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EMERGENCY PLAN PROCEDURE INDEX

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EP-102	3	Unusual Event Response	06/08/84	
EP-103	3	Alert Response	06/08/84	
EP-104	3	Site Emergency Response	06/08/84	
EP-105	2	General Emergency Response	04/02/84	
EP-106	1	Written Summary Notification	06/08/84	
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EP-120	1	Site Emergency Coordinator	06/08/84	
EP-201	1	Technical Support Center (TSC) Activation	06/08/84	
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EP-221	1	Personnel Dosimetry, Bioassay, and Respiratory Protection Group	06/08/84	
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EP-231	2	Operation of Post-Accident Sampling Systems (PASS)	06/08/84	
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PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
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EP-235	2	Obtaining Reactor Water Samples from Sample Sinks Following Accident Conditions	06/08/84	
EP-236	1	Obtaining Cooling Tower Blowdown Line Water Samples Following Radioactive Liquid Release after Accident Conditions	06/08/84	
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EP-240	2	Obtaining Off-Gas Samples from the Air Ejector/Holdup Pipe Discharge Sample Station	06/08/84	
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PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
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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	1	Limerick Station Supervision Call List	06/08/84	
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	
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EP-279	1	Emergency Operations Facility (EOF) Group Phone List	06/08/84	
EP-280	1	Technical Support Center Phone List	06/08/84	
EP-282	1	Government and Emergency Management Agencies	06/08/84	
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EP-291	1	Staffing Augmentation	06/08/84	
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PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-301	0	Operating the Evacuation Alarm and River Warning System	11/11/83	
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EP-305	1	Site Evacuation	06/08/84	
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-316	0	Cumulative Population Dose Calculations for Airborne Releases - Manual Method	12/23/83	
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	1	Emergency Response Facility Habitability	06/08/84	
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	

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-101 CLASSIFICATION OF EMERGENCIES

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for classifying an event or condition into one of four emergency classifications as described in the Emergency Plan. Additionally this procedure details the method to change from one emergency action level to another and to enter the recovery phase, if applicable.

2.0 RESPONSIBILITIES

2.1 Shift Supervision acting as Interim Emergency Director is responsible to:

2.1.1 Classify the event according to this procedure.

2.1.2 Periodically re-evaluate the event for a change in classification.

2.1.3 Implement the Emergency Plan if the situation warrants.

2.2 The Station Superintendent acting as Emergency Director has the same responsibilities as in 2.1.

3.0 APPENDICES

3.1 EP-101-1 Hazards to Station Operation

3.2 EP-101-2 Environmental

3.3 EP-101-3 Loss of Power

3.4 EP-101-4 Personnel Injury

3.5 EP-101-5 Fire

3.6	EP-101-6	Radioactive Release
3.7	EP-101-7	Evacuation of Control Room
3.8	EP-101-8	Damage of Fuel
3.9	EP-101-9	Instrument Failure
3.10	EP-101-10	Scram Failure
3.11	EP-101-11	Boundary Degradation/LOCA
3.12	EP-101-12	Unusual Shutdown
3.13	EP-101-13	Loss of Hot or Cold Shutdown Capacity
3.14	EP-101-14	Security

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented whenever Shift Supervision detects conditions which meet the Emergency Action Levels in Appendix EP-101, Classification Table.

IMPLEMENTATION OF THIS PROCEDURE DOES NOT CONSTITUTE IMPLEMENTATION OF THE EMERGENCY PLAN.

8.0 PRECAUTIONS

THE JUDGEMENT OF THE (INTERIM) EMERGENCY DIRECTOR IS VITAL IN PROPER CONTROL OF AN EMERGENCY AND TAKES PRECEDENCE OVER GUIDANCE IN THIS EMERGENCY PLAN PROCEDURE.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 Shift Supervision or Emergency Director shall:

9.1.1.1 Select categories related to station events or conditions.

9.1.1.2 Beginning at the indicated page in Appendix EP-101, review the Emergency Action Levels for categories selected.

9.1.1.3 If the most severe events or conditions are classified as an Unusual Event, implement EP-102, "Unusual Event Response."

9.1.1.4 If the most severe events or conditions are classified as an Alert, implement EP-103, "Alert Immediate Response."

9.1.1.5 If the most severe events or conditions are classified as a Site Emergency, implement EP-104, "Site Emergency Response."

9.1.1.6 If the most severe events or conditions are classified as a General Emergency, implement EP-105, "General Emergency Response."

9.2 ACTIONS

9.2.1 If event is classified as Alert, Site Emergency, or General Emergency, Shift Supervision or Emergency Director shall:

9.2.1.1 Periodically evaluate the event classification as listed on attached Appendix EP-101. Based upon results of corrective action taken to recover from the emergency situation, escalation or de-escalation of the emergency classification will be decided upon by the (Interim) Emergency Director. (It is preferable, but not mandatory, to obtain concurrance from the Site Emergency Coordinator and Corporate Headquarters prior to classification reduction). The NRC and appropriate off-site authorities shall be informed of the decision to move from one emergency class to the next. As appropriate, agencies or personnel listed in checkoff lists of EPs 102, 103, 104, and 105 shall be informed.

Notified within 15 minutes once the emergency level is declared.

9.2.1.2 Have a written summary sent to the NRC within eight hours of closeout or reductin of the emergency clasification in accordance with EP-106, Written Summary Notification.

9.2.2 When the emergency has been controlled and the power plant and auxiliaries have been placed in a safe shutdown condition, only then will a decision be made as to whether a recovery phase is justified. To enter the recovery phase after the emergency or accident situation is considered no longer in effect, the concurrence of the Site Emergency Coordinator, Emergency Director, the Emergency Support Officer at Corporate Headquarters, and Federal and State Government Liaison is required per EP-410. The recovery phase is a departure from an emergency situation. The Site Emergency Coordinator and Emergency Director evaluate plant operating conditions as well as the in-plant and out-of-plant radiological conditions in this decision. Notifications to the various individuals and agencies that the recovery phase has been implemented is the responsibility of the Site Emergency Coordinator.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

10.2 NUREG 0654 Rev. 1 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

10.3 EP-102 Unusual Event Response

10.4 EP-103 Alert Response

10.5 EP-104 Site Emergency Response

10.6 EP-105 General Emergency Response

10.7 EP-410 Recovery Phase Implementation

HAZARDS TO STATION OPERATION

UNUSUAL EVENT

1. Aircraft crash in or unusual aircraft activity over the site.
2. Train derailment within the site boundary.
3. Explosion within or near the site boundary.
4. Toxic or flammable gas release within or near the site boundary.

ALERT

WHEN BOTH UNITS ARE IN COLD SHUTDOWN

1. Aircraft crash or missile impact on the Reactor Enclosure, Control Enclosure, Turbine Enclosure, Diesel Generator Enclosure or Spray Pond Pump House.
2. Known explosion damage affecting plant operation.
3. Toxic, flammable gases or chlorine detected in the Control Room as indicated by 'High Toxic Chemical Concentration' Alarm or 'Control Room Chlorine Isolation Initiated' Alarm on 00C881.

SITE EMERGENCY

WHEN EITHER UNIT IS NOT IN COLD SHUTDOWN

1. Aircraft crash or missile impact on the Reactor Enclosure, Control Enclosure, Turbine Enclosure, Diesel Generator Enclosure or Spray Pond Pump House.
2. Known explosion damage affecting plant operation.
3. Toxic, flammable gases or chlorine detected in the Control Room as indicated by 'High Toxic Chemical Concentration' Alarm or 'Control Room Chlorine Isolation Initiated' Alarm on 00C881.

GENERAL EMERGENCY

ENVIRONMENTAL

UNUSUAL EVENT	ALERT
1. An actual earthquake detected by the Seismic Monitoring System (00C693) at or below operating basis earthquake (.075g).	1. An actual earthquake detected by the Seismic Monitoring System (00C693) beyond the operating basis earthquake (.075g).
2. A tornado is observed within or near site boundary.	2. Tornado strikes the Reactor Enclosure, Turbine Enclosure, Spray Pond Pump House, Control Enclosure or Diesel Generator Enclosure.
3. A hurricane is expected to be in the vicinity of the site.	3. Sustained high winds greater than 70 mph as indicated on 0BC699.

SITE EMERGENCY	GENERAL EMERGENCY
1. Sustained high winds greater than 90 mph as indicated on 0BC699 if either unit is not in Cold Shutdown.	1. Earthquake beyond the safe shutdown earthquake (.15g) which causes massive damage leading to other General Emergencies.
2. An actual earthquake detected by the Seismic Monitoring System (00C693) beyond the safe shutdown earthquake (.15g) if either unit is not in Cold Shutdown.	

LOSS OF POWER

UNUSUAL EVENT	ALERT
1. Loss of all off-site power or loss of all on-site AC power for greater than 60 seconds.	N/A

SITE EMERGENCY	GENERAL EMERGENCY
1. Loss of all on-site AC power and loss of off-site power	N/A
2. Loss of all safety-related DC power as indicated by:	
a) Loss of all Control Room annunciators.	

PERSONNEL INJURY

UNUSUAL EVENT	ALERT
1. Transportation of contaminated injured individual from site to off-site hospital.	N/A

SITE EMERGENCY	GENERAL EMERGENCY
N/A	N/A

FIRE

UNUSUAL EVENT	ALERT
1. Fires invclving permanent plant structures within the protected area lasting 10 minutes or more after initial attempts to extinquish it.	1. Fire which could make an ECCS inop as indicated by observation.

SITE EMERGENCY	GENERAL EMERGENCY
1. Fire which makes an ECCS inop and requires or causes immediate plant shutdown as indicated by observation.	N/A

RADIOACTIVE RELEASE

UNUSUAL EVENT

1. Report indicates liquid effluent release exceeds technical specification 3.11.1.1 or 3.11.1.2.

2. Report indicates gaseous effluent release exceeds technical specification 3.11.2.1 or 3.11.2.2 or 3.11.2.3

ALERT

1. Radiological effluents release greater than 0.5 mR/hr at site boundary as indicated by an uncontrollable release for greater than 20 minutes with:

   a) North stack effluent radiation monitor exceeds 1.0N2 uCi/cc or

   b) South stack effluent radiation monitor exceeds 1.2N2 uCi/cc.

SITE EMERGENCY

1. Radiological effluent release greater than 50 mR/hr at site boundary as indicated by an uncontrollable release for greater than 20 minutes with:

   a) North stack effluent radiation monitor exceeds 1.0 uCi/cc.

2. Projected whole body dose greater than .1 rem or thyroid dose greater than .5 Rem at or beyond the site boundary over course of the event utilizing RMMS procedure calculating offsite doses.

GENERAL EMERGENCY

1. Radiological effluent release greater than 500 mR/hr at site boundary as indicated by an uncontrollable release for greater than 20 minutes with:

   a) North stack effluent radiation monitor exceeds 10 uCi/cc.

2. Projected whole body dose greater than 1 Rem or thyroid dose greater than 5 Rem at or beyond the site boundary over course of the event utilizing RMMS procedure calculating offsite doses.

EVACUATION OF CONTROL ROOM

UNUSUAL EVENT	ALERT
N/A	1. Evacuation of Control Room anticipated or required with control established at remote shutdown panel.

SITE EMERGENCY	GENERAL EMERGENCY
1. Evacuation of Contol Room and control of shutdown systems not established from remote shutdown panel in 15 minutes.	N/A

DAMAGE OF FUEL

UNUSUAL EVENT

1. Steam Jet Air Ejector Discharge radiation monitor exceeds 2.1P4 mR/hr.
2. Steam Jet Air Ejector Discharge radiation monitor has an unexpected increase of 4000 mR/hr over 30 minutes.
3. I-131 dose equivalent in the reactor coolant exceeds 0.2 uCi/g from sample analysis.

ALERT

1. Steam Jet Air Ejector Discharge radiation monitor exceeds 2.1P5 mR/hr
2. I-131 dose equivalent in the reactor coolant exceeds 300 uCi/g from sample and main steam line high-high radiation with resultant scram.
3. Spent fuel damage resulting in a refueling floor area ventilation exhaust monitor alarm.
4. Containment Post LOCA Radiation Monitors greater than 1P2 R/hr.

SITE EMERGENCY

1. Major damage to spent fuel:
   a) Observation of major damage to spent fuel or
   b) Water loss below fuel level in spent fuel pool.
2. Containment Post LOCA Radiation Monitors greater than 1P3 R/hr.

GENERAL EMERGENCY

1. Containment Post LOCA Radiation Monitors greater than 1P4 R/hr.

INSTRUMENT FAILURE

UNUSUAL EVENT	ALERT
1. Complete loss of all Main Control Room communication equipment.	N/A
2. Significant loss of assessment capability in the Main Control Room as indicated by: a) Loss of all flow or all radiation monitors for the North, South stacks or radwaste discharge while a release is in progress.	

SITE EMERGENCY	GENERAL EMERGENCY
N/A	N/A

SCRAM FAILURE

UNUSUAL EVENT	ALERT
N/A	1. Failure of the Reactor protection system to automatically initiate and complete a scram and Scram fails to bring Reactor subcritical as indicated by APRM's greater than 4%, one minute after scram.

SITE EMERGENCY	GENERAL EMERGENCY
1. Transient requiring standby liquid control system to initiate with failure to scram.	1. Transient requiring standby liquid control system to initiate with failure to scram and Reactor does not become sub-critical. As indicated by APRM's greater than 4% 10 minutes after scram.

BOUNDARY DEGRADATION/LOCA

UNUSUAL EVENT

1. Failure of a main steam relief valve or ADS valve to close following reduction of applicable pressure.

   As indicated by:

   a) SRV tailpipe high temperature alarm or

   b) Acoustic monitor valve position indication or

   c) Increase in suppression pool temperature and

   d) Reactor pressure below 1130 psig

2. Reactor coolant leak rate exceeds 30 gpm total leakage average over any hour period as indicated by surveillance test report.

ALERT

1. Scram with small leak as indicated by:
   a) Scram alarm and

   b) Reactor level less than -129" and

   c) Containment pressure greater than 1.68 psig and pressure is increasing.

2. Reactor coolant leak rate exceeds 60 gpm total leakage averaged over any 24 hour period as indicated by surveillance test report.

3. High airborne contamination in the Reactor Enclosure exhaust

   a) Reactor Enclosure exhaust high radiation causing Reactor Enclosure isolation or

   b) 1000 fold increase of airborne radiation in a major area of the reactor enclosure as determined by health physics.

BOUNDARY DEGRADATION/LOCA

SITE EMERGENCY	GENERAL EMERGENCY
1. Scram with LOCA as indicated by: a) Scram alarm and b) Reactor level less than -129" and c) Containment pressure greater than 10 psig	1. Scram with LOCA & no ECCS as indicated by: a) Scram alarm and b) Reactor level less than -129" and c) Failure to bring Reactor level above -129" after 3 minutes and d) Containment pressure greater than 20 psig
2. Main steam line break outside containment without isolation as indicated by: a) High Main Steam Line Flow (140%) and b) High Steam Tunnel Temp (165 deg F) and c) Main Steam Line Low Pressure (831 psig)	2. Scram with LOCA & Containment Failure as indicated by: a) Scram with Reactor level less than-129" and b) Reactor Enclosure Exhaust High Radiation causing Reactor Enclosure Isolation.

UNUSUAL SHUTDOWN

UNUSUAL EVENT	ALERT
1. Controlled shutdown due to failure to meet limiting condition of operation.	N/A
2. Shutdown other than normal controlled shutdown and for the purpose of placing the plant in a safer condition.	
3. Cooldown rate exceeds technical specification limits.	

SITE EMERGENCY	GENERAL EMERGENCY
N/A	N/A

LOSS OF HOT OR COLD SHUTDOWN CAPABILITY

UNUSUAL EVENT	ALERT
N/A	1. Complete loss of any function needed for plant Cold Shutdown and main condenser unavailable as indicated by: a) Loss of RHRSW or b) Loss of shutdown cooling.

SITE EMERGENCY	GENERAL EMERGENCY
1. Complete loss of any function needed to maintain the plant in Hot Shutdown if Hot Shutdown condition is required as indicated by: a) HPCI and RCIC not available or b) All Reactor vessel relief valves inoperable or c) Loss of Suppression Pool cooling.	1) Shutdown occurs but Decay Heat Removal Systems not available as indicated by: a) Reactor operating and scram occurs and b) RHR shutdown cooling not available and c) All SRV's INOP and d) HPCI and RCIC not available

SECURITY

UNUSUAL EVENT	ALERT
1. Security threat or attempted entry or attempted sabotage. Event 1 - Sabotage or Bomb Threat Event 2 - Intrusion and Attach Threat Event 7 - Suspected Intrusion Event 8 - Actual Intrusion Event 9 - Suspected Bomb or Sabotage Device Discovered Event 15 - Guard Strike Event 16 - Onsite Hostage Situation	1. Ongoing security compromise

SITE EMERGENCY	GENERAL EMERGENCY
1. Imminent loss of physical control of the plant. Escalation of Event 8 - Actual Intrusion or Event 9 - Suspected Bomb or Sabotage Device Discovered depending on location and size of device and radiological consequences.	1. Loss of physical control of the facility. Escalation of Event 8 - Actual Instrusion or Event 9 - Suspected Bomb or Sabotage Device Discovered depending on location and size of device and radiological consequences.

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-102 UNUSUAL EVENT RESPONSE

1.0 PURPOSE

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

2.0 RESPONSIBILITIES

2.1 Shift Supervision shall assume the role of the Interim Emergency Director when an Unusual Event occurs, unless Emergency Director is present, and perform the necessary steps in this procedure.

2.2 The Station Superintendent may assume the role of the Emergency Director and relieve the Interim Emergency Director, if necessary.

3.0 APPENDICES

3.1 EP-102-1 Unusual Event Notification Message

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

3.3 EP-102-3 Unusual Event Phone List

4.0 PREREQUISITES

4.1 EP-101, Classification of Emergencies has been completed.

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented when an event occurs that is classified as an Unusual Event per procedure EP-101 Classifications of Emergencies.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 (Interim) Emergency Director shall:

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

9.1.1.2 Complete Appendix EP-102-1, Unusual Event Notification Message, and give it to a communicator and direct the communicator to complete notification of the appropriate parties in Appendix EP-102-3, Unusual Event Phone List.

9.1.1.3 Direct Shift Supervision to initiate evacuation of affected areas, as necessary. Refer to the following procedure:

EP-303 Local Evacuation

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

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

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

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

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

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

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

9.2 FOLLOW-UP

9.2.1 (Interim) Emergency Director shall:

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

9.2.1.2 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.

9.2.1.3 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 from Shift Technical Advisor or Dose Assessment Team Leader.

E. Notification Results from Communicator.

9.2.1.4 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.

9.2.2 The Communicator Shall:

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

10. REFERENCES

10.1 Limerick Generating Station Emergency Plan

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

10.3 EP-303 — Local Evacuation

10.4 EP-101 — Classification of Emergencies

10.5 EP-230 — Chemistry Sampling and Analysis Team Activation

10.6 EP-250 — Personnel Safety Team Activation

10.7 EP-260 — Fire and Damage Team Activation

10.8 EP-261 — Damage Repair Group

10.9 EP-312 — Radioactive Liquid Release

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	Time	Person Responding
a. Emergency Director G. M. Leitch	Home Office	[redacted]		
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				
g. Director - Emergency Preparedness Roberta Kankus	Home Office			

APPENDIX EP-102-3
UNUSUAL EVENT PHONE LIST

Time Initiated _____ (INITIAL NOTIFICATION)

Personnel/Agency To Be Notified	Phone Number	Time	Person Responding
h. NRC Operations Center* Bethesda, MD	[redacted]		
*Person contacting NRC must be Licensed Operator			
Agencies to be contacted after the above personnel/agencies have been notifed			
i. Berks County Emergency Management Agency			
j. Chester County Emergency Services			

Completed By: _____ Time/Date _____

Verified By: _____
(INTERIM) EMERGENCY DIRECTOR

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-103 ALERT RESPONSE

1.0 PURPOSE

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

2.0 RESPONSIBILITIES

2.1 Shift Supervision shall assume the role of the Interim Emergency Director when an Alert occurs, unless the Emergency Director is present, and perform the necessary steps in this procedure.

2.2 The Station Superintendent or Alternate shall assume the role of the Emergency Director, report to the Technical Support Center or Control Room and relieve the Interim Emergency Director.

3.0 APPENDICES

3.1 EP-103-1 Alert Notification Message

3.2 EP-103-2 Emergency Exposure Guidelines

3.3 EP-103-3 Alert De-Escalation Notification Message

3.4 EP-103-4 Alert Phone List (Initial Notification)

3.5 EP-103-5 Alert Phone List (Escalation or De-escalation)

4.0 PREREQUISITES

4.1 EP-101, Classification of Emergencies, completed

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented when an event occurs that is classified as an Alert per procedure EP-101 Classification of Emergencies.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-103-2, Emergency Exposure Guidelines.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 (Interim) Emergency Director shall:

9.1.1.1 Verify the Emergency Classification as determined in EP-101, Classification of Emergencies, unless determination has just been made.

9.1.1.2 Fill out Appendix EP-103-1 Alert Notification Message and give it to the communicator.

9.1.1.3 Direct the communicator to complete notification of the appropriate parties as specified in Appendix EP-103-4, Alert Phone List, (Initial Notification) or Appendix EP-103-5, Alert Phone List (Escalation or De-escalation). The Communicator shall man the NRC RED telephone on a continuous basis until the NRC disconnects. If the communicator is required for urgent plant operations related to the emergency, the concurrence for securing the phone should be obtained from the NRC prior to securing this telephone.

9.1.1.4 Contact the Station Superintendent and the Shift Technical Advisor, inform them of the situation.

9.1.1.5 Direct the Information Center Staff (4256, 495-6767) to implement EP-306, Evacuation of The Information Center. Inform the Staff of the wind direction if there is an airborne release.

9.1.1.6 If there is a radiological release, implement EP-305, Site Evaluation.

9.1.1.7. If there has not been a radiological release,

A. Evacuate all construction personnel by contacting Bechtel Safety [redacted]. Direct them to call for a "Total Project Evacuation" in accordance with Bechtel procedures.

B. Contact Yoh Construction Security Off-Hours [redacted] and inform them that a Total Project Evacuation of Bechtel Construction personnel is being implemented.

THIS WILL CALL FOR THE ASSEMBLY OF PERSONNEL AT THE UPPER PARKING LOT AND POST #3. IF IT IS DESIRED THAT THEY LEAVE THE SITE, INFORM BECHTEL COMMAND POSTS AT THE UPPER PARKING LOT.

C. Select the type of accountability desired for personnel in the protected area and implement the required actions below:

1. Emergency Assembly Without Accountability

-Make the following announcement

"THIS (IS)(IS NOT) A DRILL. DESIGNATED EMERGENCY PERSONNEL REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITIES. ALL OTHER PERSONNEL STAND BY FOR FURTHER ANNOUNCEMENT. THIS (IS) (IS NOT) A DRILL."

2. Emergency Assembly With Accountability

a. Select Unit 1 exit points as follows:

Day Shift - TSC and Administration Building
Afternoon Shift - Administration Building
Night Shift - Administration Building

b. Contact the (Interim) Security Team Leader. Inform him of the selected exit point(s), that emergency assembly with accountability is going to be implemented, and to activate the Security Team (EP-208) and to perform personnel accountability in accordance with EP-110, Personnel Assembly and Accountability.

c. Contact Yoh Construction Security and inform them that personnel leaving Unit 1 will be reassembling at the Personnel Processing Center (PPC).

"THIS (IS)(IS NOT) A DRILL, THIS (IS)(IS NOT) A DRILL. DESIGNATED EMERGENCY PERSONNEL REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITIES. ALL OTHER PERSONNEL LEAVE THE PROTECTED AREA IMMEDIATELY THROUGH THE (name of exit area or areas) AND REASSEMBLE AT THE PERSONNEL PROCESSING CENTER. THIS (IS)(IS NOT) A DRILL. THIS (IS)(IS NOT) A DRILL."

9.1.1.8 Direct the Shift Clerk to activate the 60 minute call list using EP-291, Staffing Augmentation. If Shift Clerk is not available, this function shall be assigned to any available individual.

9.1.1.9 Direct the activation of the Technical Support Center in accordance with EP-201, Technical Support Center (TSC) Activation.

9.1.1.10 If necessary, activate the Emergency Operations Facility in accordance with EP-203, Emergency Operations Facility (EOF) Activation.

9.1.1.11 Assign an Operations Support Center Coordinator (PO) to direct available personnel to report to the Operations Support Center on 269' Elev. Turbine Bldg. and to activate it in accordance with EP-202, Operations Support Center (OSC) Activation.

9.1.1.12 <u>For samples</u>, direct the Shift Chemistry Technician or Chemistry Sampling and Analysis Team Leader to implement EP-230, Chemistry Sampling and Analysis Team Activation.

9.1.1.13 <u>For in-plant surveys</u>, direct a Shift HP Technician or Personnel Safety Team Leader to implement EP-250, Personnel Safety Team Activation.

9.1.1.14 <u>For field surveys</u>, when a release of gaseous radioactive material has occurred or is suspected, direct the Dose Assessment Team Leader to implement EP-210, Dose Assessment Team Activation.

9.1.1.15 <u>For a release</u> at or greater than the Alert level in EP-101, Classification of Emergencies, direct the Dose Assesment Team Leader to implement EP-210, Dose Assessment Team Activation. On an interim bases, direct the Shift Technical Advisor to perform dose projections using EP-316, Cumulative Population Dose Calculations For Airborne Releases - Manual Method or RMMS Computer and implement EP-317, Determination of Protective Action Recommendations.

9.1.1.16 For fire/damage repair direct the Maintenance Shift Assistant Foreman or Fire and Damage Team Leader to implement EP-260, Fire and Damage Team Activation and/or EP-261, Damage Repair Group.

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

9.1.1.18 For Security matters, contact Security Shift Supervision and direct implementation of EP-208, Security Team Activation, unless previously done.

9.2 FOLLOW-UP

9.2.1 (Interim) Emergency Director shall:

9.2.1.1 Verify that the Technical Support Center, the Emergency Operations Facility (if necessary) and the Operations Support Center have been activated.

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

9.2.1.3 If classification is de-escalated, fill out Appendix EP-103-3, Alert De-Escalation Notification Message and give it to the communicator and direct the communicator to perform notification of the appropriate parties listed in Appendix EP-103-5, Alert Phone List (Escalation or De-escalation).

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

A. Security status from Security Team Leader

B. Sample analysis from Shift Chemist or Chemistry Sampling and Analysis Team Leader

C. In-plant surveys from Shift HP Technician or Personnel Safety Team Leader

D. Field surveys from Dose Assessment Team Leader

E. Dose projections and protective action recommendations from Shift Technical Advisor or Dose Assessment Team Leader

F. Fire/damage repair status from the Maintenance Shift Assistant Foreman or Fire and Damage Team Leader

G. Notification results from Communicator

9.2.1.5 Determine which additional support personnel are necessary for emergency functions and direct the Shift Clerk or other assigned communicator in TSC to contact those personnel.

9.2.1.6 Provide site personnel with public address (PA) announcements for any major changes in plant emergency status, such as changing emergency action levels and evacuations.

9.2.1.7 Evaluate the need and order evacuation of effected areas as necessary. Refer to the following procedures: EP-303 Local Evacuation, EP-304 Partial Plant Evacuation, EP-305 Site Evacuation.

9.2.2 The Communicator shall:

9.2.2.1 Inform (Interim) Emergency Director when appropriate Notifications have been made and submit completed copy of Appendix EP-103-4 Alert Phone List (Initial Notification) or Appendix EP-103-5 Alert Phone List (Escalation or De-Escalation) for (Interim) Emergency Director's Signature.

10. REFERENCES

10.1 Limerick Generating Station Emergency Plan

10.2 NUREG 0654, Rev. 1 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Prepardness in Support of Nuclear Power Plant.

10.3	EP-303	Local Evacuation
10.4	EP-101	Classification of Emergencies
10.5	EP-304	Partial Plant Evacuation
10.6	EP-305	Site Evacuation
10.7	EP-306	Evacuation of the Information Center
10.8	A-31	Procedure for Prompt Notification
10.9	EP-291	Staffing Augmentation
10.10	EP-201	Technical Support Center (TSC) Activation
10.11	EP-202	Operations Support Center (OSC) Activation
10.12	EP-203	Emergency Operations Facility (EOF) Activation
10.13	EP-317	Determination of Protective Action Recommendations
10.14	EP-316	Cumulative Population Dose Calculations for Airborne Release - Manual Method
10.15	EP-110	Personnel Assembly and Accountability
10.16	EP-208	Security Team Activation
10.17	EP-210	Dose Assesment Team Activation
10.18	EP-230	Chemistry Sampling and Analysis Team Activation
10.19	EP-250	Personnel Safety Team Activation
10.20	EP-260	Fire and Damage Team Activation
10.21	EP-261	Damage Repair Group
10.22	EP-312	Radioactive Liquid Release

APPENDIX EP-103-1

ALERT NOTIFICATION MESSAGE

MESSAGE: This (is) (is not) a drill. This (is) (is not) a drill. This is Limerick Generating Station calling to report an Alert. My name is _____, telephone _____. Limerick Generating Station is reporting an Alert declared at Unit No. _____. Time and date of Alert 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 knwon). There is no protective action recommended. This (is) (is not) a drill. This (is) (is not) a drill.

APPENDIX EP-103-2
Emergency Exposure Guidelines

Function	Projected Whole Body Dose	Thyroid Dose	Authorized By
1. Life Saving and Reduction of Injury	75 REM*	375 REM	(Interim) Emergency** Director
2. Operation of Equipment to Mitigate an Emergency	25 REM*	125 REM	(Interim) Emergency** Director
3. Protection of Health and Safety of the Public	5 REM	25 REM	(Interim) Emergency** Director
4. Other Emergency Activities	10 CFR 20 limits	10 CFR 20 limits	(Interim) 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-103-3

ALERT DE-ESCALATION NOTIFICATION CHECKOFF LIST

MESSAGE: This (is) (is not) a drill. This (is) (is not) a drill. This is Limerick Generating Station calling to report a change in emergency classification. The Alert has been (de-escalated to an Unusual Event) (Terminated). Time and date are _____ (24 Hr Clock Time), _____ (Date).

The plant status is (stable) (improving). My name is _____.

This (is) (is not) a drill. This (is) (is not) a drill.

APPENDIX EP-103-3
ALERT PHONE LIST
(INITIAL NOTIFICATION)

Time Initiated _____

Personnel/Agency To Be Notified		Phone Number	Time	Person Responding
a. Emergency Director G. M. Leitch	Home Office	[redacted]		
Alternate J. F. Franz	Home Office			
b. Load Dispatcher	Office			
c. Montgomery County Emergency Management Agency				
d. Pennsylvania Emergency Management Agency				
e. Pennsylvania Bureau of Radiation Protection Harrisburg, PA				
f. Manager - Public Information Ronald Harper				
g. Director - Emergency Preparedness Roberta Kankus	Home Office			

APPENDIX EP-103-3
ALERT PHONE LIST
(INITIAL NOTIFICATION)

Time Initiated _____

Personnel/Agency To Be Notified	Phone Number	Time	Person Responding
h. NRC Operations Center* Bethesda, MD			
Make this call last and remain on telephone until NRC disconnects			
*Person contacting NRC must be Licensed Operator			
Agencies to be contacted after the above personnel/agencies have been notifed			
i. Berks County Emergency Management Agency			
j. Chester County Emergency Services			

Completed By: _____ Time/Date _____

Verified By: _____
(INTERIM) EMERGENCY DIRECTOR

APPENDIX EP-103-5
ALERT PHONE LIST
(ESCALATION OR DE-ESCALATION)

Time Initiated _____

Personnel/Agency To Be Notified		Phone Number	Time	Person Responding
a. Emergency Director G. M. Leitch	Home Office			
Alternate J. F. Franz	Home Office			
b. Load Dispatcher	Office			
c. Pennsylvania Bureau of Radiation Protection Harrisburg, PA				
d. NRC Operations Center* Bethesda, MD.				

Make this call last and remain on telephone until NRC disconnects

*Person contacting NRC must be Licensed Operator

APPENDIX EP-103-5
ALERT PHONE LIST
(ESCALATION OR DE-ESCALATION)

Time Initiated _____

Personnel/Agency To Be Notified	Time	Person Responding
Agencies to be contacted after the above personnel/agencies have been notifed		
e. Montgomery County Office of Emergency Preparedness and Medical Services		
f. Pennsylvania Emergency Management Agency		
g. Berks County Emergency Managment Agency		
h. Chester County Emergency Services		

[redacted]

Completed By: _____ Time/Date _____

Verified By: _____
(INTERIM) EMERGENCY DIRECTOR

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-104 SITE EMERGENCY RESPONSE

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the site response to a Site Emergency.

2.0 RESPONSIBILITIES

2.1 Shift Supervision shall assume the role of the Interim Emergency Director when a Site Emergency occurs unless the Emergency Director is present and perform the necessary steps in this procedure.

2.2 The Station Superintendent or Alternate shall assume the role of the Emergency Director, report to the Technical Support Center or control room and relieve the Interim Emergency Director.

2.3 The Site Emergency Coordinator shall report to the Emergency Operations Facility and perform the necessary steps in this procedure.

3.0 APPENDICES

3.1 EP-104-1 Site Emergency Notification Message

3.2 EP-104-2 Emergency Exposure Guidelines

3.3 EP-104-3 Site Emergency De-Escalation Notification Message

3.4 EP-104-4 Site Emergency Phone List (Initial Notification)

3.5 EP-104-5 Site Emergency Phone List (Escalation or De-escalation)

4.0 PREREQUISITES

4.1 EP-101, Classification of Emergencies, completed

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented when an event occurs that is classified as a Site Emergency per EP-101, Classification of Emergencies.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-104-2, Emergency Exposure Guidelines.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 (Interim) Emergency Director shall:

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

9.1.1.2 Fill out Appendix EP-104-1, Site Emergency Notification Message, and give it to the Communicator.

9.1.1.3 Direct the communicator to complete notification of the appropriate parties as specified in Appendix EP-104-4, Site Emergency Phone List (Initial Notification) or Appendix EP-104-5, Alert Phone List (Escalation or De-escalation). The Communicator shall man the NRC RED Telephone until the NRC disconnects.

9.1.1.4 Contact the Station Superintendent and the Shift Technical Advisor, inform them of the situation, if not already done.

9.1.1.5 Direct the Information Center Staff (4256, 495-6767) to implement EP-306, Evacuation of the Information Center, if not already done. Inform the staff of the wind direction, if there is an airborne release.

9.1.1.6 If there is a radiological release, implement EP-305, Site Evacuation.

9.1.1.7 If there has not been a radiologi release,

A. Evacuate all construction personnel by contacting Bechtel Safety [redacted] Direct them to call for a "Total Project Evacuation" in accordance with Bechtel procedures.

B. Contact Yoh Construction Security [redacted] off-hours [redacted] and inform them that a Total Project Evacuation of Bechtel Construction personnel is being implemented.

THIS WILL CALL FOR THE ASSEMBLY OF PERSONNEL AT THE UPPER PARKING LOT AND POST #3. IF IT IS DESIRED THAT THEY LEAVE THE SITE, INFORM BECHTEL COMMAND POSTS AT THE UPPER PARKING LOG.

C. Select the type of accountability desired for personnel in the protected area and implement the required actions below:

1. Emergency Assembly Without Accountability

   - Make the following announcement

   "THIS (IS) (IS NOT) A DRILL. DESIGNATED EMERGENCY PERSONNEL REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITIES. ALL OTHER PERSONNEL STAND BY FOR FURTHER ANNOUNCEMENT. THIS (IS) (IS NOT) A DRILL."

2. Emergency Assembly With Accountability

   a. Select Unit 1 exit points as follows:

      Day Shift - TSC and Administration Building
      Afternoon Shift - Administration Building
      Night Shift - Administration Building

   b. Contact the (Interim) Security Team Leader. Inform him of the selected point(s), that emergency assembly with accountability is going to be implemented, and to activate the Security Team (EP-208) and to perform personnel accountability in accordance with EP-110, Personnel Assembly and Accountability

   c. Contact Yoh Construction Security and inform them that personnel leaving Unit 1 will be reassembling at the Personnel Processing Center (PPC)

      "THIS (IS) (IS NOT) A DRILL, THIS (IS) (IS NOT) A DRILL. DESIGNATED EMERGENCY PERSONNEL REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITIES. ALL OTHER PERSONNEL LEAVE THE PROTECTED

AREA IMMEDIATELY THROUGH THE
(NAME OF EXIT AREA OR AREAS)
AND REASSEMBLE AT THE
PERSONNEL PROCESSING CENTER.
THIS (IS) (IS NOT) A DRILL.
THIS (IS) (IS NOT) A DRILL."

9.1.1.8 If not already accomplished at the Alert stage, direct the Shift Clerk to activate the 60 minute call list per EP-291, Staffing Augmentation. If Shift Clerk is not available, this function may be assigned to any available individual.

9.1.1.9 Direct the activation of the Technical Support Center in accordance with EP-201, Technical Support Center (TSC) Activation, if not already activated.

9.1.1.10 Direct the activation of the Emergency Operations Facility in accordance with EP-203, Emergency Operations Facility (EOF) Activation, if not already activated.

9.1.1.11 If the EOF has not been activated earlier, during the Alert Response procedure, direct a communicator to call EOF personnel (directing them to report to the EOF) using EP-279, EOF Group Phone List.

9.1.1.12 Assign an Operations Support Center coordinator (PO) if not already done, to direct available personnel to report to the Operations Support Center and to activate it in accordance with EP-202, Operations Support Center (OSC) Activation.

9.1.1.13 <u>For samples</u>, direct the Shift Chemistry Technician or Chemistry Sampling And Analysis Team Leader to implement EP-230, Chemistry Sampling And Analysis Team Activation.

9.1.1.14 <u>For in-plant surveys</u>, direct a Shift HP Technician or Personnel Safety Team Leader to implement EP-250, Personnel Safety Team Activation.

9.1.1.15 For field surveys, when a release of gaseous radioactive material has occurred or is suspected, direct a Shift HP Technician or Dose Assessment Team Leader to implement EP-210, Dose Assessment Team Activation.

9.1.1.16 For a release, at or greater than the Alert level in EP-101, Classification of Emergencies, or at the discretion of the Emergency Director, direct the Dose Assessment Team Leader to implement EP-210, Dose Assessment Team Activation. On an interim bases, direct the Shift Technical Advisor to perform dose projections using EP-316, Cumulative Population Dose Calculations for Airborne Releases-Manual Method or RMMS Computer and implement EP-317, Determination of Protective Action Recommendations.

9.1.1.17 For fire/damage repair direct the Maintenance Shift Assistant Foreman or Fire and Damage Team Leader to implement EP-260, Fire and Damage Team Activation and/or EP-261, Damage Repair Group.

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

9.1.1.19 For Security matters, contact Security Shift Supervision and direct implementation of EP-208, Security Team Activation, unless previously done.

9.2 FOLLOW-UP

9.2.1 (Interim) Emergency Director shall:

9.2.1.1 Verify that the Technical Support Center, Emergency Operations Facility and the Operations Support Center have been activated.

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

9.2.1.3 If classification is de-escalated, fill out Appendix EP-104-3, Site Emergency De-Escalation Notification Message and give it to the communicator and direct the communicator to perform notification of the appropriate parties listed in Appendix EP-104-5, Site Emergency Phone List (Escalation or De-escalation).

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

A. Security Status from Security Team Leader

B. Sample analysis from Shift Chemistry Technician or Chemistry Sampling And Analysis Team Leader

C. In-plant surveys from Shift HP Technician or Personnel Safety Team Leader

D. Field surveys from Shift HP Technician or Dose Assessment Team Leader

E. Dose projections and protective action recommendations from Shift Technical Advisor or Dose Assessment Team Leader

F. Fire/Damage repair status from the Maintenance Shift Assistant Foreman or Fire and Damage Team Leader.

G. Notification Results from Communicator.

9.2.1.5 Discuss protective action recommendations with the Site Emergency Coordinator.

9.2.1.6 Determine which additional support personnel are necessary for emergency functions and direct the shift clerk or other assigned communicator to contact those personnel.

9.2.1.7 Provide site personnel with public addres (PA) announcements for any major changes in plant emergency status, such as changing emergency action levels and evacuations.

9.2.1.8 Evaluate the need and order evacuation of affected areas as necessary.

Refer to the following procedures:

EP-303 Local Evacuation

EP-305 Site Evacuation

9.2.1.9 Perform the following until relieved by the Site Emergency Coordinator:

A. Discuss protective action recommendations with the Dose Assessment Team Leader.

B. Provide protective action recommendations, if necessary, to the Pennsylvania Bureau of Radiation Protection.

C. Inform the various emergency response groups if the recovery phase organization is to be implemented.

9.2.2 The Communicator shall:

9.2.2.1 Inform the Emergency Director when appropriate notifications have been made and submit completed copy of Attachment EP-104-4 Site Emergency Phone List (Initial Notification) or Appendix EP-104-5, Site Emergency Phone List (Escalation or De-escalation) for Emergency Directors Signature.

10. REFERENCES

10.1 Limerick Generating Station Emergency Plan

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

10.3 EP-101 Classification of Emergencies

10.4 A-31 Procedure for Prompt Notification

10.5 EP-291 Staffing Augmentation

10.6 EP-201 Technical Support Center (TSC) Activation

10.7 EP-202 Operations Support Center (OSC) Activation

10.8 EP-203 Emergency Operations Facility (EOF) Activation

10.9 EP-317 Determination of Protective Action Recommendations

10.10 EP-316 Cumulative Population Dose Calucations For Airborne Releases-Manual Method

10.11 EP-305 Site Evacuation

10.12 EP-306 Evacuation of the Information Center

10.13 EP-110 Personnel Assembly and Accountability

10.14 EP-208 Security Team Activation

10.15 EP-210 Dose Assessment Team Activation

10.16 EP-230 Chemistry Sampling and Analysis Team Activation

10.17 EP-250 Personnel Safety Team Activation

10.18 EP-260 Fire and Damage Team Activation

10.19 EP-261 Damage Repair Group

10.20 EP-312 Radioactive Liquid Release

10.21 EP-279 Emergency Operations Facility (EOF) Group Phone List

APPENDIX EP-104-1

SITE EMERGENCY NOTIFICATION MESSAGE

Message: This (is)(is not) a drill. This (is)(is not) a drill. This is Limerick Generating Station calling to report a Site Emergency. My name is _____, telephone _____. Limerick Generating Station is reporting a Site Emergency declared at Unit No. ___.

Time and date of Site Emergency 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-104-2

EMERGENCY EXPOSURE GUIDELINES

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

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

APPENDIX EP-104-3

SITE EMERGENCY DE-ESCALATION NOTIFICATION MESSAGE

MESSAGE: This (is) (is not) a drill. This (is) (is not) a drill. This is Limerick Generating Station calling to report a change in emergency action level. The site emergency has been (de-escalated to an) (Unusual Event) (Alert) (Terminated). Time and date are _____, _____. The plant status is (stable) (improving). My name is_____. This (is) (is not) a drill. This (is) (is not) a drill.

(24 Hr Clock Time) (Date)

APPENDIX EP-104-4
SITE EMERGENCY PHONE LIST
(INITIAL NOTIFICATION)

Time Initiated _____

Personnel/Agency to be notified	Phone Number	Time	Person Responding
a. Emergency Director G. M. Leitch	Home - Office -		
Alternate J. F. Franz	Home - Office -		
b. Load Dispatcher	Office -		
c. Montgomery County Office of Emerg. Preparedness and Medical Services			
d. Pennsylvania Emergency Management Agency			
e. Pennsylvania Bureau of Radiation Protection, Harrisburg, PA			
f. Manager - Public Information Ronald Harper			
g. Director - Emergency Preparedness Roberta Kankus	Home - Office -		

APPENDIX EP-104-4 (CONT'D)
SITE EMERGENCY PHONE LIST (CONT'D)
(INITIAL NOTIFICATION)

Personnel/Agency to be notified	Phone Number	Time	Person Responding
Agencies to be contacted after the above personnel/agencies have been notified			
h. NRC Operations Center* Bethesda, MD	[redacted]		

Make this call last and remain on telephone until NRC disconnects

*Person contacting NRC must be licensed operator

i. Berks County Emergency Management Agency			
j. Chester County Emergency Services	[redacted]		

Completed By: _____ Time/Date _____
Verified By: _____
(Interim) Emergency Director

APPENDIX EP-104-5
SITE EMERGENCY PHONE LIST
(ESCALATION OR DE-ESCALATION)

Time Initiated _____

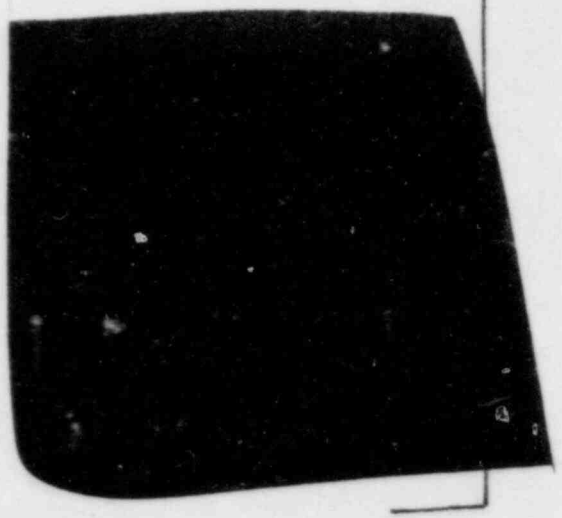
Personnel/Agency to be notified	Phone Number	Time	Person Responding
a. Emergency Director G. M. Leitch	Home - Office -		
Alternate J. F. Franz	Home - Office -		
b. Load Dispatcher	Office -		
c. Pennsylvania Bureau of Radiation Protection, Harrisburg, PA			
d. NRC Operations Center* Bethesda, MD			

Make this call last and remain on telephone until NRC disconnects

*Person contacting NRC must be licensed operator

APPENDIX EP-104-5 (CONT'D)
SITE EMERGENCY PHONE LIST (CONT'D)
(ESCALATION OR DE-ESCALATION)

Personnel/Agency to be notified	Phone Number	Time	Person Responding
Agencies to be contacted after the above personnel/agencies have been notified			
e. Montgomery County Office of Emergency Preparedness and Medical Services			
f. Pennsylvania Emergency Management Agency			
g. Berks County Emergency Management Agency			
h. Chester County Emergency Services			



Completed By: _____ Time/Date _____

Verified By: _____
(Interim) Emergency Director

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-106 WRITTEN SUMMARY NOTIFICATION

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the eight hour written summary notification to the NRC following closeout or de-escalation of an Alert, Site Emergency or General Emergency Classification.

2.0 RESPONSIBILITIES

2.1 The (Interim) Emergency Director shall direct the Shift Technical Advisor or other assigned engineer to prepare the written summary report following the closeout or de-escalation of an Alert, Site Emergency or General Emergency.

2.2 The Shift Technical Advisor or other assigned engineer shall prepare the written summary report.

3.0 APPENDICES

3.1 EP-106-1 Emergency Class Closeout/De-escalation Report

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

6.1 Closeout or de-escalation of an Alert, Site Emergency or General Emergency Classification.

7.0 ACTION LEVEL

7.1 This procedure shall be implemented following a closeout or de-escalation of an Alert, Site Emergency or General Emergency Classification per EP-101 Classification of Emergencies.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 Immediate Actions

9.1.1 The (Interim) Emergency Director shall:

9.1.1.1 Direct the Shift Technical Advisor or other assigned engineer to prepare the written summary in accordance with this procedure.

9.1.2 The Shift Technical Advisor shall:

9.1.2.1 Obtain the necessary information to complete Appendix EP-106-1 Emergency Class Closeout/Reduction Report.

9.1.2.2 Fill in the following information on the form:

a. Item 1 - Enter the number of the affected units. If the event occurred at both units, enter Unit 1.

b. Item 2 - Enter the docket number of the unit listed.

LGS UNIT 1 05000- (352)
LGS UNIT 2 05000- (353)

c. Item 3 - Enter the total number of pages.

d. Item 4 - Enter a concise description of the event.

e. Item 5 - Enter the date of the event.

f. Item 7 - Enter the date of the report.

g. Item 8 - Enter name and docket number of Unit 2 if the event occurred at both units.

LGS UNIT 2 05000- (353)

h. Item 9 - Enter the operating mode.

1. - Power Operation
2. - Startup
3. - Hot Shutdown
4. - Cold Shutdown
5. - Refueling

i. Item 10- Enter the percent of licensed thermal power at which the reactor was operating when the event occurred.

j. Item 12 - Enter the name of the Shift Superintendent.

k. Item 17 - Enter a brief description of the circumstances and reasons behind the closeout or de-escalation of the Alert, Site Emergency or General Emergency.

9.1.2.3 Submit the report to the (Interim) Emergency Director.

9.2 Follow-Up Actions

9.2.1 The (Interim) Emergency Director shall:

9.2.1.1 Review the report for completeness and accuracy.

9.2.1.2 Have the Station Superintendent or Assistant Station Superintendent and the Operations Engineer or Technical Engineer review the report. This may require review over the telephone.

9.2.1.3 Have the report telecopied within eight hours to the NRC Operations Center or Region I office via the following phone number:

NRC Operations Center [redacted]

Region I Office

9.2.1.4 Call and verify that the report was received:

NRC Operation Center

Region I Office

9.2.1.5 If the report cannot be telecopied, have the report hand delivered within eight hours to the:

Region I Office
631 Park Ave.
King of Prussia, PA 19406

10.0 REFERENCES

10.1 NUREG 0654, Rev. 1 — Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

10.2 EP-101 Classification of Emergency

NRC Form 366
(9-83)

APPENDIX EP-106-1 EMERGENCY CLASS CLOSEOUT/DE-ESCALATION REPORT

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Limerick Generating Station Unit	0 5 0 0 0	1 OF

TITLE (4)

EVENT DATE (5)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR		MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
								0 5 0 0 0
								0 5 0 0 0

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
	20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Shift Superintendent	AREA CODE [redacted]

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

This report is to satisfy the 8 hour written summary requirement for a closeout of an Alert, Site Emergency or General Emergency, in accordance with NUREG-0654 Appendix 1.

Item 17 of this report is a brief description of the closeout of the event. If applicable, a LER will follow in the required time frame.

NRC Form 366A (9-83)

APPENDIX EP-106-1 EMERGENCY CLASS CLOSEOUT/DE-ESCALATION REPORT
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
	0 5 0 0 0	OF

TEXT (If more space is required, use additional NRC Form 366A's) (17)

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-110 PERSONNEL ASSEMBLY AND ACCOUNTABILITY

1.0 PURPOSE

The purpose of this procedure is to provide the steps necessary for personnel assembly and accountability.

