3843067870

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-101	2	Classification of Emergencies	09/27/84	
EP-102	4	Unusual Event Response	07/20/84	
EP-103	4	Alert Response	07/20/84	
EP-104	4	Site Emergency Response	07/20/84	
EP-105	4	General Emergency Response	07/20/84	
EP-106	1	Written Summary Notification	06/08/84	
EP-110	2	Personnel Assembly and Accountability	06/08/84	
EP-120	1	Site Emergency Coordinator	06/08/84	
EP-201	1	Technical Support Center (TSC) Activation	06/08/84	
EP-202	2	Operations Support Center (OSC) Activation	09/25/84	
EP-203	2	Emergency Operations Facility (EOF) Activation	09/27/84	
EP-208	2	Security Team Activation	06/08/84	
EP-210	1	Dose Assessment Team	06/08/84	
EP-220		CANCELLED		
EP-221	1	Personnel Dosimetry, Bioassay, and Respiratory Protection Group	06/08/84	
EP-222	2	Field Survey Group	07/17/84	
EP-230	3	Chemistry Sampling and Analysis Team Activation	07/20/84	
EP-231	4	Operation of Post-Accident Sampling Systems (PASS)	08/07/84	
EP-232		CANCELLED		
EP-233	3	Retrieving and Changing Sample Filters and Cartridges from the Containment Leak Detector During Emergencies	07/20/84	

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-234	3	Obtaining Containment Gas Samples from the Containment Leak Detector During Emergencies	07/20/84	
EP-235	3	Obtaining Reactor Water Samples from Sample Sinks Following Accident Conditions	07/20/84	
EP-236	3	Obtaining Cooling Tower Blowdown Line Water Samples Following Radioactive Liquid Release after Accident Conditions	08/07/84	
EP-237	3	Obtaining the Iodine/ Particulate and/or Gas Samples from the North Vent Wide Range Gas Monitor (WRGM)	07/20/84	
EP-238	3	Obtaining Liquid Radwaste Samples from Radwaste Sample Sink Following Accident Conditions	07/20/84	
EP-240	2	Obtaining Off-Gas Samples from the Air Ejector/Holdup Pipe Discharge Sample Station	06/08/84	
EP-241	4	Sample Preparation and Handling of Highly Radioactive Liquid Samples	10/04/84	
EP-242	3	Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges	07/20/84	
EP-243	4	Sample Preparation and Handling of Highly Radioactive Gas Samples	08/06/84	
EP-244	0	Offsite Analysis of High Activity Samples	06/08/84	
EP-250	1	Personnel Safety Team Activation	06/08/84	
EP-251	1	Plant Survey Group	06/08/84	

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-252	2	Search and Rescue/First Aid	07/20/84	
EP-254	1	Vehicle and Evacuee Control Group	06/08/84	
EP-255	1	Vehicle Decontamination	06/08/84	
EP-260	1	Fire and Damage Team Activation	06/08/84	
EP-261	1	Damage Repair Group	06/08/84	
EP-272	1	Philadelphia Electric Company Officials	06/08/84	
EP-273	2	Limerick Station Supervision Call List	10/04/84	
EP-275		CANCELLED		
EP-276	1	Fire and Damage Team Phone List	06/08/84	
EP-277	1	Personnel Safety Team Phone List	06/08/84	
EP-278	0	Security Team Phone List	12/27/83	
EP-279	1	Emergency Operations Facility (EOF) Group Phone List	06/08/84	
EP-280	2	Technical Support Center Phone List	09/27/84	
EP-282	1	Government and Emergency Management Agencies	06/08/84	
EP-284	2	Company Consultants and Contractors Phone List	09/27/84	
EP-287	1	Nearby Public and Industrial Users of Downstream Water	06/08/84	
EP-291	2	Staffing Augmentation	09/27/84	
EP-292	3	Chemistry Sampling and Analysis Team Phone List	09/27/84	
EP-294	1	Dose Assessment Team Phone List	06/08/84	
EP-301	0	Operating the Evacuation Alarm and River Warning System	11/11/83	

