Mr. Randal turned on WALK radio as soon as the sirens were sounded. Mr. Randal left the house 15 minutes after hearing the message requesting people in his zone to leave the area. Mr. Randal arrived at the Relocation Center three hours after leaving his home.

No contamination is found on Mr. Randal's vehicle. Mr. Randal is directed to park in the "clean" parking area. Mr. Randal is directed to proceed to the Initial Monitoring Station. Scanning indicates that he is free from surface contamination. He is directed to proceed to the Thyroid Monitoring Station. Monitoring indicates no intake of radioiodines by the thyroid gland. Mr. Randal is directed to proceed to the Relocation Center.

FIGURE 2

VEHICLE CONTAMINATION REPORT

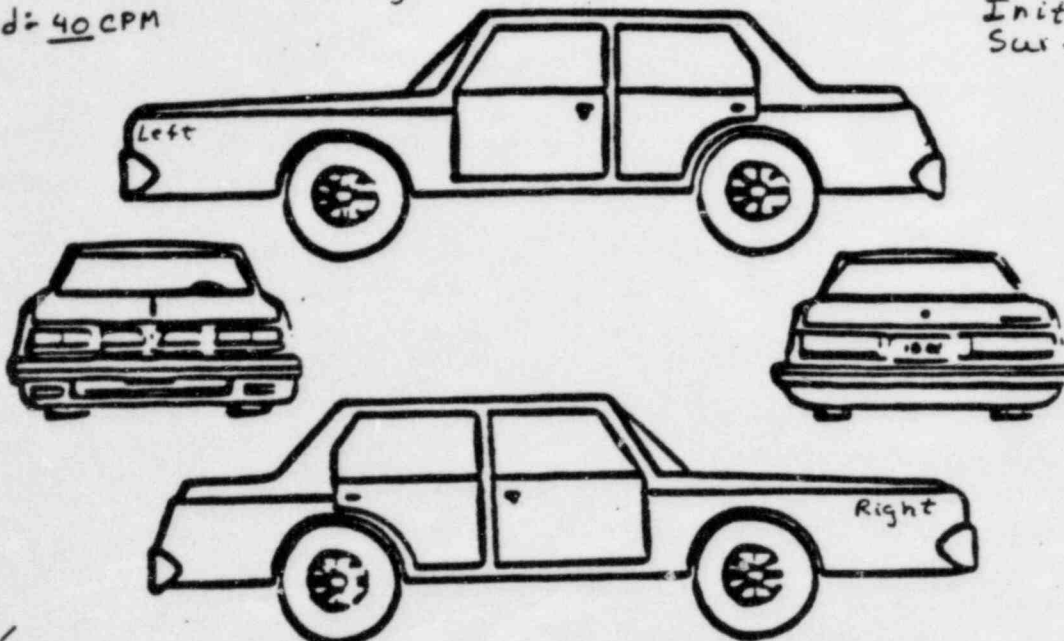
License # 7625-KLT State NY
Name of Driver Robert T. Randall
Address (if Non-LERO) 310 Central Ave ; Wading River, NY 11792
Number Street City State Zip

INITIAL SURVEY RESULTS

Instrument Used: Model No. RM-14 S/N 5079 Left Side Probe Type HP-270
5127- Right Side
Date Today's Time Present Surveyed by CAH + EAT

Background: 40 CPM

Initial Vehicle Survey Area



Clear - Authorized for Release from Site
 Contamination Detected - Release Denied

COMMENTS

No levels above background observed

Signature E.A. Thompson / Initial Survey Area
Charles A. Hilary

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated by _____
Name Date Time

Decontamination Methods Used: _____

Post-Decontamination Survey Results: _____

Instrument Used: _____ Date _____ Time _____

Followup Action Required: Model No. _____ S/N _____ Probe Type _____
_____ None _____ Special Followup (Specify) _____

Send Completed Form to Radiation Health Coordinator

EVACUEE EXPOSURE RECORD

I. REGISTRATION (EMERGENCY WORKER-PLEASE PRINT)

DATE Today's TIME Present DECONTAMINATION CENTER Current Location

1. NAME Randall Robert J.
(LAST) (FIRST) (MIDDLE INT.)

2. AGE 32 3. SEX MALE FEMALE 4. PREGNANT YES NO

5. HOME ADDRESS 310 Central Ave

6. CITY Wading River 7. STATE NY 8. ZIP CODE 11792

9. TELEPHONE NUMBER (HOME) (516) 929 - 4244

10. TELEPHONE NUMBER (BUSINESS) (516) 733 - 7086

11. SOCIAL SECURITY NUMBER 118 - 47 - 1328

II. BRIEFLY DESCRIBE YOUR WHEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.

LOCATION	INDOORS/OUTDOORS	TIME SPENT (HRS)	ACTIVITY
1. <u>Home</u>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<u>From previous evening till evacuation</u>	
2. <u>Car</u>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<u>2.4</u>	<u>driving to Relocation Center</u>
3. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
4. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
5. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____

OFFICIAL USE ONLY

III. PERSONNEL MONITORING (TO BE COMPLETED BY CENTER PERSONNEL) BACKGROUND 40 CPM

MONITOR'S INITIALS	INITIAL COUNTS MINUS BACKGROUND		COUNTS MINUS BACKGROUND AFTER DECONTAMINATION				THYROID MONITORING
	CLOTHED	UNCLOTHED	FIRST METHOD	SILICO METHOD	THIRD METHOD	FOURTH METHOD	
<u>GAK</u>							<u>JW</u>
WHOLE BODY	<u>0</u> CPM	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>	<u>40</u> CPM
FEET	<u>0</u> CPM	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>
HANDS	<u>0</u> CPM	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>	<u>CPM</u>

CHECK DECONTAMINATION METHOD(S) USED:

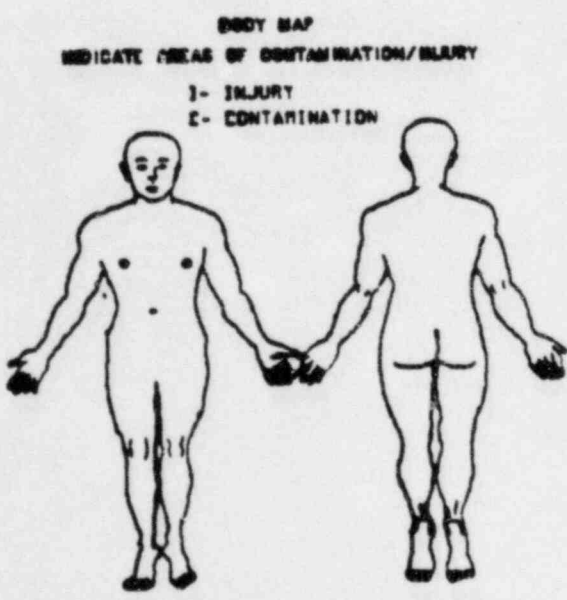
WASH (ISOLATED AREAS) METHOD: 1. WARM WATER/MILD SOAP/SOFT BRUSH

SHOWER (WIDE SPREAD) 2. WATERLESS HAND CLEANER

3. PASTE MADE FROM MILD DETERGENT

4. LAVA SOAP

DECONTAMINATION PERSONNEL'S INITIALS _____



CHECK APPROPRIATE FINAL ACTION:

INDIVIDUAL DECONTAMINATED

INDIVIDUAL SENT TO _____ HOSPITAL

DUE TO: _____

INJURY _____

THYROID CONTAMINATION ABOVE 0.15mR/hr OR 150cpm ABOVE BACKGROUND

CONTINUED WHOLE BODY CONTAMINATION ABOVE 120cpm ABOVE BACKGROUND

INITIALS _____ PAGE 1 OF 1

NAME: David D. Kenner
ADDRESS: 46 Trappers Path
Wading River, New York 11792
ZONE: C

Mr. Kenner turned on WALK radio as he had been directed and heard the announcement that all people in his zone were being requested to evacuate the area near the plant. Mr. Kenner packs a few belongings, secures his home and heads for his car. Mr. Kenner trips on the way to his car, twisting his left ankle.

Upon arriving at the Relocation Center, Mr. Kenner follows the signs to the area where his car is monitored for contamination. None is detected on his car, so he is directed to park in the "clean" parking area. Mr. Kenner's ankle is quite swollen. Security personnel help him in to the Initial Monitoring Station. The Decontamination Leader is sent for. Meanwhile, monitoring personnel determine that the man is free of contamination. The Decontamination Leader decides to send the man to the hospital so that his ankle can be examined. Mr. Kenner is made comfortable while he waits for the ambulance.

While he is waiting, he is given a thyroid scan. No intake of radioactive iodines is indicated. Mr. Kenner waits for the ambulance.

FIGURE 2

VEHICLE CONTAMINATION REPORT

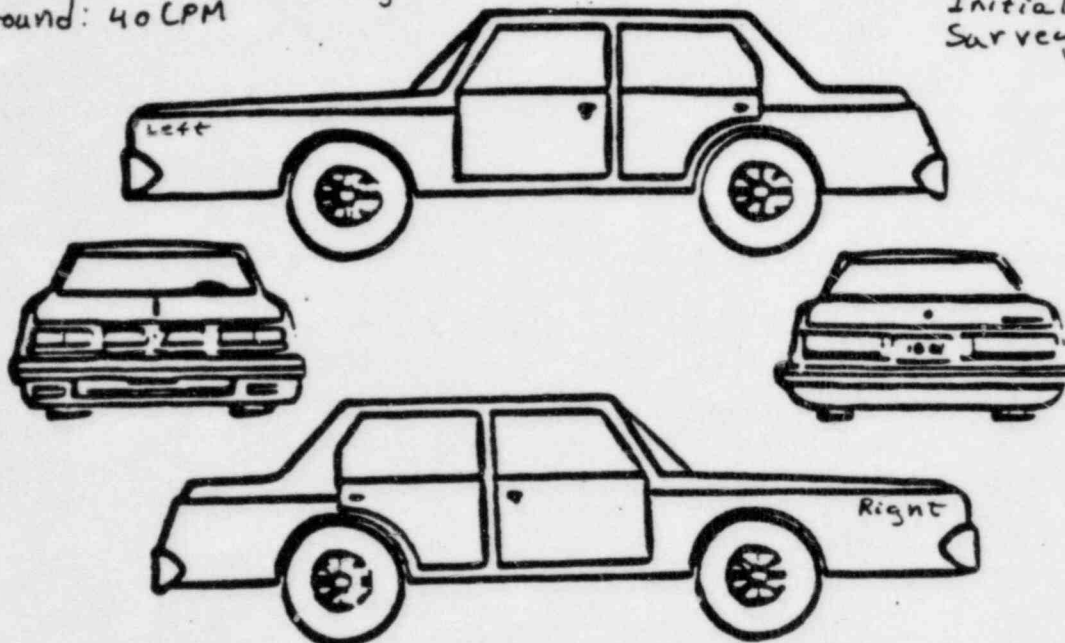
License # 3582-KBX State NY
Name of Driver David D. Kenner
Address (if Non-LERO) 46 Trapper's Path ; Wading River NY 11792
Number Street City State Zip

INITIAL SURVEY RESULTS

Instrument Used: Model No. RM-14 S/N 5079-Right Side Probe Type HP-270
5027-Left Side
Date Today's Time Present Surveyed by CAH + EAT

Background: 40 CPM

Initial Vehicle Survey Area



✓

Clear - Authorized for Release from Site
Contamination Detected - Release Denied

COMMENTS

Signature EA Thompson / Initial Survey Area
Charles A. Hilary

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated by _____
Name Date Time

Decontamination Methods Used: _____

Post-Decontamination Survey Results: _____

Instrument Used: _____ Date _____ Time _____

Followup Action Required: _____ None _____ Special Followup (Specify) _____

Send Completed Form to Radiation Health Coordinator

EVACUEE EXPOSURE RECORD

I. REGISTRATION (EMERGENCY WORKER-PLEASE PRINT)

DATE Today's TIME Present DECONTAMINATION CENTER Current Location
 1. NAME Kenner David D.
(LAST) (FIRST) (MIDDLE INT.)
 2. AGE 35 3. SEX MALE FEMALE 4. PREGNANT YES NO
 5. HOME ADDRESS 46 Trapper's Path
 6. CITY Wading River 7. STATE N Y 8. ZIP CODE 11792
 9. TELEPHONE NUMBER (HOME) (516) 929-6779
 10. TELEPHONE NUMBER (BUSINESS) (516) 481-7281
 11. SOCIAL SECURITY NUMBER 762-92-8543

II. BRIEFLY DESCRIBE YOUR WHEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.

LOCATION	INDOORS/OUTDOORS	TIME SPENT (HRS)	ACTIVITY	OFFICIAL USE ONLY
1. <u>Home</u>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<u>From previous afternoon till evacuation</u>		_____
2. <u>car</u>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<u>2.4</u>	<u>driving to Relocation Center</u>	_____
3. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____	_____
4. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____	_____
5. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____	_____

III. PERSONNEL MONITORING (TO BE COMPLETED BY CENTER PERSONNEL) BACKGROUND 40 cpm

MONITOR'S INITIALS	INITIAL COUNTS MINUS BACKGROUND		COUNTS MINUS BACKGROUND AFTER DECONTAMINATION				THYROID MONITORING
	CLOTHED	UNCLOTHED	FIRST METHOD	SECOND METHOD	THIRD METHOD	FOURTH METHOD	
<u>GAK</u>							<u>JJW</u>
WHOLE BODY	<u>0</u> cpm	cpm	cpm	cpm	cpm	cpm	<u>40</u> cpm
FEET	<u>0</u> cpm	cpm	cpm	cpm	cpm	cpm	_____
HANDS	<u>0</u> cpm	cpm	cpm	cpm	cpm	cpm	_____

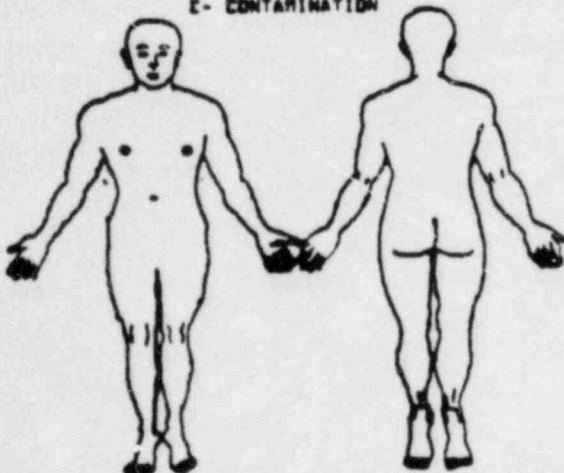
CHECK DECONTAMINATION METHOD(S) USED:

- | | |
|---|---|
| <input type="checkbox"/> WASH (ISOLATED AREAS)
<input type="checkbox"/> SHOWER (WIDE SPREAD) | METHOD: 1. <input type="checkbox"/> WARM WATER/MILD SOAP/ SOFT BRUSH
2. <input type="checkbox"/> WATERLESS HAND CLEANER
3. <input type="checkbox"/> PASTE MADE FROM MILD DETERGENT
4. <input type="checkbox"/> LAVA SOAP |
|---|---|

DECONTAMINATION PERSONNEL'S INITIALS _____

BODY MAP
INDICATE AREAS OF CONTAMINATION/INJURY

1- INJURY
2- CONTAMINATION



CHECK APPROPRIATE FINAL ACTION:

- INDIVIDUAL DECONTAMINATED
- INDIVIDUAL SENT TO _____ HOSPITAL
- DUE TO: _____
- INJURY _____
- THYROID CONTAMINATION ABOVE 0.15mR/hr OR 150cpm ABOVE BACKGROUND
- CONTINUED WHOLE BODY CONTAMINATION ABOVE 120cpm ABOVE BACKGROUND
- INITIALS _____

PAGE 1 OF 1

NAME: John J. Miller
ADDRESS: 23 Creek Road
Wading River, New York 11792
ZONE: E

Mr. Miller, his wife and son left the area shortly after hearing the WALK radio announcement asking people in his area to evacuate.

