UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

in the matter of:

LONG ISLAND LIGHTING COMPANY

(Shoreham Nuclear Power Station Unit 1)

Docket No. 50-322-01-3

VOLUME II

Location: Hauppauge, New York

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TAYLOR ASSOCIATES

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#### UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

#### Before the Atomic Safety and Licensing Board

In the Matter of	)	
LONG ISLAND LIGHTING COMPANY	A STATE OF THE PARTY OF THE PAR	50-322-OL-3 Planning Proceeding)
(Shoreham Nuclear Power Station, 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

Hunton & Williams 707 East Main Street Post Office Box 1535 Richmond, Virginia 23212 (804) 788-8200

### 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 Facilities Drill, Rev. 0
ATTACHMENT	5	LILCO Local Emergency Response Organization EOC/ENC/All Staging Areas/EWDF Drill, Rev. 0
ATTACHMENT	6	LILCO Integrated SNPS/LERO Drill EOF/EOC Activation, Rev. 0
ATTACHMENT	7	Lesson Plan: Coast Guard Emergency Preparedness Training
ATTACHMENT	8	Lesson Plan: Ambulance Personnel - Emergency Preparedness Training
		Lesson Plan: Ambulance Personnel - Radiation Protection Training
ATTACHMENT	9	Lesson Plan: Helicopter Personnel - Radiation Protection Training
ATTACHMENT	10	Letter dated January 20, 1984 from Charles A. Daverio, LILCO, to Captain E. W. Weigand, U.S. Coast Guard
ATTACHMENT	11	Lesson Plan I, Emergency Preparedness Overview - General Knowledge (Module 1 - script)
ATTACHMENT	12	Lesson Plan I, Emergency Preparedness Overview - Site Specific (Module 2 - script)
ATTACHMENT	13	LERO Organization, Script No. 1, Radiation Protection (Module 3)
ATTACHMENT	14	LERO Organization, Module No. 5, LERO Notifications
ATTACHMENT	15	LERO Organization, Module No. 8, Emergency Communications

ATTACHMENT	16	LERO Organization, Module No. 8a, Portable Radio Installation and Operation
ATTACHMENT	17	LERO Organization, Module No. 9, Personnel Dosimetry Demonstration
ATTACHMENT	13	LERO Organization, Module No. 10, Radiological Monitoring and Decontamination
ATTACHMENT	19	LERO Organization, Module No. 12, Traffic Control
ATTACHMENT	20	LERO Training Program Workbook (bound separately as Volume 3)
ATTACHMENT	21	LILCO, Local Emergency Response Organization Decontamination Tabletop Drill, Rev. 0
ATTACHMENT	22	Lesson Plan: Traffic Direction and Control
ATTACHMENT	23	Syllabus, Lesson Plan: Traffic Direction and Control
ATTACHMENT	24	Syllabus, Lesson Plan: Traffic Direction and Control During Darkness
ATTACHMENT	25	Forms from drill participants
ATTACHMENT	26	Lesson Plan: Modules 8 and 9
ATTACHMENT	27	Lesson Plan: Modules 3 and 10
*ATTACHMENT	28	Videotape, Module 1
*ATTACHMENT	29	Videotape, Module 3
*ATTACHMENT	30	Videotape, Module 8A
*ATTACHMENT	31	Videotape, Module 14

Suffolk County is already in possession of these videotapes.

<sup>\*</sup>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.

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 Date

### APPROVALS:

### CAUTION

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

AWeisman 10/14/8:
Manager of LERO 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:
	<ul> <li>Winds from NW 315° @ 25 mph with gusts to 35 mph</li> <li>Temperature 67°F</li> <li>A tornado watch has been in effect for the Eastern Long Island area for the past two hours</li> </ul>
T = -2/35	The National Weather Serivce 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 caliback 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.

E:	(e	rci	ned se Min	Tim	9 5	
T		-1,	/55			
Т		-1,	/35			
Т		-1,	/20			

### Sequence of Events

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.

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

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

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

T = -1/12

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 EGC.

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.

EH	Plan	nned ise /Min	Tin	ne s
т	- 0	/55		
т	- 1.	/10		

## T = 1/35

T = 1/25

T = 1/50

T = 2/10

T = 2/15

### Sequence of Events

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

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.

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

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.

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.

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 Exhause Isolation Valves continue

 Contaminated/injured man is in transport to the hospital

- Reactor Pressure Vessel Water is continuing to decrease

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.

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

	Pla	nne	d	
LX	erc	ise	Tin	ne
Ho	urs	Mi	nute	25

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

T = 3/05

### RADIOLOGICAL EMERGENCY DATA FORM

### PART I - GENERAL INFORMATION

1.	Date and Time of Message	8.		re has:
	Transmittal:		IA	NOT been a release of
	Date Time 7 = -2/18	2		radioactivity.
	(24-hour clock)		B	been a release of radio-
				activity to the
2.	Facility providing information:			ATMOSPHERE.
-	A Indian Point Unit No. 2			been a release of radio-
	B Indian Point Unit No. 3			activity to a BODY OF
	C Ginna Station			WATER .
	D Wine Mile Point Unit No. 1		D	THE RESERVE TO THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAME
	E FitzPatrick Plant			lease of radioactivity.
	F Shoreham Station			
	G Other	0	The	release is:
	d other			continuing
3.	Reported by:			terminated
٥.	A Name Joe Fanittany			NOT applicable.
	B Title Plant Superintendent		-	
	B Traite Trait Superincendent	10.	Pro	tective Actions:
4.	This Ais an exercise.			There is NO need for
٠.	B is NOT			Protective Actions out-
	0 13 401			side the site boundary.
5	Emergency Classification			Protective Actions are
٠.	IA Unusual Event			under consideration.
	B Alert		C	
	C Site Area Emergency			Actions:
	D General Emergency			Shelter within
	b delierar amergency			miles/or
6.	This classification occured at			sectors/or ERPA's.
٠.	Date Time $T = -2/18$			Evacuate within
	(24-hour clock)			miles/or
	(E4-Hour Grock)			sectors/or ERPA's.
7	Brief Event Description/			
	Initiating Condition:	11.	Wei	ther:
	Tornado in vicinity of the			Wind speed 27 miles
	station, electrical distri-			per hour or meters
	bution system. Disruptions			per second.
	have occured as a result.		B	Direction (from) 315°
	Mave occured as a result.			degrees.
			C	Stability class (A-G) B
			D	General Weather Condi-
				tion (if available)
				Overcast
		Mess	220	received by
		He 3	saye	16661160 03

### PART II - RADIOLOGICAL ASSESSMENT DATA

	lant Emergency Response Actions E Procedures	Underway:	
	lity Offsite Emergency Response	Action Underway:	
Re1	ease Information		
A.	Atmospheric Release		
		Actual	Projected
	Date and Time Release Started Duration of Release Noble Gas Release Rate Radioiodine Release Rate Elevated or Ground Release	hrs C1/sec C1/sec	hrs Ci/sec Ci/sec
В.	Waterborne Release		
		Actual	Projected
	Date and Time Release Started Duration of Release Volume of Release Radioactivity Concentration (gross)	hrs gal uCi/ml	hrs gal uCi/ml
	Total Radioactivity Released Radionuclides in Release	Ci uCi/ml uCi/ml	Ci uCi/ml uCi/ml uci/ml

# PART II - RADIOLOGICAL ASSESSMENT DATA (continued)

### 16. Dose and Measurements and Projections

A. Site Boundary

		Actual	Projected
	Whole Body Dose Rate Whole Body Commitment (for duration)	mR Rem	mR/hr Rem
	Thyroid Dose Commitment (! hr. exposure) Thyroid Dose (for duration)	Rem Rem	mRem Rem
В.	Projected Offsite		
		2 Miles 5 M	iles 10 Miles
	Whole Body Dose Rate (mR/hr) Whole Body Dose (Rem) Thyroid Dose Commitment (1 hr. Exposure - mRem) Thyroid Dose (Total Commitment - Rem)		
	tective Action Recommendations	and the basis i	for that
N	lo actions		

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 (Notificaton 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	8.		re has:
	Transmittal:			NOT been a release of
	Date Time $T = -1/12$			radioactivity.
	(24-hour clock)		В	been a release of radio-
				activity to the
2.	Facility providing information:			ATMOSPHERE.
	A Indian Point Unit No. 2		C	been a release of radio-
	B Indian Point Unit No. 3			activity to a BODY OF
	C Ginna Station			WATER .
	D Nine Mile Point Unit No. 1		D	been a GROUND SPILL re-
	E FitzPatrick Plant			lease of radioactivity.
1	F Shoreham Station			
	G Other	9.	The	release is:
	a other			continuing
•	Departed but			terminated
3.	Reported by:		IC	NOT applicable.
	A Name Joe Fanittany		Tr	NOT ADDITION TO
	B Title Plant Superintendent	30	D	Antion.
		10.		tective Actions:
4.	This A is an exercise.		A	There is NO need for
	B is NOT			Protective Actions out-
			1	side the site boundary.
5.	Emergency Classification		В	
	A Unusual Event			under consideration.
	IB Alert		C	
	C Site Area Emergency			Actions:
	D General Emergency			Shelter within
				miles/or
6.	This classification occured at			sectors/or ERPA's.
	Date Time $T = -1/12$			Evacuate within
	(24-hour clock)			miles/or
				sectors/or ERPA's.
7.	Brief Event Description/			
	Initiating Condition:	11.	We	ather:
	A pipe break in the Reactor	975		Wind speed 6 miles
	Water Clean Up System has			per hour or meters
				per second.
	occurred.		В	Direction (from) 315°
				degrees.
			•	Stability class (A-G) D
			C	General Weather Condi-
			D	
				tion (if available)
				Overcast
		Mes:	sage	received by

### PART II - RADIOLOGICAL ASSESSMENT DATA

13.								
.,		ert Procedure  lity Offsite Emergency Response	Action Undomay:					
14.		ert status	Action onderway.					
15.	Rel	ease Information						
	A.	Atmospheric Release						
			Actual	Projected				
		Date and Time Release Started Duration of Release Noble Gas Release Rate Radioiodine Release Rate Elevated or Ground Release	hrs Ci/sec Ci/sec	hrs Ci/sec Ci/sec				
	В.	Waterborne Release						
			Actual	Projected				
		Date and Time Release Started Duration of Release Volume of Release Radioactivity Concentration (gross) Total Radioactivity Released Radionuclides in Release	hrs  gal  uCi/ml  Ci  uCi/ml  uCi/ml  uCi/ml  uCi/ml	hrs gal uCi/ml  Ci uCi/ml uCi/ml uCi/ml uCi/ml				

## PART II - RADIOLOGICAL ASSESSMENT DATA (continued)

## 16. Dose and Measurements and Projections

A. Site Boundary

	Orec boancary			
		Actual	P	rojected
	Whole Body Dose Rate Whole Body Commitment (for duration)	mR		mR/hr Rem
	Thyroid Dose Commitment (1 hr. exposure) Thyroid Dose (for duration)	Re		mRem Rem
В.	Projected Offsite			
		2 Miles	5 Miles	10 Miles
	Whole Body Dose Rate (mR/hr) Whole Body Dose (Rem) Thyroid Dose Commitment (1 hr. Exposure - mRem) Thyroid Dose (Total Commitment - Rem)	=		=
	otective Action Recommendations commendation:	and the bas	is for th	at
	o actions.			

PART III - DOE RADIOLOGICAL STATUS

Information not available at present time.

### LOCAL EMERGENCY RESPONSE ORGANIZATION EVENT SUMMARY SHEET

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
Initial Event Classification (Notification Fact Sheet - Item 5):  (circle one)  UNUSUAL EYENT  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:
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:
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
Initial Notification (Notification Fact Sheet - Item 6):  Time: T = -1/12
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
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
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
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
Name and Contact Number for the LERO Director/Manager of Local Response:  Local EOC Activation Necessary? (circle one) YES NO
Local EOC Activation Necessary? (circle one) YES NO
tutiling 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 kesponse

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

### PART II - RADIOLOGICAL ASSESSMENT DATA

lant Emergency Response Actions		
ease Information		
Atmospheric Release		
	Actual	Projected
Date and Time Release Started Duration of Release Noble Gas Release Rate Radioiodine Release Rate Elevated or Ground Release	-1/20 hrs C1/sec C1/sec	-1/20 10 hrs 9.2 (1) Ci/sed 1.2 (0) Ci/sed Ground
Waterborne Release		
	Actual	Projected
Date and Time Release Started Duration of Release Volume of Release Radioactivity Concentration	hrs gal uC1/m1	hrs gal uCi/ml
(gross) Total Radioactivity Released Radionuclides in Release	C1UC1/m1UC1/m1	C1UC1/m1UC1/m1
	diological field monitoring team  ease Information  Atmospheric Release  Date and Time Release Started Duration of Release Noble Gas Release Rate Radioiodine Release Rate Elevated or Ground Release Waterborne Release Volume of Release Volume of Release Radioactivity Concentration (gross) Total Radioactivity Released	Atmospheric Release  Date and Time Release Started Duration of Release Noble Gas Release Rate Radioiodine Release Rate Elevated or Ground Release  Waterborne Release  Waterborne Release  Duration of Release Volume of Release Radioactivity Concentration (gross) Total Radioactivity Released Radionuclides in Release  Mactual  Actual  Actual  Actual  Ci/sec  Balance  Actual  Actual  Ci/sec  Ci/mi  Ci/mi

## PART II - RADIOLOGICAL ASSESSMENT DATA (continued)

## 16. Dose and Measurements and Projections

### A. Site Boundary

			Actual	Pr	rojected		
		Whole Body Dose Rate Whole Body Commitment (for duration)	mR		mR/hr Rem		
		Thyroid Dose Commitment (1 hr. expcsure) Thyroid Dose (for duration)	Re		70 mRem 54 Rem		
	В.	Projected Offsite					
			2 Miles	5 Miles	10 Miles		
		Whole Body Dose Rate (mR/hr) Whole Body Dose (Rem)	108	25	10		
		Thyroid Dose Commitment (1 hr. Exposure - mRem)	871	183	75		
		Thyroid Dose (Total Commitment - Rem)	8.71	1.83	75		
17		tective Action Recommendations	and the bas	is for the	at		
	Evacuate to 1 mile. Zones CDE shelter to 3.0 miles Zone D						
		No action past 3.0 miles					

### PART III - DOE RADIOLOIGCAL STATUS

Distance	Projected Dosr Rates
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	8.	There has:	
	Transmittal:		A NOT been a release	OT
	Date Time _T = 1/25		radioactivity.	di - 1
	(24-hour clock)		B been a release of	radio-
			activity to the	
2.	Facility providing information:		C been a release of	madio-
	A Indian Point Unit No. 2		been a release of	05
	B Indian Point Unit No. 3		activity to a BODY WATER	Ur
	C Ginna Station		D been a GROUND SPIL	1 20-
	D Nine Mile Point Unit No. 1		lease of radioacti	vitv
	E FitzPatrick Plant		lease of radioacci	vicy.
	F Shoreham Station	0	The release is:	
	G Other	9.	A continuing	
			B terminated	
3.	Reported by:		C NOT applicable.	
	A Name Don Johnson		C MOI applicable.	
	B Title TSC Communicator	10.	Protective Actions:	
	Tite on supporter	10.	A There is NO need i	for
4.	This Alis an exercise.		Protective Actions	
	B is NOT		side the site bour	
	F Classification		B Protective Actions	are
5.	Emergency Classification A Unusual Event		under consideration	
			C Recommended Protec	tive
	B Alert C Site Area Emergency		Actions:	11111
	D General Emergency		Shelter within	1.5
	D General Emergency		miles/or C	
	This classification occured at		sectors/or ERPA'	s.
0.	Date Time T = -1/12		Evacuate within	
	(24-hour clock)		miles/or	
	124-1105, 615617		sectors/or ERPA'	s.
7.	Brief Event Description/			
/.	Initiating Condition:	11.	Weather:	
	Ongoing radiological release	9.07	A Wind speed 6	miles
	combined with a continuously		per hour or	meters
	decreasing Reactor Vessel		per second.	
	water level.		B Direction (from)	315°
	1000110101		degrees.	
			C Stability class (	A-G) D
			D General Weather C	ondi-
			tion (if availabl	e)
			Overcast	
				di official a
		Mes	age received by	

### PART II - RADIOLOGICAL ASSESSMENT DATA

	lant Emergency Response Actions to isolation valves are still und		npts to clos
mo	lity Offsite Emergency Response initoring teams initial data contom the plant.		
Rel	ease Information		
A.	Atmospheric Release		
		Actual	Projected
	Date and Time Release Started Duration of Release Noble Gas Release Rate Radiolodine Release Rate Elevated or Ground Release	-1/20 hrs 1.0 (2) Ci/sec 3.7 (-2) C1/sec Ground	10 hrs 1.0 (2) Ct 3.7 (-2) Ct Ground
В.	Waterborne Release		
		Actual	Projected
	Date and Time Release Started Duration of Release Volume of Release Radioactivity Concentration (gross)	hrs gal uCi/ml	hrs gal
	Total Radioactivity Released Radionuclides in Release	C1 UC1/m1 uC1/m1	UC1

## PART II - RADIOLOGICAL ASSESSMENT DATA (continued)

### 16. Dose and Measurements and Projections

### A. Site Boundary

		Actua	<u>P1</u>	rojected		
	Whole Body Dose Rate Whole Body Commitment (for duration)	1,550	nR 324	mR/hr 3.24 Rem		
	Thyroid Dose Commitment (1 hr. exposure) Thyroid Dose (for duration)		Rem 269	mRem 2.69 Rem		
В.	Projected Offsite					
		2 Miles	5 Miles	10 Miles		
	Whole Body Dose Rate (mR/hr) Whole Body Dose (Rem) Thyroid Dose Commitment	.710	16	6.7		
	(1 hr. Exposure - mRem)	43	9	4		
	Thyroid Dose (Total Commitment - Rem)	43	09	.04		
	Protective Action Recommendations and the basis for that recommendation:					
	Shelter to 1.5 miles. No action beyond 1.5 miles based on					

### PART III - DOE RADIOLOGICAL STATSU

Distance	Projected Dosr Rates
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	8.	A	re has: NOT been a release of radioactivity.
	(24-hour clock)		В	been a release of radio- activity to the
2.	A Indian Point Unit No. 2 B Indian Point Unit No. 3 C Ginna Station	•	C	ATMOSPHERE. been a release of radio- activity to a BODY OF WATER
	D Nine Mile Point Unit No. 1 E FitzPatrick Plant F Shoreham Station		D	been a GROUND SPILL re- lease of radioactivity.
	6 Other	9.	The	release is:
			A	continuing
3.	Reported by:		В	terminated
	A Name Ralph Moore B Title EOF Communicator		C	NOT applicable.
		10.	Pro	tective Actions:
4.	This Ais an exercise.	17/7/6	A	There is NO need for
	B is NOT			Protective Actions out-
				side the site boundary.
5.	Emergency Classification		В	Protective Actions are
-	A Unusual Event		70	under consideration.
	B Alert		C	
	C Site Area Emergency			Actions:
	D General Emergency		-	Shelter within 10
	To deliter and going			miles/or I and O
6.	This classification occured at			sectors/or ERPA's.
-	Date Time $T = 2/12$			Evacuate within 3.5
	(24-hour clock)			miles/or CDE
				sectors/or ERPA's.
7.	Brief Event Description/			
	Initiating Condition:	11.	Wei	ather:
	Continuing decrease in RPV.			Wind speed 6 miles
	Water level has resulted in			per hour or meters
	fuel uncovering and potential			per second.
	fuel damage.		B	Direction (from) 315°
				degrees.
			C	Stability class (A-G) D
			D	General Weather Condi-
				tion (if available)
				Overcast
		Moss	SAGE	received by
		me s	sage	received by