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-303	2	Local Evacuation	04/02/84	
EP-304	2	Partial Plant Evacuation	07/09/84	
EP-305	2	Site Evacuation	09/25/84	
EP-306	0	Evacuation of the Information Center	12/27/83	
EP-307	1	Reception and Orientation of Support Personnel	06/08/84	
EP-312	0	Radioactive Liquid Release	11/30/83	
EP-313	1	Distribution of Thyroid Blocking Tablets	06/08/84	
EP-315	0	Calculation of Offsite Doses During a Radiological Emergency Using RMMS in the Manual Mode	07/17/84	
EP-316	1	Cumulative Population and Near Real-Time Emergency Dose Calculations for Airborne Releases Manual Method	07/24/84	
EP-317	0	Determination of Protective Action Recommendations	12/27/83	
EP-318	0	Liquid Release Dose Calculations Method for Drinking Water	11/30/83	
EP-319	0	Fish Ingestion Pathway Dose Calculation	11/30/83	
EP-325	0	Use of Containment Radiation Monitors to Estimate Release Source Term	12/29/83	
EP-330	2	Emergency Response Facility Habitability	07/20/84	
EP-401	1	Entry for Emergency Repair and Operations	06/08/84	
EP-410	1	Recovery Phase Implementation	06/08/84	
EP-500	1	Review and Revision of Emergency Plan	06/08/84	

10/14/84

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-241 SAMPLE PREPARATION AND HANDLING OF HIGHLY RADIOACTIVE LIQUID SAMPLES.

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for sample preparation and handling of highly radioactive liquid samples following accident conditions.

2.0 RESPONSIBILITIES

2.1 The Chemistry Sampling and Analysis Group Leader is responsible for:

a. Determining the processing procedure.

b. Determining the method and location of sample storage and/or disposal as required.

c. Having group member(s) exposure monitored in conjunction with Health Physics guidance to ensure that the Administrative Exposure Guidelines are not exceeded.

d. Directing group member(s) and the assigned Health Physics technician to perform the necessary steps of this procedure and to report back the results of the sample analysis as soon as they become available.

2.2 The Health Physics technician is responsible for:

a. Providing constant coverage for the necessary steps of this procedure.

b. Monitoring the extremity dose to the hands during sample handling.

c. Monitoring laboratory habitability.

d. Conducting a pre-job briefing concerning :

1. RWP requirements.

2. Radiological concerns and precautions (ALARA).

3. The use of staytimes to ensure that exposures do not exceed limits.

2.3 The Chemistry Sampling and Analysis Group members are responsible for:

a. Preparing the hot lab post accident sample preparation station to accept the sample.

b. Performing sample dilution and analysis requirements as specified by the Chemistry Sampling and Analysis Group Leader.

c. Following RWP and Health Physics requirements as specified by the Health Physics technician.

3.0 APPENDICES

3.1 EP-241-1 Data Sheet

4.0 PREREQUISITES

4.1 Ventilation in the sample preparation hood is operating.

5.0 SPECIAL EQUIPMENT

5.1 Liquid sample vials with septum.

5.2 Appropriate liquid microsyringes.

5.3 Rubber gloves

5.4 Plastic sample bags.

5.5 Sample handling tongs.

5.6 0.01N nitric acid solution(500 ml).

5.7 Eye protection

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure shall be implemented when preparing or handling highly radioactive liquid samples during an emergency situation.

8.0 PRECAUTIONS

8.1 In all steps of this procedure, keep exposures ALARA.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 Determination of processing procedure.

9.1.1.1 The Chemistry Sampling and Analysis Group Leader shall obtain the appropriate EP-Sample Data Sheet and select one of the following processing procedures based on the radiation levels of the sample.

a. Send the sample off-site for analysis per EP-244 Offsite Analysis of High Activity Samples.

b. Place the sample in temporary storage for future analysis.

c. Analyze the sample on-site.

COMPLETE SECTION I OF APPENDIX EP-241-1

9.1.1.2 The Chemistry Sampling and Analysis Group Leader shall determine the following sample parameters based on sample dose rates and analysis requirements.

a. Analysis to be performed.

b. Order of analysis

c. Number and magnitude of dilutions

d. Analysis sample volume desired

PH DETERMINATION CANNOT BE PERFORMED ON DILUTED SAMPLES.

COMPLETE SECTION II OF APPENDIX EP-241-1.