Mr. Miller follows the signs and other cars to the area where arriving cars are being monitored for contamination. When it is determined that his car is "clean," the monitoring personnel direct him to park his car in the "clean" parking area. He and his family are given directions to the Initial Monitoring Station by Security personnel.

Monitoring indicates no contamination on any member of the Miller family. They are directed to proceed to the Thyroid Monitoring Station. No significant intake of radioiodines is indicated in any of the family members. They are directed to proceed into the Relocation Center.

FIGURE 2

VEHICLE CONTAMINATION REPORT

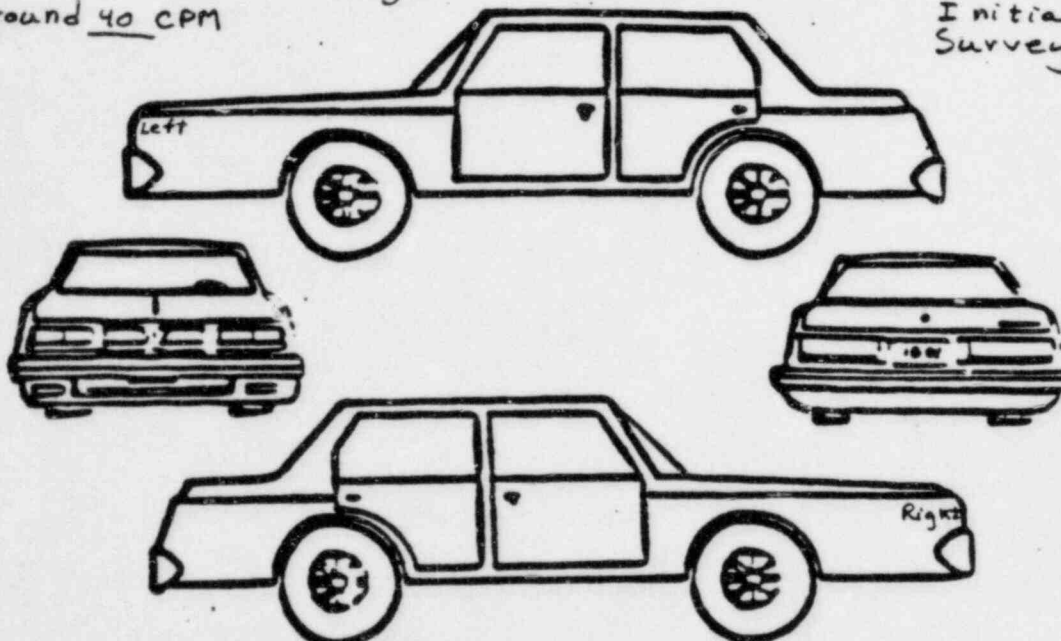
License # 723-HJB State NY
Name of Driver John J. Miller
Address (if Non-LERO) 23 Creek Rd. Wading River NY 11792
Number Street City State Zip

INITIAL SURVEY RESULTS

Instrument Used: Model No. RM-14 S/N 5079-Left Side Probe Type _____
Date Today's Time Present Surveyed by CAH+EAT

Background 40 CPM

Initial Vehicle Survey Area



Clear - Authorized for Release from Site
 Contamination Detected - Release Denied

COMMENTS

Signature E.A. Thompson / Initial Survey Area
Charles A. Hilary

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated by _____
Name Date Time

Decontamination Methods Used: _____

Post-Decontamination Survey Results: _____

Instrument Used: _____ Date _____ Time _____

Followup Action Required: _____
Model No. S/N Probe Type
None Special Followup (Specify)

Send Completed Form to Radiation Health Coordinator

EVACUEE EXPOSURE RECORD

I. REGISTRATION (EMERGENCY WORKER-PLEASE PRINT)

DATE Today's TIME Present DECONTAMINATION CENTER Current Location

1. NAME Miller John J
(LAST) (FIRST) (MIDDLE INT.)

2. AGE 40 3. SEX MALE FEMALE 4. PREGNANT YES NO

5. HOME ADDRESS 23 Creek Rd.

6. CITY Wading River 7. STATE NY 8. ZIP CODE 11792

9. TELEPHONE NUMBER (HOME) (516) 929 - 7686

10. TELEPHONE NUMBER (BUSINESS) (516) 744 - 6259

11. SOCIAL SECURITY NUMBER 184 - 26 - 8762

II. BRIEFLY DESCRIBE YOUR WHEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.

LOCATION	INDOORS/OUTDOORS	TIME SPENT (HRS)	ACTIVITY
1. <u>Home</u>	<input checked="" type="checkbox"/> <input type="checkbox"/>	<u>Previous evening till evacuation</u>	
2. <u>car</u>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<u>≈ 4</u>	<u>driving to Relocation Center</u>
3. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
4. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
5. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____

OFFICIAL USE ONLY

III. PERSONNEL MONITORING (TO BE COMPLETED BY CENTER PERSONNEL) BACKGROUND CEM

MONITOR'S INITIALS	INITIAL COUNTS MINUS BACKGROUND		COUNTS MINUS BACKGROUND AFTER DECONTAMINATION				THYROID MONITORING
	CLOTHED	UNCLOTHED	FIRST METHOD	SECOND METHOD	THIRD METHOD	FOURTH METHOD	
<u>GAIS</u>							<u>JJW</u>
WHOLE BODY	<u>10</u> cpm	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>40</u> cpm
FEET	<u>0</u> cpm	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<input checked="" type="checkbox"/>
HANDS	<u>0</u> cpm	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<input checked="" type="checkbox"/>

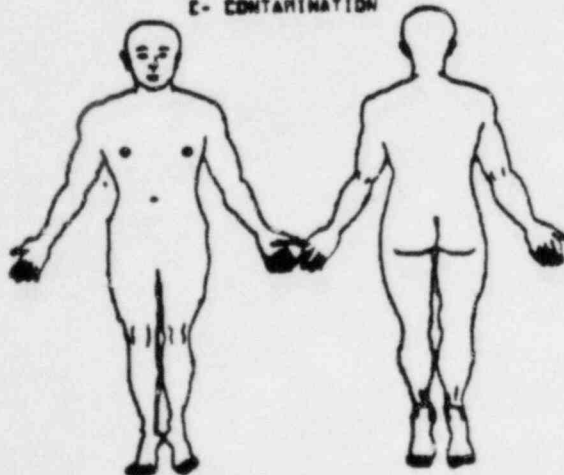
CHECK DECONTAMINATION METHOD(S) USED:

- WASH (ISOLATED) AREAS METHOD: 1. WARM WATER/MILD SOAP/ SOFT BRUSH
- SHOWER (WIDE SPREAD) 2. WATERLESS HAND CLEANER
3. PASTE MADE FROM MILD DETERGENT
4. LAVA SOAP

DECONTAMINATION PERSONNEL'S INITIALS _____

BODY MAP
INDICATE AREAS OF CONTAMINATION/INJURY

I- INJURY
C- CONTAMINATION



CHECK APPROPRIATE FINAL ACTION:

- INDIVIDUAL DECONTAMINATED
- INDIVIDUAL SENT TO _____ HOSPITAL
- DUE TO: _____
- INJURY _____
- THYROID CONTAMINATION ABOVE 0.15mR/hr OR 150cpm ABOVE BACKGROUND
- CONTINUED WHOLE BODY CONTAMINATION ABOVE 120cpm ABOVE BACKGROUND

INITIALS _____

PAGE 1 OF 1

Section II - Situations to be used to simulate the arrival of Emergency Workers at the Decontamination Facility.

This section includes the following simulated histories and contamination reports:

- o George A. Lutz - Contaminated
- o Richard A. McGuire - Contaminated
- o Laurence J. Kilmore - Not contaminated
- o Kenneth J. Randall - Not contaminated
- o Joseph P. Brown - Not contaminated

NAME: George A. Lutz
LERO TASK: Traffic Guide
LOCATION: Traffic Control Point #127
Corner of North Wading River Road and North Country Road

Mr. Lutz arrives at the Emergency Worker Decontamination Facility after spending three hours in the Emergency Planning Zone at Traffic Control Point #127. Mr. Lutz arrived at the location 2 hours after the start of the release. He spent a total of 5 hours at the location before reporting to the facility at the Local EOC in Brentwood.

Contamination is detected on his car ranging from 150-400 CPM above background (see attached sheet). His traffic cones are contaminated from 300-400 CPM above background (see attached sheet). Mr. Lutz has contamination on his clothing ranging from 150-300 CPM. Monitoring Mr. Lutz unclothed revealed contamination on his hands and in his hair ranging from 200-300 CPM. This contamination is easily removed by washing with a mild soap. He is given clean clothes. Thyroid monitoring does not indicate a significant intake of radioiodines. His dosimeters indicate he has received a dose of about 1.5 R.

The interior of Mr. Lutz's car is monitored at the contaminated parking area. Contamination is detected on the seat and steering wheel (50-200 CPM above background) as shown on the attached sheet. Wiping the exterior and interior of the car with a damp sponge and vacuuming the interior reduces levels to 20-30 CPM above background. The car is released as clean.

The traffic cones are placed in plastic trash bags, labeled as contaminated, and stored in a controlled area.

Mr. Lutz is released from duty.

FIGURE 2

VEHICLE CONTAMINATION REPORT

License # 3987-DCM State NY
 Name of Driver George A. Lutz
 Address (if Non-LERO) NA
 Number Street City State Zip

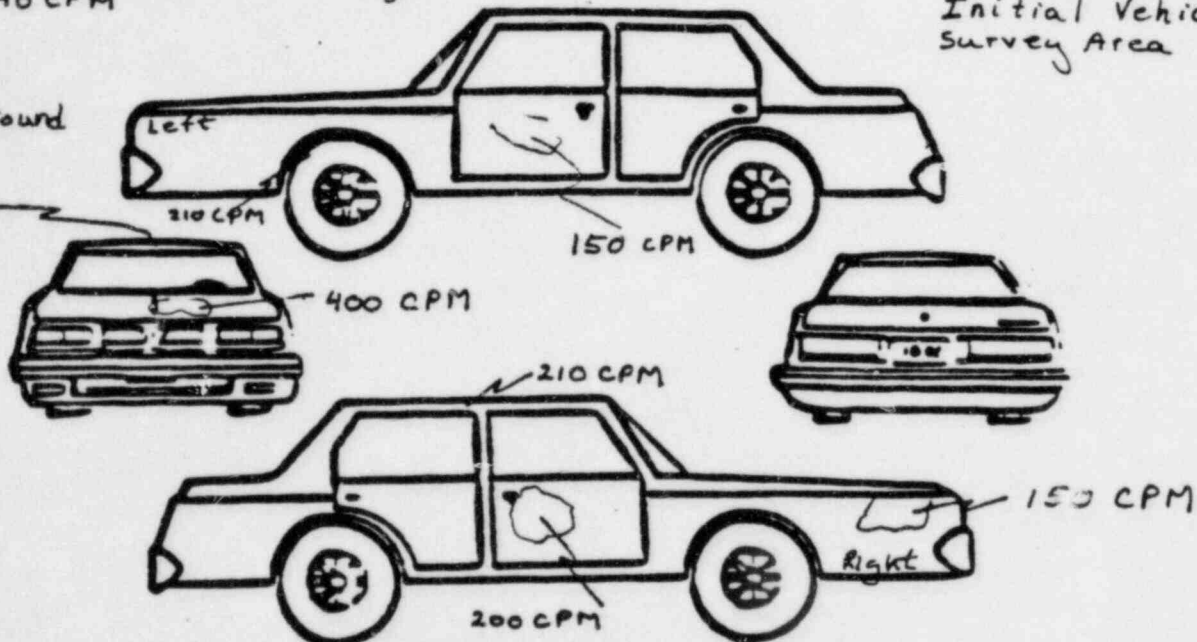
INITIAL SURVEY RESULTS

Instrument Used: Model No. RM-14 S/N 5132 ^{Left Side} 5147 ^{Right Side} Probe Type HP-270
 Date Today's Time Present Surveyed by CAH + EAT

Background: 40 CPM

All levels
 minus background

300 CPM



Initial Vehicle
 Survey Area

Clear - Authorized for Release from Site
 Contamination Detected - Release Denied

COMMENTS

levels on hood, roof + sides: 150-300 CPM above background
 levels on driver's seat, steering wheel, floor: 150-210 CPM above background

Signature Randolf C. Clark/Decon Area

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated by James E. Allen Today's Date Present Time

Decontamination Methods Used: Inside + outside - Wiped down with damp, soapy sponge; Inside vacuumed

Post-Decontamination Survey Results: Swipes of outside - 0 CPM above background; Seat surveyed - 10-20 CPM above background; floor + steering wheel swipes - 8 CPM above background

Instrument Used: RM-14 / 5039 / HP-270 Date Today's Time Present
 Model No. S/N Probe Type

Followup Action Required: None Special Followup (Specify)

Send Completed Form to Radiation Health Coordinator

EMERGENCY WORKER EXPOSURE RECORD

I. REGISTRATION (EMERGENCY WORKER-PLEASE PRINT)

DATE Today's TIME Present DECONTAMINATION CENTER Current Location

1. NAME Lutz George A.
(LAST) (FIRST) (MIDDLE INT.)

2. AGE 50 3. SEX MALE FEMALE 4. PREGNANT YES NO

5. HOME ADDRESS 1627 Oakwood Ave

6. CITY Hempstead 7. STATE NY 8. ZIP CODE 11787

9. TELEPHONE NUMBER (HOME) (516) 787 - 6797

10. TELEPHONE NUMBER (BUSINESS) (516) 447 - 3629

11. SOCIAL SECURITY NUMBER 082-47-7652

12. KI TAKEN YES NO 13. TIME INITIAL DOSE WAS TAKEN NA

14. DATE INITIAL DOSE WAS TAKEN NA 15. HOW MANY DAYS KI TAKEN NA

II. BRIEFLY DESCRIBE YOUR WHEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.

LOCATION	INDOORS/OUTDOORS	TIME SPENT (HRS)	ACTIVITY
1. <u>Traffic Control Point #127</u>	<input type="checkbox"/> INDOORS <input checked="" type="checkbox"/> OUTDOORS	<u>5</u>	<u>Traffic Guide</u>
2. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
3. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
4. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
5. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____

OFFICIAL USE ONLY

III. PERSONNEL MONITORING (TO BE COMPLETED BY CENTER PERSONNEL) BACKGROUND 40 cpm

MONITOR'S INITIALS	INITIAL COUNTS MINUS BACKGROUND		COUNTS MINUS BACKGROUND AFTER DECONTAMINATION				THYROID MONITORING
	CLOTHED	UNCLOTHED	FIRST METHOD	SECOND METHOD	THIRD METHOD	FOURTH METHOD	
<u>TAK</u>	<u>B.D</u>	<u>B.D</u>	<u>0 cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>RNY</u>
WHOLE BODY	<u>210 cpm</u>	<u>150 cpm</u>	<u>0 cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>70 cpm</u>
FEET	<u>300 cpm</u>	<u>0 cpm</u>	<u>- cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>X</u>
HANDS	<u>280 cpm</u>	<u>280 cpm</u>	<u>0 cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>cpm</u>	<u>X</u>