### PART II - RADIOLOGICAL ASSESSMENT DATA

Inplant Emergency Response Actions Underway: Containment  isolation valve work continuing in an attempt to terminate the release  Utility Offsite Emergency Response Action Underway: Field monitoring personnel continuing to track the plume.							
A.	Atmospheric Release						
		Actua1	Projected				
	Date and Time Release Started Duration of Release Noble Gas Release Rate Radioiodine Release Rate Elevated or Ground Release	-1/20 10 hrs 3.1 (3) C1/sec 1.1 (0) C1/sec Ground	-1/20 10 hrs 3.1 (3) Ci/sec 1.1 (0) Ci/sec Ground				
В.	Waterborne Release						
		Actual	Projected				
	Date and Time Release Started Duration of Release Volume of Release Radioactivity Concentration (gross) Total Radioactivity Released	hrs gal uCi/ml	hrs gal uCi/ml				
	Radionuclides in Release	uC1/ml uC1/ml uC1/ml	uCi/ml uCi/ml uCi/ml				

#### PART II - RADIOLOGICAL ASSESSMENT DATA (continued)

## 16. Dose and Measurements and Projections

(hole Body Dose Rate (hole Body Commitment (for duration)	Actual mR	9,72						
(hole Body Commitment (for duration)								
		···	97.2 Rem					
Thyroid Dose Commitment (1 hr. exposure) Thyroid Dose (for duration)	Re		8,070 mRem 80.7 Rem					
Projected Offsite								
	2 Miles	5 Miles	10 Miles					
Inole Body Dose (Rem)	2,140	489	203					
(1 hr. Exposure - mRem)	1,290	270	111					
(Total Commitment - Rem)	12.9	2.7	1.1					
Protective Action Recommendations and the basis for that recommendation:								
Based upon actual isotopic analysis. Shelter to 10 miles								
	Projected Offsite  Whole Body Dose Rate (mR/hr) Whole Body Dose (Rem) Whyroid Dose Commitment (1 hr. Exposure - mRem) Whyroid Dose (Total Commitment - Rem)  Sective Action Recommendations Manual Recommendations	Projected Offsite    Amiles	Projected Offsite  2 Miles 5 Miles  (hole Body Dose Rate (mR/hr) 2,140 489  (hole Body Dose (Rem) 21.4 4.89  (hyroid Dose Commitment (1 hr. Exposure - mRem) 1,290 270  (hyroid Dose (Total Commitment - Rem) 12.9 2.7  ective Action Recommendations and the basis for the mmendation:					

## PART III - DOE RADIOLOGICAL STATUS

Distance	Projected Dosr Rates	Actual Dose Rates	
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:	8.		NOT been a release of
	Date Time T = 2/45 (24-hour clock)		В	activity to the
2.	Facility providing information:		<u> </u>	ATMOSPHERE.
	A Indian Point Unit No. 2 B Indian Point Unit No. 3 C Ginna Station		С	been a release of radio- activity to a BODY OF WATER
	D Nine Mile Point Unit No. 1 E FitzPatrick Plant		D	been a GROUND SPILL re- lease of radioactivity.
	F Shoreham Station		Th	
	6 Other	9.		e release is:
	Account of him			continuing
3.	Reported by:		C	terminated
	A Name Ralph Moore		•	NOT applicable.
	B Title EOF Communicator	10.	Dre	otective Actions:
	This Alis an exercise.	10.	A	
7.	B is NOT		~	Protective Actions out-
	D 13 HO!			side the site boundary.
5.	Emergency Classification		В	
	A Unusual Event		-	under consideration.
	B Alert		C	
	C Site Area Emergency		- 77	Actions:
	D General Emergency			Shelter within 10
				miles/or I and 0
6.	This classification occured at			sectors/or ERPA's.
	Date Time T = 2/12			Evacuate within 3.5
	(24-hour clock)			miles/or CDE
				sectors/or ERPA's.
7.	Brief Event Description/			
	Initiating Condition:	11.	We	ather:
	Primary Containment Exhaust			Wind speed 6 miles
	Isolation Valves have been			per hour or meters
	closed. The release has been			per second.
	terminated into secondary		В	Direction (from) 315°
	containment.			degrees.
			C	Stability class (A-G) D
			D	General Weather Condi-
			11.1	tion (if available)
				Overcast
		Mess	age	received by

## PART II - RADIOLOGICAL ASSESSMENT DATA

- 1	lant Emergency Response Actions wel in the RPV.	Underway: Resto	oring water
	lity Offsite Emergency Response nitoring teams continuing.	Action Underway:	Field
Rel	ease Information		
A.	Atmospheric Release		
		Actual	Projected
	Date and Time Release Started Duration of Release Noble Gas Release Rate Radioiodine Release Rate Elevated or Ground Release	-1/20 hrs 3.1 (3) Ci/sec 1.1 (0) Ci/sec	-1/20 10 hrs 3.1 (3) Ci/so 1.1 (0) Ci/so Ground
в.	Waterborne Release		
		Actual	Projected
	Date and Time Release Started Duration of Release Volume of Release Radioactivity Concentration (gross)	hrs gal uCi/ml	hrs gal uCi/m
	Total Radioactivity Released Radionuclides in Release	C1 uC1/m1 uC1/m1	Ci uCi/m uCi/m

# PART II - RADIOLOGICAL ASSESSMENT DATA (continued)

### 16. Dose and Measurements and Projections

### A. Site Boundary

		Actual	<u> P</u>	rojected
	Whole Body Dose Rate Whole Body Commitment (for duration)	mR		20 mR/hr 97.2 Rem
	Thyroid Dose Commitment (1 hr. exposure) Thyroid Dose (for duration)	Re	The second second	70 mRem 80.7 Rem
В.	Projected Offsite			
		2 Miles	5 Miles	10 Miles
	Whole Body Dose Rate (mR/hr) Whole Body Dose (Rem) Thyroid Dose Commitment	2,140	489	203
	(1 hr. Exposure - mRem) Thyroid Dose	1,290	270	111
	(Total Commitment - Rem)	12.9	2.7	1.1
101 20120	tective Action Recommendations ommendation:	and the bas	is for th	at

## PART III - DOE RADIOLOGICAL STATUS

Distance	Projected Dosr Rates	Actual Dose Rates
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	8		re has:
	Transmittal:			NOT been a release of
	Date Time T = 3/05			radioactivity.
	(24-hour clock)			been a release of radio- activity to the
2	Facility providing information:			ATMOSPHERE.
••	A Indian Point Unit No. 2			been a release of radio-
	B Indian Point Unit No. 3 C Ginna Station			activity to a BODY OF WATER
	D Nine Mile Point Unit No. 1		D	been a GROUND SPILL re-
	E FitzPatrick Plant F Shoreham Station			lease of radioactivity.
	6 Other	9.	The	release is:
	d Other	٥.		continuing
3.			C	terminated
	A Name Ralph Moore B Title EOF Communicator		10	NOT applicable.
	B TITLE EUR COMMUNICATOR	10.	Pro	tective Actions:
4	This Ais an exercise.		A	There is NO need for
**	B is NOT			Protective Actions out-
	0 13 80.			side the site boundary.
	Emergency Classification			Protective Actions are
٥.			-	under consideration.
	A Unusual Event			Recommended Protective
	B Alert		-	Actions:
	C Site Area Emergency			Shelter within
	D General Emergency			
				miles/or
6.	This classification occured at			sectors/or ERPA's.
	Date Time T = 3/02			Evacuate within
	(24-hour clock)			miles/or
				sectors/or ERPA's.
7.	Brief Event Description/			
	Initiating Condition:	11.	wea	ther:
	Plant conditions have		A	Wind speed 6 miles
	improved considerably.			per hour or meters
				per second.
				Direction (from) 315°
				degrees.
				Stability class (A-G) D
			D	General Weather Condi-
				tion (if available)
				Clearing
		Mes	sage	received by

## PART II - RADIOLOGICAL ASSESSMENT DATA

	lant Emergency Response Actions store plant systems.	Underway: Cont	inuing to
	lity Offsite Emergency Response nitoring teams are conducting en		
Rel	ease Information		
A.	Atmospheric Release		
		Actual	Projected
	Date and Time Release Started Duration of Release Noble Gas Release Rate Radioiodine Release Rate Elevated or Ground Release	hrs C1/sec C1/sec	hrs Ci/sec Ci/sec
В.	Waterborne Release		
		Actual	Projected
	Date and Time Release Started Duration of Release Volume of Release Radioactivity Concentration (gross) Total Radioactivity Released	hrs gal uCi/ml	hrs gal uC1/m1
	Radionuclides in Release	uCi/ml uCi/ml uCi/ml	uC1/m1 uC1/m1 uC1/m1

# PART II - RADIOLOGICAL ASSESSMENT DATA (continued)

## 16. Dose and Measurements and Projections

### A. Site Boundary

		Actua	<u> </u>	rojected
	Whole Body Dose Rate Whole Body Commitment (for duration)	— mi	em	mR/hr Rem
	Thyroid Dose Commitment (1 hr. exposure) Thyroid Dose (for duration)	AND DESCRIPTION OF THE PARTY OF	em	miRem Rem
в.	Projected Offsite			
		2 Miles	5 Miles	10 Miles
	Whole Body Dose Rate (mR/hr) Whole Body Dose (Rem) Thyroid Dose Commitment (1 hr. Exposure - mRem) Thyroid Dose (Total Commitment - Rem)	=	$\equiv$	$\equiv$
	tective Action Recommendations	and the ba	sis for th	at

### 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

TABLE NO.	TITLE
6-1	Meterological 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

FIGURE NO.	TITLE
6-1 6-2 6-3 6-4	Contaminated Mechanic Xe-133 Equivalent Gas Release Rate vs. Time Gross Iodine Release Rate vs. Time Gross Noble Gas Release Rate vs. Time
6.5.1 - 6.5.4 6.6.1 - 6.6.3 6.7.1 - 6.7.3	Onsite Radiation Zone Maps One-Mile Radiation Zone Maps 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 meterological 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  $8.6 \times 10^8$  cpm, wholebody gamma. The iodine dose rates are projected at  $1/1000 \, \frac{\text{TH}}{\text{N}}$ , 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 x 10<sup>3</sup> 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 99.9% of the iodines will be adsorbed before release.

Implant 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	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   T+00/00   T+01/00   T+02/00	6 6 6 7	315 316 315 315	70.0 70.5 70.5 70.5 71.0	-0.5 -0.5 -0.5 -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

<sup>\*</sup> Data to be provided to Station Shift Supervisor, Radiological Assessment Coordinator, Environmental Survey Team Coordinator, or Meteorological Advisor.

TABLE 6-2
PERSONNEL CONTAMINATION INFORMATION

Individual Name	Maximum RM-14 CPM	Description of Area With Reading
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 uc1/ml \*

Nuclide	1 - 03/00	T + 00/10	T + 00/30	T + 01:45	
	0.46 - 10-5	145	4,290	4,265	
1-131	8.46 x 10-5	102	2,700	1,738	
132	4.43 x 10-3	102	9 400	7 877	
133	1.43 x 10-3	280	8,400 900	7,877	
134	1.57 x 10-2	40	500	5,389	
135	1 2.92 x 10-3 1	220	6,300		
Xe-133	1 1.67 x 10-4				
135	5.09 x 10-3				
Kr-85m	i I				
97	i i				
87 88	i i				
7- 122		4	114	1 110 1	
Te-132	3.59 x 10-6	.5	1 15	1 15 1	
Cs-134	3.59 X 10	.4	1 15 1 12	1 12 1	
137			18	i 18 I	
Co-58	1.89 x 10 <sup>-4</sup> 2.67 x 10 <sup>-4</sup>	.6	18	18	
60	2.67 x 10-4	,.3	210	209	
Ce-141			150	149	
Ba-140	1.18 x 10-4 1.18 x 10-4	5	149	145	
La-140	1 1.18 x 10-4	5	149		

<sup>\*</sup> Data provided reflects analysis results from samples taken at the indicated times.

TABLE 6-3.2

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

	Total Concentration (uCi/ml)
Nuclide	
1-131	8.46 x 10 <sup>-5</sup>
132	4.43 x 10 <sup>-3</sup>
133	1.43 x 10 <sup>-3</sup>
134	1.57 x 10 <sup>-2</sup>
135	2.92 x 10 <sup>-3</sup>
Xe-133	1.67 x 10 <sup>-4</sup>
135	5.09 x 10 <sup>-3</sup>
Kr-85m	
87	<u></u>
88	
Te-132	3.59 x 10 <sup>-6</sup>
Cs-134	3.59 X 10
137	4
Co-58	1.89 x 10 <sup>-4</sup>
-60	2.67 x 10 <sup>-4</sup>
Ce-141	
Ba-140	1.18 x 10 <sup>-4</sup>
La-140	1.18 x 10 <sup>-4</sup>
20 210	

<sup>\*</sup> Data to be provided to Chemistry personnel.

TABLE 6-3.3

REACTOR WATER SAMPLE ACTIVITY (T +0/10)

	Total Concentration
Nuclide	(uCi/cc)
I-131	145
	102
132	280
133	40
134	220
135	
Xe-133	
135	
Kr-85m	
87	
88	
Te-132	4
Cs-134	.5
137	.4
Co-58	.6
-60	.3
Ce-141	7
	5
Ba-140	5
La-140	기가 가장하면 하는 이 상처를 하고 있다.

<sup>\*</sup> Data to be provided to Chemistry personnel.

TABLE 6-3.4

REACTOR WATER SAMPLE ACTIVITY (T +0/30)

•	* Total Concentration
Nuclide	(uCi/cc)
I-131	4,290
132	2,700
133	8,400
134	900
135	6,300
Xe-133	
135	
Kr-85m	
87	
88	: [1] : [1]
Te-132	114
Cs-134	15
137	12
Co-58	18
-60	9
Ce-141	210
Ba-140	150
La-140	149

<sup>\*</sup> Data to be provided to Chemistry personnel.

TABLE 6-3.5
REACTOR WATER SAMPLE ACTIVITY (T +1/45)

Nuclide	Total Concentration (uCi/cc)
I-131	4, 265
132	1,738
133	7,877
134	275
135	5,389
Xe-133	•• ·
135	
Kr-85m	
87	[20] 전환 환경 [20] (B. 10] (B. 10] (B. 10]
88	
Te-132	110
Cs-134	15
137	12
Co-58	18
-60	9
Ce-141	209
Ba-140	149
La-140	145

<sup>\*</sup> Data to be provided to Chemistry personnel.

TABLE 6-4.1
SUPPRESSION POOL WATER SAMPLE ANALYSIS

Total Concentration uci/ml \*

Nuclide	T - 03/00 I	1 + 00/30	7 + 01/45	
. 121	1.65 x 10-5	4,290	4,265	
1-131	2.33 x 10-5	2,700	1,738	
132	3.30 x 10-5	8,400	7,877	
133	3.30 X 10 1	900	275	
134	3.69 x 10-5		5,389	
135	2.91 x 10-5	6,300	5,505	
Xe-133		••		
135	1			
Kr-85m				
	1			
87 88	1 1			
Te-132	2.33 x 10-5	114	110	
Cs-134	1 1.46 x 10-6	15 12 18	15	
137	9.13 x 10-7	12	12 1	
Co-58	1 1.52 x 10-7	18	18	
	5.63 x 10-8	9	5 1	
60	2.91 x 10-5	210	209	
Ce-141	2.31 × 10-5	150	149	
Ba-140	3.11 x 10 <sup>-5</sup>	149	145	
La-140	3.11 x 10-5	143		

<sup>\*</sup> Data provided reflects analysis results from samples taken at the indicated times.

TABLE 6-4.2

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

•	Total Concentration (uCi/ml)
Nuclide	
I-131	1.65 x 10 <sup>-5</sup>
132	2.33 x 10 <sup>-5</sup>
133	$3.30 \times 10^{-5}$
134	3.69 x 10 <sup>-5</sup>
135	$2.91 \times 10^{-5}$
Xe-133	
135	
Kr-85m	
87	Kin da kata da <del>Ki</del> n da k
88	
Te-132	$2.33 \times 10^{-5}$
Cs-134	$1.46 \times 10^{-6}$
137	9.13 x 10 <sup>-7</sup>
Co-58	1.52 x 10 <sup>-7</sup>
-60	5.63 x 10 <sup>-8</sup>
Ce-141	2.91 x 10 <sup>-5</sup>
	3.11 x 10 <sup>-5</sup>
Ba-140	3.11 x 10 <sup>-5</sup>
La-140	****

<sup>\*</sup> Data to be provided to Chemistry personnel.

TABLE 6-4.3

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

Nuclide	Total Concentration (uCi/cc)
	4, 290
1-131	
132	2,700
133	8,400
134	900
135	6,300
Xe-133	
135	
Kr-85m	
87	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
88	
Te-132	114
Cs-134	15
137	12
Co-58	18
-60	9
Ce-141	210
Ba-140	150
La-140	149

<sup>\*</sup> Data to be provided to Chemistry personnel.

TABLE 6-4.4

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

	Total Concentration
Nuclide	(uCi/cc)
I-131	4, 265
132	1,738
133	7,877
134	275
135	5, 389
Xe-133	
135	
Kr-85m	
87	3. (1)
88	
Te-132	110
Cs-134	15
137	12
Co-58	18
-60	9
Ce-141	209
Ba-140	149
La-140	145

<sup>\*</sup> 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
	1 2 - 10-10	3.3 x 10-10	17	522	519
1-131	3.3 x 10-10	4.8 x 10-10	12	365	235
132	4.8 x 10-10	4.8 X 10 10	25	1,044	979
133 134	7.2 x 10-10	7.2 x 10-10	35	170	52
134	8.1 x 10-10	8.1 - 10-10	27	809	692
135	1 6.6 x 10-10	6.6 x 10 <sup>-10</sup>		A 515	4 463
Xe-133	1 8.6 x 10 <sup>-3</sup>	8.6 x 10-9	151	4,515 1,018	4,463
135	1 4.1 x 10-9	4.1 x 10-9	34	1,010	418
Kr-85m	1 1.9 x 10-9	1.9 x 10-9	17	525	183
	1 4.1 x 10-9	4.1 x 10-9	13	392	
87 88	1 5.9 x 10 <sup>-9</sup>	5.9 x 10 <sup>-9</sup>	41	1,227	i 862
Te-132			.9	30	29
Cs-134	i		.1	4	. 4
137	i		.1	3	3
Co-58	i		.03	2	1 2
60			.02	1	
			1.7	50	1 50
Ce-141			.03 .02 1.7 1.3 1.3	40 38	1 40 37
Ba-140			1.3	38	1 37
La-140					

<sup>\*</sup> Data provided reflects analysis results from samples taken at the indicated times.

TABLE 6-5.2

DRYWELL AIR SAMPLE ACTIVITY (T -3/00)

	* Total Concentration
Nuclide	(uCi/cc)
I-131	3.3 x 10 <sup>-10</sup>
132	4.8 x 10 <sup>-10</sup>
133	$7.2 \times 10^{-10}$
134	8.1 x 10 <sup>-10</sup>
135	6.6 x 10 <sup>-10</sup>
Xe-133	8.6 x 10 <sup>-9</sup>
135	4.1 x 10 <sup>-9</sup>
Kr-85m	1.9 x 10 <sup>-9</sup>
87	4.1 x 10 <sup>-9</sup>
88	5.9 x 10 <sup>-9</sup>
Te-132	
Cs-134	
137	
Co-58	19 19 19 19 19 19 19 19 19 19 19 19 19 1
-60	
Ce-141	역 이 경영화 등을 하지만 <del></del> 보다 있다.
Ba-140	
La-140	

<sup>\*</sup> Data to be provided to Chemistry personnel.