This procedure does not apply to Unit 2 Bechtel and sub-contractor personnel since they will be assembled per Bechtel procedures.

2.0 RESPONSIBILITIES

2.1 Personnel shall report to designated Emergency Assembly Areas or as otherwise directed.

2.2 Emergency Assembly Area Coordinators shall, when required, perform an accountability check of personnel at their areas.

2.3 When personnel accountability is required, Bechtel and sub-contractor personnel shall account for their personnel in accordance with Bechtel procedures and make reports to their command posts at Post #3 and the North Parking Lot.

2.4 Security shall assemble a list of unaccounted for persons, when accountability checks are required, for the (Interim) Emergency Director, (Interim) Personnel Safety Team Leader, and (Interim) Security Team Leader.

2.5 The (Interim) Emergency Director shall direct the (Interim) Personnel Safety Team Leader to activate the First Aid/Search and Rescue Group to locate unaccounted for personnel.

3.0 APPENDICES

3.1 EP-110-1, Emergency Assembly Areas

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure should be implemented whenever an Alert, Site Emergency, General Emergency, or Site Evacuation is declared and may also be executed when an Unusual Event is declared at the discretion of the Emergency Director.

8.0 PRECAUTIONS

8.1 Only the following personnel may authorize support personnel without Limerick badges access to the site at an Alert, Site or General Emergency.

8.1.1 Site Emergency Coordinator

8.1.2 (Interim) Emergency Director

8.1.3 Security Team Leader

9.0 PROCEDURE

9.1 ACTIONS

THESE ACTIONS WILL IMMEDIATELY FOLLOW THE ASSEMBLY ANNOUNCEMENT MADE IN ACCORDANCE WITH ANY OF THE FOLLOWING:

EP-103 - Alert Response

EP-104 - Site Emergency Response

EP-105 - General Emergency Response

EP-305 - Site Evacuation

9.1.1 For assembly WITHOUT accountability check.

9.1.1.1 Designated Emergency Response personnel shall report to their assigned assembly areas (see Appendix EP-110-1).

9.1.1.2 Other personnel shall remain at their normal positions until receiving further instructions.

9.1.2 For emergency assembly WITH accountability

9.1.2.1 Personnel shall report to their designated Emergemcy Assembly Facility/Area (see Appendix EP-110-1). If not assigned to an Emergency Assembly Facility/Area, exit the Protected Area, and report to the Personnel Processing Center.

9.1.2.2 Personnel escorting visitors shall:

A. Escort visitors to Administration Building Guard Station

B. Report to their Emergency Assembly Facility/Area (see Appendix EP-110-1) or, if not assigned to an emergency assembly area, exit the Protected Area, and report to the Personnel Processing Center.

9.1.3 Emergency Assembly Area Coordinators shall:

9.1.3.1 For Assembly <u>without</u> an accountability check:

A. Maintain a log of names and badge numbers of all personnel leaving and returning to assembly areas.

9.1.3.2 For Assembly with an accountability check:

A. Record names and security badge numbers of all individuals reporting to the assembly area.

Conduct a roll call (if necessary) to verify an accurate listing of personnel.

B. Report names of accounted for personnel to Security when contacted.

C. Maintain a log of names and badge numbers of all personnel leaving and returning to assembly areas.

D. If the entire group of assembled personnel are to move to a new location, perform steps A through C to ensure that accountability is maintained.

9.1.4 Plant Security Group shall:

9.1.4.1 For Assembly with Accountability:

A. Report to the appropriate personnel exit areas.

B. Ensure that personnel exiting the Protected Area follow the normal "Card-Out" procedure and utilize the portal monitors while exiting.

C. If the COMPUTER is NOT operating:

1. Obtain a copy of the Master Badge List.

2. Collect the badges of all existing personnel. Using the Master Badge List, check OFF the numbers of all the collected badges and those not in use at the time of the evacuation.

3. Give the completed Master Badge List to the Personnel Accountability Group Leader as quickly as possible.

9.1.4.2 For Site Evacuation:

A. Report to the appropriate personnel exit areas and set out buckets or other containers to collect security badges.

B. Have exiting personnel deposit their security badges and dosimetry in the appropriate containers, and utilize the portal monitors.

IF PORTAL MONITORS ALARM, PERSONNEL SHOULD BE INSTRUCTED TO REPORT TO HEALTH PHYSICS AT THE OFFSITE ASSEMBLY AREAS.

Emergency workers may be required to retain dosimetry. Prior arrangements should be made through (Interim) Security Team Leader.

C. If the Security Computer System is operable, badges will be carded out by security using the exit lane card readers.

D. If the Security Computer System is NOT operable, perform the steps detailed in 9.1.4.1 C of this procedure.

9.1.5 Personnel Accountability Group shall:

9.1.5.1 For Assembly with Accountability:

A. Report to the Administration Guard Station.

B. Contact the Emergency Assembly Area Coordinators for accountability reports utilizing Appendix EP-110-1, Emergency Assembly Areas.

C. Compite a list of personnel in the Protected Area using information received from the Emergency Assembly Area Coordinators and the Security Computer System.

IF THE SECURITY COMPUTER IS NOT OPERABLE, THE PLANT SECURITY GROUP WILL PROVIDE A MASTER BADGE LIST WITH ALL BADGES TURNED IN AND BADGES NOT IN USE CHECKED OFF.

D. Compare the list of personnel remaining in the Protected Area with the Emergency Assembly Area Coordinators accountability reports to compile a list of unaccounted for personnel.

E. Within 30 minutes from the time of the evacuation and assembly announcement, report the accountability STATUS and the names of the unaccounted for personnel to the (Interim) Security Team Leader.

F. Contact the Bechtel Command Posts at Post #3 and the North Parking Lot to determine if any Bechtel or subcontractor personnel are unaccounted for and inform the (Interim) Security Team Leader.

G. As unaccounted for personnel are located, immediately provide an update of the accountability STATUS to the (Interim) Security Team Leader.

9.1.5.2 For Site Evacuation:

A. Report to the Administration Guard Station.

B. If the Security Computer is NOT operating, obtain the Master Badge List from the Plant Security Group.

C. Complete steps 9.1.5.1 B through G of this procedure.

9.1.6 (Interim) Security Team Leader shall:

9.1.6.1 Report the names of unaccounted for personnel to the (Interim) Emergency Director.

9.1.6.2 Forward a list of unaccounted for personnel to the (Interim) Personnel Safety Team Leader at the following locations:

A. Operations Support Center (If Technical Support Center is not activated).

B. Technical Support Center (If Technical Support Center is activated).

9.1.6.3 As unaccounted for personnel are located, immediately provide an update of the accountability status to the (Interim) Emergency Director and (Interim) Personnel Safety Team Leader.

9.2 FOLLOW-UP

9.2.1 (Interim) Emergency Director shall:

9.2.1.1 Contact the Personnel Safety Team Leader to activate the Search and Rescue Group if required to locate unaccounted for personnel.

9.2.1.2 Contact the (Interim) Personnel Safety Team Leader for status updates.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

APPENDIX EP-110-1

EMERGENCY ASSEMBLY AREAS

GROUP	PRIMARY ASSEMBLY AREAS AND TELEPHONE NUMBERS	ALTERNATE ASSEMBLY AREAS AND TELEPHONE NUMBERS	ASSEMBLY AREA COORDINATOR(S)
Control Operators Assit. Control Operators Shift Supervision STA		Safe Shutdown Panels For Units 1 and 2 (Only if Control Room uninhabitable)	Shift Superintendent Alt: Shift Supervisor
Chemistry Technicians		2nd Floor Admin Chemistry Station Phone - Ext. 2296	Chemist
Instrument & Control Technicians			Senior Person Present
PECO Field Engineers			
Escorted Plant Visitors			
Administrative Staff and Unescorted Visitors			
Bechtel or Subcontractors in Restricted Area			Supervisors
Maintenance Personnel			

Notes:

(2) If accountability is required they will leave the Protected Area. Otherwise, they will receive further instructions and directions.

APPENDIX EP-110-1

EMERGENCY ASSEMBLY AREAS

GROUP	PRIMARY ASSEMBLY AREAS AND TELEPHONE NUMBERS	ALTERNATE ASSEMBLY AREAS AND TELEPHONE NUMBERS	ASSEMBLY AREA COORDINATOR(S)
Technical Support Center Staff:		None	Personnel Safety Team Leader
HP Technicians		See Note 1	Senior HP TA/Technician
Plant Operators Auxiliary Plant Operators		Control Room Ext.	Senior Ranking P.O., A.P.O., or A.O.
Security Guards		None	Senior Ranking Security Person

Notes:

(1) If the OSC becomes or is uninhabitable one HP Technician shall accompany each Plant Operator or Auxiliary Plant Operator to the Control Room. All other HP Technicians shall report to Admin Bldg. 2ND Floor, HP Office.

(2) If accountability is required they will leave the Protected Area. Otherwise, they will receive further instructions and directions.

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-120 SITE EMERGENCY COORDINATOR

1.0 PURPOSE

The purpose of this procedure is to provide guidelines to delineate the responsibilities and actions of the Site Emergency Coordinator.

2.0 RESPONSIBILITIES

2.1 The Site Emergency Coordinator is responsibile for supervising the activation and managing the activities of the Emergency Operations Facility.

3.0 APPENDICES

None

4.0 PREREQUISITES

4.1 The Site Emergency Coordinator has been notified that an Emergency (Alert, Site Area or General) exists at Limerick Generating Station.

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 The position of Site Emergency Coordinator is normally activated at a Site or General Emergency or at the discretion of the Emergency Director.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Site Emergency Coordinator shall direct the Load Dispatcher to activate the Site Emergency Coordinator's call list.

9.1.2 For Site and General emergencies, the Site Emergency Coordinator shall:

9.1.2.1 Proceed to the Emergency Operations Facility.

9.1.2.2 Become cognizant of the situation directly from the (Interim) Emergency Director.

9.1.2.3 Announce to EOF personnel that he is assuming the role of Site Emergency Coordinator and inform the (Interim) Emergency Director that he is assuming control of the emergency response organization.

9.1.2.4 Supervise the activation of the EOF.

9.1.3 The Site Emergency Coordinator shall as appropriate request the collection of environmental station samples per EP-C-315, if there has been a radioactive material release.

9.1.4 Through the Dose Assessment Team Leader, direct all radiation surveys conducted in off-site areas.

9.1.5 Request activation of corporate support functions through dialogue with the Emergency Support Officer.

9.1.6 Upon completion of EP-317, Determination of Protective Action Recommendations, the Site Emergency Coordinator shall:

9.1.6.1 Obtain protective action recommendations from the Dose Assessment Team Leader.

9.1.6.2 Discuss recommendations with the (Interim) Emergency Director and Emergency Support Officer to ensure that all parties are informed of the recommendations before they are made to government authorities.

9.1.6.3 Meet with the Commonwealth of Pennsylvania representatives in the Emergency Operations Facility to ensure that questions on protective actions to be applied are answered prior to formal recommendation.

9.1.6.4 Provide protective action recommendations to Pennsylvania Bureau of Radiation Protection.

9.1.6.5 Update these recommendations as new data become available or conditions change.

9.1.7 Upon completion of EP-318, Liquid Release Dose Calculations for Drinking Water, notify if appropriate downstream water users per EP-287.

9.2 FOLLOW-UP

9.2.1 The Site Emergency Coordinator is responsible for the following:

9.2.1.1 Maintaining awareness of plant status and being alert to potential off-site consequences of the emergency.

9.2.1.2 Conducting periodic briefings for Emergency Operations Facility personnel.

9.2.1.3 Coordinating between the on-site emergency personnel and the off-site emergency personnel, when activated, to obtain necessary additional facilities, equipment, supplies, personnel, or technical services.

9.2.1.4 Coordinating with the Emergency Support Officer concerning personnel, equipment, and materials expected to arrive at the plant site.

9.2.1.5 Ensuring preparations are made for check-in of incoming personnel, especially with regard to site area access control, indoctrination of visiting personnel, maintenance of proper security, issuing dosimeters and preparing exposure records, and distribution of protective clothing and equipment.

9.2.1.6 Providing management direction for the establishment and functioning of the Emergency Support Center.

9.2.1.7 Continuing to supervise the operation of the Emergency Operations Facility.

9.2.1.8 Reviewing with the (Interim) Emergency Director the current status of information provided to governmental agencies and relieving the (Interim) Emergency Director of this responsibility. The Site Emergency Coordinator will then serve as the primary contact for Federal, State, and local emergency response agencies which dispatch personnel to the plant vicinity, and will provide status and assessment information to governmental agencies.

9.2.1.9 Provide direction for Philadelphia Electric emergency response personnel who are dispatched to the plant site and for support personnel activated by Philadelphia Electric Company.

9.2.1.10 Keeping the Emergency Support Officer, the (Interim) Emergency Director, Federal, and State Government Liaison appraised of actions taken and of consequences off-site.

9.2.1.11 Coordinating with the Federal/State Government Liaison, (Interim) Emergency Director and the Emergency Support Officer to determine when to terminate the initial phase and enter the recovery phase, informing various agencies and organizations when the modification is to be implemented.

10.0 REFERENCES

10.1 EP-203 Emergency Operations Facility (EOF) Activation

10.2 EP-307 Reception and Orientation of Support Personnel

10.3 EP-317 Determination of Protective Action Recommendations

10.4 EP-287 Nearby Public and Industrial Users of Downstream Water

10.5 EP-C-218 Health Physics and Chemistry Coordinator

10.6 EP-C-315 Environmental Sampling Coordinator

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-201 TECHNICAL SUPPORT CENTER (TSC) ACTIVATION

1.0 PURPOSE

The purpose of this procedure is to describe the instructions and actions required for the activation, manning, and operation of the Technical Support Center (TSC).

2.0 RESPONSIBILITIES

2.1 The (Interim) Emergency Director shall direct the activation of the Technical Support Center by performing the necessary steps of this procedure.

2.2 Shift I & C Technician shall activate the equipment in the TSC.

2.3 Communicators shall man assigned phones and communications log.

2.4 Status Board Recorders shall obtain and post information on assigned status boards.

2.5 Health Physics Technician shall perform a habitability check of the TSC.

3.0 APPENDICES

3.1 EP-201-1 Technical Support Center HVAC System 'Emergency' Mode

3.2 EP-201-2 TSC Equipment Activation

3.3 EP-201-3 LGS Plant Parameter Status Board

3.4 EP-201-4 Plant Parameter Trends Board

3.5 EP-201-5 Event Chronology Status Board

3.6 EP-201-6 Offsite Communications Status Board

3.7 EP-201-7 Staff Assignment Status Board

3.8 EP-201-8 Fire/Damage Status Board

3.9 EP-201-9 Dose Assessment Status Board

3.10 EP-201-10 TSC Telephone Check List

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 Activate the TSC when an event has been classified as an Alert, Site Emergency or General Emergency in accordance with EP-101, Classification of Emergencies, or at the discretion of the (Interim) Emergency Director.

8.0 PRECAUTIONS

8.1 Verify TSC habitability prior to or during activation.

8.2 Ensure that TSC ventilation system is operating and that air samples are taken periodically to measure potential airborne contamination.

8.3 Ensure that incoming personnel to the site enter the protected area through the TSC Guard Station.

8.4 If the security computer is not operable ensure Security maintains a sign-in, sign-out log for personnel reporting to the TSC.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 (Interim) Emergency Director shall:

9.1.1.1 Assign a Shift I & C Technician to perform the steps in Appendix EP-201-1 Placing the Technical Support Center HVAC System in the 'Emergency' Mode and to perform the steps in Appendix EP-201-2, TSC Equipment Activation.

9.1.1.2 Assign an individual the duties of Emergency Director's Communicator and direct the individual to perform the steps outlined in Section 9.1.3 of this procedure.

9.1.1.3 Direct a HP Technician to perform a habitability check of the TSC per EP-330, Emergency Response Facility Habitability, if not already completed.

9.1.2 The Shift I&C Technician shall:

9.1.2.1 Use attached Appendices EP-201-1 and EP-201-2 to turn on lighting, and Particulate, Iodine and Noble Gas (PING) Monitor, and to place the HVAC in Emergency Mode.

THE TSC HVAC SYSTEM SHOULD BE OPERATING IN THE "NORMAL" MODE, IF NOT, START UP THE SYSTEM IN ACCORDANCE WITH S81.1.B STARTUP OF THE TECHNICAL SUPPORT CENTER HEATING, VENTILATION, AND AIR CONDITIONING SYSTEM.

9.1.3 Emergency Director's Communicator shall:

9.1.3.1 Using Appendix EP-201-10, TSC Telephone Checkoff List, verify communications capability exists from the Technical Support Center.

9.1.3.2 Inform the (Interim) Emergency Director when the communications capabilities have been verified or of any discrepancies. If there are any problems, have the Shift I&C technician call [redacted] and ask for telecommunications on-call personnel.

9.1.3.3 Man communications lines as directed by the (Interim) Emergency Director and maintain a communications documentation containing information received from and sent to emergency response personnel and offsite agencies.

The log shall include as a minimum the following information:

A. Date and Time (use 24 hour time notation)

B. Messages received or sent

C. Name of person information was received or sent to and location

D. Name and initials of person making entries

9.1.3.4 Inform the (Interim) Emergency Director promptly of all significant information received from other emergency response personnel and offsite agencies.

9.2 FOLLOW-UP

9.2.1 Emergency Director shall:

9.2.1.1 Ensure that the TSC Guard Station is activated, in accordance with EP-208, Security Team Activation.

9.2.1.2 Direct the communicator to call in additional personnel if needed. Use EP-280, Technical Support Center Group Phone List.

9.2.1.3 Assure that individuals are available as Status Board Recorders for necessary status boards.

A. LGS Plant Parameter Status Board

B. Plant Parameter Trends Board

C. Event Chronology Status Board

D. Offsite Communications Status Board

E. Staff Assignment Status Board

F. Fire/Damage Status Board.

G. Dose Assessment Status Board.

WHERE APPLICABLE, MAINTAIN DOCUMENTATION ON STATUS BOARDS

9.2.1.4 Direct the Status Board Recorder(s) to perform the steps outlined in Section 9.2.2 of these Follow-up Actions.

9.2.1.5 Assign an individual to man the communication lines to the Control Room and Operations Support Center and direct the individual to perform the steps outlined in Section 9.2.3 of this procedure.

9.2.1.6 If necessary, assign two individuals to man the telephone consoles and direct the individuals to perform the steps outlined in Section 9.2.3 of this procedure.

9.2.1.7 If necessary, assign a communicator to the Field Survey Group Leader for sending field survey data, and other information to the Emergency Operations Facility (EOF) and to perform the steps outlined in Section 9.2.3 of this procedure.

9.2.1.8 Assign individuals to be data display operators.

9.2.1.9 Inform the Control Room when the Technical Support Center is operational and manned, assuming control of its designated responsibilities.

9.2.1.10 Brief the TSC staff on their arrival and periodically (normally every 30 minutes) on the status of the pertinent plant conditions.

9.2.1.11 Contact the various Team Leaders for periodic status updates as necessary.

9.2.2 Status Board Recorders shall:

9.2.2.1 Fill in their assigned status board(s).

Format and content of the status board are given in the following appendices:

A. Appendix EP-201-3, LGS Plant Parameter Status Board

B. Appendix EP-201-4, Plant Parameter Trends Status Board

C. Appendix EP-201-5, Event Chronology Status Board

D. Appendix EP-201-6, Offsite Communications Status Board

E. Appendix EP-201-7, Staff Assignment Status Board

F. Appendix EP-201-8, Fire/Damage Status Board

G. Appendix EP-201-9, Dose Assessment Status Board

9.2.2.2 Contact the following individuals for the various status board information.

A. Data Display Operators for plant parameter status and plant parameter trend information.

B. Emergency Director's Communicator or Control Room for event chronology information.

C. Emergency Director's Communicator for offsite communication information.

D. Emergency Director's Communicator for staff assignment information.

E. OSC Coordinator for site radiological status.

F. Field Survey Group Leader for field survey status.

G. Fire and Damage Control Team Leader for Fire/Damage Status Board.

H. Dose Assessment Team Leader for Dose Assessment Status Board.

9.2.2.3 As information is received, post on assigned status board and maintain documentation of appropriate status board entries.

9.2.2.4 Transmit plant status information and event chronology information to appropriate Status Board Recorders at the EOF, if activated.

9.2.2.5 Review and update the status board as changes in plant conditions or information warrant.

9.2.2.6 Inform the appropriate Team Leaders as significant changes in status board information are noted.

9.2.3 Communicators shall:

9.2.3.1 When directed, use EP-280, Technical Support Center Group Phone List to call in additional personnel.

9.2.3.2 Man assigned communication lines or consoles.

9.2.3.3 Maintain a communications log containing information received from and sent to other emergency response facilities and other support organizations.

The log shall include as a minimum the following information:

A. Date and time (use 24 hour time notation)

B. Summary of messages received or sent

C. Name of person information was received from or sent to

D. Name and initials of person making entries

9.2.3.4 Inform the Emergency Director or appropriate Team Leader promptly of all significant information received from or sent to members of the emergency response organization or support organizations.

9.2.4 HP Technician shall:

9.2.4.1 Periodically confirm habitability per EP-330, Emergency Response Facilities Habitability.

10.0 REFERENCES

10.1. Limerick Generating Station Emergency Plan

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

10.3 NUREG 0696 - Functional Criteria for Emergency Response Facilities.

10.4 EP-280 - Technical Support Center Group Phone List.

10.5 EP-330 - Emergency Response Facilities Habitability

10.6 S81.1.B - Startup of the Technical Support Center Heating, Ventilation and Air Conditioning System

APPENDIX EP-201-1
TECHNICAL SUPPORT CENTER HVAC SYSTEM 'EMERGENCY MODE'

1. When the Shift I&C Technician arrives at the TSC, HVAC System should be operating in the 'Normal' mode per procedure S81.1.B Startup of The Technical Support Center Heating, Ventilating, and Air Conditioning System. If not, start up the system per S81.1.B.

   A TWO POSITION MANUAL SWITCH, LOCATED IN THE DISPLAY AREA ON THE EASTERN COLUMN IS PROVIDED FOR SWITCHING THE TECHNICAL SUPPORT CENTER'S HEATING, VENTILATION & AIR CONDITIONING SYSTEM FROM THE NORMAL MODE OF OPERATION TO THE EMERGENCY MODE OF OPERATION.

2. Turn the control switch on the eastern column of the display area to its "EMERGENCY" position in order to actuate the emergency mode.

3. Inform the Emergency Director that the HVAC System is functioning in the 'Emergency' mode.

VERIFY THE FOLLOWING:

4. Fan ME-03 is activated.

5. The fan flow rate is 3000 cfm as read on the airflow monitor panel in the mechanical equipment room.

6. MD1 closes.

7. Exhaust Fan ME-07 stops.

APPENDIX EP-201-3
LGS PLANT PARAMETER STATUS - UNIT NO. ____

DATE: _____

Radiological Parameters Time ____

North Stack ____ uCi/cc ____ uCi/sec
North Stack Flow ____ cfm
South Stack ____ uCi/cc ____ uCi/sec
South Stack Flow ____ cfm
D/W Rad Monitor ____ R/hr
R/X Encl Exh ____ mr/hr
Refuel Floor Exh. ____ mr/hr
Air Ejector Offgas ____ mr/hr
R/W Monitor ____ cpm

Meteorological Parameters Time

Ave. Wind Direction ____ (from)
Ave. Ambient Temp. ____ degrees F
Precipitation _____
Stability Class _____
Wind Speed ( ) ____ (Tower 1)
Wind Speed ( ) ____ (Tower 2)
Wind Speed ( ) ____ (Satellite)

POWER SUPPLIES Time ____

Source	Supplying	Unavail/Reason
220 kv 1 offsite		
500 kv 2 offsite		
D-1		
D-2		
D-3		
D-4		

Bus	Offsite	Diesel#	Unavail
D1 1			
D1 2			
D1 3			
D1 4			

Reactor Parameters Time ____

Power _____
Level _____ inches
Pressure _____ psig

Reactivity Control Time ____

Of Rods not inserted ____

SBLC Inj. Unavail/Reason

A _____
B _____
C _____

Pressure Control Time ____

#Bypass Valves Open ____

SRV's A B C D E F G H J K L M N S

Open _____
Closed _____
Was Open _____

Level Control Time ____

F.W.A. on Unavail/Reason

B _____
C _____

CRD A _____
B _____
HPCI _____
RCIC _____
Cond. A _____
B _____
C _____
C.S.A _____
B _____
C _____
D _____
LPCI A _____
B _____
C _____
D _____
RHRSW A _____
B _____
C _____
D _____
Cond. _____
Trans. _____
Refuel _____
Trans. _____
SBLC _____

APPENDIX EP-201-2
TSC EQUIPMENT ACTIVATION

1. Enter the TSC Display area and turn on display area lighting switches on the wall by the entry door and by the conference room.

2. Turn on the Particulate-Iodine-Noble Gas Monitor (PING) located in the equipment room.

3. Turn on CRT's per posted procedures.

4. Check the radios in the equipment room for operability.

5. Inform the (Interim) Emergency Director when the TSC Equipment setup is complete and of any equipment problems.

APPENDIX EP-201-3 (CONT'D)
LGS PLANT PARAMETER STATUS - UNIT NO. (CONT'D)

DATE: _____

Containment Parameters

Drywell pressure ____ psig
Drywell Temp ____ F
Suppression Pool Temp ____ F
*Suppression Pool Level ____ ft
Containment ____ %O2 ____ %H2

Containment Control Time ____

RHR	Sup. Pool Cool	Sup. Pool Spray	Spray D/W	Spray S/D Cool	Unavail/ Reason
A					
B					
C					
D					

RHRSW	On	Unavail/Reason
A		
B		
C		
D		

Isolations	Isolated/Exceptions
I MSIV	
II RHR	
III RWCU	
VII Containment	
VII MISC	

SGTS	On	Unavail/Reason
Train A		
B		
Fan A		
B		

Containment H2 Recombiners	ON	Unavail/Reason
A		
B		

APPENDIX EP-201-4
PLANT PARAMETER TRENDS

Time										
Reactor Press psig										
Reactor Power %										
Reactor Level in										
Drywell Press psig										
Drywell Temp degrees F										
Suppression Pool Level ft										
Suppression Pool Temp degrees F										
Containment Rad R/hr										
North Stack Rad uCi/sec										

APPENDIX EP-201-5
EVENT CHRONOLOGY STATUS BOARD

DATE:

TIME	EVENT	EVENT

APPENDIX EP-201-6
OFFSITE COMMUNICATIONS STATUS BOARD

DATE:

TIME	OFFSITE COMMUNICATIONS	RESPONSE/COMMENT

APPENDIX EP-201-7
STAFF ASSIGNMENT STATUS BOARD

DATE:

EMERGENCY TITLE	NAME	BADGE #	EMERGENCY TITLE	NAME
Emergency Director			Shift Superintendent	
Personnel Safety Team Leader			Shift Supervisor	
Fire and Damage Team Leader				
Dose Assessment Team Leader				
Chem. Sampling & Analysis Team Leader				
Field Survey Group Leader			Site Emergency Coordinator	
Security Team Leader				
Technical Support Group Leader				
US NRC Representative				
OSC Coordinator			Emergency Support Officer	

APPENDIX EP-201-8
FIRE/DAMAGE STATUS BOARD

DATE:

TIME	LOCATION	DESCRIPTION	REPAIR STATUS

APPENDIX EP-201-9
DOSE ASSESSMENT DATA STATUS BOARD

Wind Direction: NOBLE GAS IODINE

Turb. Class: T= T= T= T= T= T= T= T= T= T=

Windspeed (mph)
Dose Rate (mr/hr)
Integrated Dose (r)
Dose in T+2 hr (r)
Dose in T+6 hr (r)
Dose Rate (mr/hr)
Integrated Dose (r)
Dose in T+2 hr (r)
Dose in T+6 hr (r)
Dose Rate (mr/hr)
Integrated Dose (r)
Dose in T+2 hr (r)
Dose in T+6 hr (r)
Dose Rate (mr/hr)
Integrated Dose (r)
Dose in T+2 hr (r)
Dose in T+6 hr (r)
Dose Rate (mr/hr)
Integrate Dose (r)
Dose in T+2 hr (r)
Dose in T+6 hr (r)
Dose Rate (mr/hr)
Integrated Dose (r)
Dose in T+2 hr (r)

Date:
Release Point:

Est. Release

Potential Release
Source Term Study
Est. Activity:

Est. Release Rate:

Highest Off Site
Dose Rate:

APPENDIX EP-201-10
TSC PHONE CHECK LIST

Test Prelude Phones for Dial Tone	YES/NO
Located at Emergency Director's Desk:	
[redacted] Emergency Notification	
[redacted] OSC	
[redacted] Corporate Spokesman	
[redacted] Control Room/EOF (	
[redacted] Management Circuit	
[redacted] EOF	
In NRC Office (Red Phone)	
NRC (located in display area) (Red Phone)	
[redacted] In Conference Room (Brown Phone)	
[redacted] In Emergency Director Office (Brown Phone)	
At Dose Assessment Team Leader's Desk:	
[redacted] Bureau of Radiation Protection (Green Phone)	
[redacted] Field Survey (Yellow Phone)	
[redacted] (In Dose Assessment Room) (Yellow Phone)	
At Technical Support Group Leader's Desk:	
[redacted] Bureau of Radiation Protection-Technical (White Phone)	
At Personnel Safety Team Leader's Desk:	
[redacted] Evacuation Assembly (Beige Phone)	
At Fire and Damage Team Leader's Desk:	
[redacted] Maintenance Coordination (Brown Phone)	
In Telephone Switch Room:	
[redacted] Emergency Communications (Brown Phone)	

APPENDIX EP-201-10
TSC PHONE CHECK LIST (CONT'D)

	YES/NO
Test Station Phones for Dial Tone (Black Phone)	
ERFDS Computer Terminal	
Emergency Analysis Team Phone	
Fire/Damage Team Leader	
Telecopier	
Technical Engineer	
Emergency Director Office	
Emergency Director	
Conference Room	
NRC Office	
Personnel Safety Team Leader	
Personnel Dosimetry	
Field Survey Group Leader	
Chemistry Sampling and Analysis Team Leader	
#2618/#2617 Dose Assessment Team Leader	
Dose Assessment Group	
Security Team Leader	
Personnel Accountability	
Emergency Preparedness Coordinator	
Status Boards	
Telephone Switch Room	
Test Brown Conference Desk Phones for Dial Tone	
Emergency Director's Desk	
Technical Support Group Leader's Desk	
Conference Room	
Test Outside Lines (Black Phones)	
Emergency Director	
Emergency Director Office	
Dose Assessment Team Leader Desk	
NRC Office	
NRC Office	

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-202 OPERATIONS SUPPORT CENTER (OSC) ACTIVATION

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the actions required by the Operations Support Center Coordinator to activate, man and manage the Operations Support Center (OSC).

2.0 RESPONSIBILITIES

2.1 The Operations Support Center Coordinator shall activate the OSC by performing the necessary steps in this procedure.

3.0 APPENDICES

3.1 Appendix EP-202-1 OSC - Operator Assignment Status Board

3.2 Appendix EP-202-2 OSC - HP Assignment Status Board

3.3 Appendix EP-202-3 OSC - Plant Status Board

3.4 Appendix EP-202-4 OSC - Telephone Check List

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 Portable Area Radiation Monitor

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 The Operations Support Center is activated when an event has been classified as an Alert, Site or General Emergency in accordance with EP-101, Classification of Emergencies, or at the discretion of the Emergency Director.

8.0 PRECAUTIONS

8.1 Verify habitability of Operations Support Center in accordance with EP-330, Emergency Response Facility Habitability.

8.2 Personnel shall log in and out of the Operations Support Centers in order to maintain personnel accountability.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 Operations Support Center Coordinator shall:

9.1.1.1 Assign an individual the duties of Operations Support Center Communicator and Status Board Keeper. Use Appendices EP-202-1, EP-202-2, EP-202-3 for status board formats.

9.1.1.2 Direct the establishment and maintenance of a log of pertinent events. The log keeper can be any available maintenance person or technician.

9.1.1.3 Direct the Operations Support Center communicator to verify operability of the telephones between the OSC and the TSC and Control Room (in accordance with Appendix EP-202-4, OSC Telephone Check List) and maintain the status board.

9.1.1.4 Notify the (Interim) Emergency Director when the Operations Support Center is manned and communications are satisfactory between the Control Room, Technical Support Center and the Operations Support Center.

9.1.1.5 Have Health Physics check out equipment.

9.1.1.6 Have Health Physics set up a portable area radiation monitor (if available) or use a survey meter to monitor radiation levels.

9.2 FOLLOW-UP

9.2.1 Operations Support Center Coordinator shall:

9.2.1.1 Remain available for contact with the Control Room or TSC in order to provide personnel for emergency teams.

9.2.1.2 Direct personnel entering or leaving the Operations Support Center to log in or out using the Operations Support Center log.

9.2.1.3 Contact the Emergency Director for additional manpower, if needed.

9.2.1.4 Upon leaving the Operations Support Center for any reason, delegate the duties to the senior remaining operator or HP technician.

9.2.1.5 Assign Health Physics to periodically confirm habitability using EP-330, Emergency Response Facility Habitability.

9.2.1.6 In the event the OSC becomes unhabitable, direct personnel as follows:

A. Plant Operators and Auxiliary Plant Operators report to the Control Room.

B. HP Technicians: One HP Technician should accompany each Plant Operator or Auxiliary Plant Operator to the Control Room. All remaining HP Technicians shall report to Admin. Bldg., 2nd Floor - HP&C Area.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

10.2 Nureg 0654, Rev. 1 - Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

10.3 Nureg 0696 - Functional Criteria for Emergency Response Facilities.

10.4 10 CFR 20

10.5 EP-330 - Emergency Response Facilities Habitability

APPENDIX EP-202-1

OSC - OPERATOR ASSIGNMENT STATUS BOARD

DATE:

TIME	JOB DESCRIPTION	OPERATORS SENT(NAME)	MAINTENANCE CALLED	ESTIMATED RETURN TIME

APPENDIX EP-202-2

OSC - HP ASSIGNMENT STATUS BOARD

DATE:

TIME	JOB DESCRIPTION	HP'S SENT (NAME)	RADIATION PROBLEMS	ESTIMATED RETURN TIME

APPENDIX EP-202-3

OSC PLANT STATUS BOARD

UNIT ____

RX LEVEL _____ TIME _____ EMERGENCY CLASS: _____

13 KV Bus	1:	2:		HPCI:
Condensate Pumps	A:	B:	C:	RCIC:
Recirc Pumps	A:	B:		
4 KV Bus	D 1:	D 2:	D 3:	D 4:
Diesel	D 1:	D 2:	D 3:	D 4:
RHR	A:	B:	C:	D:
RHRSW	A:	B:	C:	D:
Core Spray	A:	B:	C:	D:
ESW	A:	B:	C:	D:
CRD	A:			B:
SBLC Pumps	A:	B:	C:	
SBLC Valves	A:	B:	C:	
SBGT Fans	A:	B:	SBGT Filter A SBGT Filter B	
Containment H2 Recomb.	A:	B:		
Air Compressors:	A:	B:	Service Air:	
Backup Service Air:				

APPENDIX EP-202-4

OSC - EMERGENCY EQUIPMENT INVENTORY LIST

Check the following phones for dial tone:

	YES/NO
OSC Prelude Phones:	
[redacted] Control Room/OSC (Beige Phone)	_____
OSC/TSC (Light Blue Phone)	_____
OSC Station Phones (Black):	YES/NO
[redacted]	_____
	_____
	_____

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-203 EMERGENCY OPERATIONS FACILITY (EOF) ACTIVATION

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the activation, manning, and conduct of operations of the Emergency Operations Facility (EOF).

2.0 RESPONSIBILITIES

2.1 The Dose Assessment Team Leader or other individual appointed by Emergency Director shall activate the EOF by performing the necessary steps in this procedure.

2.2 The Site Emergency Coordinator's Communicator shall man communication lines and log information.

2.3 The Site Emergency Coordinator shall direct operation at the EOF.

2.4 The Status Board Recorders shall obtain and post information.

3.0 APPENDICES

3.1	EP-203-1	LGS Plant Parameter Status Board
3.2	EP-203-2	Plant Parameter Trends Board
3.3	EP-203-3	Event Chronology Status Board
3.4	EP-203-4	Staff Assignment Status Board
3.5	EP-203-5	Headquarters Support Requests Status Board
3.6	EP-203-6	Offsite Communications Status Board
3.7	EP-203-7	Dose Assessment Data Status Board

3.8 EP-203-8 EOF Phone Check List

3.9 EP-203-9 EOF Equipment Activation

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 The EOF is activated when an event has been classified as a Site Emergency or General Emergency in accordance with EP-101, Classification of Emergencies, or at the discretion of the Site Emergency Coordinator or (Interim) Emergency Director.

8.0 PRECAUTIONS

8.1 Maintain accountability of personnel and staff reporting to the EOF throughout the incident.

9.0 PROCEDURE

9.1 ACTIONS

PERSONNEL ARE DESIGNATED AND ASSIGNED GENERAL DUTIES IN THE EOF BY EP-279, EOF GROUP PHONE LIST.

9.1.1 The Dose Assessment Team Leader or other designated personnel shall:

9.1.1.1 Obtain keys for EOF from the Plymouth Dispatch office.

9.1.1.2 Assign the first available person to the entrance of the EOF to control access and to establish a log for the purposes of personnel accountability.

ENSURE THAT PERSONNEL SIGN IN AND OUT AND THAT ONLY INDIVIDUALS WITH OFFICIAL BUSINESS ARE ALLOWED TO ENTER THE EOF.

9.1.1.3 Assign an individual (as soon as one is available), the duties of the Site Emergency Coordinator Communicator. The communicator shall perform the steps outlined in Section 9.1.2. Until a communicator is available the Site Emergency Coordinator shall perform the communicator's duties.

9.1.2 The Site Emergency Coordinator Communicator shall:

9.1.2.1 Use Appendix EP-203-9, EOF Equipment Activation, to activate the EOF equipment.

9.1.2.2 Verify communications capability by completing Appendix EP-203-8, EOF Phone Check List.

9.1.2.3 Use EP-279, Emergency Operations Facility Group Phone List to call in additional personnel to staff the EOF, if necessary.

9.1.2.4 Inform the Dose Assessment Team Leader or alternate when the above communications capabilities have been verified or of any problems.

9.1.2.5 As personnel arrive, man communications lines on the Site Emergency Coordinator's desk and maintain a communications log containing information received from and sent to other facilities and other organizations.

ENSURE ALL PERTINENT ACTIONS AND NOTIFICATIONS ARE LOGGED.

9.2 FOLLOW-UP

SITE EMERGENCY COORDINATOR SHALL ASSUME CONTROL AFTER HE HAS ARRIVED AND IS COGNIZANT OF THE SITUATION.

9.2.1 Site Emergency Coordinator shall:

9.2.1.1 Assign personnel to be status board keepers and direct them to perform the steps outlined in section 9.2.4 of this procedure.

A. LGS Plant Parameter Status Board

B. Plant Parameter Trends Board

C. Event Chronology Status Board

D. Staff Assignment Status Board

E. Headquarters Support Requests Status Board

F. Offsite Communications Status Board

G. Dose Assessment Data Status Board

9.2.1.2 Ensure that an individual has been assigned as the Site Emergency Coordinator's Communicator.

9.2.1.3 Inform the Technical Support Center when the Emergency Operations Facility is operational, manned and in control of its designated responsibilities.

9.2.1.4 Brief the EOF Staff periodicially on the status of the emergency and pertinent plant conditions.

9.2.1.5 Direct transmittion of all Status Board information to appropriate Headquarters Emergency Support Center Status Board Recorders.

9.2.3 Dose Assessment Team Leader shall:

9.2.3.1 Complete the Dose Assessment Team Activation in accordance with EP-210, Dose Assessment Team Activation.

9.2.4 Status Board Recorders shall:

9.2.4.1 Fill in their assigned status board(s).

Format and content of the Status Boards are given in the following appendices:

A. Appendix EP-203-1, LGS Plant Parameter Status Board

B. Appendix EP-203-2, Plant Parameter Trends Status Board

C. Appendix EP-203-3, Event Chronology Status Board

D. Appendix EP-203-4, Staff Assignment Status Board

E. Appendix EP-203-5, Headquarters Support Requests Status Board

F. Appendix EP-203-6, Offsite Communications Status Board

G. Appendix EP-203-7, Dose Assessment Data Status Board

9.2.4.2 Contact the following individuals for the various Status information.

A. TSC Plant Parameter Status Board Recorder for Plant Status information.

B. TSC Event Chronology Status Board Recorder for Event Chronology information.

C. Site Emergency Coordinator's Communicator for Staff Assignment Information and Headquarters Support Requests.

D. Emergency Director's Communicator Site Emergency Coordinator's Communicator or Control Room Communicator for offsite communication information.

E. Field Survey Group Leader for field survey data.

F. Dose Assessment Team Leader for dose assessment data.

9.2.4.3 Post appropriate information on assigned status board and maintain a log of all status board entries.

9.2.4.4 Review and update the status boards as changes in plant conditions or information warrant.

9.2.4.5 Inform the appropriate Coordinator, Team or Group Leader as significant changes in status board information are noted.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

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

10.3 NUREG 0696 - Functional Criteria for Emergency Response Facilities.

10.4 EP-279 - Emergency Operations Facility Group Phone List

10.5 EP-210 - Dose Assessment Team Activation

APPENDIX EP-203-1
LGS PLANT PARAMETER STATUS - UNIT NO._____

DATE: _____

Radiological Parameters Time _____

North Stack ____ uCi/cc ____ uCi/sec
North Stack Flow ____ cfm
South Stack ____ uCi/cc ____ uCi/sec
South Stack Flow ____ cfm
D/W Rad Monitor ____ R/hr
R/X Encl Exh ____ mr/hr
Refuel Floor Exh. ____ mr/hr
Air Ejector Offgas ____ mr/hr
R/W Monitor _____cpm

Meteorological Parameters Time

Ave. Wind Direction ____ (from)
Ave. Ambient Temp. ____ degrees F
Precipitation _____
Stability Class _____
Wind Speed ( ) ____ (Tower 1)
Wind Speed ( ) ____ (Tower 2)
Wind Speed ( ) ____ (Satellite)

POWER SUPPLIES Time _____ _____

Source	Supplying	Unavail/Reason
220 kv 1 offsite		
500 kv 2 offsite		
D-1		
D-2		
D-3		
D-4		

Bus	Offsite	Diesel#	Unavail
D1 1			
D1 2			
D1 3			
D1 4			

Reactor Parameters Time _____

Power _____ %
Level _____ inches
Pressure _____ psig

Reactivity Control Time ____

Of Rods not inserted ____

SBLC Inj. Unavail/Reason

A _____
B _____
C _____

SBLC Tank Level _____

Pressure Control Time ____

#Bypass Valves Open ____

SRV's A B C D E F G H J K L M N S

Open _____
Closed _____
Was Open _____

Level Control Time ____

F.W.A. on Unavail/Reason

B _____
C _____

CRD A _____
B _____
HPCI _____
RCIC _____
Cond. A _____
B _____
C _____
C.S.A _____
B _____
C _____
D _____
LPCI A _____
B _____
C _____
D _____
RHRSW A _____
B _____
C _____
D _____
Cond. Trans. _____
Refuel Trans. _____
SBLC _____

APPENDIX EP-203-1
LGS PLANT PARAMETER STATUS - UNIT NO. (CONT'D)

DATE: _____

Containment Parameters
Drywell pressure ____ psig
Drywell Temp ____ f
Suppression Pool Temp ____ f
*Suppression Pool Level ____ ft
Containment ____ %02 ____ %H2

Containment Control Time ____

RHR	Sup. Pool Cool	Sup. Pool Spray	D/W Spray	S/D Cool	Unavail/ Reason
A					
B					
C					
D					

RHRSW	On	Unavail/Reason
A		
B		
C		
D		

Isolations	Isolated/Exceptions
I MSIV	
II RHR	
III RWCU	
VII Containment	
VII MISC	

SGTS	On	Unavail/Reason
Train A		
B		
Fan A		
B		

Containment H2 Recombiners	On	Unavail/Reason
A		
B		

DATE

APPENDIX EP-203-2
PLANT PARAMETER TRENDS

Time										
Reactor Press psig										
Reactor Power %										
Reactor Level in										
Drywell Press psig										
Drywell Temp degrees F										
Suppression Pool Level ft										
Suppression Pool Temp degrees F										
Containment Rad R/hr										
North Stack Rad uCi/sec										

APPENDIX EP-203-3
EVENT CHRONOLOGY STATUS BOARD

DATE:

TIME	EVENT NO.	EVENT

APPENDIX EP-203-4
STAFF ASSIGNMENT STATUS BOARD

Date:

TITLE	NAME LOCATION
SHIFT SUPERINTENDENT	
SHIFT SUPERVISOR	
EMERGENCY DIRECTOR	
PERSONNEL SAFETY TEAM LEADER	
FIRE/DAMAGE TEAM LEADER	
SITE EMERG. COORD.	
HEALTH PHYSICS/CHEM. COORD.	
DOSE ASSESSMENT TEAM LEADER	
CHEMISTRY SAMPLING & ANALYSIS TEAM LDR.	
FIELD SURVEY GROUP LEADER	
EOF LIAISON - CORP. COMM.	
PROCEDURE SUPPORT COORDINATOR	
PLANNING AND SCHEDULING COORDINATOR	
MECH. ENGR. LIAISON	
ELEC. ENGR. LIAISON	
EMERGENCY SUPPORT OFFICER	

APPENDIX EP-203-5
HEADQUARTERS SUPPORT REQUESTS STATUS BOARD

Date:

TIME	SUBMITTED TO	ITEM	RESPONSE STATUS

APPENDIX EP-203-6
OFFSITE COMMUNICATIONS STATUS BOARD

DATE:

TIME	OFFSITE COMMUNICATIONS	RESPONSE/COMMENT

APPENDIX EP-203-7
DOSE ASSESSMENT DATA STATUS BOARD

Wind Direction: NOBLE GAS IODINE

Turb. Class: T= T= T= T= T= T= T= T= T= T=

	T=	T=	T=	T=	T=	T=	T=	T=	T=	T=
Windspeed (mph)										
Dose Rate (mr/hr)										
Integrated Dose (r)										
Dose in T+2 hr (r)										
Dose in T+6 hr (r)										
Dose Rate (mr/hr)										
Integrated Dose (r)										
Dose in T+2 hr (r)										
Dose in T+6 hr (r)										
Dose Rate (mr/hr)										
Integrated Dose (r)										
Dose in T+2 hr (r)										
Dose in T+6 hr (r)										
Dose Rate (mr/hr)										
Integrated Dose (r)										
Dose in T+2 hr (r)										
Dose in T+6 hr (r)										
Dose Rate (mr/hr)										
Integrate Dose (r)										
Dose in T+2 hr (r)										
Dose in T+6 hr (r)										
Dose Rate (mr/hr)										
Integrated Dose (r)										
Dose in T+2 hr (r)										

Date:

Release Point:

Est. Release

Potential Release
Source Term Study
Est. Activity:

Est. Release Rate:

Highest Off Site
Dose Rate:

APPENDIX EP-203-8
EOF PHONE CHECKOFF LIST

Test the Following Phones for Dial Tone:

1. Prelude Phones:	YES/NO
Located at the SEC Desk	
[redacted] TSC/EOF (Ivory - Spk)*	_____
CR & TSC/EOF (Orange)	_____
Located in the SEC Office	
[redacted] TSC/EOF (Ivory - Spk)	_____
CR & TSC/EOF (Orange)	_____
Management (Grey)	_____
(Brown-Spk)	_____
Located at SEC Communicator's Desk	
[redacted] Corporate Spokesman (Ash)	_____
Management (Grey)	_____
Located in State/Local Government Office	
[redacted] BRP Rad (Green)	_____
Located by Dose Assessment Desk	
[redacted] (Yellow)	_____
Located by HP & Chem Desk	
[redacted] (Green)	_____
(White)	_____
Located by Manual Dose Assessment Calculator	
[redacted] (Yellow)	_____

* Ivory colored phone - speaker at desk.

APPENDIX EP-203-8
EOF PHONE CHECKOFF LIST (CONT'D)

2. Limerick Station Phones (Black)

Phone #	Location/Area	YES/NO
[redacted]	NRC Office	
	Conference Room	
	Procedure Support Coordinator	
	Procedure Support Coordinator	
	EOF Security	
	Near HP & Chem Coordinator	
	Telecopier	
	HP & Chem Desk	
	HP & Chem Desk	
	RMMS Calculator	
	Medical Director	
	Emergency Preparedness	
	ERF Operator	
	Video Copier	
	NRC Desk	
	NRC Desk	

APPENDIX EP-203-8
EOF PHONE CHECKOFF LIST (CONT'D)

3. Outside Lines (Black Phone)

Phone #	Location/Area	YES/NO
[redacted]	State/Local Government Office	
	State/Local Government Office	
	State/Local Government Office	
	NRC Office	
	NRC Office	
	NRC Office	
	NRC Office	
	EOF SEC Desk	
	Dose Assessment Desk	
	Dose Assessment Desk	
	RMMS Calculator	
	Manual Dose Assessment Calculator	
	EOF Corp. Comm. Liaison	
	NRC Desk	
	NRC Desk	
	NRC Desk	
	NRC Desk	
	NRC Desk	
	NRC Desk	
	NRC Desk	

APPENDIX EP-203-8
EOF PHONE CHECKOFF LIST (CONT'D)

4. Plymouth Service Building Phones (Black)

Phone #	Location/Area	YES/NO
[redacted]	SEC Office	
	SEC Communicator's Desk	
	Near HP & Chem Coordinator	
	BRP	
	Telecopier	
	Reception Desk (Near Plant Status Printer)	
	EOF Corp. Comm. Liaison	
	Planning & Scheduling Coordinator	
	EOF Engineering Liaison	

APPENDIX EP-203-9
EOF EQUIPMENT ACTIVATION

1. Turn on Lights in EOF using switch(es) to the left of the door.

2. Turn on CRT's using posted procedures.

3. Check radio base station for operability.

4. Inform Dose Assessment Team Leader or Site Emergency Coordinator when activation is complete and of any problems discovered.

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-208 SECURITY TEAM ACTIVATION

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the activation and conduct of operation for the Security Team.

2.0 RESPONSIBILITIES

2.1 The Guard Sergeant or designated alternate shall assume the role of the Interim Security Team Leader and perform the steps of this procedure until relieved by the Security Team Leader.

2.2 The Security Team Leader shall relieve the Interim Security Team Leader and perform the steps of this procedure not completed by the Interim Security Team Leader.

