LIMERICK GENERATING STATION

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-101	3	Classification of Emergencies	12/12/84	
EP-102	7	Unusual Event Response	02/25/85	
EP-103	7	Alert Response	02/04/85	
EP-104	7	Site Emergency Response	02/04/85	
EP-105	7	General Emergency Response	02/04/85	
EP-106	3	Written Summary Notification	01/28/85	
EP-110	5	Personnel Assembly and Accountability	02/04/85	
EP-120	2	Site Emergency Coordinator	12/12/84	
EP-201	3	Technical Support Center (TSC) Activation	01/28/85	
EP-202	3	Operations Support Center (OSC) Activation	12/12/84	
EP-203	4	Emergency Operations Facility (EOF) Activation	01/28/85	
EP-208	4	Security Team	12/12/84	
EP-210	3	Dose Assessment Team	12/12/84	
EP-211	1	Field Survey Group	02/20/85	
EP-220		CANCELLED		
EP-221		CANCELLED		
EP-222		CANCELLED		
EP-230	4	Chemistry Sampling and Analysis Team	12/12/84	
EP-231	6	Operation of Post-Accident Sampling Systems (PASS)	01/11/85	
EP-232		CANCELLED		

LIMERICK GENERATING STATION

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-233	4	Retrieving and Changing Sample Filters and Cartridges from the Containment Leak Detector During Emergencies	12/12/84	
EP-234	4	Obtaining Containment Gas Samples from the Containment Leak Detector During Emergencies	12/12/84	
EP-235	4	Obtaining Reactor Water Samples from Sample Sinks Following Accident Conditions	12/12/84	
EP-236	4	Obtaining Cooling Tower Blowdown Line Water Samples Following Radioactive Liquid Release after Accident Conditions	12/12/84	
EP-237	5	Obtaining the Iodine/ Particulate and/or Gas Samples from the North Vent Wide Range Gas Monitor (WRGM)	01/11/85	
EP-238	4	Obtaining Liquid Radwaste Samples from Radwaste Sample Sink Following Accident Conditions	12/12/84	
EP-240		CANCELLED		
EP-241	7	Sample Preparation and Handling of Highly Radioactive Liquid Samples	02/04/85	
EP-242	4	Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges	12/12/84	
EP-243	5	Sample Preparation and Handling of Highly Radioactive Gas Samples	12/12/84	
EP-244	2	Offsite Analysis of High Activity Samples	01/22/85	

LIMERICK GENERATING STATION

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-250	2	Personnel Safety Team	12/12/84	
EP-251	2	Plant Survey Group	12/12/84	
EP-252	4	Search and Rescue/First Aid Group	02/11/85	
EP-253	0	Personnel Dosimetry, Bioassay, and Respiratory Protection Group	12/12/84	
EP-254	3	Vehicle and Evacuee Control Group	02/04/85	
EP-255	2	Vehicle Decontamination	12/12/84	
EP-260	2	Fire and Damage Control Team	12/12/84	
EP-261	2	Damage Repair Group	12/12/84	
EP-272	4	Philadelphia Electric Company Officials Phone List	02/04/85	
EP-273	4	Limerick Station Supervision Call List	02/11/85	
EP-275		CANCELLED		
EP-276	5	Fire and Damage Team Phone List	01/24/85	
EP-277	6	Personnel Safety Team Phone List	02/11/85	
EP-278	4	Security Team Phone List	01/28/85	
EP-279	4	Emergency Operations Facility (EOF) Group Phone List	01/22/85	
EP-280	5	Technical Support Center Phone List	01/22/85	
EP-282	4	Government and Emergency Management Agencies Phone List	01/22/85	
EP-284	4	Company Consultants and Contractors Phone List	01/22/85	
EP-287	3	Nearby Public and Industrial Users of Downstream Water	02/11/85	

LIMERICK GENERATING STATION

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-291	5	Staffing Augmentation	02/25/85	
EP-292	6	Chemistry Sampling and Analysis Team Phone List	01/22/85	
EP-294	5	Dose Assessment Team Phone List	02/04/85	
EP-301	1	Operating the Evacuation Alarm and River Warning System	12/12/84	
EP-303	3	Local Evacuation	12/12/84	
EP-304	3	Partial Plant Evacuation	12/12/84	
EP-305	4	Site Evacuation	02/11/85	
EP-306	1	Evacuation of the Information Center	12/12/84	
EP-307	2	Reception and Orientation of Support Personnel	12/12/84	
EP-312	3	Radioactive Liquid Release	02/25/85	
EP-313	2	Distribution of Thyroid Blocking Tablets	12/12/84	
EP-314	0	Emergency Radiation Exposure Guidelines and Controls	12/06/84	
EP-315	3	Calculation of Offsite Doses During a (Potential) Radiological Emergency Using RMMS in the Manual Mode	02/04/85	
EP-316	2	Cumulative Population and Near Real-Time Emergency Dose Calculations for Airborne Releases Manual Method	12/13/84	
EP-317	2	Determination of Protective Action Recommendations	12/12/84	
EP-318	1	Liquid Release Dose Calculations Method for Drinking Water	12/12/84	

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EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-319	1	Fish Ingestion Pathway Dose Calculation	12/12/84	
EP-325	2	Use of Containment Dose Rates to Estimate Release Source Term	12/12/84	
EP-330	3	Emergency Response Facility Habitability	12/12/84	
EP-401	2	Entry for Emergency Repair and Operations	12/12/84	
EP-410	2	Recovery Phase Implementation	12/12/84	
EP-500	2	Review and Revision of Emergency Plan	12/12/84	

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PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

2-25-85

EP-102 UNUSUAL EVENT RESPONSE

1.0 PARTICIPANTS

1.1 Shift Superintendent or designated alternate shall assume the role of Emergency Director and implement this procedure, until relieved.