TABLE 6-5.3

DRYWELL AIR SAMPLE ACTIVITY (T -1/40)

Nuclida	Total Concentration (uCi/cc)
Nuclide	
I-131	3.3 x 10 <sup>-10</sup>
132	4.8 x 10 <sup>-10</sup>
133	$7.2 \times 10^{-10}$
134	8.1 x 10 <sup>-10</sup>
135	6.6 x 10 <sup>-10</sup>
Xe-133	8.6 x 10 <sup>-9</sup>
135	4.1 x 10 <sup>-9</sup>
Kr-85m	1.9 x 10 <sup>-9</sup>
87	4.1 x 10 <sup>-9</sup>
88	5.9 x 10 <sup>-9</sup>
Te-132	
Cs-134	
137	
Co-58	
-60	124
Ce-141	
Ba-140	•••
La-140	

<sup>\*</sup> Data to be provided to Chemistry personnel.

TABLE 6-5.4

DRYWELL AIR SAMPLE ACTIVITY (T +00/10)

* Nuclide	Total Concentration (uCi/cc)
1-131	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

<sup>\*</sup> Data to be provided to Chemistry personnel.

TABLE 6-5.5

DRYWELL AIR SAMPLE ACTIVITY (T +00/20)

Nuclide	Total Concentration (uCi/cc)
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

<sup>\*</sup> Data to be provided to Chemistry personnel.

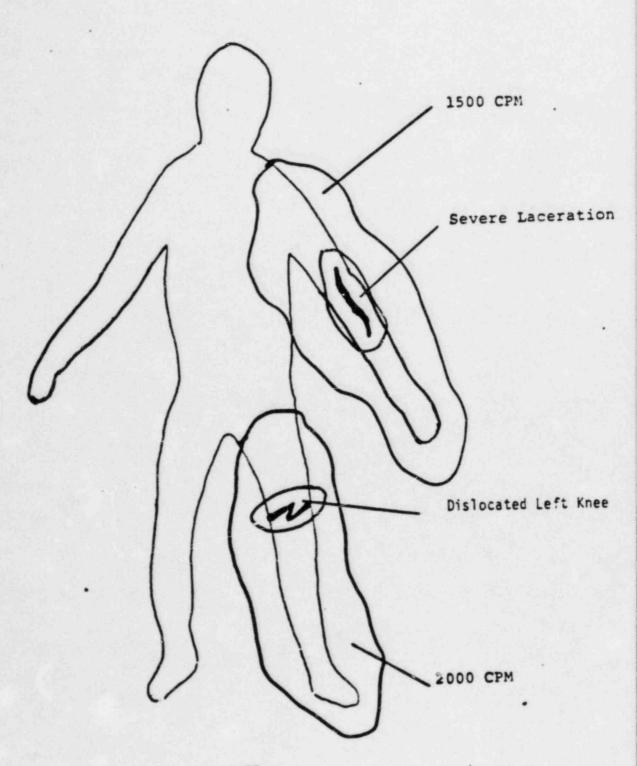
TABLE 6-5.6

DRYWELL AIR SAMPLE ACTIVITY (T +01/45)

Nuclida	Total Concentration (uCi/cc)
Nuclide	
1-131	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
24 240	

<sup>\*</sup> Data to be provided to Chemistry personnel.

FIGURE 6-1
INJURED AND CONTAMINATED MECHANIC



#### AREA RADIATION MONITORS

#### mRem/Hr

Elevation	Location	RE No.	T - 03/00	T - 02/45	T - 02/30	1 - 02/15	T - 02/00	T - 01:45	T - 01/30	T - 01:15
8. 8. 8.	Reactor Bldg. Reactor Bldg. Reactor Bldg. Reactor Bldg.	001 002 003 005	5 5 5	5 5 5 5	5 5 5 5	5 5 5	5 5 5 5	30 30 30 10	30 30 40 30	30 30 40 30
40' 40'	Reactor Bldg. Reactor Bldg.	004 005	5 5	5 5	5 5	5	5 5	10	20 20	20
63' 63'	Reactor Bldg. Reactor Bldg.	006 007	100	100 100	100	100	15 15	15 15	30 30	30 30
78' 78' 78' 78' 78' 78'	Reactor 81dg. Reactor 81dg. Reactor 81dg. Reactor 81dg. Reactor 81dg. Reactor 81dg.	008 009 036 037 085A 085B	1	1 1 1 1 5 5 5	1 1 1 1 5 5	1 1 1 1 5 5 5	1 1 1 1 5 5 5	2 2 25 25 25 200* 200*	3 3 25 25 4 x 103* 4 x 103*	5 5 30 30 7 x 10 <sup>3</sup> *
112' - 9"	Reactor Bldg.	010	1	1	1	1	1	1	2 2	2 2
160' - 9" 160' - 9"	Reactor 81 dg.	012	1	1	1	1	1	1	2 2	2 2
175' - 9" 175' - 9" 175' - 9"	Reactor Bldg. Reactor Bldg. Reactor Bldg.	014 015 038	2 2 2 2	2 2 2	2 2 2	2 2 2	2 2 2	2 2 2	3 3 3	3 3 3
63' 63' 63'	Turbine Bldg. Turbine Bldg. Turbine Bldg.	019 020 021	1	1	1	1	1	3 3 3	1	1
	Post-Accident   Sampling	043 044	1	1	1	1	1	2 2	2 2	3 3

<sup>\*</sup> R/hr

#### AREA RADIATION MONITORS

#### mRem/Hr

#### (continued)

Elevation	Location	RE No.	1 - 01/00	T - 00/45	T - 00/30	T - 00/15	1 + 00/00	1 + 00/15	1 + 00/30	T + 00/45
9. 9. 9.	Reactor Bldg. Reactor Bldg. Reactor Bldg. Reactor Bldg.	001 002 003 005	30 30 40 30	30 40 40 30	30 40 40 30	30 40 40 30	30 40 40 30	250 500 500 200	HZO HZO HZO HZO HZO	OSH OSH OSH OSH
40°	Reactor Bldg. Reactor Bldg.	004	30 30	30 30	30 30	30 30	30 30	100	OSH H20	OSH OSH
63' 63'	Reactor Bldg. Reactor Bldg.	006 007	30 30	30	30	30 30	30 30	OSH OSH	OSH OSH	H20
76' 78' 78' 78' 78' 78'	Reactor Bldg. Reactor Bldg. Reactor Bldg. Reactor Bldg. Reactor Bldg. Reactor Bldg.	008 009 036 037 085A 085B	5 5 30 30 1.4 x 10 <sup>4</sup> a 1.4 x 10 <sup>4</sup> a	5 5 30 30 2 x 10 <sup>4</sup> * 2 x 10 <sup>4</sup> *	5 5 30 30 12.5 x 10 <sup>4</sup> + 12.5 x 10 <sup>4</sup> +	5 5 30 30 3 x 10 <sup>4</sup> a 3 x 10 <sup>4</sup> a	5 5 30 30 3.6 x 10 <sup>4</sup> *	10 10 100 100 5 x 104+ 5 x 104+	0SH 0SH 0SH 0SH 0SH 2 x 106+ 2 x 106+	0SH 0SH 0SH 0SH 11.1 x 106+
112, - 3,	Reactor Bldg. Reactor Bldg.	010 011	2 2	2 2	2 2	2 2	2 2	3	HZO HZO	OSH OSH
160' - 9" 160' - 9"	Reactor Bldg. Reactor Bldg.	012 013	2 2	2 2	2 2	2 2	2 2	3 ,	OSH OSH	OSH OSH
175' - 9" 175' - 9" 175' - 9"	Reactor Bldg. Reactor Bldg. Reactor Bldg.	014 015 038	3 3	3 3 3	3 3 3	3 3	3 3 3	5 5 5	HZO I	OSH OSH OSH
63' 63'	Turbine Bldg. Turbine Bldg. Turbine Bldg.	019 020 021	1	1	1	1	1	5 5 5	OSH OSH OSH	OSH OSH OSH
	Post-Accident   Sampling	043	3 3	3 3	3 3	3 3	3 3	5 5	6 6	6 6

<sup>• -</sup> R/hr OSH - Off Scale High

AREA BADIATION NONITORS

When/Hr
(continued)

m/cn + 1	05H 05H 05H 05H 05H 05H 05H 05H 05H	0SH 0SH 0SH	500 300 300	05H	1 0SH 0SH 1 0SH	HSO HSO 1	05H 05H 05H 05H 05H 05H	05H 05H 05H 05H 05H 05H	
1 + 05/30 1 1 + 05/43	05H 05H 05H 05H 05H 05H 05H 05H 05H	NS0 NS0	NSO NSO 0SH	05H	HS0 HS0	NSO NSO NSO NSO	H20 H20	HS0 HS0 HS0 HS0 HS0 HS0	99
61/20 + 1	NSO OSH OSH	HS0 HS0	NSO NSO	0SH 0SH 0SH 0SH 1 x 106*	HS0	HSO HSO	05H 05H 05H	HS0 HS0 HS0	
00/20 + 1	054 054 054 054	NSO NSO	NSO NSO	0SH 0SH 0SH 1 x 106*	HS0 OSH	NS0 NS0	OSH OSH OSH	MSO HSO HSO	
RE NO.	903 903 905	88	8 8	000 009 036 037 0854	85	26	015	019	88
Location	Reactor 81dg. Reactor 81dg. Reactor 81dg. Reactor 81dg.	Reactor 3159. Reactor 3169.	Reactor 8169.	Reactor 81dg. Reactor 81dg. Reactor 81dg. Reactor 81dg. Reactor 81dg.	Reactor Bidg. Reactor Bidg.	Reactor 81dg.	Reactor 816g. Reactor 816g. Reactor 816g.	Tarbine 81dg. Turbine 81dg. Turbine 81dg.	Post-Accident Sampling
Elevation			100	78.	20. 20.	160' - 9"	175' - 9"	253	

,,

•

7 7 7 7 7 7 7 7 9

OSH - Off Scale High

### PROCESS & EFFLUENT RADIATION MONITORS

System	T - 03/00	T - 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 wc1/cc 10-4 wc1/cc	OSH OSH	OSH OSH	OSH OSH
Mein Steam Line A B C D	1 mr/hr 1 mr/hr 1 mr/hr 1 mr/hr	2 mr/hr 2 mr/hr 2 mr/hr 2 mr/hr	20 mr/hr 20 mr/hr 20 mr/hr 20 mr/hr	OSH OSH OSH OSH	HZO HZO HZO HZO			
Station Vent Exhaust (Hi-Range)		-	-	-	-	10 uc1/cc	280 uc1/cc	280 uc1/cc
Station Vent Exhaust (Normal)	MDA	MDA	MDA	MDA	10 <sup>-1</sup> uc1/cc	10 uc1/cc	76 uc1/cc	76 wc1/cc
Reactor Standby Vent Exhaust (Intermediate Range) cpms						8.6 x 10 <sup>8</sup>	8.6 x 10 <sup>8</sup>	8.6 x 10 <sup>8</sup>

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

### PROCESS & EFFLUENT RADIATION MONITORS

### (continued)

System	1 - 01/00	T - 00/45	T - 00/30	1 - 00/15	1 + 00/00	T + 00/15	1 + 00/30	Y + 00/45
Containment Drywell Filter Train Exhaust A B	NSO NSO	HZO H	OSH OSH	OSH OSH	OSH OSH	OSH OSH	H20 H20	H20 H20
Main Steam Line A B C D	HZO HZO HZO HZO	CSH OSH OSH OSH	HZO HZO HZO HZO HZO HZO HZO	OSH OSH OSH OSH	OSH I OSH I OSH I OSH	OSH OSH OSH HEO	OSM OSM OSM NSO	0SH 03H 0SH 0SH
Station Vent Exhaust (Hi-Range)	280 uc1/cc	280 wc1/cc	280 uc1/cc	280 uc1/cc	280 ec1/cc	8400 uc1/cc	8400 uc1/cc	8400 uc1/cc
Station Vent Exhaust (Normal)	150 uc1/cc	150 ucl/sc	150 uc1/cc	150 uc1/cc	150 uc1/cc	OSH	OSH	ОЅН
Reactor Standby Vent Exhaust (Intermediate Range) com	8.6 x 10 <sup>0</sup>	8.6 x 10 <sup>8</sup>	8.6 x 10 <sup>8</sup>	8. × x 10 <sup>8</sup>	8.6 x 10 <sup>8</sup>	2.6 x 108	2.6 x 1010	2.6 x 1010

OSH - Off Scale High N - Normal

### PROCESS & EFFLUENT RADIATION MONITORS

(continued)

System	1 + 01/00	T + 01/15	1 + 01/30	1 + 09/45	1 + 02/00	1 + 02/15	1 + 02/30	1 + 02/45
Containment Drywell Filter Train Exhaust A B	HZO HZO	NSO NSO	OSH OSH	0SИ 0SИ	OSH OSH	OSH OSH	OSH OSH	NSO HSO
Mein Steam Line A B C D	05M 05H 05H 05H	OSH OSH OSH OSH	NSO	OSH OSH OSH OSH	0SH 0SH 0SH 0SH	OSH OSH OSH OSH	OSH OSH OSH OSH	OSH OSH OSH
Station Vent Exhaust (Hi-Range)	8400 sc1/cc	8400 uc1/cc	8400 uc1/cc	10 <sup>-2</sup> uc1/cc	10-2 uc1/cc	10-2 uc1/cc	10-2 wc1/cc	10-2 uc1/cc
Station Vent Exhaust (Normal)	OSH	OSH	OSH	10-2 uc1/cc	10-2	10 <sup>-2</sup> uc1/cc	10-2 uc1/cc	10-2 uc1/cc
Reactor Standby Vent Exhaust (Intermediate Range) cpms	2.6 x 10 <sup>10</sup>	2.6 x 10 <sup>10</sup>	2.6 x 10 <sup>10</sup>	2.6 x 10 <sup>10</sup>				

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

# FIELD MONITORING DOSE RATES (mR/Hr) \*

	I/NG	Xu m-2	through T - 01/55	T - 01/45	T - 01/30	T - 01/15	T - 01/00	T - 00/45	T - 00/30
1451	NG	6.373	0	80	08	80	ϡ	08	26
-	-	09.560	0	8	8	8			0 2
1552	SN	46.750	-	299	299	565	200	500	200
-	-	1 85.010	0	15	75	75	12	500	676
1663	NG	1 33,000	0	400	400	400	400	004	900
3	!-	000.99	0	05	20	20	20	200	200
261	NG	15.292	0	0	187	187	187	181	/81
-	<u>-</u>	21.492	0	0	18	18	8:	8:	8 4
ACF1	NG.	3.650	0	0	0	0	45	4	9
-	-	4.214	0	0	0	0	٠.		
1 135g	NG	1 0.077	0	0	0	-	- 0		
-	-	0.085	-	0	0	0		25	2
6SE1	NG	4.293	0	0	0	-	-	70	76
-	I	4.385	0	0	0	0			
SSF2 I	NG	0.500	0	0	0	-			
-	1	0.225	0	0	0	0	-		25
7SE1	NG	1.998	0	0	0	0			67
-	-	1.822	0	0	0	-	-		
7SE2	NG	1 0.581	-	0	-				
_	-	0.586	0	0	-	-			-
BSE1	9N	1.570	0		-	-			
-	-	1.721	0						-
BSE2	NG	0.047	-	-	-	-			
		0.050	0	0	-	-			
9SE1	NG	0.046	0	0	-	-		-	-
	I	0.049	-	0	-	-			-
10SE1	NG	0.049	0	0	-	-			
	1	1 0.051	0	0	0			-	
13561	NG	0.108	0	0	0	0			-
-	-	0.114	0	0	0	0			
11SE2	NG	2.002	-	0	-	-			
-	-	1.953	0	0	0				
15E3	9N	0.520	0	-					-
		1 0.494	0	0					