2.3 The Security Team members shall perform the required steps in this procedure.

3.0 APPENDICES

3.1 Appendix EP-208-1 Exit Point Staffing for Site Evacuation

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 Traffic Vests

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure shall be implemented whenever a Personnel Assembly is announced, an Alert or higher classification is declared, a Site Evacuation is declared or at the discretion of the (Interim) Emergency Director.

8.0 PRECAUTIONS

8.1 Access to the site for support personnel without Limerick security badges during an Alert, Site Emergency and General Emergency may only be authorized by the following personnel:

8.1.1 (Interim) Emergency Director

8.1.2 (Interim) Security Team Leader

8.1.3 Site Emergency Coordinator

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Guard Sergeant shall:

9.1.1.1 Assume the role of the Interim Security Team Leader.

9.1.1.2 Call or assign someone to call the Security Team Leader and required group members by using EP-278 Security Team Phone List.

9.1.1.3 Assign Group Leaders from available security personnel to the following groups to perform the duties in Section 9.2 as required for the situation:

A. Access Control

B. Personnel Accountability

C. Plant Security

AT ANY TIME DURING THIS PROCEDURE THE INTERIM SECURITY TEAM LEADER MAY BE RELIEVED BY THE SECURITY TEAM LEADER.

9.1.1.4 At an Alert or higher the security gate on 269' elevation of the turbine enclosure should be locked.

9.1.1.5 If assembly with accountability is announced, perform the following steps:

A. Ensure that the Access Control Group assigns security personnel at the Personnel Processing Center to assist in controlling personnel access.

B. Ensure that the Plant Security Group are stationed at the appropriate personnel exit areas.

C. Activate the Personnel Accountability Group to perform personnel accountability checks in accordance with EP-110, Personnel Assembly and Accountability (Section 9.1.5.1).

9.1.1.6 If informed by the (Interim) Emergency Director that a site evacuation is going to be declared, perform the following:

A. Ensure that the Access Control Group assigns security personnel to the appropriate site access control points and selected offsite assembly area.

B. Ensure that the Plant Security Group assigns security personnel to the selected personnel exit areas and required protected area access control points.

C. Activate the Personnel Accountability Group to perform personnel accountability checks in accordance with EP-110, Personnel Assembly and Accountability (Section 9.1.5.2).

D. Immediately notify the (Interim) Emergency Director when the Access Control Group is at the appropriate site access control points and the Plant Security Group is at the selected personnel exit areas so that the site evacuation can commence.

9.1.1.7 Advise the (Interim) Emergency Director concerning the need for support of off-site security agencies, if necessary.

9.1.1.8 Coordinate the actions of off-site security agency personnel if their assistance is required.

9.2 FOLLOW-UP

9.2.1 The Security Team Leader shall:

9.2.1.1 Report to the Technical Support Center.

9.2.1.2 Review the current status of the emergency and relieve the Interim Security Leader.

9.2.1.3 Ensure that the necessary groups are staffed and performing the appropriate sections of this procedure. Augment groups as necessary, by using EP-278, Security Team Phone List.

9.2.1.4 Keep the (Interim) Emergency Director updated on status of the team's activities.

9.2.1.5 Periodically re-evaluate the security situation and make appropriate recommendations to the (Interim) Emergency Director.

9.2.1.6 Implement LGS Plant Protection Procedures as appropriate.

9.2.2 The Access Control Group shall:

THIS GROUP IS COMPRISED OF CONSTRUCTION SECURITY FORCE MEMBERS. THE CONSTRUCTION SECURITY SHIFT SUPERVISION IS THE APPROPRIATE CONTACT.

9.2.2.1 Be activated when directed by the (Interim) Security Team Leader.

9.2.2.2 Receive instructions via the best means available (telephone, radio, etc.) and obtain traffic vests from the Security stocks.

9.2.2.3 Members of the access control group will be dispatched to each of the following locations to control access:

A. North Parking Lot

B. Post #3

C. Main Access Gate (Gate #1)

D. Gate #2

E. Back Access Gate (Post #10)

F. Cross Road Outside Gate #1 (Evergreen and Sanatoga Roads)

SECURITY PERSONNEL NEED NOT BE POSTED AT A GATE THAT WILL REMAIN LOCKED DURING THE EMERGENCY.

9.2.2.4 During assembly with accountability:

A. Dispatch access control group members to the Personnel Processing Center to control personnel access.

9.2.2.5 During a site evacuation:

A. Control access and vehicle traffic by providing security personnel at locations required by Appendix EP-208-1.

B. Immediately notify the (Interim) Security Team Leader when security personnel are stationed at the required site access control points so the site evacuation can begin.

9.2.3 The Personnel Accountability Group shall:

9.2.3.1 For Personnel Accountability Check <u>without</u> Site Evacuation:

A. Perform a personnel accountability check as detailed in EP-110, Personnel Assembly and Accountability, Section 9.1.5.1.

9.2.3.2 For Site Evacuation

A. Report to the Administration Guard Station and perform personnel Accountability in accordance with EP-110, Personnel Assembly and Accountability, Section 9.1.5.2.

9.2.4 The Plant Security Group shall:

9.2.4.1 Maintain plant security in accordance with Plant Protection procedures, and as directed by the (Interim) Security Team Leader.

9.2.4.2 In the event of an Assembly with Accountability and Site Evacuation, assist personnel in the evacuation of affected areas and the performance of personnel accountability in accordance with EP-110.

9.2.4.3 Issue emergency dosimetry as directed by the Personnel Safety Team Leader for incoming personnel per PP-2, Emergency Admittance Procedure.

9.2.4.4 For assembly with accountability:

A. Assist the Personnel Accountability Group with the evacuation of non-essential personnel from the Protected Area.

B. Perform the instructions detailed in Step 9.1.4.1 of EP-110, Personnel Assembly and Accountability.

9.2.4.5 For Site Evacuation:

A. Control access to the protected area by providing security personnel at locations required by Appendix EP-208-1.

B. Perform the instructions detailed in Step 9.1.4.2 of EP-110, Personnel Assembly and Accountability.

C. Immediately notify the (Interim) Security Team Leader when security personnel are positioned and ready at the personnel exit areas.

10.0 REFERENCES

10.1 Limerick Generation Station Emergency Plan

10.2 Limerick Generating Station Security Plan and Procedures

10.3 EP-278 Security Team Phone List

10.4 EP-254 Vehicle and Evacuee Control Group

10.5 EP-110 Personnel Assembly and Accountability

10.6 PP-2 Emergency Admittance Procedure

APPENDIX EP-208-1
EXIT POINT STAFFING FOR SITE EVACUATION(1)

	DAY SHIFT	AFTERNOON SHIFT	NIGHT SHIFT
TSC PERSONNEL EXIT AREA	P		
ADMIN PERSONNEL EXIT AREA	P	P	P
TURBINE DECK GATE - 269'(4)	P		
NORTH VEHICLE ACCESS GATE	P		
SOUTH VEHICLE ACCESS GATE	P		
COOLING TOWER GATE	P		
NORTH PARKING LOT	A	A	
POST #3	A	A	A
MAIN ACCESS GATE (GATE #1)	A	A	A
GATE #2	A	A	
BACK ACCESS GATE (POST 10)	A		
CORNER SANATOGA & EVERGREEN ROADS	A	A	A
OFFSITE ASSEMBLY AREA (SEE NOTE 2)	A	A	A

NOTES:
(1) Security personnel need not be stationed at a gate which is to remain locked during the Emergency.
(2) The offsite assembly area is either Cromby Generating Station or Limerick Airport.
(3) A = Access Control Group
P = Plant Security Group
(4) This should be locked at an Alert or above.

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-210 DOSE ASSESSMENT TEAM

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the Activation of the Activation of Dose Assessment Team in the Technical Support Center and the transfer of Dose Assessment functions to the Emergency Operations Facility (EOF).

2.0 RESPONSIBILITIES

2.1 The Dose Assessment Team Leader is responsible for directing the activities of the Dose Assessment and Field Survey Groups and advising the Emergency Director on protective action recommendations.

2.2 The Field Survey Group Leader is responsible for coordinating the Activities of the Field Survey groups, in Accordance with the requirements of EP-222, Field Survey Group.

3.0 APPENDICES

None

4.0 PREREQUISITES

4.1 An emergency has been declared in accordance with EP-101.

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

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

7.0 ACTION LEVEL

7.1 Dose Assessment Team shall be activated at the discretion of the Emergency Director or upon activation of the Technical Support Center (TSC).

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Dose Assessment Team Leader shall:

9.1.1.1 Upon notification that the TSC is to be activated and prior to reporting members to the TSC, implement EP-294, Dose Assessment Team Phone List.

9.1.1.2 Contact the (Interim) Dose Assessment Team (Shift Technical Advisor) to receive an update on plant status and Dose Assessment actions which have been taken.

9.1.1.3 Assemble and brief Dose Assessment Team members including Field Survey Group Leader.

Direct the team members to perform dose calculations with the RMMS computer (using EP-315) or manually using the following procedures:

EP-316 Cumulative Population Dose Calculations for Airborne Releases

EP-318 Liquid Release Dose Calculation Method for Drinking Water

EP-319 Fish Ingestion Pathway Dose Calculation

EP-325 Use of Containment Radiation Monitor to Estimate Release Source Term

9.1.1.5 Request the appropriate number of personnel to form Field Survey Squad from the Personnel Safety Team Leader, if there is a radioactive release, or the potential for a release, occurring.

A SQUAD IS COMPRISED OF A HEALTH PHYSICS TECHNICIAN AND A DRIVER

9.1.1.6 Contact the Emergency Director when the Dose Assessment Team is ready to assume responsibility for Dose Assessment Activities.

9.2 FOLLOW-UP

9.2.1 The Dose Assessment Team Leader shall:

9.2.1.1 Advise the Emergency Director on protective action recommendations in Accordance with EP-317, Determination of Protective Action recommendations.

9.2.1.2 Coordinate the placement of Field Survey groups, through the Field Survey Group Leader and coordinate with the Contact Technical Support Group leader periodically to ascertain plant status and impact of operator actions on releases.

9.2.1.3 Report data to offsite organizations, as requested by the Emergency Director.

9.2.1.4 Contact the Load Dispatcher or the National Weather Service for an extended weather forecast.

9.2.1.5 Keep the Emergency Director appraised of release rate and meterological trends, and any changes which requre a modification to the protective action recommendation.

9.2.1.6 Request inplant and effluent sampling as necessary from the Chemistry Sampling Team Leader to provide data which would improve dose projections.

9.2.1.7 Prior to transferring responsibility to the EOF, inform the EOF Dose Assessment Team Leader of the following:

a. Status and Location of Field Survey Squads

b. Results of last dose calculation

c. Any ongoing release and projected duration

d. Current protective action recommendation

e. Plant status as affecting dose assessment

9.2.1.8 Transfer Dose Assessment responsibility to EOF on the concurrence of the Emergency Director, the Site Emergency Coordinator and the EOF Dose Assessment Personnel.

10.0 REFERENCES

10.3 EP-316 Cumulative Population Dose Calculations for Airborne Releases

10.4 EP-317 Determination of Protective Action Recommendations

10.5 EP-318 Liquid Release Dose Calculations Method for Drinking Water

10.6 EP-319 Fish Ingestion Pathway Dose Calculation

10.7 EP-325 Use of Containment Radiation Monitor to Estimate Release Source Team

10.8 EP-222 Field Survey Group

10.9 EP-315 Operation of RMMS (RM-21A) Computer

PHILADELPHIA ELECTRIC COMPANY
ELECTRIC PRODUCTION DEPARTMENT
LIMERICK GENERATING STATION

3843010670

May 14, 1984

FROM: P. J. Duca

TO: G. M. Leitch

SUBJECT: CANCELLATION MEMORANDUM FOR EP-220
Reference: Limerick Administrative Procedure A-21

EP-220 should be cancelled because the organization was changed to eliminate the Radiation Protection Team and assign those responsibilities to the Personnel Safety Team and Dose Assessment Team.

P. J. Duca 05/14/84

- -

FROM: G. M. Leitch

TO: Holders of EP Procedures

This Cancellation Memorandum has been reviewed by PORC and is approved. All holders of EP procedures will be contacted regarding destruction of EP-220. In accordance with Administrative Procedure A-21, procedure number EP-220 will not be re-used.

APPROVED: STATION SUPERINTENDENT

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-221 PERSONNEL DOSIMETRY, BIOASSAY, AND RESPIRATORY PROTECTION GROUP

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the actions of the Personnel Dosimetry, Bioassay and Respiratory Protection Group.

2.0 RESPONSIBILITIES

2.1 The Personnel Dosimetry, Bioassay and Respiratory Protection Group Leader is responsible for coordinating the provision of technical and Health Physics support as directed by the Personnel Safety Team Leader and as requested by the Plant Survey Group Leader.

3.0 APPENDICES

None

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

The Personnel Dosimetry, Bioassay, and Respiratory Protection Group shall be activated during an emergency as determined by the Personnel Safety Team Leader, usually, after transfer of the Dose Assessment function to the EOF.

8.0 PRECAUTIONS

8.1 During emergencies, all routine Health Physics procedures, related to functions of the Personnel Dosimetry, Bioassay, and Respiratory Protection C-Group shall be followed unless deviations are authorized by the Personnel Dosimetry, Bioassay and Respiratory Protection Group Leader.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Personnel Dosimetry, Bioassay, and Respiratory Protection Group Leader shall:

9.1.1.1 Report to the TSC and discuss the situation with the Personnel Safety Team Leader.

9.1.1.2 Station personnel to support plant needs and brief group members on the expected short and long term needs and priorities.

9.1.1.3 Direct the group to accomplish necessary tasks including, but not limited to those specified in the following functional areas.

9.1.2 Emergency Dosimetry Issuance

9.1.2.1 Establish communications with Security and with group members as assigned to the Dosimetry Office, Whole Body Count Room and the OSC.

9.1.2.2 Direct the group members and Security personnel to perform the following tasks as necessary.

A. Inventory and inspect the emergency devices at each location.

B. Issue dosimetry to emergency team personnel and off-site emergency response personnel (i.e. ambulance crews, fire-fighting crews, etc.) in accordance with Health Physics procedures (HP-610).

C. Maintain a list of the personnel to whom dosimetric devices are distributed in accordance with Health Physics procedures.

9.1.3 Personnel Bioassay

9.1.3.1 Verify the Wholebody Counter background is acceptable to perform personnel whole body counts. Report to the Group Leader on the status of the Wholebody Counter.

9.1.3.2 If the Wholebody Counter is unavailable, obtain additional bioassay sample containers from storage. Report to the Group Leader whether adequate bioassay sample containers are on hand.

9.1.3.3 Perform Wholebody counts or collect bioassay samples from those individuals identified by the Personnel Safety Team Group Leader or Plant Survey Group Leader.

9.1.3.4 Have all personnel reporting to the Whole Body Count Room perform a thorough frisk prior to entry. If contamination greater than or equal to 100 cpm above background is found, have the person report to the Personnel Decon Area in the TSC and notify the Group Leader.

9.1.4 Respiratory Protection

9.1.4.1 Determine the current demand (usage) levels of respiratory protection equipment by the various emergency teams (i.e. plant survey team, fire and damage team, etc.) as well as near term anticipated needs.

9.1.4.2 Determine current stock levels and locations of the equipment on hand, especially SCBA's.

9.1.4.3 Coordinate the recycling of equipment so far as possible based on cleaning, decontamination, inspection, and repair capabilities available on-site.

9.1.4.4 Arrange for the necessary qualified personnel to man the high pressure air compressor for recharging SCBA cylinders as well as monitoring the ambient air to ensure that it is acceptable for cylinder recharging (i.e. airborne gaseous and particulate radioactivity is less than 0.25 MPC).

9.1.4.5 Coordinate and arrange for off-site support concerning cleaning, restocking, cylinder recharging, etc.

9.1.4.6 Coordinate and arrange for quantitative fit testing, if required.

9.2 FOLLOW-UP

9.2.1 Personnel Dosimetry, Bioassay, and Respiratory Protection Group shall:

9.2.1.1 Emergency Dosimetry Issuance

A. Establish a dosimetric device collection point for on-site Emergency Response Team members leaving the Restricted Area.

B. Arrange to have dosimetric devices processed in accordance with Health Physics Procedures.

9.2.1.2 Personnel Bioassay

A. Initiate an exposure evaluation in accordance with HP-619.

B. Transport the bioassay samples to the offsite laboratory for analysis.

9.2.1.3 Respiratory Protection

A. Recover respiratory equipment and process for re-use in accordance with Health Physics Procedures. (HP-514, HP-515)

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

10.2 NUREG 0654 Rev. 1 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans in Support of Nuclear Power Plants.

10.3 HP-619 Preparation, Administrative Review and Dissemination of Personnel Exposure Records and Reports.

10.4 HP-514 Cleaning and Decontamination of Respiratory Protection Equipment

10.5 HP-515 Inspection and Maintenance of Respiratory Protection Equipment.

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-222 FIELD SURVEY GROUP

1.0 PURPOSE

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

2.0 RESPONSIBILITIES

2.1 The Field Survey Group Leader shall be responsible to direct the actions of the field survey group members.

2.2 The Field Survey Group members shall be responsible to conduct field surveys as directed by the Field Survey Group leader and this procedure.

3.0 APPENDICES

3.1 EP-222-1, Emergency Exposure Guidelines

3.2 EP-222-2, Field Survey Group Survey Record

3.3 EP-222-3, Field Survey Group Exposure Record

3.4 EP-222-4, Field Survey Group Data Record

4.0 PREREQUISITES

4.1 Emergency has been declared per EP-101, Classification of Emergencies.

5.0 SPECIAL EQUIPMENT

5.1 Radio

5.2 Field survey kits

5.3 Vehicle

6.0 SYMPTOMS

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

7.0 ACTION LEVEL

7.1 The Field Survey Group shall be activated at the Alert Level when the emergency has actual or potential radiological releases.

7.2 The Field Survey Group shall be activated as determined by the Dose Assessment Team Leader.

8.0 PRECAUTIONS

8.1 The group members exposure should be limited to the guidelines in EP-222-1, Emergency Exposure Guidelines.

8.2 Meteorological conditions, expected radiation levels, and other hazards shall be used to determine the positioning of field survey groups.

8.3 Consideration shall be given to the administration of KI tablets to group members per EP-313, Distribution of Thyroid Blocking Tablets, if the potential or actual dose to the thyroid will exceed 10 Rem.

9.0 PROCEDURE

9.1 Actions

9.1.1 The Field Survey Group Leader (FSGL) shall:

9.1.1.1 Report to the Technical Support Center (TSC).

9.1.1.2 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.

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

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

9.1.1.5 Direct field survey squads to obtain emergency dosimetry.

9.1.1.6 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.

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

9.1.1.8 Notify Security Team Leader of the names of field survey squad members and inform him that they will be keeping their dosimetry.

9.1.2 Field survey squad members shall:

9.1.2.1 Report to the Field Survey Group Leader (FSGL) at the Technical Support Center.

9.1.2.2 Obtain a field survey kit and a radio.

9.1.2.3 Break the seal on the field survey kit and check equipment for operability including source check of survey equipment.

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

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

9.1.2.5 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 RECEIVE 5 REM.

9.1.2.6 Upon leaving the TSC keep all dosimetry.

9.1.2.7 Perform communication check of radios with the FSGL manning the base station prior to leaving the site.

9.1.2.8 Ensure that the E-520/HP-270 or equivalent is on after arriving at the vehicle.

9.1.2.9 Upon direction of FSGL, proceed to the first field survey point.

9.2 Follow-Up

9.2.1 The Field Survey Group leader shall:

9.2.1.1 Maintain contact with the field survey squads and squad members accumulated exposures. Exposures are to be recorded on EP-222-3, Field Survey Group Exposure Record. Distribute copies as indicated on form.

9.2.1.2 Obtain field survey results as provided by field survey squads and record results on EP-222-4, Field Survey Group Data Record.

9.2.1.3 Calculate I-131 concentrations on EP-222-4 and distribute copies as indicated on form.

9.2.1.4 Provide the field survey squads with status updates including: radioactive source, meteorological conditions, etc. Dispatch the field survey squads to other locations as directed by the Dose Assessment Team Leader.

9.2.1.5 Inform the Dose Assessment Team Leader, if advised, that the field survey squad members and/or vehicles are contaminated.

9.2.1.6 When advised that the EOF has taken over the Dose Assessment function, inform the field survey squads. Assist the EOF, Field Survey Group Leader in assuming the role by providing a briefing as to the plan of action that was being taken, group members exposures, etc.

9.2.2 Field survey squad members shall perform the following actions:

9.2.2.1 While in transit, ensure that your E-520/HP-270 and SK1 or equivalent are on. Approach the specified location checking for increasing radiation levels on the survey meter. Hold the probe outside the vehicle and have the driver proceed slowly until the specified survey location is reached.

9.2.2.2 Exit vehicle and determine the maximum dose rate at waist height in a 360" radius using the RO2A or equivalent. Perform open window and closed window surveys. Record all results on EP-222-2, Field Survey Group Data Record, and transmit information to the FSGL by radio. If the radio does not function properly, locate a telephone and report survey information. Use [redacted] and ask for the Field Survey Group Leader on extension [redacted] (TSC) or [redacted] (EOF) or [redacted] and ask for the Field Survey Group Leader.

9.2.2.3 Using the E520/HP270 or equivalent take readings with the probe shielded and unshielded, record readings on EP-222-4, Field Survey Group Data Record, and transmit results to FSGL.

9.2.2.4 Take air sample at the location if directed by the FSGL, as follows:

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

b) Mark filter and silver zeolite cartridge to indicate air flow direction. The particulate filter is placed on the outside of the silver zeolite cartridge in the sampler head.

c) Orient the air sampler toward the plant and run for 5 minutes. Record the indicated flow rate on EP-222-2, Field Survey Group Survey Record.

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

9.2.2.5 While Air Sampler is running, use the R02A or equivalent to obtain closed window gamma measurements at 3 inches and 3 feet above the ground. If 3 inch readings are higher than 3 foot readings, take several smear samples (with gloved hands) of the ground. Place smears in labelled envelope for counting at a later time. Perform and open window survey at 3 inches and 3 feet above ground and record data on EP-222-2, Field Survey Group Survey Record. Transmit readings back to the FSGL.

9.2.2.6 When you have finished collecting the Air Sample, carefully wrap the filter and cartridge in cellophane, seperately and place in plastic bags. Label each bag with the location, date, time air sampler on, time air sampler off and flow rate.

WHEN HANDLING AIR SAMPLE MEDIA USE CAUTION TO AVOID CONTAMINATION OF THE SAMPLES.

9.2.2.7 Inform the FSGL that the air sample has been obtained and is ready to be analyzed. You will be instructed to take the air sample to a low background counting area. While in transit, monitor your E520-HP270 or equivalents for radiation levels noting minima and maxima levels and transmit locations to FSGL.

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

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

b) 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.

c) Set the SAM-2 Controls as follows:

Stabilizer: ON

Count Mode: TIMED

Meter Channel: 1

Window: Set for Ba-133 as shown on Calibration Sticker

Threshold: Set for Ba-133 as shown on Calibration Sticker "t"

Multiplier: x10

Response: "Midrange" - "IN"

Count Time: 5 x 1

Channel 2: Off-out

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

d) 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, SWITCH TO A FRESH BATTERY PACK.

9.2.2.9 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-222-2, Field Survey Group Survey Record.

9.2.2.10 Place the Ba-133 check source cartridge against the end of the RD22 probe in the sample holder 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-222-2.

9.2.2.11 Exchange a clean silver zeolite cartridge for the Ba-133 check source and press "RESET START". Record total number of counts on Appendix EP-222-2.

9.2.2.12 Compute the net count rate as follows:

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

and record on Appendix EP-222-2.

9.2.2.13 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 9.2.2.14 to set up and use the SAM-2 for I-131 determination. IF THE NET COUNT RATE FALLS OUTSIDE OF THE ALLOWABLE RANGE, REPEAT STEPS 9.2.2.10 TO 9.2.2.13 ONE TIME. If results are still unsatisfactory, inform the Field Survey Group Leader.

9.2.2.14 Set up the SAM-2 for counting I-131 as follows:

Window: Set for I-131 as shown on Calibration Sticker.

Threshold: Set for I-131 as shown on Calibration Sticker.

9.2.2.15 Place clean silver zeolite cartridge in the sample holder and press "RESET START". Record total number of counts on Appendix EP-222-2.

9.2.2.16 Place silver zeolite cartridge with field sample in the sample holder and press "RESET START". RECORD TOTAL NUMBER OF COUNTS ACQUIRED ON APPENDIX EP-222-2 AND TRANSMIT ALL INFORMATION TO FSGL.

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

9.2.2.18 Await further instructions from the Field Survey Group Leader.

9.2.2.19 Before returning 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.

9.2.2.20 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.

9.2.2.21 Bring all environmental samples to the Personnel Decontamination Facility in the Radwaste Enclosure and turn them over to a member of the Chemistry Sampling and Analysis Group.

APPENDIX EP-222-1
EMERGENCY EXPOSURE GUIDELINES

	Function	Projected Whole Body Dose	Thyroid Dose	Authorized By
1.	Life Saving and Reduction of Injury	75 rem*	375 rem	(Interim) Emergency** Director
2.	Operation of Equipment to Mitigate an Emergency	25 rem*	125 rem	(Interim) Emergency** Director
3.	Protection of Health and Safety of the Public	5 rem	25 rem	(Interim) Emergency** Director
4.	Other Emergency Activities	10 CFR 20 limits	10 CFR 20 limits	(Interim) 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-222-2
FIELD SURVEY GROUP SURVEY RECORD

LOCATION: _____ DATE: _____/_____/_____

TEAM: _____ TIME: _____

DOSE RATE SURVEYS

1) R02A Dose Rate - Open Window 3-inch Above Ground _____ mR/hr; 3ft Above Ground _____ mR/hr

2) R02A Dose Rate - Closed Window 3-inch Above Ground _____ mR/hr; 3ft Above Ground _____ mR/hr

3) E520-HP270 Shielded Probe _____ mR/hr; Unshielded _____ mR/hr

AIR SAMPLES

4) Air Sampler flow rate _____ cfm

5) Time Air Sampler on _____

6) Time Air Sampler off _____

7) Collection time (6)-(5) _____

AIR SAMPLE ANALYSIS

8) SAM2 Ba-133 Check Source _____ cts/2 minutes

9) SAM2 Ba-133 Clean Cartridge _____ cts/2 minutes

10) SAM2 I-131 Clean Cartridge _____ cts/2 minutes

11) SAM2 I-131 Field Sample _____ cts/2 minutes

12) Particulate Filter E-140N _____ cpm

NET COUNT RATE

$$\text{NET(CPM)} = \frac{\text{GROSS COUNTS (8)}}{\text{2 minutes}} - \frac{\text{BKG COUNTS (9)}}{\text{2 minutes}}$$

$$= \left(\frac{\_\_\_\_\_}{\text{2 min}}\right) - \left(\frac{\_\_\_\_\_}{\text{2 min}}\right) = \_\_\_\_\_ \text{ CPM}$$

APPENDIX EP-222-3
FIELD SURVEY GROUP EXPOSURES

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

. MPC-HOURS ARE ADMINISTRATIVELY CONTROLLED AT 20 MPC-HRS/WK;

Exposures >20 mpc/hrs/wk to 40 mpc-hrs/wk can be authorized by the Senior Health Physicist

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

3. INDIVIDUALS SUSPECTED OF EXCEEDING 10 MPS-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
- DOSIMETRY, BIOASSAY AND RESPIRATORY PROTECTION GROUP LEADER

APPENDIX EP-222-4
FIELD SURVEY GROUP DATA

Date: ___/___/___ Time: _____ EST

Survey Team "_____" Location _____
Sector _____

PART 1

1. Area Dose Rate (γ) 3" _____ mR/hr; 3' _____ mR/hr (Open Window)
2. Area Dose Rate (γ) 3" _____ mR/hr; 3' _____ mR/hr (Closed Window)
3. Air Sample Time _____ minutes
4. Air Sample Flow Rate _____ cfm
5. Air Sample Volume (3) x (4) _____ ft3
6. SAM-2 Ba-133 check source _____ cts/2 minutes
7. SAM-2 Ba-133 clean cartridge _____ cts/2 minutes
8. SAM-2 I-131 clean cartridge _____ cts/2 minutes
9. SAM-2 I-131 field sample _____ cts/2 minutes
10. Particulate Filter & E-140N _____ cpm

PART 2

Determination of I-131 Concentration

$$\frac{(9)\ \text{Counts} - (8)\ \text{Bkg}}{2\ \text{Minutes}} \times \frac{1}{\text{Eff}} \times \frac{1}{\text{Volume}} \times \frac{1}{0.95} \times 1.59N11 = \text{uCi/cc}$$

$$\frac{\quad - \quad}{2\ \text{Min}} \times \frac{1}{\quad} \times \frac{1}{\quad} \times \frac{1}{0.95} \times 1.59N11 = \_\_\_\_\_ \text{ uCi/cc}$$

Determination of I-131 MDA

$$3 \times \frac{(8)\ \text{Bkg}}{2\ \text{Min}} \times \frac{1}{\text{Eff}} \times \frac{1}{\text{Vol}} \times \frac{1}{0.95} \times 1.59N11 = \text{uCi/cc}$$

$$3 \times \frac{\quad}{2\ \text{Min}} \times \frac{1}{\quad} \times \frac{1}{\quad} \times \frac{1}{0.95} \times 1.59N11 = \_\_\_\_\_ \text{ uCi/cc}$$

APPENDIX EP-222-5
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 occured while still in transit to specified survey location

   B) Performed survey using R02A to look for maximum dose rate at waist level in 360 deg. radius

   C) Have notified FSGL of arrival and dose rate encountered

   D) Survey with E520/HP270 with probe shielded and unshielded

   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) Open Window and Closed Window survey with R02A at 3 inches and 3 feet above ground, results recorded

H) If 3" Closed Window readings higher than 3 foot Closed Window, smears taken

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

J) Air Samples wrapped and placed in separate, labelled plastic bags

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

3) AT LOW BACKGROUND COUNTING AREA

A) SAM 2 set up and counting on Ba-133 channel for 5 minutes to warm up

B) 2 minute count of Ba-133 check source

C) 2 minute count of Clean Silver Zeolite cartridge

F) 2 minute count of Sample Silver Zeolite cartridge

G) All results recorded and relayed to FSGL

H) Advised to move to new location

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

J) All samples turned over to _____ Chemistry Sampling & Analysis Group at Personnel Decon Facility in Radwaste.

K) All Forms turned over to FSGL for subsequent disposition

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-230 CHEMISTRY SAMPLING AND ANALYSIS TEAM ACTIVATION

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the actions required to activate the Chemistry Sampling and Analysis Team.

2.0 RESPONSIBILITIES

2.1 The (Interim) Emergency Director shall direct the Chemistry Sampling and Analysis Team Leader to activate a team, when required.

2.2 The Chemistry Sampling and Analysis Team Leader shall appoint a group leader to perform the steps necessary in this procedure.

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

3.0 APPENDICES

3.1 EP-230-1 Emergency Exposure Guidelines

3.2 EP-230-2 Chemistry Sampling and Analysis COL

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 The Chemistry Sampling and Analysis Group will be activated at the discretion of the (Interim) Emergency Director.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-230-1 Emergency Exposure Guidelines.

8.2 Continuous coverage by a Health Physics Technician may substitute for the Radiation Work Permit.

8.3 Every effort should be made to maintain the individual and man-rem exposures of the group to ALARA.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The (Interim) Emergency Director shall:

9.1.1.1 Direct the (Interim) Chemistry Sampling and Analysis Team Leader to collect samples, as necessary, and analyze the samples or use offsite support groups for the analysis.

9.1.2 Senior Shift Chemistry technician shall:

9.1.2.1 Report to the Chemistry Field Office and verify habitability in accordance with EP-330, Emergency Response Facility Habitability. Report to the Chemistry Area on the 2nd floor of the Administration Building if the Chemistry Lab is not habitable. If the Chemistry Lab habitability is degraded, time spent in the lab analyzing samples should be minimized and protective measures shall be employed.

Consideration should be given to sending the samples offsite for analysis.

9.1.2.2 After discussing the situation with the Emergency Director to determine the priorities of group activation and immediate responses of the Chemistry Sampling and Analysis Team, assume the role of Interim Chemistry Sampling and Analysis Team Leader.

AT ANY POINT IN THIS PROCEDURE, THE CHEMISTRY SAMPLING AND ANALYSIS TEAM LEADER WILL REPORT TO THE TSC AND RELIEVE THE INTERIM TEAM LEADER ONCE FULLY COGNIZANT OF THE SITUATION.

9.1.2.3 Appoint Group Leaders from available personnel and/or assume the role of group leader and group member(s) (until relieved) and complete the appropriate steps in this procedure.

9.1.2.4 Assign sampling tasks to Group Leaders. Brief Group Leaders on plant status and potential or existing radiological conditions and/or hazards, as the information becomes available.

9.1.2.5 Request emergency exposure authorizations from the Emergency Director for the appropriate group members as required.

9.1.3 Chemistry Sampling and Analysis Group Leader shall:

9.1.3.1 Assemble the Chemistry Sampling and Analysis Group at the Chemistry Field Office and perform accountability if required per EP-110 Personnel Assembly and Accountability.

9.1.3.2 Evaluate sampling conditions and/or locations identified in steps 9.1.3.3 through 9.1.3.7 below and instruct group members to take the necessary samples using indicated procedures.

9.1.3.3 Refer to the following procedures to sample primary coolant and drywell atmosphere as necessary:

EP-231 Operation of Post Accident Sampling System (PASS)

EP-233 Retrieving And Changing Sample Filters And Cartridges From The Containment Leak Detector During Emergencies

EP-234 Obtaining Containment Gas Samples From the Containment Leak Detector During Emergencies

EP-235 Obtaining Reactor Water Samples From Sample Sinks Following Accident Conditions

9.1.3.4 In the event of a unplanned radioactive liquid release, greater than tech specs to the Schuylkill River, obtain samples of the blowdown line water in accordance with:

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

9.1.3.5 Use the following procedures to obtain samples, as necessary, from the various sample points.

North and South Stack

EP-237 Obtaining the Iodine/Particulate and/or gas samples from the North Vent Wide Range Gas Monitor (WRGM)

Liquid Radwaste

EP-238 Obtaining Liquid Radwaste Samples from Radwaste Sample Sink Following Accident Conditions

Off Gas

EP-240 Obtaining Off Gas Samples from the Air Ejector/Holdup pipe Discharge

Reactor Enclosure or Suppression Pool

EP-231 Operation of Post Accident Sampling Systems (PASS)

9.1.3.6 Use the following procedures for the preparation and handling of highly radioactive samples.

EP-241 Sample Preparation and Handling of Highly Radioactive Liquid Samples

EP-242 Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges

EP-243 Sample Preparation and Handling of Highly Radioactive Gas Samples

9.1.3.7 Periodically have group member exposures evaluated to ensure that group members do not exceed normal administrative exposure guidelines without prior approval of the (Interim) Emergency Director.

9.1.3.8 As required, request the Chemistry Sampling and Analysis Team Leader to obtain emergency exposure authorizations from the (Interim) Emergency Director for affected group members.

9.1.4 Chemistry Sampling and Analysis Group Members shall:

9.1.4.1 Assemble the necessary equipment needed to obtain and analyze samples. Label all sample containers before sampling. Use Appendix EP-230-2 as guidance to follow the progress of samples drawn and analyzed onsite.

9.1.4.2 Collect and analyze samples as directed by the Group Leader.

9.1.4.3 Attach data sheets and analysis reports to Appendix EP-230-2 Chemistry Sampling & Analysis COL for each sample taken. Give this information to the Chemistry Sampling and Analysis Group Leader.

9.2 FOLLOW-UP

9.2.1 The (Interim) Chemistry Sampling and Analysis Team Leader shall:

9.2.1.1 Report the results of these analyses to the (Interim) Emergency Director, Dose Assessment Team Leader and Health Physics and Chemistry Coordinator.

9.2.1.2 Provide group leaders with periodic plant status changes including significant radiation exposure and radioactive contamination problems which may affect the functions of the team.

9.2.1.3 If necessary, use the post accident sampling analysis off-site capabilities by referring to EP-244, Off-Site Analysis of High Activity Samples.

9.2.1.4 Provide additional personnel support, if necessary, using EP-292 Chemistry Sampling and Analysis Team Phone List.

9.2.2. Chemistry Sampling and Analysis Group Leader shall:

9.2.2.1 Report results of samples and analysis to the Chemistry Sampling and Analysis Team Leader.

9.2.2.2 Provide Group Members with periodic plant status changes to include radiological conditions which may affect the group.

9.2.2.3 Request augmentative personnel from the Chemistry Sampling and Analysis Team Leader as required.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

10.2 NUREG 0654, Rev. 2 - Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness In Support of Nuclear Power Plants

10.3 EP-231 Operation of Post Accident Sampling System (PASS)

10.4	EP-233	Retrieving and Changing Sample Filters and Cartridges from the Containment Leak Detector during Emergencies
10.5	EP-234	Obtaining Containment Gas Samples from the Containment Leak Detector During Emergencies
10.6	EP-235	Obtaining Reactor Water Samples from Sample Sinks Following Accident Conditions
10.7	EP-236	Obtaining Cooling Tower Blowdown Line Samples Following Radioactive Liquid Releases After Accident Conditions
10.8	EP-237	Obtaining the Iodine/Particulate Samples and/or gas samples the North Vent Wide Range Gas Monitor (WRGM)
10.9	EP-238	Obtaining Liquid Radwaste Samples from the Radwaste Sample Sink Following Accident Conditions
10.10	EP-240	Off Gas Samples from the Air Ejector/Holdup Pipe Discharge
10.11	EP-241	Sample Preparation and Handling of Highly Radioactive Liquid Samples
10.12	EP-242	Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges
10.13	EP-243	Sample Preparation and Handling of Highly Radioactive Gas Samples
10.14	EP-292	Chemistry Sampling and Analysis Team Phone List
10.15	EP-110	Personnel Assembly and Accountability
10.16	EP-244	Off-Site Analysis of High Activity Samples

APPENDIX EP-230-1
Emergency Exposure Guidelines

Function	Projected Whole Body Dose	Thyroid Dose	Authorized By
1. Life Saving and Reduction of Injury	75 REM*	375 REM	(Interim) Emergency** Director
2. Operation of Equipment to Mitigate an Emergency	25 REM*	125 REM	(Interim) Emergency** Director
3. Protection of Health and Safety of the Public	5 REM	25 REM	(Interim) 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-230-2
CHEM SAMPLING & ANALYSIS COL

TEAM ACTIONS

1. SAMPLE TYPE: _____ LOCATION: _____

   DATE: _____ TIME: _____

2. ANALYSIS TO BE PERFORMED (LIST)

   _____

   _____

   _____

3. PROCEDURES NEEDED (LIST)	REVIEWED	PREREQUISITES	SPECIAL EQUIPMENT
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

SAMPLE GROUP ACTIONS	INITIALS
1. TRAVEL ROUTE PLANNED	_____
2. HP COVERAGE AVAILABLE	_____
3. PROTECTIVE EQUIPMENT & DOSIMETRY ISSUED	_____
4. SAMPLE SURVEY BY HP	_____
5. SAMPLE TRANSPORTED TO LAB	_____

ANALYSIS GROUP ACTIONS	INITIALS
1. LAB READY TO RECEIVE SAMPLE	_____
2. HP COVERAGE AVAILABLE IN LAB	_____
3. PROTECTIVE EQUIPMENT & DOSIMETRY ISSUED	_____
4. SAMPLE RECEIVED IN LAB	_____
5. DOSE RATE SURVEY DONE IN LAB AFTER SAMPLE RECEIPT	_____
6. RESULTS FORWARDED TO TEAM LEADER	

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-231 OPERATION OF POST-ACCIDENT SAMPLING SYSTEMS (PASS)

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for obtaining samples from the Post-Accident Sampling Station following accident conditions.

2.0 RESPONSIBILITIES

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

3.0 APPENDICES

3.1 EP-231-1 Procedure for Draining the Trap, Sump and Collector

3.2 EP-231-2 Procedure for Obtaining 14.4 ml Gas Sample

3.3 EP-231-3 Procedure for Obtaining Iodine/Particulate Sample

3.4 EP-231-4 Procedure for Obtaining a Small Volume Liquid Sample

3.5 EP-231-5 Procedure for Obtaining a Large Liquid Sample and/or a Dissolved Gas Sample

3.6 EP-231-6 Procedure for Flushing the Liquid and Dissolved Gas System

3.7 EP-231-7 M-102 General Arrangement Plan at El. 217'-0"

3.8 EP-231-8 Diagram of Control Panel-left side (Original Photographs are kept on file with Chemistry Supervision)

3.9 EP-231-9 Diagram of Control Panel-right side (Original photographs are kept on file with Chemistry Supervision)

3.10 EP-231-10 Control Panel Switch Layout

3.11 EP-231-11 Schematic of Post Accident Sample Station

4.0 PREREQUISITES

4.1 Prior to entering the plant to obtain the sample, ensure that the Post Accident Sample Station is operable by verifying that RT-5-030-800-0, POST ACCIDENT SAMPLE STATION OPERABILITY TEST, was successfully performed in the previous six months.

5.0 SPECIAL EQUIPMENT

5.1 Appropriate Health Physics survey equipment

5.2 Air sampler

5.3 Respiratory protective equipment

5.4 Anti-C clothing

5.5 Whole Body dosimetry

5.6 Gas vial sample tube

5.7 Iodine & particulate sample assembly

5.8 14.4 ml gas vials and caps

5.9 Liquid sample bottles and caps

5.10 10cc syringe with stop lock

5.11 Silver zeolite cartridges

5.12 47mm particulate filters

5.13 Small bottle of demin water

5.14 Large volume cask

5.15 Small volume cask

5.16 Gas sample cask

5.17 Flashlight

5.18 Mirror

5.19 Extremity dosimetry

5.20 Watch with secondhand

5.21 Plastic bag & pole to transport cartridges

5.22 Gym bag

5.23 Copy of EP-231-Operation of Post-Accident Sampling Systems (PASS)

5.24 Blank Data Sheets

5.25 Portable Communication Equipment

5.26 Clip Board

5.27 Pens, Pencils, etc.

5.28 Towels

5.29 Control Panel Power Key

5.30 Ramp for Large Volume Case

5.31 Scissors

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented when a sample shall be taken from the PASS during an emergency situation.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-230-1, Emergency Exposure Guidelines.

8.2 Continuous coverage by a health physics technician may substitute for the Radiation Work Permit.

8.3 Eye protection should be worn by all personnel when obtaining samples from the sample station.

8.4 There is no automatic drain or blow down but there is an alarm light to indicate that the level in the trap T-717 is high and that the trap needs to be drained right away. This trap removes water from the gas sample lines. If the liquid level becomes too high, water will be sucked into the gas breakdown pump and mechanical damage may result.

8.5 Minimum amount of time should be spent near the surface of the sample enclosure.

8.6 The indicator for Area Radiation Detector RE-507 is on the control panel and its reading should be noted.

8.7 Prior to collecting a sample, (and after the system has been operated) the PASS should be drained and blown out in accordance with Appendix EP-231-1.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The (Interim) Chemistry Sampling and Analysis Team Leader shall:

9.1.1.1 After discussing the situation with the (Interim) Emergency Director, determine which of the following PASS samples are required.

A. Drywell atmosphere

B. Suppression pool atmosphere

C. Secondary containment atmosphere

D. Primary coolant atmosphere

9.1.1.2 Check the Plant Radiation Level Status Board to forecast anticipated radiological conditions.

9.1.1.3 Contact the Plant Survey Group Leader and check on the latest developments related to radiological conditions and inform him what sample(s) are to be taken and that Health Physics' coverage is required.

9.1.1.4 Request input from the Control Room (via Emergency Director) to ascertain desired sample system availability.

9.1.1.5 Determine what analyses are required and inform the Chemistry Sampling and Analysis Group Leader what analyses are required.

9.1.1.6 Request Emergency Exposure Authorizations from the Emergency Director for group members (as required) and inform the Plant Survey Group Leader of this development.

9.1.1.7 Direct the Chemistry Sampling and Analysis Group Leader to collect and analyze the PASS samples.

9.1.2 The Chemistry Sampling and Analysis Group Leader shall:

9.1.2.1 After discussing the situation with the Chemistry Sampling and Analysis Team Leader, contact the Plant Survey Group Leader and request a Health Physics technician to report to the Chemistry lab to perform the following:

A. Provide the Group Leader with radiological conditions that would impact the sample and route determination.

B. Brief the Group Members on radiological conditions, precautions and requirements for entering the area and for handling and analyzing the sample.

C. Provide radiation survey equipment for constant coverage of the sampling and analysis portions of this procedure.

D. Provide Group members with the appropriate dosimetry, protective clothing, and respiratory equipment.

9.1.2.2 Determine the type of PASS sample to be taken based on the following information.

A. Radiological conditions

1. In route and within the area

2. Expected radiation levels of the sample

B. Sampling times (Based on the following information)

Sample	Sampling Time
1. Drywell Atmosphere	25 Min.
A. Upper Drywell 291' El	
B. Lower Drywell 242' El	
2. Suppression Pool Atmosphere	
A. 222' El-250 Deg Azimuth from North	
B. 222' El-70 Deg Azimuth from North	
3. Secondary Containment Atmosphere	10 Min.
4. Primary Coolant Jet Pump	20 Min.
5. RHR	25 Min.
A. "A" RHR	
B. "B" RHR	

9.1.2.3 Select the appropriate sample point.

Sample	Equip. No.	Location
A. Gas	10S 941(20S 941)	El. 217'-0"-Area 8
B. Liquid	10S 942(20S 942)	El. 217'-0"-Area 8

9.1.2.4 If a particulate/iodine cartridge sample is to be obtained, contact the Dose Assessment Team Leader (TSC) for an estimated sampling time and record this time on Appendix EP-231-3. Verify this time as feasible.

9.1.2.5 Assign the appropriate number of group members to obtain the necessary equipment and once briefed by the H.P. technician to collect and transport the sample to the hot chemistry lab.

INSTRUCT THE GROUP MEMBERS TO OBTAIN THE SMALLEST SAMPLE NECESSARY FOR THE ANALYSIS.

9.1.2.6 Once the sample type and sampling location has been determined, contact the Control Room and request a system line-up to permit collection of the appropriate sample in accordance with the following information. Also, inform of any other samples to be taken and inform operations to contact the Chemistry Sampling and Analysis Group Leader if problems with the line-up arise during sampling.

SAMPLE LOCATION	SWITCH	SWITCH NAME	POSITION
A. Upper Drywell (291') or Lower Drywell (242')	SV-57-132,134,150 -(232,234,250)	1 B Containment Atmosphere Sample Sys. Isolation	OPEN
	HS-57-153(253)	Drywell Atmosphere Sample Sys. Isolation	AUTO
	*HSS-57-191B(291B)	Containment Isolation Signal Bypass	BYPASS
	*HSS-57-191D(292D)	Containment Isolation Signal Bypass	BYPASS
B. Suppression Pool(222') (250 Deg Azimuth from North)	SV-57-183,191 -(283,291)	1 A Containment Atmosphere Sample Sys. Isolation	AUTO
	HS-57-187(287)	Suppression Pool Atmosphere Sample Sys. Isolation	AUTO
	*HSS-57-191A(291A)	Containment Isolation Signal Bypass	BYPASS
	*HSS-57-191C(291C)	Containment Isolation Signal Bypass	BYPASS

* Only necessary if containment isolation signal is present

SAMPLE LOCATION	SWITCH	SWITCH NAME	POSITION
C. Suppression Pool (222') (70 Deg Azimuth from North)	SV-57-181(281)	1 B Containment Atmosphere Sample Sys. Isolation	AUTO
	HS-57-187(287)	Suppression Pool Atmosphere Sample Sys. Isolation	AUTO
	*HSS-57-191B(291B)	Containment Isolation Signal Bypass	BYPASS
	*HSS-57-191C(291C)	Containment Isolation Signal Bypass	BYPASS
D. Secondary Containment		No Line-up Necessary	
E. "A" RHR	HV-51-1F079A (2F079A)	1 A RHR Sample Line Upstream Isolation Valve	OPEN
	HV-51-1F080A (2F080A)	1 A RHR Sample Line Outboard	OPEN
	*HSS-57-191A(291A)	Containment Isolation Signal Bypass	BYPASS
	*HSS-57-191B(291B)	Containment Isolation Signal Bypass	BYPASS

* Only necessary if containment isolation signal is present

SAMPLE LOCATION	SWITCH	SWITCH NAME	POSITION
F. "B" RHR	HV-51-1F079B (2F079B)	1 B RHR Line Upstream Isolation Valve	OPEN
	HV-51-1F080B (2F080B)	1B RHR Sample Line Downstream Isolation	OPEN
	*HSS-57-191A(291A)	Containment Isolation Signal Bypass	BYPASS
	*HSS-57-191B(291B)	Containment Isolation Signal Bypass	BYPASS

* Only necessary if containment isolation signal is present.

9.1.2.7 Have the shift verify that the liquid return line to the Suppression Pool is open by placing the following switch in the appropriate position:

UNIT	SWITCH	SWITCH NAME	POSITION
1	HS-52-101D	Supp Pool Suction	OPEN
2	HS-52-101A	Supp Pool Suction	OPEN

9.1.2.8 Appoint one Group member to prepare the Hot Lab for receiving the sample, using the following guidelines:

A. Adequate Shielding is available for the sample.

B. Remote handling tools are in place (as required).

C. Protective clothing and equipment are readily available (as required by HP).

D. Copies of the appropriate sample handling and analysis procedures are on hand.

E. Equipment is properly calibrated, warmed-up and in place.

USE THE FOLLOWING PROCEDURES AS GUIDELINES FOR PREPARATION OF THE HOT LAB.

EP-241 (LIQUID)	Sample Preparation and Handling of Highly Radioactive Liquid Samples
EP-242 (IODINE)	Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges
EP-243 (GAS)	Sample Preparation and Handling of Highly Radioactive Gas Samples

IF THE ROUTE IS INACCESSIBLE, EXIT IMMEDIATELY AND CONSULT CHEMISTRY SAMPLING AND ANALYSIS GROUP LEADER FOR ALTERNATIVE ROUTES.

9.1.2.9 If a large volume liquid sample is to be taken and an outside route is to be taken, contact the Fire and Damage Repair Team Leader for providing the means of transportation for the large volume CASK.

9.1.2.10 Brief the Health Physics Technician and Chemistry Sampling and Analysis Group members on the following:

A. Team identification

B. Communications equipment and channel

C. Type of sample(s) to be collected

D. Location of sample points

E. Suggested Routes to be taken

F. Precautions for operating the PASS

G. Sample transport techniques

H. Projected amount of time required to collect and tranport the sample

I. Review the procedures to be followed for sample collection, handling, preparation and analysis

J. Special tools and equipment required for sample handling and/or collection

K. Alternatives for obtaining and practiced methods of remotely handling the sample(s)

L. Proper completion of data sheets

9.1.2.11 Instruct group members to immediately report the following as they occur or as the information becomes available.