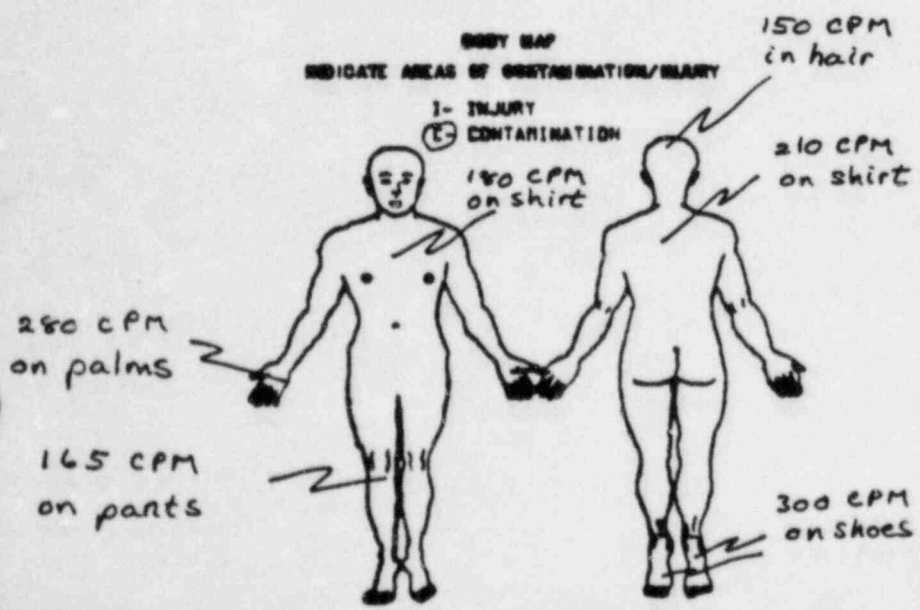
CHECK DECONTAMINATION METHOD(S) USED:

WASH (ISOLATED AREAS) METHOD: 1. WARM WATER/MILD SOAP/ SOFT BRUSH

SHOWER (WIDE SPREAD) 2. WATERLESS HAND CLEANER

DECONTAMINATION PERSONNEL'S INITIALS TAL 3. PASTE MADE FROM MILD DETERGENT

4. LAVA SOAP



CHECK APPROPRIATE FINAL ACTION:

INDIVIDUAL DECONTAMINATED

INDIVIDUAL SENT TO _____ HOSPITAL

DUE TO:

INJURY _____

THYROID CONTAMINATION ABOVE 0.15mR/hr OR 350cpm ABOVE BACKGROUND

CONTINUED WHOLE BODY CONTAMINATION ABOVE 120cpm ABOVE BACKGROUND

EMERGENCY WORKER PERMANENT DOSE RECORD FORM

I. IDENTIFICATION (PLEASE PRINT)

1. NAME Lutz George A.
 (LAST) (FIRST) (MIDDLE INITIAL)
2. SEX MALE FEMALE
3. DATE OF BIRTH 6 / 15 / 33
 MONTH DAY YEAR
4. SOCIAL SECURITY NUMBER 782--47--7652
5. HOME ADDRESS 1627 Oakwood Ave; Hauppauge, NY 1178
6. MISSION Traffic Guide - Control Point *127

II. EXPOSURE (RECORDED FROM POCKET DOSIMETER)

DATE	DIRECT-READING DOSIMETER SERIAL #	RANGE	DOSE (MR OR R)	
			DAILY	TOTAL
Today's	3070041	0-200 mR	—	off scale
"	3070042	0-5 R	1.5 R	1.5 R

III. EXPOSURE (RECORDED FROM TLD)

DATE	TLD SERIAL NO.	DOSE (MR OR R)	
		DAILY	TOTAL
Today's	0000213		

EMERGENCY WORKER LOG OUT/LOG IN FORM

Date/Time: Todays Date/hr/min
 Area: Current Location
 Record Keeper: Your Name
 Page 1 of 2

Name/Group	Mission	Dosimeter Serial No.	Initial Readings	Final Readings	TLD Serial No.	hr/min. Time Out	hr/min. Time In
George A. Lutz	Traffic Guide Central Point 127	3070041	0 mR	offscale		0100	6/00
"		3070042	0 R	1.5 R			
"					0000213		
Richard A McGuire	Bus Driver Bus Route C1	3070048	0 mR	offscale		0100	4/30
		3070027	0 R	1.0 R			
					0000129		
Laurence J. Kilmore	Traffic Guide Central Point 125	3070036	0 R	50 mR		0100	4/00
"		3070053	0 R	Not			
					0000762		

NAME: Richard A. McGuire

LERO TASK: Bus Driver

LOCATION: Zone C, Route C1

Mr. McGuire arrives at the Emergency Worker Decontamination Facility after spending 4 hours in the Emergency Planning Zone.

Contamination is detected on the bus. The levels range from 200-250 CPM above background (see attached sheet). Mr. McGuire is directed to park the bus in the contaminated parking area.

Mr. McGuire is contaminated only on his hands. The level is 150 CPM above background (see attached sheet). Washing his hands with warm water and soap removes the contamination. Monitoring of his thyroid gland does not indicate a significant intake of radioiodines. Mr. McGuire's dosimeters indicate he has received 1 Rem of exposure. Mr. McGuire is released from duty.

The bus is parked in the contaminated parking area along with a copy of the contamination report. It will be cleaned later.

FIGURE 2

VEHICLE CONTAMINATION REPORT

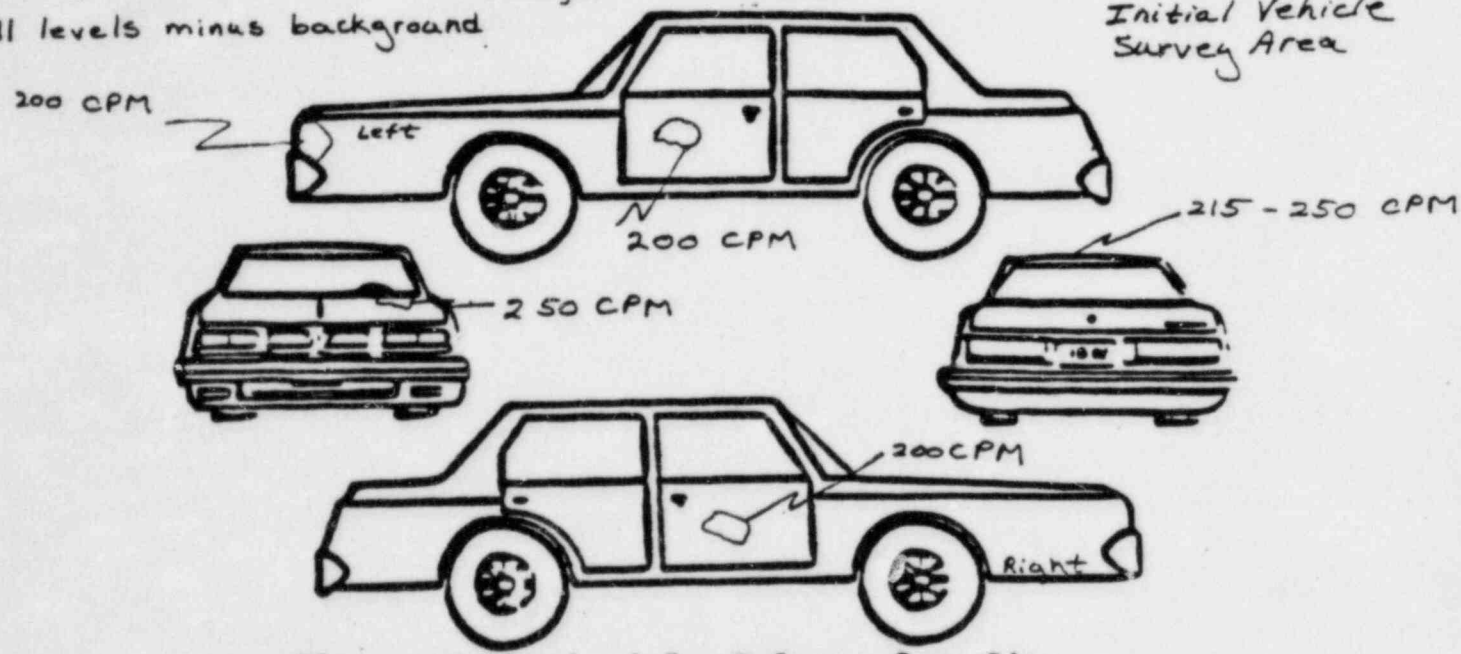
License # 7629-JLK State NY
Name of Driver Richard H. McLuire
Address (if Non-LERO) _____
Number Street City State Zip

INITIAL SURVEY RESULTS

Instrument Used: Model No. RM-14 S/N 5132-Left Side / 5147-Right Side Probe Type HP-270
Background: 40 CPM Date Today's Time Present Surveyed by CAH + EAT

All levels minus background.

Initial Vehicle Survey Area



Clear - Authorized for Release from Site
 Contamination Detected - Release Denied

COMMENTS

outside side, hood, & roof: 200-250 CPM; inside seats, floor: counts from 50-300 CPM on seats & floor of driver's side (e.b.)

Signature Randolf C. Clark / Decor Area

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated by James E. Allen Today's Date Present Time

Decontamination Methods Used: Inside & outside - wipe down with damp soapy sponge; Vacuum Seat & floor

Post-Decontamination Survey Results: swipes of outside - 0 CPM above background; seat surveyed - 0-15 CPM above background floor and steering wheel swipes - 0 CPM above background

Instrument Used: RM-14 / 5039 / HP-270 Date Today's Time Present
Model No. S/N Probe Type

Followup Action Required: None Special Followup (Specify)

EMERGENCY WORKER EXPOSURE RECORD

I. REGISTRATION (EMERGENCY WORKER-PLEASE PRINT)

DATE Today's TIME Present DECONTAMINATION CENTER Emergency Worker
Decon. Facility

1. NAME McGuire Richard A.
(LAST) (FIRST) (MIDDLE INT.)

2. AGE 43 3. SEX MALE FEMALE 4. PREGNANT YES NO

5. HOME ADDRESS 177 Hempstead Turnpike

6. CITY Hempstead 7. STATE NY 8. ZIP CODE 11550

9. TELEPHONE NUMBER (HOME) (516) 379-4948

10. TELEPHONE NUMBER (BUSINESS) (516) 379-6777

11. SOCIAL SECURITY NUMBER 489-32-4812

12. KI TAKEN YES NO 13. TIME INITIAL DOSE WAS TAKEN NA

14. DATE INITIAL DOSE WAS TAKEN NA 15. HOW MANY DAYS KI TAKEN NA

II. BRIEFLY DESCRIBE YOUR WHEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.

LOCATION	INDOORS/DU'DOORS	TIME SPENT (HRS)	ACTIVITY
1. <u>Bus Route C1</u>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<u>4</u>	<u>Bus Driver</u>
2. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
3. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
4. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
5. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____

OFFICIAL USE ONLY

III. PERSONNEL MONITORING (TO BE COMPLETED BY CENTER PERSONNEL) BACKGROUND 40 cpm

MONITOR'S INITIALS	INITIAL COUNTS MINUS BACKGROUND		COUNTS MINUS BACKGROUND AFTER DECONTAMINATION				THYROID MONITORING
	CLOTHED	UNCLOTHED	FIRST METHOD	SECOND METHOD	THIRD METHOD	FOURTH METHOD	
<u>JAK</u>			<u>BD</u>				<u>RV</u>
WHOLE BODY	<u>0</u> cpm	cpm	<u>—</u> cpm	cpm	cpm	cpm	<u>40 cpm</u>
FEET	<u>0</u> cpm	cpm	<u>—</u> cpm	cpm	cpm	cpm	<input checked="" type="checkbox"/>
HANDS	<u>150</u> cpm	cpm	<u>0</u> cpm	cpm	cpm	cpm	<input checked="" type="checkbox"/>

CHECK DECONTAMINATION METHOD(S) USED:

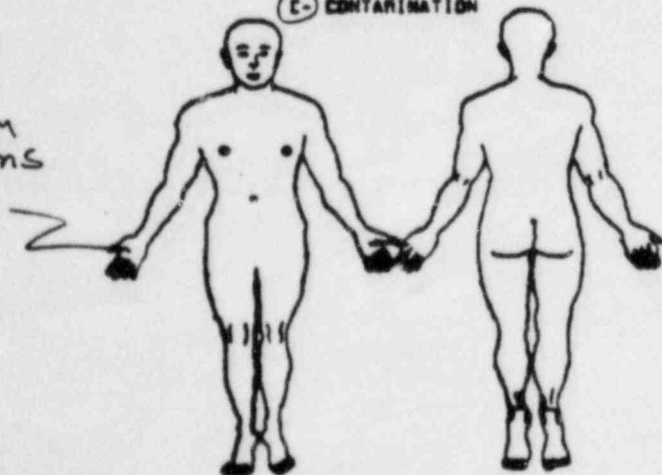
- WASH (ISOLATED AREAS) METHOD: 1. WARM WATER/MILD SOAP/ SOFT BRUSH
- SHOWER (WIDE SPREAD) 2. WATERLESS HAND CLEANER
3. PASTE MADE FROM MILD DETERGENT
4. LAVA SOAP

DECONTAMINATION PERSONNEL'S INITIALS _____

BODY MAP INDICATE AREAS OF CONTAMINATION/INJURY

I- INJURY
C- CONTAMINATION

150 cpm on palms



CHECK APPROPRIATE FINAL ACTION:

INDIVIDUAL DECONTAMINATED

INDIVIDUAL SENT TO _____ HOSPITAL
DUE TO:

- INJURY _____
- THYROID CONTAMINATION ABOVE 0.13mR/hr OR 260cpm ABOVE BACKGROUND
- CONTINUED WHOLE BODY CONTAMINATION ABOVE 120 cpm ABOVE BACKGROUND

BD INITIALS

PAGE 1 OF 1

Rev. 2

EMERGENCY WORKER PERMANENT DOSE RECORD FORM

I. IDENTIFICATION (PLEASE PRINT)

1. NAME McGuire Richard A
 (LAST) (FIRST) (MIDDLE INITIAL)
2. SEX MALE FEMALE
3. DATE OF BIRTH 9 / 28 / 40
 MONTH DAY YEAR
4. SOCIAL SECURITY NUMBER 489--32--4812
5. HOME ADDRESS 177 Hempstead Turnpike, Hempstead, NY 11550
6. MISSION _____

II. EXPOSURE (RECORDED FROM POCKET DOSIMETER)

DATE	DIRECT-READING DOSIMETER SERIAL #	RANGE	DOSE (MR OR R)	
			DAILY	TOTAL
Today's	3070022	0-200 mR	—	off scale
"	3070076	0-5 R	1.0 R	1.0 R

III. EXPOSURE (RECORDED FROM TLD)

DATE	TLD SERIAL NO.	DOSE (MR OR R)	
		DAILY	TOTAL
Today's	0000129		

EMERGENCY WORKER LOG OUT/LOG IN FORM

Date/Time: Tedman's Date / hr/min
 Area: Current Location
 Record Keeper: Your Name
 Page 1 of 2

Name/Group	Mission	Dosimeter Serial No.	Initial Readings	Final Readings	TLD Serial No.	hr/min Time Out	hr/min Time In
George A. Lutz	Traffic Guide Central Point #127	3070041	0 mR	off scale		0100	6/00
"		3070042	0 R	1.5 R			
"					0000213		
Richard A McGuire	Bus Driver Bus Route C1	3070048	0 mR	off scale		0100	4/30
		3070027	0 R	1.0 R			
					0000129		
Laurence J. Kilmore	Traffic Guide Central Point 125	3070036	0 R	50 mR Not		0100	4/00
"		3070053	0 R				
					0000762		

EMERGENCY WORKER LOG OUT/LOG IN FORM

Date/Time: Tidona's Date/hr/min
 Area: Current location
 Record Keeper: Your Name
 Page 1 of 2

Name/Group	Mission	Dosimeter Serial No.	Initial Readings	Final Readings	TLD Serial No.	hr/min. Time Out	hr/min. Time In
George A. Lutz	Traffic Guide Control Point #127	3070041	0 mR	off scale		0100	6/00
"		3070042	0 R	1.5 R			
"					0000213		
Richard A McGuire	Bus Driver Bus Route C1	3070048	0 mR	off scale		0100	4/30
		3070027	0 R	1.0 R			
					0000127		
Laurence J. Kilmare	Traffic Guide Control Point 125	3070036	0 R	50 mR Not		0100	4/00
"		3070053	0 R				
					0000762		

NAME: Laurence J. Kilmore

LERO TASK: Traffic Guide

LOCATION: Traffic Control Point #125
Route 25A and William Floyd Parkway Extension

Mr. Kilmore arrives at the Emergency Worker Decontamination Facility after spending 3-1/2 hours at his post in the Emergency Planning Zone. Mr. Kilmore was at his post approximately 1 hour after the release began.