TABLE 6-8

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

Location	I/NG	Xu   m-2	T - 00/15		T + 00/15	T + 00/30		T + 01/00	
ISEI	NG	6.373	80	80	80	235	235	235	. 235
	1	9.560	8	8	8	250	250	250	250 565
1SE2	NG	46.750	565	565	565	565	565	565	
1	I	85.010	1 75	75	75	17,226	17,226	17,226 1 12,160	17,226
1SE3	NG	33.000	400	400	400	12,160	12,160	1 12,100	12,160
1	I	1 56,000	1 50	50	50	1,457	1,457	1,457	1,457
2SE1	NG	1 15.292	1 187	1 187	1 187	187	5,635	5,635	5,635
1	I	21.492	1 18	1 18	1 18	18	560	560	18
4SE1	NG	3.650	1 45	45	1 45	45	1 45	1 1,344	1,344
1	I	1 4.214	1 5	1 5	1 5	5	5	1110	110
5SE1	NG	1 0.077	1 1	1 1	1 1	1	!!	30	30
	I	0.085	1 0	1 0	1 0	0	0	2	1
6SE1 I	NG	4.293	1 52	1 52	52	1 52	52	52	1,581
0321	I	4.385	1 4	1 4	1 4	1 4	1 4	1 4	1114
6SE2 1	NG	0.209	1 3	1 3	1 3	1 3	1 3	] 3	80
USEE !	I	0.225	1 0	1 0	1 0	1 0	1 0	1 0	5
7SE1	NG	1 1.998	1 25	1 25	1 25	1 25	25	1 25	25
7361	1	1 1.822	1 2	1 2	1 2	1 2	1 2	1 2	1 2
7SE2	NG	0.581	1 7	1 7	1 7	1 7	1 7	1 7	! !
1366	1	0.586	i 0	1 0	1 0	1 0	1 0	1 0	0
8SE1	NG	1.570	1 20	20	1 20	1 20	1 20	1 20	20
OSEI	I	1 1.721	1 1	1 1	1 1	1 1	1 1	1 1	1
0000	NG	0.047	i i	1 1	1 1	1 1	1 1	1 1	1 1
8SE2	I	0.050	0	i	1 0	1 0	1 0	1 0	1 0
~~~	NG	0.046	i	i	1 1	1 1	1 1	1 1	1 1
9SE1	MG	0.049	0	i	1 0	1 0	1 0	1 0	1 0
10001	NG	0.049	i	ii	1 1	1 1	1 1	1 1	1 1
10SE1	No	0.051	1 0	i	1 0	1 0	1 0	1 0	1 0
	1	0.108	i ŏ	i	1 1	1 1	1 1	1 1	1
11SE1	NG	0.114	1 0	i	i	1 0	1 0	1 0	1 0
11000	NC.	2.002	1 0	25	25	25	25	1 25	25
11SE2	NG	1.953	1 0	1 2	1 2	1 2	1 2	1 2	1 2
11053	NC.	0.520	1 0	23	23	23	1 23	1 23	1 23
11SE3	NG	0.494	1 0	1 1	iii	1 1	1 1	1	1 1

I - Iodines

NG - Noble Gases

<sup>\* -</sup> Data to be provided to Field Monitoring personnel



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

Location	I/NG	Xu   m-2	T + 01/30	T + 01/45	T + 02/00	T + 02/15	T + 02/30	T + 02/45	T + 03/00
TSET	NG	6.373	235	235	0	0	0	0	. 0
1	1	9.560	250	250	0	0	0		
1SE2	NG	46.750	565	565	0	0	0		
1	I	85.010	17,226 12,160 1,457	17,226	0	0			
1SE3	NG	33.000	1 12,160	12,160	0	. 0			0
	1	56.000	1,457	1,457	0	. 0			
2SE1	NG	1 15.292	5,635	5,635	0	0	1 0	0	0
	1	1 21.492	560	560	0	. 0			0
4SE1	NG	3.650	1 1,344	1,344	1 0	1 0	. 0	0	
	1	1 4.214	1 110	1 110	0	1 0	0	. 0	0
SSE1 I	NG	0.077	1 30	30	0	0	0	1 0	0
1	I	0.085	1 2	1 2	0	0	1 0	1 0	0
6SE1 1	NG	4.293	1 1,581	1,581	1 0	0	1 0	. 0	0
1	I	4.385	1 114	1 114	1 0	0	0	1 0	
6SE2	NG	0.209	1 80	1 80	1 0	1 0	1 0	0	1 0
1	1	0.225	1 5	1 5	1 0	0	1 0	0	1 0
7SE1	NG	1 1.998	740	740	1 0	1 0	1 0	1 0	0
,,,,	1	1 1.822	1 50	50	1 0	0	0	0	0
7SE2	NG	0.581	1 215	215	1 0	1 0	1 0	1 0	1 0
1322	I	0.586	1 15	1 15	1 0	0	1 0	1 0	1 0
8SE1	HG	1 1.570	1 20	580	0	1 0	1 0	1 0	1 0
0321	I	1 1.721	1 1	45	1 0	1 0	1 0	1 0	1 0
8SE2	NG	0.047	1 1	20	1 0	1 0	1 0	1 0	1 0
0322	I	0.050	1 0	1 2	1 0	1 0	0	1 0	1 0
9SE1	NG	0.046	1 1	1 1	1 0	1 0	1 0	1 0	1 0
3361	1	0.049	i 0	1 0	1 0	1 0	1 0	1 0	1 0
10SE1	NG	0.049	1 1	1 1	1 0	1 0	1 0	1 0	1 0
IUSEI	I	0.051	i o	1 0	1 0	1 0	1 0	1 0	1 0
	HC.	0.108	i	1 0	1 0	1 0	1 0	! 0	1 0
11SE1	NG	0.114	i 0	i	0	1 0	1 0	1 0	1 0
11000	I	2.002	25	25	0	1 0	1 0	1 0	1 0
11SE2	NG	1 1.953	1 2	1 2	1 0	1 0	1 0	1 0	1 0
******	1	0.520	23	23	1 0	1 0	1 0	1 0	0
11SE3	NG	0.494	1 1	i	1 0	1 0	1 0	0	1 0

I - Iodines

NG - Noble Gases

<sup>\* -</sup> Data to be provided to Field Monitoring personnel



# ONSITE MONITORING DOSE RATES (mR/Hr) \*

peation	I/NG	Xu (m-2	through T - 02/00	T - 01/45	T - 01/30	T - 01/15	T - 01/00	T - 00/45	T - 00/30
-	4	47.3	6	009	009	009	009	009	009
285	2 -	1000		200	200	200	200	1 500	200
	- on	87.2		1.100	1.100	1,100	1,100	001,1	1,100
200	2 -	1 348 7		1,200	1,200	1,200	1,200	1,200	1,200
1 603	- a	113.0		1,390	1,390	1,390	1,390	1,390	1,390
190	-	451.9	0	1.550	1,550	1,550	1,550	1,550	1,550
000	Ja Sa	87.9	0	1.100	1,100	1,100	001,1	001.1	1,100
200	2 -	1 348 7		1,200	1,200	1,200	1,200	1,200	1,200
000	, u	47.3	0	009	009	009	009	009	009
203	2-	189.0	0	200	200	200	200	200	200
SRIO	NG.	17.8	0	007	500	500	500	200	2001
-	-	0.17	0	100	100	00	20	2	2

\* Data to be provided to Onsite Monitoring Team.

TABLE 6-9

### ONSITE MONITORING DOSE RATES (mR/Hr) \*

(continued)

Location	I/NG	Xu 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
363	I	1 189.0	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
300	1	348.7	1 1,200	1,200	5,500	5,500	5,500	5,500	5,500
SB7	NG	1 113.0	1,390	1,390	49,000	49,000	49,000	49,000	49,000
30/	1	451.9	1 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
300	1	348.7	1 1,200	1 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
303	I	1 189.0	500	500	2,500	2,500	2,500	2,500	2,500
SB10	NG	1 17.8	200	200	7,700	7,700	7,700	7,700	7,700
3010	I	71.0	1 100	1 100	600	600	600	600	600

<sup>\*</sup> Data to be provided to Onsite Monitoring Team.

TABLE 6-9

### ONSITE MONITORING DOSE RATES (mR/Hr) \*

### (continued)

Location	1/NG	<u>Xu</u> m−2	T + 01/30	T + 01/45	T + 02/00     through     T + 03/00		
SB5	NG .	47.3	20,000	20,000	0 1	1	!!!
303	1	1 189.0	1 19,000	19,000	0 1		
SB6	NG	87.2	32,000	32,000	0		
300	I	1 348.7	1 36,300	36,300	0 1		
SB7	NG	1 113.0	1 49,000	49,000	0 1		
301	1	451.9	47,000	47,000	0 1		
SB8	NG	87.9	32,000	32,000	0 1		
1	1	348.7	36,300	36,300	0 1		
SB9	NG	1 47.3	1 20,000	20,000	0 1		
1	1	1 189.0	1 19,000	1 19,000	0 1		
SB10	NG	1 17.8	7,700	7,700	0 1		
30.0	1	1 71.0	6,000	6,000	0 1		

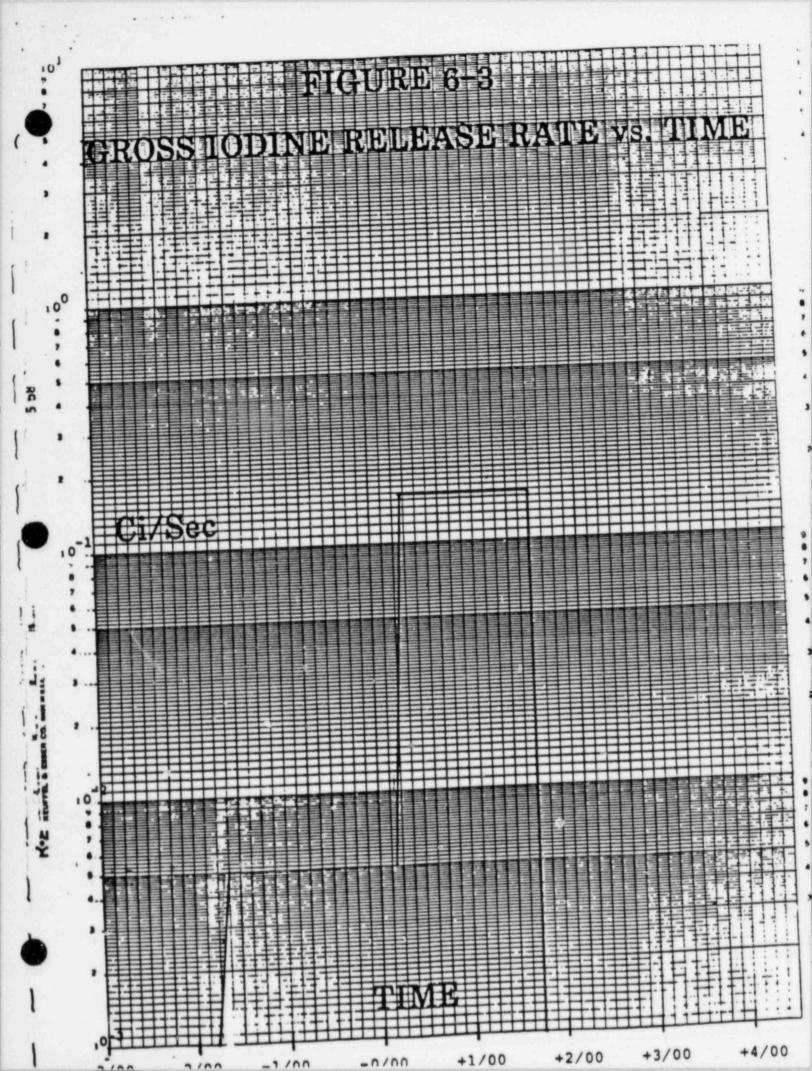
<sup>\*</sup> Data to be provided to Onsite Monitoring Team.

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
В	30,000	оѕн	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
н	750	3,700	750	15
1	400	2,000	400	10
J	200	300	200	5
K	75	100	75	1
L	25	25	25	5

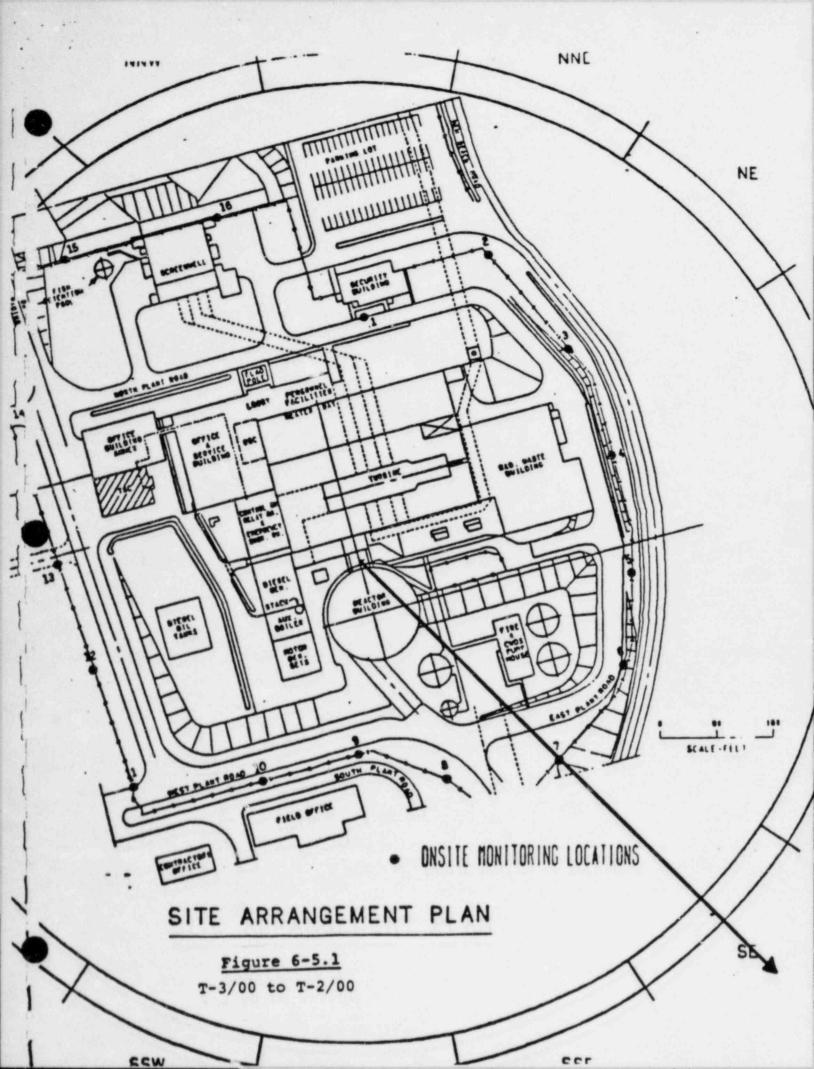
<sup>\*</sup> Data to be provided to Field Monitoring personnel when not at emergency monitoring locations.

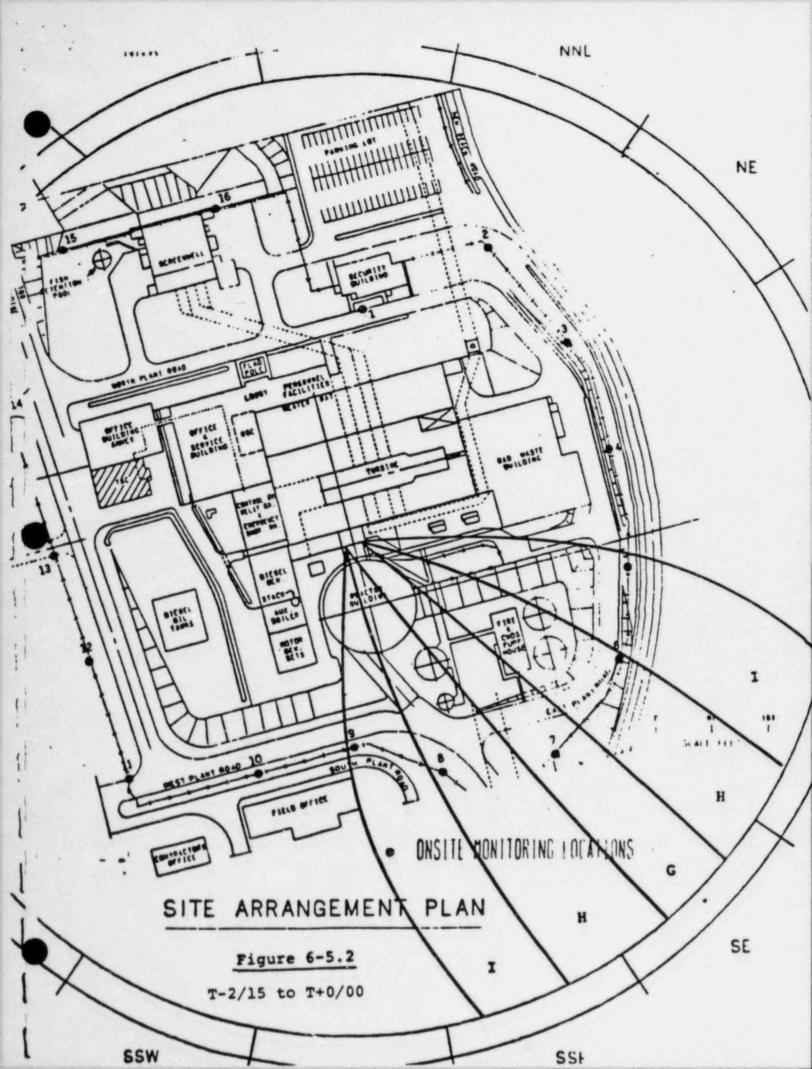
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102			de refer of the state of the st	
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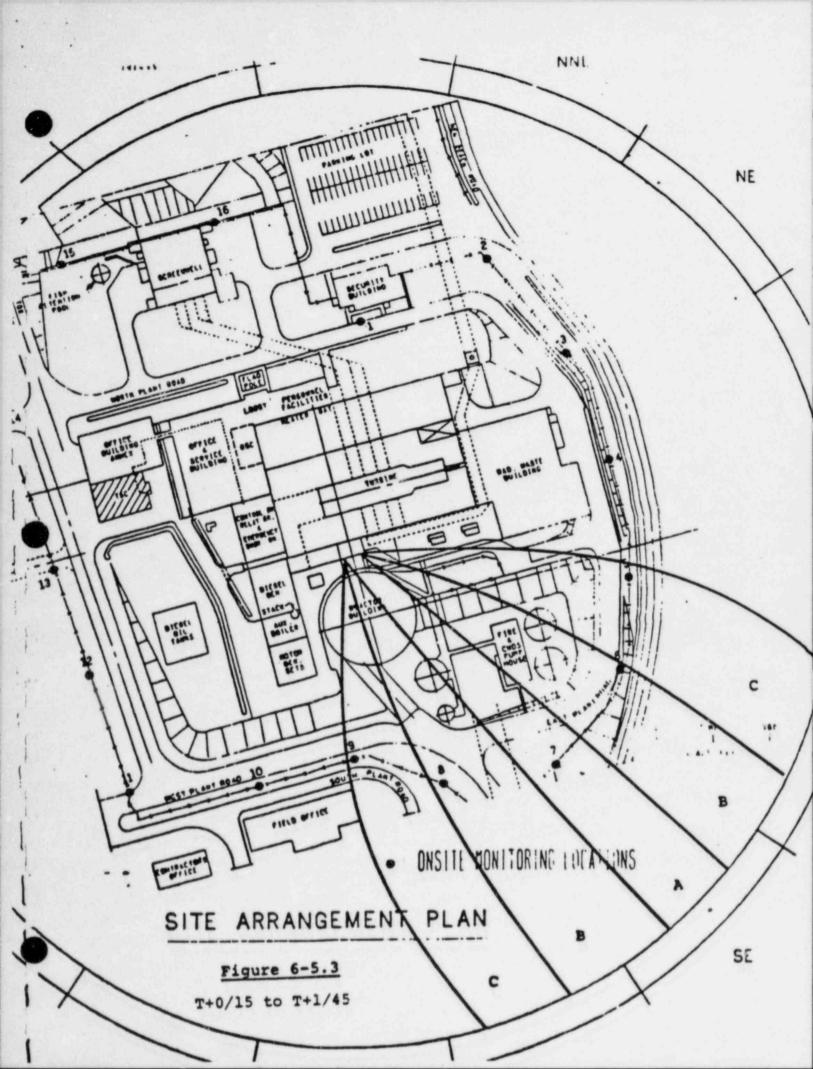


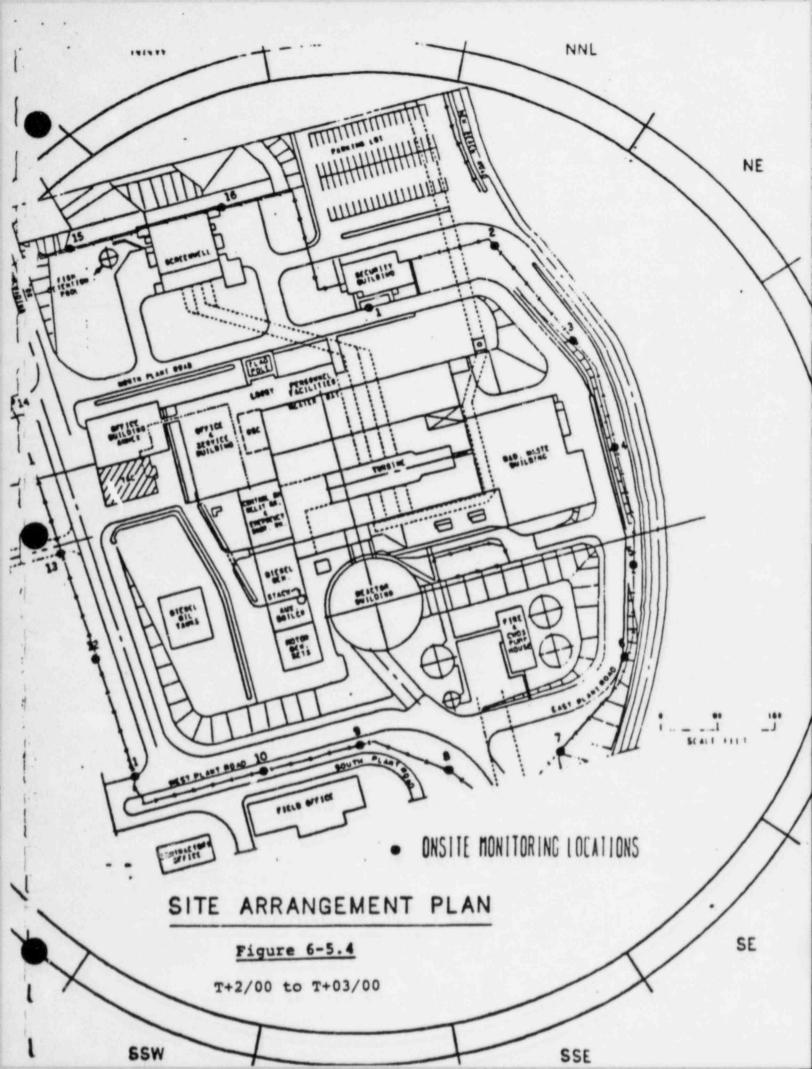
# GROSS NOBLE GAS RELEASE RATE

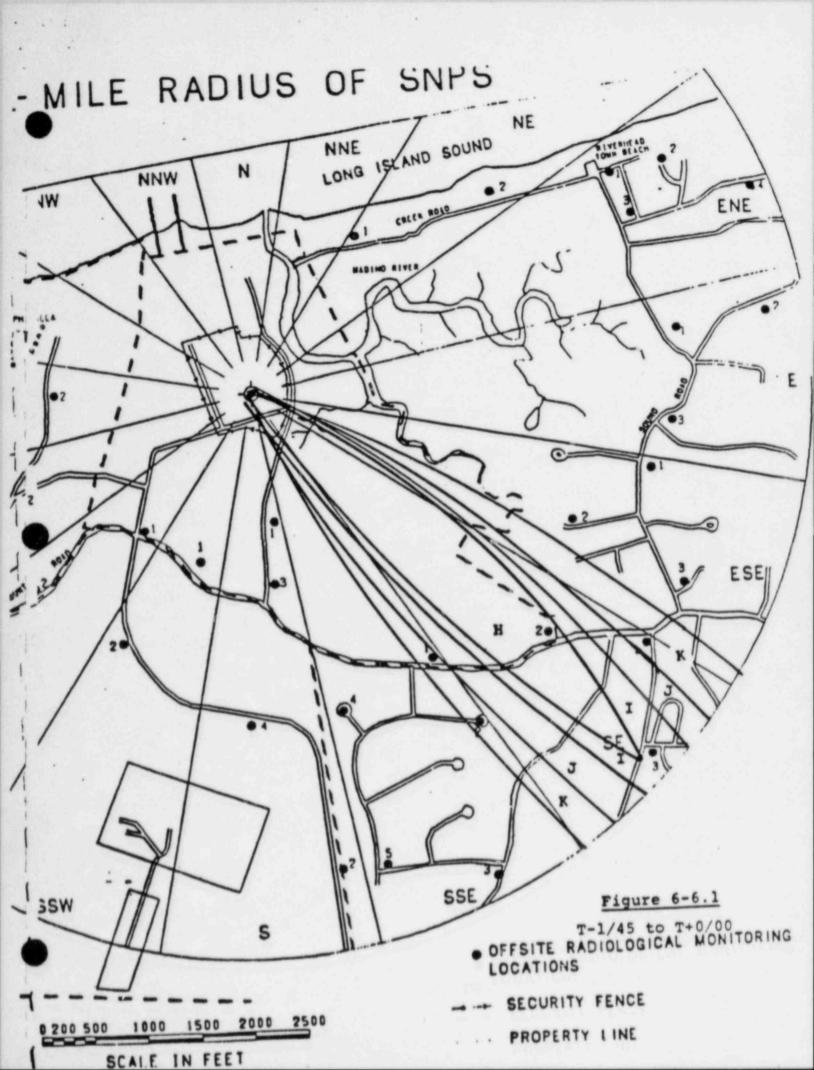
14/00

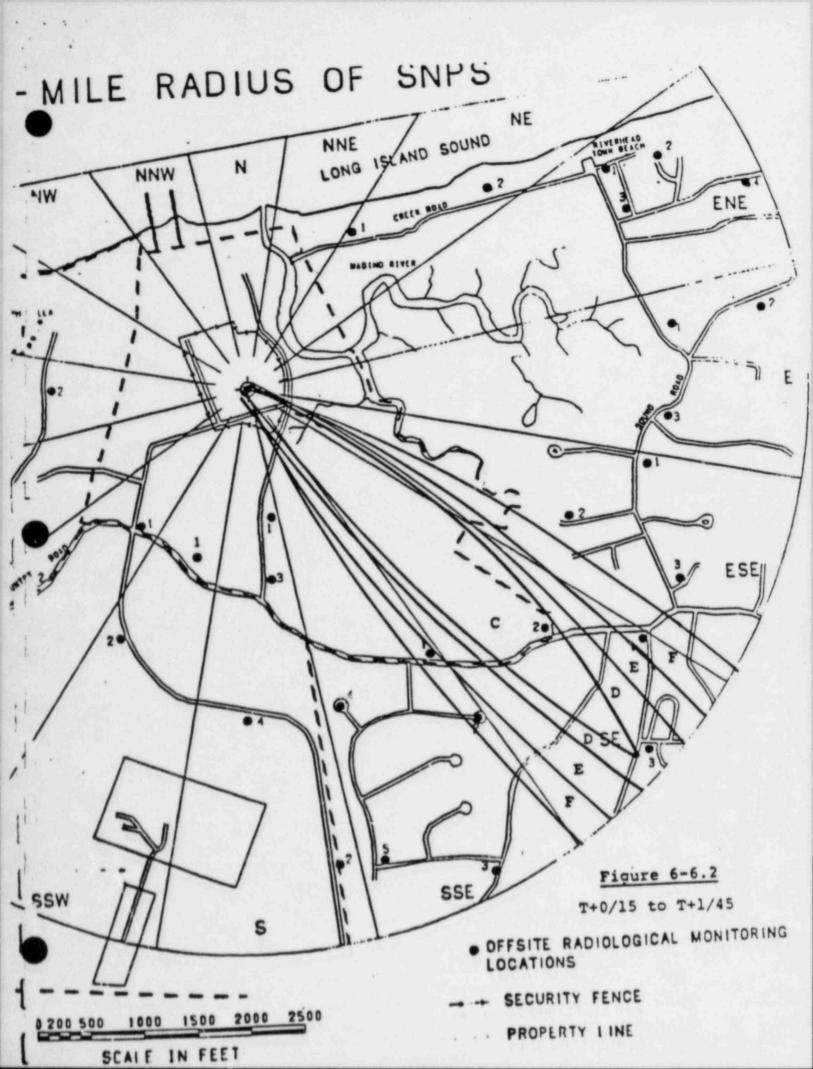


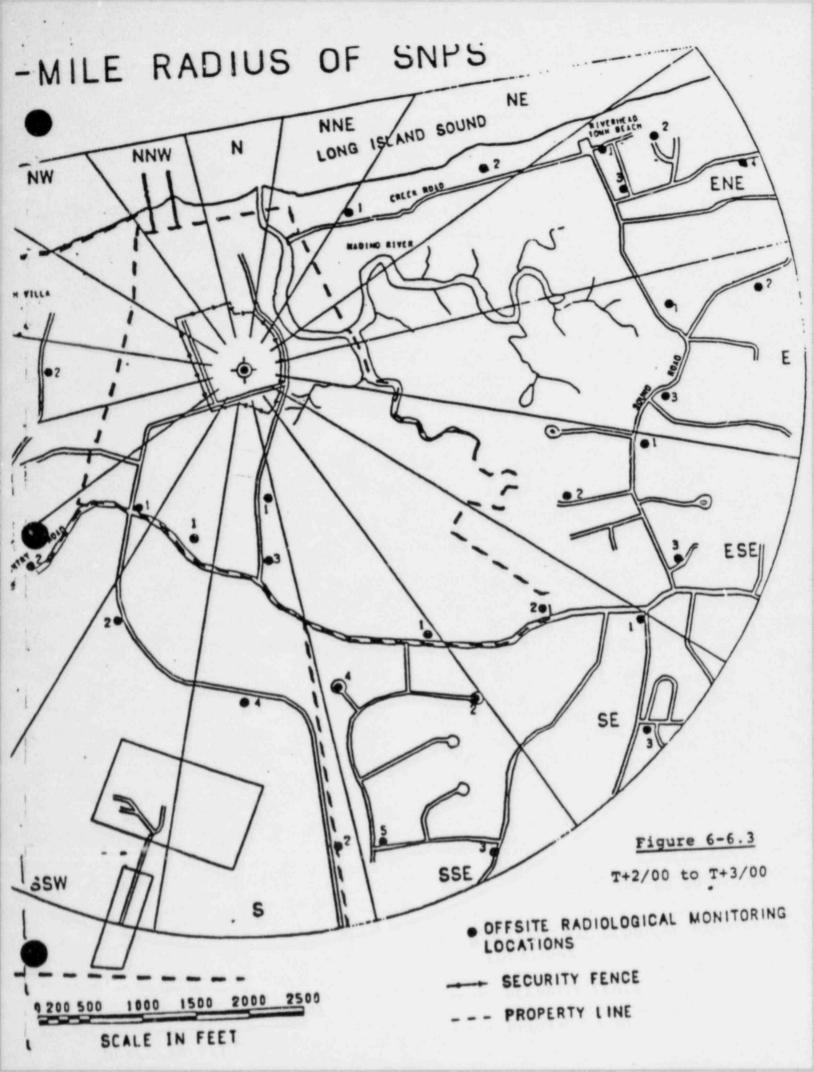


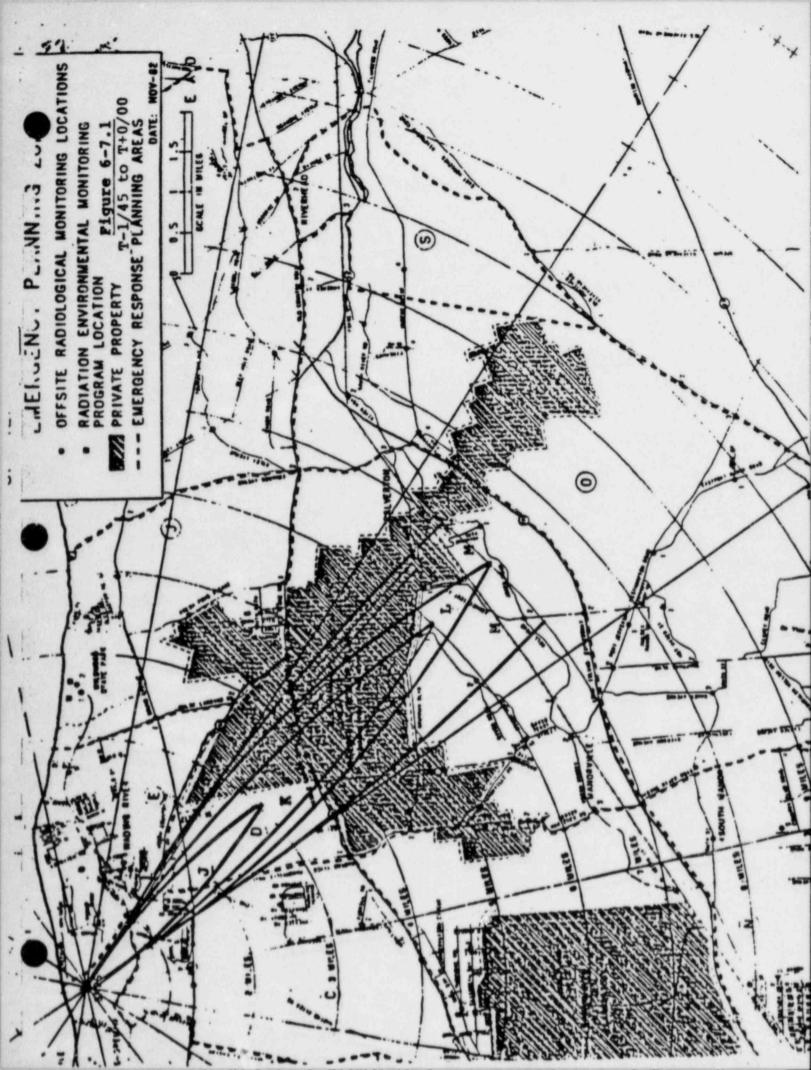


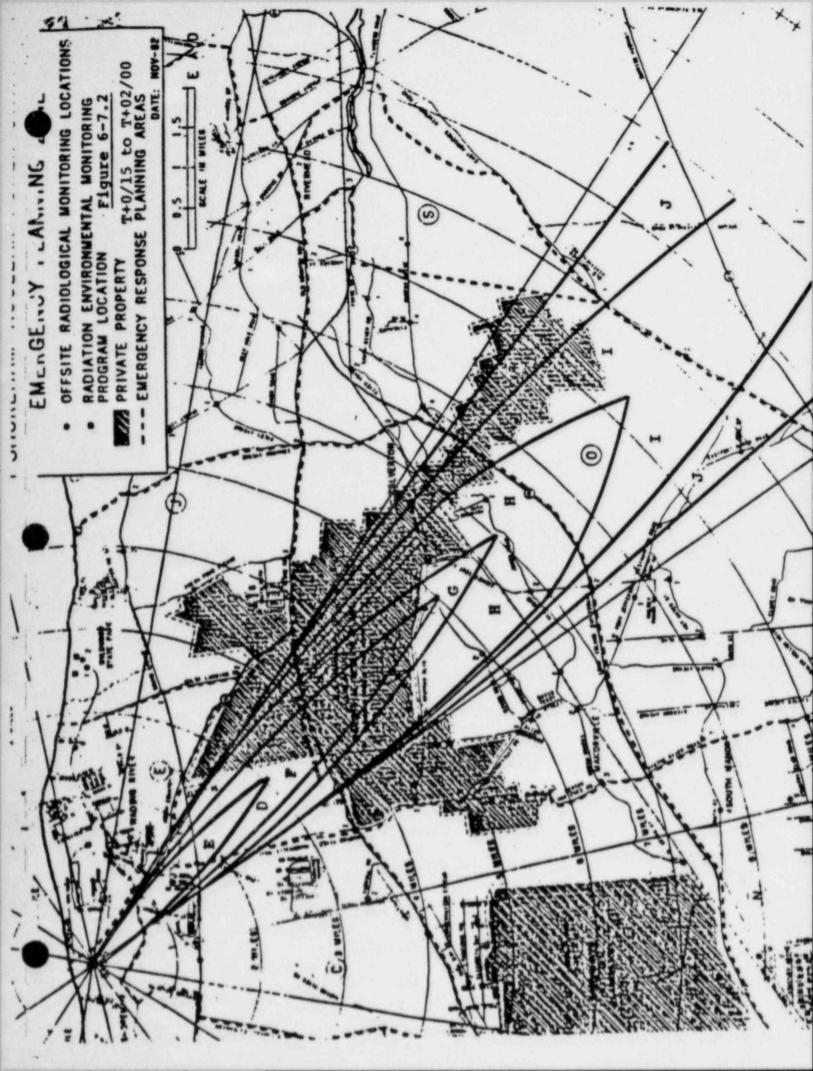


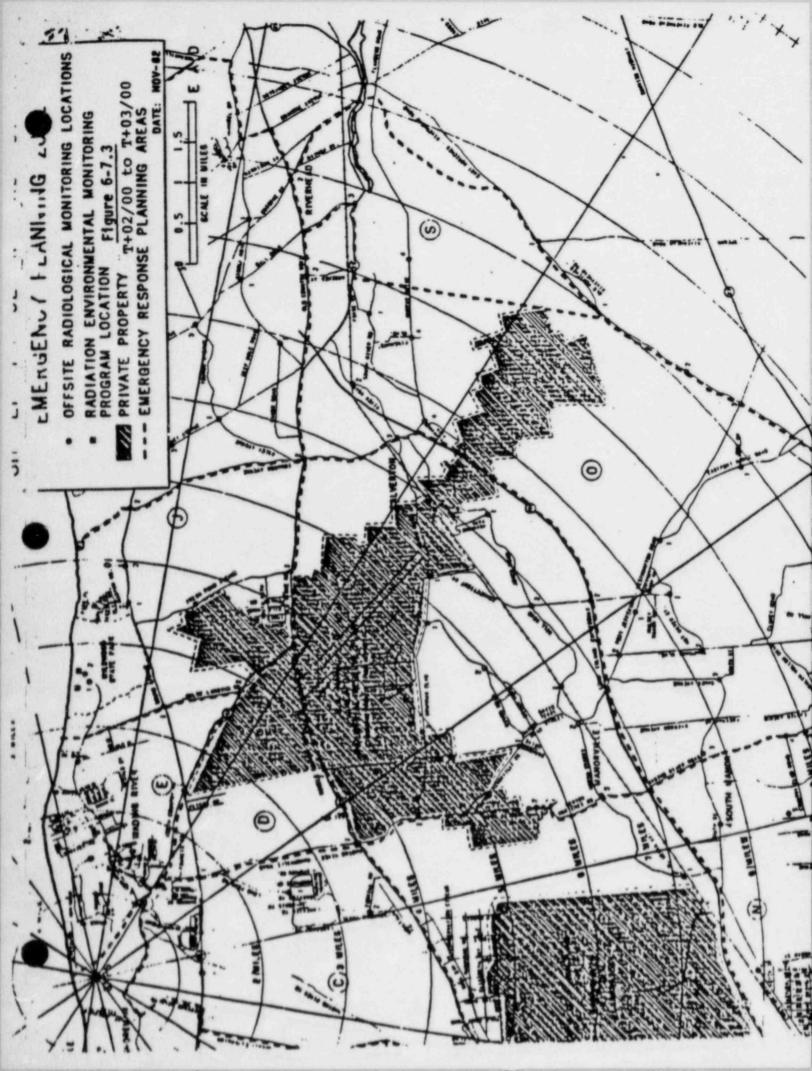












### 7.0 CONTROLLER/OBSERVER INSTRUCTIONS

### 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.
  - 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.
- 6. Significant items, both major deficiencies and strong performance points, should be highlighted upon occurence 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.
- 6. 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

	Area	Evaluated	Mon	nit	ors	Rat	tin	9
A.	Acti	vation and Response						
	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.
в.	Comm	nunications						
	1.	Were all required and specified communications circuits operable?	5	4	3	2	1	N.O.
	2.	Were personnel familiar with communi- cations 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 inor- dinate 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.

	Area	Area Evaluated			Monitors Rating						
	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.			
	n.	Were appropriate communications techniques followed? (Phonetic alphabet, sign-on, sign-off, no abbreviations or acronyms)	5	4	3	2	1	N.O.			
c.	Proc	edures									
	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 pro- cedural 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.			
D.	Dire	ection and Control									
	1.	Could the response be catagorized 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.	Mate	erial and Equipment									
	1.	Was all the required material and equip- ment 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.
Prot	ective 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.

F.

### Area Evaluated

### Monitors Rating

### G. Access Control

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

### 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.
- 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.

P	r	0	c	e	đ	u	r	8	1	:

Equipment/Facility:

Personnel:

Training:

Scenario:

### CONTROLLER/OBSERVER LOCATIONS

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

## EOC/ENC DRILL CONTROLLERS KEY EVENTS TIME LINE

REAL TIME	SCENARIO TIME	DESCRIPTION OF EVENTS
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.

REAL TIME	SCENARIO TUNE	DESCRIPTION OFEVENTS
1925-2030	T = 0/05 thru T = 1/25	EOC staff walks thru actions as out- lined 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 out- lined 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.

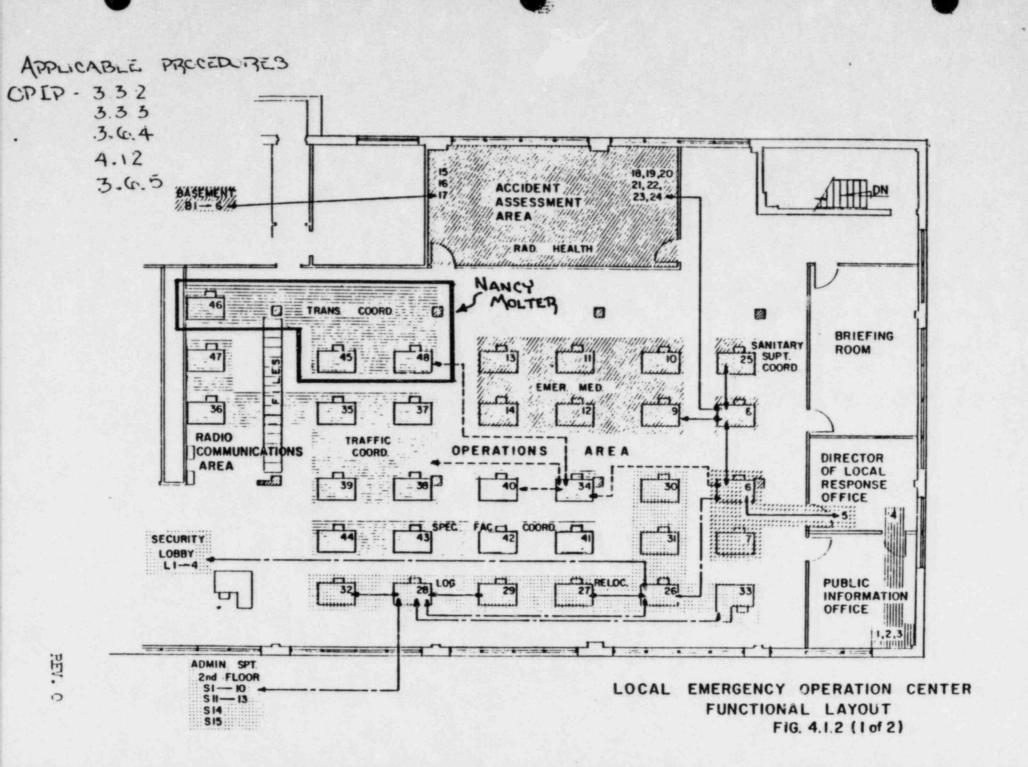
REAL TIME	SCENARIO TUNE	DESCRIPTION OF EVENTS
2230	T = 3/05	Communicator provided with 3/05 communication data form
2230-2240		EOC staff and management walk thru actions related to de-escalation of an emergency.
		EOC management meets to discuss re- entry/recovery activities.
2240		Drill terminated
2240-2245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

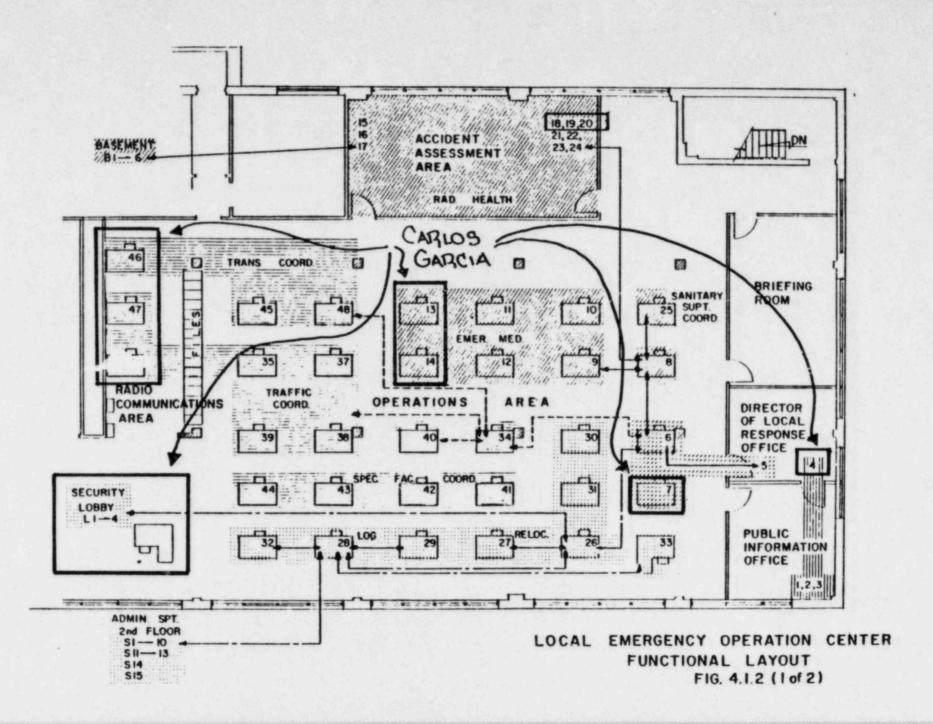
APPLICABLE PROCEDURES OPIP - 3.6.5 4.1.2 3.3.4 18,19,20 21, 22, BASEMENT RAD HEALTH TRANS COORD. Ø % BRIEFING SANITARY 25 SUPT. COORD ROOM RADIO TRAFFIC COMMUNICATIONS COORD. DIRECTOR AREA OF LOCAL RESPONSE OFFICE Ron VARLEY FAC 1 COORD SECURITY LI-4 PUBLIC INFORMATION OFFICE 1,2,3 ADMIN. SPT. 2nd FLOOR LOCAL EMERGENCY OPERATION CENTER SI-13 FUNCTIONAL LAYOUT 514

FIG. 4.1.2 (1 of 2)

515

APPLICABLE PROCEDURES 3.33 OPIP. 3.6.3 4.1.2 Williamy. 18,19,20 21, 22, BASEMENT ACCIDENT 23,24 4 ASSESSMENT HEALTH TRANS COORD 0 7/2 BRIEFING SANITARY ROOM 25 SUPT. RADIO TRAFFIC COORD. COMMUNICATIONS OPERATIONS AREA DIRECTOR AREA OF LOCAL 30 - D RESPONSE OFFICE CLIFF HEITZ SECURITY LI-4 PUBLIC INFORMATION OFFICE 1.2.3 ADMIN. SPT. 2nd FLOOR LOCAL EMERGENCY OPERATION CENTER SI-10 SII-13 FUNCTIONAL LAYOUT S14 \$15 FIG. 4.1.2 (1 of 2)





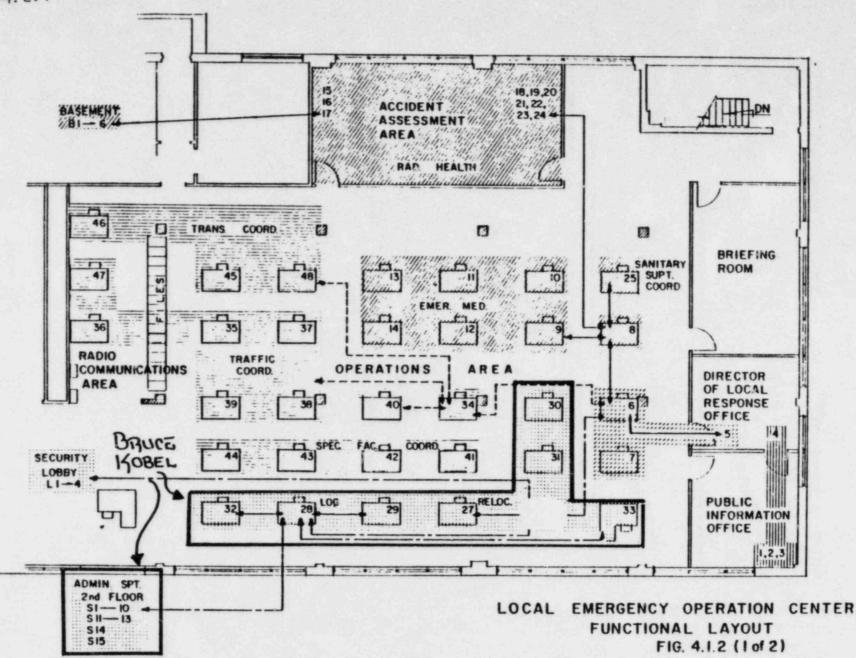
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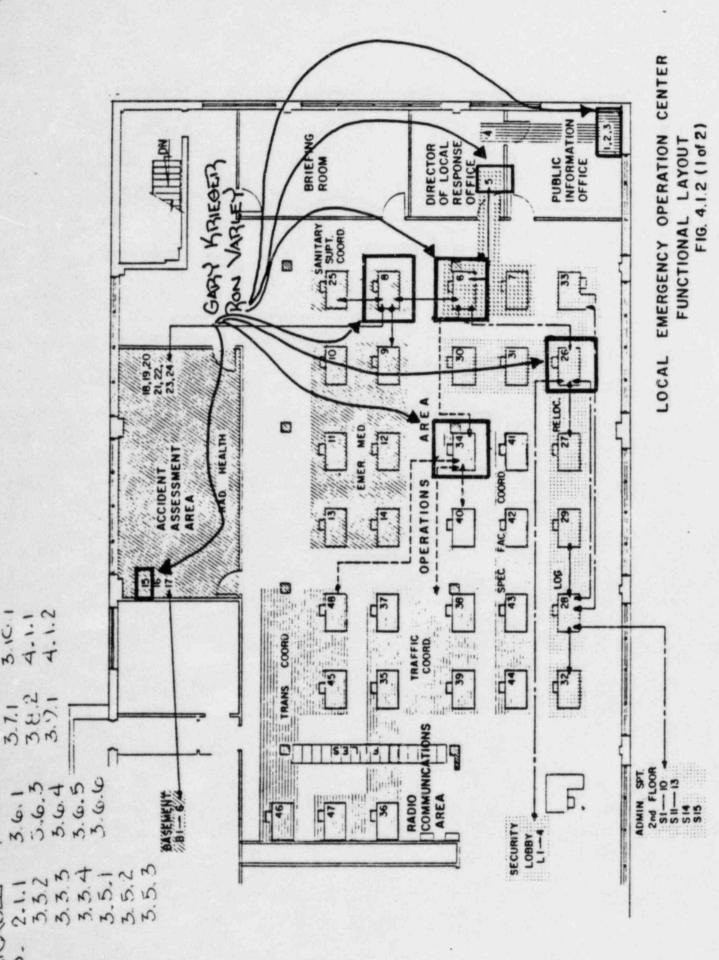
APPLICALE PHUCEWRES

CPIP 4.1.2

3.7.1

4.2.1





4.1.1 3 16. 1

PROCEDURES

PEV. C

### 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.	IND. BELATIONS COCAD.		Administrative Support
5.	Director of Local Response	34.	Evacuation Coordinator
6.	Manager of Local Response	35.	Traffic Control Coordinator
7.	Lead Commicator	36.	Communicator-Traffic Control
8.	Health Services Coordinator	37.	Traffic Control Point Coordi-
9.	Emergency Medical/Public Service	٠	nator
	Coordinator	38.	Road Logistics Coordinator
10.	Hospital Coordinator	39.	Evacuation Route Coordinator
11.	Public Service Liaison	40.	Special Facilities Evacuation
12.	Ambulance Coordinator		Coordinator
13.	MEDICAL/ALZ	41.	Public Schools Coordinator
14.	SERVICE CLMM.	42.	Private Schools Coordinator
15.	Radiation Health Coordinator	43.	Health Facilities Coordinator
16.	Dosimetry Coordinator	44.	Home Coordinator
17.	Decontamination Coordinator	45.	Transportation Support Coordi-
18.	Communicator) DIDITICAL HEALTH		nator
19.	Communicator Communicator	46.	Communicator-Transportation Support
21.	Environmental Assessment Coordinator	47.	Communicator-Traffic Control
22.	Dose Assessment Staff	48.	Bus Coordinator
23.	Dose Assessment Staff	B 1-	6 Decontamination Workers
24.	Environmental Assessment Coordinator		10 Administrative Support
25.	Sanitary Support Coordinator		-13 Materials Purchasing
26.	Support Services Coordinator		Personnel
27.	Relocation Center Coordinator	S 14	Maintenance Representative
28.	Logistics Support Coordinator		N.Y. Telephone Representative
29.	Administrative Support		4 Security Personnel
	adjust		- occuracy responsies

# DRILL BRIEFING ATTENDANCE SHEET

ate:	Location:		
Name (Print)	Signature	Company or Agency	

#### 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 tiscue. 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: Abosrbed dose delivered per unit time, as rads per seconds or rads per hour.

Dosimeter: A device that measures radiaton 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 adn 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 fifteem 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: Prople 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