9.1.2 Pre-Job Briefing

9.1.2.1 The Chemistry Sampling and Analysis Group Leader, Health Physics Technician and the Chemistry Sampling and Analysis Group Members shall assemble and review this procedure.

9.1.2.2 The Chemistry Sampling and Analysis Group Leader shall direct group members to perform the necessary steps of this procedure.

SECTION 9.1.3 AND 9.1.4 SHOULD BE PERFORMED AS EARLY AS POSSIBLE. THE SAMPLE MAY NOT BE PLACED IN THE SAMPLE PREPARATION STATION UNTIL THESE SECTIONS HAVE BEEN COMPLETED.

9.1.2.3 The Health Physics Technician shall brief group members on:

a. RWP requirements

b. Radiological concerns and precautions(ALARA)

c. Staytimes and exposure limits

9.1.3 Preparation of sample preparation station for liquid samples

9.1.3.1 The Chemistry Sampling and Analysis Group Member(s) shall prepare the dilution vials (with appropriate labels) per appendix EP-241-1 and place the vials in the appropriate dilution vial positions in the sample preparation station. Place lead caps over the vials (liquid position).

THE LEAD CAPS MAY BE POSITIONED FOR GAS OR LIQUID SAMPLES. FOR THE PURPOSE OF THIS PROCEDURE THEY SHALL BE IN THE LIQUID POSITION

9.1.3.2 The Chemistry Sampling and Analysis Group Member(s) shall ensure that the necessary liquid micro syringes (with needles), sample handling tongs and sample analysis containers are in place and available to fulfill dilution and analysis requirements per appendix EP-241-1.

9.1.3.3 The Chemistry Sampling and Analysis Group Member(s) shall ensure that at least one pair of plastic gloves and two plastic sample bags are available for each gamma analysis to be performed.

9.1.4 Preparation of analysis instrumentation.

9.1.4.1 The Chemistry Sampling and Analysis Group Member(s) shall insure that the appropriate analysis procedures specified in appendix EP-241-1 are available and have been performed to the point that each analysis instrument is ready to accept the sample for analysis.

THE FOLLOWING STEPS ARE TO BE PERFORMED BY THE CHEMISTRY SAMPLING AND ANALYSIS GROUP MEMBER(S) (UNLESS OTHERWISE SPECIFIED) AND REQUIRE CONSTANT HEALTH PHYSICS MONITORING.

LEAD BRICKS IN THE SAMPLE PREPARATION STATION HAVE BEEN MODIFIED TO ACCEPT THE SAMPLE. THE LEAD BRICK LABLED "SAMPLE VIAL A" HAS BEEN MODIFIED TO ACCEPT A GAS OR LIQUID SAMPLE FROM THE PASS. THE LEAD BRICK LABELED "SAMPLE VIAL B" HAS BEEN MODIFIED TO ACCEPT A LIQUID SAMPLE FROM THE REACTOR COOLANT SAMPLE STATION.

9.1.5 Transport of sample from transport cask to sample preparation station.

9.1.5.1 Remove the lead cap from the lead brick to accept the sample.

9.1.5.2 Position the sample transport cask as close to the Sample Preparation Station as possible.

9.1.5.3 As quickly and carefully as is possible,remove the sample from the transport cask and place it in the lead brick.

9.1.5.4 Quickly place the lead cap over the sample in the "liquid" position.

9.1.5.5 Retreat from the Sample Preparation Station and allow the Health Physics Technician to take dose rate readings.

THE HEALTH PHYSICS TECHNICIAN SHALL INFORM THE CHEMISTRY SAMPLING AND ANALYSIS GROUP MEMBER OF THE SAMPLE PREPARATION STATION DOSE RATES AND STAY TIME.

9.1.6 Sample Dilution (if dilutions are not to be performed, proceed to step 9.1.7).

DILUTIONS TO BE MADE ARE DESCRIBED IN APPENDIX EP-241-1. ALL ACCESSORIES USED IN THE DILUTION PROCESS SHALL BE MAINTAINED BEHIND THE LEAD SHIELD WALL ONCE THEY HAVE BEEN CONTAMINATED.

9.1.6.1 Insert the syringe thru the sample access hole in the lead cap then thru the sample vial septum and into the sample to be diluted. Withdraw the predetermined (appendix EP-241-1) aliquot from the sample vial.