1.2 Station Superintendent or designated alternate shall relieve the Emergency Director, assume the role of Emergency Director, and continue implementing this procedure, if necessary.

2.0 ACTIONS-IMMEDIATE

2.1 Emergency Director shall:

2.1.1 Verify the emergency classification as determined in EP-101, Classification of Emergencies unless determination has just been made.

2.1.2 Complete Appendix EP-102-1, Unusual Event Notification Message. Direct a communicator to complete notification of the appropriate parties in Appendix EP-102-3, Unusual Event Phone List within 15 minutes.

2.1.3 Direct the evacuation of affected areas, as necessary. Refer to the following procedure:

EP-303 Local Evacuation

2.1.4 Contact the Station Superintendent, if necessary, and the Shift Technical Advisor to inform them of the situation.

2.1.5 For samples, contact the Shift Chemistry Technician. If necessary, implement EP-230, Chemistry Sampling and Analysis Team.

2.1.6 For in-plant surveys, or contaminated injury, contact a Shift HP Technician. If necessary, implement EP-250, Personnel Safety Team.

2.1.7 For fire/damage repair, contact the Maintenance Shift Assistance Foreman. If necessary, to implement EP-260, Fire and Damage Team and/or EP-261, Damage Repair Group.

2.1.8 For a liquid release, implement EP-312, Radioactive Liquid Release, if required.

2.1.9 For security matters, implement EP-208, Security Team, if required.

2.1.10 For airborne releases, contact Shift Technical Advisor. If necessary, implement EP-210, Dose Assessment Team.

3.0 ACTIONS-FOLLOW-UP

3.1 Emergency Director shall:

3.1.1 Periodically reevaluate the event classification in accordance with EP-101, Classification of Emergencies, and escalate or de-escalate the classification, as necessary.

3.1.2 If classification is de-escalated fill out Appendix EP-102-2, Unusual Event De-Escalation Message and give it to the communicator and direct the communicator to perform notification of the appropriate parties listed in Appendix EP-102-3, Unusual Event Phone List.

3.1.3 Obtain the following information as necessary to formulate further actions:

A. Sample analysis from Shift Chemistry Technician or Chemistry Sampling and Analysis Team Leader.

B. In-plant surveys or status of contaminated injury from Shift HP Technician or Personnel Safety Team Leader.

C. Fire/Damage Repair status from the Maintenance Shift Assistant Foreman or Fire and Damage Team Leader.

D. Airborne releases calculation results from Shift Technical Advisor or Dose Assessment Team Leader.

E. Notification Results from Communicator.

3.1.4 Determine which support personnel are necessary for emergency functions and direct the Shift Clerk to contact those personnel. If Shift Clerk is not available, this function shall be assigned to an available individual.

3.2 Communicator shall:

3.2.1 Inform Emergency Director when appropriate notifications have been made and submit completed copy of Appendix EP-102-3, Unusual Event Phone List, for Emergency Director's Signature.

4.0 APPENDICES

4.1 EP-102-1 Unusual Event Notification Message

4.2 EP-102-2 Unusual Event De-Escalation Message

4.3 EP-102-3 Unusual Event Phone List

5.0 SUPPORTING INFORMATION

5.1 Purpose

The purpose of this procedure is to provide guidelines for site response to an Unusual Event.

5.2 Criteria for Use

5.2.1 This procedure shall be implemented when an event has been classified as an Unusual Event per EP-101, Classification of Emergencies, and EP-101 has been completed.

5.3 Special Equipment

None

5.4 References

5.4.1 Limerick Generating Station Emergency Plan

5.4.2 NUREG-0654, Rev. 1 Criteria For Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

5.4.3 EP-303 Local Evacuation

5.4.4 EP-101 Classification of Emergencies

5.4.5 EP-210 Dose Assessment Team

5.4.6 EP-230 Chemistry Sampling and Analysis Team

5.4.7 EP-250 Personnel Safety Team

5.4.8 EP-260 Fire and Damage Team

5.4.9 EP-261 Damage Repair Group

5.4.10 EP-312 Radioactive Liquid Release

5.4.11 EP-208 Security Team

APPENDIX EP-102-1

UNUSUAL EVENT NOTIFICATION MESSAGE

MESSAGE: This (is)(is not) a drill. This (is)(is not) a drill. This is the Limerick Generating Station calling to report an Unusual Event. My name is _____, telephone _____. Limerick Generating Station is reporting an Unusual Event declared at Unit No. _____. Time and date of Unusual Event classification are

_____, _____.
(24 Hr Clock Time) (Date)

The basic problem is _____.

There (has been) (has not been) an (airborne) (liquid) radioactive release from the plant. The plant status is (stable) (improving) (degrading) (not known). There is no protective action recommended. This (is) (is not) a drill. This (is) (is not) a drill.