9.1.2.12 Copy Appendix EP-230-2, Chemistry Sampling and Analysis COL for each sample taken. Fill out all pertinant information as it becomes available.

A. Sample locations that are not accessible or any other reason why the sample can not be collected.

B. When the sample and group members arrive at the hot lab.

C. Results of the analysis.

9.1.3 The Health Physics Technician shall:

9.1.3.1 Determine the appropriate route to be taken.

A. SUGGEST ROUTE AND APPROXIMATE TIMES ARE AS FOLLOWS: (SEE APPENDIX EP-231-7)

1. Proceeding past the filter demineralizers and entering the Turbine Enclosure, El. 217'-0", turning right and proceeding down the hall to Area 8.

TIME: Approximately 2 min.

2. Proceeding past the condensate demineralizers, turning left and exiting the Turbine Enclosure (door #242), turning right, proceeding around the Turbine Enclosure and re-entering the Turbine Enclosure (door #249) and proceeding to the PASS.

   TIME: Approx. 5 min.

IF THE ROUTE IS INACCESSIBLE, EXIT IMMEDIATELY AND CONSULT CHEMISTRY SAMPLING AND ANALYSIS GROUP LEADER FOR ALTERNATIVE ROUTES.

9.1.3.2 Take appropriate radiation survey equipment and ensure that equipment is functional and calibrated.

9.1.3.3 Provide group members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.3.4 Perform a pre-job briefing with the Chemistry technicians assigned to obtain the sample to discuss the following:

A. RWP requirements

B. Routes to PASS Facility

C. Authorized doses

D. Radiological concerns and precautions

E. Review of procedure for obtaining and transporting sample to hot lab

F. Suggested methods to maintain exposures ALARA

G. Stay times and Abort Criteria

9.1.3.5 Provide constant coverage while obtaining and transporting samples from the PASS.

9.1.3.6 Monitor dose rates enroute and at the sample location. If the general area dose rates exceed 5 R/hr at the door leading to the Turbine Enclosure, 217'-0" El. or 10 R/hr within the Turbine enclosure (enroute to or at the sampling point) instruct Group Members to immediately exit the area and report to the Chemistry Sampling and Analysis Group Leader.

9.1.3.7 Survey the sample area (concentrating especially on the PASS) and the sample container once the sample has been collected and the shielded sample cask.

9.1.3.8 Document the sample cask survey results and give them to the Chemistry Sampling and Analysis Group Leader (or other designated group member) when arriving at the hot lab.

9.1.3.9 Provide constant coverage during sample preparation and handling as specified in EP-241, EP-242 or EP-243.

9.1.4 Chemistry Sampling and Analysis Group members shall:

9.1.4.1 Assemble for a pre-job briefing at the chemistry lab.

9.1.4.2 Inform the Group Leader if they are approaching the Administrative exposure guidelines, or may not have sufficient exposure remaining to successfully complete the assigned task.

9.1.4.3 Obtain the necessary equipment to collect the sample and ensure that the hot lab is ready to accept the sample.

PROPERLY LABEL ALL SAMPLE CONTAINERS

9.1.4.4 Obtain and don the approriate protective clothing and equipment (as required by the H.P. technician or RWP).

9.1.4.5 Obtain the key to the control panel power from the Group Leader. (IF necessary).

9.1.4.6 Once the group has been briefed and the appropriate equipment has been assembled proceed to the PASS using the pre-determined route and collect the sample in accordance with the appropriate appendix to this procedure. (see following).

Appendix	Title
EP-231-1	Procedure for Draining the Trap, Sump and Collector
EP-231-2	Procedure for Obtaining 14.4 ml Gas Sample
EP-231-3	Procedure for Obtaining Iodine/Particulate Sample
EP-231-4	Procedure for Obtaining a Small Volume Liquid Sample
EP-231-5	Procedure for Obtaining a Large Liquid Sample and/or a Dissolved Gas Sample
EP-231-6	Procedure for Flushing the Liquid and Dissolved Gas System

9.1.4.7 Once the H.P. technician has surveyed the sample cask, take the sample to the hot lab retracing the route back from the sample point.

Upon introduction of the sample into the hot lab, the sample will be handled and stored in a manner that personnel exposures are kept ALARA.

9.1.4.8 Inform Contact the Group Leader as soon as the sample reaches the hot lab and inform him that the sample collection has been completed and what the sample status is.

9.2 FOLLOW-UP

9.2.1 Chemistry Sampling and Analysis Team Leader shall:

9.2.1.1 Report the results to the Emergency Director and the Health Physics and Chemistry Coordinator (EOF).

9.2.2 Chemistry Sampling and Analysis Group Leader shall:

9.2.2.1 Notify Shift Supervision that a sample has been taken and the aligned valves may be returned to the "NORMAL" position.

9.2.2.2 Have group member(s) dose monitored to ensure that exposure limits have not been exceeded.

9.2.2.3 Inform the Chemistry Sampling and Analysis Team Leader that the required sample is in the hot lab.

9.2.2.4 Instruct the group members to perform calculations (if any) on the Data Sheet of the appropriate Appendix.

9.2.2.5 Collect the Control Panel Power Key from the group member and return it to the Team Leader.

9.2.2.6 Instruct the appropriate group members to refer to the appropriate procedure for guidance on sample preparation and handling.

Sample	Procedure No.
Liquid (EP-241)	Sample Preparation and Handling of Highly Radioactive Liquid Samples
Iodine (EP-242) (Particulate)	Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges
Gas (EP-243)	Sample Preparation and Handling of Highly Radioactive Gas Samples

9.2.2.7 Obtain and review ALL Data Sheets and report the sample results to the Chemistry Sampling and Analysis Team Leader and attach all Data Sheets to Appendix EP-230-2.

9.2.2.8 Enter Data into RMMS, if appropriate.

9.2.3 Chemistry Sampling and Analysis Group members shall:

9.2.3.1 Complete the appropriate Appendix Data Sheet(s) when applicable.

9.2.3.2 Prepare, handle, and analyze the sample using the appropriate procedure.

9.2.3.3 Report the results to the Chemistry Sampling and Analysis Group Leader.

9.2.3.4 Properly file the analysis report and report back to the Group Leader for reassignment

10.0 REFERENCES

10.1 EP-230 - Chemistry Sampling and Analysis Team Activation

10.2 M-102 - General Arrangement Plan at El. 217'-0"

10.3 M-30, Rev. 2 - Post Accident Sampling P&ID

10.4 M-42, Proposed Rev. 24 - Nuclear Boiler Vessel Instrumentation

10.5 M-51, Sht. 1 - Rev. 21, Sht. 2 - Rev. 21, Residual Heat Removal P&ID

10.6 M-57- Sht. 1 - Proposed Rev. 23, Containment Atmosphere Control P&ID

10.7 M1-D24-Z00 1, Vol. I & II, GEK83344, Operation and Maintenance Instructions - PASS, Vol. I & II

10.8 A-107, Rev. 30, Architectural Floor Plan at Elevation 217'-0".

APPENDIX EP-231-1

PROCEDURE FOR DRAINING THE TRAP, SUMP AND COLLECTOR

1. Check that the nitrogen supply valves are open and that the pressure is set at 100 psig by opening the following valves:

Demin Water Tank	N2 Bottle 1	Unit 1
30-0017	PCV-30-074 30-0022	30-1114
	or	or
	N2 Bottle 2	Unit 2
	PCV-30-073 30-0023	30-2114

2. Check that the Demineralized Flush Water Tank OOT 945 is full and is pressurized at 100 psig and the Valves (30-0014, 30-1100 (30-2100) are open to the sample station.

   If not, open valves 30-0011 and 30-0015, verify that valve 30-0014 is open, remove the plug on the Hydro Test Tap by valve 30-0015, and SLOWLY open valve 30-0010. Continue flow until water appears at the test tap. Close valve 30-0010 FIRST, then close valves 30-0011 and 30-0015. Replace the Test Tap plug and secure.

3. Verify that the damper is open to Secondary Containment.

4. Check that FCV-627 is open and if it is not, use the knob adjacent to PCV-627 on the control panel to have a 15 psi reading on the gauge.

   A GOOD WAY TO BE SURE THAT THE DISCHARGE LINE IS OPEN IS TO ESTABLISH A FLOW THRU FCV-627 BECAUSE THIS FLOW CAN BE OBSERVED AT THE CONTROL PANEL ON FLOW INDICATOR FI-664.

5. Turn all control panel switches up and "OFF" (except HC-723, place in position 4 "SPARE") and then TURN the Control Panel Power Selector Switch HC-600 to "A" (Alternate "B").

6. Drain Collector Tank, Trap and Sump by turning Switch HC-715-1 clockwise through its eight positions pausing approximately 5 seconds at each position.

APPENDIX EP-231-1

PROCEDURE FOR DRAINING THE TRAP, SUMP AND COLLECTOR (CONT)

7. Turn all switches (except for HC-723 which is left in position 4) to their "OFF" position. (Leave HC-600 in the ON position if more samples are to be taken).

8. If no more samples are to be taken, close nitrogen supply valves opened in Step No. 2.

9. Close FCV-627 by setting PCV-627 to 0 psig.

10. If no more samples are to be taken, close the Demin Water Tank valves opened in Step No. 1.

11. If no more samples are to be taken, close the damper to Secondary Containment.

APPENDIX EP-231-2

PROCEDURE FOR OBTAINING A 14.4 ML GAS SAMPLE

1. Drain the system per Appendix EP-231-1.

2. With the sump drain system switch in the "OFF" position, place Switch HC-700 (liquid/gas selector) in the "GAS" position. Ensure N2 bottle valves are open and regulated to approximately 100 psig. Make sure the gas chiller E-703 is on. Quickly inspect the needle in the gas port to determine that its condition is satisfactory for obtaining a sample.

3. Install the gas filter drawer into position. If a particulate/iodine sample will be obtained later, make sure that the desired filter cartridges are properly installed in the cartridge retainer. Verify that the drawer position light is green.

4. Turn Switch HC-723 (GAS SAMPLE SELECTOR SWITCH) to the desired sample location:

POSITION	LOCATION
1	Drywell Atmosphere
2	Suppression Pool Atmosphere
3	Secondary Containment Atmosphere
4	Spare

In addition, open all required Reactor system valves in the gas sample and return line:

SAMPLE LOCATION	SWITCH	SWITCH NAME	POSITION
Upper Drywell (291')	HSS-57-146(246)	Sup Pool/Drywell Air To Post ACDT Samp	DRYWELL
Lower Drywell (242')	HSS-57-147(247)	Sup Pool/Drywell Air To Post ACDT Samp	DRYWELL
Suppression Pool (222') (250 Deg Azimuth from North)	HSS-57-147(247)	Sup Pool/Drywell Air To Post ACDT Samp	SUPP POOL
Suppression Pool (222') (70 Deg Azimuth from North)	HSS-57-146(246)	Sup Pool/Drywell Air To Post ACDT Samp	SUPP POOL
Secondary Containment	No Line-up Necessary		

APPENDIX EP-231-2

PROCEDURE FOR OBTAINING A 14.4 ML GAS SAMPLE (CONT)

5. Place a standard 14.4 milliliter off gas vial into the gas vial positioner, slide the positioner into the gas port. Observe that the bottle status light changes from red to green. If the light does not change to green, reposition the bottle.

6. Turn the 10 ml Gas Sample Switch HC-705 to position 2 and circulate gas for a period long enough to assure that the sample lines are flushed out with gas being sampled. The minimum time required is 5 minutes.

   Be sure that the flow as read by the rotameter thru the sample enclosure window is in the expected range of 11.8 to 16.5 SLPM. Record flow and flush duration on data sheet.

7. Turn HC-705 to position 3 and evacuate the off gas vial. Record pressure PI-708 of the evacuated vial on the data sheet. Make sure the vacuum in the gas vial reaches a stable minimum reading.

8. Turn HC-705 to position 4, "TAKE SAMPLE". Make sure that PI-708 does not change.

   If the pressure changes significantly, it may indicate a system leak. Therefore, turn Switch HC-705 counter clockwise to position 2. Remove the sample vial and place in a plactic bag for transportation to the hot lab. Place a new 14.4 ml off gas sample vial into the gas positioner and return to Step 5.

9. Press the HC-720 button to obtain the sample. Keep button depressed until a steady pressure is reached (approximately 5 seconds). Record pressure from PI-708 on data sheet. This pressure should correspond to actual pressure of sample being obtained. Record sample temperature TI-724 on data sheet.

10. Turn HC-705 to position 5 "FLUSH SYSTEM" and flush for approximately 1 minute.

11. Turn HC-705 to position 6, 7 and 8; and then straight up to "OFF".

12. Turn Switch HSS-57-146 or HSS-57-147 (opened is Step 4) to the CLOSE position.

APPENDIX EP-231-2

PROCEDURE FOR OBTAINING A 14.4 ML GAS SAMPLE (CONT)

13. Wearing cotton liners and gloves, and observing ALARA practices, withdraw the gas vial positioner and immediately have the HP technician survey the gas sample vial and record the Initial Contact Dose Rate on the Data Sheet. Keep the vial at the maximum distance from the individual and quickly insert the sample bottle into the gas vial cask. Close and latch the gas vial cask. Put a stopper or the gas vial positioner back into the port in the sample station.

14. Turn the Gas Chiller E-703 off.

15. Drain the system per Appendix EP-231-1.

APPENDIX EP-231-2

PROCEDURE FOR OBTAINING A 14.4 ML GAS SAMPLE (CONT)

Data Sheet for 14.4 ML Gas Sample

DESIRED ANALYSIS

A._____

B._____

C._____

1. Sample Source _____ Date _____ Time _____
2. Sample Flow _____ FI-725 (SLPM)
3. Flush Duration _____ (Min.)
4. Absolute Pressure of Vial _____ PI-708 (PSIA)
5. Final Sample Pressure _____ PI-708 (PSIA)
6. Sample Temperature _____ TI-724 (F)
7. Calculated Sample Volume _____ (ML)

$$V = \frac{(14.7)(14.4)\ (T\ F + 460)}{(530)\qquad\qquad (P\ PSIA)}$$

8. Initial Contact Dose Rate _____(mR)

Name_____

APPENDIX EP-231-3

PROCEDURE FOR OBTAINING IODINE/PARTICULATE SAMPLE

1. Drain the system per Appendix EP-231-1

2. Verify that HC-715-1 SUMP DRAIN SYSTEM SWITCH is in the "OFF" position. Place Switch HC-700 (LIQUID/GAS SELECTOR) in the "GAS" position.

3. If the gas filter drawer is already in place and there is any doubt about the desired filters being in place, pull the drawer and check the filter cartridge(s). Put the desired filter cartridge(s) into the cartridge retainer, put the cartridge retainer into the gas filter drawer and put the drawer into the sample station and verify that the drawer position light is green. If not, reposition the drawer.

4. Decide whether a timed or non-timed sample is desired and record. Generally speaking, if a high activity condition exists or is suspected, a timed sample should be taken. For a timed sample, set the Timer KC-712 between the range of 0 to 30 seconds. Select a low enough time so that the activity on the filter cartridge will not be unnecessarily high and cause special handling problems. Observe the RE-704 reading to determine if there is a rapid activity buildup. Set the Switch HC-704 located to the left of the timer labeled TIME SAMPLE on either YES or NO.

5. Check that the nitrogen supply system is operating with pressure at 100 psig. Make sure the Gas Cooler E-703 is on.

6. Turn the GAS SAMPLE SELECTOR SWITCH (HC-723) to the desired sample source.

SAMPLE SOURCE	POSITION
Drywell Atmosphere	1
Suppression Pool Atmosphere	2
Secondary Containment Atmosphere	3
Spare	4

APPENDIX EP-231-3

PROCEDURE FOR OBTAINING IODINE/PARTICULATE SAMPLE (CONT)

7. Open all required Reactor system valves in the gas sample and return lines for the appropriate sample:

SAMPLE LOCATION	SWITCH	SWITCH NAME	POSITION
Upper Drywell (291')	HSS-57-146(246)	Sup Pool/Drywell Air To Post ACDT Samp	DRYWELL
Lower Drywell (242')	HSS-57-147(247)	Sup Pool/Drywell Air To Post ACDT Samp	DRYWELL
Suppression Pool (222') (250 Deg Azimuth from North)	HSS-57-147(247)	Sup Pool/Drywell Air To Post ACDT Samp	SUPP POOL
Suppression Pool (222') (70 Deg Azimuth from North)	HSS-57-146(246)	Sup Pool/Drywell Air To Post ACDT Samp	SUPP POOL
Secondary Containment	No Line-up Necessary		

8. Turn the IODINE CARTRIDGE SAMPLE SWITCH HC-712 to position 2 and circulate gas for a period long enough to assure that the sample lines are flushed out with the gas being sampled. Minimum flush time is approximately 5 minutes. Record the flush time on the data sheet.

9. Be sure the flow as read by the rotometer which is visible thru the window in the sample station enclosure is in the expected range of 11.8 to 16.5 slpm. Record the flow (FI-725), temperature (TI-724) and pressure (PI-726 and PI-727) on the data sheet. The two pressure gages (PI-726 and PI-727), as read thru the window, should be the same.

STEPS 10 AND 11 MUST BE DONE IN CONJUNCTION WITH EACH OTHER

10. Turn HC-712 to position 3. The sample gas will start to flow through the filter cartridge. On the DATA SHEET record PI-727, PI-726, FI-725, the flow duration in seconds and RI-704.

APPENDIX EP-231-3

PROCEDURE FOR OBTAINING IODINE/PARTICULATE SAMPLE (CONT)

11. After the timer has timed out for a timed sample or after the predetermined time has elapsed for a non-timed sample, turn Selector Switch HC-712 to position 4 for 10 seconds to evacuate the filter cartridge. A vacuum will be quickly drawn on the system.

12. Turn Switch HC-712 to position 5 which will admit a nitrogen flush through the filter cartridge to remove Krypton and Xenon gases. This purge should last approximately 20 seconds or until RI-704 is stable. Record the final radiation, RI-704.

13. Rotate HC-712 to up and "OFF" position. Turn other switches to the upright and "OFF" positions. Remove filter and cartridge retainer and immediately survey the cartridges and record the Initial Contact Dose Rate on the Data Sheet and put the holder in a plastic bag. Tape bags closed. If available, install a new cartridge retainer complete with filter paper and iodine cartridges. Put drawer back into sample enclosure. Use a pole or rope to increase distance while transporting. Sample or place the sample into a transport cask.

14. Turn Switch HSS-57-146 or HSS-57-147 opened in Step 7 to the CLOSE position.

15. Turn the Gas Chiller E-703 off.

16. Drain the system per Appendix EP-231-1.

APPENDIX EP-231-3

PROCEDURE FOR OBTAINING IODINE/PARTICULATE SAMPLE (CONT)

Data Sheet for Iodine/Particulate Sample

DESIRED ANALYSIS

A._____

B._____

ESTIMATED SAMPLING TIME _____

1. Sample Source _____ Date _____ Time _____
2. Orifice Size 3.0
3. Timed Sample Yes or No _____
4. Flush Time in Minutes _____
5. Sample Flow _____ FI-725 (not thru cartridge) (slpm)
6. Temperature _____ TI-724 (F)
7. Pressure _____ PI-726 (PSIG)
8. Pressure _____ PI 727 (PSIG)
9. Pressure _____ PI-726 (critical flow thru cartridge) (PSIG)
10. Pressure _____ PI-727 (PSIG)
11. Flow _____ FI-725 (scfh)
12. Flow Duration _____ seconds
13. Radiation _____ RI-704 (mR/hr)
14. Final Radiation _____ RI-704 (mr/hr)
15. Initial Contact Dose Rate _____(mR)

NOTE: When critical flow is obtained through the cartridge assembly, a flow of 3.0 liters per minute +15% is achieved. This is true as long as PI-727 is at a minimum of 12 inches mercury vacuum.

Name _____

APPENDIX EP-231-4

PROCEDURE FOR OBTAINING A SMALL VOLUME LIQUID SAMPLE

| IF A SAMPLE IS TO BE OBTAINED FROM THE JET PUMP (JET PUMP 4 SENSING LINE), THERE EXISTS THE POSSIBILITY OF EXCESS FLOW CHECK VALVE XV-42-1F059H TRIPPING WHICH WILL REQUIRE MANUAL RESETTING BY OPERATIONS. THE ALARMS ARE LOCATED ON LOCAL PANEL I0C228 (20C228) AND MAIN CONTROL BOARD ANNUNCIATOR 1BC802-35 (2BC802-35) (EXCESS FLOW CHECK VALVE OPERATED PANEL C228). IF AT ANY TIME WHILE SAMPLING AN INDICATION OF DECREASING FLOW (FCV627) AND/OR DECREASING PRESSURE (PI661) IS NOTICED, CONTACT THE CONTROL ROOM AND REQUEST MONITORING OF THESE ANNUNCIATORS.

1. Drain the system per Appendix EP-231-1.

2. Verify that the nitrogen supply is still on and the pressure is regulated to 100 psig.

3. Verify that the Demineralized Flush Water Tank 00T 945 is adequately filled and is still pressurized at 100 psig and the Valves (30-0014, 30-1100,(30-2100)) are open to the sample station.

4. Load the syringe with 10cc of demineralized water. Place the stopcock on the syringe and load the assembly onto the injection port.

5. Check that the small volume cask is in the cask positioner, and that both are hanging from the hooks below the sample station.

6. Remove stopper and carrying handle from the small cask by unscrewing it and lifting it out. Leave stopper near by.

7. Put a 15 ML sample bottle with an outer aluminum retainer ring and neoprene cap into the small volume cask. Check that the bottle lifting lever is free to move up and down. The bottle must fit snugly in the holder and be vertically aligned. If the bottle does not fit snugly, use a small pad of rubber or felt, thick enough to hold vial against the upper yoke of the vial holder and/or attach the bottle to the vial holder with Velco tape.

   CAUTION: THE LEAD SHIELDING DRAWER WEIGHS APPROXIMATELY 70 POUNDS.

8. Make certain the lead shielding drawer is out so that the needles under the sample station enclosure are exposed. Quickly inspect the needles with a mirror and flashlight. Check that the longest part of the needle is towards the center of the sample vial.

APPENDIX EP-231-4
PROCEDURE FOR OBTAINING A SMALL VOLUME LIQUID SAMPLE (CONT)

9. Swing the cask into position under the sample station and lock the arms of the cask holder so the cask and bottle will remain in position.

10. Back off PCV-627.

11. To check the fit and operation of the sample vial without bringing a hot sample into the system, turn HC-616-1 SMALL VOLUME SAMPLE switch to position 3 (FLUSH LOOP).

12. With control panel power on and all other switches in the up and "OFF" position, set Switch HC-700 to the "LIQUID" position and Liquid Sample Selector Switch HC-626 to position 2 (Jet Pump Line) if a jet pump sample is desired or to position 4 (RPV or Suppression Pool) if the Reactor valves were set for a RHR sample. Adust PCV-627 so that the flow thru FCV-627 does not exceed 1 gpm (See FI-664).

    Also, if a RHR sample is desired, close the normal RHR sample lines by turning the respective switch:

SAMPLE LOCATION	SWITCH	SWITCH NAME	POSITION
"A" RHR	HS-51-199A(299A)	RHR Hx Normal Sample ISLN Loop A	CLOSE
"B" RHR	HS-51-199B(299B)	RHR Hx Normal Sample ISLN Loop B	CLOSE

13. Raise the sample bottle into position on the needles by moving the lever on the side of the cask.

14. Screw the lift rod in to hold the sample bottle in the engaged position. Note: If the vial does not clear the entry hole, lower the vial and rotate the small volume cask about 1/8" in either direction. If it still does not fit either the liquid vial positioner fixture or liquid tray positioner needs adjustment. Note: The green light for the small volume sample should be on. If the light remains red, unscrew the lift rod, lower the bottle and reposition.

15. Turn HC-616-1 to the up and OFF position.

APPENDIX EP-231-4
PROCEDURE FOR OBTAINING A SMALL VOLUME LIQUID SAMPLE (CONT)

16. Turn Liquid Sample Selector Switch HC-626 to position 1 (Jet Pump Line on Bypass) for a sample from the jet pump line or to position 5 (RPV or Sup'n Pool on Bypass) for a sample from the RHR line. Adjust PCV-627 so that the flow thru FCV-627 does not exceed 1 gpm. (See FI-664) Continue this flow thru bypass valve CV-626 for a long enough period to be assured that the sample lines are flushed. The minimum time required to do this is 7 minutes. Record the flow and flush time on the data sheet.

17. After flush is completed, turn Switch HC-626 to position 2 (for jet pump sample) or position 4 (for RHR sample). Note that the flow on Indicator FI-664 is greatly reduced. Adjust Valve FCV-627 for a flow of 0.3 gpm, using PCV-627.

18. Record the following on the data sheet:

    Flow (FI-664)

    Pressure (PI-661)

    Temperature (TI-660)

    Conductivity (CI-663)

    Radiation (RI-665)

19. Turn Small Volume Liquid Selector HC-616-1 to "TAKE SAMPLE" position (position 1). Valve CV-616 will rotate and carry the sample into alignment with the line to the sample bottle. Wait for Valve CV-616 light to come on.

20. Open the stopcock on the syringe and inject 10cc of water into the line. Close the syringe stopcock. Remove the syringe and fill it with air. Reattach the syringe, open the stopcock and inject the air, then close the stopcock and remove the syringe.

21. Unscrew the lift rod and lower the sample bottle.

22. Turn the Switch HC-616-1 (small volume sample sw) to the FLUSH LOOP position (3). Make sure there is enough flow by adjusting PCV-627 so that it is set to at least 15 psig. Flush for 5 minutes and/or until RI-665 reaches a minimum.

23. When the flush is complete, turn HC-626 (Liquid Sample Source Selector Switch) "OFF" FIRST and then HC-616-1 to "OFF" (position 2).

24. Verify Switch HS-51-199A(299A) or HS-51-199B(299B) is in the CLOSE position.

APPENDIX EP-231-4
PROCEDURE FOR OBTAINING A SMALL VOLUME LIQUID SAMPLE (CONT)

25. Unlock the arms of the cask holder and swing the cask out.

26. Remove the sample cask from the cask holder by using cotton liners and gloves and immediately survey the liquid vial and record the Initial Contact Dose Rate on the Data Sheet. If the sample is greater than 100 mR/hr, use the sample cask to carry the sample to the Hot Lab.

27. Drain the system per Appendix EP-231-1.

APPENDIX EP-231-4
PROCEDURE FOR OBTAINING A SMALL VOLUME LIQUID SAMPLE (CONT)

Data Sheet for Small Volume Liquid Sample

DESIRED ANALYSIS

A. _____

B. _____

C. _____

D. _____

E. _____

1. Sample Source _____ Date _____ Time _____
2. Bypass Flow _____ FI-664 (gpm)
3. Flush Time _____ Minutes
4. Sample Flow _____ FI-664 (gpm)
5. Pressure _____ PI-661 (psig)
6. Temperature _____ TI-660 (F)
7. Conductivity _____ Scale _____ CI-663
8. Radiation _____ RI-665 (mR/hr)
9. Initial Contact Dose Rate _____(mR)

Name _____

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE AND/OR A DISSOLVED GAS SAMPLE

IF A SAMPLE IS TO BE OBTAINED FROM THE JET PUMP (JET PUMP 4 SENSING LINE), THERE EXISTS THE POSSIBILITY OF EXCESS FLOW CHECK VALVE XV-42-1F059H TRIPPING WHICH WILL REQUIRE MANUAL RESETTING BY OPERATIONS. THE ALARMS ARE LOCATED ON LOCAL PANEL 10C228 AND MAIN CONTROL BOARD ANNUNCIATOR 1BC802-35 (EXCESS FLOW CHECK VALVE OPERATED PANEL C228). IF AT ANY TIME WHILE SAMPLING AN INDICATION OF DECREASING FLOW (FCV627) AND/OR DECREASING PRESSURE (PI661) IS NOTICED, CONTACT THE CONTROL ROOM AND REQUEST MONITORING OF THESE ANNUNCIATORS.

1. Drain the system per Appendix EP-231-1.

2. Verify that the nitrogen supply is still on and the pressure is regulated to 100 psig.

3. Verify that the demineralized water tank is adequately filled and pressurized to 100 psig.

4. If a dissolved gas sample is to be taken open the tracer gas bottle valve and regulate to 2-3 psig. Record pressure.

5. Make certain the lead shield drawer is out so that the needles under the sample station enclosure are exposed. Quickly inspect the needles with a mirror and flashlight. Check that the longest part of the needle is toward the center of the sample vial.

6. Remove lead stopper from large volume cask and put a 15 ML sample bottle with an outer aluminum retainer ring and a neoprene cap into the large cask. Note sample bottle must fit snugly in the holder and be vertically aligned. If necessary, place small pad under sample vial and/or attach the vial to the holder with Velco Tape. With cask in fully lowered position, roll cask into position under the sample station.

7. Back off PCV-627.

8. Using the hydraulic pump slowly raise the cask, checking for proper alignment. Stop pumping when top cask ring is <u>inside</u> and the large volume cask is <u>just below</u> the bottom of the sample station.

9. To check the fit and operation of the sample vial without bringing a hot sample into the system, turn HC-616-1 SMALL VOLUME SAMPLE switch to position 3 (FLUSH LOOP).

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE AND/OR A DISSOLVED GAS SAMPLE (CONT)

10. Place the gas vial in the holder and insert into the dissolved gas sample point. Note that the dissolved gas sample light turns green. If it does not, readjust the vial position.

11. With control panel power on and all other switches in the up and "OFF" position, set Switch HC-700 to the liquid position, and Liquid Sample Selector Switch HC-626 to position 2 if a jet pump sample is desired or to position 4 if the Reactor valves were set for a RHR sample. Adjust PCV-627 so that the flow thru FCV-627 does not exceed 1 gpm (see FI-664).

12. Push the plunger down which causes the sample bottle to be raised out of the cask and up onto the two needles. Note that the "bottle in" light will change from red to green. If the cask is not aligned properly, lower bottle and reposition cask.

13. Make certain that HC-616-1 (Small Volume Sample Switch) is in the "OFF" position.

14. Turn the Liquid Sample Source Selector Switch HC-626 to position 1 for jet pump bypass line sample or 5 for RHR sample.

    If RHR sample is desired, close the sample line valves to the normal sample station:

SAMPLE LOCATION	SWITCH	POSITION
"A" RHR	HS-51-199A(299A)	CLOSE
"B" RHR	HS-51-199B(299B)	CLOSE

15. FI-664 on control panel should be approximately 1 gpm. PI-661, TI-660, CI-663 and RI-665 should start to have meaningful values.

16. Adjust PCV-627 so that the flow on FI-664 does not exceed 1 gpm. Continue this flow for a long enough period (at least 7 minutes) to be assured that the sample lines are flushed out with liquid being sampled.

    RECORD THE FLOW FROM FI-664 AND FLUSH TIME ON DATA SHEET.

17. When flush is completed, turn HC-626 Sample Source Selector Switch to position 2 for a jet pump sample or position 4 if Reactor valves were positioned for a RHR sample. Adjust FCV-627 for a flow of 0.3 gpm (to adjust FCV-627 use PCV-627).

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE AND/OR A DISSOLVED GAS SAMPLE (CONT)

18. Turn the Dissolved Gas and Liquid Sample System Switch HC-601 to position 1 and observe that P-701 starts and Valve CV-622 rotates.

19. Turn Switch HC-601 to position 2. Observe that P-601 starts.

20. Record the following on the data sheet:

    Flow (FI-664)

    Pressure (PI-661)

    Temperature (TI-660)

    Conductivity (CI-663)

    Radiation (RI-665)

21. Turn Switch HC-601 to position 3 to isolate the sample and start the dissolved gas separator. Leave in this position for approximately 10 seconds.

22. IF IT IS NOT DESIRABLE TO INTRODUCE TRACER GAS, TURN HC-601 TO POSITION 5 QUICKLY AND VALVE WILL NOT ROTATE. PROCEED TO STEP 25.

23. Turn HC-601 to position 4 to inject tracer gas into valve CV-615. When the valve is rotated during the next step the tracer gas trapped in the passage of the ball valve will be inserted in the sample flow loop. Leave in this position for approximately 10 seconds. Read and record the tracer gas supply system pressure so tracer gas can be accurately calculated. The flow of tracer gas should be very small so that pressure drops in the line and valves will be insignificant.

24. Turn HC-601 to position 5. Let some of the dissolved gas separate from the liquid.

25. Read and record initial pressure PI-662.

26. Turn HC-601 to position 6*. Pump P-601 stops and CV-653 opens relieving liquid loop pressure.

    * DO NOT LEAVE HC-601 IN POSITION 6 FOR MORE THAN 5 SECONDS.

27. Turn HC-601 to position 7. This will bring the rest of dissolved gas into V-610. Leave in position for 10 seconds.

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE AND/OR A DISSOLVED GAS SAMPLE (CONT)

28. Read and record PI-662 on P-1. This will be the approximate pressure of the liquid loop.

29. Turn HC-601 to position 8 for no more than 5 seconds (this will open CV-653 again). Dissolved gas will rise to hold up Cylinder V-610 and then into Collection Chamber V-662.

30. Turn HC-601 to position 9 to get ready to take the dissolved gas sample or to relieve the collection chamber pressure. Pump P-601 will stop so that if the relieve pressure option is next exercised record PI-662 as P2 on data sheet as this is the pressure of the liquid sample loop.

31. Dissolved gas sample?

YES __ PROCEED TO STEP 32

NO __ PROCEED TO STEP 33

32. To take the dissolved gas sample, Switch HC-652 will be used. When HC-652 is turned clockwise to gas sample, the pressure as indicated by PI-662 will decrease while the dissolved gas is drawn into sample bottle. Turn HC-652 to gas sample and hold for at least 10 seconds until PI-662 is very steady. Then release HC-652 and it will spring back to center position. Turn HC-652 again to gas sample. Verify equalized pressure and read PI-662. Record the steady pressure as P3 reading on the data sheet. Proceed to Step 34.

33. As an alternate to Step 28, when a dissolved gas sample is not desired, it is only necessary to relieve the gas pressure back to the suppression pool by rotating Switch HC-652 counter clockwise to relieve pressure position and hold it while watching PI-662. The pressure will equalize rapidly.

34. Large Volume Sample?

YES __ PROCEED TO STEP 35

NO __ PROCEED TO STEP 36

35. If a large volume liquid sample is desired, turn HC-601 to position 10. HC-629-1 must be pushed and held for 10 seconds or 5 more for liquid to be drawn into the sample bottle. Proceed to Step 37.

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE AND/OR A DISSOLVED GAS SAMPLE (CONT)

36. If a large liquid sample is not desired, turn Switch HC-601 to the "OFF" position very quickly so that Valve CV-620 will not rotate and no radioactive liquid will be in the line ahead of CV-629.

37. Turn HC-601 to "OFF".

38. Lower liquid sample bottle into large cask by pulling up on the plunger handle. Note: Do not turn or twist bottle while it is on the needles because the needles will bend.

39. Lower the cask on the cart by relieving hydraulic oil pressure with the small petcock handle on the hydraulic cylinder.

40. Slide the lead shield drawer back into the enclosure to cover opening for the needles.

41. Roll the cask out from under the sample station and immediately survey the liquid vial and record the Initial Contact Dose Rate on the Data Sheet. Quickly plug cask. Use the cask to transport the sample if greater than 100 mR/hr. Use RI-665 to determine Gross Activity of the sample.

42. Open and place gas vial carrying cask near sample station. Remove gas vial positioner from sample enclosure. Keep the vial at maximum distance from the individual and insert sample bottle into the gas vial cask. Close and latch the gas vial cask.

43. Perform a flush of the liquid system with Switch HC-628-1 per Appendix EP-231-6.

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE AND/OR A DISSOLVED GAS SAMPLE (CONT)

DATA SHEET

DESIRED ANALYSIS

A. _____

B. _____

C. _____

D. _____

E. _____

1. Sample Source _____ Date _____ Time _____
2. Krypton Tracer Gas Pressure _____ psig
3. Bypass Flow _____ FI-664 gpm
4. Flush Time _____ Minutes
5. Sample Flow _____ FI-664 gpm
6. Pressure _____ PI-661 psig
7. Temperature _____ TI-660
8. Conductivity Meter _____ Scale _____ CI-663
9. Radiation _____ RI-665
10. Tracer Gas Supply System Pressure _____ psig
11. Initial Pressure P-O _____ PI-662
12. Pressure P-1 _____ PI-662
13. Stabilized Pressure P2 _____ PI-662
14. Sample Pressure P3 _____ PI-662
15. Initial Contact Dose Rate _____(mR)

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE AND/OR A DISSOLVED GAS SAMPLE (CONT)

DATA SHEET (CONT)

16. V1 H2 (From GC) _____ ml

17. V2 O2 (from GC) _____ ml

18. V2 Kr (from GC) _____ ml

19. Vol % O2 _____ %

$$\text{Vol \% O2} = \frac{(V2_{O2} - .2P\text{-}o) \times (P\text{-}o + 14.7)}{17317 \qquad V2_{Kr}}$$

20. Vol % H2 _____ %

$$\text{Vol \% H2} = \frac{V1_{H2} \times (P\text{-}o + 14.7)}{17317 \quad V2_{Kr}}$$

Name _____

APPENDIX EP-231-6

PROCEDURE FOR FLUSHING THE LIQUID AND DISSOLVED GAS SYSTEM

1. Verify that the nitrogen supply is still on and the pressure is regulated to 100 psig.

2. Verify that the demin water tank is adequately filled and pressurized to 100 psig.

3. Make sure that FCV-627 is open by adjusting PCV-627 to 15 psig.

   NEVER EXCEED 1 GPM ON FI-664

4. Switch HC-626 (Liquid Sample Source Selector Switch) must be in position 2 (jet pump) or 4 (RHR) and HC-700 (Liquid or Gas Selector Switch) must be in the LIQUID position.

5. Turn the FLUSH SYSTEM SWITCH (HC-628-1) to position 2 (Start Flush) which will close the inlet sample lines and start the flush with demineralized water from 00T 945. Observe that there is a flow per FI-664.

6. After RI-665 shows radiation has decreased significantly, or after 5 minutes, turn Switch HC-628-1 to position 3 (Flush V-610 Loop) to flush the V-610 loop. Watch RI-665.

7. After a few minutes, turn Switch HC-628-1 to position 4 (Flush P-601 Loop) and flush the P-601 loop. Watch RI-665.

8. After a few minutes, turn Switch HC-628-1 to position 5 (Flush CV-615) and flush Valve CV-615. Watch RI-665.

9. After a few minutes, turn Switch HC-628-1 to position 6 (Flush Piping Station) and flush the piping station for 3 minutes.

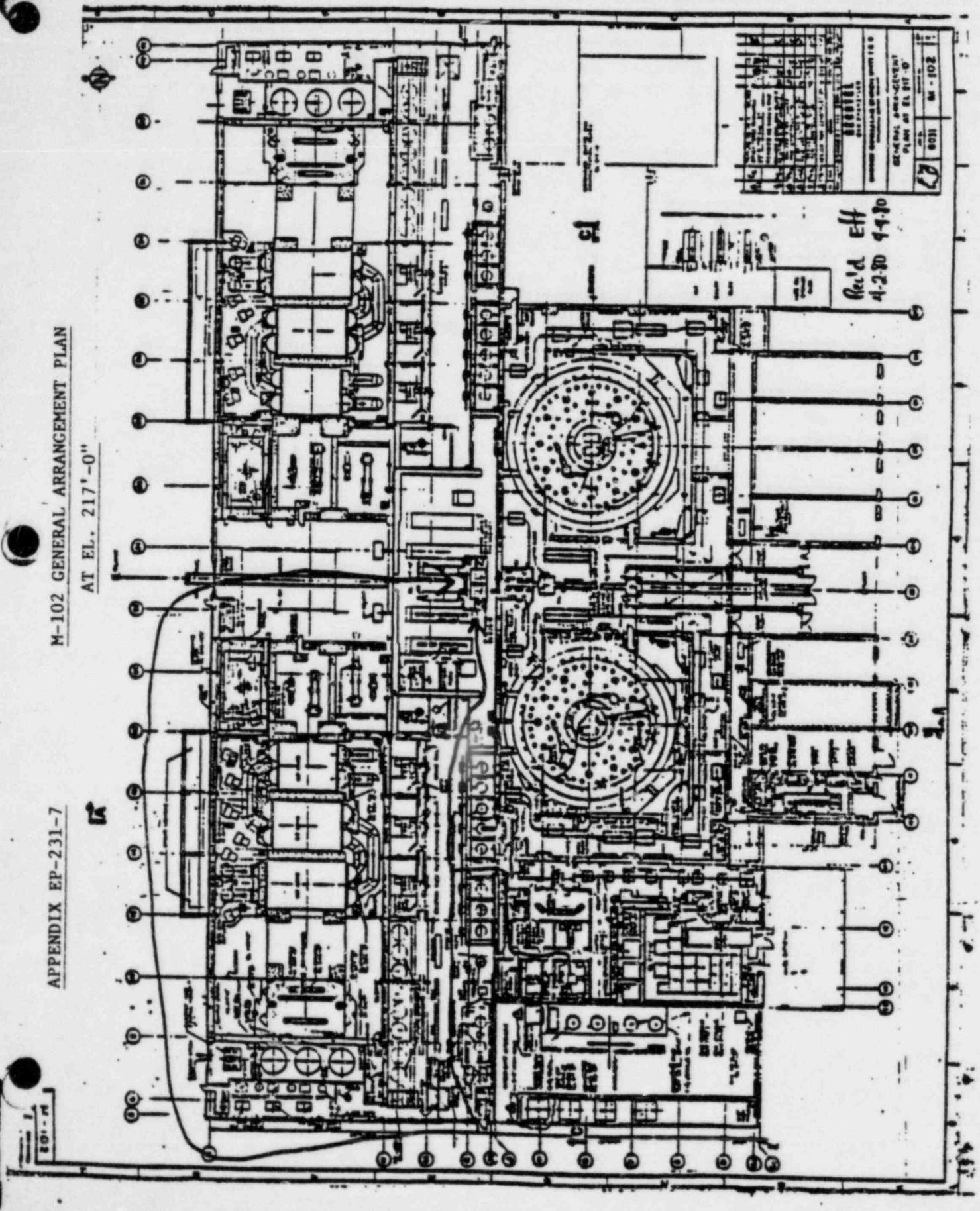
10. Turn Switch HC-628-1 to position 7 (Flush CV-622 Loop) for a few minutes to flush loop CV-622. Watch RI-665.

11. Turn HC-626 to "OFF" FIRST and then HC-628-1 to "OFF".

12. If RI-665 did not indicate an acceptable radiation level at any step of the operation, go back and repeat Steps 4 thru 11.

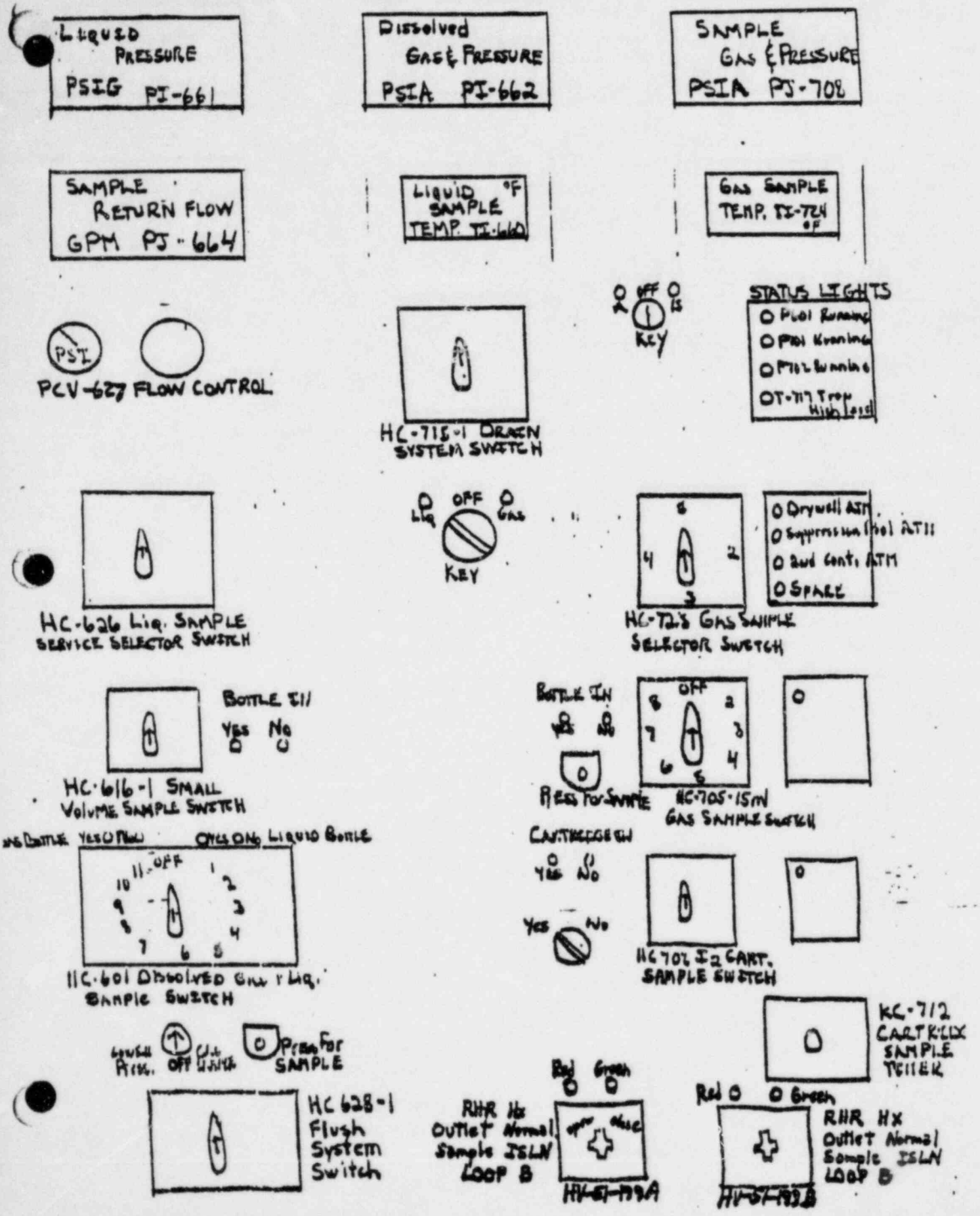
13. Drain the system per Appendix EP-231-1.