- Assess the adequacy of the Traffic Control and Route Alert Driver staffing levels and supporting procedures.
- 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) Asses 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

		Riverhead	Patchogue	Port Jefferson	
0	Traffic Control Coordinator	3	3	3	(Observer)
0	Traffic Control Point Coordinator	3	3	3	(Observer)
	Road Logistics Coordinator	3	3	3	(Observer)
0	Evacuation Route Coordinator	3	3	3	(Observer)
0	Traffic Control Communicator	6	6	6	(Observer)
0	Evacuation Route Spotters	4	4	4	(Participant)
0		3	4	3	(Participant)
0	Staging Area Coordinators	3	3	3	(Participant)
0	Lead Traffic Guide	3	121	106	(Participant)
0	Traffic Guides	81	131		
0	Road Crews	17	17	17	(Participant)
0	Dosimetry Record Keepers	4	4	4	(Participant)
0	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

Start	Finish	
		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

- 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.

40 Traffic Guides per Record Keeper.

- Second group of Traffic Guides.
- Third group of Traffic Guides.

#### Maximum

1:45 to 2:10

2:00 to 2:25

# 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

# 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	
APPROVALS:	Emergency Planning Coordinator Dat	.e
	CAUTION	
	APPROVALS MUST BE SIGNED AT LEAST 24 HOURS BEFORE ANY EXERCISE OR DRILL MAY BE PERFORMED.	
	Manager of LERO Date	te

# 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:

- 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 occured 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 dissmeinated. 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

- 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.
- Transfer bus routes (those which run from transfer points to Relocation Centers) will not be run.
- 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.
- 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
T3/30	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 Opertor completes notification verification callback to SNPS.

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.

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

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.

T = 0/0

T = 0/5 - 0/35

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.)

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.

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

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.

T = 0/35 - 1/20

T = 0/50 - 1/35

T = 0/50 - 1/35

Planned Exercise Time Hours/Minutes

T = 0/35 - 1/10

# Sequence of Events

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.

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 and of drill.

T = 1/40 - 4/00

#### 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.

- 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.
- 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\*

Zone Location	Incremental Dose Rate (mr/min)
A	800
В	500
C	300
D	130
E	65
F	35
G	20
н	15
1	10
J.	5
K	1
L	.5
м	.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.

INSERT FIGURE

INSERT FIGURE

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# 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 essumptions and precautions being taken.
  - 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.
- 6. Significant items, both major deficiencies and strong performance points, should be highlighted upon occurence 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 sill, 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

-	Evaluated	Mo	nit	ors	Rat	ting	2
	vation and Response						
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.0
3.	Was the person in charge clearly identifiable?	5	4	3	2	1	N.0
4.	Was the transfer of responsibilities accomplished effectively and efficiently?	5	4	3	2	1	N.0
Comm	unications						
1.	Were all required and specified communications circuits operable?	5	4	3	2	1	N.C
2.	Were personnel familiar with communi- cations available and the intended use of each?	5	4	3	2	1	N.C
3.	Were there sufficient personnel to conduct communications tasks?	5	4	3	2	1	N.
4.	Was incoming information effectively and efficiently distributed to appropriate personnel?	5	4	3	2	1	N.
5.	Were periodic updates made by the senior individual?	5	4	3	2	1	N.
6.	Were accurate communication logs kept?	5	4	3	2	1	N.
7.	Were the status boards properly utilized and updated?	5	4	3	2	1	N.
8.	Did individuals in charge spend an inor- dinate amount of time on communications, such that their attention was diverted from the incident? (No * 5, Yes * 1)	5	4	3	2,	. 1	N.

	Area Evaluated	. <u>Mo</u>	nito	rs	Rat	ing	
	9. Were the correct private lines used did non-emergency communications in fere with emergency transmissions? (No = 5, Yes = 1)	MIIIO -	4	3	2	1	N.O.
	10. Were logs used effectively by person to review past events and to trend	711116	4	3	2	1	N.O.
	<ol> <li>Were appropriate communications techniques followed? (Phonetic alphabe sign-on, sign-off, no abbreviations or acronyms)</li> </ol>	t.	4	3	2	1	N.O.
c.	Procedures						
	<ol> <li>Were personnel generally familiar the relevant procedures?</li> </ol>	with 5	4	3	2	1	N.O.
	2. Were procedures followed?	5	4	3	2	1	N.O.
	3. Were personnel so overwhelmed with cedural requirements that they wer distracted from the appropriate response?	pro	4	3	2	1	N.O.
	4. Were the procedures appropriate?	5	4	3	2	1	N.O.
D.	Direction and Control						
	<ol> <li>Could the response be catagorized team effort or a group of individuals efforts? (Team = 5, Individuals</li> </ol>	Jai	4	3	2	1	N.O.
	2. Was there an effective mechanism resolving differences of opinion regarding technical issues and act to be taken?	tions					N.O.
	<ol> <li>Was there excessive noise and loi in the response facility? (No = Yes = 1)</li> </ol>	rei ing	5 4		3 2		N.O.
E.	Material and Equipment						
	<ol> <li>Was all the required material and ment available?</li> </ol>	equip-	5	4	3	2	N.O.

rea l	Evaluated	Mor	it	ors	Ra	tin	9	
	Did personnel check to ensure that all equipment was available and functional early in the activation process?	5	4	3	2	1	N	.0.
	If equipment was inoperable or failed in use, were appropriate actions taken to resolve the deficiency? (spares/backup equipment)							.0.
	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.							1.0.
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.							N.O.
6.	Could the area support the personnel assigned to it?							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.
Pro	tective Measures					Į.		
1.	Were appropriate protective measures implemented for response personnel?							N.0
2.	Did personnel properly wear protective clothing and dosimetry?		5	4	3	2	1	N.0
3.	madialogical practices		5	4	3	2	1	N.0
4.	Were field personnel kept apprised of radiological conditions?		5	4				N.C
5	Were response activities conducted with regard for personnel safety, consistent with the need to complete the activity?		5	4	3	2	1	N.C

## G. Access Control

- Was an appropriate access control posture established?
- 5 4 3 2 1 N.O.
- 2. Was there an identifiable system implemented that effectively identified authroized 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.

## 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 Tevel. From 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)/	Ronald Varley Roving
3.	Drill Controller #1 Transfer Point	Carlos García
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 D	Debra Beres istribution
8.	Drill Communications LILCO Representative	
9.	Evacuation Time Study	

## 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 breifings:
			- 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 breifed 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 PARTICIPNAT FORM

FOR THIS DRILL, PLEASE FILL IN THE FOLLOWING INFORMATION:

- .1. What was the route number you drove?
- 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 PARTICIPNAT FORM

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

1. Staging Area to the bud company:

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

 Bus company to yoour 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 PARTICIPHAT 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

## 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: Abosrbed dose delivered per unit time, as rads per seconds or rads per hour.

Dosimeter: A device that measures radiaton 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:	Mah Atare 12/19/83

Emergency Planning Coordinator

## APPROVALS:

## CAUTION

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

AWeisman De Manager of LERO

10/19/83

## 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 existance 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 RWCU 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.

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.

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.

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.

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

T = -2/20

T = 1/15

T = -0/50

T = -0/40

	Planned	
Ex	ercise Time	1
Ho	urs/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 Exhause 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 = 0/50 - 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 section 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 deterines 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

Address (if Non-LERO)  IS HILL ST. Wading River NY 11792  Number Street City State Zip  INITIAL SURVEY RESULTS  SO79 - Right Side  Type HP-270  Date Taday's Time Present Surveyed by CRH TERT  Initial Vehicle Survey Area  200 CPM  200 CPM  170 CPM  170 CPM  170 CPM  170 CPM  170 CPM
Instrument Used: Model No. RM-14 S/N S127-Leve Probe Type HP-270 Date Taday's Time Present Surveyed by OPH TERT Initial vehicle Survey Area  200 CPM  200 CP
Instrument Used: Model No. RM-14 S/N 5/27-Lever Since Type HP-270  Date Taday's Time Present Surveyed by CAH TEAT  Initial Vehicle Survey Area  200 CPM  200
Instrument Used: Model No. RM-14 S/N 5127-Leve Probe Type HP-270  Date Taday's Time Present Surveyed by CAH TERT  Initial Vehicle Survey Area  200 CPM  200 CPM  200 CPM  200 CPM  200 CPM  200 CPM
Date Taday's Time Present Surveyed by CAH & ERT Initial Vehicle Survey Area  200 CPM  200 CPM
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170 CPM BIGOCPM
170 CPM (S) 100 CPM
170 CPM (S) 100 CPM
170 CPM ( ) /100 CPM
Clear - Authorized for Release from Site
Contamination Detected - Release Denied
COMMENTS
levels on hood, roof, & sides ranging from 100 - 200 CPM above background
river's seat, steering, wheel - 100-200 CPM a.b.; trunk - 100 CPM a.b.
Signature Albert Johnson Decon
POST-DECONTAMINATION SURVEY RESULTS
Decontaminated by John Jacob Harrison Todan's Present
Decontamination Methods Used: Wiped outside seat steering whe
and trunk with wet Sponges. Vacuumed seat, floor, and trunk
Post-Decontamination Survey Results: Swipes of outside : 0-10 CPM
above background : Suripes of inside: 0-30 cen above background
trunk: 0-15 tpm above background
Model No. S/N Probe Type
Followup Action Required: None Special Followup (Specify)

EVAGUEE EXPOSURE RECORD	
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	on center Current Location
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356 B 1 1 1 1 2 2 3 3 3 3 3 3 4 1 2 3 1 1 2 3 1 1 3 3 3 3 3 3 3 3 3 3 3	
	D NO
S. MOME ADDRESS 15 Hill St	11797
e. ETTY Ubding River 7. STATE NY 2	IP CODE 11792
8. TELEPHONE NUMBER (HDME) (5116) 9129-7665	
10. TELEPHONE NUMBER (BUSINESS) (5/16) 4/20-7/8/2	
11. SOCIAL SECURITY MUMBER 536-86-4191	
11. BRIEFLY DESCRIBE YOUR AMEREABOUTS AND ACTIVITIES. INCLUDE AMOUNT OF TIME SPENT AT EACH LOCATION.	
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70 CPM on palms ( on pant	ABOVE BACKDROUND
on knees	CADINITIALS PAGE _ OF _
	1 // 01
220CPM 250CPM on shoes	Nov 2
on shoes	THE RESERVE OF THE PERSON NAMED IN COLUMN 2 IS NOT THE PERSON NAME

## FIGURE 3

## EQUIPMENT CONTAMINATION REPORT

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Post-Decontamina all levels at b	tion Survey Results Survey of Swipe's she ackground  RM-14 / 5172/HP-270 Date Today's Time Hodel No. S/N Probe Type