APPENDIX EP-102-2

UNUSUAL-EVENT DE-ESCALATION MESSAGE

MESSAGE: This (is) (is not) a drill. This (is) (is not) a drill. This is Limerick Generating Station calling to de-escalate an Unusual Event. Please connect me with the appropriate authority. This is Limerick Generating Station calling to report the termination of an Unusual Event. My name is_____. Time and date are_____. This (is) (is not) a drill. This (is) (is not) a drill.

APPENDIX EP-102-3
UNUSUAL EVENT PHONE LIST

Time Initiated _____

Personnel/Agency To Be Notified		Phone Number (Circle Number Used)	Time	Person Responding
a. Station Superintendent G. M. Leitch	Home Office			
Alternate J. F. Franz	Home Office			
b. Load Dispatcher	Office			
c. Montgomery County Office of Emer. Preparedness and Medical Services				
d. Pennsylvania Emergency Management Agency				
e. Pennsylvania Bureau of Radiation Protection Harrisburg, PA				
f. Manager - Public Information Ronald Harper	Home Office			

APPENDIX EP-102-2
UNUSUAL EVENT PHONE LIST

Time Initiated _____

Personnel/Agency To Be Notified		Phone Number (Circle Number Used)	Time	Person Responding
g. Director - Emergency Preparedness Roberta Kankus	Home Office	[redacted]		
Alternate Jerry Phillabaum or Victoria Warren	Home Office Home Office			
h. NRC Operations Center Bethesda, MD (Person contacting NRC must be Licensed Operator)				
Agencies to be contacted after the above personnel/agencies have been notified				
i. Berks County Emergency Management Agency				
j. Chester County Emergency Services				

Completed By: _____

Verified By: _____
EMERGENCY DIRECTOR

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-211 FIELD SURVEY GROUP

1.0 PARTICIPANTS

1.1 Field Survey Group Leader shall direct the actions of the Field Survey Group members.

1.2 Field Survey Group Members shall conduct field surveys and onsite (out-of-plant) surveys.

2.0 ACTIONS - IMMEDIATE

2.1 Field Survey Group Leader (FSGL) shall:

2.1.1 Report to the Technical Support Center (TSC).

2.1.2 Discuss the situation with the Dose Assessment Team Leader. This discussion should include: the potential for release, the magnitude of the radioactive source term, meteorological conditions and potential for change, and the number of field survey squads needed.

2.1.3 Coordinate the formation of the necessary number of field survey squads from personnel supplied by the Operations Support Center (OSC). Each squad consists of a Health Physics Technician and a driver.

2.1.4 Obtain drivers and vehicles from the Fire and Damage Team Leader and have them report to the TSC.

2.1.5 Direct field survey squads to obtain emergency dosimetry.

2.1.6 Instruct the H.P. Technicians to secure and inventory the required number of field survey kits and radios, and perform equipment checks. The radios are located in the Dose Assessment Room in the Technical Support Center and the field survey kits are located in the storage closets in the Personnel Entry Area of the Technical Support Center.

2.1.7 Discuss the situation with each squad, assign each squad a unique color designation, and direct them to specific initial locations.

IF THE FIRST SURVEY POINT IS AN ONSITE LOCATION, INFORM THE SQUAD(S) MEMBERS OF ADDITIONAL PRECAUTIONS ASSOCIATED WITH THE POTENTIALLY ELEVATED RADIATION LEVELS.

METEOROLOGICAL CONDITIONS, EXPECTED RADIATION LEVELS, AND OTHER HAZARDS SHALL BE USED TO DETERMINE THE POSITIONING OF FIELD SURVEY GROUPS.

2.1.8 Notify Security Team Leader of the names of field survey squad members so that they will not be detained upon leaving the site.

2.2 Field Survey Squad Members shall:

2.2.1 Report to the Field Survey Group Leader (FSGL) at the Technical Support Center or the Personnel Safety Team Leader after the EOF has been activated.

2.2.2 Obtain a field survey kit and a radio.

2.2.3 Break the seal on the field survey kit and check equipment for operability including source check of survey equipment. Document equipment checks on EP-211-2.

IF THE SEAL ON THE FIELD SURVEY KIT WAS ALREADY BROKEN, PERFORM AN INVENTORY OF THE KIT CONTENTS.

2.2.4 Obtain emergency dosimetry (0-1500 mR and 0-5 R Direct Reading Dosimeters (DRDs). Ensure that DRDs are zeroed prior to leaving the TSC.

2.2.5 Obtain information from the FSGL on the situation, plan of action, specific survey locations, and necessary precautions.

ISSUANCE OF A 0-5 R DRD IS NOT TO BE INTERPRETED AS AN AUTHORIZATION TO EXCEED STATION ADMINISTRATIVE GUIDELINES.

2.2.6 Upon leaving the TSC keep all dosimetry.

2.2.7 Ensure that the E-520/HP-270 or equivalent is on and operating prior to leaving the TSC.

2.2.8 Perform communication check of radios with the FSGL at the survey vehicle.

2.2.9 Proceed to the first survey point as directed by the FSGL.

3.0 ACTIONS - FOLLOW-UP

3.1 Field Survey Group leader shall:

3.1.1 Maintain communication with and direct the activities of the field survey squads. Ensure that the location of each squad on the Field Survey display map is updated as necessary.

3.1.2 Obtain field survey results as provided by field survey squads and record results on EP-211-5, Field Survey Group Leader Data Record.