APPENDIX EP-231-7

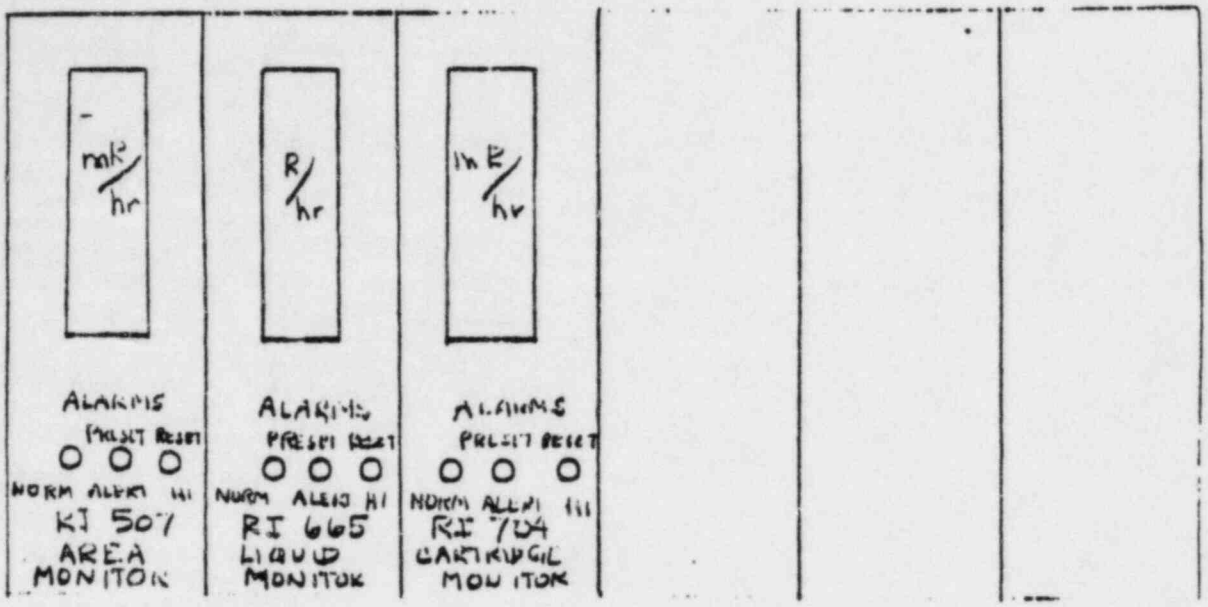


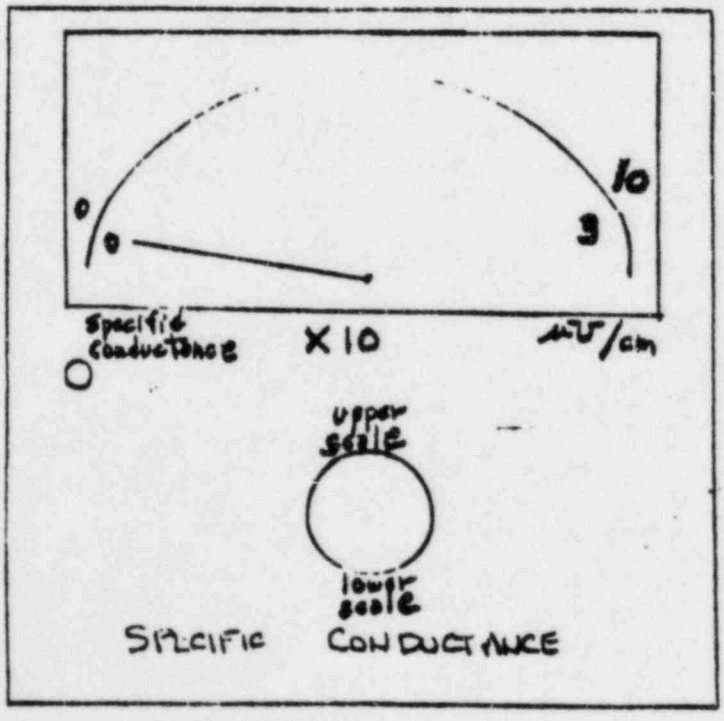
M-102 GENERAL ARRANGEMENT PLAN
AT EL. 217'-0"

APPENDIX EP-231-7

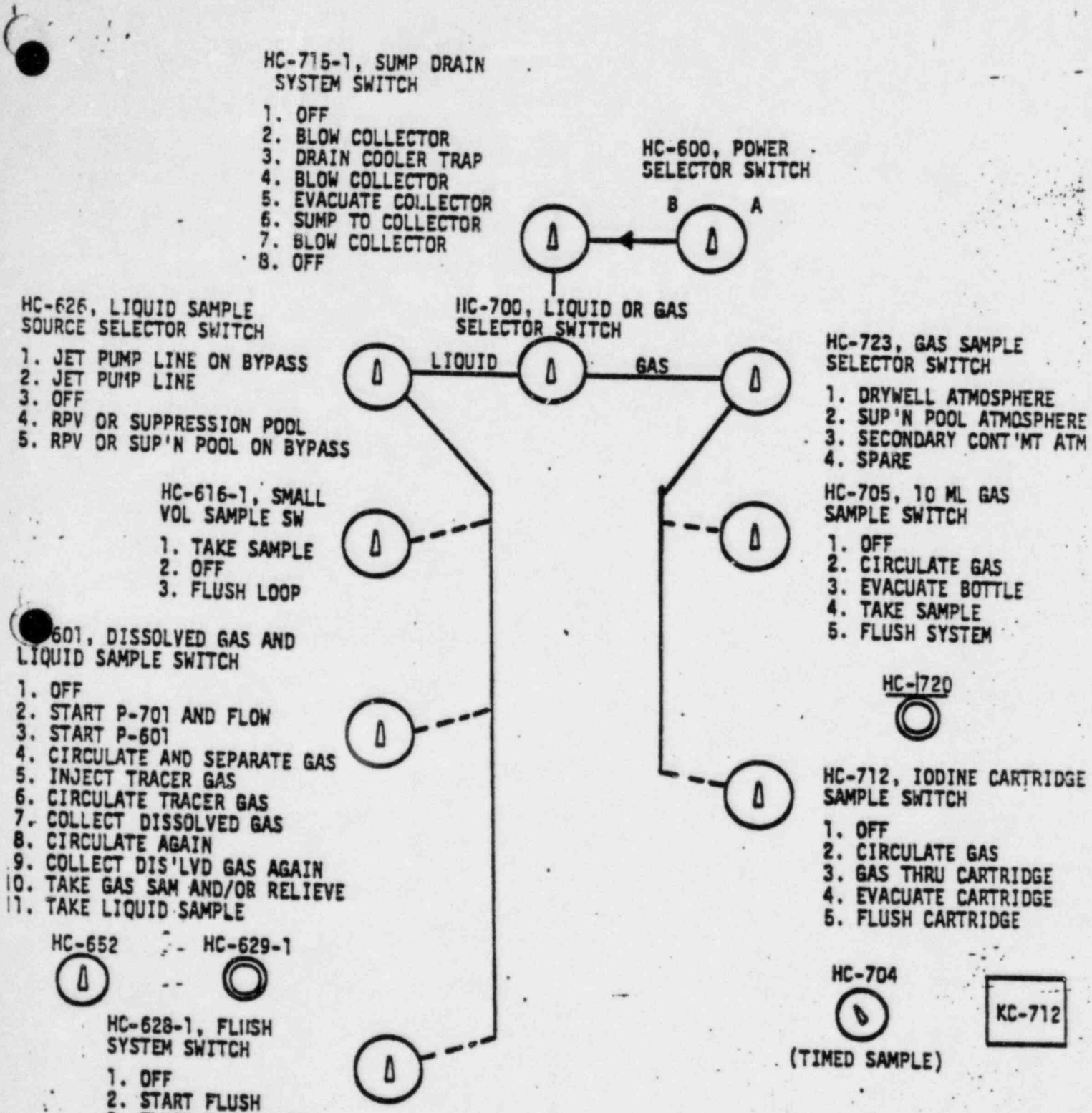

Liquid Pressure PSIG PI-661
Dissolved Gas & Pressure PSIA PI-662
Sample Gas & Pressure PSIA PJ-708
Sample Return Flow GPM PJ-664
Liquid °F Sample Temp. TI-660
Gas Sample Temp. TI-724 °F
PSI
PCV-627 Flow Control
HC-718-1 Drain System Switch
OFF
KEY
Status Lights
Pool Running
Pool Warning
T.B. Warning
Trip
HC-626 Liq. Sample Service Selector Switch
Liq
Gas
KEY
Drywell ATM
Suppression Pool ATM
2nd Cont. ATM
Spare
HC-723 Gas Sample Selector Switch
Bottle In
Yes
No
HC-616-1 Small Volume Sample Switch
Press for Sample
HC-705-15M Gas Sample Switch
Cartridge In
HC-601 Dissolved Gas & Liq. Sample Switch
HC-702 I2 Cart. Sample Switch
HC-712 Cartridge Sample Heater
Flush
Press for Sample
HC-628-1 Flush System Switch
Red
Green
RHR Hx Outlet Normal Sample ISLN Loop B
HV-67-193A
HV-67-193B

APPENDIX EP-231-9
DIAGRAM OF CONTROL PANEL - RIGHT SIDE

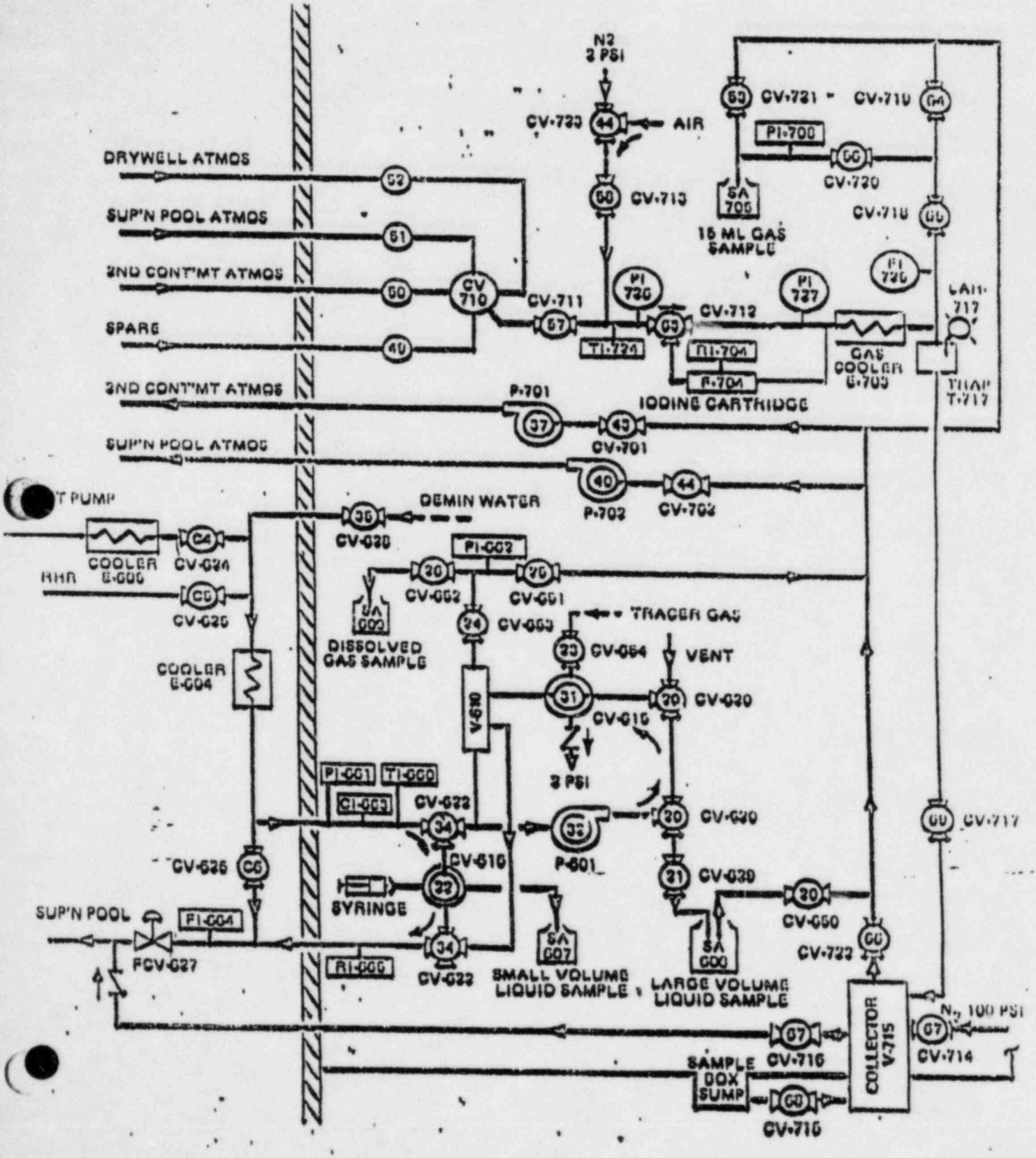




APPENDIX EP-231-10
CONTROL PANEL SWITCH LAYOUT



APPENDIX EP-231-11
SCHEMATIC OF POST ACCIDENT SAMPLE STATION



PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-233 RETRIEVING AND CHANGING SAMPLE FILTERS AND CARTRIDGES FROM THE CONTAINMENT LEAK DETECTOR DURING EMERGENCIES

1.0 PURPOSE

This procedure provides guidelines for retrieving and changing particulate filters and charcoal cartridges (or silver zeolite cartridges) located at the Containment Leak Detector following accident conditions.

2.0 RESPONSIBILITIES

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

3.0 APPENDICES

3.1 EP-233-1 - Data Sheet

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 Appropriate health physics survey equipment

5.2 Respiratory protective equipment

5.3 Anti-contamination clothing

5.4 Designated remote handling devices

5.5 Transport container (shielded)

5.6 Dosimetry

5.7 2-Combined Filter/Cartridge holder assembly

5.8 2-Extra particulate filters

5.9 2-Extra iodine cartridges

5.10 Shielded container

5.11 Extremity dosimetry

5.12 Plastic bags

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented when a Containment Filter/Cartridge sample is to be taken from the Containment Leak Detector during an Emergency

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-230-1 Emergency Exposure Guidelines.

8.2 Do not use elevators.

8.3 Eye protection should be worn by all personnel when obtaining samples from the sample stations.

8.4 Continuous coverage by a Health Physics Technician may substitute for the Radiation Work Permit.

9.0 PROCEDURE

9.1 Actions

9.1.1 (Interim) Chemistry Sampling and Analysis Team Leader shall:

9.1.1.1 After discussing the situation with the (Interim) Emergency Director determine if a filter/cartridge sample from the Containment Leak Detector is required.

9.1.1.2 Check the Plant Radiation Level Status Board to forecast anticipated radiological conditions.

9.1.1.3 Contact the Plant Survey Group Leader and check on the latest developments related to radiological conditions and inform him what sample(s) are to be taken and that Health Physics' coverage is required.

9.1.1.4 Request input from the Control Room (via Emergency Director) to ascertain desired sample system availability.

9.1.1.5 Determine what analyses are required and inform the Chemistry Sampling and Analysis Group Leader what analyses are required.

9.1.1.6 Request Emergency Exposure Authorizations from the Emergency Director for Group Members (as required) and inform the Plant Survey Group Leader of this development.

9.1.1.7 Direct the Chemistry Sampling and Analysis Group Leader to collect and analyze the filter/cartridge sample.

9.1.2 Chemistry Sampling and Analysis Group Leader shall:

9.1.2.1 After discussing the situation with the Chemistry Sampling and Analysis Team Leader contact the Plant Survey Group Leader and request a Health Physics technician to report to the Chemistry Lab to perform the following.

A. Provide the Group Leader with radiological conditions that would impact the sample selection.

B. Brief the group members on radiological conditions, precautions and requirements for entering the area and radiation level cutoffs for handling and analyzing the sample.

C. Provide constant coverage of the sampling and analysis portions of this procedure.

D. Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment

9.1.2.2 Select the sample location

A. One location for each unit exists where the sample may be taken from:

Unit	EQUIP NO.	LOCATION	AREA
1	10S 182	Rx-283'	16
2	20S 182	Rx-283'	17

9.1.2.3 Assign the appropriate number of group members to obtain the necessary equipment and once briefed by the H.P. Technician to collect and transport the sample to the Chemistry Hot Lab.

9.1.2.4 Contact the Dose Assessment Team Leader (TSC) for an estimated sampling time and record this time on Appendix EP-233-1. Verify that this time is feasible.

9.1.2.5 Brief the Health Physics Technician and Chemistry Sampling and Analysis Group members on the following.

A. Squad identifier

B. Communications equipment and channel

C. Type of sample(s) to be collected

D. Location of sample points

E. Suggested routes to be taken

F. Sample transport technique

G. Projected amount of time required to collect and transport the sample

H. Review of the procedures to be followed for sample collection, handling, preparation and analysis

I. Alternatives for obtaining and practical methods of remotely handling the sample(s)

J. Special tools and equipment required for sample handling and/or collection.

K. Proper completion of Data Sheets.

9.1.2.6 Instruct group members to immediately report the following as they occur or as the information becomes available.

A. Sample locations that are not accessible or any other reason why the sample can not be collected.

B. When the sample and group members arrive at the hot lab.

C. Results of the analysis.

9.1.2.7 Contact Shift operations in the Control Room to request system line up so that the selected sample can be taken from the desired Sample Station and sample point.

If the Containment Leak Detector is isolated, shift operations shall defeat the signal by placing jumpers across the following contacts:

DO NOT DEFEAT ISOLATION OF HIGH DRYWELL PRESSURE WHEN DRYWELL PRESSURE IS GREATER THAN 5 PSIG.

Panel	Relay	Contacts	Isolation Signal
10C609 (20C609)	B21H-K120C	T4-M4	High D/W Pressure or -38" Vessel Level
10C611 (20C611)	B21H-K120B	T4-M4	High D/W Pressure or -38" Vessel Level

9.1.2.8 Appoint one Group member to prepare the Hot Lab for receiving the sample, using the following guidelines:

A. Adequate shielding is available for the sample.

B. Remote handling tools are in place (as required).

C. Protective clothing and equipment are readily available (as required by HP).

D. Copies of the appropriate sample handling and analysis procedures are on hand.

E. Equipment is properly calibrated, warmed-up and in place.

USE THE FOLLOWING PROCEDURES AS GUIDELINES FOR PREPARATION OF THE HOT LAB.

EP-241 (LIQUID) Sample Preparation and Handling of Highly Radioactive Liquid Samples

EP-242 (IODINE) Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges

EP-243 (GAS) Sample Preparation and Handling of Highly Radioactive Gas Samples

9.1.2.9 Copy Appendix EP-230-2, Chemistry Sampling and Analysis COL for each sample taken. Fill out all pertinent information as it becomes available.

9.1.3 The Health Physics Technician shall:

9.1.3.1 Determine which route should be used for collecting and transporting the sample.

A. <u>SUGGESTED ROUTES AND APPROXIMATE TIMES ARE AS FOLLOWS</u>:

Entering the N.W. corner-Unit 1 or (N.E. corner-Unit 2) of Rx. Encl. 217' and proceeding up the stairs to 283' El.

TIME: Approx. 5 min.

B. Proceeding past the filter demineralizer access hatches and exiting the Radwaste Encl. 217' El., turning left and entering the S.W.-Unit 1 or (S.E.-Unit 2) corner of Rx. Encl. 217' El. and proceeding upstairs to 283' El.

TIME: Approx. 6 min.

9.1.3.2 Take appropriate radiation survey equipment and ensure that equipment is functional and calibrated.

9.1.3.3 Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.3.4 Perform a pre-job briefing with the Chemistry technicians assigned to obtain the sample to discuss the following:

A. RWP requirements

B. Routes to be used

C. Authorized doses

D. Radiological concerns and precautions

E. Review of procedure for obtaining and transporting sample to hot lab

F. Suggested methods to maintain exposures ALARA

G. Stay times and Abort Criteria

9.1.3.5 Provide constant coverage while obtaining, transporting and analyzing the sample filter and cartridges from the Containment Leak Detector.

9.1.3.6 Monitor dose rates enroute and at the sample location. Upon entering the power block, the surveyors shall note trends in general radiation levels enroute to the Containment Leak Detector. If general area dose rates (unanticipated) exceed 10 R/hr gamma or 10 rad/hr beta prior to arriving at the door leading to Rx.-283', exit immediately and report to Chemistry Sampling and Analysis Group Leader. If dose rates (unanticipated) exceed 5 R/hr at the door leading to Rx. 283', leave the area immediately and report to Chemistry Sampling and Analysis Group Leader.

9.1.3.7 Survey the sample area and sample cask.

9.1.3.8 Document the sample cask survey results and give them to the Chemistry Sampling and Analysis Group Leader (or other designated group member) when arriving at the hot lab.

9.1.3.9 Provide constant coverage during sample preparation and handling as specified in EP-241, 242 or 243.

9.1.4 Chemistry Sampling and Analysis Group members shall:

9.1.4.1 Assemble for a pre-job briefing at the chemistry lab.

9.1.4.2 Inform the Group Leader if they are approaching the administrative exposure guidelines, or may not have sufficient exposure remaining to successfully complete the assigned task.

9.1.4.3 Obtain the necessary equipment to collect the sample and ensure that the hot lab is ready to accept the sample (for additional information, refer to prerequisite 4.2)

PROPERLY LABEL ALL SAMPLE CONTAINERS

9.1.4.4 Obtain and don the appropriate protective clothing and equipment (as required by the H.P. technician or RWP)

9.1.4.5 Once the group has been briefed and the appropriate equipment has been assembled, proceed to the Containment Leak Detector area and retrieve and change the sample filters and cartridges as follows:

A. The HP Technician shall survey the Containment Leak Detector concentrating especially on the particulate filter/iodine cartridge assembly and sample lines.

B. Obtain the sample. The time required to obtain a sample is approximately 10 minutes.

C. FILTER/CARTRIDGE HOLDER ASSEMBLY CHANGE METHOD

1. Verify that HS-26-190-1 and HS-26-190-2 (Pump 1 and Pump 2 switches) are in the ON position and that both pump 1 and pump 2 lights are lit.

2. Verify flow (FI-26-190) indicate flow.

3. Put switch HSS-26-190 (OPERATE/PURGE) in PURGE position and verify that the purge light is lit.

4. Allow to purge for one minute.

5. Close valves V-2 and V-3.

6. Remove holder assembly, bag and place in a shielded container.

   THIS ASSEMBLY MAY BE USED LATER. SEE STEP 13.

7. Install a new filter/cartridge assembly back into the line.

8. Open valves V-2 and V-3.

9. Close valve V-8.

10. Put switch HSS-26-190 in OPERATE position and verify that the OPERATE light is lit. Record the time as TIME-1 and flow as FLOW-1 from FI-26-190 in Appendix EP-233-1.

11. Allow flow for the desired amount of sample collection time and then turn HSS-26-190 to PURGE and record time (TIME-2) and flow (FLOW-2) in EP-233-1.

12. Allow to purge for one minute.

13. Close valves V-2 and V-3.

14. Remove holder assembly and immediately have the Health Physics Technician Survey the sample and record the Initial Contact Dose Rate on Appendix EP-233-1 and bag and place the sample in a shielded transport container.

15. Reinstall the holder assembly previously removed (Step 5) if appropriate, or install a new holder assembly.

16. Open valves V-2, V-3 and V-8.

17. Put switch HSS-26-190 in OPERATE position and verify that the OPERATE light is lit.

18. Return to the hot lab with the sample by retracing one of the previously suggested routes.

19. Contact the Control Room and inform them that a sample has been taken and to return the system to the original alignment. (i.e. Remove jumpers)

9.1.4.6 Upon introduction of the sample into the hot lab, the sample will be handled and stored in a manner that personnel exposures are kept ALARA.

9.1.4.7 Inform the Group Leader as soon as the sample reaches the hot lab and inform him that the sample collection has been completed and what the sample status is.

9.2 Follow-up

9.2.1 Chemistry Sampling and Analysis Group members shall:

9.2.1.1 Complete Appendix EP-233-1

9.2.1.2 Prepare, handle and analyze the sample using EP-242 Sample Preparation and Handling of Highly Radioactive Particulate and Iodine Cartridges.

9.2.1.3 Report the results to the Chemistry Sampling and Analysis Group Leader.

9.2.1.4 Properly file the data sheets and report back to the Group Leader for reassignment.

9.2.2 Chemistry Sampling and Analysis Group Leader shall:

9.2.2.1 Ensure Group member(s) dose is monitored to ensure that exposure limits have not been exceeded.

9.2.2.2 Inform the Chemistry Sampling and Analysis Team Leader that the required sample is in the hot lab.

9.2.2.3 Direct group members to refer to EP-242 Sample Preparation and Handling of Radioactive Particulate and iodine cartridges for guidance for sample preparation and handling.

9.2.2.4 Obtain and review ALL Data Sheets report the sample results to the Chemistry Sampling and Analysis Team Leader and attach all Data Sheets to Appendix EP-230-2.

9.2.3 Chemistry Sampling and Analysis Team Leader shall:

9.2.3.1 Report the results to the Emergency Director and the Health Physics and Chemistry Coordinator (EOF).

10.0 REFERENCES

10.1 EP-230 - Chemistry Sampling and Analysis Team Activation

10.2 EP-242 - Sample Preparation and Handling of Highly Radioactive Particulate and Iodine Cartridges

10.3 M-102 - General Arrangement Plan at El. 217'-0"

10.4 M-104 - General Arrangement Plan at El. 269'-0" & 283'-0"

10.5 M-26 - Sh. 1, Rev. 8; Sh. 2, Rev. 9; Sh. 3, Rev. 3; Sh. 4, Rev. 3 - Plant Process Radiation Monitoring P&ID

10.6 E-519, Sh. 1 of 2; Rev. 2

APPENDIX EP-233-1

DATA SHEET

Containment Leak Detector

Particulate/Iodine Grab Sample

ESTIMATED SAMPLING TIME: _____

DATE: _____

TIME: _____

TIME-1: _____

FLOW-1: _____

TIME-2: _____

FLOW-2: _____

INITIAL CONTACT DOSE RATE: _____

TOTAL TIME: _____

AVG. FLOW: _____

ANALYSES: _____

_____

NAME: _____

_____

_____

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-234 OBTAINING CONTAINMENT GAS SAMPLES FROM THE CONTAINMENT LEAK DETECTOR DURING EMERGENCIES

1.0 PURPOSE

This procedure provides guidelines for obtaining gas samples from the Containment Leak Detector during emergencies.

2.0 RESPONSIBILITIES

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

3.0 APPENDICES

3.1 EP-234-1 - Diagram of Gas Sampling Apparatus

3.2 EP-234-2 - Data Sheet

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 Appropriate health physics survey equipment

5.2 Respiratory protective equipment

5.3 Anti-C clothing

5.4 Designated remote handling devices

5.5 Transport container (shielded)

5.6 Dosimetry

5.7 Shielded container for discarding invalid samples

5.8 Extremity dosimetry

5.9 3-Gas Sampling Apparatuses

5.10 3 off-gas vials

5.11 Appropriate microsyringes

5.12 Plastic bags

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented when a gas sample shall be taken from the Containment Leak Detector during an Emergency.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-230-1 Emergency Exposure Guidelines.

8.2 Do not use elevators.

8.3 Eye protection should be worn by all personnel when obtaining samples from the sample stations.

8.4 Continuous coverage by a Health Physics Technician may substitute for the Radiation Work Permit.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 (Interim) Chemistry Sampling and Analysis Team Leader shall:

9.1.1.1 After discussing the situation with the (Interim) Emergency Director determine if a gas sample from the containment leak detector is required

9.1.1.2 Check the Plant Radiation Level Status Board to forecast anticipated radiological conditions.

9.1.1.3 Contact the Plant Survey Group Leader and check on the latest developments related to radiological conditions and inform him what sample(s) are to be taken and that Health Physics' coverage is required.

9.1.1.4 Request input from the Control Room (via Emergency Director) to ascertain the desired sample system availability.

9.1.1.5 Determine what analyses are required and inform the Chemistry Sampling and Analysis Group Leader what analyses are required.

9.1.1.6 Request Emergency Exposure Authorizations from the Emergency Director for Group Members (as required) and inform the Plant Survey Group Leader of this development.

9.1.1.7 Direct the Chemistry Sampling and Analysis Group Leader to collect and analyze the filter/cartridge sample.

9.1.2 Chemistry Sampling and Analysis Group Leader shall:

9.1.2.1 After discussing the situation with the Chemistry Sampling and Analysis Team Leader contact the Plant Survey Group Leader and request a Health Physics technician to report to the Chemistry Lab to perform the following.

A. Provide the Group Leader with radiological conditions that would impact the sample selection.

B. Brief the group members on radiological conditions, precautions and requirements for entering the area and radiation level cutoffs for handling and analyzing the sample.

C. Provide constant coverage of the sampling and analysis portions of this procedure.

D. Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.2.2 Select the sample location

A. One location for each unit exists where the sample may be taken from:

Unit	EQUIP NO.	LOCATION	AREA
1	10S 182	Rx-283'	16
2	20S 182	Rx-283'	17

9.1.2.3 Assign the appropriate number of group members to obtain the necessary equipment and once briefed by the H.P. Technician to collect and transport the sample to the Chemistry Hot Lab.

9.1.2.4 Brief the Health Physics Technician and Chemistry Sampling and Analysis Group members on the following.

A. Squad identifier

B. Communications equipment and channel

C. Type of sample(s) to be collected

D. Location of sample points

E. Suggested routes to be taken

F. Sample transport technique

G. Projected amount of time required to collect and transport the sample

H. Review of the procedures to be followed for sample collection, handling, preparation and analysis

I. Alternatives for obtaining and practical methods of remotely handling the sample(s)

J. Special tools and equipment required for sample handling and/or collection.

K. Proper completion of Data Sheets

9.1.2.5 Instruct group members to immediately report the folowing as they occur or as the information becomes available.

A. Sample locations that are not accessible or any other reason why the sample can not be collected.

B. When the sample and group members arrive at the hot lab.

C. Results of the analysis.

9.1.2.6 Contact Shift operations in the Control Room to request system line up so that the selected sample can be taken from the desired Sample Station and sample point.

If the Containment Leak Detector is isolated, shift operations shall defeat the signal by placing jumpers across the following contacts:

DO NOT DEFEAT ISOLATION OF HIGH DRYWELL PRESSURE WHEN DRYWELL PRESSURE IS GREATER THAN 5 PSIG.

Panel	Relay	Contacts	Isolation Signal
10C609 (20C609)	B21H-K120C	T4-M4	High D/W Pressure or -38" Vessel Level
10C611 (20C611)	B21H-K120B	T4-M4	High D/W Pressure or -38" Vessel Level

9.1.2.7 Appoint one Group member to prepare the Hot Lab for receiving the sample, using the following guidelines:

A. Adequate shielding is available for the sample.

B. Remote handling tools are in place (as required).

C. Protective clothing and equipment are readily available (as required by HP).

D. Copies of the appropriate sample handling and analysis procedures are on hand.

E. Equipment is properly calibrated, warmed-up and in place.

USE THE FOLLOWING PROCEDURES AS GUIDELINES FOR PREPARATION OF THE HOT LAB.

EP-241 (LIQUID) Sample Preparation and Handling of Highly Radioactive Liquid Samples

EP-242 (IODINE) Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges

EP-243 (GAS) Sample Preparation and Handling of Highly Radioactive Gas Samples

9.1.2.8 Copy Appendix EP-230-2, Chemistry Sampling and Analysis COL for each sample taken. Fill out all pertinent information as it becomes available.

9.1.3 The Health Physics Technician shall:

9.1.3.1 Determine which route should be used for collecting and transporting the sample.

A. SUGGESTED ROUTES AND APPROXIMATE TIMES ARE AS FOLLOWS:

Entering the N.W. corner-Unit 1 or (N.E. corner-Unit 2) of Rx. Encl. 217' and proceeding up the stairs to 283' El.

TIME: Approx. 5 min.

B. Proceeding past the filter demineralizer access hatches and exiting the Radwaste Encl. 217' El., turning left and entering the S.W.-Unit 1 or (S.E.-Unit 2) corner of Rx. Encl. 217' El. and proceeding upstairs to 283' El.

TIME: Approx. 6 min.

9.1.3.2 Take appropriate radiation survey equipment and ensure that equipment is functional and calibrated.

9.1.3.3 Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.3.4 Perform a pre-job briefing with the Chemistry technicians assigned to obtain the sample to discuss the following:

A. RWP requirements

B. Routes to be used

C. Authorized doses

D. Radiological concerns and precautions

E. Review of procedure for obtaining and transporting sample to hot lab

F. Suggested methods to maintain exposures ALARA

G. Stay times and Abort Criteria

9.1.3.5 Provide constant coverage while obtaining, transporting and analyzing the sample from the Containment Leak Detector.

9.1.3.6 Monitor dose rates enroute and at the sample location. Upon entering the power block, the surveyors will note trends in general radiation levels enroute to the Containment Leak Detector. If general area dose rates (unanticipated) exceed 10 R/hr gamma or 10 rad/hr beta prior to arriving at the door leading to Rx.-283', exit immediately and report to Chemistry Sampling and Analysis Group Leader. If dose rates (unanticipated) exceed 5 R/hr at the door leading to Rx. 283', leave the area immediately and report to Chemistry Sampling and Analysis Group Leader.

9.1.3.7 Survey the sample area and sample cask.

9.1.3.8 Document the sample cask survey results and give them to the Chemistry Sampling and Analysis Group Leader (or other designated group member) when arriving at the hot lab.

9.1.3.9 Provide constant coverage during sample preparation and handling as specified in EP-241, 242 or 243.

9.1.4 Chemistry Sampling and Analysis Group members shall:

9.1.4.1 Assemble for a pre-job briefing at the chemistry lab.

9.1.4.2 Inform the Group Leader if they are approaching the administrative exposure guidelines, or may not have sufficient exposure remaining to successfully complete the assigned task.

9.1.4.3 Obtain the necessary equipment (prepare three evacuated off-gas sample vials) to collect the sample and ensure that the hot lab is ready to accept the sample (for additional information, refer to prerequisite 4.2)

PROPERLY LABEL ALL SAMPLE CONTAINERS

9.1.4.4 Obtain and don the appropriate protective clothing and equipment (as required by the H.P. technician or RWP)

9.1.4.5 Once the group has been briefed and the appropriate equipment has been assembled, proceed to the Containment Leak Detector area and collect a containment gas sample.

A. Proceed to the Containment Leak Detector.

B. Have the H.P. Technician survey the Containment Leak Detector.

C. Obtain the sample. The time required to obtain a sample is approximately 10 minutes.

D. <u>SAMPLING METHOD</u>

1. Verify that HS-26-190-1 and HS-26-190-2 (pump 1 and pump 2 switches) are in the ON position and that both pump 1 and pump 2 lights are lit.

2. Verify flow (FI-26-190) indicates flow.

3. Put switch HSS-26-190 (OPERATE/PURGE) in PURGE position and verify that the PURGE light is lit.

4. Allow to purge for one minute.

5. Close valves V-2 and V-3.

6. Disconnect the filter holder assembly on the outlet side and install the gas sampling apparatus making sure the sample valve and septum valve are closed. (Appendix EP-234-1).

7. Open valves V-2 and V-3.

8. Close valve V-8.

9. Put switch HSS-26-190 in OPERATE position and verify that the OPERATE light is lit.

10. Open the sample valve.

11. Open the septum valve.

12. Insert the 1.0 ml microsyringe through the septum valve and the sample valve into the sample tee.

13. Flush the microsyringe by taking a 0.1 ml sample and injecting it back into the sample tee two times.

14. Take a 0.1 ml sample and remove the microsyringe from the sample tee. Inject the sample into an evacuated 14.4 ml off gas vial. Place the microsyringe in a plastic bag and secure.

15. Have the HP Technician immediately survey the vial and record the Initial Contact Dose Rate in Appendix EP-234-2 and using remote handling tools, place the vial into an appropriate shielded transport container.

16. Complete Appendix EP-234-2.

17. Close the sample and septum valves.

18. Take the sample to the hot lab retracing one of the previously suggested routes.

19. Contact Control Room and inform that a sample has been taken and to return the system to the original alignment. (i.e. remove jumpers).

9.1.4.7 Upon introduction of the sample into the hot lab, the sample will be handled and stored in a manner that personnel exposures are kept ALARA.

9.1.4.8 Inform the Group Leader as soon as the sample reaches the hot lab and inform him that the sample collection has been completed and what the sample status is.

9.2 FOLLOW-UP

9.2.1 Chemistry Sampling and Analysis Group Members shall:

9.2.1.1 Complete Appendix EP-234-2

9.2.1.2 Prepare, handle and analyze the sample using EP-243 Preparation and Handling of Highly Radioactive Gas Samples.

9.2.1.3 Report the results to the Chemistry Sampling and Analysis Group Leader.

9.2.1.4 Properly file the data sheets and report back to the Group Leader for reassignment.

9.2.2 Chemistry Sampling and Analysis Group Leader shall:

9.2.2.1 Ensure Group Member(s) dose is monitored to ensure that exposure limits have not been exceeded.

9.2.2.2 Inform the Chemistry Sampling and Analysis Team Leader that the required sample is in the hot lab.

9.2.2.3 Direct Group Members to refer to EP-243 Sample Preparation and Handling of Radioactive Gas Samples for guidance for sample preparation and handling.

9.2.2.4 Obtain and review all Data Sheets and report the sample results to the Chemistry Sampling and Analysis Team Leader and attach all Data Sheets to Appendix EP-230-2.

9.2.3 Chemistry Sampling and Analysis Team Leader shall:

9.2.3.1 Report the results to the Emergency Director and the Health Physics and Chemistry Coordinator (EOF).

10.0 REFERENCES

10.1 EP-230 - Chemistry Sampling and Analysis Team Activation

10.2 EP-243 - Preparation and Handling of Highly Radioactive Gas Samples

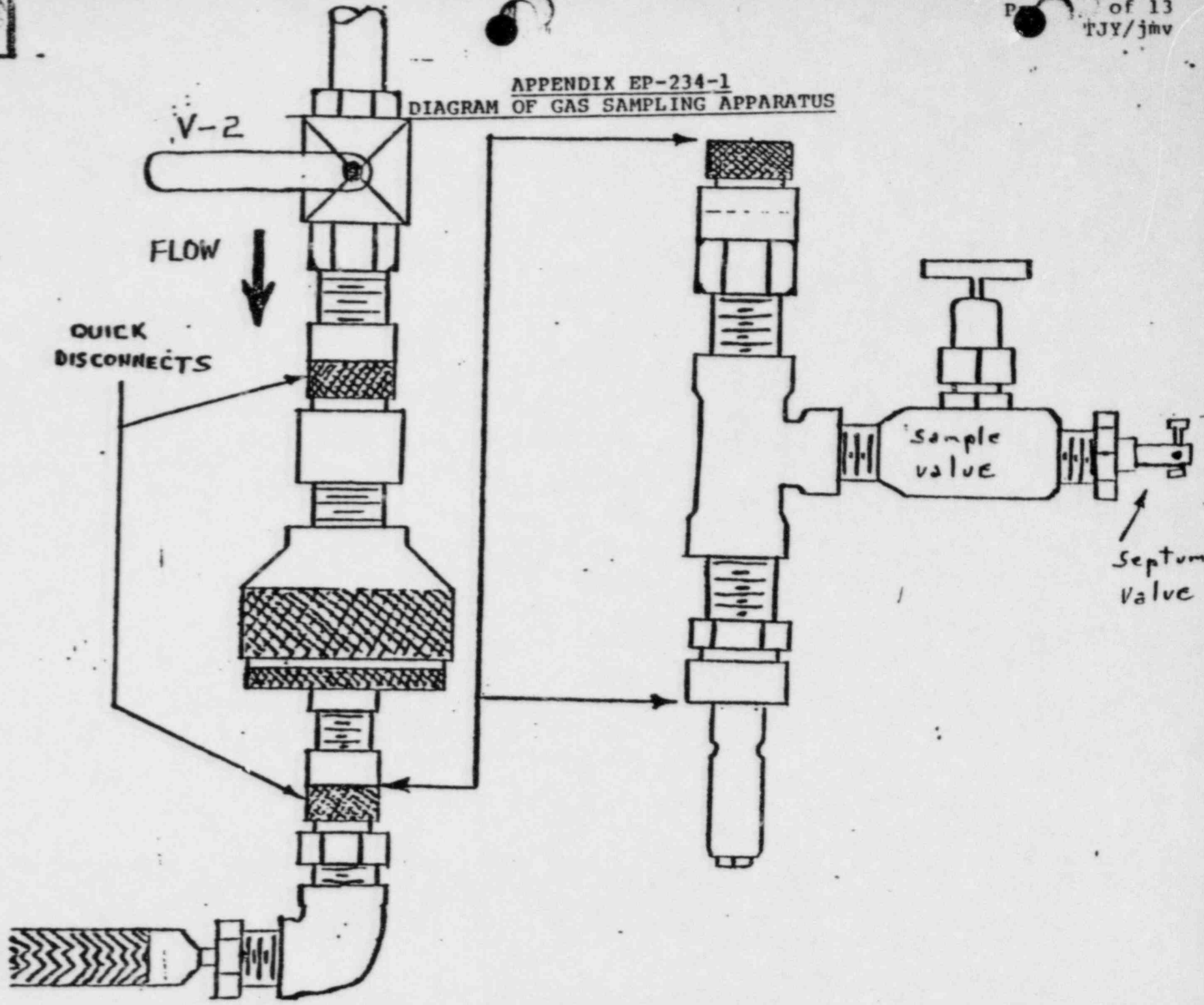
10.3 M-102 - General Arrangement Plan at El. 217'-0"

10.4 M-104 - General Arrangement Plan at El. 269'-0" & 283'-0"

10.5 M-26 P&ID, Sh. 1, Rev. 8; Sh. 2, Rev. 9; Sh. 3, Rev. 3; Sh. 4, Rev. 3 - Plant Process Radiation Monitoring

10.6 E-519, Sh. 1 of 2; Rev. 2

APPENDIX EP-234-1
DIAGRAM OF GAS SAMPLING APPARATUS



APPENDIX EP-234-2

DATA SHEET

Containment Leak Detector - Gas Grab Sample

DATE: _____

TIME: _____

VOLUME: 0.1 ml

INITIAL CONTACT DOSE RATE: _____

ANALYSES: _____

_____

NAME _____

_____

_____

TJY/mev
6/15/84

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-235 OBTAINING REACTOR WATER SAMPLES FROM SAMPLE SINKS FOLLOWING ACCIDENT CONDITIONS

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for consideration prior to, during and after obtaining a reactor water sample following accident conditions with major fuel damage.

2.0 RESPONSIBILITIES

2.1 The Chemistry Sampling and Analysis Group Leader shall direct the group members in performing the steps necessary in this procedure.

3.0 APPENDICES

3.1 EP-235-1 Data Sheet

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 Appropriate Health Physics Survey Equipment

5.2 Anti-C clothing

5.3 Dosimetry

5.4 3 oz. sample bottle with lid

5.5 Tongs or remote tooling for holding the sample bottle during sampling

5.6 Respiratory protective equipment

5.7 Eye Protection

5.8 Extremity dosimetry

5.9 Plastic bags.

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure shall be implemented when a Reactor water sample must be taken from the Reactor Enclosure sample stations during an emergency situation.

8.0 PRECAUTIONS

8.1 In all steps of this procedure, an ALARA concept is mandatory. Sampling and Analysis Group members' exposure should be limited to the administrative guide levels in EP-230, Chemistry Sampling and Analysis Team Activation, Appendix EP-230-1, Emergency Exposure Guidelines.

8.2 Do not use elevators.

8.3 Eye protection should be worn by all personnel obtaining the sample.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 (Interim) Chemistry Sampling and Analysis Team Leader shall:

9.1.1.1 After discussing the situation with the (Interim) Emergency Director, determine if a reactor water sample is required.

9.1.1.2 Determine preference of sampling points from below:

1. Reactor Water Clean up Filter Demineralizer Inlet
2. Reactor Water Recirculation Inlet
3. Main Steam from Reactor

Inform the Chemistry Sampling and Analysis Group Leader of sampling point preference.

9.1.1.3 Check the Plant Radiation Level Status Board to forecast anticipated radiological conditions.

9.1.1.4 Contact the Plant Survey Group Leader and check on the latest developments related to radiological conditions and inform him what sample(s) are to be taken and that Health Physics' coverage is required.

9.1.1.5 Request input from the Control Room (via Emergency Director) to ascertain desired sample system availability.

9.1.1.6 Determine what analyses are required and inform the Chemistry Sampling and Analysis Group Leader what analyses are required.

9.1.1.7 Request Emergency Exposure Authorizations from the Emergency Director for Group Members (as required) and inform the Plant Survey Group Leader of this development.

9.1.1.8 Direct the Chemistry Sampling and Analysis Group Leader to collect and analyze the reactor water sample from the sample sink

9.1.2 Chemistry Sampling and Analysis Group Leader shall:

9.1.2.1 After discussing the situation with the Team Leader, contact the Plant Survey Group Leader and request a Health Physics technician to report to the chemistry lab to perform the following:

A. Provide the Group Leader with radiological conditions that would impact the sample and route determination.

B. Brief the Group Members on radiological conditions, precautions and requirements for entering the area and radiation level cut-offs for handling and analyzing the sample

C. Provide radiation survey equipment for constant coverage of the sampling and analysis portions of this procedure

D. Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.2.2 Determine which sample location is to be used.

One location (for each unit) exists where a sample may be taken from:

UNIT	EQUIP. NO.	LOCATION	AREA
1	10S 292	RX-253'	15
2	20S 292	RX-253'	17

9.1.2.3 Determine which sample point is to be used based on system availability and radiological conditions. Check with shift operations whether a sample can be taken from the desired sample station and sample point

A. Three sample points are available:

1. Reactor Clean up Filter demin. Inlet

2. Reactor Water Recirculation Inlet

3. Main Steam from Reactor

9.1.2.4 If the reactor water clean up filter demin inlet sample point is to be used, contact the control room to determine if a Group III isolation signal is present.

A. If the Group III isolation signal is present, request shift operations to defeat the signal by placing jumpers across the following contacts:

PRIOR SHIFT APPROVAL IS REQUIRED FOR THIS STEP.

B.

Panel	Relay	Contacts	Isolation Signal
10C622 (20C622)	B21H-K40A	T1-M1	SLCS Initiation
10C623 (20C623)	B21H-K40B	T1-M1	SLCS Initiation
10C623 (20C623)	B21H-K42	T1-M1	Non-Regen HX Outlet High Temp
10C609 (20C609)	B21H-K3A	T2-M2	-38" Vessel Level
10C609 (20C609)	B21H-K3C	T2-M2	-38" Vessel Level

DO NOT DEFEAT THE ISOLATIONS OF HIGH RWCU DIFFERENTIAL FLOW, HIGH AREA TEMPERATURE OR HIGH DIFFERENTIAL TEMPERATURE ON ROOM VENTILATION AS THIS INDICATES A LEAK IN THE SYSTEM.

9.1.2.5 If the Reactor Water Recirculation Inlet sample line has been isolated, contact the Control Room and request shift operations to defeat the isolation signal by placing jumpers across the following contacts:

PRIOR SHIFT APPROVAL IS REQUIRED FOR THIS STEP

A.

Panel	Relay	Contacts	Isolation Signal
10C609 (20C609)	C71A-K7E	T1-M1	Main Steam Line High Radiation
10C611 (20C611)	C71A-K7H	T1-M1	Main Steam Line High Radiation
10C609 (20C609)	B21H-K3A	T2-M2	-38" vessel level
10C611 (20C609)	B21H-K3C	T2-M2	-38" Vessel Level

9.1.2.6 If the Main Steam from Reactor sample point has been isolated, contact the Control Room and request Shift Operations to defeat the isolation signal by placing jumpers across the following contacts:

PRIOR SHIFT APPROVAL IS REQUIRED FOR THIS STEP

VALVE	PANEL	RELAY	CONTACTS	ISOLATION SIGNAL
HV-41-1F084	10C622 (20C622)	B21H-K23A	T3-M3	-38" Vessel Level High Steam Line Radiation
HV-41-1F085	10C633 (20C633)	B21H-K23D	T3-M3	-38" Vessel Level High Steam Line Radiation

9.1.2.7 Brief shift personnel on possible control room indications during sampling process.

9.1.2.8 Assign the appropriate number of group members to obtain the necessary equipment and once briefed by the H.P. technician to collect and transport the sample to the Chemistry Hot Lab.

9.1.2.9 Brief the Health Physics technician and Chemistry Sampling and Analysis Group Members on the following:

A. Squad identifier

B. Communications equipment and channel

C. Type of sample(s) to be collected

D. Location of sample points

E. Suggested routes to be taken

F. Sample transport technique

G. Projected amount of time required to collect and transport the sample

H. Review of the procedures to be followed for sample collection, handling, preparation and analysis

I. Alternatives for obtaining and practical methods of remotely handling the sample(s)

J. Proper completion of Data Sheets

K. Special tools and equipment required for sample handling and/or collection

9.1.2.10 Instruct Group Members to immediately report the following as they occur or as the information becomes available.

A. Sample locations that are not accessible or any other reason why the sample can not be collected

B. When the sample and group members arrive at the hot lab

C. Results of the analysis

9.1.2.11 Appoint one Group Member to prepare the Hot Lab for receiving the sample, using the following guidelines:

A. Adequate shielding is available for the sample.

B. Remote handling tools are in place (as required).

C. Protective clothing and equipment are readily available (as required by HP).

D. Copies of the appropriate sample handling and analysis procedures are on hand.

E. Equipment is properly calibrated, warmed-up and in place.

USE THE FOLLOWING PROCEDURES AS GUIDELINES FOR PREPARATION OF THE HOT LAB.

EP-241 (LIQUID) **Sample Preparation and Handling of Highly Radioactive Liquid Samples**

EP-242 (IODINE) Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges

EP-243 (GAS) Sample Preparation and Handling of Highly Radioactive Gas Samples

9.1.2.12 Copy Appendix EP-230-2, Chemistry Sampling and Analysis COL for each sample taken. Fill out all pertinent information as it becomes available.

9.1.3 The Health Physics Technician shall:

9.1.3.1 Determine which route shall be used to collect and transport the sample

Suggested routes to Sample Stations are:

A. UNIT 1

1. Enter the Reactor Building, 217' elevation, N.W. corner, up the stairs to 253' elevation.

   TIME: Approx. 3 min.

2. Enter the Reactor Building, 217' elevation N.W. corner, procede to the S.W. corner, upstairs to 253' elevation.

   TIME: Approx. 4 min.

B. UNIT 2

1. Enter the Reactor Building, 217' elevation N.E. corner, up the stairs to 253' elevation.

   TIME: Approx. 5 min.

2. Enter the Reactor Building, 217' elevation, procede to the S.W. corner, upstairs to 253' elevation.

   TIME: Approx. 5 min.

9.1.3.2 Take appropriate radiation survey equipment and ensure that equipment is functional and calibrated.

9.1.3.3 Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.3.4 Perform a pre-job briefing with the Chemistry technicians assigned to obtain the sample to discuss the following:

A. RWP requirements

B. Routes to be used

C. Authorized doses

D. Radiological concerns and precautions

E. Review of procedure for obtaining and transporting sample to hot lab

F. Suggested methods to maintain exposures ALARA

G. Stay times and Abort Criteria

9.1.3.5 Provide constant coverage while obtaining, transporting and analyzing the reactor water sample.

9.1.3.6 Monitor dose rates enroute and at the sample location, if upon entering the Power Block, if general area dose rates (unanticipated exceed 10 R/hr gamma or 10 rad/hr beta prior to arriving at the point specified below, exit immediately and report to Chemistry Sampling and Analysis Group Leader.

If the general area dose rate (unanticipated) exceeds 5 R/hr at the door leading to Rx. 253, leave the area immediately and report to Chemistry Sampling and Analysis Group Leader with this information.

9.1.3.7 Survey the sample area and sample cask.

9.1.3.8 Document the sample cask survey results and give them to the Chemistry Sampling and Analysis Group Leader (or other designated group member) when arriving at the hot lab.

9.1.3.9 Provide constant coverage during sample preparation and handling as specified in EP-241.

9.1.4 Chemistry Sampling and Analysis Group Members shall:

9.1.4.1 Assemble for a pre-job briefing at the chemistry lab

9.1.4.2 Inform the Group Leader if they are approaching the Administrative Exposure Guidelines, or may not have sufficient exposure remaining to successfully complete the assigned task.

9.1.4.3 Obtain the necessary equipment to collect the sample and ensure that the hot lab is ready to accept the sample (for additional information, refer to Prerequiste 4.2)

PROPERLY LABEL ALL SAMPLE CONTAINERS

9.1.4.4 Obtain and don the appropriate protective clothing and equipment (as required by the H.P. technician or RWP)

9.1.4.5 Once the Group has been briefed and the appropriate equipment has been assembled, proceed to the reactor water sample sink and collect the reactor water sample as follows:

A. Proceed to the RWCI Sample Station in the Reactor Building and request the H.P. technician to survey the area concentrating on the sample sink primarily.

B. Request the Health Physics Technician to survey the area, concentrating on the sample sink.

C. Proceed to the predetermined grab sample point.

D. Ensure that a flow is present. If not, attempt to initiate flow by opening root valves. If flow is not established, exit and consult Chemistry Sampling and Analysis Group Leader

E. SAMPLING METHOD

Obtain a 1 oz. sample (about 1" up from bottom) or less in a 3 oz. bottle. Use tongs or other remote handling tools which hold the sample bottle without operator attention. When required amount of sample is obtained remove bottle from hood, quickly place lid on bottle and transport with tongs, other remote tools, or lead shielded carrying container.

F. Have the HP Technician survey the vial and record the Initial Contact Dose Rate in Appendix EP-235-1.

G. Complete the Data Sheet in Appendix EP-325-1.

H. Take the sample to the hot lab retracing one of the previously suggested routes.

9.1.4.6 Upon introduction of the sample into the hot lab, the sample will be handled and stored in a manner that personnel exposures are kept ALARA.

9.1.4.7 Contact the Group Leader as soon as the sample reaches the hot lab and inform him that the sample collection has been completed and what the sample status is.

9.1.4.8 Contact Control Room and inform them that a sample has been taken and to return the system to the original alignment (i.e. remove jumpers).

9.2 FOLLOW-UP

9.2.1 Chemistry Sampling and Analysis Group Members shall:

9.2.1.1 Prepare, handle and analyze the sample using EP-241, Sample Preparation and Handling of Highly Radioactive Liquid Samples.

A. Properly in place and shielded, the sample will be processed remotely(where and when possible). Careful handling of the sample is mandatory in preparation for analysis to minimize radiological conditions.