No contamination is detected on either Mr. Kilmore's car, the equipment or on Mr. Kilmore himself (see attached sheets). Thyroid monitoring does not indicate a significant intake of radioiodines by Mr. Kilmore's thyroid gland. His dosimeters register an accumulated exposure of 50 mR. Mr. Kilmore is released from duty.

FIGURE 2

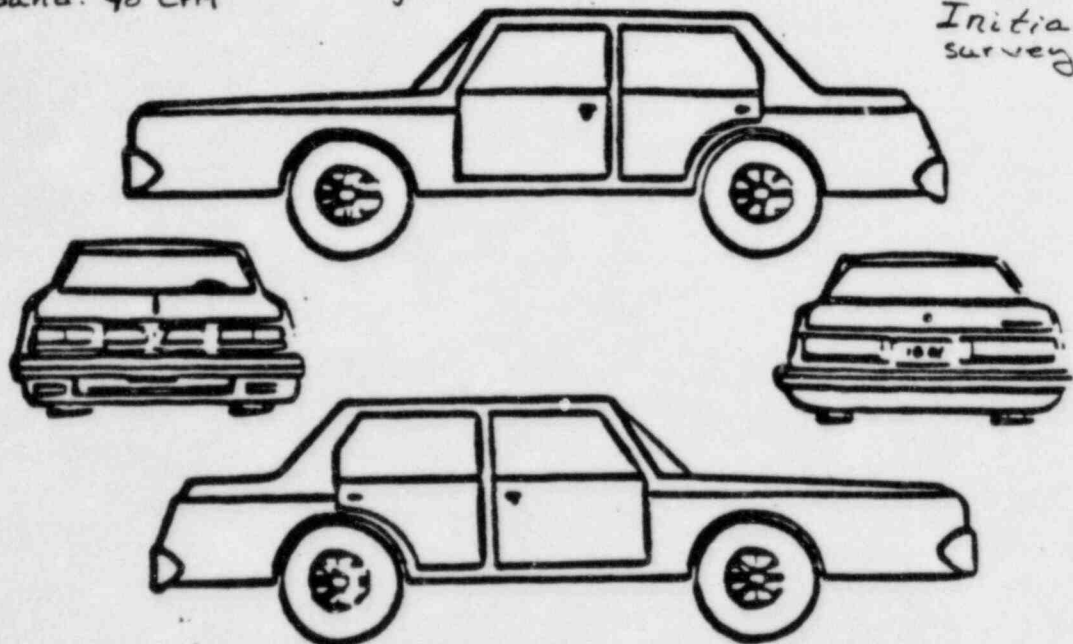
VEHICLE CONTAMINATION REPORT

License # 449-CD7 State NY
Name of Driver Laurence J. Kilmore
Address (if Non-LERO) _____
Number Street City State Zip

INITIAL SURVEY RESULTS

Instrument Used: Model No. RM-14 S/N 5055-Left Side Probe Type HP-270
5112-Right Side
Date Today's Time Present Surveyed by CA#4 EAT.
Background: 40 CPM

Initial Vehicle
survey Area



Clear - Authorized for Release from Site
Contamination Detected - Release Denied

COMMENTS

Signature Ethan A. Taylor / Initial Monitoring Area
Charles A. Hillary

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated by _____ Name _____ Date _____ Time _____

Decontamination Methods Used: _____

Post-Decontamination Survey Results: _____

Instrument Used: _____ Date _____ Time _____

Followup Action Required: _____ Model No. _____ S/N _____ Probe Type _____
_____ None _____ Special Followup (Specify) _____

Send Completed Form to Radiation Health Coordinator

EMERGENCY WORKER EXPOSURE RECORD

I. REGISTRATION (EMERGENCY WORKER-PLEASE PRINT)

DATE Today's TIME Present DECONTAMINATION CENTER Current Location

1. NAME Kilmore Laurence J.
 (LAST) (FIRST) (MIDDLE INT.)

2. AGE 29 3. SEX MALE FEMALE 4. PREGNANT YES NO

5. HOME ADDRESS 100 Reservoir Ave

6. CITY North Post 7. STATE N.Y. 8. ZIP CODE 11768

9. TELEPHONE NUMBER (HOME) (516) 427 - 8438

10. TELEPHONE NUMBER (BUSINESS) (516) 774 - 3987

11. SOCIAL SECURITY NUMBER 192-88-4339

12. KI TAKEN YES NO 13. TIME INITIAL DOSE WAS TAKEN NA

14. DATE INITIAL DOSE WAS TAKEN NA 15. HOW MANY DAYS KI TAKEN NA

II. BRIEFLY DESCRIBE YOUR WHEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.

LOCATION	INDOORS/OUTDOORS	TIME SPENT (HRS)	ACTIVITY
1. <u>Traffic Control Point 125</u>	<input type="checkbox"/> Indoors <input checked="" type="checkbox"/> Outdoors	<u>3.5</u>	<u>Traffic Guide</u>
2. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
3. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
4. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
5. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____

OFFICIAL USE ONLY

III. PERSONNEL MONITORING (TO BE COMPLETED BY CENTER PERSONNEL)

BACKGROUND 40 CPM

MONITOR'S INITIALS	INITIAL COUNTS MINUS BACKGROUND		COUNTS MINUS BACKGROUND AFTER DECONTAMINATION				THYROID MONITORING
	CLOTHED	UNCLOTHED	FIRST METHOD	SECOND METHOD	THIRD METHOD	FOURTH METHOD	
JJK							<u>AV</u>
WHOLE BODY	0 CPM	CPM	CPM	CPM	CPM	CPM	<u>40</u> CPM
FEET	0 CPM	CPM	CPM	CPM	CPM	CPM	
HANDS	0 CPM	CPM	CPM	CPM	CPM	CPM	

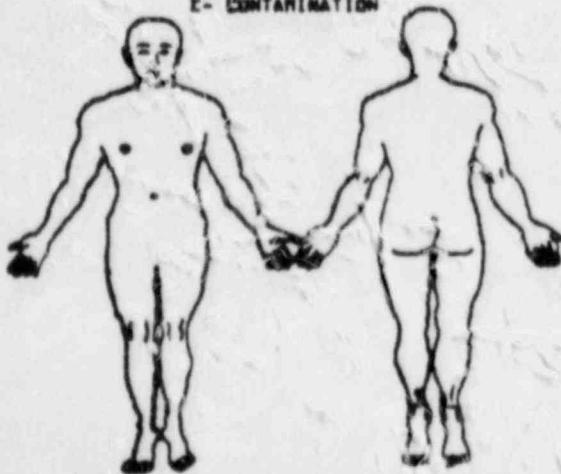
CHECK DECONTAMINATION METHOD(S) USED:

- WASH (ISOLATED AREAS) METHOD: 1. WARM WATER/MILD SOAP/ SOFT BRUSH
- SHOWER (WIDE SPREAD) 2. WATERLESS HAND CLEANER
3. PASTE MADE FROM MILD DETERGENT
4. LAVA SOAP

DECONTAMINATION PERSONNEL'S INITIALS _____

BODY MAP
INDICATE AREAS OF CONTAMINATION/INJURY

I- INJURY
E- CONTAMINATION



CHECK APPROPRIATE FINAL ACTION:

- INDIVIDUAL DECONTAMINATED
- INDIVIDUAL SENT TO _____ HOSPITAL
- DUE TO: _____
- INJURY _____
- THYROID CONTAMINATION ABOVE 0.15mR/hr OR 360cpm ABOVE BACKGROUND
- CONTINUED WHOLE BODY CONTAMINATION ABOVE 100cpm ABOVE BACKGROUND

INITIALS _____

PAGE 1 OF 1

EMERGENCY WORKER PERMANENT DOSE RECORD FORM

I. IDENTIFICATION (PLEASE PRINT)

1. NAME Kilmore Laurence J.
(LAST) (FIRST) (MIDDLE INITIAL)
2. SEX MALE FEMALE
3. DATE OF BIRTH 8 / 16 / 54
MONTH DAY YEAR
4. SOCIAL SECURITY NUMBER 686--78--9214
5. HOME ADDRESS 100 Reservoir Ave; North Port, NY 11768
6. MISSION Traffic Guide; Central Point 12.5

II. EXPOSURE (RECORDED FROM POCKET DOSIMETER)

DATE	DIRECT-READING DOSIMETER SERIAL #	RANGE	DOSE (MR OR R)	
			DAILY	TOTAL
Today's	3070036	0-200 mR	—	50 mR
"	3070053	0-5 R	—	Not measurable

III. EXPOSURE (RECORDED FROM TLD)

DATE	TLD SERIAL NO.	DOSE (MR OR R)	
		DAILY	TOTAL
Today's	0000762		

EMERGENCY WORKER LOG OUT/LOG IN FORM

Date/Time: Todays Date/hr/min
 Area: Current Location
 Record Keeper: Your Name
 Page 1 of 2

Name/Group	Mission	Dosimeter Serial No.	Initial Readings	Final Readings	TLD Serial No.	hr/min Time Out	hr/min Time In
George A. Lutz	Traffic Guide Central Point #127	3070041	0 mR	offscale		0100	6/00
"		3070042	0 R	1.5 R			
"					0000213		
Richard A McGuire	Bus Driver Bus Route C-1	3070048	0 mR	offscale		0100	4/30
		3070027	0 R	1.0 R			
					0000129		
Laurance J. Kilmore	Traffic Guide Central Point 125	3070036	0 R	50 mR Not		0100	4/00
"		3070053	0 R				
					0000762		

NAME: Kenneth J. Randall

LERO TASK: Traffic Guide

LOCATION: Traffic Control Point #3
Corner of North Country Road and Valentine Road

Mr. Randall arrives at the Emergency Worker Decontamination Facility after spending 4 hours at his post in the Emergency Planning Zone at Traffic Control Point #3. Mr. Randall arrived at his post about 1 hour and 45 minutes after the release began.

No contamination is detected in either Mr. Randall's car, the equipment he used or on Mr. Randall himself (see attached sheets). Thyroid monitoring does not reveal a significant intake of radioiodines. Mr. Randall's dosimeters register an accumulated exposure of 62 mR. He is released from duty.

FIGURE 2

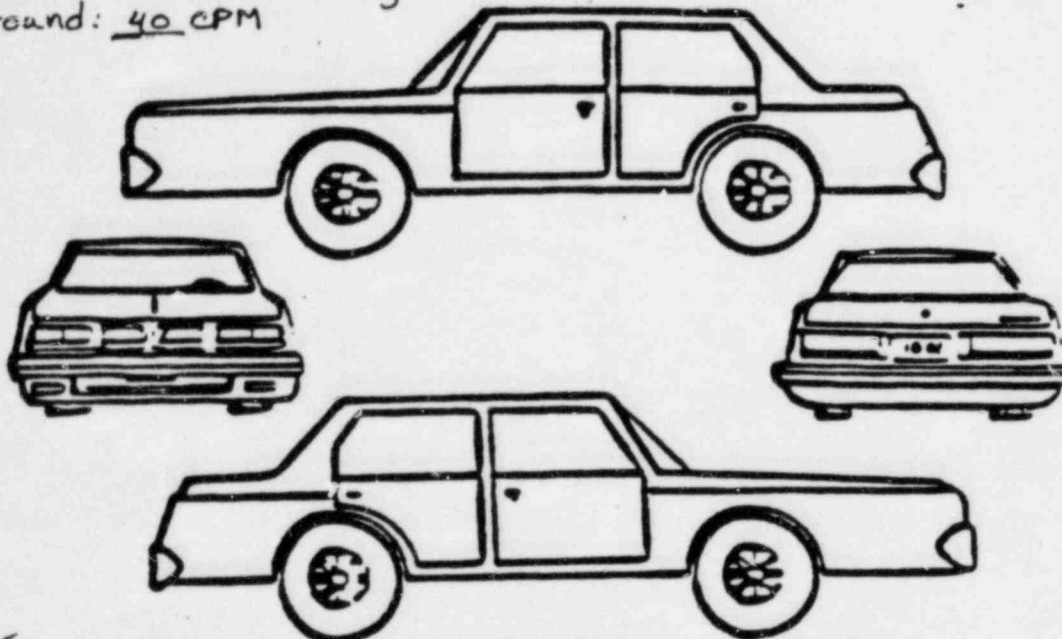
VEHICLE CONTAMINATION REPORT

License # 688-0PT State NY
Name of Driver Kennith R. Randall
Address (if Non-LERO) _____
Number Street City State Zip

INITIAL SURVEY RESULTS

Instrument Used: Model No. RM-14 S/N 5055 - Left Side Probe Type HP-270
5112 - Right Side
Date Today's Time Present Surveyed by P.P. + K.G.M.