# EQUIPMENT CONTAMINATION REPORT

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Decontaminated by	Name Date Time
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Market Street,	n Survey Results
Post-Decontaminatio	a bette, motters
Post-Decontaminatio	
Instrument Used:	Date Time_
Instrument Used:	

NAME: Franklin P. Pierce

ADDRESS: 14 Oliver Street

Wading River, New York 11792

ZONE:

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.

### WEHICLE CONTAMINATION REPORT

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21035.CHT. 57 BCL. 65

# EQUIPMENT CONTAMINATION REPORT

	S/N NA
MODEL NO. NA	
	INITIAL SURVEY RESULTS
INSTRUMENT USED: MOI	DEL NO.RM-14 S/N 5048 PROBE TYPE HP
DA'	TETOLOGIS TIME Present SURVEYED BY GAK/
	Clear - Authorized for Release from Site
CPM a.b. on bottom.	Contamination Detected - Release Denied
nd - 40 CPM	COMMENTS
	DECONTAMINATION SURVEY RESULTS
Decontaminated by Ch	Name Todau's Prese
	ds Used: Bottom, handles wiped with
above background	
Instrument Used: Rr	1-14 /5030 / HP-270 Date Today's Time
	ired: None _ Special Followup (Spec

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.

### VEHICLE CONTAMINATION REPORT

Instrument Used: Model No. RM-14 S/N S/27-Right Probe Type HP-27  Date Today's Time Present Surveyed by CAH - EAT  Initial Vehings Area  Closer - Authorized for Release from Site  Contamination Detected - Release Denied  COMMENTS  No level's above backarpand abserved  POST-DECONTAMINATION SURVEY RESULTS  Decontamination Methods Used:  Name  Date  Time  Post-Decontamination Survey Results:  Instrument Used:  Model No. S/N Probe Type  Right Probe Type  None  Special Followup (Specify	Mane of Driver Robert T. Randall Address (if Non-LERO) 310 Central Ave : Wading River, NY U- Number Street City State Zig	79
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11685.CHT.57 BCL.84

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.

### WEEICLE CONTAMINATION REPORT

lame of Driver David D. kenner
ddress (if Non-LERO) 46 Trapper's Path; Wading River NY 11793  Number Street; City State Zip
INITIAL SURVEY RESULTS
INITIAL SURVEY RESULTS  5079-Right Side  5079-Right Side  Frobe Type #P-270  Date Today's Time Present Surveyed by CAH+ EAT
Sackground: 40 CPM  Sarvey Area  Sarvey Area
Right
Clear - Authorized for Release from Site
Contamination Detected - Release Denied  COMMENTS
COMMENTS
Signature Charles A Hilarn Survey
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

	Todays	TIME P	resent	BECONT	TAMINATION CENT	ER Curre	nt Loca
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want	Kenner	11	FIRST!	IMIDDLE	INT.)		
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	Wading F		. STATE N	Y	8. ZIP COD	E 1179	2
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Rev 2

NAME: John J. Miller

ADDRESS: 23 Creek Road

Wading River, New York 11792

ZONE:

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 contamiation. 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 diected 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.

### VEHICLE CONTAMINATION REPORT

license # 723- HJ1	The same of the sa	State	NY	
	J. Miller 23 Creek Rd. Number Stree	Wadi	City S	NY 11792 tate Zip
	NITIAL SURVEY E	RESULTS		
Instrument Used: Model Ro	D. RM-14 8/1	5079- Left 5127- Rigi	Probe Ty	ре
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POST-DEC	CONTAMINATION S	SURVEY RES	ULTS	<u> </u>
	Name		Date	Time
Decontamination Methods	Deed:			
Cost-Decontamination Sur	vey Results:			
Instrument Used:			ate	Time
Hodel		be Type	-	7 194
Followup Action Required	: None	Spec	TET BOTTOM	up (Specify)
Send Completed For	m to Radiation	Health	Coordin	ator

			CUEE EXPOSU	ME RECORD			
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				J			
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2. AGE _	40_ 3.			. PREGNANT D	TES D NO		
	ADDRESS 23						
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Pev 2

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.

### VEHICLE CONTAMINATION REPORT

Address (if Non-LERO)	Number Street	City	State Z
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	Signature	Randoll	2 Clark/
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So CPM  Pains  Thyroid contamination  ABOVE BACKDROUND  TO CPM  TO CPM  THYROID CONTAMINATION  ABOVE BACKDROUND  TO CONTAMINATION ABOVE  120 cpm  ABOVE BACKDROUND  ABOVE BACKDROUND	210 CPM
DUE TO:    Shirt   Shirt   Sue to:	on shirt INDIVIOUAL BENT TO
THYROID CONTAMINATION  ABOVE OLISMR/HO OR 260cpm  ABOVE BACKDROUND  CONTAMINATION ABOVE  120 cpm  ABOVE BACKDROUND  ABOVE BACKDROUND	HOSPITAL .
Palms  Companies  Thyroid Contamination  ABOVE 0.13mm/H OR 180cpm  ABOVE BACKDROUND  CONTINUED MHOLE BODY  CONTAMINATION ABOVE  120 cpm  ABOVE BACKDROUND	
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cs com Zun	2

# EMERGENCY WORKER DAILY DOSE RECORD CARD

PRON

### EMERGENCY WORKER PERMANENT DOSE RECORD FORM

1.	NAME /	utz	George	A.
		(LAST)	(FIRST)	(MIDDLE INITIAL)
2.	SEX IVI	MALE   F	EMALE	
3.	DATE OF BIRT	H 6 / 15 MONTH DAY	/ 33 YEAR	
4.	SOCIAL SECUR	ITY NUMBER	1821-141	71-171615121
5.	HOME ADDRESS	1627 0	Dakwood Av	e; Hauppauge, MY117
6.	MISSION	Troffic	Guide - Contr	al Paint *127

# II. EXPOSURE (RECORDED FROM POCKET DOSIMETER)

	DIRECT-READING		DOSE	(MR OR R)
DATE	DOSIMETER SERIAL #	RANGE	DAILY	TOTAL
Today	3070041	0-200 mR		off scale
"	3070042	0-5 R	1.5 R	1.5 R
			The state of	1 1 1 1

## III. EXPOSURE (RECORDED FROM TLD)

	TLD	DOSE (MI	
DATE	SERIAL NO.	DAILY	TOTAL
Today's	0000213		

EMERCENCY WORKER LOG OUT/LOG IN PORM

ste/Time: Edan's Op-Te/hr/min cont Keeper: Your Name

Hame/Group	Mission	Serial No.	Initial Resdings	Initial Final Readings Readings	Seriel No.	Out	Time Time
George A. Lutz	Traffic buide Control Point # 127	3070041 0 mR offsale	O mR	offsoole		00/0	0/00 6/00
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"					00000313		
Richard A Mc Guire	Bus Brite C1	13070048 OmB		offsa/e		0000	0/00 4/30
		130700 27	OR	1.0 R			
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	Traffic Guide	30 1000 OF	OR	150 mR		00/0	460
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EMERCENCY WORKER LOG OUT/LOG IN FORM

ires: Todan's Date hr min Current less tion lecord Keeper: Your Name

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Bas Driver - Route A 1		OR	2.07R			
Bas Driver - Route A 1				0000033		
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	11 3070029 10mR	10 m R	BOMR		0/00	460
		OR	Not			
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						1

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.

### VEHICLE CONTAMDUATION REPORT

Address (if N	on-LERO)	umber 3	treet	City	State	Zip
	INI	TIAL SURV	EY RESULTS	Left Side	•	
Instrument Us	ed: Model Ro.	RM-14	S/N 5/47-	reyed by	CANTE	AL
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THE THE STATE STAT	palms	\ \\ \.	11	17 6	1.1	☐ THYRO	ID CONTABLE	MATION	
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INDIVIDUAL BENT TO  SOLITIS  WE INDIVIDUAL DECONTAMINATED  INDIVIDUAL SENT TO  SOLITIS  THYROID CONTAMINATION  ABOVE 0.13mR/W OR 160cpm		1.1	/	18/		100000000000000000000000000000000000000			
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THE STATE AND THE SACTION STATE OF THE SACTION OF THE SAC				/					
INDIVIDUAL BENT TO  SUE TO:  THYROID CONTABINATION  ABOVE 0.13mm/m OR 360cpm  ABOVE BACKGROUND  CONTINUED MHOLE BODY  CONTABINATION ABOVE		\ \ \		14/		ABOVE	BACKBROUNG	,	
TINDIVIDUAL DECONTARINATION  INDIVIDUAL SENT TO  DUE TO:  THYROID CONTARINATION  ABOVE 0.13mR/W ON 180cpm  ABOVE 8ACKDROUND  CONTINUED MHOLE BODY  CONTARINATION ABOVE  120 cpm  ABOVE BACKDROUND		1	)(	XX			and the second		OF.
CPM CPM COMMISSIONS  INDIVIDUAL BENT TO  BUE TO:  HOSPITAL  INJURY  THYROID CONTABINATION  ABOVE 84TKDROUND  CONTINUED WHOLE BODY  CONTINUED WHOLE BODY  CONTINUED WHOLE BODY  CONTINUED WHOLE BODY		)		P.A.			and the second	PAGE	. OF_

# EMERGENCY WORKER DAILY BOSE RECORD CARD

TOTAL

DAILT

DOSE (NR OR R)

BACK	FINAL											
	INITIAL											
	DATE OF EXPOSURE											
		1550	MOSTOR	Som R	OR R)	TOTAL	1	1.0 R	T	T	[	[
	QW		C 1	RANGE 20 - 200 m.R.	DOSE (MR OR R)	DATLY	ı	LOR		T		
FRONT	EMERCENCY WORKER ILY DOSE RECORD CARD	McGuire	MISSION: R. C. Driver - Route C.	3070022 30 200 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		PINAL READING	offscale	1.0R				
	EMER DAILY D	ard A M	Oriver	YSIS YSIS ERIAL NO.:		READING	SmR	OR				
		NAME: Richard A	MISSION R. C Deive	SOCIAL SECURITY NO.:		EXPOSURE	Todays	"				

1. NAME	Mc Guire	Richard	A	
	(LAST)	(FIRST)	(MIDI	DLE INITIA
2. SEX	MALE	FEMALE		
3. DATE	OF BIRTH 9 / 28			
4. SOCIA	L SECURITY NUMBER	4 8 9 13	2 2 4	18/12
5. HOME	ADDRESS 177 Hempsto			
5. HOME 6. MISSI	ADDRESS 177 Hempsto	ead Turnpike;		
5. HOME 6. MISSI	ADDRESS 177 Hempsto	ead Turnpike;		
5. HOME 6. MISSI EXPOSURE	ON THE POCKE	end Turnpike;	Hempstea	(MR OR R)

# Taday'S 3070022 0-200 mR - Scale " 3070076 0-5 R 1.0 R 1.0 R

# III. EXPOSURE (RECORDED FROM TLD)

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

EMERCENCY WORKER LOS OUT/LOG IN FORM

Ares: Labu's Date hr/min

			Tolinia.	Pital	ALL D	hr/min.	hr/min
Name/Group	Mission	Serial No.	Readings	Readings	No.	Out	In
George A. Lutz	Control Point *127	3070641 0 mR Offscale	O mR	off scale		00/0	0/00 6/00
, "		30700 42 0 R	OR	1.5 R			
"					0000013		
Richard A Mc Gaire	Bus Rute Ct	13070048 Om B	OmB	offseale		0/00 4/30	4/30
		7200005	OR	1.0 R			
					0000123		
1.7	Traffic Guide	30 3500 CE	OR	150 mR		0/00 1/00	460
March Cestalmore	0	13070053 O.R	OR	Not			
					0000 762		
		_					

EMERCENCY WORKER LOG OUT/LOG IN FORM

Area: Trans Current beatian
Record Resper: Your Name

Neme/Group	Mission	Serial No.	Initial Readings	Initial Final Readings Readings	Serial No.	Time Time	Time
George A. Lutz	Control Point *127	3070041	o mR	o mR offscale		0/0	0/9 00/0
,,		30700 42 0 R	OR	1.5 R			
"					0000013		
Richard A Mc Guire	Bus Poiner	3070048 OmB	OmB	offsa/e		00/0	0/00 4/30
		130700 27 OR	OR	1.0 R			
					0000123		
Laurence J. Kilmore	Control Point 125	30 350010E	OR	So mk		00/0	400
-		13070053 OR	OR	Not			
					0000 768		

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.

### VEHICLE CONTAMINATION REPORT

License # 449- CD7  Name of Driver Laurence		_
Address (if Non-LERO)		Ip
		-1
	M-14 S/N SITE Right Side  M-14 S/N Probe Type HP-2	
Instrument Used: Model No. RA	M-14 S/N Probe Type HF-2 Time Present Surveyed by CA# + EAT.	70
achground: 40 CPM	Initial Vel	hie
	Initial Vel survey Area	
b C		
	(&)	
EPEB		
	1. 11	
D( @; )=		
	ted for Release from Site	
	COMMENTS	
	Ethan A Tay per /	Ini
	Signature Charles A Hillary	rec
	AMINATION SURVEY RESULTS	
Decontaminated by N	lame Date Time	-
Decontamination Methods Used	l:	
Fost-Decontamination Survey	Results:	
Decommended Dorvey		_
	N-1	
Instrument Used:	S/N Probe Type None Special Followup (Speci	

		EMERGENCY WORKER	EXPOSURE REC	CORD		
1. 001576	TION (ENERGENCY	MORKER-PLEASE PRINTS				
DATE.	Today S.	TIM Present	BECONT	MINATION CENTER	current bocati	on
	Kilmore	Laurence				
	(LAST)	(FIRST)	(WIDDLE )	NT.1		
2. AGE_	29 3. 88	E D' MALE D FEMALE	4. PREDMANT D	TES D NO		
S. HORE	ADDRESS	a Reserva	ir Ave			
. CITY.	North Post	7. STATE_N	<u>Y</u>	8. ZIF CODE _	11768	
. TELEP		(575)3	127-84	ज्ञा <b>र</b>		
10. TELEP		100E\$51 (51116)	776-34	क्षत्र		
11. BOCIA	-	াগ্রাথ-ভার	स्डाउँक			
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14. DATE	INITIAL BOSE MAS	TAKEN NA				
		PERT AT EACH LOCATION.	15.			
		TIME SPEN				
Traff	ic Control	7801D9088 (HRS)	Traff	c Guide	OFFICIAL U	SE SWL
	125					
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5		0	_			
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Max 2

# EMERCENCY WORKER DAIL: DOSE RECORD CARD

BACK

FRON

	EMERGENCY WORKER						DOSE (HR OR R)	R OR R)	
DAT	DAILY DOSE RECORD CARD	CARD		EXPOSURE	READING	FINAL	DAILT	TOTAL	
rence	MAR: Lawrence J. Kilmore								
Reserv	ADDRESS: 100 Reservoir Ave.; North Bit, NY	BIT, NY	8911						
affic G	MISSION: Traffic (ruide: Traffic Contral	ic Control	Paint 125						
50CIAL SECURITY NO.: 686-78-92/4	13070036:0-200mR	RANGE . 0 - 2	som R						
ERIAL NO	1	53:0-6	SR						
		DOSE (HR OR R)	R OR R)						