9.1.6.2 Withdraw the syringe from the sample and insert it in the predescribed method into the next sequential dilution vial to accept the sample (Dilution Vial #1, #2 etc.). Inject the aliquot into the dilution vial.

9.1.6.3 Withdraw the syringe from the sample. Separate the needle and the syringe and discard them in the shielded waste container.

9.1.6.4 Remove the lead cap over the diluted sample. Grasp the sample vial securely with the sample handling tongs and raise the vial out of the lead brick (but not above the lead shield wall).

9.1.6.5 Using the tongs, swirl the sample vial enough to ensure adequate mixing, replace the vial. Replace the lead cap (liquid position).

9.1.6.6 If further dilutions are necessary (per appendix EP-241-1) repeat steps 9.1.6.1 thru 9.1.6.5, always beginning with the last dilution vial to accept a sample aliquot.

9.1.6.7 When desired dilution is reached, the Health Physics Technician shall determine the dose rate of the diluted sample.

9.1.6.8 If the diluted sample dose rate is unacceptable, repeat steps 9.1.6.1 thru 9.1.6.5 until dose rate is acceptable. Indicate additional dilutions on appendix EP-241-1.

9.1.7 Sample Cup Preparation

9.1.7.1 For each analysis to be performed (appendix EP-241-1) use the syringe transfer method (step 9.1.6.1) to sequentially obtain the volume of sample required (Appendix EP-241-1) from the appropriate diluted/undiluted sample source (appendix EP-241-1).

9.1.7.2 Inject the appropriate sample aliquot into its analysis cup.

DUE TO THE AMOUNT OF SAMPLE BEING REMOVED FROM THE BOTTLE IT MAY BE NECESSARY TO VENT THE BOTTLE BY PLACING A NEEDLE THRU THE SEPTUM.

DUE TO THE SMALL VOLUME OF SAMPLE USED TO PERFORM PH AND THE EFFECTS CO2 ABSORBTION WILL HAVE ON THE ANALYSIS, THE PH SHOULD BE DETERMINED IMMEDIATELY AFTER THE SAMPLE IS PLACED IN ITS SAMPLE CUP.

9.2 FOLLOW-UP

9.2.1 Perform the predetermined analysis (Appendix EP-241-1) in the predetermined sequence (Appendix EP-241-1).

9.2.2 Disposal of samples and contaminated materials

THE STORAGE AND/OR DISPOSAL OF THE UNUSED PORTION OF THE ORIGINAL SAMPLE WILL BE AT THE DISCRETION OF THE CHEMISTRY SAMPLING AND ANALYSIS GROUPS LEADER AND THE HEALTH PHYSICS TECHNICIAN.

9.2.2.1 The remaining samples and contaminated sample cups shall be disposed of in the shielded waste container. The sample handling tongs shall be used in the transfers. The samples and sample cups should be kept behind the lead shield wall as much as is possible.

9.2.2.2 Transfer and disposal of the shielded waste container will be at the discretion of the Health Physics Technician and the Chemistry Sampling and Analysis Group Leader.

10.0 REFERENCES

10.1	CH-901	Determination of Ions by Ion Chromatograph during Post Accident Conditions.
10.2	CH-903	Determination of PH in Low Volume Water Samples during Post Accident Conditions.
10.3	Ch-904	Determination of Metals by DCP during Post Accident Conditions.
10.4	CH-905	Determination of Gamma Isotopic activity during Post Accident Conditions.
10.5	Ch-906	Determination of chloride by Specific ton during Post Accident Conditions.
10.6	CH-907	Determination of Boron at ppm levels during Post Accident Conditions.
10.7	EP-230	Chemistry Sampling and Analysis Team Activation
10.8	LGS FSAR 11.5.5, Post-Accident Sampling System	

Appendix EP-241-1
Data Sheet

I.

Sample Source	_____	Processing Procedure:	(X)
Grab Sample Point	_____	A. Sent Offsite for Analysis(1)	( )
Initial Sample Volume	_____	B. Placed in Temporary Storage (1),(2)	( )
Initial Contact Dose Rate	_____	C. Analyzed on Site	( )
Sample Date/Time	____/____		

II.