9.2.1.2 Report the results to the Chemistry Sampling and Analysis Group Leader.

9.2.1.3 Properly file the data sheets and report back to the Group Leader for re-assignment.

9.2.2 Chemistry Sampling and Analysis Group Leader shall:

9.2.2.1 Ensure Group Member(s) dose is monitored to ensure that exposure limits have not been exceeded.

9.2.2.2 Inform the Chemistry Sampling and Analysis Team Leader that the required sample is in the hot lab.

9.2.2.3 Direct Group Members to refer to EP-241, Sample Preparation and Handling of Highly Radioactive Liquid Samples for guidance for sample preparation and handling.

9.2.2.4 Obtain and review ALL Data Sheets and report the sample results to the Chemistry Sampling and Analysis Team Leader and attach all Data Sheets to Appendix EP-230-2.

9.2.3 Chemistry Sampling and Analysis Team Leader shall:

9.2.3.1 Report the results to the Emergency Director and the Health Physics and Chemistry Coordinator (EOF).

10.0 REFERENCES

10.1 EP-230 Chemistry Sampling and Analysis Team Activation

10.2 M-23 P&ID, Sh. 3, Rev. 12 Process Sampling

10.3 M-102 General Arrangement Plan at el. 217'-0"

10.4 M-103 General Arrangement Plan at el. 239'-0" & 253'-0"

10.5 EP-241 Sample Preparation and Handling of Highly Radioactive Liquids

APPENDIX EP-235-1

DATA SHEET

Reactor Water Grab Sample

DATE: _____

TIME: _____

SAMPLE LOCATION:

UNIT 1 ____
UNIT 2 ____

SAMPLE POINT:

1. REACTOR WATER CLEAN UP FILTER DEMIN INLET ____
2. REACTOR WATER RECIRCULATION INLET ____
3. MAIN STEAM FROM REACTOR ____

VOLUME: _____

INITIAL CONTACT DOSE RATE _____

ANALYSES: _____
_____
_____
_____
_____

NAME: _____
_____
_____

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-236 OBTAINING COOLING TOWER BLOWDOWN LINE WATER SAMPLES FOLLOWING RADIOACTIVE LIQUID RELEASE AFTER ACCIDENT CONDITIONS

1.0 PURPOSE

The purpose of this procedure is to provide guidelines to obtain Blowdown Line water samples following radioactive liquid releases after accident conditions.

2.0 RESPONSIBILITIES

2.1 The Chemistry Sampling and Analysis Group Leader shall direct the group members in performing the steps necessary in this procedure.

3.0 APPENDICES

3.1 EP-236-1 Data Sheet

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 Appropriate Health Physics survey equipment

5.2 1 liter sample bottles with lids

5.3 Plastic bags

5.4 Tape

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure shall be implemented when a Cooling Tower Blowdown Line water sample shall be taken during an emergency situation.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-230-1 Emergency Exposure Guidelines.

8.2 If the Plant Survey Group Leader in conjunction with Chemistry Sampling and Analysis Team Leader determines that health physics coverage is not necessary, the steps performed by the health physics technician may be omitted.

9.0 PROCEDURE

9.1 Actions

9.1.1 (Interim) Chemistry Sampling and Analysis Team Leader shall:

9.1.1.1 After discussing the situation with the Emergency Director determine if a cooling tower blowdown line water sample is required.

9.1.1.2 Check the Plant Radiation Level Status Board to forecast anticipated radiological conditions.

9.1.1.3 Contact the Plant Survey Group Leader and check on the latest developments related to radiological conditions and inform him what sample(s) are to be taken and that Health Physics' coverage may be required.

9.1.1.4 Request input from the Control Room (via Emergency Director) to ascertain desired sample system availability.

9.1.1.5 Determine what analyses are required and inform the Chemistry Sampling and Analysis Group Leader what analyses are required.

9.1.1.6 Request Emergency Exposure Authorizations from the Emergency Director for Group Members (as required) and inform the Plant Survey Group Leader of this development.

9.1.1.7 Direct the Chemistry Sampling and Analysis Group Leader to collect and analyze the cooling tower blowdown line water sample.

9.1.2 Chemistry Sampling and Analysis Group Leader shall:

9.1.2.1 After discussing the situation with the Chemistry Sampling and Analysis Team Leader contact the Plant Survey Group Leader and request a Health Physics technician to report to the Chemistry Lab to perform the following, if necessary.

A. Provide the Group Leader with radiological conditions that would impact the sample selection.

B. Brief the group members on radiological conditions, precautions and requirements for entering the area and radiation level cutoffs for handling and analyzing the sample.

C. Provide constant coverage of the sampling and analysis portions of this procedure.

D. Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.2.2 Select the appropriate sample point. Four loctions exist where the sample may be taken from.

A. Units 1 and 2 Cooling Tower Blowdown Line sample points (SX-09-104-(204)). Located in the pit between the Cooling Towers.

B. Effluent to river sample pump discharge grab sample (68-0061) and composite sample (68-0060) located behind Control Panel 0BC580 in the Holding Pond Enclosure.

9.1.2.3 Assign the appropriate number of group members to obtain the necessary equipment and, once briefed by the H.P. technician, to collect and transport the sample to the Chemistry Hot Lab.

9.1.2.4 Brief the Health Physics Technician and Chemistry Sampling and Analysis Group members on the following.

A. Team identification

B. Communications equipment and channel

C. Type of sample(s) to be collected

D. Location of sample points

E. Suggested routes to be taken

F. Sample transport technique

G. Projected amount of time required to collect and transport the sample

H. Review the procedures to be followed for sample collection, handling, preparation and analysis

I. Alternatives for obtaining and practical methods of remotely handling the sample(s)

J. Special tools and equipment required for sample handling and/or collection

K. Proper completion of data sheets

9.1.2.5 Instruct group memebers to immediately report the following as they occur or as the information becomes available.

A. Sample locations that are not accessabile or any other reason why the sample can not be collected.

B. When the sample and group members arrive at the hot lab.

C. Results of the analysis.

9.1.2.6 Appoint one Group member to prepare the Hot Lab for receiving the sample, using the following guidelines:

A. Adequate shielding is available for the sample.

B. Remote handling tools are in place (as required).

C. Protective clothing and equipment are readily available (as required by HP).

D. Copies of the appropriate sample handling and analysis procedures are on hand.

E. Equipment is properly calibrated warmed-up and in place.

USE THE FOLLOWING PROCEDURES AS GUIDELINES FOR PREPARATION OF THE HOT LAB.

EP-241 (LIQUID)	Sample Preparation and Handling of Highly Radioactive Liquid Samples
EP-242 (IODINE)	Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges
EP-243 (GAS)	Sample Preparation and Handling of Highly Radioactive Gas Samples

9.1.2.7 Copy Appendix EP-230-2, Chemistry Sampling and Analysis COL for each sample taken. Fill out all pertinent information as it becomes available.

9.1.3 The Health Physics Technician if called upon shall:

9.1.3.1 Determine which route should be used for collecting and transporting the sample based on the following.

A. SUGGESTED ROUTES AND APPROXIMATE TIMES AS FOLLOWS:

For a Cooling Tower sample Exit the protected area through the Guard Station, turn left and proceed to the pit between the Cooling Towers.

TIME: Approx. 10 minutes

B. For an effluent to river discharge line sample, exit the protected area through the Guard Station, turn right and proceed down the hill on the road to the Holding Pond Enclosure.

TIME: Approx. 10 minutes

C. The following are the times required to obtain the samples:

Type of Sample	Location	Time
Grab	Pit Between Cooling Towers	5 Min.
Grab	Holding Pond Enclosure	5 Min.
Composite	Holding Pond Enclosure	5 Min.

9.1.3.2 Take appropriate radiation survey equipment and ensure that equipment is functional and calibrated.

9.1.3.3 Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.3.4 Perform a pre-job briefing with the Chemistry technicians assigned to obtain the sample to discuss the following:

A. RWP requirements

B. Routes to be used

C. Authorized doses

D. Radiological concerns and precautions

E. Review of procedure for obtaining and transporting sample to hot lab

F. Suggested methods to maintain exposures ALARA

G. Stay times and Abort Criteria

9.1.3.5 Provide constant coverage while obtaining, transporting and analyzing the sample, if required.

9.1.3.6 Document the sample survey results and give them to the Chemistry Sampling and Analysis Group Leader (or other designated group member) when arriving at the hot lab.

9.1.3.7 Provide constant coverage during sample preparation and handling as specified in EP 241, if required.

9.1.4 Chemistry Sampling and Analysis Group Members shall:

9.1.4.1 Assemble for a pre-job briefing at the chemistry lab.

9.1.4.2 Inform the Group Leader if they are approaching the Administrative exposure guidelines, or may not have sufficient exposure remaining to successfully complete the assigned task.

9.1.4.3 Obtain the necessary equipment to collect the sample and ensure that the hot lab is ready to accept the sample (for additional information, refer to prerequisite 4.2)

PROPERLY LABEL ALL SAMPLE CONTAINERS

9.1.4.4 Obtain and don the appropriate protective clothing and equipment (as required by the H.P. technician or RWP).

9.1.4.5 Once the Group has been beiefed and the appropriate equipment has been assembled, proceed to the appropriate sampling location and retrieve the water sample using the following.

A. COOLING TOWER BLOWDOWN LINE GRAB SAMPLE

1) Proceed to the desired sample point (SX-09-104, 204).

2) Position a one liter sample bottle under the sample point.

3) Open SX-09-104, -204 and fill sample bottle.

4) Close SX-09-104, -204.

5) Place lid on sample bottle and secure.

6) Place in a plastic bag and secure with tape.

7) Return switch opened in step No. 2 to the desired position.

8) Proceed to step 9.1.4.6.

B. EFFLUENT TO RIVER SAMPLE PUMP DISCHARGE LINE GRAB SAMPLE

1) Proceed to Control Panel 0BC580.

2) Verify that switch HS68-003A (Effluent to River Sample Pump 0AP900) or HS68-003B (Effluent to River Sample Pump 0BP900) is on.

3) Open back panel and locate sample point. (Valve 68-0061).

4) Ensure that a flow is present. If not, attempt to initiate flow by opening root valves. If flow is not established, contact Chemistry Sampling and Analysis Group Leader for alternate sample points.

5) Obtain a one liter grab sample.

6) Place lid on sample bottle and secure.

7) Place in a plastic bag and secure with tape.

8) Return switch opened in step No. 2 to the desired position.

9) Have the HP Technician survey the sample and record the Initial Contact Dose Rate on Appendix EP-236-1.

10) Proceed to step 9.1.4.6.

C. EFFLUENT TO RIVER SAMPLE PUMP DISCHARGE LINE COMPOSITE SAMPLE

1) Proceed to Control Panel 0BC580.

2) Verify that switch HS68-003A (Effluent to River Sample Pump 0AP900) or HS68-003B (Effluent to River Sample Pump 0BP900) is on.

3) Open back panel and locate composite sampling container. (Valve 68-0061).

4) From the composite sampling bottle throughly mix the sample and transfer a 1 liter dip sample to an appropriate sample bottle.

5) Place lid on sample bottle and secure.

6) Place in a plastic bag and secure with tape.

7) Return switch opened in step No. 2 to the desired position.

8) Have the HP Technician survey the sample and record the Initial Contact Dose Rate on Appendix EP-236-1.

9.1.4.6 Complete the Data Sheet in Appendix EP-236-2.

9.1.4.7 Transport the sample to the counting room by retracing the route back from the sample point.

9.2 Follow-up

9.2.1 Chemistry Sampling and Analysis Team Leader shall:

9.2.1.1 Report the results to the (Interim) Emergency Director Dose Assessment Team Leader and the Health Physics and Chemistry Coordinator (EOF).

9.2.2 Chemistry Sampling and Analysis Group Leader shall:

9.2.2.1 Complete Appendix EP-236-1.

9.2.2.2 Have the group member(s) dose monitored to ensure that exposure limits have not been exceeded.

9.2.2.3 Inform the Chemistry Sampling and Analysis Team Leader that the required sample is in the Counting Room.

9.2.2.4 Direct group memeber to refer to EP-241 Sampling Preparation and Handling of radioactive liquid samples for guidance for sample preparation and handling.

9.2.2.5 Obtain and review all data sheets and report the sample results to the Chemistry Sampling and Analysis Team Leader and attach all data sheets to Appendix EP-230-2.

9.2.3 Chemistry Sampling and Analysis Group members shall:

9.2.3.1 Prepare, handle and analyze the sample using EP-241, Sample Preparation and Handling of Radioactive Liquid Samples.

9.2.3.2 Report the results to the Chemistry Sampling and Analysis Group Leader.

9.2.3.3 Properly file the analysis report and report back to the Group Leader for reassignment.

10.0 REFERENCES

10.1 EP-230 Chemistry Sampling and Analysis Team Activation

10.2 M-09 P&ID, Sh. 1, Rev. 19, Circulating Water

10.3 M-68 P&ID, Rev. 4, Plant Waste Water Effluent

10.4 EP-241 - Sample Preparation and Handling of Radioactive Liquid Samples

APPENDIX EP-236-1

DATA SHEET

ANALYSIS: _____

DATE: _____

TIME: _____

SAMPLE LOCATION: _____

TYPE OF SAMPLE: _____

VOLUME: _____

NAME: _____

_____

_____

3843010660

6/8/84

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-237 OBTAINING THE IODINE/PARTICULATE AND/OR GAS SAMPLES FROM THE NORTH VENT WIDE RANGE GAS MONITOR (WRGM)

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for obtaining particulate/iodine and/or gas samples from the North Vent WRGM following accident conditions.

2.0 RESPONSIBILITIES

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

3.0 APPENDICES

3.1 EP-237-1 Data Sheet

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 Appropriate health physics survey equipment

5.2 Respiratory protective equipment

5.3 Anti-C clothing

5.4 Dosimetry

5.5 3-off gas vials

5.6 Adjustable wrench

5.7 Channel lock pliers

5.8 Extremity dosimetry

5.9 Extra filter

5.10 Extra cartridge

5.11 2-septum valves

5.12 Transport cask

5.13 Designated remote handling tools

5.14 Plastic bags

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented when a particulate, iodine or gas sample shall be taken from the North Vent WRGM during an emergency situation.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-230-1 Emergency Exposure Guidelines.

8.2 Do not use elevators.

8.3 Eye protection should be worn when obtaining samples from the sample stations.

8.4 Continuous coverage by a Health Physics Technician may substitute for the Radiation Work Permit.

9.0 PROCEDURE

9.1 Actions

9.1.1 (Interim) Chemistry Sampling and Analysis Team Leader shall:

9.1.1.1 After discussing the situation with the (Interim) Emergency Director, determine if a filter/cartridge or gas sample is required from the North Vent WRGM.

9.1.1.2 Check the Plant Radiation Level Status Board to forecast anticipated radiological conditions.

9.1.1.3 Contact the Plant Survey Group Leader and check on the latest developments related to radiological conditions and inform him what sample(s) are to be taken and that Health Physics coverage is required.

9.1.1.4 Request input from the Control Room (via Emergency Director) to ascertain desired sample system availability.

9.1.1.5 Determine what analyses are required and inform the Chemistry Sampling and Analysis Group Leader what analyses are required.

9.1.1.6 Request Emergency Exposure Authorizations from the Emergency Director for Group Members (as required) and inform the Plant Survey Group Leader of this development.

9.1.1.7 Direct the Chemistry Sampling and Analysis Group Leader to collect and analyze the appropriate samples.

9.1.2 Chemistry Sampling and Analysis Group Leader shall:

9.1.2.1 After discussing the situation with the Chemistry Sampling and Analysis Team Leader contact the Plant Survey Group Leader and request a Health Physics technician to report to the Chemistry Lab to perform the following:

A. Provide the Group Leader with radiological conditions that would impact the sample selection.

B. Brief the Group Members on radiological conditions, precautions and requirements for entering the area and radiation level cutoffs for handling and analyzing the sample.

C. Provide constant coverage of the sampling and analysis portions of this procedure.

D. Provide Group Members with the appropriate Dosimetry, Protective Clothing and Respiratory Equipment.

9.1.2.2 One location exists where the sample may be taken from:

North Stack	Rack#	Location	Area
	01S908/02S908	Rx-411'	13

9.1.2.3 Assign the appropriate number of group members to obtain the necessary equipment and once briefed by the Health Physics technician to collect and transport the sample to the Chemistry Hot Lab.

9.1.2.4 Determine what type(s) of sample(s) are to be taken:

A. Local Particulate/Iodine Sample

B. Remote Particulate/Iodine Sample

C. Gas Grab Sample

9.1.2.5 If a particulate/Iodine sample is to be taken, contact the Dose Assessment Team Leader (TSC) for an estimated sampling time and record this time on Appendix EP-237-1. Verify that this time is feasible.

9.1.2.6 Brief the Health Physics Technician and Chemistry Sampling and Analysis Group members on the following:

A. Squad identifier

B. Communications equipment and channel

C. Type and sampling time of sample(s) to be collected

D. Location of sample point

E. Suggested routes to be taken

F. Sample transport technique

G. Projected amount of time required to collect and transport the sample

H. Review of the procedures to be followed for sample collection, handling, preparation and analysis

I. Alternatives for obtaining and practical methods of remotely handling the sample(s)

J. Special tools and equipment required for sample handling and/or collection

K. Proper completion of Data Sheets.

9.1.2.7 Instruct group members to immediately report the following as they occur or as the information becomes available.

A. Sample locations that are not accessible or any other reason why the sample can not be collected.

B. When the sample and group members arrive at the hot lab.

C. Results of the analysis.

9.1.2.8 Appoint one Group member to prepare the Hot Lab for receiving the sample, using the following guidelines:

A. Adequate shielding is available for the sample.

B. Remote handling tools are in place (as required).

C. Protective clothing and equipment are readily available (as required by HP).

D. Copies of the appropriate sample handling and analysis procedures are on hand.

E. Equipment is properly calibrated, warmed-up and in place.

USE THE FOLLOWING PROCEDURES AS GUIDELINES FOR PREPARATION OF THE HOT LAB.

EP-241 (LIQUID) Sample Preparation and Handling of Highly Radioactive Liquid Samples.

EP-242 (IODINE) Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges.

EP-243 (GAS) Sample Preparation and Handling of Highly Radioactive Gas Samples.

9.1.2.9 Copy Appendix EP-230-2, Chemistry Sampling and Analysis COL for each sample taken. Fill out all pertinent information as it becomes available.

9.1.3 The Health Physics Technician shall:

9.1.3.1 Determine which route should be used to collect and transport the sample.

A. SUGGESTED ROUTES AND APPROXIMATE TIMES ARE DESCRIBED:

1. Walking up the stairs (Turb. Encl. 217') by the 13.2 kV bus cage to 332' El. proceeding across 332' El. to the stairs next to the North Stack then up the stairs to 411' El.

   TIME: Approx. 10 Mins.

2. Proceeding up the stairs in the N.W. corner of RX-217' (Unit 1) to 352' El., walking across the refuel floor to the door on the south wall between the 2 units. Entering and proceeding up the ladders to 411' El.

   TIME: Approx. 15 Mins.

9.1.3.2 Take appropriate radiation survey equipment and ensure that equipment is functional and calibrated.

9.1.3.3 Provide Group Members with the appropriate Dosimetry, Protective Clothing and Respiratory Equipment.

9.1.3.4 Perform a pre-job briefing with the Chemistry technicians assigned to obtain the sample, to discuss the following:

A. RWP requirements

B. Routes to be used

C. Authorized doses

D. Radiological concerns and precautions

E. Review of procedure for obtaining and transporting sample to hot lab

F. Suggested methods to maintain exposures ALARA

G. Stay times and Abort Criteria

9.1.3.5 Provide constant coverage while obtaining, transporting and analyzing the sample filter/cartridge and/or gas sample from the WRGM.

9.1.3.6 Monitor dose rates enroute to and at the sample location.

A. Upon entering the power block, the surveyor shall note trends in general radiation levels enroute to the sample point. If general area dose rates (unanticipated) exceed 10 R/hr gamma or 10 Rad/hr beta, prior to arriving at the point specified below, immediately report to Chemistry Sampling and Analysis Group Leader. The following dose rates shall be determined prior to entry:

B. If the dose rate (unanticipated) exceeds 5 R/hr at the door leading to 217', 332', 352', or 411' El. exit the area immediately and report to Chemistry

Sampling and Analysis Group Leader with this information. With dose rates less than 5 R/hr., enter the desired elevation through that door. Take careful note of the dose rates.

C. If using the route suggested in procedure step 9.1.2.3, remember the stairs are next to the North Vent. If general area dose rate (unanticipated) exceeds 10 R/hr. gamma or 10 Rad/hr beta, exit the area immediately and report to Chemistry Sampling and Analysis Group Leader.

9.1.3.7 Survey the sample area and sample cask.

9.1.3.8 Document the sample cask survey results and give them to the Chemistry Sampling and Analysis Group Leader (or other designated group member) when arriving at the hot lab.

9.1.3.9 Provide constant coverage during sample preparation and handling as specified in EP-242 or 243.

9.1.4 Chemistry Sampling and Analysis Group members shall:

9.1.4.1 Assemble for a pre-job briefing at the chemistry lab.

9.1.4.2 Inform the Group Leader if they are approaching the administrative exposure guidelines or do not have sufficient exposure remaining to successfully complete the assigned task.

9.1.4.3 Obtain the necessary equipment to collect the sample and ensure that the hot lab is ready to accept the sample (for additional information, refer to prerequisite 4.2).

A. Properly label all sample containers.

B. If a gas sample is to be taken, prepare three evacuated gas sampling vials.

9.1.4.4 Obtain and don the appropriate protective clothing and equipment (as required by the H.P. technician or RWP).

9.1.4.5 Once the group has been briefed and the appropriate equipment has been assembled collect and transport the sample as follows:

A. Proceed to the North Vent WRGM or Control Room.

B. Request the HP Technician to survey the area concentrating especially on the North Vent WRGM.

C. SAMPLING METHOD

Perform the appropriate section for the desired sample:

1. For obtaining Local Particulate/Iodine Sample

2. For obtaining Remote Particulate/Iodine Sample

3. For obtaining a Gas Grab Sample

D. FOR OBTAINING LOCAL PARTICULATE/IODINE SAMPLE

1. Locate Control Room Panel Timer/Control Assembly (RIX-26-076, KIC-26-076-1, KIC-26-076-2).

2. Verify POWER switch is ON.

3. Verify the green LED's on RIX-26-076 (NORTH STACK W.R. ACCIDENT) are lit.

4. Press CLEAR.

5. Press MON, 1, 3, 6, ITEM and the channel number will be displayed. Record channel number.

CHANNEL NUMBER	RANGE BUTTON
1	LOW RANGE
2	MID RANGE
3	HIGH RANGE

6. Push appropriate channel (RANGE) button. Record concentration.

7. Inform the Group Leader of the Range and Concentration and have him verify that the Estimated Sampling Time and Range Selection are feasible. Record the Range Selection and Sampling Time.

8. Proceed to the appropriate Section for the desired sample:

SECTION

D-1 LOW RANGE
D-2 MID/HIGH RANGE

D-1 LOW RANGE

9. Proceed to the North Vent WRGM.

10. Verify that the isolation valves (26-0026, 26-0027, 26-0028, 26-0029) on either side of the quick-disconnects for GRAB SAMPLE 1 are OPEN.

11. Locate Sample Conditioning Skid Control Station Electrical Enclosure. Open lid and set HSS-26-076-2, SKID CONTROL switch to LOCAL.

12. Verify the green REMOTE CONTROL DISABLE lamp is lit.

13. Verify that the POWER DISCONNECT SWITCH is ON.

14. On the Sample Detection Skid, ensure that the PUMP ON LOW green light is lit. If not, place the following switches in the appropriate position:

RANGE	SWITCH NO.	NAME	POSITION
LOW	HSS-26-076-8	Low Pump	ON
	HS-26-076-10	Flow Control (Low)	HAND
	HSS-26-076-6	Flow Control (Low)	OPEN

15. Ensure that the PUMP ON LOW green light is lit. If not, exit the area.

16. Record position (A or B) of HSS-26-076-4, FILTER SELECTOR LOW RANGE switch.

17. Turn HSS-26-076-4 to GRAB 1 position and immediately record the time as TIME-1 and record the flow from FI-26-076-2.

18. After the desired time has expired, turn HSS-26-076-4 to position A or B and immediately record the time as TIME-2 and record the position.

19. Close the isolation valves (26-0026, 26-0027, 26-0-28, 26-0029).

20. Release the band on the holder assembly and immediately have the HP Technician survey the sample and record the Initial Contact Dose Rate.

21. Remove the cartridge, bag and place into an appropriate transport cask.

22. Install a new cartridge and filter paper into the assembly.

23. Reclip the band on the holder assembly.

24. Open the isolation valves (26-0026, 26-0027, 26-0028, 26-0029).

25. Place the following switches in the appropriate position:

RANGE	SWITCH NO.	NAME	POSITION
LOW	HSS-26-076-8	Low Pump	AUTO
	HS-26-076-10	Flow Control (Low)	AUTO
	HSS-26-076-6	Flow Control (Low)	OPEN

26. Set HSS-26-076-2, SKID CONTROL switch to REMOTE.

27. Close Sample Conditioning Skid Control Station Electrical Enclosure lid and secure.

28. Transport the sample to the Chemistry Hot Lab.

D-2 MID/HIGH RANGE

9. Proceed to the North Vent WRGM.

10. Verify that the isolation valves (26-0021, 26-0022, 26-0023, 26-0024) on either side of the quick-disconnects for GRAB SAMPLE 2 are OPEN.

11. Locate Sample Conditioning Skid Control Station Electrical Enclosure. Open lid and set HSS-26-076-2, SKID CONTROL switch to LOCAL.

12. Verify the green REMOTE CONTROL DISABLE lamp is lit.

13. Verify that the POWER DISCONNECT SWITCH is ON.

14. On the Sample Detection Skid, ensure that the PUMP ON MID/HIGH green light is lit. If not, place the following switches in the appropriate position:

RANGE	SWITCH NO.	NAME	POSITION
MID/ HIGH	HSS-26-076-7	Mid/High Pump	ON
	HS-26-076-9	Flow Control (Mid/High)	HAND
	HSS-26-076-5	Flow Control (Mid/High)	OPEN

15. Ensure that the PUMP ON MID/HIGH green light is lit. If not, exit the area.

16. Record position (C or D) of HSS-26-076-3, FILTER SELECTOR HIGH RANGE switch.

17. Turn HSS-26-076-3 to GRAB 2 position and immediately record the time as TIME-1 and record the flow from FI-26-076-1.

18. After the desired time has expired, turn HSS-26-076-3 to position C or D and immediately record the time as TIME-2 and record the position.

19. Close the isolation valves (26-0021, 26-0022, 26-0023, 26-0024).

20. Open the door to the holder assembly and immediately have the HP Technician survey the holder assembly and record the Initial Contact Dose Rate.

21. Release the quick-disconnects on either side of the holder assembly and place the holder assembly into an appropriate transport cask.

22. Install a new holder assembly.

23. Close the door to the holder assembly.

24. Open the isolation valves (26-0021, 26-0022, 26-0023, 26-0024).

25. Place the following switches in the appropriate position:

RANGE	SWITCH NO.	NAME	POSITION
MID/ HIGH	HSS-26-076-7	Mid/High Pump	AUTO
	HS-26-076-9	Flow Control (Mid/High)	AUTO
	HSS-26-076-5	Flow Control (Mid/High)	OPEN

26. Set HSS-26-076-2, SKID CONTROL switch to REMOTE.

27. Close Sample Conditioning Skid Control Station Electrical Enclosure lid and secure.

28. Transport the sample to the Chemistry Hot Lab.

E. FOR OBTAINING REMOTE PARTICULATE/IODINE SAMPLE

1. Locate Control Room Panel Timer/Control Assembly (RIX-26-076, KIC-26-076-1, KIC-26-076-2).

2. Verify POWER switch is ON.

3. Verify SKID CONT-REMOTE light is lit.

   IF SKID CONT-REMOTE LIGHT IS NOT LIT AND SKID CONT-LOCAL LIGHT IS LIT, THEN THE SAMPLE CONDITION SKID CONTROL STATION ELECTRICAL ENCLOSURE LID IS OPEN AND/OR THE SKID CONTROL SWITCH (HSS-076-2) IS IN THE LOCAL POSITION.

   Tell group leader remote sample is impossible and ask for further instructions.

4. Verify the green LED's on RIX-26-076 (NORTH STACK W.R. ACCIDENT).

5. Press CLEAR.

6. Press MON, 1, 3, 6, ITEM and the channel number will be displayed. Record channel number.

CHANNEL NUMBER	RANGE BUTTON
1	LOW RANGE
2	MID RANGE
3	HIGH RANGE

7. Push appropriate channel (Range) button. Record concentration.

8. Inform the Group Leader of the Range and Concentration and have him verify that the Estimated Sampling time and Range Selection is feasible. Record range selection and sampling time.

9. Proceed to the following section for the appropriate Range:

   SECTION

   E-1 LOW RANGE
   E-2 MID/HIGH RANGE

E-1 LOW RANGE

10. Record letter (A or B) of prefilter in service (HSS-26-076-10).

11. Set KIC-26-076-2, LOW RANGE GRAB SAMPLE TIMER, to the desired sample time by use of the screwdriver adjustment and record the SAMPLING TIME.

12. Press START TIMER pushbutton (HS-26-076-2) and verify the timer display is counting. Record the time as TIME-1.

13. Press MON, 0, 2, 8, ITEM and the flow will be displayed. Record the flow.

14. When the timer stops counting, grab sample has been taken. Record time as TIME-2.

15. Press CLEAR.

16. Turn HSS-26-076-10 to the desired prefilter and record the letter (A or B) or prefilter in service.

17. Proceed to the North Vent WRGM.

    GROUP MEMBERS AT THE WRGM PERFORM:

18. Close the isolation valves (26-0026, 26-0027, 26-0028, 26-0029) on each side of the quick-disconnects on GRAB SAMPLE 1.

19. Release the band on the holder assembly and immediately have the HP Technician survey the sample and record the Initial Contact Dose

Rate. Remove the cartridge, bag and place into an appropriate transport cask.

20. Install a new cartridge and filter paper into the assembly and reclip the band.

21. Open the isolation valves (26-0026, 26-0027, 26-0028, 26-0029).

22. Transport the sample to the Chemistry Hot Lab.

E-2 MID/HIGH RANGE

10. Record letter (C or D) of prefilter in service (HSS-26-076-9).

11. Set KIC-26-076-1, MID HIGH RANGE GRAB SAMPLE TIMER, to the desired sample time by use of the screwdriver adjustment and record the SAMPLING TIME.

12. Press START TIMER pushbutton (HS-26-076-1) and verify the timer display is counting. Record the time as TIME-1.

13. Press MON, 0, 7, 2, ITEM and the flow will be displayed. Record the flow.

14. When the timer stops counting, grab sample has been taken. Record time as TIME-2.

15. Press CLEAR.

16. Turn HSS-26-076-9 to the desired prefilter and record the letter (C or D) or prefilter in service.

17. Proceed to the North Vent WRGM.

GROUP MEMBERS AT THE WRGM PERFORM:

18. Close the isolation valves (26-0021, 26-0022, 26-0023, 26-0024) on each side of the quick-disconnects on GRAB SAMPLE 2.

19. Open the door to the holder assembly and immediately have the HP Technician survey the holder assembly and record the Initial Contact Dose Rate.

20. Release the quick-disconnects on either side of the holder assembly and place the holder assembly into an appropriate transport cask.

21. Install a new holder assembly.

22. Open the isolation valves (26-0021, 26-0022, 26-0023, 26-0024).

23. Transport the sample to the Chemistry Hot Lab.

F. FOR OBTAINING A GAS GRAB SAMPLE

1. Verify that the green OPERATE light on the RM80/J BOX assembly is on.

2. Verify that Power Disconnect Switch on Sample Detection Skid assembly is on.

3 Verify that either PUMP ON LOW or PUMP ON MID/HIGH or both green lights are lit.

4. Verify that either MID/HIGH FLOW or LOW RANGE FLOW switches or both visual flow meters on sample detection skid are indicating flow.

5. Locate sample tap valve and verify that it is closed.

6. Remove plug and install septum valve and verify valve is closed.

7. Open sample tap valve.

8. Open septum valve.

9. Insert the 1.0 ml microsyringe through the septum valve and the septum valve into the tee connection.

10. Flush the microsyringe by taking a 0.1 ml sample and injecting it back into the sample tee two times.

11. Take a 0.1 ml sample and remove the microsyringe from the sample tee. Inject the sample into an evacuated 14.4 ml off gas vial.

12. Using remote handling tools, place the vial into an appropriate container for transportation to the Hot Lab.

13. Close the septum valve.

14. Close the sample tap valve.

15. Record the sample volume and Time in Appendix EP-237-3.

16. Have the HP Technician survey the vial and record the Initial Contact Dose Rate.

17. Transport the sample to the Hot Lab by retracing the route back from the sample station.

9.1.4.6 Upon introduction of the sample into the hot lab, the sample will be handled and stored in a manner that personnel exposures are kept ALARA.

9.1.4.7 Contact the Group Leader as soon as the sample reaches the hot lab and inform him that the sample collection has been completed and what the sample status is.

9.2 Follow-up

9.2.1 Chemistry Sampling and Analysis Group members shall:

9.2.1.1 Complete Appendix EP-237-1.

9.2.1.2 Prepare, handle and analyze the sample using EP-242 or EP-243.

9.2.1.3 Report the results to the Chemistry Sampling and Analysis Group Leader.

9.2.1.4 Properly file the Data Sheets and report back to the Group Leader for reassignment.

9.2.2 Chemistry Sampling and Analysis Group Leader shall:

9.2.2.1 Ensure Group member(s) dose is monitored to ensure that exposure limits have not been exceeded.

9.2.2.2 Inform the Chemistry Sampling and Analysis Team Leader that the required sample is in the hot lab.

9.2.2.3 Direct group members to refer to EP-242 Sample Preparation and Handling of Radioactive Particulate and Iodine Cartridges or EP-243 Sample Preparation & Handling of Highly Radioactive Gas Samples, for guidance for sample preparation and handling.

9.2.2.4 Obtain and review ALL Data Sheets and report the sample results to the Chemistry Sampling and Analysis Team Leader and attach all Data Sheets to Appendix EP-230-2.

9.2.3 Chemistry Sampling and Analysis Team Leader shall:

9.2.3.1 Report the results to the Emergency Director and the Health Physics and Chemistry Coordinator (EOF).

10.0 REFERENCES

10.1 EP-230 - Chemistry Sampling And Analysis Team Activation

10.2 M-102 - General Arrangement Plan At El. 217'-0"

10.3 M-106 - General Arrangement Plan At El. 352'-0"

10.4 General Arrangement Plan at El. 411'-0"

10.5 M-26 P&ID, Sh. 1, Rev. 8, Sh. 3, Rev. 3, Sh. 4, Rev. 3, - Plant Process Radiation Monitoring

10.6 EP-242 - Sample Preparation And Handling Of Highly Radioactive Particulate Filters And Iodine Cartridges

10.7 EP-243 - Sample Preparation And Handling Of Highly Radioactive Gas Samples

APPENDIX EP-237-1
DATA SHEET

Sample:_____, _____

Analysis:_____, _____

Est. Sampling Time:_____

D. FOR OBTAINING LOCAL PARTICULATE/IODINE SAMPLE

Channel number:_____ (1,2 or 3)
Conc._____
Range Selection_____ (Low or Mid/High)
Sampling Time_____

D-1 LOW RANGE	D-2 MID/HIGH RANGE
Prefilter_____ (A or B)	Prefilter_____ (C or D)
Time-1_____	Time-1_____
Flow_____ (FI-26-076-2)	Flow_____ (FI-26-076-1)
Time-2_____	Time-2_____
Prefilter_____ (A or B)	Prefilter_____ (C or D)
Initial Contact Dose Rate____	Initial Contact Dose Rate____

E. FOR OBTAINING REMOTE PARTICULATE/IODINE SAMPLE

Channel number:_____ (1,2 or 3)
Conc._____
Range Selection_____ (Low or Mid/High)
Sampling Time_____

E-1 LOW RANGE	E-2 MID/HIGH RANGE
Prefilter_____ (A or B)	Prefilter_____ (C or D)
Sampling Time_____	Sampling Time_____
Time-1_____	Time-1__ _____
Flow_____	Flow_____ ____
Time-2_____	Time-2_____
Prefilter_____ (A or B)	Prefilter_____ (C or D)
Initial Contact Dose Rate____	Initial Contact Dose Rate____

F. FOR OBTAINING A GAS GRAB SAMPLE

Time_____
Vol._____

NAME:_____
_____
_____

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-238 OBTAINING LIQUID RADWASTE SAMPLES FROM RADWASTE SAMPLE SINK FOLLOWING ACCIDENT CONDITIONS

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for consideration, prior to, during and after obtaining samples from the radwaste sample sink, following accident conditions.

2.0 RESPONSIBILITIES

2.1 The Chemistry Sampling and Analysis Group Leader shall direct the group members in performing the steps necessary in this procedure.

3.0 APPENDICES

3.1 EP-238-1 - Data Sheet

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 Appropriate Health Physics Survey Equipment

5.2 Anti-C clothing

5.3 Dosimetry

5.4 3 oz sample bottle with lid

5.5 Tongs, remote tooling (and/or) lead carrying container for holding the sample.

5.6 Respiratory protective equipment

5.7 Eye Protection

5.8 Extremity dosimetry

5.9 Plastic bags

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure shall be implemented when a Liquid Radwaste sample shall be taken from the Radwaste Sample Sink during an emergency situation.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-230-1 Emergency Exposure Guidelines.

8.2 Eye protection should be worn by all personnel obtaining the sample.

8.3 Do NOT use elevators

8.4 Continous coverage by a Health Physics Technician may substitute for the Radiation Work Permit !(RWP)!.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 (Interim) Chemistry Sampling and Analysis Team Leader shall:

9.1.1.1 After discussing the situation with the (Interim) Emergency Director, determine if a liquid radwaste sample is required.

9.1.1.2 Determine preference of the Sampling Point from M-23 P&ID, Sheet 1 Process Sampling.

9.1.1.3 Check the Plant Radiation Level Status Board to forecast anticipated radiological conditions.

9.1.1.4 Contact the Plant Survey Group Leader and check on the latest developments related to radiological conditions and inform him what sample(s) are to be taken and that Health Physics' coverage is required.

9.1.1.5 Request input from the Control Room (via Emergency Director) to ascertain the desired sample system availability.

9.1.1.6 Determine what analyses are required and inform the Chemistry Sampling and Analysis Group Leader what analyses are required.

9.1.1.7 Request Emergency Exposure Authorizations from the Emergency Director for Group Members (as required) and inform the Plant Survey Group Leader of this development.

9.1.1.8 Direct the Chemistry Sampling and Analysis Group Leader to collect and analyze the liquid sample from the radwaste sample sink (Radwaste Enclosure 162')

9.1.2 Chemistry Sampling and Analysis Group Leader shall:

9.1.2.1 After discussing the situation with the Chemistry Sampling and Analysis Team Leader contact the Plant Survey Group Leader and request a Health Physics technician to report to the Chemistry Lab to perform the following.

A. Provide the Group Leader with radiological conditions that would impact the sample and route selection.

B. Brief the group members on radiological conditions, precautions and requirements for entering the area and radiation level cutoffs for handling and analyzing the sample.

C. Provide radiation survey equipment for constant coverage of the sampling and analysis portions of this procedure.

D. Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.2.2 Determine which sample point is to be used based on system availability and radiological conditions. Chenck with Shift Operations whether a sample can be taken from the desired sample point. (See M-23 P & ID, sheet 1 for reference)

9.1.2.3 Assign the appropriate number of group members to obtain the necessary equipment and once briefed by the H.P. Technician to collect and transport the sample to the Chemistry Hot Lab.

9.1.2.4 Brief the Health Physics Technician and Chemistry Sampling and Analysis Group members on the following.

A. Team identifier

B. Communications equipment and channel

C. Type of sample(s) to be collected

D. Location of sample points

E. Suggested routes to be taken

F. Sample transport technique

G. Projected amount of time required to collect and transport the sample

H. Review of the procedures to be followed for sample collection, handling, preparation and analysis

I. Alternatives for obtaining and practical methods of remotely handling the sample(s)

J. Special tools and equipment required for sample handling and/or collection.

K. Proper completion of Data Sheets

9.1.2.5 Instruct group members to immediately report the folowing as they occur or as the information becomes available.

A. Sample locations that are not accessible or any other reason why the sample can not be collected.

B. When the sample and group members arrive at the hot lab.

C. Results of the analysis.

9.1.2.6 Appoint one Group member to prepare the Hot Lab for receiving the sample, using the following guidelines:

A. Adequate shielding is available for the sample.

B. Remote handling tools are in place (as required).

C. Protective clothing and equipment are readily available (as required by HP).

D. Copies of the appropriate sample handling and analysis procedures are on hand.

E. Equipment is properly calibrated, warmed-up and in place.

USE THE FOLLOWING PROCEDURES AS GUIDELINES FOR PREPARATION OF THE HOT LAB.

EP-241 (LIQUID)	Sample Preparation and Handling of Highly Radioactive Liquid Samples
EP-242 (IODINE)	Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges
EP-243 (GAS)	Sample Preparation and Handling of Highly Radioactive Gas Samples

9.1.2.7 Copy Appendix EP-230-2, Chemistry Sampling and Analysis COL for each sample taken. Fill out all pertinent information as it becomes available.

9.1.3 The Health Physics Technician shall:

9.1.3.1 Select the sample route using the following:

A. SUGGESTED ROUTES

(1) Down the stairs near the Counting Room (217' elevation) to 162' elevation.

TIME: Approx. 3 min.

(2) Walking past the demineralizers exiting the Radwaste Encl. on 217' elevation (Door 337) turn right, proceeding until the next door (Door 339), reentering the Radwaste Encl. and proceeding down the stairs to 162' elevation.

TIME: Approx. 3 min.

B. The following are approximate times required to obtain the samples:

LOCATION	TIME TO SAMPLE
Radwaste Sample Sink	3 mins. or less depending on flow

9.1.3.2 Take appropriate radiation survey equipment and ensure that equipment is functional and calibrated.

9.1.3.3 Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.3.4 Perform a pre-job briefing with the Chemistry technicians assigned to obtain the sample to discuss the following:

A. RWP requirements

B. Routes to be used

C. Authorized doses

D. Radiological concerns and precautions

E. Review of procedure for obtaining and transporting sample to hot lab

F. Suggested methods to maintain exposures ALARA

G. Stay times and Abort Criteria

9.1.3.5 Provide constant coverage while obtaining, transporting and analyzing the sample from the Containment Leak Detector.

9.1.3.6 Monitor dose rates enroute and at the sample location. Upon entering the power block, the surveyors will note trends in general radiation levels enroute to the Containment Leak Detector. If general area dose rates (unanticipated) exceed 10 R/hr gamma or 10 rad/hr beta prior to arriving at the point specified below, exit immediately and report to Chemistry Sampling and Analysis Group Leader.

If the general dose rate (unanticipated) exceeds 5 R/hr at the door leading to Rx. 162', leave the area immediately and report to Chemistry Sampling and Analysis Group Leader with this information.

9.1.3.7 Survey the sample area and sample cask.

9.1.3.8 Document the sample cask survey results and give them to the Chemistry Sampling and Analysis Group Leader (or other designated group member) when arriving at the hot lab.

9.1.3.9 Provide constant coverage during sample preparation and handling as specified in EP-241.

9.1.4 Chemistry Sampling and Analysis Group members shall:

9.1.4.1 Assemble for a pre-job briefing at the chemistry lab.

9.1.4.2 Inform the Group Leader if they are approaching the administrative exposure guidelines, or may not have sufficient exposure remaining to successfully complete the assigned task.

9.1.4.3 Obtain the necessary equipment (prepare three evacuated off-gas sample vials) to collect the sample and ensure that the hot lab is ready to accept the sample (for additional information, refer to prerequisite 4.2)

PROPERLY LABEL ALL SAMPLE CONTAINERS

9.1.4.4 Obtain and don the appropriate protective clothing and equipment (as required by the H.P. technician or RWP)

9.1.4.5 Once the group has been briefed and the appropriate equipment has been assembled, proceed to the appropriate radwaste sink and collect the sample as follows:

A. Proceed to the Radwaste Sample Sink.

B. Have the H.P. Technician survey the area, concentrating on the Sample Sink

C. Proceed to the predetermined Grab Sample Point.

D. Ensure that a flow is present. If not, attempt to initiate flow by opening root valves. If flow is not established, exit and consult Chemistry Sampling and Analysis Group Leader.

E. SAMPLING METHOD Obtain a 1 oz. sample (about 1" up from bottom) or less in a 3 oz. bottle. Usetongs or other remote handling tools which hold the sample bottle without operator attention. When required amount of sample is obtained remove bottle and transport with tongs, other remote tools, or lead carrying container.

F. Have the Health Physics Technician survey the vial and record the Initial Contact Dose Rate in Appendix EP-235-1.

G. Complete the Data Sheet in Appendix EP-238-1.

H. Take the sample to the hot lab retracing one of the previously suggested routes.

9.2 FOLLOW-UP

9.2.1 Chemistry Sampling and Analysis Group Members shall:

9.2.1.1 Prepare, handle and analyze the sample using EP-241 Preparation and Handling of Highly Radioactive Liquids.

9.2.1.2 Report the results to the Chemistry Sampling and Analysis Group Leader.

9.2.1.3 Properly file the data sheets and report back to the Group Leader for reassignment.

9.2.2 Chemistry Sampling and Analysis Group Leader shall:

9.2.2.1 Ensure Group Member(s) dose is monitored to ensure that exposure limits have not been exceeded.

9.2.2.2 Inform the Chemistry Sampling and Analysis Team Leader that the required sample is in the hot lab.

9.2.2.3 Direct Group Members to refer to EP-241 Sample Preparation and Handling of Radioactive Liquids for guidance for sample preparation and handling.

9.2.2.4 Obtain and review all Data Sheets and report the sample results to the Chemistry Sampling and Analysis Team Leader and attach all Data Sheets to Appendix EP-230-2.

9.2.3 Chemistry Sampling and Analysis Team Leader shall:

9.2.3.1 Report the results to the Emergency Director and the Health Physics and Chemistry Coordinator (EOF).

10.0 REFERENCES

10.1 EP-230 Chemistry Sampling and Analysis Team Activation

10.2 M-23 P&ID, Sh. 1 Rev. 9 Process Sampling

10.3 M-100 General Arrangement Plan at El. 177'-0"

10.4 M-102 General Arrangement Plan at El. 217'-0"

10.5 EP-241 Sample Preparation and Handling of Highly Radioactive Liquids

APPENDIX EP-238-1

DATA SHEET

Liquid Radwaste Grab Samples

DATE: _____

TIME: _____

SAMPLE LOCATION: _____

SAMPLE POINT: _____

VOLUME: _____

INITIAL CONTACT DOSE RATE: _____

ANALYSES: _____

_____

_____

NAME: _____

_____

_____

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-240 OBTAINING OFF-GAS SAMPLES FROM THE AIR EJECTOR/HOLDUP PIPE DISCHARGE SAMPLE STATION

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for consideration prior to, during and after obtaining an off-gas sample from the Air Ejector/Holdup Pipe Discharge Sample Station.

2.0 RESPONSIBILITIES

2.1 The Chemistry Sampling and Analysis Group Leader shall direct the Group Members in performing the steps necessary in this procedure.

3.0 APPENDICES

3.1 EP-240-1 Data Sheet

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 Appropriate health physics survey equipment

5.2 Respiratory protective equipment

5.3 Anti-C clothing

5.4 Dosimetry

5.5 14.4 ml off-gas vials with septums

5.6 Tongs or other remote tooling or lead carrying container

5.7 Eye Protection

5.8 Thermometer

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented when an off-gas sample shall be taken from the Air Ejector/Holdup Pipe Discharge Sample Point during an Emergency situation.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-230-1 Emergency Exposure Guidelines.

8.2 Do not use elevators.

8.3 Eye protection should be worn by all personnel when obtaining samples from the sample station.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 Chemistry Sampling and Analysis Team Leader shall:

9.1.1.1 After discussing the situation with the (Interim) Emergency Director, determine if an off-gas sample from the Air Ejector/Holdup Pipe Discharge Sample Station is required

9.1.1.2 Check the Plant Radiation Level Status Board to forecast anticipated radiological conditions.

9.1.1.3 Contact the Plant Survey Group Leader and check on the latest developments related to radiological conditions and inform him what sample(s) are to be taken and that Health Physics' coverage is required.

9.1.1.4 Request input from the Control Room (via Emergency Director) to ascertain desired sample system availability.

9.1.1.5 Determine what analyses are required and inform the Chemistry Sampling and Analysis Group Leader what analyses are required.

9.1.1.6 Request Emergency Exposure Authorization from the Emergency Director for Group Members (as required) and inform the Plant Survey Group Leader of this development.

9.1.1.7 Direct the Chemistry Sampling and Analysis Group Leader to collect and analyze the appropriate samples

9.1.2 Chemistry Sampling and Analysis Group Leader shall:

9.1.2.1 After discussing the situation with the Team Leader, contact the Plant Survey Group Leader and request a Health Physics technician to report to the Chemistry Lab to perform the following:

A. Provide the Group Leader with radiological conditions that would impact the sample and route determination

B. Brief the Group Members on radiological conditions, precautions and requirements for entering the area and radiation level cut-offs for handling and analyzing the sample

C. Provide radiation survey equipment for constant coverage of the sampling and analysis portions of the procedure

D. Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.2.2 Select the sample location

The location for each unit where the sample may be taken is:

Equip. No.	Location	Area
10S 160	Turb. Encl. 200'	8
20S 160	Turb. Encl. 200'	8

9.1.2.3 Check with shift operations to verify that the desired sample can be collected from the desired sample station and sample point

9.1.2.4 Assign the appropriate number of group members to obtain the necessary equipment and once briefed by the H.P. technician, to collect and transport the sample to the Chemistry Hot Lab.

9.1.2.5 Brief the Health Physics technician and Chemistry Sampling and Analysis Group Members on the following:

A. Squad identifier

B. Communications equipment and channel

C. Type of sample(s) to be collected

D. Location of sample points

E. Suggested routes to be taken

F. Sample transport technique

G. Projected amount of time required to collect and transport the sample

H. Review of the procedures to follow for sample collection, handling, preparation and analysis

I. Alternatives for obtaining and practical methods of remotely handling the sample(s)

J. Special tools and equipment required for sample handling and/or collection

K. Proper completion of Data Sheets

9.1.2.8 Copy Appendix EP-230-2, Chemistry Sampling and Analysis COL for each sample taken. Fill out all pertinent information as it becomes available.

9.1.3 The Health Physics Technitian shall:

9.1.3.1 Determine which route should be used for collecting and transporting the sample

ROUTES AND APPROXIMATE TIMES

1. Down the stairs in the S.W. corner of Turb. Encl. 217' to 200' El. and proceed forward down the hall to Area 8.

   TIME: 3 Min.