3.1.3 Provide the field survey squads with status updates including: radiological and meteorological conditions, etc.

3.1.4 Dispatch the field survey squads to additional survey locations as necessary.

3.1.5 Field Survey Group Exposure Record, Appendix EP-211-3, shall be completed as directed by the Field Survey Group Leader.

3.1.6 If the field survey squad members and/or vehicles become contaminated inform the Personnel Safety Team Leader.

3.1.7 When advised that the EOF has taken over the Dose Assessment function, inform the field survey squads. Perform a formal turnover with the EOF Field Survey Group Leader and report to the Dose Assessment Team Leader.

3.2 Field Survey Squad Members shall:

If an onsite (out-of-plant) survey is required, take an air sample using a Lapel Air Sampler in accordance with the appropriate steps of HP-428, Operation of the Gilian Model HFS 113AUT Lapel Air Sampler, transport the air sampler assembly to the counting room on Elevation 217 of the Radwaste Enclosure to be analyzed, and proceed with the remainder of this procedure.

3.2.1 While in transit, ensure that the E-520/HP-270 or equivalent is on and switched to the lowest appropriate scale. Hold the probe outside the vehicle and have the driver proceed until the

specified survey location is reached. Continuously monitor the survey instrument while in transit.

3.2.2 When survey location is reached, pull off the road and turn on emergency flashers. Exit vehicle and determine the maximum dose rate at waist height in a 360 degree radius using the E-520/HP-270 or equivalent. Take readings with the probe shielded and unshielded. If the unshielded reading is greater than two times the shielded reading, assume that you are immersed in the plume (as opposed to seeing the effects of skyshine).

3.2.3 Record all results on EP-211-2, Field Survey Group Survey Record, and transmit information to the FSGL by radio. If the radio does not function properly, locate a telephone and report survey information. Call [redacted] (TSC) or [redacted] (EOF) and ask for the Field Survey Group Leader.

3.2.4 Take air sample at the "field" survey locations if directed by the FSGL as follows:

CAUTION
ENSURE THAT THE ON/OFF SWITCH IS OFF PRIOR TO CONNECTING THE AIR SAMPLER TO THE VEHICLE BATTERY. CONNECT RED LEAD TO THE POSITIVE BATTERY TERMINAL AND BLACK LEAD TO NEGATIVE BATTERY TERMINAL.

3.2.4.1 Connect terminals of Radeco H809C or equivalent to vehicle battery with engine running as stated above. Place air sampler on an elevated surface, not the ground.

3.2.4.2 Mark filter and silver zeolite cartridge to indicate air flow direction.

3.2.4.3 Orient the air sampler toward the plant and run air sampler for 5 minutes or as directed by FSGL. Record the indicated flow rate on EP-211-4, Field Survey Air Sample Data Record.

3.2.4.4 While air sampler is running, label one envelope and one small plastic bag with the following information: Location, Date, Flow rate, Time On, and Time Off.

AIR SAMPLER SHOULD NOT BE RUN AT GREATER THAN 2.5 cfm. ADVISE FSGL IF SUCH IS THE CASE.

3.2.5 If so directed by the FSGL take 6 inch and waist level shielded probe measurements using the E-520/HP-270. If the 6 inch reading is greater than the waist level reading, take several disc smears of representative flat environmental surfaces. Using caution to prevent the spread of contamination, place smears in labelled envelopes for counting at a later time.

3.2.6 When you have finished collecting the Air Sample, inform the FSGL that the air sample is ready to be analyzed. Disconnect air sampler, place air sampler in vehicle, and drive to a low background counting area, as directed by the FSGL. While in transit, monitor E-520/HP-270 or equivalent for radiation levels. Note minimum and maximum readings and transmit the location of these readings to the FSGL.

3.2.7 Upon arrival at the low background counting area, set up the SAM-2 or equivalent and allow to warm up and stabilize, as follows:

3.2.7.1 Connect cable from RD22 probe to "Detector" jack on the front of the SAM-2.

3.2.7.2 Connect the battery lead to the "Battery" jack on the back of the SAM-2. Plug other end of lead into the socket on the side of the battery pack.

3.2.7.3 Set the SAM-2 Controls as follows:

Stabilizer: OFF

Count Mode: TIMED

Meter Channel: 1

Window: Set as shown on
Calibration Sticker

Threshold: Set as shown
on Calibration Sticker

Multiplier: x10

Response: "Midrange" - "IN"

Count Time: 5 x 1

Channel 1: In, +

Channel 2: Off,out

H.V.: As shown on the SAM-2 Calibration
Sticker.

3.2.7.4 Switch the "Power" Switch on the back of the SAM-2 to "ON". Press the "RESET START" button on the front of the SAM-2 and allow the instrument to count for 5 minutes to warm up.

IF THE "BATT OK" LIGHT IS NOT LIT, INFORM FSGL.

3.2.8 Remove only the particulate filter from the air sampler head and perform an analysis of the particulate filter using the E140N/HP-210T with the SH4A sample holder. Record background readings and sample readings in EP-211-4, Field Survey Air Sample Data Record.

CAUTION
IF BACKGROUND RADIATION LEVELS EXCEED 300 CPM USING THE E-140N/HP-210 T, INFORM THE FSGL AND MOVE TO ANOTHER COUNTING AREA WHERE THE BACKGROUND IS LESS THAN OR EQUAL TO 300 CPM.