READING	C READING	DAILT	TOTAL						
OmR	50mR	١	Some						
OR	2 2	١	Not Measure 11						
-									
			-	The same of the sa	-		-	-	

### EMERGENCY WORKER PERMANENT DOSE RECORD FORM

ı.	IDE	ENTIFICATION (PLEASE PRINT)
	1.	NAME Kilmore Laurence J. (MIDDLE INITIAL)
	2.	SEX     MALE   FEMALE
	3.	DATE OF BIRTH 8 1 16 1 54  MONTH DAY YEAR
	4.	SOCIAL SECURITY NUMBER 1686117811912/14
	5.	HOME ADDRESS 100 Riservoir Ave; North Port, NY 11768
	6.	MISSION Traffic fuide; Control Point 125

## II. EXPOSURE (RECORDED FROM POCKET DOSIMETER)

	DIRECT-READING		DOSE	(MR OR R)
DATE	DOSIMETER SERIAL #	RANGE	DAILY	TOTAL
Today's	3070036	0-200 mR	_	50 mR
"		0-5 R	_	Measurable
				Market .

## III. EXPOSURE (RECORDED FROM TLD)

	TLD	DOSE (M	R OR R)
DATE	SERIAL NO.	DAILY	TOTAL
Today's	0000 762		

EMERCENCY WORKER LOG OUT/LOG IN FORM

Area: Lucent loss tion.
Record Keeper: Your Name

Time Time To	4/00			460					
Time Out	00/0			0010					
TLD Seriel No.			0000332			7110000			
Initici   Final   Readings	SMR 67mR	2.07R		30mR	Not				
Initial	SMR	OR		10mg	OR				
Dosimeter Serial No.	710000	3010012		13070029 1 10 mR 130 mR	30700 34 OR				
Mission	Traffic Guide- Bint #3 3070017			Bas Driver - Route A 1					
Name/Group	dall			Joseph P. Brown					

EMERCENCY WORKER LOG OUT/LOG IN FORM

Area:
Record Keeper: Your Name
Fage 1 of 2

Name/Group	Mission	Serial No.	Initial Readings	Final Readings	TLD Serial No.	Time	Time
4	Control Point *127	30700411 0 mR loff soule	O mR	off scale		00/0	9/90
10		30700 42 0 R	OR	1.5 R			
"					0000013		
Richard A Mc Guire	Bus Driver	13070048 OmB	omB	off scale		0/00 4/30	4/30
		75 OCTOE	OR	1.0 R			
					0000123		
Total	Traffic Guide	13010036 OR	OR	50 mR		00/0	400
,		13070053 OR	OR	Not			
					2000 762		
						_	

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 Name of Driver _Kennith R.R.	anda II	te NY		
Mame of Driver Kennith R. R. Address (1f Non-LERO) Number	Street	City	State	Zip
	SURVEY RESUL	TS Left Side		
Instrument Used: Model No. RM-14 Date Todan's T	S/N"	- Right Prob	F.P. + K	2.70
background: 40 CPM		1		
	1			
		<b>€</b> )—	J	
			3	
		2	3	
Clear - Authorized Contamination Detec	for Release ted - Relea	from Site		
	COMMENTS			
	Stanstura	Paul Peter	no M	
	Signature		9.100	A
POST-DECONTAMIN		Y RESULTS		
Name Decontamination Methods Used:		Date	T:	me
Post-Decontamination Survey Res	ults:			
Instrument Used:		Date	Time	
Followup Action Required:	N Probe T	Special For	llowup (S	pecify)
Send Completed Form to R	adiation H	ealth Coc	rdinator	

I. REGISTRA	-	ICY HOPETS - S.		XPOSURE RE	CORD		
					AMINATION CENTER	Emerce	noyworke
	Today's		resent	DECONT	AMINATION CENTER	vecon	center
1. MARE.	Randal		enneth		Σ		
	(LAST)	/	IRSTI	INIDDLE			
2. 406	11 - 11 - 12 - 2	SEX TO HALE		PREGNANT D	TES D NO		
	ADDRESS _13		Country	Road			
. e. CITY.	Hicksvill	e ,	. STATE TO	Υ	6. ZIP CODE	1180	1
9. TELEP		HONE) (	जाव) क्ष	22-314	916		
10. TELEP	-	BUSINESS! [	स्यात) ह	1714-614	1414		
11. BOCIA	L SECURITY WU	MBER GIL	14-63-				
12. KI TA	KEN - TE	5 DF WO	13. 71	E INITIAL DOS	SE MAS TAKEN	NA	
14. DATE	INITIAL DOSE	MAS TAKEN	NA_		TAKEN	The state of the s	
		The second secon	AND ACTIVITIES				
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9	=	0 0					
4		0 0					
8		0 0					
MANITON'S	JJK JJK	UNLIGTHED	FIRST METHOD	SECOND METHOD	THIRD METHOU FO	METH METHOD	RRV
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The second secon	11 11 11 11 11 11	The second secon				PROPERTY AND RESIDENCE AND RES	<b>X</b>
THE RESERVE AND ADDRESS OF THE PARTY OF THE	O com	the Real Property lies and the Persons in con-	The second second second second			cem	$\sim$
CHECK DEC	ONTARL NATE	ON METHOD	(s) usfo:	CPM	CPN	cfm	
CHECK DEC	WASH (I SOLAT	ON METHOD	(S) USFO: METHOD:	CPM	ATEK/MILD SOAF	CAM P/SOFT RAI	ush
CHECK DEC	ONTARL NATE	ON METHOD	(s) usfo: METHOD:	CPM	ATER/MILD SOAF ESS HAND CLEA ADE FROM MILI	CAM P/SOFT RAI	ush
CHECK DEC	WASH (I SOLAT	ON METHOD EU ARFAS) E SPREAD)	(s) usfo: METHOD:	CPM	ATER/MILD SOAF ESS HAND CLEA ADE FROM MILI	CAM P/SOFT RAI	ush
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CHECK DEC	ONTATI NATI WASH (I SOLAT SHOWER (WID	ON METHOD EU ARFAS) E SPREAD) INTITIALS	METHOD:	CPM	CPN  ATER/MILD SOAF ESS HAND CLEA ADE FROM MILL OA P  CO  INDI  THYR ABOV ABOV CONT	CPM P/SOFT PAN NER D DETERGE CHECK APPROP FINAL ACTI VIDUAL DECO VIDUAL SENT HO INT ROID CONTANI VE D.13mR/M VE BATKGROUN TINUED MMOLE	PRIATE ION: ONTAMINATED TO OSPITAL INATION OR MOCOMM
CHECK DEC	ONTATI NATI WASH (I SOLAT SHOWER (WID	ON METHOD EU ARFAS) E SPREAD) INTITIALS	METHOD:	CPM	CPN  ATER/MILD SOAF ESS HAND CLEA ADE FROM MILL OAP  CO  INDI  INDI  THYR  ABOV  ABOV  CONT  EDNT	P/SOFT PANER D DETERGE CHECK APPROPERING ACTION EVIDUAL BENT TO: HOTO: H	PRIATE ION: ONTAMINATED TO OSPITAL INATION OR MOCOMM
CHECK DEC	ONTATI NATI WASH (I SOLAT SHOWER (WID	ON METHOD EU ARFAS) E SPREAD) INTITIALS	METHOD:	CPM	CPN  ATER/MILD SOAF ESS HAND CLEA ADE FROM MILL OAP  CO INDI INDI THYR ABOV ABOV CONT CONT 126	CPM P/SOFT CAN NER D DETERGE CHECK APPROPERINAL ACTI EVIDUAL DECO EVIDUAL BENT TO: HO TO: HO TO: HO TO: HE D.13mR/H HE BATKDROUN INUED HHOLE FARINATION A COM	PRIATE ION: ONTAMINATED TO OSPITAL INATION OR MODERM
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Rev 2

# EMERCENCY WORKER DAILY DOSE RECORD CARD

TOTAL

DATLY

DOSE (MR OR R)

BACK

FRON

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	EM	ERGENCY WORKER PERMA	NENT DOSE RECO	ORD FORM	
ı.	IDENTIFIC	ATION (PLEASE PRINT	)		
	1. NAME	Randall (LAST)	Kennet (FIRST)	h (MIDD	LE INITIAL)
	2. SEX	MALE	FEMALE		
	3. DATE	OF BIRTH 2 / 10 MONTH DA	7 / 4 7 Y YEAR		
	4. SOCIA	L SECURITY NUMBER	161141-18	112	241/1
	5. HOME	ADDRESS 1310 Old Con	intruRd, Hicks	ville, NY	11801
	6. MISSI	ON Traffic G	uide-Control	Point *	3
ı.	EXPOSURE	(RECORDED FROM POCK	ET DOSIMETER)		
	DATE	DIRECT-READING DOSIMETER SERIAL	RANGE	DOSE (	MR OR R)
	Todan's	3070017	10-200 mR	162mR	62mR

DATE	DIRECT-READING DOSIMETER SERLAL #	RANGE	DAILY	MR OR R)
Todans	3070017	0-200 mR	62mR	62mR
	3070012	0-5 R	2.07 R	2.07 R
				-

# III. EXPOSURE (RECORDED FROM TLD)

	TLD	DOSE (MI	R OR R)
DATE	SERIAL NO.	DAILY	TOTAL
Todanis	0000232		
		-	

EMERCENCY WORKER LOG OUT/LOG UN FORM

Area:
Record Resper: Your Name

Name/Group	Mission	Dosimeter Serial No.	Initial Readings	Final	TLD Seriel No.	Time Time	Time
George A. Lutz	Control Point *127	3070041 0 mR Offscale	OMB	Off scale		00/0	0/9 00/0
"		30700 42 0 R	OR	1.5 R			1
"					0000013		
Richard A Mc Guire	Bus Briver	13070048 OmB	omB	offscale		0/00	0/00 4/30
		72 00708	OR	1.08			
					0000123		
Laurence J. Kilmore.	Traffic Guide	3010036 0 R	OR	50 mR		0/00	460
-		3070053 0 R	OR	Not			
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EMERCENCY WORKER LOG OUT/LOG IN FORM

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Page 3. of 2.

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NAME: Joseph P. Brown

LERO TASK: Bus Driver

LOCATION: Zone A, Route Al

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

	SERA I. ISIOUII		THE RESERVE AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS
Name of Driver Jo Address (if Non ERO)	Number Street	City	State Zip
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POST-Decontamination Metho	COMMENTS  Signature -DECONTAMINATION SUKV	Foul Peter  Kensuel h A  EY RESULTS	MAYOUR / A
POST- Decontaminated by Decontamination Metho Fost-Decontamination Instrument Used:	COMMENTS  Signature DECONTAMINATION SUKV  Name ds Used:  Survey Besults:	Paul Peter Exement h A EY RESULTS  Date	Time

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Rev 2

# EMERCENCY WORKER DAILY DOSE RECORD CARD

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	EMER	DAILY D	CON P. F	7 A 201	S Driver		ERIAL NO.:		READING	10mg					
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EMERGENCY WORKER LOG OUT/LOG IN FORM

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EMERGENCY WORKER LOG OUT/LOG IN FORM

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	Dosimeter Serial No.	3070017	3070013		3070027 10 mR 30 mR	3070034 OR				
	Mission	Tra ffic			Bus Driver - Route A 1					
	Name/Group	Kenneth J. Randall			Joseph P. Brown					

### 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.
  - The exercise scenario, including the initiating events and the expected course of action to be taken.
  - 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 occurence 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/hor immediate area and to inform the Lead Drill Controller of the situation. Upon notification of an actual emergency, the Lead Drill Controller will notify ail 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.

### 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 Decontamination Leader/	
2.	Drill Controller #1 Dosimeter Distribution /	
3.	Drill Controller #1 Initial Vehicle Monitor	
4.	Drill Controller #2 Initial Monitoring State	
5.	Drill Controller #4 Decontamination Area Per	
6.	Drill Controller #5 Vehicle and Equipment Mo	Ron Varley onitoring and Decontamination Personnel
7.	Drill Controller #6 Thyroid Monitoring State	· Bruce Kobel

# 7.5 Critique Sheets

# 7.5.1 Lead Drill Controller Critique Sheet Decontamination Leader

## I. General Questions

Are	a Evaluated	0	bse	rve	rs	Rat	ing
Act	ivation 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.
Com	nunications						
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.
Proc	edures						
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 pro- cedural 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	a Evaluated	Ob	ser	ver	's R	ati	ng
D.	Dire	ection and Control						
	1.	Could the response be catagorized 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.
ε.	Mate	erial and Equipment						
	1.	Was all the required material and equip- ment 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	01	ser	rver	's R	ati	ng
	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.	Prote	ective 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.
11.	Speci	fic Questions: Decontamination Leader						
Α.	Set L	p of the Decontamination Facility						
	1.	Does the Decontamination Leader establish contact with the Decontamination Coordinator at the Local EOC?	Ye	s		No		
		Does the Decontamination Leader take charge? Does he delegate people to set up the following areas:	Ye	s		No		
		- Dosimeter Distribution Area	Ye	s		No		
		- Initial Vehicle Monitoring Area	Ye	s		No		
		- Initial Personnel Monitoring	Ye			No		
		- Decontamination Area - Thyroid Monitoring Area	Ye			No		
		- Clean Parking Area	Ye			No		
		- Contaminated Parking Area	Ye	-		No		
		Does the Decontamination Leader keep a Log In Sheet of Monitoring/Decontamination personnel?	Ye	s		No		

	Area	Evaluated	<u>Observe</u>	rs Rati 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
В.	Oper	ration 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 - Initial Vehicle Monitoring Area - Initial Fersonnel Monitoring Stations - Personnel Decontamination Area - Thyroid Monitoring Stations - Contaminated Parking Area - Clean Parking Area	Yes Yes Yes Yes Yes Yes	No No No No No 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? - with respect to the facility?	Yes Yes	No No
	6.	Can the Decontamination Leader answer questions related to the operation of his facility or to the evacuation?	Yes	No

### III, Summary

 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 Tevel. 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

### General Questions

	Area	Evaluated	<u>Ob</u>	ser	ver	s R	ati	ng
١.	Acti	vation 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.
3.	Comm	unications						
	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.
	Proc	edures						
	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 pro- cedural 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	<u>Ob</u>	ser	ver	s R	ati	ng
D.	Dire	ection and Control						
	1.	Could the response be catagorized 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.
Ε.	Mate	rial and Equipment						
	1.	Was all the required material and equip- ment 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	01	ser	ver	s R	ati	ng
	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.	Prote	ective 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.