Background: 40 CPM



Clear - Authorized for Release from Site
 Contamination Detected - Release Denied

Clear - Authorized for Release from Site
Contamination Detected - Release Denied

COMMENTS

Signature Paul Peters / Initial
Kennith J. Monrad / Monitor
Area

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated by _____
Name Date Time

Decontamination Methods Used: _____

Post-Decontamination Survey Results: _____

Instrument Used: _____ Date _____ Time _____

Followup Action Required: _____ Model No. S/N Probe Type
None Special Followup (Specify)

Send Completed Form to Radiation Health Coordinator

EMERGENCY WORKER EXPOSURE RECORD

I. REGISTRATION (EMERGENCY WORKER-PLEASE PRINT):

DATE Today's TIME Present DECONTAMINATION CENTER Emergency Worker Decon Center

1. NAME Randall Kenneth J.
(LAST) (FIRST) (MIDDLE INT.)

2. AGE 36 3. SEX MALE FEMALE 4. PREGNANT YES NO

5. HOME ADDRESS 1310 Old Country Road

6. CITY Hicksville 7. STATE NY 8. ZIP CODE 11801

9. TELEPHONE NUMBER (HOME) (516) 822-3496

10. TELEPHONE NUMBER (BUSINESS) (516) 374-6444

11. SOCIAL SECURITY NUMBER 614-63-7247

12. KI TAKEN YES NO 13. TIME INITIAL DOSE WAS TAKEN NA

14. DATE INITIAL DOSE WAS TAKEN NA 15. HOW MANY DAYS KI TAKEN NA

II. BRIEFLY DESCRIBE YOUR WHEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.

LOCATION	INDOORS/OUTDOORS	TIME SPENT (HRS)	ACTIVITY
1. <u>Traffic Control Point #3</u>	<input type="checkbox"/> INDOORS <input checked="" type="checkbox"/> OUTDOORS	<u>4</u>	<u>Traffic Guide</u>
2. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
3. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
4. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
5. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____

OFFICIAL USE ONLY

III. PERSONNEL MONITORING (TO BE COMPLETED BY CENTER PERSONNEL) BACKGROUND 40 cpm

	INITIAL COUNTS MINUS BACKGROUND (CLOTHED)		COUNTS MINUS BACKGROUND AFTER DECONTAMINATION				THYROID MONITORING
	CLOTHED	UN-CLOTHED	FIRST METHOD	SECOND METHOD	THIRD METHOD	FOURTH METHOD	
MONITOR'S INITIALS	<u>JJK</u>						<u>RRV</u>
WHOLE BODY	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>40 cpm</u>
FEET	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	X
HANDS	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	X

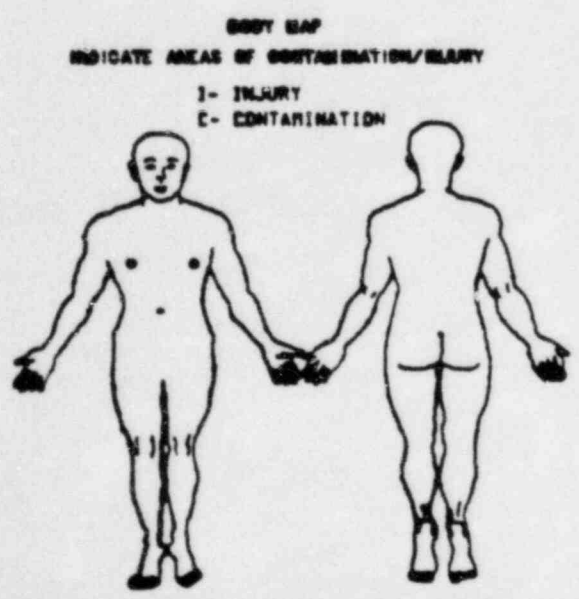
CHECK DECONTAMINATION METHOD(S) USED:

WASH (ISOLATED AREAS) METHOD: 1. WARM WATER/MILD SOAP/ SOFT BRUSH

SHOWER (WIDE SPREAD) 2. WATERLESS HAND CLEANER

DECONTAMINATION PERSONNEL'S INITIALS _____ 3. PASTE MADE FROM MILD DETERGENT

4. LAVA SOAP



CHECK APPROPRIATE FINAL ACTION:

INDIVIDUAL DECONTAMINATED

INDIVIDUAL SENT TO _____ HOSPITAL

DUE TO: _____

INJURY _____

THYROID CONTAMINATION ABOVE 0.15mR/hr OR 360cpm ABOVE BACKGROUND

CONTINUED WHOLE BODY CONTAMINATION ABOVE 120cpm ABOVE BACKGROUND

INITIALS _____

EMERGENCY WORKER LOG OUT/LOG IN FORM

Date/Time: Today's Date / hr/min
 Area: Current Location
 Record Keeper: Your Name
 Page 1 of 2

Name/Group	Mission	Dosimeter Serial No.	Initial Readings	Final Readings	TLD Serial No.	hr/min. Time Out	hr/min. Time In
George A. Lutz	Traffic Guide Control Point 12.7	3070041	0 mR	offscale		0100	6/00
"		3070042	0 R	1.5 R			
"					0000213		
Richard A McGuire	Bus Driver Bus Route C1	3070048	0 mR	offscale		0100	4/30
		3070027	0 R	1.0 R			
					0000129		
Laurence J. Kilmore	Traffic Guide Control Point 12.5	3070036	0 R	50 mR Not		0100	4/00
"		3070053	0 R				
					0000713		

NAME: Joseph P. Brown
LERO TASK: Bus Driver
LOCATION: Zone A, Route A1

Mr. Brown arrives at the Emergency Worker Decontamination Facility after spending 4 hours in the Emergency Planning Zone.

No contamination is detected on either the bus or on Mr. Brown (see attached sheets). Thyroid monitoring does not indicate a significant intake of radioiodines by Mr. Brown's thyroid gland. His dosimeters registered an accumulated exposure of 20 mR. Mr. Brown is released from duty.

FIGURE 2

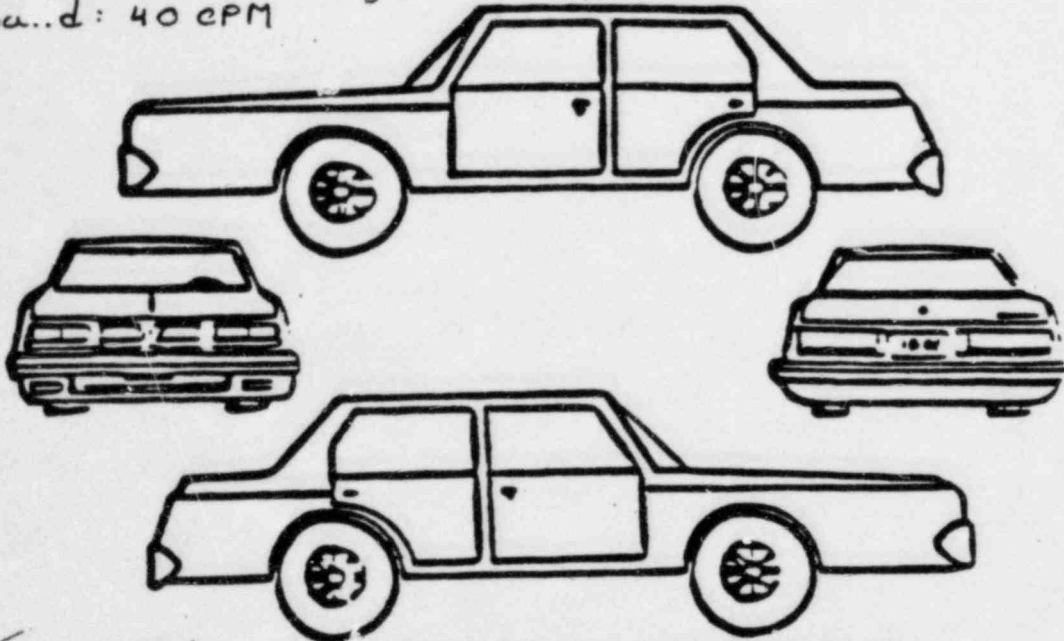
VEHICLE CONTAMINATION REPORT

License # 313-RGB State NY
Name of Driver Joseph P. Brown
Address (if Non-ERO) _____
Number Street City State Zip

INITIAL SURVEY RESULTS

Instrument Used: Model No. RM-14 S/N 5055 Left Side Probe Type HP-270
Date Today's Time Present Surveyed by FP & KAM
5112 - Right Side

Background: 40 cpm



Clear - Authorized for Release from Site
 Contamination Detected - Release Denied

COMMENTS

Signature Paul Peters / Kenneth A. Monroe / Initial Monitoring Area

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated by _____ Name _____ Date _____ Time _____

Decontamination Methods Used: _____

Post-Decontamination Survey Results: _____

Instrument Used: _____ Date _____ Time _____

Followup Action Required: _____ Model No. _____ S/N _____ Probe Type _____
_____ None _____ Special Followup (Specify) _____

Send Completed Form to Radiation Health Coordinator

EMERGENCY WORKER EXPOSURE RECORD

I. REGISTRATION (EMERGENCY WORKER-PLEASE PRINT)

DATE Today's TIME Present DECONTAMINATION CENTER Emergency Worker Decad. Facility

1. NAME Brown Joseph P
 (LAST) (FIRST) (MIDDLE INT.)

2. AGE 37 3. SEX MALE FEMALE 4. PREGNANT YES NO

5. HOME ADDRESS 47 Azalea Drive

6. CITY Syosset 7. STATE NY 8. ZIP CODE 11791

9. TELEPHONE NUMBER (HOME) (516) 672 - 6262

10. TELEPHONE NUMBER (BUSINESS) (516) 881 - 3472

11. SOCIAL SECURITY NUMBER 054 - 37 - 8227

12. KI TAKEN YES NO 13. TIME INITIAL DOSE WAS TAKEN NA

14. DATE INITIAL DOSE WAS TAKEN NA 15. HOW MANY DAYS KI TAKEN NA

II. BRIEFLY DESCRIBE YOUR WHEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.

LOCATION	INDOORS/OUTDOORS	TIME SPENT (HRS)	ACTIVITY
1. <u>Bus Route A1</u>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<u>4.5</u>	<u>Bus Driver</u>
2. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
3. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
4. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____
5. _____	<input type="checkbox"/> <input type="checkbox"/>	_____	_____

OFFICIAL USE ONLY

III. PERSONNEL MONITORING (TO BE COMPLETED BY CENTER PERSONNEL) BACKGROUND 40 cpm

MONITOR'S INITIALS	INITIAL COUNTS MINUS BACKGROUND		COUNTS MINUS BACKGROUND AFTER DECONTAMINATION				THYROID MONITORING
	CLOTHED	UNCLOTHED	FIRST METHOD	SECOND METHOD	THIRD METHOD	FOURTH METHOD	
<u>JLK</u>	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>RRV</u> <u>40</u> cpm
WHOLE BODY	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	X
FEET	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	
HANDS	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	<u>0</u> cpm	

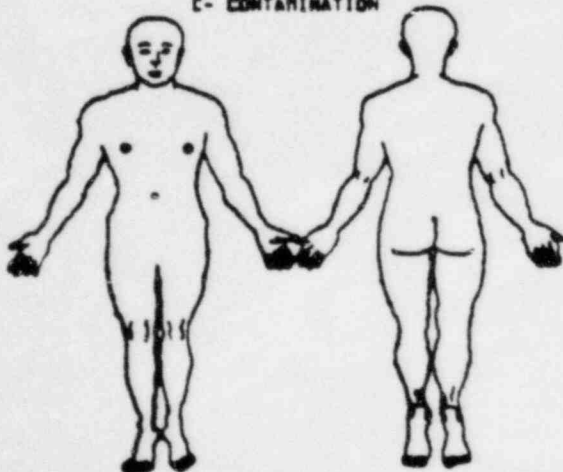
CHECK DECONTAMINATION METHOD(S) USED:

- WASH (ISOLATED AREAS) METHOD: 1. WARM WATER/MILD SOAP/ SOFT BRUSH
- SHOWER (WIDE SPREAD) 2. WATERLESS HAND CLEANER
3. PASTE MADE FROM MILD DETERGENT
4. LAVA SOAP

DECONTAMINATION PERSONNEL INITIALS _____

BODY MAP
INDICATE AREAS OF CONTAMINATION/INJURY

I - INJURY
C - CONTAMINATION



CHECK APPROPRIATE FINAL ACTION:

- INDIVIDUAL DECONTAMINATED
- INDIVIDUAL SENT TO _____ HOSPITAL
- DUE TO: _____
- INJURY _____
- THYROID CONTAMINATION ABOVE 0.15mR/hr OR 150cpm ABOVE BACKGROUND
- CONTINUED WHOLE BODY CONTAMINATION ABOVE 120cpm ABOVE BACKGROUND

INITIALS _____

PAGE 1 OF 1

EMERGENCY WORKER PERMANENT DOSE RECORD FORM

I. IDENTIFICATION (PLEASE PRINT)

1. NAME Brown (LAST) Joseph (FIRST) P. (MIDDLE INITIAL)
2. SEX MALE FEMALE
3. DATE OF BIRTH 3 / 12 / 6
MONTH DAY YEAR
4. SOCIAL SECURITY NUMBER 675--43--1249
5. HOME ADDRESS 47 Azalea Dr., Syosset, NY 11791
6. MISSION Bus Driver; Route A1

II. EXPOSURE (RECORDED FROM POCKET DOSIMETER)

DATE	DIRECT-READING DOSIMETER SERIAL #	RANGE	DOSE (MR OR R)	
			DAILY	TOTAL
Today's	3070029	0-200 mR	20 mR	20 mR
"	3070034	0-5 R	Not Measurable	Not Measurable

III. EXPOSURE (RECORDED FROM TLD)

DATE	TLD SERIAL NO.	DOSE (MR OR R)	
		DAILY	TOTAL
Today's	0000117		

EMERGENCY WORKER LOG OUT/LOG IN FORM

Date/Time: Todays Date/hr/min
 Area: Current Location
 Record Keeper: Your Name
 Page 1 of 2

Name/Group	Mission	Dosimeter Serial No.	Initial Readings	Final Readings	TLD Serial No.	Time Out	Time In
George A. Lutz	Traffic Guide Control Point #127	3070041	0 mR	offscale		0100	6/00
"		3070042	0 R	1.5 R			
"					0000213		
Richard A McGuire	Bus Driver Bus Route C1	3070048	0 mR	offscale		0100	4/30
		3070027	0 R	1.0 R			
					0000129		
Laurence J. Kilmore	Traffic Guide Control Point 125	3070036	0 R	50 mR Not		0100	4/00
"		3070053	0 R				
					0000762		

5.0 INITIATING CONDITIONS

This drill will require advance notification for the participants, informing them of the date and time for the conduct of the drill. Drill participants will be required to appear at the facility as indicated in the notification message. The LERO notification and mobilization process is not to be utilized as part of this drill.

With the participants in place at the facility, the assigned Drill Controllers will inform the assembled facility staff of the objectives and ground rules for conducting the drill. Additionally, the participants will be briefed by the Drill Controllers on the outlined scenario conditions simulated to have occurred prior to their arrival at the facility.

As the drill progresses, Drill Controllers will provide the incoming information as shown on the message forms and scenario time table to stimulate the participants response actions.

6.0 RADIOLOGICAL INFORMATION

Dose projection and assessment activities will not be conducted as part of this drill.

7.0 CONTROLLER/OBSERVER INSTRUCTIONS

7.1 Exercise Controller/Observer Conduct

- A. Each Controller/Observer should be familiar with the following:
 - 1. The basic objectives of the exercise.
 - 2. The assumptions and precautions being taken.
 - 3. The exercise scenario, including the initiating events and the expected course of action to be taken.
 - 4. The various locations that will be involved and the specific items to be observed when at those locations.
- B. Controllers/Observers are assigned to various locations as indicated in this section.
- C. If Controllers are to provide information via "cue cards," (e.g., initiating events, instrument readings, monitoring results, etc.) to the drill participants, the information must be provided exactly as and when prescribed. Failure to provide information appropriately may invalidate the results of the drill.
- D. Controllers/Observers shall maintain an accurate chronological record of activities for the locations observed.

A Lead Exercise Controller has been designated for this drill. Those Controllers responsible for initiating an action should coordinate their action times closely with the Lead Controller. Provisions will be made available for necessary communications with this designated individual should scenario variations warrant.

- E. The Controller/Observer must remain cognizant of all the events and circumstances at their assigned locations. These should include, but not be limited to: Participants' actions and reactions, communications methods and record keeping, chain of command, equipment performance and the overall ability to interface with other emergency facilities.
- F. Controller/Observers should record all times (both start and finish), actions and comments or suggestions, as complete and precise as possible, in a chronological order.
- G. Significant items, both major deficiencies and strong performance points, should be highlighted upon occurrence and condensed for presentation in the subsequent critique.

7.2 Precautions and Limitations

This section provides information for all Drill Controllers and Observers related to the rules and guidelines to be followed throughout the conduct of this drill. Prior to initiation of the drill, a pre-drill briefing will be held to review the entire drill process with all the Drill Controllers and Observers identified in this section of this package.

- A. Should, at any time during the course of the conduct of this drill, an actual emergency situation arise, all activities and communications related to the drill will be suspended. It will be the responsibility of any Drill Controller or Observer that becomes aware of an actual emergency to suspend drill response in his/her immediate area and to inform the Lead Drill Controller of the situation. Upon notification of an actual emergency, the Lead Drill Controller will notify all other Controllers/Observers to suspend all drill activities.
- B. Should, at any time during the course of the conduct of this drill, a Drill Controller or Observer witness a drill participant undertake any action which would, in the opinion of the Controller/Observer, place either an individual or component in an unsafe condition, the Controller/Observer is responsible for intervening in the individual's actions and terminating the unsafe activity immediately. Upon termination of the activity, the Controller/Observer is responsible for contacting the Lead Drill Controller and informing him of the situation. The

Lead Drill Controller will make a determination at that point whether to continue, place a temporary hold on, or terminate the drill.