2. Down the stairs by the 13.2 kV Bus Room on Turb. Encl. 217' to 200' El.

   TIME: 3 Min.

9.1.3.2 Take appropriate radiation survey equipment and ensure that equipment is functional and calibrated.

9.1.3.3 Provide Group Members with the appropriate dosimetry, protective clothing and respiratory equipment.

9.1.3.4 Perform a pre-job briefing with the Chemistry technicians assigned to obtain the sample to discuss the following:

A. RWP requirements

B. Routes to be used

C. Authorized doses

D. Radiological concerns and precautions

E. Review of procedure for obtaining and transporting sample to hot lab

F. Suggested methods to maintain exposures ALARA

G. Stay times and Abort Criteria

9.1.4 Chemistry Sampling and Analysis Group Members shall:

9.1.4.1 Assemble for a pre-job briefing at the chemistry lab

9.1.4.2 Inform the Group Leader if they are approaching the Adminstrative Exposure Guidelines, or may not have sufficient exposure remaining to successfully complete the assigned task.

9.1.4.3 Obtain the necessary equipment to collect the sample and ensure that the hot lab is ready to accept the sample (for additional information, refer to Prerequiste 4.2)

9.1.4.4 Obtain and don the appropriate protective clothing and equipment (as required by the H.P. technician or RWP)

PROPERLY LABEL ALL SAMPLE CONTAINERS

9.1.4.5 Once the group has been briefed and the appropriate equipment has been assemble, proceed to the Air Ejector/Holdup Pipe Discharge Sample Station and collect/transport the sample as follows:

A. With general area dose rates less than 5 R/hr in the area of the Air Ejector/Holdup Pipe Discharge Sample Station, survey the control panel and if the general area dose rates are less than 5 R/hr open the door on the back of the panel. Survey the sample station concentrating on the inlet lines.

B. The time to obtain a sample is approximately 15 minutes

<u>SAMPLING METHOD</u>

1. Open valve 26-1022 (-2022).

2. Verify that the FUNCTION SELECTOR Switch (HSS-26-114-1;-214-1) is in the INSERT VIAL position.

3. Install a sample vial in the vial positioner.

4. Insert the vial positioner into the vial positioning guide tube so that microswitch S3 is held closed by the vial.

5. Turn POWER switch (HS-26-114-1;-214-1) to the ON position.

6. Turn POWER switch (HS-26-114-3;-214-3) to the ON position.

7. Position the FUNCTION SELECTOR Switch (HSS-26-114-1;-214-1) to the EVACUATE VIAL position. Indicator lamps DS2 (valve 2), DS3 (valve 3) and DS4 (pump) should be illuminated. Vacuum pump B1 (26-10P927;-20P927) should be running and the vacuum gauge (PI-26-114;-214) should show a decreasing pressure level within the vial.

8. After vacuum gauge indicates greater than 25 in. Hg vacuum, position FUNCTION SELECTOR switch to CHECK VACUUM position. Allow the sample line to purge for at least 10 minutes. Indicator lamp DS3 (valve 3) should have extinguished and lamps DS1 (valve 1), DS2 (valve 2) and DS4 (pump) should be illuminated.

   THE SAMPLE MAY BE COLLECTED DOWN TO 20 in. Hg VACUUM IF THE PUMP WILL NOT GIVE ANY MORE VACUUM.

9. Place FUNCTION SELECTOR Switch to PURGE position. Indicator lamp DS1 (valve 1) should be illuminated.

10. Record in Appendix EP-240-1 the ambient temperature (deg. C) in the cabinet by placing a thermometer in the back of the cabinet.

11. If the level of vacuum holds within the sample vial, record the vial vacuum as VAC-I from PI-26-114;-214.

12. Turn FUNCTION SELECTOR switch to FILL VIAL position. Indicator lamps DS1 (valve 1) and DS3 (valve 3) should be illuminated. Record the time in EP-240-1.

13. After the vacuum gauge has stabilized, record in EP-240-1 the final vial pressure as VAC-F in "Hg if pressure is < atmospheric or P in psig if pressure is > atmospheric.

14. Turn FUNCTION SELECTOR Switch to REMOVE VIAL position and remove the vial and immediately have the HP Technician survey the vial and record the Initial Contact Dose Rate in Appendix EP-240-1 and place the vial in an appropriate shielded container for transportation to the Hot Lab.

15. Return FUNCTION SELECTOR switch to INSERT VIAL position.

16. Turn POWER switch (HS-26-114-3;-214-3) to the OFF position.

17. Turn POWER switch (HS-26-114-1;-214-1) to the OFF position.

18. Take the sample to the Hot Lab retracing backwards one of the priviously suggested routes.

9.1.4.6 Upon introduction of the sample into the hot lab, the sample will be handled in a manner that personnel exposures are kept ALARA.

UNNECESSARY PERSONNEL SHALL NOT REMAIN IN THE HOT LAB.

9.1.4.7 Inform the Control Room that the required sample has been taken.

9.2 FOLLOW-UP

9.2.1 Chemistry Sampling and Analysis Team Leader shall:

9.2.1.1 Report the results to the Emergency Director and the Health Physics and Chemistry Coordinator (EOF).

9.2.2 Chemistry Sampling and Analysis Group Leader shall:

9.2.2.1 Ensure Group Member(s) dose is monitored to ensure that exposure limits have not been exceeded

9.2.2.2 Inform the Chemistry Sampling and Analysis Team Leader that the required sample is in the hot lab

9.2.2.3 Direct Group Members to refer to EP-243 Preparation and Handling of Highly Radioactive Gas Samples for Guidance for Sample Preparation and Handling

9.2.2.4 Obtain and review ALL Data Sheets and report the sample results to the Chemistry Sampling and Analysis Team Leader and attach all Data Sheets to Appendix EP-230-2.

9.2.3 Chemistry Sampling and Analysis Group Members shall:

9.2.3.1 Complete Appendix EP-240-1

9.2.3.2 Prepare, handle and analyze the sample using EP-243 Preparation and Handling of Highly Radioactive Gas Samples.

9.2.3.3 Report the results to the Chemistry Sampling and Analysis Group Leader

9.2.3.4 Properly file the data sheets and report back to the Group Leader for re-assignment.

10.0 REFERENCES

10.1 EP-230 Chemistry Sampling and Analysis Team Activation

10.2 M-101 General Arrangement Plan at El. 201'-0"

10.3 M-102 General Arrangement Plan at El. 217'-0"

10.4 M-26 P&ID, Sh. 2 Rev. 7; Sh. 4 Rev. 3;
Plant Process-Radiation Monitoring

10.5 M-69 P&ID, Rev. 21 Gaseous Radwaste-Recombination

10.6 EP-243 Sample Preparation and Handling of Highly Radioactive Gas Samples

APPENDIX EP-240-1

DATA SHEET

OFF GAS SAMPLE

DATE: _____

TIME: _____

TEMP. (T): _____ Deg. C

VACI: _____ "Hg

TIME: _____

VACF: _____ "Hg

P: _____ psig

INITIAL CONTACT DOSE RATE: _____

CALCULATION OF OFF GAS VOLUME

$$\text{VOL O.G. at STP} = \frac{(P)\ (14.4\ \text{ml})\ (273\ \text{deg. K})}{(T+273\ \text{deg. K})\ (29.9\ "\text{Hg})}$$

Where:

P = (VACI - VACF) if final pressure is < atmospheric or
P = (2.04P + VACI) if final pressure is > atmospheric
T = ambient Temp. in cabinet (degrees C)

NAME: _____

_____

_____

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 An RWP shall be assigned to the actual sample preparation and analysis task.

4.2 Ventilation in the sample preparation hood is operating.

5.0 SPECIAL EQUIPMENT

5.1 Appropriate Health Physics Survey Equipment

5.2 Respiratory Protection Equipment if required.

5.3 Anti-C Clothing.

5.4 Whole Body Dosimetry.

5.5 Extremity Dosimetry

5.6 Liquid sample vials with septum.

5.7 Appropriate liquid microsyringes.

5.8 Rubber gloves

5.9 Plastic sample bags.

5.10 Sample handling tongs.

5.11 0.01N nitric acid solution(500 ml).

5.12 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. ALL RWP REQUIREMENTS MUST BE MET BEFORE PROCEEDING.

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 Positon 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

Appendix EP-241-1
Data Sheet

I.

Sample Source _____
Grab Sample Point _____
Initial Sample Volume _____
Initial Contact Dose Rate _____
Sample Date/Time ____/____

Processing Procedure: (X)
A. Sent Offsite for Analysis* ( )
B. Placed in Temporary Storage *,** ( )
C. Analyzed on Site ( )

II.

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

* If this method is used sign and date this data sheet and terminate this procedure.

** The Chemistry Sampling and Analysis Group Leader shall determine place of storage.

***Dilution magnitudes of 10:1 can be obtained by transfering a 1 ml aliquot of sample into 9 ml of blank water. Dilution magnitudes of 100:1 can be obtained by transfering a .1 ml aliquot of sample into 9.9 ml of blank water. Dilution magnitudes of 1000:1 can be obtained by transferring a .01 ml aliquot of sample into 9.99 ml of blank water. Nitric acid (0.01N) may be used in place of blank water.

****Recommended Analysis Sample Volume DCP-4ml, IC-4 ml, PH-.3ml, Cl-1ml/100ml H_2O (specific ion electrode), Boron-2ml (titration method). If the gamma analysis sample is to be counted on the 2ND shelf, make the final dilution vial into a 14.4 cc gas vial containing the appropriate volume of dilution solution.

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.

	Signature	Date	Time
Chemistry Group Member		____/____	
Health Physics Group Member		____/____	
Group Leader			

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-242 SAMPLE PREPARATION AND HANDLING OF HIGHLY RADIOACTIVE PARTICULATE FILTERS AND IODINE CARTRIDGES

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for sample preparation and handling of highly radioactive particulate filters and iodine cartridges during an emergency situation.

2.0 RESPONSIBILITIES

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

2.1.1 Determining the processing procedure.

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

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

2.1.4 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:

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

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

2.2.3 Monitoring laboratory habitability.

2.2.4 Conducting a pre-job briefing concerning:

A. RWP requirements

B. Radiological concerns and precautions

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

2.3 The Chemistry Sampling and Analyses Group Members are responsible for:

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

2.3.2 Following sample dilution and analysis requirements as specified by the Chemistry Sampling and Analyses Group Leader

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

3.0 APPENDICES

3.1 EP-242-1 Data Sheet

4.0 PREREQUISITES

4.1 An RWP shall be assigned to the actual sample preparation and analysis task.

4.2 Ventilation in the sample preparation hood is operating.

5.0 SPECIAL EQUIPMENT

5.1 Appropriate Health Physics Survey Equipment

5.2 Respiratory Protection Equipment if required

5.3 Anti-C clothing

5.4 Whole Body Dosimetry

5.5 Extremity Dosimetry

5.6 Purge cannister

5.7 Eye protection

5.8 Plastic sample bags

5.9 Sample handling tongs

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure shall be implemented when preparing or handling highly radioactive particulate filters and iodine cartridges 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 Analyses Group Leader shall obtain the appropriate Sample Data Sheet and select one of the following processing procedures based on the radiation levels of the sample.

A. Send the sample offsite for analyses per EP-244 Offsite Analysis of High Activity Samples.

B. Place the sample in temporary storage for future analyses.

C. Analyze the sample on-site.

COMPLETE SECTION I OF APPENDIX EP-242-1.

9.1.1.2 The Chemistry Sampling and Analyses Group Leader shall determine the following sample parameters based on sample dose rates and gamma isotopic analyses requirements.

A. Sample to be analyzed (silver zeolite and/or filter)

B. Order of analyses

C. Purge time of sample

D. Acceptable dose rate for gamma counting

COMPLETE SECTION II OF APPENDIX EP-243-1.

9.1.2 Pre-Job Briefing

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

9.1.2.2 The Chemistry Sampling and Analyses 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

NOTE

THE FOLLOWING STEPS ARE TO BE PERFORMED BY THE CHEMISTRY SAMPLING AND ANALYSIS GROUP MEMBER (UNLESS OTHERWISE SPECIFIED).

9.1.3 Preparation of Sample Station for Iodine and Particulate Samples

9.1.3.1 Determine the purge gas to be used (nitrogen or air)

9.1.3.2 Ensure that the desired purge gas system has adequate supply pressure and is aligned to the sample preparation station.

9.1.3.3 Place the purge cannister discharge line in the "discharge position".

9.1.3.4 If a purge cannister is to be used connect it to the quick disconnect fitting and place it behind the lead shield wall.

9.1.4 Preparation of Analysis Instrumentation

9.1.4.1 Ensure that the appropriate analysis procedure specified in Appendix EP-242-1 is available and has been performed to the point that each analysis instrument is ready to accept the sample for analysis.

NOTE

ALL RWP REQUIREMENTS MUST BE MET BEFORE PROCEEDING.

9.1.5 Transport of Sample from Transport Casks to Sample Preparation Station

9.1.5.1 Position the sample transport casks as close to the Sample Preparation Station as possible.

9.1.5.2 As quickly and carefully as is possible, remove the sample from the transport cask and place it behind the lead shield wall.

9.1.5.3 If a purge cannister is to be used, place the sample in its appropriate purge cannister and connect the quick disconnect fittings. Establish a purge gas flow in the same direction and flow rate as was used in the sampling process.

9.1.5.4 If a purge cannister is not used, connect the quick disconnect fittings (on the sample chamber). Establish a purge gas flow in the same direction and flow rate as was used in the sampling process.

9.1.5.5 Retreat from the Sample Preparation Station and allow the sample to purge for the predetermined amount of time (Appendix EP-242-1).

9.1.5.6 When the desired purge time has elapsed secure the purge gas and disconnect the quick disconnect fittings. Keep the sample shielded behind the lead shield wall.

9.1.5.7 The Health Physics technician shall determine the dose rate of the purged sample.

9.1.5.8 If the purged sample dose rate is unacceptable (per Appendix EP-242-1) repeat steps 9.1.5.3 through 9.1.5.7 until the acceptable analysis dose rate is reached or no longer changes.

9.2 FOLLOW-UP

9.2.1 Sample Analyses

9.2.1.1 Perform the gamma isotopic analysis as directed in Appendix EP-242-1.

9.2.2 Disposal of Samples and Contaminated Materials

9.2.2.1 Transfer and disposal of "analyzed samples" will be at the discretion of the Health Physics technician and the Chemistry Sampling and Analysis Group Leader.

10.0 REFERENCES

10.1 CH-905 Determination of Gamma Isotopic Activity During Post Accident Conditions

10.2 EP-230 Chemistry Sampling and Analysis Team Activation

APPENDIX EP-242-1

DATA SHEET

I. Sample Source _____ Grab Sample Point _____

Initial Sample Volume _____ Initial Contact Dose Rate _____

Sample Date/Time _____/_____

Processing Procedure:	(X)
(*) A. Sent offsite for analyses	( )
(*)(**) B. Placed in temporary storage	( )
C. Analyzed on-site	( )

(*) If this method is used, sign and date this data sheet and terminate this procedure.

(**) The Chemistry Sampling and Analyses Group Leader shall determine the place of storage.

II. Gamma Isotopic Analysis requirements

Order of Analysis	Procedure Number	(***) Sample to be Analyzed	(****) Purge Time	Acceptable Dose Rate for Analysis
1	CH-905	_____	_____	_____
2	CH-905	_____	_____	_____
3	CH-905	_____	_____	_____
4	CH-905	_____	_____	_____
5	CH-905	_____	_____	_____

(***) silver zeolite cartridge(s) or filter paper

(****) since all samples are to be purged together, the same purge time should be used.

	Signature	Date	Time
Chemistry Group Member	_____	_____	_____
Health Physics Group Member	_____	_____	_____
Group Leader	_____	_____	_____

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-243 SAMPLE PREPARATION AND HANDLING OF HIGHLY RADIOACTIVE GAS SAMPLES

1.0 PURPOSE

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

2.0 RESPONSIBILITIES

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

2.1.1 Determining the processing procedure.

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

2.1.3 Having group member(s) exposure monitored in conjunction with Health Physics guidance to ensure that the Administrative Exposure Guidelines arenot exceeded.

2.1.4 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:

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

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

2.2.3 Monitoring laboratory habitability.

2.2.4 Conducting a pre-job briefing concerning:

A. RWP requirements

B. Radiological concerns and precautions

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

2.3 The Chemistry Sampling and Analyses Group Members are responsible for:

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

2.3.2 Performing sample dilution and analysis requirements as specified by the Chemistry Sampling and Analyses Group Leader

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

3.0 APPENDICES

3.1 EP-243-1 Data Sheet

4.0 PREREQUISITES

4.1 An RWP shall be assigned to the actual sample preparation and analyses task.

4.2 Ventilation in the sample preparation hood is operating.

5.0 SPECIAL EQUIPMENT

5.1 Appropriate Health Physics Survey Equipment

5.2 Respiratory Protection Equipment if required

5.3 Anti-C clothing

5.4 Whole Body Dosimetry

5.5 Extremity Dosimetry

5.6 Gas sample vials

5.7 Appropriate gas syringes

5.8 Rubber gloves

5.9 Plastic sample bags

5.10 Sample handling tongs

5.11 Eye protection

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure shall be implemented when preparing or handling highly radioactive gas sample 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 Analyses 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 offsite for analyses per EP-244 Offsite Analysis of High Activity Samples.

B. Place the sample in temporary storage for future analyses.

C. Analyze the sample on-site.

COMPLETE SECTION I OF APPENDIX EP-243-1.

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

A. Analysis to be performed

B. Order of analyses

C. Number and magnitude of dilutions

D. Analyses sample volume required.

SAMPLES FOR HYDROGEN AND OXYGEN DETERMINATION BY GAS CHROMATOGRAPHY MUST NOT BE DILUTED.

COMPLETE SECTION II OF APPENDIX EP-243-1.

9.1.2 **Pre-Job Briefing**

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

9.1.2.2 The Chemistry Sampling and Analyses 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 Gas Samples

9.1.3.1 The Chemistry Sampling and Analysis Group Member(s) shall prepare the dilution vials per Appendix EP-243-1 and place the vials in the appropriate dilution vial positions in the sample preparation station. Each dilution vial shall have the predetermined (EP-243-1) aliquot volume withdrawn from it. Place lead caps over the vials (gas position).

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

9.1.3.2 The Chemistry Sampling and Analyses Group Member(s) shall ensure that the necessary gas 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-243-1.

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 ensure that the appropriate analyses procedures specified in Appendix EP-243-1 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 ANALYSES GROUP MEMBER (UNLESS OTHERWISE SPECIFIED) AND REQUIRE CONSTANT HEALTH PHYSICS MONITORING. ALL RWP REQUIREMENTS MUST BE MET BEFORE PROCEEDING.

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

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 "gas 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 MEMBERS OF THE SAMPLE PREPARATION STATION DOSE RATES AND STAY-TIME.

9.1.6 Sample Dilutions (If dilutions are not to be performed or if analyses are to be performed prior to dilution, proceed to 9.2.1.2).

DILUTIONS TO BE MADE ARE PRESCRIBED IN APPENDIX EP-243-1. 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 through the sample access hole in the lead cap, then through the sample vial septum and into the sample to be diluted.

9.1.6.2 Mix the gas in the sample vial by pumping the syringe in and out.

9.1.6.3 Set the syringe to the volume of sample to be transferred per Appendix EP-243-1.

9.1.6.4 Withdraw the syringe form the sample and insert it in the predescribed method into the next sequential dilution vial to accept the sample. Inject the aliquot into the dilution vial.

9.1.6.5 Mix the gas in the sample vial by pumping the syringe in and out.

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

9.1.6.7 If further dilutions are necessary (per Appendix EP-243-1) repeat steps 9.1.6.1 through 9.1.6.6, always beginning with the last dilution vial to accept a sample aliquot.

9.1.6.8 When the desired dilution is reached, the Health Physics technician shall determine the dose rate of the dilution sample.

9.1.6.9 If the dilution sample dose rate is unacceptable repeat steps 9.1.6.1 through 9.1.6.6 until the dose rate is acceptable. Indicate additional dilutions on Appendix EP-241-1.

9.2 FOLLOW-UP

9.2.1 Sample Analysis

9.2.1.1 Perform gamma isotopic analysis if directed by Appendix EP-243-1. Proceed to step 9.2.2.

9.2.1.2 Perform oxygen and hydrogen analysis if directed by Appendix EP-243-1. Proceed back to step 9.1.6.1 if dilutions are necessary for gamma isotopic anlysis per Appendix EP-243-1.

9.2.2 Disposal of Samples and Contaminated Materials

9.2.2.1 The remaining samples shall be disposed of in the shielded waste container. The sample handling tongs shall be used in the transfer. The samples 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 Analyses Group Leader.

10.0 REFERENCES

10.1	CH-903	Determination of Gamma Isotopic Activity During Post Accident Conditions
10.2	CH-902	Determination of Hydrogen and Oxygen Using a Gas Chromatograph During Post Accident Conditions
10.3	EP-230	Chemistry Sampling and Analysis Team Activation

APPENDIX EP-243-1

DATA SHEET

I. Sample Source _____ Grab Sample Point _____

Initial Sample Volume _____ Initial Contact Dose Rate _____

Sample Date/Time _____/_____

Processing Procedure:	(X)
(*) A. Sent offsite for analyses	( )
(*)(**) B. Placed in temporary storage	( )
C. Analyzed on-site	( )

(*) If this method is used, sign and date this data sheet and terminate this procedure.

(**) The Chemistry Sampling and Analyses Group Leader shall determine the place of storage.

II.

Order of Analyses	Analysis	Procedure Number	Aliquot Size	*** Magnitude of Dilutions	**** Total Dilution Factor	***** Analysis Sample Volume	Acceptable Analysis Dose Rate
1	_____	_____	_____	__|__|__|__	_____	_____	_____
2	_____	_____	_____	__|__|__|__	_____	_____	_____
3	_____	_____	_____	__|__|__|__	_____	_____	_____
4	_____	_____	_____	__|__|__|__	_____	_____	_____

APPENDIX EP-243-1

DATA SHEET (CONT'D)

(***) 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 analyses. To calculate the magnitud of dilution use the following tables: (*****) Recommended sample volumes: GC - 100 micro liters

Aliquot Size	1st dilution	2nd dilution	3rd dilution	4th dilution
1 ml	14.4	207	2985	42998
.1 ml	144	2070	29850	429980

$$\text{Total Dilution Factor} = \frac{Vs}{14.4} \times \text{Magnitude of Dilution}$$

Vs = Volume of original sample (from the appropriate EP-231 Sample Data Sheet)

Signature. Date Time

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-244 OFFSITE ANALYSIS OF HIGH ACTIVITY SAMPLES

1.0 PURPOSE

The purpose of this procedure is to coordinate the shipment of high activity samples to off-site laboratories for analysis.

2.0 RESPONSIBILITIES

2.1 The Chemistry Sampling and Analysis Team Leader shall contact the (Interim) Emergency Director and request off-site sample analysis as required.

2.2 The (Interim) Emergency Director shall determine the need to ship a sample off-site for analysis and request the Site Emergency Coordinator to arrange transportation for the sample.

2.3 The H.P. and Chemistry Coordinator shall complete the appropriate steps of this procedure.

2.4 The Personnel Safety Team Leader shall complete the appropriate steps of this procedure.

3.0 APPENDICES

3.1 EP-244-1 - Off-site Post Accident Sampling Analysis.

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 Samples must be sent to specially equipped off-site laboratories when 1) the activity is judged to be too great for the on-site facilities; and 2) when there is a need to determine the condition of the core by off-site analysis. The samples will be sent as directed by the Emergency Director.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Chemistry Sampling and Analysis Team Leader shall:

9.1.1.1 Contact the (Interim) Emergency Director and request off-site sample analysis as required.

9.1.2 The (Interim) Emergency Director shall:

9.1.2.1 Determine the need to ship a sample off-site for analysis based on the limitations of the on-site analytical capabilities for hot samples or any need to determine core conditions by off-site analysis or both.

9.1.2.2 Contact the Site Emergency Coordinator and request transportation off-site.

9.2 FOLLOW-UP

9.2.1 The Emergency Director shall:

9.2.1.1 Contact the Site Emergency Coordinator for an estimated time of arrival of the shipping cask.

9.2.2 The Personnel Safety Team Leader shall:

9.2.2.1 Assign an individual to load the cask in accordance with all applicable Limerick radwaste shipping procedures including HP-713.

Note: Unless otherwise directed, the cask will be shipped to the Babcock and Wilcox Research Center in Lynchburg, Virginia.

10.0 REFERENCES

10.1 HP-713

10.2 HP-272

10.3 EP-284

10.4 EP-120 - Site Emergency Coordinator

10.5 Babcock and Wilcox - Project Technical Plan for Post Accident Sample Analysis Program

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-250 PERSONNEL SAFETY TEAM ACTIVATION

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the actions required to activate and assemble the Personnel Safety Team.

2.0 RESPONSIBILITIES

2.1 A Shift Health Physics Technician shall assume the role of the Interim Personnel Safety Team Leader and perform the necessary steps in this procedure.

2.2 The Personnel Safety Team Leader shall relieve the Interim Personnel Safety Team Leader and perform the necessary steps in this procedure.

3.0 APPENDICES

3.1 EP-250-1 Emergency Exposure Guidelines

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 The (Interim) Emergency Director shall activate the Personnel Safety Team at his discretion.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-250-1 Emergency Exposure Guidelines.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 Interim Personnel Safety Team Leader (Shift Senior HP Technician) shall:

9.1.1.1 Report to the OSC.

9.1.1.2 Contact the Emergency Director and discuss any radiological considerations.

9.1.1.3 Prioritize assignment of available personnel from the Operations Support Center (OSC) to the required Personnel Safety Team Groups to carry out the following procedures, as necessary:

EP-251 Plant Survey Group

EP-252 Search and Rescue/First Aid

EP-254 Vehicle and Evacuee Control Group

EP-255 Vehicle Decontamination Procedure

PERSONNEL SAFETY TEAM ACTIVITIES SHOULD BE GIVEN TO THE ASSESSMENT OF INPLANT RADIOLOGICAL CONDITIONS AND SUPPORT OF EMERGENCY ENTRIES UNTIL SUCH TIME AS THE TSC HAS BEEN ACTIVATED.

9.1.1.4 Direct the group leaders to report the status and results of group activities via radios, telephone or plant page system.

9.2 FOLLOW-UP

9.2.1 Personnel Safety Team Leader shall:

9.2.1.1 Report to the Technical Support Center and contact the Interim Personnel Safety Team Leader in the OSC and assess existing in-plant radiological conditions.

9.2.1.2 Based upon this assessment consider the need for implementation of protective actions for emergency workers including the need for KI in accordance with EP-313 Distribution of Thyroid Blocking Tablets.

9.2.1.3 Ensure Personnel Safety Team members are available at assembly areas (OSC on 269, Elev. Turbine Enclosure or designated evacuation assembly area). Use EP-277 Personnel Safety Team Phone List to call additional personnel, if necessary.

9.2.1.4 Assign additional team members to functional groups as necessary per step 9.1.1.2 of this procedure.

9.2.1.5 Activate the Personnel Dosimetry, Bioassay, and Respiratory Protection Group in accordance with EP-221, if technical health physics support is needed.

9.2.1.6 Designate group leaders for the functional groups formed.

9.2.1.7 Maintain communications via any available means with the groups after they have been sent to perform their assigned tasks.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

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

10.3 EP-251 Plant Survey Group

10.4 EP-252 Search and Rescue/First Aid

10.5 EP-254 Vehicle and Evacuee Control Group

10.6 EP-255 Vehicle Decontamination Procedure

10.7 EP-277 Personnel Safety Team Phone List

10.8 EP-221 Personnel Dosimetry, Bioassay, and Respiratory Protection Group

10.9 EP-313 Distribution of Thyroid Blocking Tablets

APPENDIX EP-250-1
Emergency Exposure Guidelines

Function	Projected Whole Body Dose	Thyroid Dose	Authorized By
1. Life Saving and Reduction of Injury	75 rem*	375 rem	(Interim) Emergency** Director
2. Operation of Equipment to Mitigate an Emergency	25 rem*	125 rem	(Interim) Emergency** Director
3. Protection of Health and Safety of the Public	5 rem	25 rem	(Interim) Emergency** Director
4. Other Emergency Activities	10 CFR 20 limits	10 CFR 20 limits	(Interim) 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

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-251 PLANT SURVEY GROUP

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the actions of the Plant Survey Group.

2.0 RESPONSIBILITIES

2.1 The Plant Survey Group Leader shall be responsible for directing the Plant Survey Squads by performing the steps in this procedure.

2.2 The Plant Survey Squads shall be responsible for conducting surveys and providing health physics coverage as directed by the Plant Survey Group Leader.

3.0 APPENDICES

3.1 EP-251-1, Emergency Exposure Guidelines

4.0 PREREQUISITES

4.1 Emergency has been declared per EP-101 classification of emergencies.

5.0 SPECIAL EQUIPMENT

Plant Survey Kit

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 Entry is authorized by the (Interim) Emergency Director.

7.2 The Personnel Safety Team Leader direct a specific survey or health physics activity to be performed.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-251-1, Emergency Exposure Guidelines.

8.2 Unless specific needs dictate, in-plant radiation surveys should be conducted in conjunction with entries performed for other purposes. ARM readings should be used in lieu of pre-entry surveys whenever possible.

8.3 Until it is proven otherwise, airborne radioactive materials are presumed to be present in all affected areas of the plant.

9.0 PROCEDURE

9.1 Actions

9.1.1 The Plant Survey Group leader shall:

9.1.1.1 Report to the Operations Support Center (OSC).

9.1.1.2 Inform the OSC Coordinator of your presence and proposed course of action. Determine if any entries to affected areas are planned.

9.1.1.3 Establish communication with the Personnel Safety Team Leader and discuss plant radiological conditions, actual and projected.

9.1.1.4 Dispatch a HP Technician to the ARM panel in the Auxiliary Equipment room and direct him to establish an open telephone line with the OSC and TSC and provide ARM readings.

9.1.1.5 Assign an individual to man the phone to the auxiliary equipment room and read ARM readings.

9.1.1.6 Determine the type(s) of survey information needed, the type(s) of surveys to be conducted, and specify the instrumentation to be used.

9.1.1.7 Assign a Health Physics Technician to accompany each team entering the affected area.

9.1.1.8 If survey information is necessary, form a Plant Survey Squad comprised of at least two Health Physics Technicians.

9.1.1.9 Prepare ERWP per EP-401 and brief the technician/team.

9.1.2 Plant Survey Squad Members shall:

9.1.2.1 Check that all squad members are properly clothed and equipped with appropriate dosimetry and respiratory protection per the Emergency Radiation Work Permit (ERWP) contained in EP-401.

9.1.2.2 Question that all squad members know where they are going, how to get there, and what they are expected to do.

9.1.2.3 Check that at least one squad member is equipped with an operating, calibrated lapel air sampler.

9.1.2.4 Check that the squad is equipped with any needed tools or equipment, e.g., shielded container for samples, reach rods, etc.

9.1.2.5 Check that the maximum allowable exposures are known and understood by the team members.

9.1.2.6 Obtain the survey instruments specified by the Plant Survey Group Leader and check that they are calibrated and operable.

9.1.2.7 Estimate exposure accumulation for the job including transit time to and from the work area.

DO NOT PROCEED IF ENTRY PLUS EXIT EXPOSURES WOULD EXCEED THE ALLOWABLE EXPOSURE. CONTACT THE PLANT SURVEY GROUP LEADER FOR INSTRUCTIONS.

9.1.2.8 Make entry and perform continuous dose rate surveys.

IF RADIATION LEVELS EXCEED THE RANGE OF THE SURVEY INSTRUMENT, DO NOT PROCEED.

9.1.2.9 Upon arrival at the area of interest, conduct rapid surveys and exposure estimates. Based on estimated exposures determine a maximum stay time.

9.1.2.10 Continue to monitor area radiation dose rates during the conduct of activities with particular interest in operations that could result in changed conditions, e.g., sample collection.

9.2 Follow-up

9.2.1 After completing the entries into affected areas, Plant Survey Squad members shall:

9.2.1.1 Record the results of all surveys on a Survey Data Sheet.

9.2.1.2 Record exposures received by team members.

9.2.1.3 Record all observations and conditions.

9.2.1.4 Report survey results and personnel exposures to the Plant Survey Group Leader.

9.2.1.5 Collect and turn in team dosimetry for processing if directed by the Plant Survey Group Leader.

9.2.1.6 Analyze air sample media in accordance with HP-214.

9.2.1.7 Provide copies of all survey records to the Plant Survey Group Leader.

9.2.2 The Plant Survey Group Leader shall:

9.2.2.1 Report radiological and personnel exposure status to the Personnel Safety Team Leader.

9.2.2.2 Provide the plant survey squads and OSC coordinator with status updates as to changes in plant conditions.

9.2.2.3 Direct the plant survey squads to other locations as necessary.

9.2.2.4 Inform the Personnel Safety Team Leader of the need for additional personnel, if necessary.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

10.2 NUREG 0654, Rev. 1 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans in Support of Nuclear Power Plants.

10.3 HP-214

10.4 EP-401

10.5 EP-101

APPENDIX EP 251-1
Emergency Exposure Guidelines

	Function	Projected Whole Body Dose	Thyroid Dose	Authorized By
1.	Life Saving and Reduction of Injury	75 rem*	375 rem	(Interim) Emergency** Director
2.	Operation of Equipment to Mitigate an Emergency	25 rem*	125 rem	(Interim) Emergency** Director
3.	Protection of Health and Safety of the Public	5 rem	25 rem	(Interim) 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

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-252 SEARCH AND RESCUE/FIRST AID

1.0 PURPOSE

The purpose of this procedure is to define the requirements and the actions of the Search and Rescue/First Aid Group.

2.0 RESPONSIBILITIES

2.1 The Personnel Safety Team Leader shall control the Search and Rescue/First Aid Group exposure and provide offsite medical support by performing the necessary steps in this procedure.

2.2 The Search and Rescue/First Aid Group Leader shall direct operations by performing the necessary steps in this procedure.

2.3 The Search and Rescue/First Aid Group members shall perform rescue operations by performing the necessary steps in this procedure.

3.0 APPENDICES

3.1 EP 252-1 Emergency Exposure Guidelines

3.2 EP 252-2 First Aid Equipment Locations

3.3 EP 252-3 Injured Personnel Report Form

3.4 EP-252-4 Medical Support [illegible]

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 First Aid Kit

6.0 SYMPTOMS

6.1 Missing personnel or personnel with injury requiring first aid.

7.0 ACTION LEVEL

7.1 The Search and Rescue/First Aid Group is activated whenever personnel are known to be missing or in need of help.

8.0 PRECAUTIONS

8.1 Personnel shall participate in search and rescue operations on a voluntary basis.

8.2 Proper radiological controls shall be followed as much as practicable during search and rescue operations. Continuous coverage by Health Physics technician may be substituted for a Radiation Work Permit.

8.3 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-252-1 Emergency Exposure Guidelines.

8.4 Life-saving first aid treatment has priority over decontamination or treatment for radiation exposure.

8.5 Radiation exposure and group member contamination should be minimized as much as practical.

8.6 If gross external contamination is found, internal contamination should be suspected.

8.7 Any material removed from a contaminated person shall be recovered for potential use for isotopic analysis.

8.8 The Search and Rescue/First Aid Group Leader will maintain contact with the Personnel Safety Team Leader at the designated assembly area.

8.9 If first aid team is unable to move an injured person due to the nature of the injury, assistance of local ambulance personnel may be utilized.

9.0 PROCEDURE

9.1 IMMEDIATE ACTIONS

9.1.1 Personnel Safety Team Leader shall:

9.1.1.1 Select a qualified person at the OSC to be the Search and Rescue/First Aid Group Leader and to carry out Section 9.1.2 of this procedure.

9.1.1.2 Inform the Interim Emergency Director or the Emergency Director that search and rescue/first aid groups have been formed and of their intentions to enter the plant for search and rescue operations. (Attempt to locate missing person(s) by utilizing plant paging system just prior to actually dispatching the search and rescue group(s)).

9.1.1.3 Obtain exposure limits from the Emergency Director. If later search and rescue operations are necessary, the Emergency Director may adjust the radiation exposure limits accordingly. If waiting for Emergency Director approval could endanger personnel, the search and rescue/first aid group leader may decide to remove injured person.

9.1.1.4 If offsite medical help is necessary, have the ambulance, hospital or physician contacted by using Appendix EP-252-4 Medical Support Groups Phone List. Always state the number of individuals involved, type of injury and if contamination is involved.

9.1.1.5 Notify security so that the offsite medical response group's access to the Restricted Area can be expedited, if necessary.

9.1.1.6 Recall the search and rescue groups when search and rescue operations are no longer necessary.

9.1.2 Search and Rescue/First Aid Group Leader shall:

9.1.2.1 Select volunteers from available personnel to form search and rescue/first aid squads. Each squad shall consist of at least three members; two must be qualified in first aid and one must be a health physics technician.

9.1.2.2 Ensure that each member has the necessary respiratory equipment, radsurvey equipment, anti-contamination clothing, and personal dosimetry. This material can be obtained from emergency survey kits at the OSC or from normal HP stocks.

9.1.2.3 Discuss the situation with the Personnel Safety Team Leader. The following information should be obtained prior to performing search and rescue operations:

A. Number of missing persons.

B. Name of individuals.

C. Last known location of individuals.

D. The job being worked.

E. Any significant plant conditions that may affect the search and any special instructions.

9.1.2.4 Ensure the group is equipped with a first aid kit, or can get one enroute. See attached Appendix EP-252-2 for listing of first aid equipment location in the plant.

9.1.2.5 Coordinate search and rescue/first aid squads to minimize duplication of effort and unnecessary radiation exposure.

9.1.2.6 Direct the groups to the last known location of the missing individual. If necessary, expand the search to adjacent areas. Ensure most expeditious routes available are taken to minimize team exposure.

9.1.2.7 Inform the Personnel Saftey Team Leader of the actions of the group and whenever the group locates any missing personnel, and the identity of located personnel.

9.1.2.8 Determine the extent of the injury and direct administration of first aid.

9.1.2.9 Report to the Personnel Safety Team Leader the extent of the individual's injuries and recommend supplementary medical actions as necessary (i.e., hospitalization). Complete Appendix EP 252-3 (if possible) and attach to injured person prior to transporting in ambulance.

9.1.2.10 Report to the Personnel Safety Team Leader when the search and rescue/first aid group has finished its task.

9.1.3 Search and Rescue/First Aid Squad Members shall:

9.1.3.1 Perform a radiation and contamination survey of the person and subsequently the area.

9.1.3.2 Transport the injured person to a site first aid facility if practicable.

9.1.3.3 Perform the following if the injured person is contaminated.

A. Wear necessary anti-contamination clothing <u>if practicable</u>.

IF THE INJURY IS SEVERE, IMMEDIATE MEDICAL TREATMENT IS OF THE HIGHEST PRIORITY AND RADIOLOGICAL CONTROLS ARE SECONDARY.

B. Administer appropriate first aid, being careful to limit the spread of contamination and limit personal exposure.

C. IF INJURY IS NOT SEVERE, DECONTAMINATION SHALL BE ATTEMPTED.

D. Prepare the person for transportation by covering the contaminated area with a protective wrap. Avoid excessive wrapping to prevent dehydration of the person.

IF THE INJURED PERSON IS GOING TO BE TRANSPORTED TO AN OFFSITE MEDICAL FACILITY, IT MAY NOT BE FEASIBLE TO

BRING THE PERSON TO THE FIRST AID FACILITY, INSTEAD MOVE THE PERSON TO A SAFE PLACE WHICH IS EASILY ACCESSIBLE FOR THE TRANSFER TO A VEHICLE.

E. When transporting the victim to an offsite medical facility, a Health Physics Technician shall accompany the victim to assist the medical staff.

9.1.3.4 Recover any contaminated articles of clothing that may have been removed from the person for isotopic analysis.

9.2 Follow-Up Actions

9.2.1 Search and rescue group members shall:

9.2.1.1 Report results of their actions to the Personnel Safety Team Leader.

9.2.1.2 Follow normal decontamination and disposal procedures when their tasks are complete.

9.2.2 Personnel Safety Team Leader shall:

9.2.2.1 Verify the victim's arrival at the medical facilities.

9.2.2.2 Inform the Emergency Director of results of search and rescue efforts.

9.2.2.3 Have the Health Physics technician accompanying victim to the hospital, call the Personnel Safety Team Leader when informed by the hospital that his services are no longer needed. With the concurrence of the Personnel Safety Team Leader he may procede to another assignment.

9.2.2.4 Arrange for inventory and restocking of first aid kits, if necessary.

9.2.3 The Emergency Director shall:

9.2.3.1 Have the Medical Director and Corporate Communications informed of the identify and condition of the victim(s).

10.0 REFERENCES:

10.1 Limerick Generating Station Emergency Plan

10.2 NUREG 0654, Rev.1 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness In Support of Nuclear Power Plants.

APPENDIX EP 252-1
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-214-2
FIRST-AID EQUIPMENT LOCATIONS

		STRETCHERS	FIRST AID KITS	BLANKETS
Unit 1 RX Encl. Elevator Stairwells				
	Elev. 177'	X	X	X
	Elev. 201'	X	X	X
	Elev. 217'	X	X	X
	Elev. 239'	X	X	X
	Elev. 253'	X	X	X
	Elev. 283'	X	X	X
	Elev. 313'	X	X	X
	Elev. 351'	X	X	X
	Elev. 352'	X	X	X
Unit 2 RX Encl. Elevator Stairwells				
	Elev. 177'	X	X	X
	Elev. 201'	X	X	X
	Elev. 217'	X	X	X
	Elev. 239'	X	X	X
	Elev. 253'	X	X	X
	Elev. 283'	X	X	X
	Elev. 313'	X	X	X
	Elev. 331'	X	X	X
	Elev. 352'			
Turbine Encl. East & West Stairwells	Elev. 200'		X	
	Elev. 217'		X	
	Elev. 239'		X	
	Elev. 269'		X	
Turbine Encl. Equipment Hatch	Elev. 217'		X	X

	STRETCHERS	FIRST AID KITS	BLANKETS
Control Enclosure Elevator Stairwells			
Elev. 180'	X	X	X
Elev. 200'	X	X	X
Elev. 217'	X	X	X
Elev. 239'	X	X	X
Elev. 254'	X	X	X
Elev. 269'	X	X	X
Elev. 289'	X	X	X
Elev. 304'	X	X	X
Elev. 332'	X	X	X
Radwaste Encl. North Stairwell			
Elev. 162'		X	X
Elev. 191'		X	X
Elev. 217'		X	X
Elev. 237'		X	X
Elev. 257'		X	X
Circ. Water Pump House	X		
220 Switchyard Encl.	X		
500 Switchyard Encl.	X		

NOTE: 1/2 Mile Rays (Emergency Flashlights) Are Located Just Outside Door To Unit 2 Side of Main Control Room In Cabinet.

APPENDIX EP 252-3
INJURED PERSONNEL REPORT FORM
(PREPARE IN DUPLICATE)

Injured Person's Name _____

Age _____

Badge No. Or
Social Security No. _____

Male _____ Female _____

Type and Location of Injury _____

_____

_____

_____

Radioactive Contamination _____Yes _____No _____Level

Location _____

Radiation Exposure Estimate _____

Where Did Injury Occur _____

_____

Prepared by First Aid Group Leader _____
SIGNATURE

Group Members _____

_____

_____

If practicable forward original, with the person, to the site first aid facility or hospital as appropriate.

APPENDIX EP 252-4
MEDICAL SUPPORT GROUP PHONE LIST

Local Physicians

	Office	Home
Dr. Charles W. Delp	[redacted]	
Dr. Arthur Mann		

Pottstown Memorial Medical Center (Contaminated or otherwise)

1600 E. High St.
Pottstown, PA 19464 [redacted]

Radiation Management Corporation (Serious Contamination/or Exposure multiple contaminated personnel)

	Preferred	Alternate
Dr. Roger E. Linneman	[redacted]	

Ambulance

Goodwill Ambulance Co.

*Serious Contamination/Exposure is:
Whole Body Exposure greater than 25 REM or skin exposure greater than 150 REM or extremity exposure greater than 375 REM or contamination causing body contacted reading of greater than 1 MR/HR or suspected or actual inhalation or ingestion of measurable quantities of radioactive material.

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-254 VEHICLE AND EVACUEE CONTROL GROUP

1.0 PURPOSE

The purpose of this procedure is to establish provisions for personnel and vehicle monitoring during a Site Evacuation when contamination may be present.

2.0 RESPONSIBILITIES

2.1 Personnel Safety Team Leader shall coordinate the needs and actions of the Vehicle and Evacuee Control Group with needs and actions of other elements of the Personnel Safety Team.

2.2 Vehicle and Evacuee Control Group Leader coordinates the actions of the Vehicle and Evacuee Control Group members.

2.3 Vehicle and Evacuee Control Group members perform the duties in this procedure at the designated assembly areas.

3.0 APPENDICES

3.1 EP-254-1 Vehicle Survey and Decontamination Report

4.0 PREREQUISITES

4.1 Emergency has been declared per EP-101 Classification of Emergencies

5.0 SPECIAL EQUIPMENT

5.1 Assembly area Kit

5.2 Portable Radio (1/Team)

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 An atmospheric release of radioactive material has occurred or is occurring, and a Site Evacuation has been ordered or is underway; OR

7.2 As directed by the Personnel Safety Team Leader

8.0 PRECAUTIONS

8.1 Personnel at the offsite assembly area who are identified as being contaminated should not be returned to the site for decontamination if a release is ongoing or expected to occur.

8.2 Alpha contamination should be considered whenever there is reactor fuel degradation.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 Personnel Safety Team Leader shall:

9.1.1.1 Verify with the (Interim) Emergency Direct which offsite Assembly Area is to be used.

9.1.1.2 Appoint a Vehicle and Evacuee Control Grou Leader and direct him to report to the TSC Personnel entry area.

9.1.1.3 Brief the Group Leader on the selected offsite assembly area and other pertinent information.

9.1.2 Vehicle and Evacuee Control Group Leader shall:

9.1.2.1 Contact the Personnel Safety Team Leader in the TSC and request that a minimum of two Health Physics Technicians report to the TSC personnel entry area or to the selected offsite assembly area.

9.1.2.2 Contact the PSTL and request that the Fire and Damage Control Group Leader provide a vehicle and driver in support of the Vehicle and Evacuee Control Group, with the driver to report to you in the TSC, if required.

9.1.2.3 Upon arrival of HP Technicians, appoint one of them as the Squad Leader.

9.1.2.4 Instruct the team members to implement section 9.1.3 of this procedure.

9.1.3 Vehicle and Evacuee Control Group shall:

9.1.3.1 Upon the direction of the Group Leader, proceed to the designated offsite assembly area.

9.1.3.2 Upon arrival at the offsite assembly area, establish communications with the Vehicle and Evacuee Control Group Leader in the TSC via portable radio or available telephone.

9.1.3.3 Coordinate the set-up of personnel and vehicle contamination monitoring areas with security representatives present.

9.1.3.4 Obtain an Assembly Area Kit at the offsite assembly area.

9.1.3.5 Perform an inventory of the equipment in the kits by comparing contents with the inventory lists contained in the respective kits.

9.1.3.6 Perform battery and source checks on all instrumentation.

9.1.3.7 Report any missing items or inoperable equipment to the Group Leader and request replacements.

PRIORITY SHOULD BE GIVEN TO THE MONITORING OF PERSONNEL. VEHICLE MONITORING, IF NECESSARY, SHOULD ONLY BE PERFORMED WHEN PERSONNEL MONITORING HAS BEEN COMPLETED.

9.1.3.8 Perform whole body frisk of each individual in accordance with HP-817, Personnel Contamination Monitoring.

9.1.3.9 If individuals are found to be contaminated, decontaminate using the techniques described in HP-818, Personnel Decontamination, and complete the documentation described therein.

9.1.3.10 If any individual cannot be decontaminated below the release limits specified in HP-818, contact the Vehicle and Evacuee Control Group Leader in the TSC for further instructions.

9.1.3.11 Perform Vehicle surveys in accordance with the following procedure.

a. Check that the survey instrument is operable and that the audible accessory is turned on and operating.

b. Prior to starting the survey, determine the background radiation in the area. If the background greater than 300 cpm as determined with an E140N with HP-210/HP-260 probe or equivalent, the vehicle or equipment must be moved to another area where the background is less than 300 cpm.

c. Hold the instrument probe approximately 1 (one) inch from the surface and move it slowly over the surface with particular attention to horizontal surfaces and areas that would most likely come in contact with contamination, e.g., tires, door handles, etc.

d. If there is any increase in audible response, stop moving the probe, allow the meter response to stabilize and determine the magnitude and size of the contaminated area.

e. Survey the accessible interior surfaces of the vehicle or equipment in a similar manner. Again, give special attention to those areas most likely to be contaminated, e.g., steering wheel, brake pedal, drivers's seat, etc.

f. If contamination levels are less than the 100 cpm as determined by an E140N equipped with an HP-210 or HP-260 probe or equivalent, release the vehicle or equipment by checking the appropriate block on the Report and giving a copy to the driver.

g. If the vehicle is contaminated, record readings on the Vehicle Survey and Decontamination Report (Appendix EP-254-1) and note contaminated areas and levels on the illustration sheet.

9.1.3.12 Perform vehicle decontamination in accordance with EP-255, beginning with 9.1.2.7.

DECONTAMINATION OF VEHICLES SHALL BE SECOND IN PRIORITY TO DECONTAMINATION OF PERSONNEL AND IMPOUNDING OF THE VEHICLES

9.1.3.13 If any vehicle cannot be decontaminated below the release limits, contact the Vehicle and Evacuee Control Group Leader in the TSC for further instructions.

9.1.3.14 Remain on-station until released by the Group Leader.

9.2 FOLLOW-UP

9.2.1 Vehicle and Evacuee Control Group Leader shall:

9.2.1.1 When all personnel and vehicles have been monitored, and the team is no longer needed for decontamination, instruct them to monitor themselves, their equipment and vehicle, and return to the TSC, or to the EOF if the TSC is inaccessable.

9.2.1.2 Upon return of the group, collect personnel and vehicle survey and decontamination records.

9.2.1.3 Transfer personnel survey and decontamination records to the Dosimetry, Bioassay and Respiratory Protection Group Leader for any needed exposure evaluations and record retention.