3.2.9 Run the air sampler for one minute with the silver zeolite cartridge in place to purge the cartridge.

3.2.10 Place the Ba-133 check source cartridge against the end of the RD22 probe and set the count time on the SAM-2 to 2x1 minutes. Press the "RESET START" button and count. Record total number of counts on Appendix EP-211-4.

3.2.11 To establish the background of the counting system, exchange a clean silver zeolite cartridge for the Ba-133 check source and press "RESET START". Record total number of counts on Appendix EP-211-4.

3.2.12 Compute the net count rate as follows:

$$\text{NET(CPM)} = \frac{\text{GROSS COUNTS-BKG COUNTS}}{2}$$

and record on Appendix EP-211-4.

3.2.13 Compare the net count rate to the allowable net count rate listed on the SAM-2 calibration label. If the measured net count rate is within the range specified, proceed to 3.2.14 and use the SAM-2 for I-131 determination. IF THE NET COUNT RATE FALLS OUTSIDE OF THE ALLOWABLE RANGE, REPEAT STEPS 3.2.10 TO 3.2.13 ONE TIME. If results are still unsatisfactory, inform the Field Survey Group Leader.

THE BA-133 SOURCE CHECK STEPS 3.2.10 to 3.2.13, MUST BE PERFORMED INITIALLY TO VERIFY SATISFACTORY OPERATION OF THE SAM-2 COUNTING SYSTEM. THIS CHECK NEED NOT BE PERFORMED PRIOR TO COUNTING SUBSEQUENT AIR SAMPLES UNLESS THERE IS REASON TO SUSPECT A PROBLEM WITH THE SAM-2 COUNTING SYSTEM. THE BACKGROUND, HOWEVER, MUST BE COUNTED PRIOR TO COUNTING EACH AIR SAMPLE.

3.2.14 Remove the silver zeolite cartridge with the field sample from the air sampler head and carefully wrap the cartridge in cellophane.

3.2.15 Place the RD22 probe next to the wrapped cartridge and press "RESET START". Record TOTAL number of counts on EP-211-4 when the count is complete.

3.2.16 Calculate I-131 concentration using the equation listed in EP-211-4, Part 2 and transmit the results to the FSGL.

3.2.17 Rebag the samples for transport back to the site for analysis.

3.2.18 Await further instructions from the Field Survey Group Leader.

3.2.19 Before returning to the site, survey self and vehicle for contamination. If contamination is found, inform the Field Survey Group Leader and take the vehicle to the designated Vehicle Decontamination Facility.

3.2.20 Bring all environmental samples to the Counting Room in the Radwaste Enclosure and turn them over to a member of the Chemistry Sampling and Analysis Group or as directed by the FSGL.

3.2.21 Place all data forms in a clean plastic bag and have a noncontaminated individual bring the bag to the Field Survey Group Leader in the TSC.

3.2.22 The Health Physics Technician shall inventory the field survey kit upon returning to the site and report results to FSGL.

4.0 APPENDICES

4.1 EP-211-1, Emergency Exposure Guidelines

4.2 EP-211-2, Field Survey Group Survey Record

4.3 EP-211-3, Field Survey Group Exposure Record

4.4 EP-211-4, Field Survey Air Sample Data Record

4.5 EP-211-5, Field Survey Group Leader Data Record

4.6 EP-211-6, Field Survey Checklist

5.0 SUPPORTING INFORMATION

5.1 PURPOSE

The purpose of this procedure is to provide instructions and guidelines for the actions of the Field Survey Group.

5.2 Criteria for Use

5.2.1 An actual or potential release of radioactive material beyond the site boundary in excess of technical specifications.

5.2.2 The Field Survey Group shall be activated at the Alert level or as determined by the Dose Assessment Team Leader.

5.2.3 The group members exposure shall be limited to the guidelines in EP-211-1, Emergency Exposure Guidelines.

5.3 Special Equipment

5.3.1 Radio with 2 Battery Packs

5.3.2 Field survey kits

5.3.3 Vehicle

5.3.4 Emergency Dosimetry (0-1500 mR and 0-5 R DRD's)

5.4 References

5.4.1 HP-128, Operation of the Gilian Model HFS 113AUT Lapel Air Sampler

APPENDIX EP-211-1
EMERGENCY EXPOSURE GUIDELINES

Function	Projected Whole Body Dose	Thyroid Dose	Authorized By
1. Life Saving and Reduction of Injury	75 rem*	375 rem	Emergency** Director
2. Operation of Equipment to Mitigate an Emergency	25 rem*	125 rem	Emergency** Director
3. Protection of Health and Safety of the Public	5 rem	25 rem	Emergency** Director
4. Other Emergency Activities	10 CFR 20 limits	10 CFR 20 limits	Emergency Director
5. Re-entry/Recovery Activities	Station Administrative Guidelines	Station Administrative Guidelines	N/A

* Reference: EPA-520/1-75-001 Table 2.1
** Such exposure shall be on a voluntary basis

APPENDIX EP-211-2

FIELD SURVEY GROUP SURVEY RECORD

(Page 1 of 2)

Field Survey Team _____

Team Members: _____ Date: ___/___/___

_____

_____

INSTRUMENT INVENTORY

Instrument Type	Serial Number	Calibration ok	Batt ok	Response ok
RO-2A				
E-520				
E-140N HP210T				
Radeco H-890C				
3AM II				
Lapel Air Sampler				