- C. Pressurization of fire hoses, discharging of fire extinguishers, or initiation of any fire suppression systems, is not to occur in response to any simulated fires during this drill.
- D. Manipulation of any plant operating system, valves, breakers or controls in response to this drill are only to be simulated. There is to be no alteration of any plant operating equipment, systems or circuits during the response to this drill.
- E. All telephone communications, radio transmissions and public address announcements related to the drill must begin and end with the statement, "This is a drill." Should a Controller or Observer witness a drill participant not observing this practice, it is the Controllers/Observers responsibility to remind the individual of the need to follow this procedure.
- F. Any motor vehicle response to this drill whether it be ambulance, fire fighting equipment, security vehicles or field monitoring teams, should observe all normal motor vehicle operating laws including posted speed limits, stop lights/signs, one way streets, etc.
- G. Drill participants are to inject as much realism into the drill as is consistent with its safe performance, however, caution must be used to prevent overreaction.
- H. Care must be taken to assure that any non-participating individuals who may observe drill activities or overhear drill communications are not misled into believing that an actual emergency exists. Any Drill Controller or Observer who is aware of an individual or group of individuals in the immediate vicinity who may have become alarmed or confused about the situation, should approach that individual or group and explain the nature of the exercise and its intent.

7.3 Evaluation Criteria

During this drill, both the activation and operation of a decontamination facility will be practiced. It is the intent of the drill to both provide training and to test the emergency response capabilities of the participating individuals. Therefore, observers and referees will provide guidance or corrective action to ensure the participants respond to events in accordance with the emergency plan and procedures.

7.4 CONTROLLER LOCATIONS

1. Lead Drill Controller Deborah Beres
Decontamination Leader/Roving)
2. Drill Controller #1 Nancy Molter
Dosimeter Distribution Area Personnel
3. Drill Controller #1 Carlos Garcia
Initial Vehicle Monitoring Personnel
4. Drill Controller #2 Cliff Heitz
Initial Monitoring Station Personnel
5. Drill Controller #4 Gary Krieger
Decontamination Area Personnel
6. Drill Controller #5 Ron Varley
Vehicle and Equipment Monitoring and Decontamination Personnel
7. Drill Controller #6 Bruce Kobel
Thyroid Monitoring Station Personnel

7.5 Critique Sheets

7.5.1 Lead Drill Controller Critique Sheet Decontamination Leader

I. General Questions

Area Evaluated

Observers Rating

A. Activation and Response

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was the action/initiation efficient and organized? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were personnel familiar with their responsibilities and respond in a timely manner? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was the person in charge clearly identifiable? | 5 | 4 | 3 | 2 | 1 | N.O. |

B. Communications

- | | | | | | | |
|---|---|---|---|---|---|------|
| 1. Were all required and specified communications circuits operable? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were there sufficient personnel to conduct communications tasks? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was incoming information effectively and efficiently distributed to appropriate personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |

C. Procedures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were personnel generally familiar with the relevant procedures? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were procedures followed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were personnel so overwhelmed with procedural requirements that they were distracted from the appropriate response? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were the procedures appropriate? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Observers Rating

D. Direction and Control

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Could the response be categorized as a team effort or a group of individual efforts? (Team = 5, Individuals = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Was there an effective mechanism for resolving differences of opinion regarding technical issues and actions to be taken? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was there excessive noise and loitering in the response facility? (No = 5, Yes = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |

E. Material and Equipment

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was all the required material and equipment available? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel check to ensure that all equipment was available and functional early in the activation process? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. If equipment was inoperable or failed in use, were appropriate actions taken to resolve the deficiency? (spares/ backup equipment) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were there any situations in which the lack of equipment, or a lack of ability to operate the equipment, prevented personnel from completing their tasks? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were there any situations in which additional equipment or materials, or different types of equipment could have made the activity more effective? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 6. Could the area support the personnel assigned to it? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Observers Rating

- | | | | | | | |
|--|---|---|---|---|---|------|
| 7. Were there sufficient resource materials readily available to support the conduct of the response? (maps, reference documents, copies of plans and procedures, data sheets, etc.) | 5 | 4 | 3 | 2 | 1 | N.O. |
|--|---|---|---|---|---|------|

F. Protective Measures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were appropriate protective measures implemented for response personnel? | 5 | 4 | 3 | 2 | 1 | N.C. |
| 2. Did personnel properly wear protective clothing and dosimetry? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were appropriate radiological practices observed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were field personnel kept apprised of radiological conditions? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were response activities conducted with regard for personnel safety, consistent with the need to complete the activity? | 5 | 4 | 3 | 2 | 1 | N.O. |

II. Specific Questions: Decontamination Leader

A. Set Up of the Decontamination Facility

- | | | |
|---|-----|----|
| 1. Does the Decontamination Leader establish contact with the Decontamination Coordinator at the Local EOC? | Yes | No |
| 2. Does the Decontamination Leader take charge? Does he delegate people to set up the following areas: | Yes | No |
| - Dosimeter Distribution Area | Yes | No |
| - Initial Vehicle Monitoring Area | Yes | No |
| - Initial Personnel Monitoring | Yes | No |
| - Decontamination Area | Yes | No |
| - Thyroid Monitoring Area | Yes | No |
| - Clean Parking Area | Yes | No |
| - Contaminated Parking Area | Yes | No |
| 3. Does the Decontamination Leader keep a Log In Sheet of Monitoring/Decontamination personnel? | Yes | No |

Area Evaluated

Observers Rating 1

- | | | |
|---|-----|----|
| 4. Does the Decontamination Leader keep a list of what personnel have been assigned what duty? | Yes | No |
| 5. Does the Decontamination Leader keep a list of each survey instrument in use (including its location)? | Yes | No |
| 6. Does the Decontamination Leader check to insure each person who requires dosimeters is wearing them? | Yes | No |

B. Operation of the Decontamination Facility

- | | | |
|--|-----|----|
| 1. Does the Decontamination Leader check to make sure proper radiological controls are being maintained? | Yes | No |
| 2. Does the Decontamination Leader pass information regarding contaminated individuals on to the Decontamination Coordinator at the Local EOC? | Yes | No |
| 3. Does the Decontamination Leader know how to handle a contaminated wound? | Yes | No |
| 4. Does the Decontamination Leader regularly inspect the following areas: | | |
| - Dosimeter Distribution Area | Yes | No |
| - Initial Vehicle Monitoring Area | Yes | No |
| - Initial Personnel Monitoring Stations | Yes | No |
| - Personnel Decontamination Area | Yes | No |
| - Thyroid Monitoring Stations | Yes | No |
| - Contaminated Parking Area | Yes | No |
| - Clean Parking Area | Yes | No |
| 5. Does the Decontamination Leader keep informed on the status of the evacuations? Does the Decontamination Leader keep the facility personnel informed of all important events: | Yes | No |
| - with respect to the evacuation? | Yes | No |
| - with respect to the facility? | Yes | No |
| 6. Can the Decontamination Leader answer questions related to the operation of his facility or to the evacuation? | Yes | No |

III. Summary

1. Describe any problems noted by the area being evaluated. Provide a description of the problem, its outcome or effect and any recommended corrective courses of action to alleviate or correct the deficiency. Any of the previously listed areas that receive an evaluation grade of 2 or 1 require a written explanation on this page.

Evaluators Signature / Date

IV. Evaluation Standards

- "5" Excellent - Personnel and equipment always functioned without error. There were no problems encountered and all personnel and equipment functioned at a superior level.
- "4" Good - Personnel and equipment generally performed as expected. Any errors or problems were minor and did not detract from completion of the task.
- "3" Satisfactory - Personnel and equipment performed at an acceptable level. Errors noted were not severe and completion of the task was achieved within acceptable limits.
- "2" Poor - Personnel and equipment generally performed below expectations. There were deficiencies of a significant nature. The areas ability to carry out its function was diminished.
- "1" Failure - Personnel and equipment consistently failed to perform as required. Acceptable completion of the task was not achieved.

N.O. Not Observed

7.5.2 Lead Drill Controller #1 Critique Sheet
Dosimeter Distribution Area Personnel

I. General Questions

<u>Area Evaluated</u>	<u>Observers Rating</u>
A. <u>Activation and Response</u>	
1. Was the action/initiation efficient and organized?	5 4 3 2 1 N.O.
2. Were personnel familiar with their responsibilities and respond in a timely manner?	5 4 3 2 1 N.O.
3. Was the person in charge clearly identifiable?	5 4 3 2 1 N.O.
B. <u>Communications</u>	
1. Were all required and specified communications circuits operable?	5 4 3 2 1 N.O.
2. Were there sufficient personnel to conduct communications tasks?	5 4 3 2 1 N.O.
3. Was incoming information effectively and efficiently distributed to appropriate personnel?	5 4 3 2 1 N.O.
C. <u>Procedures</u>	
1. Were personnel generally familiar with the relevant procedures?	5 4 3 2 1 N.O.
2. Were procedures followed?	5 4 3 2 1 N.O.
3. Were personnel so overwhelmed with procedural requirements that they were distracted from the appropriate response?	5 4 3 2 1 N.O.
4. Were the procedures appropriate?	5 4 3 2 1 N.O.

Area Evaluated

Observers Rating

D. Direction and Control

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Could the response be categorized as a team effort or a group of individual efforts? (Team = 5, Individuals = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Was there an effective mechanism for resolving differences of opinion regarding technical issues and actions to be taken? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was there excessive noise and loitering in the response facility? (No = 5, Yes = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |

E. Material and Equipment

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was all the required material and equipment available? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel check to ensure that all equipment was available and functional early in the activation process? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. If equipment was inoperable or failed in use, were appropriate actions taken to resolve the deficiency? (spares/ backup equipment) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were there any situations in which the lack of equipment, or a lack of ability to operate the equipment, prevented personnel from completing their tasks? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were there any situations in which additional equipment or materials, or different types of equipment could have made the activity more effective? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 6. Could the area support the personnel assigned to it? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Observers Rating

- | | | | | | | |
|--|---|---|---|---|---|------|
| 7. Were there sufficient resource materials readily available to support the conduct of the response? (maps, reference documents, copies of plans and procedures, data sheets, etc.) | 5 | 4 | 3 | 2 | 1 | N.O. |
|--|---|---|---|---|---|------|

F. Protective Measures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were appropriate protective measures implemented for response personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel properly wear protective clothing and dosimetry? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were appropriate radiological practices observed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were field personnel kept apprised of radiological conditions? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were response activities conducted with regard for personnel safety, consistent with the need to complete the activity? | 5 | 4 | 3 | 2 | 1 | N.O. |

II. Specific Questions: Dosimeter Distribution Area Personnel

A. Set Up of the Area

- | | | |
|---|-----|----|
| 1. Are the following forms available? | | |
| - Daily Dose Record Cards | Yes | No |
| - Permanent Dose Record Forms | Yes | No |
| - Log Out/Lcg In Forms | Yes | No |
| 2. Is the following equipment available? | | |
| - Direct-Reading Dosimeters
Range 0-200 mR | Yes | No |
| - Direct-Reading Dosimeters
Range 0-5 R | Yes | No |
| - TLD Badges | Yes | No |
| - Dosimeter Chargers with batteries | Yes | No |
| 3. Is there a sign identifying the area? | Yes | No |

Area Evaluated

Observers Rating

B. Operation of the Area

- | | | |
|---|-----|----|
| 1. Is the information being entered correctly on each form? | Yes | No |
| 2. Are the Record Keepers verifying any dosimetry information written on the forms by the emergency worker? | Yes | No |
| 3. Are the Record Keepers fillint out all three forms for each worker (Daily Dose Record Card, Permanent Dose Record Form, and Log Out/Log In)? | Yes | No |
| 4. Is each worker being given the Daily Dose Record Form and a copy of the Permanent Dose Record Form? | Yes | No |

III. Summary

1. Describe any problems noted by the area being evaluated. Provide a description of the problem, its outcome or effect and any recommended corrective courses of action to alleviate or correct the deficiency. Any of the previously listed areas that receive an evaluation grade of 2 or 1 require a written explanation on this page.

Evaluators Signature / Date

IV. Evaluation Standards

- "5" Excellent - Personnel and equipment always functioned without error. There were no problems encountered and all personnel and equipment functioned at a superior level.
- "4" Good - Personnel and equipment generally performed as expected. Any errors or problems were minor and did not detract from completion of the task.
- "3" Satisfactory - Personnel and equipment performed at an acceptable level. Errors noted were not severe and completion of the task was achieved within acceptable limits.
- "2" Poor - Personnel and equipment generally performed below expectations. There were deficiencies of a significant nature. The areas ability to carry out its function was diminished.
- "1" Failure - Personnel and equipment consistently failed to perform as required. Acceptable completion of the task was not achieved.
- N.O. Not Observed

7.5.3 Drill Controller #2 Critique Sheet
Initial Vehicle Monitoring Personnel

I. General Questions

Area Evaluated

Observers Rating

A. Activation and Response

- | | |
|--|----------------|
| 1. Was the action/initiation efficient and organized? | 5 4 3 2 1 N.O. |
| 2. Were personnel familiar with their responsibilities and respond in a timely manner? | 5 4 3 2 1 N.O. |
| 3. Was the person in charge clearly identifiable? | 5 4 3 2 1 N.O. |

B. Communications

- | | |
|---|----------------|
| 1. Were all required and specified communications circuits operable? | 5 4 3 2 1 N.O. |
| 2. Were there sufficient personnel to conduct communications tasks? | 5 4 3 2 1 N.O. |
| 3. Was incoming information effectively and efficiently distributed to appropriate personnel? | 5 4 3 2 1 N.O. |

C. Procedures

- | | |
|--|----------------|
| 1. Were personnel generally familiar with the relevant procedures? | 5 4 3 2 1 N.O. |
| 2. Were procedures followed? | 5 4 3 2 1 N.O. |
| 3. Were personnel so overwhelmed with procedural requirements that they were distracted from the appropriate response? | 5 4 3 2 1 N.O. |
| 4. Were the procedures appropriate? | 5 4 3 2 1 N.O. |

Area Evaluated

Observers Rating

D. Direction and Control

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Could the response be categorized as a team effort or a group of individual efforts? (Team = 5, Individuals = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Was there an effective mechanism for resolving differences of opinion regarding technical issues and actions to be taken? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was there excessive noise and loitering in the response facility? (No = 5, Yes = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |

E. Material and Equipment

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was all the required material and equipment available? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel check to ensure that all equipment was available and functional early in the activation process? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. If equipment was inoperable or failed in use, were appropriate actions taken to resolve the deficiency? (spares/ backup equipment) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were there any situations in which the lack of equipment, or a lack of ability to operate the equipment, prevented personnel from completing their tasks? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were there any situations in which additional equipment or materials, or different types of equipment could have made the activity more effective? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 6. Could the area support the personnel assigned to it? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Observers Rating

- | | | | | | | |
|--|---|---|---|---|---|------|
| 7. Were there sufficient resource materials readily available to support the conduct of the response? (maps, reference documents, copies of plans and procedures, data sheets, etc.) | 5 | 4 | 3 | 2 | 1 | N.O. |
|--|---|---|---|---|---|------|

F. Protective Measures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were appropriate protective measures implemented for response personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel properly wear protective clothing and dosimetry? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were appropriate radiological practices observed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were field personnel kept apprised of radiological conditions? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were response activities conducted with regard for personnel safety, consistent with the need to complete the activity? | 5 | 4 | 3 | 2 | 1 | N.O. |

II. Specific Questions for the Initial Vehicle Monitoring Station

A. Set Up of the Station

- | | | |
|--|-----|----|
| 1. Is there a sign notifying the monitoring station? | Yes | No |
| 2. Have the RM-14 survey meters undergone a preoperational check? | Yes | No |
| 3. Has the background count rate been established? | Yes | No |
| 4. Are Vehicle Contamination Report forms available? | Yes | No |
| 5. Has at least one person been delegated the responsibility of greeting the drivers of the arriving vehicles? | Yes | No |

Area Evaluated

Observers Rating

6. Are the emergency workers aware of the location of the contaminated and clean parking lots?

Yes No

Number of workers who know
Number of workers who don't know

B. Operation of the Station

1. Does the Emergency Worker greeting the driver of the vehicle explain what the monitor personnel are doing?

Yes No

2. Is the information being correctly entered on the Vehicle Contamination Report?

Yes No

3. Is the Vehicle Contamination Report handed to the driver of a contaminated vehicle?

Yes No

Is the driver told to keep the report with the vehicle?