11.	Speci	fic Questions: Dosimeter Distribution Area	Per	son	nel			
A.	Set U	p of the Area						
	1.	Are the following forms available?						
		- Daily Dose Record Cards - Permanent Dose Record Forms - Log Out/Lcg In Forms	Ye Ye Ye	S		No No No		
	2.	Is the following equipment available?						
		- Direct-Reading Dosimeters Range 0-200 mR	Ye	s		No		
		- Direct-Reading Dosimeters Range 0-5 R	Ye			No		
		- TLD Badges - Dosimeter Chargers with batteries	Ye	-		No		
	3.	Is there a sign identifying the area?	Ye	s		No		

### 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 gener 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	a Evaluated	01	ser	ver	's F	ati	ing
A.	Acti	ivation 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.
в.	Сопп	nunications						
	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.	Proc	edures						
	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 pro- cedural 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	Area Evaluated			Observers Rating							
D.	Direction and Control											
	1.	Could the response be catagorized 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 equip- ment 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	<u>0bs</u>	ser	vers	s Ra	ati	ng
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.
Prot	ective 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.0
5.		5	4	3	2	1	N.0
I. Spe	cific Questions for the Initial Vehicle Mon	tori	ng	Sta	tio	n	
. Set	Up of the Station						
1.	Is there a sign notifying the monitorng station?	Y	es	s No			
2.	Have the RM-14 survey meters under- gone a preoperational check?	Y		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?	١	Ye: N			No	

	Area	Evaluated Observers Ra			
	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	=		
В.	Oper	ation 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 surver 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	Yes	No	
		- Tires	Yes	No	
		- Hood	Yes	No	
		- Roof	Yes	No	
		- Door handles	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	

### 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 tank.
- "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

### General Questions

	Area	Area Evaluated			Observers Rating							
A.	Acti	vation 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.				
В.	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 pro- cedural 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.				

	Ares	Evaluated	Observers Rating							
D.	Dire	ection and Control								
	1.	Could the response be catagorized 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.		
ε.	Mate	erial and Equipment								
	1.	Was all the required material and equip- ment 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.	Prot	ective 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.			
11.	Speci	ific Questions about the Initial Monitoring uees or Emergency Workers	Stat	ion	fo	r A	rri	ving			
A.	Set !	of the Station									
	1.	Is there a sign identifying the monitoring station?	Ye	s		No					
	2.	Have the RM-14 survey meters undergone a preoperational check?	Ye	s		No					
	3.	Has the background count rate been established?	Ye	s		No					
	4.	Are Evacuee or Emergency Worker Contamination Report Forms available?	Ye	s		No					
	5.	Is the area where monitoring is occuring a "controlled area"?	Ye	s		No					

	a Evaluated	Observ	vers 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
	ration 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.		Yes	No No
3.	monitoring person is using it?  Do the monitoring personnel know how to read the meter?		
	monitoring person is using it?  Do the monitoring personnel know how to read the meter?  Is the shield on the probe in the	Yes	No
4.	monitoring person is using it?  Do the monitoring personnel know how to read the meter?  Is the shield on the probe in the open position?  Are the monitoring personnel scanning	Yes	No No
4.	monitoring person is using it?  Do the monitoring personnel know how to read the meter?  Is the shield on the probe in the open position?  Are the monitoring personnel scanning too fast?	Yes Yes Yes	No No
4.	monitoring person is using it?  Do the monitoring personnel know how to read the meter?  Is the shield on the probe in the open position?  Are the monitoring personnel scanning too fast? or to slow?  How long does it take to process one	Yes Yes Yes	No No No

1. Describe any problems noted by the area being evaluated.
Provide a description of the problem, its cutcome 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

- "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	<u>Ob</u>	ser	ver	's R	ati	ng
Α.	Acti	vation 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.
В.	Comm	nunications						
	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.	Proc	edures						
	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 pro- cedural 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.

	Are	ea Evaluated		0bs	er	/er	s R	Rat	ing
D.	Dir	rection and Control							
	1.	Could the response be catagorized 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	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.
Ε.	Mate	erial and Equipment							
	1.	Was all the required material and equip- ment available?	5	4	3	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 per- sonnel from completing their tasks? (No = 5, Yes = 1) If so, please indicate details.	5	4	3	2		1	N.O.
		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	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.	Prote	ective 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.						
11.	Speci	fic Questions about the Decontamination Area												
Α.	Set U	p of the Area												
		Is there a sign identifying the Decontamintion Area?	Ye	s		No								
		Is there a sign identifying the "clean" exit?	Ye	s		No								
		Is the exit well marked (exit only, do not enter)?	Ye	s		No								
		Are the signs in the shower area describing the various methods of washing?	Ye	s		No								
		Are the following items available for use in washing?												
		- Liquid soap	Yes	s		No								
		- Liquid soap - Soft brushes - Waterless hand cleaner	Ye: Ye:	5		No No								

	a Evaluated	Observ	vers Rati
	- Detergent	Yes	No
	- Lava soap	Yes	No
	- Towels	Yes	No
5.	Are clean coveralls availabel 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	Nc
10.	Is the report form kept free of contamination?	Yes	No
per	ration of the Station		
	Is the information correctly entered on the Contamination Report?	Yes	No
	Is the information correctly entered	Yes Yes	No No
۲.	Is the information correctly entered on the Contamination Report?  Is the survey meter turned on when		
1.	Is the information correctly entered on the Contamination Report?  Is the survey meter turned on when it is being used?  Do the monitoring personnel know how	Yes	No
i. 2. 3.	Is the information correctly entered on the Contamination Report?  Is the survey meter turned on when it is being used?  Do the monitoring personnel know how to read the meter?  Is the shield on the probe in the open position?  Are the monitoring personnel scanning	Yes Yes Yes	No No
i. 2. 3.	Is the information correctly entered on the Contamination Report?  Is the survey meter turned on when it is being used?  Do the monitoring personnel know how to read the meter?  Is the shield on the probe in the open position?  Are the monitoring personnel scanning too fast?	Yes Yes Yes	No No No
i. 2. 3.	Is the information correctly entered on the Contamination Report?  Is the survey meter turned on when it is being used?  Do the monitoring personnel know how to read the meter?  Is the shield on the probe in the open position?  Are the monitoring personnel scanning	Yes Yes Yes	No No No
i. 2. 3.	Is the information correctly entered on the Contamination Report?  Is the survey meter turned on when it is being used?  Do the monitoring personnel know how to read the meter?  Is the shield on the probe in the open position?  Are the monitoring personnel scanning too fast?	Yes Yes Yes	No No No

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

- "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 Tevel. 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	a Evaluated	01	sei	rver	rs F	lati	ing
A.	Act	ivation 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.
в.	Comm	nunications						
	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.	Froc	edures						
	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 pro- cedural 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.	Dir	ection and Control											
	1.	Could the response be catagorized 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.					
ε.	Mate	erial and Equipment											
	1.	Was all the required material and equip- ment 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	;	N.O.			
F.	Prote	ective 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.			
11.	Spec	ific Questions about the Decontamination Area									
Α.	Set I	Jp of the Area									
	1.	Is there a sign identifying the Decontamintion Area?	Ye	s		No					
	2.	Are the boundaries of the area clearly marked?	Ye	s		No	٠				
	3.	Have the RM-14 survey meters undergone a preoperational check?	Ye	s		No					
	4.	Has the background count rate been established?	Ye	s		No					
	5.	Are the following articles available:									
		- Vehicle Contamination Report Forms - Hand sponges - Sponge mops	Ye Ye Ye	s		No No					
		- Garden hose	Ye	-		No					

Area	Evaluated	Observ	ers 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
Oper	ration 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.	taking swipes of the contaminated area after attempting to clean the	Yes	No
	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 Rep]ort?	Yes	No
8.	Are all contaminated equipment properly bagged and labeled after use?	Yes	No

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.

- "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

# General Questions

	Are	a Evaluated	Observers Rating							
A.	Act	ivation 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.		
в.	Comm	nunications								
	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.	Proc	edures								
	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 pro- cedural 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	a Evaluated	<u>Ob</u>	ser	ve"	s R	ati	ng
D.	Dire	ection and Control						
	1.	Could the response be catagorized 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.
Ε.	Material and Equipment							
	1.	Was all the required material and equip- ment 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	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.	Prot	ective 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.		
11.	Spec	ific Questions about the Thyroid Gland Moni	torin	g S	tat	ion				
Α.	Set 1	Up of the Station								
	1.	Is there a sign identifying the monitoring station?	Ye	s		No				
	2.	Have the RM-14 survey meters undergone a preoperational check?	Ye	s		No				
	3.	Has the background count rate been established?	Ye	s		No				
	4.	Are Evacuee or Emergency Worker Contamination Report Forms available?	Ye	s		No				
В.	Opera	ation of the Station						23		
	-									

Area	Evaluated	Observ	ers 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?		minute	s

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 S'gnature / Date

- "5" Excellent Personnel and equipment always functioned without error. There were no problems encountered and all personnel and equipment functioned at a superior level.
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- 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

# DRILL BRIEFING ATTENDANCE SPEET

Date:	Location:	
Name (Print)	Signature	Company or Agency
	-	

#### 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: Abosrbed dose delivered per unit time, as rads per seconds or rads per hour.

Dosimeter: A device that measures radiaton 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 a broked 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 adn 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 fifteem 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.