APPENDIX EP-211-2

FIELD SURVEY GROUP SURVEY RECORD

(Page 2 of 2)

E-520/HP-270

Survey Location	Date/ Time of Survey	Time in Area	Shielded 6"/waist MR/HR	Unshielded waist MR/HR	MPC Fraction Gross B	uCi/cc I 131	Smear Results dpm/100cm2	Whole Body Exposures
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								

APPENDIX EP-211-3
FIELD SURVEY GROUP EXPOSURE RECORD

Field Survey Team _____ Date: ____/____/____
Time: _____

	Name	Dose Rec'd. (mR)	Time Spent In Area (Hrs.)	MPC-hours**
(A)	HP TECH			
(B)	DRIVER			
(C)	OTHER			

**MPC-hrs(I 131)=(Detected conc. uCi/cc I 131)(Time in Area)(1.11P8 MPC/uCi/cc)

**NOTES:

1. MPC-HOURS ARE CALCULATED USING I-131 AS THE LIMITING ISOTOPE

2. MPC-HOURS ARE ADMINISTRATIVELY CONTROLLED AT 20 MPC-HRS/WK;
   xposures >20 mpc-hrs/wk to 40 mpc-hrs/wk can be authorized by the Personnel Safety Team Leader

	(A)	(B)	(C)			(A)	(B)	(C)	
Previous Daily Exposures	___	___	___	(mR)	W/B	___	___	___	MPC-hrs.
Exposure from this entry +	___	___	___	(mR)	W/B	___	___	___	MPC-hrs.
Exposure Totals	___	___	___	(mR)	W/B	___	___	___	MPC-hrs.
Remaining Balance	___	___	___	(mR)	W/B	___	___	___	MPC-hrs.

3. INDIVIDUALS SUSPECTED OF EXCEEDING 10 MPC-HRS/WK ARE REQUIRED TO HAVE A WHOLE BODY COUNT

4. DOSIMETRY RECORDS ARE REQUIRED FOR EXPOSURES > 2 MPC HRS/DAY, >10 MPC HOURS/WK.

COPIES TO: - FIELD SURVEY TEAM LEADER; - DOSE ASSESSMENT TEAM LEADER

APPENDIX EP-211-4
FIELD SURVEY AIR SAMPLE DATA RECORD

Date: ___/___/___ Time: _____

Survey Team "_____" Location _____
Sector _____

PART 1

1. Air Sample "Time On" _____
2. Air Sample "Time Off" _____
3. Air Sample Run Time _____ minutes
4. Air Sample Flow Rate _____ cfm
5. E-140N/HP-210T Background _____ cpm
6. Particulate Filter Gross Count Rate _____ cpm
7. Particulate Filter Net Count Rate _____ cpm(net)
8. AgX Cartridge Gross Count Rate _____ cpm
9. AgX Cartridge Net Count Rate _____ cpm(net)
*10. SAM-2 Ba-133 Check source _____ Counts/2 min.
11. SAM-2 Background (clean cartridge) _____ Counts/2 min.
*12. Ba-133 Net Counts _____ Counts/2 min.
13. SAM-2 I-131 field sample _____ Counts/2 min.

*Perform initially to verify operation of SAM-2-See NOTE, sec. 3.2.13

PART 2

Determination of I-131 Concentration

1. Air Sample Volume:
   Run Time (#3) X Flow Rate (#4) = _____cubic feet (ft3)

2.

(#13)(#11)

$$\left[\frac{\text{Counts - Bkg}}{\text{2 Minutes}}\right]\left[\frac{1}{\text{Eff}}\right]\left[\frac{1}{\text{Volume}}\right]\left[\frac{1}{0.95}\right] \times 1.59N11 = \text{uCi/cc}$$

$$\left[\frac{\quad}{\text{2 Min}}\right]\left[\frac{1}{\quad}\right]\left[\frac{1}{\quad}\right]\left[\frac{1}{0.95}\right] \times 1.59N11 = \_\_\_\_\_ \text{ uCi/cc}$$

PART 3

Determination of MPC Fraction (If directed by FSGL)

$$\text{E-140N} - \frac{\text{(Net CPM)}}{\text{(Volume) (18.7)}} = \_\_\_\_\_ \text{ \% MPC}$$

APPENDIX EP-211-5
FIELD SURVEY GROUP LEADER RECORD

Date: ___/___/___ Time: _____ EST

Survey Team "_____" Location _____

Sector _____

	6"	Waist High	
Area Dose Rate ( )			mR/Hr (shielded) E-520/HP-270
( )			mR/Hr (unshielded) E-520/HP-270

Direct Frisk of Air Sample Filters

AgX _____ net cpm

Particulate Filter _____ net cpm

Air Sample Data (Part) _____ MPC Fraction (unidentified)

(I - 131) _____ uCi/cc

Copies to: Field Survey Team Leader - Status Board Keeper - Dose Assessment Team Leader

APPENDIX EP-211-6
FIELD SURVEY CHECKLIST

1. BEFORE LEAVING SITE

A) All Equipment accounted for and operable

B) Have been briefed on situation, etc.