Yes No

4. Is the survey meter turned on while the monitoring personnel are using it?

Yes No

5. Do the monitoring personnel know how to read the meters?

Yes No

6. Do the monitoring personnel scan the following areas:

- Wheel wells
- Tires
- Hood
- Roof
- Door handles

Yes No
Yes No
Yes No
Yes No
Yes No

7. How long does it take a team of two monitors to scan a car?

8. Is the shield on each probe in the open position?

Yes No

9. Overall, how long does it take to process a car from first greeting the driver till the vehicle drives away?

_____ minutes

Area Evaluated

Observers Rating

III. Summary

1. Describe any problems noted by the area being evaluated. Provide a description of the problem, its outcome or effect and any recommended corrective courses of action to alleviate or correct the deficiency. Any of the previously listed areas that receive an evaluation grade of 2 or 1 require a written explanation on this page.

Evaluators Signature / Date

IV. Evaluation Standards

- "5" Excellent - Personnel and equipment always functioned without error. There were no problems encountered and all personnel and equipment functioned at a superior level.
- "4" Good - Personnel and equipment generally performed as expected. Any errors or problems were minor and did not detract from completion of the task.
- "3" Satisfactory - Personnel and equipment performed at an acceptable level. Errors noted were not severe and completion of the task was achieved within acceptable limits.
- "2" Poor - Personnel and equipment generally performed below expectations. There were deficiencies of a significant nature. The areas ability to carry out its function was diminished.
- "1" Failure - Personnel and equipment consistently failed to perform as required. Acceptable completion of the task was not achieved.
- N.O. Not Observed

7.5.4 Drill Controller #3 Critique Sheet
Initial Monitoring Station Personnel

I. General Questions

Area Evaluated

Observers Rating

A. Activation and Response

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was the action/initiation efficient and organized? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were personnel familiar with their responsibilities and respond in a timely manner? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was the person in charge clearly identifiable? | 5 | 4 | 3 | 2 | 1 | N.O. |

B. Communications

- | | | | | | | |
|---|---|---|---|---|---|------|
| 1. Were all required and specified communications circuits operable? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were there sufficient personnel to conduct communications tasks? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was incoming information effectively and efficiently distributed to appropriate personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |

C. Procedures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were personnel generally familiar with the relevant procedures? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were procedures followed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were personnel so overwhelmed with procedural requirements that they were distracted from the appropriate response? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were the procedures appropriate? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Observers Rating

D. Direction and Control

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Could the response be categorized as a team effort or a group of individual efforts? (Team = 5, Individuals = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Was there an effective mechanism for resolving differences of opinion regarding technical issues and actions to be taken? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was there excessive noise and loitering in the response facility? (No = 5, Yes = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |

E. Material and Equipment

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was all the required material and equipment available? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel check to ensure that all equipment was available and functional early in the activation process? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. If equipment was inoperable or failed in use, were appropriate actions taken to resolve the deficiency? (spares/backup equipment) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were there any situations in which the lack of equipment, or a lack of ability to operate the equipment, prevented personnel from completing their tasks? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were there any situations in which additional equipment or materials, or different types of equipment could have made the activity more effective? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 6. Could the area support the personnel assigned to it? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Observers Rating

- | | | | | | | |
|--|---|---|---|---|---|------|
| 7. Were there sufficient resource materials readily available to support the conduct of the response? (maps, reference documents, copies of plans and procedures, data sheets, etc.) | 5 | 4 | 3 | 2 | 1 | N.O. |
|--|---|---|---|---|---|------|

F. Protective Measures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were appropriate protective measures implemented for response personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel properly wear protective clothing and dosimetry? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were appropriate radiological practices observed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were field personnel kept apprised of radiological conditions? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were response activities conducted with regard for personnel safety, consistent with the need to complete the activity? | 5 | 4 | 3 | 2 | 1 | N.O. |

II. Specific Questions about the Initial Monitoring Station for Arriving Evacuees or Emergency Workers

A. Set Up of the Station

- | | | |
|--|-----|----|
| 1. Is there a sign identifying the monitoring station? | Yes | No |
| 2. Have the RM-14 survey meters undergone a preoperational check? | Yes | No |
| 3. Has the background count rate been established? | Yes | No |
| 4. Are Evacuee or Emergency Worker Contamination Report Forms available? | Yes | No |
| 5. Is the area where monitoring is occurring a "controlled area"? | Yes | No |

Area Evaluated

Observers Rating

- | | | |
|--|-----|----|
| 6. Is there an exit to a "clean" area for people to use who are free of contamination? | Yes | No |
| Is this exit well marked (exit only, no entry)? | Yes | No |
| 7. Is the route to the decontamination area "controlled"? | Yes | No |
| Is this route well marked? | Yes | No |
| 8. Is the area set up such that it is possible to keep the Contamination Report on the "clean" side of the boundaries? | Yes | No |
| 9. Is there a method for transferring the Contamination Report to the Decontamination personnel? | Yes | No |

B. Operation of the Station

- | | | |
|--|---|----|
| 1. Is the information correctly entered on the Contamination Report? | Yes | No |
| 2. Is the survey meter turned on while monitoring person is using it? | Yes | No |
| 3. Do the monitoring personnel know how to read the meter? | Yes | No |
| 4. Is the shield on the probe in the open position? | Yes | No |
| 5. Are the monitoring personnel scanning too fast?
or to slow? | Yes | No |
| 6. How long does it take to process one person? | <hr style="width: 100px; margin-left: 0;"/> minutes | |
| 7. Is a contaminated injury treated properly? | Yes | No |
| 8. Is the Decontamination Leader informed if contamination is found on a person? | Yes | No |

III. Summary

1. Describe any problems noted by the area being evaluated. Provide a description of the problem, its outcome or effect and any recommended corrective courses of action to alleviate or correct the deficiency. Any of the previously listed areas that receive an evaluation grade of 2 or 1 require a written explanation on this page.

Evaluators Signature / Date

IV. Evaluation Standards

- "5" Excellent - Personnel and equipment always functioned without error. There were no problems encountered and all personnel and equipment functioned at a superior level.
- "4" Good - Personnel and equipment generally performed as expected. Any errors or problems were minor and did not detract from completion of the task.
- "3" Satisfactory - Personnel and equipment performed at an acceptable level. Errors noted were not severe and completion of the task was achieved within acceptable limits.
- "2" Poor - Personnel and equipment generally performed below expectations. There were deficiencies of a significant nature. The areas ability to carry out its function was diminished.
- "1" Failure - Personnel and equipment consistently failed to perform as required. Acceptable completion of the task was not achieved.

N.O. Not Observed

7.5.5 Drill Controller #4 Critique Sheet
Decontamination Area Personnel

I. General Questions

Area Evaluated

Observers Rating

A. Activation and Response

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was the action/initiation efficient and organized? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were personnel familiar with their responsibilities and respond in a timely manner? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was the person in charge clearly identifiable? | 5 | 4 | 3 | 2 | 1 | N.O. |

B. Communications

- | | | | | | | |
|---|---|---|---|---|---|------|
| 1. Were all required and specified communications circuits operable? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were there sufficient personnel to conduct communications tasks? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was incoming information effectively and efficiently distributed to appropriate personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |

C. Procedures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were personnel generally familiar with the relevant procedures? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were procedures followed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were personnel so overwhelmed with procedural requirements that they were distracted from the appropriate response? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were the procedures appropriate? | 5 | 4 | 3 | 2 | 1 | N.O. |

<u>Area Evaluated</u>	<u>Observers Rating</u>					
<u>D. Direction and Control</u>						
1. Could the response be categorized as a team effort or a group of individual efforts? (Team = 5, Individuals = 1)	5	4	3	2	1	N.O.
2. Was there an effective mechanism for resolving differences of opinion regarding technical issues and actions to be taken?	5	4	3	2	1	N.O.
3. Was there excessive noise and loitering in the response facility? (No = 5, Yes = 1)	5	4	3	2	1	N.O.
<u>E. Material and Equipment</u>						
1. Was all the required material and equipment available?	5	4	3	2	1	N.O.
2. Did personnel check to ensure that all equipment was available and functional early in the activation process?	5	4	3	2	1	N.O.
3. If equipment was inoperable or failed in use, were appropriate actions taken to resolve the deficiency? (spares/ backup equipment)	5	4	3	2	1	N.O.
4. Were there any situations in which the lack of equipment, or a lack of ability to operate the equipment, prevented personnel from completing their tasks? (No = 5, Yes = 1) If so, please indicate details.	5	4	3	2	1	N.O.
5. Were there any situations in which additional equipment or materials, or different types of equipment could have made the activity more effective? (No = 5, Yes = 1) If so, please indicate details.	5	4	3	2	1	N.O.
6. Could the area support the personnel assigned to it?	5	4	3	2	1	N.O.

Area Evaluated

Observers Rating

- | | | | | | | |
|--|---|---|---|---|---|------|
| 7. Were there sufficient resource materials readily available to support the conduct of the response? (maps, reference documents, copies of plans and procedures, data sheets, etc.) | 5 | 4 | 3 | 2 | 1 | N.O. |
|--|---|---|---|---|---|------|

F. Protective Measures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were appropriate protective measures implemented for response personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel properly wear protective clothing and dosimetry? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were appropriate radiological practices observed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were field personnel kept apprised of radiological conditions? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were response activities conducted with regard for personnel safety, consistent with the need to complete the activity? | 5 | 4 | 3 | 2 | 1 | N.O. |

II. Specific Questions about the Decontamination Area

A. Set Up of the Area

- | | | |
|--|-----|----|
| 1. Is there a sign identifying the Decontamination Area? | Yes | No |
| 2. Is there a sign identifying the "clean" exit? | Yes | No |
| Is the exit well marked (exit only, do not enter)? | Yes | No |
| 3. Are the signs in the shower area describing the various methods of washing? | Yes | No |
| 4. Are the following items available for use in washing? | | |
| - Liquid soap | Yes | No |
| - Soft brushes | Yes | No |
| - Waterless hand cleaner | Yes | No |

Area EvaluatedObservers Rating

- Detergent	Yes	No
- Lava soap	Yes	No
- Towels	Yes	No
5. Are clean coveralls available in the "clean" side of the boundary?	Yes	No
6. Has the RM-14 survey meter undergone preoperational check?	Yes	No
7. Has the background count rate been established?	Yes	No
8. Are Evacuee or Emergency Worker Contamination Report Forms available?	Yes	No
9. Are proper radiological controls being monitored?	Yes	No
Are boundaries well marked?	Yes	No
10. Is the report form kept free of contamination?	Yes	No

B. Operation of the Station

1. Is the information correctly entered on the Contamination Report?	Yes	No
2. Is the survey meter turned on when it is being used?	Yes	No
3. Do the monitoring personnel know how to read the meter?	Yes	No
4. Is the shield on the probe in the open position?	Yes	No
5. Are the monitoring personnel scanning too fast?	Yes	No
too slow?	Yes	No
6. Are the proper decontamination methods being used?	Yes	No
7. Is a contaminated injury treated properly?	Yes	No

III. Summary

1. Describe any problems noted by the area being evaluated. Provide a description of the problem, its outcome or effect and any recommended corrective courses of action to alleviate or correct the deficiency. Any of the previously listed areas that receive an evaluation grade of 2 or 1 require a written explanation on this page.

Evaluators Signature / Date

IV. Evaluation Standards

- "5" Excellent - Personnel and equipment always functioned without error. There were no problems encountered and all personnel and equipment functioned at a superior level.
- "4" Good - Personnel and equipment generally performed as expected. Any errors or problems were minor and did not detract from completion of the task.
- "3" Satisfactory - Personnel and equipment performed at an acceptable level. Errors noted were not severe and completion of the task was achieved within acceptable limits.
- "2" Poor - Personnel and equipment generally performed below expectations. There were deficiencies of a significant nature. The areas ability to carry out its function was diminished.
- "1" Failure - Personnel and equipment consistently failed to perform as required. Acceptable completion of the task was not achieved.
- N.O. Not Observed

7.5.6 Drill Controller #5 Critique Sheet
Vehicle and Equipment Monitoring and Decontamination
Personnel

I. General Questions

Area Evaluated

Observers Rating

A. Activation and Response

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was the action/initiation efficient and organized? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were personnel familiar with their responsibilities and respond in a timely manner? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was the person in charge clearly identifiable? | 5 | 4 | 3 | 2 | 1 | N.O. |

B. Communications

- | | | | | | | |
|---|---|---|---|---|---|------|
| 1. Were all required and specified communications circuits operable? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were there sufficient personnel to conduct communications tasks? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was incoming information effectively and efficiently distributed to appropriate personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |

C. Procedures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were personnel generally familiar with the relevant procedures? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were procedures followed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were personnel so overwhelmed with procedural requirements that they were distracted from the appropriate response? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were the procedures appropriate? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Observers Rating

D. Direction and Control

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Could the response be categorized as a team effort or a group of individual efforts? (Team = 5, Individuals = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Was there an effective mechanism for resolving differences of opinion regarding technical issues and actions to be taken? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was there excessive noise and loitering in the response facility? (No = 5, Yes = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |

E. Material and Equipment

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was all the required material and equipment available? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel check to ensure that all equipment was available and functional early in the activation process? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. If equipment was inoperable or failed in use, were appropriate actions taken to resolve the deficiency? (spares/ backup equipment) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were there any situations in which the lack of equipment, or a lack of ability to operate the equipment, prevented personnel from completing their tasks? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were there any situations in which additional equipment or materials, or different types of equipment could have made the activity more effective? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 6. Could the area support the personnel assigned to it? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Observers Rating

- | | | | | | | |
|--|---|---|---|---|---|------|
| 7. Were there sufficient resource materials readily available to support the conduct of the response? (maps, reference documents, copies of plans and procedures, data sheets, etc.) | 5 | 4 | 3 | 2 | 1 | N.O. |
|--|---|---|---|---|---|------|

F. Protective Measures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were appropriate protective measures implemented for response personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel properly wear protective clothing and dosimetry? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were appropriate radiological practices observed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were field personnel kept apprised of radiological conditions? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were response activities conducted with regard for personnel safety, consistent with the need to complete the activity? | 5 | 4 | 3 | 2 | 1 | N.O. |

II. Specific Questions about the Decontamination Area

A. Set Up of the Area

- | | | |
|---|-----|----|
| 1. Is there a sign identifying the Decontamination Area? | Yes | No |
| 2. Are the boundaries of the area clearly marked? | Yes | No |
| 3. Have the RM-14 survey meters undergone a preoperational check? | Yes | No |
| 4. Has the background count rate been established? | Yes | No |
| 5. Are the following articles available: | | |
| - Vehicle Contamination Report Forms | Yes | No |
| - Hand sponges | Yes | No |
| - Sponge mops | Yes | No |
| - Garden hose | Yes | No |

Area EvaluatedObservers Rating

- 5 Gallon pails	Yes	No
- Water vacuum	Yes	No
- Soap	Yes	No
- Coveralls	Yes	No
- Anti-C booties	Yes	No
- Gloves	Yes	No
- Plastic bags	Yes	No
- Warning labels	Yes	No
- Swiper	Yes	No

B. Operation of the Area

1. Is everyone and everything frisked before exiting the area?	Yes	No
2. Are the decontamination personnel wearing protective clothing when cleaning a vehicle?	Yes	No
3. Do the monitoring personnel know how to read the survey meter?	Yes	No
4. Is the shield on the probe in the open position?	Yes	No
5. Are the decontamination personnel taking swipes of the contaminated area after attempting to clean the area? Are the swipes roughly 4" x 4"?	Yes	No
6. Are the decontamination personnel using proper cleaning methods (wiping with wet sponges versus hosing the vehicle)?	Yes	No
7. Is the information entered correctly on the Vehicle Contamination Report?	Yes	No
8. Are all contaminated equipment properly bagged and labeled after use?	Yes	No

III. Summary

1. Describe any problems noted by the area being evaluated. Provide a description of the problem, its outcome or effect and any recommended corrective courses of action to alleviate or correct the deficiency. Any of the previously listed areas that receive an evaluation grade of 2 or 1 require a written explanation on this page.