Order of Analysis	Analysis	Procedure Number	(3) Magnitude of Dilutions	Number of Dilutions	(4) Total Dilution Factor	(5) Analysis Sample Volume	Acceptable Analysis Dose Rate
1							
2							
3							
4							
5							
6							

(1) If this method is used sign and date this data sheet and terminate this procedure.
(2) The Chemistry Sampling and Analysis Group Leader shall determine place of storage.
(3) Magnitude of Dilutions
10:1 = 1 ml sample: 9 ml of 0.01N Nitric Acid
100.1 = 1 ml sample: 9.9 ml of 0.01 Nitric Acid
1000.1 = 0.01 ml sample: 9.99 ml of 0.01 N Nitric Acid

(4) If original sample is a small volume diluted sample, this dilution factor must be considered

(5) Analysis Sample Volume
pH 0.5ml Cl (IC) 4 ml
B (DCP) 4 ml (SIE) 1 ml

Due to the complexity of the dilution and analysis process, it is recommended that the same magnitude of dilution be used for all of the analysis.

MDL's for: Boron DCP 10ppb Titr. 1 ppm
Chloride IC 1 ppb SIE 1 ppm

Reactor Coolant Regions of Interest Activity
Activity - 10 uCi/cc to 10 Ci/cc
Borod - 50 ppm to 1100 ppm
Chloride - greater than 10 ppm

Chemistry Group Leader _____ ____/____
Chemistry Group Member _____ ____/____

10/4/84

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-273 LIMERICK STATION SUPERVISION CALL LIST

1.0 PURPOSE

The purpose of this procedure is to provide information for contacting Station Supervision.

2.0 RESPONSIBILITIES

2.1 The communicator shall contact Station Supervision.

3.0 APPENDICES

None

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure can be used when it is necessary to contact members of Station Supervision.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The communicator shall contact people from the following list as required:

		Home	Work
9.1.1.1	STATION SUPERINTENDENT:		
	G. M. Leitch		
9.1.1.2	ASSISTANT STATION SUPERINTENDENT!:		
	J. F. Franz		
9.1.1.3	STARTUP DIRECTOR:		
	J. W. Spencer (until Startup)		
9.1.1.4	TECHNICAL ENGINEER:		
	P. J. Duca		
9.1.1.5	ENGINEER - MAINTENANCE:		
	J. B. Cotton		
9.1.1.6	ENGINEER - OPERATIONS:		
	J. Doering		
9.1.1.7	SENIOR HEALTH PHYSICIST:		
	R. W. Dubiel		
9.1.1.8	SENIOR CHEMIST:		
	J. S. Wi[illegible]		
9.1.1.9	ADMINISTRATIVE ENGINEER:		
	J. A. Ba[illegible]		

		Home	Work
9.1.1.10	PERFORMANCE ENGINEER:		
	L. A. Hopkins		
	V. J. Cwietniewicz		
9.1.1.11	SECURITY ADMINISTRATIVE ASSISTANT:		
	P. Supplee		
9.1.1.12	INSTRUMENTATION & CONTROL ENGINEER:		
	G. R. Rainey		
9.1.1.13	REACTOR ENGINEER:		
	K. W. Hunt		
9.1.1.14	APPLIED HEALTH PHYSICIST:		
	R. J. Titolo		
9.1.1.15	HEALTH PHYSICIST - TECHNICAL SUPPORT:		
	G. W. Murphy		
9.1.1.16	ASSISTANT ENGINEER - MAINTENANCE:		
	G. Paptzun		
9.1.1.17	SUPV - CHEMIST:		
	J. Sabados		
9.1.2	SHIFT SUPERINTENDENT:		
9.1.2.1	C. Gillespie		
9.1.2.2	R. Hampton		
		or	
9.1.2.3	J. Monaghan		
9.1.2.4	W. Trus[illegible]		
9.1.2.5	W. Barnshaw		
9.1.2.6	E. Cosgrove		

PROP[illegible]

		Home	Work
9.1.3	SHIFT SUPERVISORS:		
9.1.3.1	G. Paton	[redacted]	
9.1.3.2	R. Delaney		
9.1.3.3	W. Russell		
9.1.3.4	R. Kennedy		
9.1.3.5	W. Stanley		
9.1.3.6	M. Cory		

10.0 REFERENCES

None

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

November 1, 1984

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