C) Have Emergency Dosimetry and they are zeroed

D) Communication check performed

E) E520/HP270 is ON

2. AT THE SURVEY LOCATION AND WHILE IN TRANSIT

A) Looked for and reported location where increasing radiation levels occurred while still in transit to specified survey location

B) Performed air sample using lapel air sampler, if necessary

C) Performed survey using E-520/HP-270 to look for maximum dose rate at waist level in 360 deg. radius

D) Survey with E-520/HP-270 with probe shielded and unshielded

E) Have notified FSGL of arrival and dose rate encountered

F) If advised to take air sample:

1) Particulate filter and silver zeolite cartridge marked to indicate direction of air flow

2) Air Sampler head loaded with filter located outside of cartridge

3) Air Sampler head oriented toward the plant and running

4) Flow Rate observed and recorded

G) If directed by FSGL, 6 inch gamma readings taken with E-520/HP-270

H) If 6" readings higher than waist level readings, smears taken

I) Notified FSGL that Air Sample has been pulled and advised to move to low background counting area to analyze sample

J) E520/HP270 is ON during transit - looking for and reporting locations of maximum and minimum dose rates

3) AT LOW BACKGROUND COUNTING AREA

A) SAM 2 set up and counting for 5 minutes to warm up

*B) 2 minute count of Ba-133 check source (for initial analysis only)

C) Remove and count particulate filter with E-140N/HP-210T

D) Purge Silver zeolite cartridge for 1 minute

E) 2 minute count of Clean Silver Zeolite cartridge

F) 2 minute count of Sample Silver Zeolite cartridge

G) I-131 Concentration calculated

H) All results recorded and relayed to FSGL

I) Advised to move to new location

J) If advised to return, monitor self and vehicle and relay findings to FSGL

K) All samples turned over to Chemistry Sampling & Analysis Group at Personnel Decon Facility in Radwaste Enclosure

L) All forms turned over to FSGL for subsequent dispostion

*Perform initially to verify satisfactory operation of SAM-2 counting system only

2-25-85

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-291 STAFFING AUGMENTATION

1.0 PARTICIPANTS

1.1 Shift Clerk or other assigned person shall perform the following procedure.

2.0 ACTIONS - IMMEDIATE

2.1 Shift Clerk or other assigned person shall:

2.1.1 Ask the Emergency Director if the TSC and EOF or the TSC only is to be activated so that this information can be given to the Dose Assessment Team Leader and Communicators and what groups are to be activated for transmission to Team Leaders.

Event Classification _____

Facilities to be activated

TSC _____

TSC & EOF _____

Groups to be activated

Personnel Sa[illegible] _____

Plant Survey _____

1st Aid/Search and Rescue _____

Vehicle [illegible] _____

Dosimetry, Bioassay & Respiratory Protection _____

Dose Assessment Team _____

Dose Assessment group _____

Field Survey _____

Security _____

Access Control _____

Personnel Accountability _____

Fire and Damage _____

Fire Fighting _____

Damage Repair _____

Chemistry Sampling and Analysis _____

2.1.2 Contact in sequence the personnel listed in Section 2.2.

2.1.3 Inform each person contacted of the event classification, that they are to respond to their assigned location and what groups under them are to be activated. If the person is unable to respond, go to the next person on the list.

2.1.4 Attempt to contact personnel who have pagers, by that method if they are known to be "on the page", or the phone is busy or there is no answer.

2.1.5 Inform Emergency Director of results including discrepancies.

2.2 Personnel to be contacted are:

2.2.1 SHIFT I&C TECHNICIAN

Communicator shall request that the ISC be activated. (Shift I&C Technician ext. [redacted])

I&C Technician _____ Time _____ By _____

_____ _____ _____

2.2.2 EMERGENCY DIRECTOR

The Station Superintendent or Assistant Station Superintendent is contacted by communicator and is one contact. Do not re-contact if he has been successfully reached.

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Station Supt. G. M. Leitch			
Asst. Station Supt. J. F. Franz			

2.2.3 OPERATIONS ENGINEER

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Operations Eng. J. Doering			
J. Armstrong			

2.2.4 PERSONNEL SAFETY TEAM LEADER (ONE)

Communicator shall request that the Team Leader call in Group Leaders of groups to be activated and that the Group Leaders call in their groups.

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Senior Health Physicist R. W. Dubiel			
Applied HP R. Titolo			

2.2.5 DOSE ASSESSMENT TEAM LEADER (ONE)

Communicator shall request the Team Leader to call in team and the Field Survey Group Leader, and to report to the TSC or EOF as determined by Step 2.1.

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Technical Support Health Physicist G. Murphy	[redacted]		
Physicist Rad. Prot. D. Rombold			

2.2.6 SHIFT MAINTENANCE SUB-FOREMAN

Extension [redacted] page. Communicator shall request the Maintenance Sub-foreman to call three maintenance mechanics, preferably, one electrician and two machinists or fitters.

Sub-foreman	Time	By

2.2.7 TECHNICAL SUPPORT PERSONNEL (ONE)

Communicator shall request call in of Technical Support Group Members.

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Performance Engineer L. A. Hopkins V. Cwietniewicz	[redacted]		
I&C Engineer G. R. Rainey			
Reactor Engineer K. W. Hunt			

2.2.8 COMMUNICATORS (ONE per facility)

Communicator shall request call in of members for the TSC or EOF as determined by Step 9.1.1.1.