Evaluators Signature / Date

IV. Evaluation Standards

- "5" Excellent - Personnel and equipment always functioned without error. There were no problems encountered and all personnel and equipment functioned at a superior level.
- "4" Good - Personnel and equipment generally performed as expected. Any errors or problems were minor and did not detract from completion of the task.
- "3" Satisfactory - Personnel and equipment performed at an acceptable level. Errors noted were not severe and completion of the task was achieved within acceptable limits.
- "2" Poor - Personnel and equipment generally performed below expectations. There were deficiencies of a significant nature. The areas ability to carry out its function was diminished.
- "1" Failure - Personnel and equipment consistently failed to perform as required. Acceptable completion of the task was not achieved.
- N.O. Not Observed

7.5.7 Drill Controller #6 Critique Sheet
Thyroid Monitoring Station Personnel

I. General Questions

Area Evaluated

Observers Rating

A. Activation and Response

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was the action/initiation efficient and organized? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were personnel familiar with their responsibilities and respond in a timely manner? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was the person in charge clearly identifiable? | 5 | 4 | 3 | 2 | 1 | N.O. |

B. Communications

- | | | | | | | |
|---|---|---|---|---|---|------|
| 1. Were all required and specified communications circuits operable? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were there sufficient personnel to conduct communications tasks? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was incoming information effectively and efficiently distributed to appropriate personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |

C. Procedures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were personnel generally familiar with the relevant procedures? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Were procedures followed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were personnel so overwhelmed with procedural requirements that they were distracted from the appropriate response? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were the procedures appropriate? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Observer's Rating

D. Direction and Control

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Could the response be categorized as a team effort or a group of individual efforts? (Team = 5, Individuals = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Was there an effective mechanism for resolving differences of opinion regarding technical issues and actions to be taken? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Was there excessive noise and loitering in the response facility? (No = 5, Yes = 1) | 5 | 4 | 3 | 2 | 1 | N.O. |

E. Material and Equipment

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Was all the required material and equipment available? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel check to ensure that all equipment was available and functional early in the activation process? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. If equipment was inoperable or failed in use, were appropriate actions taken to resolve the deficiency? (spares/ backup equipment) | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were there any situations in which the lack of equipment, or a lack of ability to operate the equipment, prevented personnel from completing their tasks? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were there any situations in which additional equipment or materials, or different types of equipment could have made the activity more effective? (No = 5, Yes = 1) If so, please indicate details. | 5 | 4 | 3 | 2 | 1 | N.O. |
| 6. Could the area support the personnel assigned to it? | 5 | 4 | 3 | 2 | 1 | N.O. |

Area Evaluated

Observers Rating

- | | | | | | | |
|--|---|---|---|---|---|------|
| 7. Were there sufficient resource materials readily available to support the conduct of the response? (maps, reference documents, copies of plans and procedures, data sheets, etc.) | 5 | 4 | 3 | 2 | 1 | N.O. |
|--|---|---|---|---|---|------|

F. Protective Measures

- | | | | | | | |
|--|---|---|---|---|---|------|
| 1. Were appropriate protective measures implemented for response personnel? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 2. Did personnel properly wear protective clothing and dosimetry? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 3. Were appropriate radiological practices observed? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 4. Were field personnel kept apprised of radiological conditions? | 5 | 4 | 3 | 2 | 1 | N.O. |
| 5. Were response activities conducted with regard for personnel safety, consistent with the need to complete the activity? | 5 | 4 | 3 | 2 | 1 | N.O. |

II. Specific Questions about the Thyroid Gland Monitoring Station

A. Set Up of the Station

- | | | |
|--|-----|----|
| 1. Is there a sign identifying the monitoring station? | Yes | No |
| 2. Have the RM-14 survey meters undergone a preoperational check? | Yes | No |
| 3. Has the background count rate been established? | Yes | No |
| 4. Are Evacuee or Emergency Worker Contamination Report Forms available? | Yes | No |

B. Operation of the Station

- | | | |
|--|-----|----|
| 1. Is the information correctly entered on the Contamination Report? | Yes | No |
|--|-----|----|

Area Evaluated

Observers Rating

- | | | |
|--|---------------|----|
| 2. Is the survey meter turned on while the monitoring personnel is using it? | Yes | No |
| 3. Do the monitoring personnel know how to read the meter? | Yes | No |
| 4. Is the shield on the probe in the closed position? | Yes | No |
| 5. Is the monitoring person holding the meter in place at least 5 seconds? | Yes | No |
| 6. How long does it take to process one person? | _____ minutes | |

III. Summary

1. Describe any problems noted by the area being evaluated. Provide a description of the problem, its outcome or effect and any recommended corrective courses of action to alleviate or correct the deficiency. Any of the previously listed areas that receive an evaluation grade of 2 or 1 require a written explanation on this page.

Evaluators Signature / Date

IV. Evaluation Standards

- "5" Excellent - Personnel and equipment always functioned without error. There were no problems encountered and all personnel and equipment functioned at a superior level.
- "4" Good - Personnel and equipment generally performed as expected. Any errors or problems were minor and did not detract from completion of the task.
- "3" Satisfactory - Personnel and equipment performed at an acceptable level. Errors noted were not severe and completion of the task was achieved within acceptable limits.
- "2" Poor - Personnel and equipment generally performed below expectations. There were deficiencies of a significant nature. The areas ability to carry out its function was diminished.
- "1" Failure - Personnel and equipment consistently failed to perform as required. Acceptable completion of the task was not achieved.
- N.O. Not Observed

7.5.8 Drill Participant Comment Sheet

Now that you've participated in this LERO drill, we would like you to spend a moment and provide us with any comments or concerns related to your ability to carry out your LERO tasks. If you can identify a particular problem that you encountered in implementing your responsibilities, please indicate below, under the appropriate heading, the nature of the problem and give a suggested solution, if possible.

Procedural:

Equipment/Facility:

Personnel:

Training:

Scenario:

LERO Job Title

Date/Time of Drill

8.0 GLOSSARY

A - Glossary of Terms

Brief definitions of many of the terms used in this plan are given here. For more exact and detailed information, standard reference works can be consulted.

Absorbed Dose: The quantity of energy absorbed from ionization per unit mass of tissue. The rad is the unit of absorbed dose.

Airborne Radioactive Material: Any radioactive material dispersed in the air in the form of dusts, fumes, mists, vapors or gases.

Alpha Particle: Positively charged particles identical with the nuclei of helium atoms. They penetrate tissues to usually less than 0.1 mm (1/250 inch), but create dense ionization and heavy absorbed doses along these short tracks.

Background Radiation: Radiation arising from material other than the one directly under consideration. Cosmic rays and natural radioactivity are always present, and man-made sources may also contribute to the background radiation level.

Beta Particles: Electrons ejected from the nuclei of atoms; extremely tiny bits of matter traveling at nearly the speed of light. Their range in air can be several feet. In heavier material, such as the human body, they expend their energy within about 2 mm (1/10 inch).

Contamination (Radioactive): Deposition of radioactive material in any place where it may harm persons, spoil experiments or make products of equipment unsuitable or unsafe for some specific use. The presence of unwanted radioactive matter.

Decay: Disintegration of the nucleus of the radionuclide in a radioactive process.

Decay Product: A nuclide, either radioactive or stable, resulting from the disintegration of a radioactive material.

Decontamination: The reduction or removal of contaminating radioactive material from a structure, area, object or person.

Dose: The quantity of energy absorbed from ionization per unit mass of tissue. The rad is the unit of absorbed dose.

Dose Equivalent: A quantity that expresses all types of nuclear radiation on a common scale to indicate relative biological effects. The rem is the unit of dose equivalent.

Dose Rate: Absorbed dose delivered per unit time, as rads per seconds or rads per hour.

Dosimeter: A device that measures radiation dose, such as a film badge or ionization chamber.

Emergency Director: A highly trained individual totally responsible for directing onsite actions during an emergency at the nuclear plant site. Position occupied by the Shift Supervisor until relieved by a higher ranking individual.

Emergency Operations Facility: A facility operated by the licensee for the purpose of evaluating and controlling emergency situations and coordinating emergency responses.

Emergency Planning Zone (EPZ): The area surrounding the nuclear plant site for which planning has been done to assure that prompt and effective actions can be taken to protect the public in the event of a radiological incident. The EPZ is usually a radius of about ten (10) miles for the plume exposure pathway and a radius of about fifty (50) miles for the ingestion exposure pathway.

Evacuation: The process of removing people from a hazardous or potentially hazardous area to a safe area.

Evacuation Time Estimate: The roadway travel time required to leave the plume exposure emergency planning zone after mobilization has been completed.

Exposure: A measure of the ionization produced in air by X-ray or gamma radiation. The roentgen (R) is the unit of exposure. The term "dose" sometimes used interchangeably with exposure, actually refers to absorbed radiation.

Film Badge: A light-tight package of photographic film worn like a badge by workers in the nuclear industry or research, used to measure possible exposure to ionizing radiation. The absorbed dose can be calculated by the degree of film darkening caused by the irradiation.

Gamma Rays: Electromagnetic radiation comparable to light. They are similar to X-rays except for their origin. They are emitted with energies characteristic of each nuclide, and many are highly penetrating. Although their intensity decreases exponentially with thickness of the absorbing material, they can travel hundreds of feet in air and penetrate completely through the body.

General Population: People permanently residing within the plume exposure emergency planning zone (not including residents of nursing homes and long-term health-care facilities).

Geiger-Muller Counter (Geiger-Muller Tube): A radiation detection and measuring instrument. It consists of a gas-filled (Geiger-Muller) tube containing electrodes, between which there is an electrical voltage but not current flowing. When ionizing radiation passes through the tube, a short intense pulse of current passes from the negative electrode to the positive electrode and is measured or counted. The number of pulses per second measures the intensity of radiation. It is also often known as a Geiger Counter.

Incident: An occurrence that results in the loss of control of radioactive materials and involves a potential hazard to life, health or property.

Ingestion Exposure Pathway (50-mile EPZ): For planning purposes, the area within about a fifty (50) mile radius surrounding a nuclear plant site. The principal exposure from this pathway would be from the ingestion of contaminated water or foods.

Internal Radiation: Radiation (including alpha and beta particles and gamma radiation) resulting from radioactive substances within the body.

Isotopes: Forms of the same element having identical chemical properties but differing in their atomic masses. A radioisotope is an unstable isotope of an element that decays or disintegrates spontaneously, emitting radiation.

Local Emergency Operations Center: A location at the headquarters of each offsite response agency or some other designated location that may be used to direct the action taken by designated agencies under its jurisdiction during an emergency at the Shoreham Nuclear Power Station.

Millirem (mrem): One-thousandth (1/1000) of a rem.

Milliroentgen (mR): One-thousandth (1/1000) of a Roentgen.

Monitoring, Radiological: The operation of locating and measuring radioactive contamination by means of survey instruments that can detect and measure (as dose rates) ionizing radiations.

Nuclear Reactor: A device in which a fission chain reaction can be initiated, maintained, and controlled. Its essential component is a core with fissionable fuel.

Plume Exposure Pathway (10-mile EPZ): For planning purposes, the area within a ten (10) mile radius surrounding a nuclear plant site. The principal exposure sources from this pathway are: (a) whole body exposure to gamma radiation from the plume and from deposit material, and (b) inhalation exposure from the passing radioactive plume.

Protective Action Guide: The projected radiological dose, or dose commitment, values to individuals in the general population which warrants a protective action response following a release of radiological material.

Rad: The unit of absorbed dose in body tissue or other material.

Radiation Area: Any accessible area in which the level of radiation is such that a major portion of an individual's body could receive, in any one hour, a dose in excess of 5 millirem, or in any 5 consecutive days, a dose in excess of 100 millirem.

Radioactivity: The property of certain nuclides of spontaneously emitting nuclear particles or gamma or X-ray radiation, or of undergoing spontaneous fission.

Radioassay: The analysis of any substance (food, water, soil, etc.) to determine the presence and magnitude of radioactive contamination.

Radiological: A general term referring to processes that involve nuclear radiation.

Relocation Center: A pre-designated facility outside the plume exposure emergency planning zone at which evacuees can receive directions to congregate care centers, reunite with others, receive general information and, if necessary, receive radiological monitoring and decontamination and provide temporary housing, food and other necessities to evacuees needing them.

Release: Escape of radioactive materials into the environment.

Rem: The unit of radiation dose affecting body tissue. It is equal to the absorbed dose (measured in rads) multiplied by the quality factor (which takes into account the effectiveness of different types of radiation) and by other multiplying factors. For beta and gamma radiation the quality factor is 1.

Roentgen (R): The unit of radiation exposure in air. Roentgens are the units for quantities of X-ray or gamma radiation measured by detection and survey meters.

Scenarios: Time-based characterizations of plume exposure emergency planning zone populations and their variations by time of day, day of week and season.

Shelter: A structure or other location offering shielding from nuclear radiation in the environment.

Shielding: Any material or barrier that attenuates radiation.

Site Boundary: Area surrounding the nuclear plant site in which the Nuclear Facility Operator (NFO) has the authority to determine and control all activities including exclusion or removal of personnel and property from the area.

Source Term: A particular type or amount of radionuclide originating at the source of a nuclear incident. In its broadest sense, source term also describes the conditions and mode of emission.

Special Facility: Institution or location having either a residential population of fifteen or more people or having sizeable, but temporary, attendance at predictable times (e.g., nursing homes, hospitals, schools, parks).

Survey Meter: A portable instrument used in radiological monitoring to detect and measure ionizing radiation.

Thermoluminescent Dosimeter: A dosimetry badge worn by workers in the nuclear industry or research, used to measure possible exposure to ionizing radiation. It is characteristic of thermoluminescent material that radiation causes internal changes which make the material, when subsequently heated, give off an amount of light directly proportional to the radiation dose, which can be measured.

Thyroid Exposure: Exposure of the thyroid gland to radiation from radioactive isotopes of iodine which have been either absorbed or ingested.

Traffic Zone: A sub-division of an emergency response planning area associated with one specified primary evacuation route and particular reception center.

Transient Population: Those people who are only temporarily in, but do not permanently reside in, the plume exposure emergency planning zone.

Transient-dependents: People without access to an automobile for the purpose of leaving the plume exposure emergency planning zone at the time of an evacuation.

Whole Body Counter: A device used to identify and measure the radiation in the body (body burden) of human beings and animals; it uses heavy shielding to keep out background radiation and ultrasensitive scintillation detectors and electronic equipment.