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Technical Support Center (TSC) Communicator D. Feaster			
Alternate E. Boscola			
EOF Communicator K. Cenci			
Alternate W. Lewis			

2.2.9 CHEMISTRY SAMPLING and ANALYSIS TEAM LEADER (ONE)

Communicator shall request call in of Chemistry Sampling and Analysis Team Members by Group Leader.

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Sr. Chemist J. S. Wiley			
Supv.-Chemist J. Sabados			

2.2.10 FIRE AND DAMAGE TEAM LEADER (ONE)

Communicator shall request the Team Leader to call the appropriate Group Leaders and have Group Leader call in Group Members.

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Engineer Maintenance J. B. Cotton C. Wyler or R. Braun			

2.2.11 SECURITY TEAM LEADER (ONE)

Communicator shall request the Team Leader to call appropriate Group Leaders and have Group Leaders call in personnel.

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Security Administrative Assistant P. Supplee Site Captain (Protected Area) M. Berner Access Lt. Richard Parker			

3.0 ACTIONS-FOLLOW-UP

3.1 None Required.

4.0 APPENDICES

None.

5.0 SUPPORTING INFORMATION

5.1 Purpose

The purpose of this procedure is to provide guidelines and information necessary to perform staff augmentation.

5.2 Criteria for Use

This procedure shall be implemented at an Alert, a Site Emergency or a General Emergency or at the discretion of the Emergency Director.

5.3 Special Equipment

None.

5.4 References

None.

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

2-23-85

EP-312 RADIOACTIVE LIQUID RELEASE

1.0 PARTICIPANTS

1.1 Emergency Director shall have the necessary actions performed to terminate the liquid release and evaluate the consequences of the release.

1.2 Site Emergency Coordinator, if activated, or Emergency Director shall direct the follow-up actions of notification of downstream water users and river sampling, if required.

2.0 ACTIONS-IMMEDIATE

2.1 Emergency Director shall:

2.1.1 Direct the immediate steps necessary to terminate the discharge to the river.

2.1.2 Direct the Chemistry Sampling and Analysis Team Leader to initiate sampling of the blowdown line in accordance with EP-236, Obtaining Blowdown Line Water Samples Following Radioactive Liquid Release Under Accident Conditions.

2.1.3 Direct the Dose Assessment Team Leader to estimate dose projections from the release for drinking water and fish in accordance with EP-318, Liquid Release Dose Calculation Method for Drinking Water and EP-319, Fish Ingestion Pathway Dose Calculation, respectively.

2.2 Site Emergency Coordinator, if activated, or Emergency Director shall:

2.2.1 Based on results of estimated dose projections for downstream water users and fish ingestion, direct his communicator to notify the Department of Environmental Resources.

A. [redacted]

B. [redacted]

C. [redacted] (Regional Office)

2.2.2 If requested by the Department of Environmental Resources, direct his communicator to notify the downstream domestic water users in EP-287, Nearby Public and Industrial Users of Downstream Waters.

2.2.3 If necessary, direct the HP&C Coordinator to activate and request the Environmental Sampling Coordinator to assign personnel to sample the river water near the intake for the following water companies sampled at the appropriate time based on the Estimated Transit Time for that location.

The Estimated Transit Time is the time required for the material released to reach the location of interest.

Location		Estimated Transit Time (hrs)
A.	Citizens Utilities Home Water Company-Royersford	1.5
B.	Phoenixville Water	10
C.	Philadelphia Suburban Water	16
D.	Norristown Water	27
E.	Philadelphia Belmont Water	50

2.2.4 Direct the Chemistry Sampling and Analysis Team Leader and/or Environmental Sampling Coordinator to transmit the sampling results back them.

3.0 ACTIONS-FOLLOW-UP

None

4.0 APPENDICES

None

5.0 SUPPORTING INFORMATION

5.1 Purpose

The purpose of this procedure is to provide guidelines for the actions to be taken when an uncontrolled liquid release of radioactive material occurs.

5.2 Criteria for Use

5.2.1 A liquid effluent release in excess of Technical Specification 3.11.1.1 or 3.11.1.2 has occurred.

5.3 Special Equipment

None

5.4 References

5.4.1 Limerick Generating Station Emergency Plan

5.4.2 EP-236 Obtaining Blowdown Line Water Samples Following Radioactive Liquid Release After Accident Conditions

5.4.3 EP-318 Liquid Release Dose Calculation Method For Drinking Water

5.4.4 EP-319 Fish Ingestion Pathway Dose Calculation

5.4.5 EP-287 Nearby Public And Industrial Users Of Downstream Waters

5.4.6 EROL Appendix 5.2A Radiological Dose Model-Liquid Effluents

5.4.7 10CFR Part 20 Appendix B

5.4.8 LGS Technical Specifications

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

April 1, 1985

50-352/353 Limerick

MEMORANDUM FOR: Chief, Document Management Branch, TIDC

FROM: Director, Division of Rules and Records, ADM

SUBJECT: REVIEW OF UTILITY EMERGENCY PLAN DOCUMENTATION

The Division of Rules and Records has reviewed the attached document and has determined that it may now be made publicly available.

J. M. Felton, Director
Division of Rules and Records
Office of Administration

Attachment: As stated

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SUBJECT: Forwards Central Files version of Rev 7 to Procedure EP-102, "Unusual Event Response," Rev 1 to EP-211, "Field Survey Group," Rev 5 to EP-291, "Staffing Augmentation" & Rev 3 to EP-312, "Radioactive Liquid Waste." Withheld.

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