9.2.2 Vehicle and Evacuee Control Group shall:

9.2.2.1 Upon release, return with your equipment to the TSC or other location as directed.

9.2.2.2 Return all survey and decontamination records to the Vehicle and Evacuee Control Group Leader.

10.0 REFERENCES

10.1 EP-255 - Vehicle Decontamination

10.2 EP-305 - Site Evacuation

10.3 HP-817 - Personnel Contamination Monitoring

10.4 HP-818 - Personnel Decontamination

10.5 EP-101 - Classification of Emergencies

VEHICLE SURVEY AND DECONTAMINATION REPORT

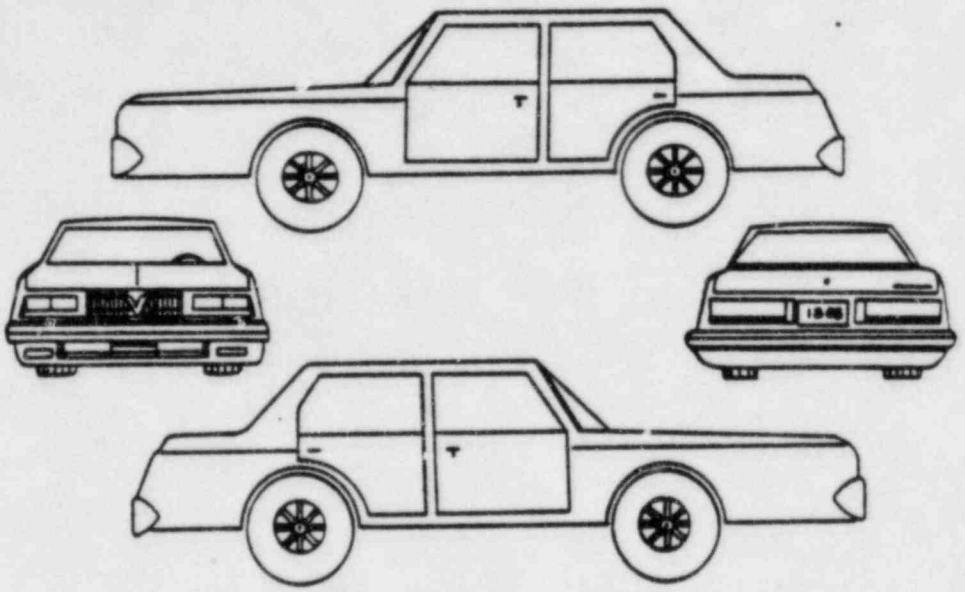
License# _____ State _____

Name of Owner _____ Phone (___) _____ (___) _____
Home Work Badge No.

Address (If Non-PECo) _____
Number Street City State Zip

INITIAL SURVEY RESULTS

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



___Clean - Authorized for Release From Site ___Contamination Detected - Release Denied

COMMENTS

_____

_____

Signature _____

POST-DECONTAMINATION SURVEY RESULTS

Decontaminated By: _____ _____ _____
Name Date Time

Decontamination Methods Used: _____

_____

_____

_____

Post-Decontamination Survey Results: _____

_____

_____

_____

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

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

_____

_____

Signature _____

RETURN COMPLETED FORMS TO VEHICLE AND EVACUEE GROUP LEADER

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-255 VEHICLE DECONTAMINATION

1.0 PURPOSE

The purpose of this procedure is to establish provisions for decontamination of vehicles evacuated from the site to offsite assembly areas or leaving the site in support of the emergency response.

2.0 RESPONSIBILITIES

2.1 Personnel Safety Team Leader shall coordinate the needs and actions of the Vehicle and Evacuee Control Group with needs and actions of other groups of the Personnel Safety Team.

2.2 Vehicle and Evacuee Control Group Leader shall coordinate the actions of the Vehicle and Evacuee Control Group members.

2.3 Vehicle and Evacuee Control Group shall perform the duties in this procedure.

2.4 Vehicle Decontamination Group members shall perform decontamination in accordance with this procedure.

3.0 APPENDICES

None

4.0 PREREQUISITES

4.1 Vehicle decontamination activities shall not interfere with other emergency activities

5.0 SPECIAL EQUIPMENT

5.1 Assembly Area Kit (if at assembly area)

5.2 Vehicle Decontamination Kit (if at Batch Plant)

5.3 Portable Radio (1/Team)

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure shall be implemented whenever a vehicle has been identified to be contaminated (a >100 cpm above background as determined with an E-140N equipped with an HP-210/HP-260 probe or equivalent) and the vehicle is authorized by the Emergency Director or by procedures for release to the owner or for emergency use.

8.0 PRECAUTIONS

8.1 Decontamination of vehicles shall be second in priority to decontamination of personnel and impounding of the vehicles.

8.2 Alpha contamination should be considered whenever there is reactor fuel degradation.

8.3 Dry methods of decontamination shall be the method of choice. First priority of decontamination shall be to those vehicles needed to support the emergency response for which dry methods will be effective.

9.0 PROCEDURE

9.1 Actions

9.1.1 Vehicle and Evacuee Control Group Leader shall:

9.1.1.1 Determine manpower needs and availability based on the number of vehicles to be decontaminated and their location and obtain Personnel Safety Team Leader's concurrence.

9.1.1.2 Select one or both of the following decontamination areas:

Offsite Assembly Area for evacuee vehicles (Limerick Airport or Cromby Station)

Batch Plant for onsite vehicles

9.1.1.3 If the Batch Plant is to be used for vehicle decontamination:

Contact the Personnel Safety Team Leader in the TSC and request that a Health Physics Technician be dispatched to the TSC;

Contact the PSTL and request that the Fire and Damage Team Leader provide for the dispatch of personnel with vehicle to the TSC.

9.1.1.4 Upon arrival of HP Technician(s), appoint a Group Leader.

9.1.1.5 Instruct the group members to implement section 9.1.3 of this procedure.

9.1.2 Vehicle Decontamination Team - Batch Plant shall:

9.1.2.1 Obtain a Vehicle Decontamination Kit from the TSC Emergency Equipment Storage Closet.

9.1.2.2 Perform an inventory of the equipment in the kits by comparing contents with the inventory lists contained in the respective kits.

9.1.2.3 Perform battery and source checks on all instrumentation.

9.1.2.4 Report any missing items or inoperable equipment to the Group Leader.

9.1.2.5 Inform Group Leader when ready to depart for the Batch Plant.

9.1.2.6 Upon the direction of the Group Leader, proceed to the designated decontamination area.

IF VEHICLE DECONTAMINATION IS TO BE PERFORMED AT THE ASSEMBLY AREA, START WITH 9.1.2.7 (PER EP-254)

9.1.2.7 Upon arrival at the decontamination area:

a. Set up a holding area for vehicles that cannot be decontaminated after several attempts.

b. Set up a designated clean area for checking vehicles once decontamination is completed.

9.1.2.8 Decontaminate vehicles using the following techniques:

a. Wipe down hard, smooth surfaces with dry masslinn cloth.

b. Vacuum dry, irregular porus surfaces.

c. Wipe down vehicle with damp masslinn cloth.

USE WATER SPARINGLY AND ONLY WITH APPROVAL OF THE PERSONNEL SAFETY TEAM LEADER.

9.1.2.9 After the initial decontamination, the Health Physics Technician shall resurvey the vehicle per EP-254 and record post-decontamination survey results on the copy of Vehicle Survey and Decontamination Report (EP-254-1) accompanying the vehicle.

9.1.2.10 Vehicles meeting the release criteria of EP-254 may be released to the owner, if present. If owner is not present, move vehicle to clean holding area.

9.1.2.11 If vehicle is still contaminated, return it to the contaminated holding area for further decontamination at a later time.

9.1.2.12 When decontamination operations are complete, return completed forms to the Vehicle and Evacuee Control Group Leader in the TSC.

9.2 Follow-Up

9.2.1 Vehicle Decontamination Team shall:

9.2.1.1 When all vehicles have been decontaminated and the team is no longer needed, monitor the area, yourselves, your equipment and vehicle, and post any areas in accordance with HP-215.

9.2.1.2 Deliver contaminated rags and other materials to the radwaste facility.

9.2.1.3 Return to the TSC, or to the EOF if the TSC is inaccessable.

9.2.1.4 Upon return to the TSC, deliver Vehicle Survey and Decontamination Reports to the Group Leader.

9.2.1.5 Transfer personnel survey and decontamination records to the Dosimetry, Bioassay and Respiratory Protection Group Leader for any needed exposure evaluations and record maintenance.

9.2.2 Vehicle and Evacuee Control Group Leader shall:

9.2.2.1 Using completed Vehicle Survey and Decontamination Reports (EP-254-1), contact owners and inform them where and when they may pick up their vehicle.

9.2.2.2 Retain all survey and decontamination records.

10.0 REFERENCES

10.1 EP-254 - Vehicle and Evacuee Control Group

10.3 HP-215 - Posting of Radiologically Controlled Areas

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-260 FIRE AND DAMAGE TEAM ACTIVATION

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the actions required to activate the Fire and Damage Team, and the Fire Fighting Group.

2.0 RESPONSIBILITIES

2.1 The Maintenance Shift Assistant Foreman shall assume the role of Interim Fire and Damage Team Leader and perform the necessary steps in this procedure.

2.2 The Engineer - Maintenance or designated alternate shall assume the role of Fire and Damage Team Leader, relieve the Interim Team Leader, and perform the necessary steps in this procedure.

2.3 A Shift Supervisor shall assume the role of the Fire Fighting Group Leader and combat the fire in accordance with the Limerick Generating Station (LGS) Fire Fighting Procedures.

3.0 APPENDICES

3.1 EP-260-1 Emergency Exposure Guidelines

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

7.0 ACTION LEVEL

7.1 The Fire and Damage Team will be activated whenever the (Interim) Emergency Director deems their services necessary.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-260-1

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Shift Supervisor shall:

9.1.1.1 Report to scene of fire or as otherwise directed.

9.1.1.2 Assume role of Fire Fighting Group Leader.

9.1.1.3 Direct fire fighting activities in accordance with the LGS Fire Fighting Procedures.

9.1.1.4 Periodically inform the Control Room on status of the fire.

REPORTS SHOULD BE MADE ABOUT EVERY 15 MINUTES.

9.1.1.5 Request additional personnel and or equipment as necessary from (Interim) Fire and Damage Team Leader.

9.1.1.6 Request Health Physics personnel as necessary.

9.1.1.7 Inform group members on plant status and significant radiological problems.

9.1.2 The Maintenance Shift Assistant Foreman shall:

9.1.2.1 Report to the Control Room or as otherwise directed.

9.1.2.2 Assume the role of the Interim Fire and Damage Team Leader.

AT ANY TIME DURING THIS PROCEDURE THE INTERIM FIRE AND DAMAGE TEAM LEADER MAY BE RELIEVED BY THE FIRE AND DAMAGE TEAM LEADER.

9.1.2.3 Assist the Fire Fighting Group in combating the fire with necessary personnel and equipment.

9.1.2.4 If damage repair group is needed, notify the Supervisor, Maintenance or designated alternate to activate the Damage Repair Group in accordance with EP-261.

9.1.2.5 Keep Control Room and (Interim) Emergency Director informed of Fire and Damage Team status.

9.1.2.6 Request additional personnel as necessary using EP-276, Fire and Damage Team Phone List.

9.2 FOLLOW UP

9.2.1 Fire and Damage Team Leader shall:

9.2.1.1 Report to TSC or as otherwise directed.

9.2.1.2 Communicate and discuss situation with (Interim) Emergency Director and with Interim Fire and Damage Team Leader.

9.2.1.3 Relieve the Interim Team Leader when fully cognizant of the situation.

ENSURE THAT GROUP LEADERS ARE INFORMED OF NEW TEAM LEADER AND COMMAND LOCATION.

9.2.1.4 Activate the Fire Fighting Group by directing the Shift Supervisor to implement section 9.1.1.1 of this procedure (if necessary).

9.2.1.5 Activate the Damage Repair Group (if necessary) as follows:

Notify the Supervisor, Maintenance or designated alternate to activate the Damage Repair Group in accordance with EP-261, Damage Repair Group.

9.2.1.6 Update (Interim) Emergency Director on status of team activities.

In cases of fire, make update report at least every 15 minutes.

9.2.1.7 Request additional site personnel and equipment from (Interim) Emergency Director as required.

9.2.1.8 Requests outside fire assistance from the (Interim) Emergency Director as required.

9.2.1.9 Re-assess the situation periodically and make appropriate reports and adjustments.

9.2.1.10 Have personnel radiation exposures monitored and request Emergency Exposure authorization from the (Interim) Emergency Director as necessary.

9.2.1.11 Debrief all involved participants to complete an accurate report when team activities have been completed.

10.0 References

10.1 Limerick Generating Station Emergency Plan

10.2 SE-8 - Fire on-site - General Fire Fighting Procedure

10.3 EP-261 - Damage Repair Group.

10.4 EP-276 - Fire and Damage Team Phone List

APPENDIX EP-260-1

Emergency Exposure Guidelines

Function	Projected Whole Body Dose	Thyroid Dose	Authorized By
1. Life Saving and Reduction of Injury	75 rem*	375 rem	(Interim) Emergency** Director
2. Operation of Equipment to Mitigate an Emergency	25 rem*	125 rem	(Interim) Emergency** Director
3. Protection of Health and Safety of the Public	5 rem	25 rem	(Interim) Emergency** Director
4. Other Emergency Activities	10 CFR 20 limits	10 CFR 20 limits	(Interim) 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

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-261 DAMAGE REPAIR GROUP

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the actions of the Damage Repair Group.

2.0 RESPONSIBILITIES

2.1 The (Interim) Fire and Damage Team Leader shall perform the necessary steps in this procedure.

2.2 The Supervisor, Maintenance or designated alternate shall assume the role of the Damage Repair Group Leader when directed and perform the necessary steps in this procedure.

3.0 APPENDICES

3.1 EP-261-1 Emergency Exposure Guidelines

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 The Damage Repair Group shall be activated whenever the (Interim) Emergency Director or (Interim) Fire and Damage Team Leader deems their services necessary.

8.0 PRECAUTIONS

8.1 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-261-1 Emergency Exposure Guidelines.

8.2 Continuous coverage by Health Physics Technician may substitute for the Radiation Work Permit.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 (Interim) Fire and Damage Team Leader shall:

9.1.1.1 Notify the Supervisor, Maintenance or designated alternate to activate the Damage Repair Group using EP-276, Fire and Damage Team Phone List.

9.1.1.2 Direct and coordinate emergency repair operations as necessary.

9.1.1.3 Provide the Damage Repair Group with periodic plant status changes including significant radiation and contamination problems which may affect the functions of the group.

9.1.1.4 Periodically update the (Interim) Emergency Director of the status of the repair work. Ensure that the plant status board in the TSC is updated as necessary.

9.1.1.5 Provide additional personnel support if necessary. Use EP-276 Fire and Damage Team Phone List for additional qualified maintenance personnel.

9.1.2 Damage Repair Group Leader shall:

9.1.2.1 Report to the maintenance office or as otherwise directed.

9.1.2.2 Assemble the Damage Repair Group from available auxiliary operators. Call in additional members using EP-276, Fire and Damage Control Team Phone List. Contact the Plant Survey Group Leader for a Pre-Entry Evaluation and HP coverage.

9.1.2.3 Brief the group members on the situation and explain the actions that need to be performed.

9.1.2.4 Obtain necessary keys for the group.

9.1.2.5 Review applicable maintenance procedures and advise group members.

9.1.2.6 Provide information to the group on equipment and supplies.

9.1.2.7 Request system blocking as needed from the OSC Coordinator.

9.1.2.8 If necessary, request additional personnel or equipment from the (Interim) Fire and Damage Team Leader.

9.1.2.9 Periodically update the (Interim) Fire and Damage Team Leader of the status of the repair work.

9.1.3 Damage Repair Group Members shall:

9.1.3.1 Report to the maintenance office or as otherwise directed.

9.1.3.2 Follow the directions of the group leader.

9.1.3.3 Assemble necessary equipment (i.e., tools, parts, etc. for the pending operations) from locations on or off-site designated by the Damage Repair Group Leader. The Operations Support Center (on 269' elevation Turbine Enclosure) should be contacted for radiation monitoring equipment needed to support the repair effort.

9.1.3.4 Keep the Damage Repair Group Leader updated as to current status of emergency repair efforts.

9.1.3.5 The HP Technician should obtain the necessary equipment from the OSC. When the group is conducting operations, the HP Technician shall review the Emergency Radiation Work Permit (ERWP) in accordance with EP-401, Entry for Emergency Repair and Operations.

9.2.1 Damage Repair Group Leader shall:

9.2.1.1 Conduct a debriefing with the group members and provide the information to Fire and Damage Team Leader.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

10.2 EP-260 - Fire and Damage Team Activation

10.3 EP-401 - Entry for Emergency Repair, Operations, and Search and Rescue.

10.4 EP-276 - Fire and Damage Team Phone List

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

APPENDIX EP-261-1

EMERGENCY EXPOSURE GUIDELINES

Function	Projected Whole Body Dose	Thyroid Dose	Authorized By
1. Life Saving and Reduction of Injury	75 rem*	375 rem	(Interim) Emergency** Director
2. Operation of Equipment to Mitigate an Emergency	25 rem*	125 rem	(Interim) Emergency** Director
3. Protection of Health and Safety of the Public	5 rem	25 rem	(Interim) Emergency** Director
4. Other Emergency Activities	10 CFR 20 limits	10 CFR 20 limits	(Interim) 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

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-272 PHILADELPHIA ELECTRIC COMPANY OFFICIALS

1.0 PURPOSE

The purpose of this procedure is to supply information to contact Philadelphia Electric Company officials.

2.0 RESPONSIBILITIES

2.1 A communicator shall contact the required Philadelphia Electric Company officials when directed by the Emergency Director or the Site Emergency Coordinator.

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 may be used when Philadelphia Electric Company officials are to be contacted.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 Actions

9.1.1 As necessary, the following people will be called by the communicator.

	Home Phone	Centrex
Sr. V. P. Nuclear		
V. S. Boyer Federal/State Government Liaison		
V. P. Corporate Communications		
C. Brenner Alternate Federal/State Government Liaison		
Medical Director		
W. F. Hushion, MD Emergency Medical Director		
Medical Dispensary Physician		
A. J. Cincotta, MD Alternate Emergency Medical Director		
Vice President, Elect. Production		
S. L. Daltroff Emergency Support Officer		
Manager, Electric Production-Nuclear		
M. J. Cooney Alternate Emergency Support Officer		

	Home Phone	Centrex
Superintendent - Nuclear Generation Division		
W. T. Ullrich Site Emergency Coordinator		
Superintendent - Nuclear Services		
R. H. Logue Alternate Site Emergency Coordinator		
Superintendent - Peach Bottom		
R. S. Fleischmann II Alternate Site Emergency Coordinator		
Vice-President - Engineering & Research Department		
J. S. Kemper Corporate Spokesman		
Chief Mechanical Engineer		
E. C. Kistner Design & Construction Support Officer		
Chief Electrical Engineer		
G. N. DeCowsky Alternate Design Construction Support Officer		
Assistant Manager - Energy Information and Ed.		
M. D. McCormick EOF Liason - Corporate Communications		

	Home Phone	Centrex
Manager - Public Information		
R. L. Harper Emergency News Center Coordinator		
Manager of Claims Security		
J. D. McGoldrick Emergency Security Officer		
Director of Security		
R. J. Deneen Alternate Emergency Security Officer		
Engineer in Charge Chemistry Section		
G. H. Assenheimer		
General Superintendent of Maintenance		
M. J. McCormick Maintenance Coordinator		
Manager, Transmission & Distribution		
A. G. Mikalauskas T. & D. Support Coordinator		
Assistant to V. P. T&D		
H. J. Why Alternate T&D Support Coordinator		
Superintendent Electric Protection Quality Assurance		
R. H. Moore QA/QC Coordinator		

	Home Phone	Centrex
Engineer-In-Charge E&R QA		
P. K. Pavlides Alternate QA/QC Coordinator		
Administration (Electric Production)		
G. Conover, Jr.		
Manager Corporate Planning And Analysis		
J. M. Friderichs Administration and Logistics Manager		
Manager Rate Division		
R. C. Williams Alternate Administration and Logistics Manager		
Manager T&D Services		
J. V. Mannion Alternate Administration and Logistics Manager		
Manager Area Development		
J. C. O'Brien Support Personnel Accomodations Coordinator		
Supervisor Sales Analysis		
J. J. Bevan (Tech. Services) Alternate Support Personnel Accomodations Coordinator		

	Home Phone	Centrex
Engineer-In-Charge Licensing		
W. M. Alden Support Personnel Procurement Coordinator		
Engineer Licensing		
R. C. Brown Alternate Support Personnel Procurement Coordinator		
Manager Purchasing		
R. P. Winitsky Purchasing Coordinator		
Supervising Buyer		
R. A. Nones Alternate Purchasing Coordinator		
General Supt. Trans. Division		
E. L. Dold Transportation Coordinator		
Supt. Trans. Division		
R. T. Melvin Alternate Transportation Coordinator		
General Supt. Office Systems and Communications		
B. C. Czarkowski Communications Equipment Coordinator		

	Home Phone	Centrex
Supt. Office Systems and Communications		
C. W. Aldred Alternate Communications Equipment Coordinator		
General Supt. Stores Division		
T. C. Stapleford Stores Division Coordinator		
Supt. Stores Division		
H. A. Connor Alternate Stores Division Coordinator		
Engineer-In-Charge Power Plant Services		
S. J. Kowalski Radwaste Coordinator		
Supr. Engineer Power Plant Services		
A. C. Caprara Alternate Radwaste Coordinator		
Chief Design Engineer		
J. W. Siefert Engineering Design Coordinator		
Assistant Chief Design Engineer		
A. R. Lewis Alternate Engineering Design Coordinator		
Engineer-In-Charge Civil Engineering		
D. Marano Civil Engineering Coordinator		

	Home Phone	Centrex
Supv. Engineer Struct. Branch		
H. W. Vollmer Alternate Civil Engineering Coordinator		
Supv. Engineer Power Plant Control Systems Branch		
R. T. Jones I&C Coordinator		
Engineer Power Plant Control Systems Branch		
W. W. Bowers Alternate I&C Coordinator		
Engineer-In-Charge Nuclear and Env. Section		
L. B. Pyrih Licensing Coordinator		
Supervising Engineer Nuclear Branch		
R. A. Diederich Alternate Licensing Coordinator		
Engineer-In-Charge Power Plant Design		
J. Moskowitz Systems Engineering Coordinator - Mechanical		
Sr. Engineer Power Plant Design		
T. E. Shannon Alternate Systems Engineering Coordinator - Mechanical		

	Home Phone	Centrex
Engineer-In-Charge Station Engineering Section		
J. J. Ferencsik Systems Engineering Coordinator - Electrical		
Supervising Engineer Station Engineering Section		
J. Lees Alternate Systems Engineering Coordinator - Electrical		
General Supt. Construction		
J. G. Weisheit Construction Coordinator		
Asst. General Supt. Construction		
T. P. Gotzis Alternate Construction Coordinator		
Engineer-In-Charge Industrial Section		
J. H. Long Ventilation Coordinator		
Supervising Engineer-Building Facilities Branch		
G. M. Morley Alternate Ventilation Coordinator		

10.0 REFERENCES

None

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. Wiley		
9.1.1.9	ADMINISTRATIVE ENGINEER:		
	J. A. Basilio		

		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. Truax		
9.1.2.5	W. Barnshaw		
9.1.2.6	E. Cosgrove		

		Home	Work
9.1.3	SHIFT SUPERVISORS:		
9.1.3.1	G. Paton		
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

PHILADELPHIA ELECTRIC COMPANY
ELECTRIC PRODUCTION DEPARTMENT
LIMERICK GENERATING STATION

3843010680

May 14, 1984

FROM: P. J. Duca

TO: G. M. Leitch

SUBJECT: CANCELLATION MEMORANDUM FOR EP-275
Reference: Limerick Administrative Procedure A-21

EP-275 should be cancelled because the Radiation Protection Team was eliminated from the organization.

P. J. Duca 05/14/84

- -

FROM: G. M. Leitch

TO: Holders of EP Procedures

This Cancellation Memorandum has been reviewed by PORC and is approved. All holders of EP procedures will be contacted regarding destruction of EP-275. In accordance with Administrative Procedure A-21, procedure number EP-275 will not be re-used.

APPROVED: STATION SUPERINTENDENT

CONTROLLED COPY
VALID ONLY WHEN RED

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-276 FIRE AND DAMAGE TEAM PHONE LIST

1.0 PURPOSE

The purpose of this procedure is to provide guidelines and information to call in Fire and Damage Team Members.

2.0 RESPONSIBILITIES

2.1 The Fire and Damage Team Leader shall be responsible to call in group members.

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 the Fire and Damage Team is activated or when additional personnel are needed.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 Actions

9.1.1 The Fire and Damage Team Leader shall call people from the following list until appropriate positions are filled.

9.1.2 FIRE AND DAMAGE TEAM LEADER:

	HOME	WORK
ENGINEER - MAINTENANCE		
J. B. Cotton		
ASSISTANT ENGINEER - MAINTENANCE		
G. Paptzun		
MAINTENANCE SHIFT ASSISTANT FOREMAN		
Rotating Shift Assignment		

Name	(24 Hour Clock Time)

9.1.3 FIRE FIGHTING GROUP LEADER
-(FIRE BRIGADE LEADER)
SHIFT SUPERVISOR

Contact Control Room at

9.1.4 FIRE FIGHTING GROUP MEMBER
- FIRE BRIGADE

Fire Fighting Group Members,
Contact Shift Clerk in
Control Room

9.1.5 DAMAGE REPAIR GROUP LEADERS:

SUPERVISING ENGINEER, MAINTENANCE

R. Costagliola

SUPERVISOR, MAINTENANCE (Alternate)

T. O'Mara

9.1.6 DAMAGE REPAIR GROUP MEMBERS

J. Cook

J. Perkins

R. Whitbeck

D. Roller

R. Scott

R. Black

S. Dennett

9.1.7 FIRE PROTECTION ASSISTANT:

A. Mount

10.0 REFERENCES

None

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-277 PERSONNEL SAFETY TEAM PHONE LIST

1.0 PURPOSE

The purpose of this procedure is to provide guidelines and information to call in Personnel Safety Team Members.

2.0 RESPONSIBILITIES

The Personnel Safety Team Leader shall be responsible to call in team members.

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 the Personnel Safety Team is activated or when additional people are needed.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Personnel Safety Team Leader shall call people from the following list until appropriate positions are filled.

9.1.2 Personnel Safety Team Leader:

	Home	Work
R.W. Dubiel		
R. Titolo		

9.1.3 Plant Survey Group Leader

	Home
T. Mscisz	
S. Baker	

9.1.3.1 Plant Survey Group Members

Health Physics Technicians listed in 9.1.8.

9.1.4 Personnel Dosimetry, Bioassay, and Respiratory Protection Group Leader

	Home	Work
G. Murphy		
(Alt.) F. Molohon		

9.1.4.1 Personnel Dosimetry, Bioassay, and Respiratory Protection Group Members

Any Health Physics Technicians listed in 9.1.8, (two required).

9.1.5 Vehicle and Evacuee Control Group Leader

	Home	Work
C. Smith		
(Alt.) J. Scone		

9.1.5.1 Vehicle and Evacuee Control Group Members

Health Physics Technicians listed in 9.1.8.

9.1.6 Vehicle Decontamination Group Members

Any Health Physics Technicians listed in 9.1.8, as needed.

9.1.7 Search and Rescue/First Aid Group Leader

	Home	Work
J. Krais		
(Alt.) R. Dickenson		

9.1.7.1 Search and Rescue/First Aid Group Members

Health Physics Technicians listed in 9.1.8.

9.1.8 Health Physics Technicians

	Home	Work
Baker, S.		
Fay, D.		
Gordon, K.		
Gosnay, R.		
Gruber, J.		
Hines, D.		
Parducci, A.		

Assistant Technicians

Bilinski, M.		
Chobot, J.		
Engle, R.		
Gerhart, J.		
Golden, E.		
Hass, D.		
Kanaskie, J.		
Landis, B.		

Assistant Technicians (Cont'd)

Nugent, D.
Red, C.
Reyes, A.
Root, N.
Strubilla, W.
Sweisford, S.

9.1.9 Contract Personnel

Dailey, R.
Engle, M. L.
Gerry, M. E.
Mahanes, B. M.
Muscarella, J. E.
Smith, B. G.
Smith, W.
Wiecjorek, J.

10.0 REFERENCES

None

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-279 EMERGENCY OPERATIONS FACILITY (EOF) GROUP PHONE LIST

1.0 PURPOSE

The purpose of this procedure is to provide guidelines and information to call in the EOF Staff.

2.0 RESPONSIBILITIES

2.1 The Communicator shall be responsible to call in group members as needed.

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 the EOF is activated or additional personnel are needed.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The communicator shall call people from the following list until appropriate positions are filled.

9.1.2 Site Emergency Coordinator

W. T. Ullrich
Supt. Nuc. Gen.

Alt. R. H. Logue
Supt. Nuc. Serv.

Alt.
R. S. Fleishmann II
Supt. PBAPS

9.1.3 Health Physics and Chemistry Coordinator

W. J. Knapp
Dir. Rad. Prot.

Alt. J. Fongheiser
Phys. Rad. Prot.

9.1.4 Planning and Scheduling Coordinator

J. W. Spencer
Startup Director

J. P. Law
TRB Chairman

9.1.5 Procedures Support Coordinator

W. C. Birely
Sr. Eng. Licensing

C. R. Endriss
Regulatory Engineer

9.1.6	Dose Assessment Team Leader
	G. Murphy HP Technical Support
	Alt. K. Taylor Sr. Physicist Corporate
9.1.7	EOF Mechanical Engineering Liaison
	J. T. Robb
	C. Weidersum
9.1.8	EOF Electrical Engineering Liaison
	W. C. Ramer Field Engineer
	Alt. A. W. Jones Field Engineer
9.1.9	EOF Liaison - Corporate Communications
	M. D. McCormick Asst. Mgr. Energy Education and Information
	Alt. R. H. Geiger Sr. Energy Info. Rep.
9.1.10	Emergency Prep. Coor.
	R. A. Kankus Dir. Em. Prep
	Alt. K. W. Schlecker Physicist Emer. Prep
	Mike Mezias
9.1.11	Communicators and Status Board Keepers (5 Minimum)
	K. Cenci W. Lewis R. Degregorio J. Dixon J. Fitzgerald R. Hawthorne J. Hopkins M. Horton

Communicators and Status Board Keepers (Cont'd

R. Kovach
Todd Moore
J. Stott
Scott Wagner
S. Weik

9.1.12 Data Display Operators

M. McCormick

10.0 REFERENCES

None

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-280 TECHNICAL SUPPORT CENTER PHONE LIST

1.0 PURPOSE

The purpose of this procedure is to provide guidelines and information to call in Technical Support Center (TSC) personnel.

2.0 RESPONSIBILITIES

2.1 The Emergency Director shall be responsible to have group members notified.

2.2 The Communicator shall call in TSC personnel.

3.0 APPENDICES

None

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 The procedure may be used when:

7.1.1 The Technical Support Center is to be activated.

7.1.2 Additional Technical Support Group people must be called in.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Communicator shall call people from the following list until appropriate positions are filled.

9.1.2 EMERGENCY DIRECTOR (ONE)

	Home	Work
Station Superintendent G. M. Leitch		
Assistant Station Superintendent J. F. Franz		

9.1.3 TECHNICAL SUPPORT GROUP PERSONNEL (FOUR)

	Home	Work
Technical Engineer P. J. Duca		
Performance Engineer L. A. Hopkins		
- V. Cwietniewicz		
I & C Engineer G. Rainey		

		Home	Work
	Reactor Engineer K. Hunt		
	- K. Kemper		
	- E. Callan		
	- J. Armstrong		
	- M. Gallagher		
	- R. Alejnikov		
	- J. Muntz		
	- R. Cyhan		
	- B. Mandik		
9.1.4	PERSONNEL SAFETY TEAM LEADER (ONE)		
		Home	Work
	Sr. Health Physicist R. W. Dubiel		
	Applied Health Physicist R. J. Titolo		
9.1.5	FIRE and DAMAGE TEAM LEADER (ONE)		
		Home	Work
	Engineer - Maintenance J. Cotton		
	G. Paptzun		

9.1.6 SECURITY TEAM LEADER (1)

	Home	Work
Security Administrative Assistant P. Supplee		
Security Coordinator O. Burwell		
Site Captain - Operations Security (Protected Area) D. Ross		

9.1.7 DOSE ASSESSMENT TEAM LEADER (ONE)

	Home	Work
Health Physicist G. Murphy		
Alt. Sr. Physicist Corp. K. Taylor		

9.1.8 CHEMISTRY SAMPLING AND ANALYSIS TEAM LEADER (ONE)

	Home	Work
Sr. Chemist J. S. Wiley		
Supervisory Chemist J. Sabados		

9.1.9 COMMUNICATORS AND STATUS BOARD KEEPERS (FIVE MINIMUM)

Lead Communicators

	Home	Work
D. Feaster		
W. Winters		

		E. Brown
		M. Davis
		J. Dolan
		M. Eyre
		G. Hutchinson
		J. Kanute
		D. Kelsey
		L. Marabella
		K. Mastrangelo
		T. Moore (Tim)
		D. Shaner
		T. Shea
		J. Tyler
		K. Walsh
		R. Weidner
	9.1.10	DATA DISPLAY OPERATOR (TWO)
		Home Work
	(ERFDS)	E. Kabak

10.0 REFERENCES

None

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-282 GOVERNMENT AND EMERGENCY MANAGEMENT AGENCIES

1.0 PURPOSE

The purpose of this procedure is to supply pertinent information to government and emergency management agencies.

2.0 RESPONSIBILITIES

2.1 The (Interim) Emergency Director or the Site Emergency Coordinator shall be responsible for the decision to implement this procedure.

2.2 The Communicator shall be responsible to notify the required agencies.

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 may be used when a government or emergency management agency must be contacted.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Communicator shall be directed to contact appropriate agencies by the Emergency Director or Site Emergency Coordinator using the following list.

		Address	Phone
9.1.2	U. S. Nuclear Regulatory Commission	Region I 631 Park Ave. King of Prussia, PA 19406	
9.1.2.1	Office of Inspection and Enforcement		
	Region 1	631 Park Avenue King of Prussia, PA 19406	
9.1.2.2	Office of Nuclear Reactor Regulation	Washington, DC 20555	
	Harold Denton (Director)		
9.1.3	Dept. of Energy Radiological Program	Brookhaven Nat. Lab Upton, NY 11973	

		Address	Phone
9.1.4	Environmental Protection Agency	Curtis Building 6th & Walnut Sts. Philadelphia, PA 19106	
9.1.5	Department of Transportation 3rd U.S. Coast Guard District	Governors Island New York, NY 10004	
9.1.6	Department of Agriculture Chief, Division of Milk Sanitation W. Fouse	Dept of Agriculture Bureau of Food & Chemistry 2301 N. Cameron St Harrisburg, PA 17110-9408	
9.1.7	Department of Energy Rep.		
9.1.8	Pennsylvania Emergency Management Duty Officer	Room B-151 Transportation And Safety Bldg. (P.O. Box 332 1-17105) Harrisburg, Pa 17120	
9.1.9	Department of Environmental Resources	Harrisburg, PA	
9.1.9.1	Office of Public Information Ellen Sprinkle Director	Room B-102 Transportation & Safety Bldg. Harrisburg, PA 17120 Harrisburg, PA	
9.1.9.2	Regional Office	1875 New Hope Norristown, PA	

		Address	Phone
9.1.10	Bureau of Radiation Protection, Dept. of Env. Resources	P.O. Box 2063 Harrisburg, PA 17120	
9.1.10.1	Personnel & Home Phones T. Gerusky W. Dornsife M. Reilley D. McDonald		
9.1.11	Pennsylvania State Health Center	21. S. Brown St. P.O. Box 1012 Lewistown, PA 17044	
9.1.12	State Police Barracks (Limerick)	Rt. 422 & Lewis Rd. Limerick, PA	
9.1.13	Delaware Civil Defense Agency	State Police & Civil Defense Emergency Management Section	
9.1.14	New Jersey Civil Defense Agency	P.O. Box 7068 West Trenton N.J., 08625	
9.1.15	Maryland Civil Defense Agency	Sudbrook Lane Reisterstown Rd. Pikesville, MD 21208	
9.1.16	Montgomery County Dept. of Emergency Services	100 Wilson Blvd. Eagleville, PA 19403	
9.1.17	Chester County Dept. of Emergency Services	14 E. Biddle St. West Chester, PA 19380	

		Address	Phone
9.1.18	Berks County Dept. of Emergency Services	Agricultural Center, RD-1 Leesport, PA 19533	

10.0 REFERENCES

None

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-284 COMPANY CONSULTANTS AND CONTRACTORS

1.0 PURPOSE

The purpose of this procedure is to provide information to contact PECo consultants and contractors.

2.0 RESPONSIBILITIES

2.1 The Communicator shall be responsible to contact contractor or consultants as their services are needed.

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 may be used when it is necessary to contact a company consultant or contractor.

8.0 PRECAUTIONS

8.1 Requests for consultants or contractors shall be approved by the Site Emergency Coordinator or Emergency Director.

9.0 PROCEDURE

9.1 Actions

9.1.1 The Communicator shall contact the needed contractor or consultant by using the following list.

		Address	Phone
9.1.2	Chemistry Contractor (Later)		
9.1.3	Health Physics Contractor(s) (Later)		
9.1.4	General Electric Company, Emergency Support Program	Nuclear Energy Business Operations Services Division 175 Curtner Ave. San Jose, CA 95125 Working Hours: Manager of BWR Product Service Off Hours: Answering Service for immediate call back from GE	(24 hour emergency number)
9.1.5	Underwater Technics, Inc. Mr. D. R. Stith Mr. R. T. Bannon	2735 Buren Ave. Camden, NJ 08105 (24 hour emergency numbers)	

		Address	Phone
9.1.6	Radiation Management Corporation Suite 400 Science Ctr. Bldg. 2 (Dr. Roger E. Linneman)	3508 Market St. Philadelphia, PA 19104	
9.1.7	Yoh, Inc. (Security Services)	On Site	
		also: 828 Oak St. Royersford, PA 19468	
		also: 1600 Market St. Philadelphia, PA 19103	
9.1.8	Institute of Nuclear Power Operations (INPO)	1100 Circle 75 Parkway Suite 1500 Atlanta, GA 30339	
9.1.9	Babcock and Wilcox Lynchburg Research Ctr.		
9.1.10	Bechtel Power Corporation		

	Address	Phone
9.1.11	Pooled Inventory Management (PIMS)	
	Program Manager Bruce McClintic	(Telecopier) (home)
	Alternate Jim G. Hogue	(Telecopier) (home)
	off hours	
	Alternate Milind Korde	(work)

10.0 REFERENCES

None

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-287 NEARBY PUBLIC AND INDUSTRIAL USERS OF DOWNSTREAM WATER

1.0 PURPOSE

The purpose of this procedure is to provide information to contact downstream users of the Schuylkill River.

2.0 RESPONSIBILITIES

2.1 The Pennsylvania Department of Environmental Resources shall be responsible for the notification of the downstream domestic water users, unless specifically delegated to PECO.

2.2 The (Interim) Emergency Director or Site Emergency Coordinator shall direct the implementation of this procedure.

2.3 The Communicator, when directed by the (Interim) Emergency Director or Site Emergency Coordinator, shall be responsible to contact the downstream users.

3.0 APPENDICES

None

4.0 PREREQUISITES

4.1 EP-312, Radioactive Liquid Release has been completed.

4.2 The Pennsylvania Department of Environmental Resources has concurred with the notification of the downstream domestic water users by PECO.

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 This procedure can be used when there has been a release to the Schuylkill River.

8.0 PRECAUTIONS

8.1 Ensure that the Pennsylvania Department of Environmental Resources has concurred with notification of downstream water users by PECO.

8.2 Ensure that the (Interim) Emergency Director or Site Emergency Coordinator has directed implementation of this procedure.

9.0 PROCEDURE

9.1 Actions

9.1.1 The Communicator shall contact the downstream users using the following list and inform each of the information, listed below:

9.1.1.1 That there has been a radioactive liquid release into the river.

9.1.1.2 Estimated Transit Time to their intake (for water companies only).

9.1.1.3 Suggest that they close their intake until further notice.

ESTIMATED TRANSIT TIME FOR WATER COMPANIES CAN BE OBTAINED FROM EP-312, RADIOACTIVE LIQUID RELEASE.

9.1.2	Downstream Users
9.1.2.1	Citizens Utility Home Water Co.
9.1.2.2	Philadelphia Electric Co. Cromby Generating Station
9.1.2.3	Philadelphia Suburban Water Co. (Office) after 5 pm (Plant)
9.1.2.4	Phoenixville Water Authority
9.1.2.5	Lukens Steel Co. Day 24 hrs.
9.1.2.6	Phoenix Steel Corp. Phoenixville Plant
9.1.2.7	Synthane - Taylor Corp.
9.1.2.8	Nicolet Industries, Inc. Norristown Plant
9.1.2.9	Keystone Water Co., (Norristown District)
9.1.2.10	City of Philadelphia, Queen Lane Plant
9.1.2.11	City of Philadelphia, Belmont Plant
9.1.2.12	Container Corp. of America Philadelphia Plant, Mill Dr.
9.1.2.13	Connelly Container, Inc. Philadelphia Plant

9.2 Follow-Up

9.2.1 The Communicator shall:

9.2.1.1 When the (Interim) Emergency Director or Site Emergency Coordinator and Pennsylvania Department of Environmental Resources have determined that the concentration of radioactive material in the river is at or below acceptable levels, contact the downstream users and inform them of this information.

10.0 REFERENCES

10.1 EP-312 Radioactive Liquid Release.

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-291 STAFFING AUGMENTATION

1.0 PURPOSE

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

2.0 RESPONSIBILITIES

2.1 The shift clerk or other assigned person shall perform the following procedure.

3.0 APPENDICES

None

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented at an Alert, a Site Emergency or a General Emergency.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Shift Clerk or other assigned person shall:

9.1.1.1 Ask the (Interim) Emergency Director if the TSC and EOF or the TSC only is to be activated so this information can be given to the Dose Assessment Team Leader and Communicators.

9.1.1.2 Contact in sequence the personnel listed in Section 9.1.2.

9.1.1.3 Inform each person contacted of the event classification and that they are to respond to their assigned location. If the person is unable to respond, go to the next person on the list.

9.1.1.4 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.

9.1.1.5 Inform (Interim) Emergency Director of results including discrepancies.

9.1.2 Personnel to be contacted are:

9.1.2.1 SHIFT I&C TECHNICIAN

Communicator shall request that the TSC be activated. (Shift I&C Technician ext. 2470 or 2471)

I&C Technician	Time	By

9.1.2.2 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	876-3547 or 2000			
Asst. Station Supt. J. F. Franz	323-0127 or 2001			

9.1.2.3 OPERATIONS ENGINEER

		Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Operations Eng. J. Doering	495-7415 or 2100			
J. Armstrong	323-6536			

9.1.2.4 PERSONNEL SAFETY TEAM LEADER (ONE)

Communicator shall request call in of Personnel Safety Team Members.

		Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Senior Health Physicist R. W. Dubiel	717-653-2205 or 2200			
Applied HP R. Titolo	296-7855 or 2299			

9.1.2.5 DOSE ASSESSMENT TEAM LEADER (ONE)

Communicator shall request to call in team, and to report to the TSC or EOF as determined by Step 9.1.1.1.

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Technical Support Health Physicist G. Murphy	687-2857 or 2210		
Sr. Physicist Corp. K. H. Taylor	1-367-5495 or 2290		

9.1.2.6 SHIFT MAINTENANCE SUB-FOREMAN

Extension 2395 or 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

9.1.2.7 TECHNICAL SUPPORT PERSONNEL (ONE)

Communicator shall request call in of Technical Support Group Members.

	Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Technical Engineer P. J. Duca	449-3638 or 2400		
Performance Engineer L. A. Hopkins V. Cwietniewicz	436-0873 or 2410 666-7322		
I&C Engineer G. R. Rainey	485-6902 or 2460		
Reactor Engineer K. W. Hunt	367-7862 or 2480		

9.1.2.8 COMMUNICATORS (ONE)

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	327-1638 or 2415			
Alternate W. Winters	327-2338 or 2413			
EOF Communicator				
K. Cenci	674-5925 or 2413			
Alternate W. Lewis	659-6661 or 2412			

9.1.2.9 CHEMISTRY SAMPLING and ANALYSIS TEAM LEADER (ONE)

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

		Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Sr. Chemist J. S. Wiley	647-3393 or 2292			
Supv.-Chemist J. Sabados	323-1246 or 2293			

9.1.2.10 FIRE AND DAMAGE TEAM LEADER (ONE)

Communicator shall request call in of Fire and Damage Team Members.

		Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Engineer Maintenance J. B. Cotton	584-9261 or 2300			
G. Paptzun	646-8260 (or 327-0383) or 2301			

9.1.2.11 SECURITY TEAM LEADER (ONE)

		Time Called	Disposition-Busy, No Ans.-Contacted	Called By
Security Administrative Assistant P. Supplee	486-0646 or 2070			
Security Coordinator O. Burwell	609-877-4403 or 2017			
Site Captain (Protected Area) D. Ross	948-8792 or 2015			

10.0 REFERENCES

10.1 NUREG 0654 Rev. 1 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-292 CHEMISTRY SAMPLING AND ANALYSIS TEAM PHONE LIST

1.0 PURPOSE

The purpose of this procedure is to provide guidelines and information for notification of the Chemistry Sampling and Analysis Team.

2.0 RESPONSIBILITIES

2.1 The Chemistry Sampling and Analysis Team Leader shall be responsible to call team members.

3.0 APPENDICES

None

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure can be used when the Chemistry Sampling and Analysis Team is activated or when additional personnel are needed.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Chemistry Sampling and Analysis Team Leader shall call in people from the following list until appropriate positions are filled.

9.1.1.1 CHEMISTRY SAMPLING AND ANALYSIS TEAM LEADER

	Home	Work
J. S. Wiley		
J. W. Sabados		
T. J. Yednock		

9.1.1.2 CHEMISTRY SAMPLING AND ANALYSIS GROUP LEADER (One)

	Home	Work
J. W. Sabados		
T. J. Yednock		
D. S. Musselman		
J. C. Effinger		

9.1.1.3 CHEMISTRY SAMPLING AND ANALYSIS GROUP MEMBERS

	Home	Work
E. W. Frick		
J. C. Effinger		
M. Wyzalek		
M. Reller		
W. Decker		
T. Williams		
R. Ullrich		

10.0 REFERENCES

None

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-294 DOSE ASSESSMENT TEAM PHONE LIST

1.0 PURPOSE

The purpose of this procedure is to provide guidelines and information to call in the Dose Assessment Team.

2.0 RESPONSIBILITIES

2.1 The Dose Assessment Team Leader shall be responsible to call in team members.

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 the Dose Assessment Team is to be activated or additional people are needed.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 Actions

9.1.1 The Dose Assessment Team Leader shall call people from the following list until appropriate positions are filled.

9.1.2 DOSE ASSESSMENT TEAM LEADER (ONE)

9.1.2.1

Name	Home Phone	Work Phone
Gary Murphy (H.P. Tech Support)		
Ken Taylor (SR. Corporate Physicist)		
Alternate K. Eldridge (HP Radwaste)		
Alternate D. M. Rombold (Physicist)		

9.1.3 DOSE ASSESSMENT GROUP MEMBERS (3 MINIMUM)

9.1.3.1

Name	Home Phone	Work Phone
F. Molohon		
L. Wells		
K. Eldridge		
D. M. Rombold		
M. J. McGuinn		
M. Christinziano		
C. Hetrick		

9.1.4 FIELD SURVEY GROUP

9.1.4.1 Field Survey Group Leader (One)

Name	Home Phone	Work Phone
Steve Taylor		
Alternate Robert Leddy		

9.1.4.2 Field Survey Group Members:

A. Health Physics Personnel

Name	Home Phone	Work Phone
R. Dailey		
M. L. Engle		
D. Fay		
M. E. Gerry		
K. Gordon		
R. Gosnay		
J. Gruber		
D. Hines		
B. M. Mahanes		
J. E. Muncarella		
B. G. Smith		
W. Smith		
J. Wiecjorek		
A. Parducci		
S. Baker		

B. Drivers

Drivers Available by Calling:

Name	Home Phone	Work Phone
R. Wiegle		
L. Perkoski		

10.0 REFERENCES

None

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-304 PARTIAL PLANT EVACUATION

1.0 PURPOSE

The purpose of this procedure is to define the actions to be performed in the event that a partial plant evacuation is required.

2.0 RESPONSIBILITIES

2.1 Personnel in affected areas requiring evacuation shall evacuate the area and notify the control room.

2.2 The (Interim) Emergency Director shall direct the partial plant evacuation by performing the appropriate steps in this procedure.

3.0 APPENDICES

None

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

6.1 An increase in the area radiation monitors or continuous air monitor indications to greater than alarm levels in two or more large operating areas.

6.2 Radiation levels greater than 100 mR/hr within two or more large operating areas which normally experience less than 10 mR/hr.

6.3 Airborne radioactivity greater than 3N8 uCi/cc for an unidentified isotope, (except for noble gas activity) or 10 MPC for identified isotopes in restricted areas in two or more large operating areas.

6.4 Release, leakage or spill of a toxic reagent such that the concentration of chemical vapors makes the areas uninhabitable in two or more large operating areas.

6.5 Other hazards such as flood or fire affecting two or more large operating areas

7.0 ACTION LEVEL

This procedure shall be implemented by the (Interim) Emergency Director when the symptoms of section 6.0 of this procedure occur. Two or more large operating areas is defined as two or more elevations in a single enclosure or one elevation in two or more enclosures.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 Actions

9.1.1 Personnel in the affected area not directly involved in controlling the hazard shall evacuate to a safe area. Notify the control room of the type and location of the hazard.

9.1.2 The (Interim) Emergency Director or Shift Supervision shall:

9.1.2.1 Upon receiving information from personnel in the field about a hazardous condition or from Control Room indications, evacuate the affected areas by making the following announcement:

"This (is) (is not) a drill. This (is) (is not) a drill. This is a Partial Plant Evacuation . Evacuate (locations of hazard) and assemble at (location of assembly area). All Other Personnel Leave The Protected Area. This (is) (is not) a drill. This (is) (is not) a drill."

9.1.2.2 If necessary, account for personnel in the affected area using means such as security computer, RWP's, etc.

9.1.2.3 If the hazard has a potential to spread to Unit 2, evacuate construction personnel by notifying Bechtel Safety , or Bechtel Security . Direct them to call for either:

PARTIAL EVACUATION - ASSEMBLY AREA
between the Main Construction Office and the Change House.

TOTAL PROJECT EVACUATION - ASSEMBLY AREAS
at the upper parking lot and Post #3.

9.2 Follow-Up

9.2.1 The (Interim) Emergency Director shall:

9.2.1.1 Evaluate the situation and if conditions worsen call for an evacuation of the site in accordance with procedure EP-305 Site Evacuation.

9.2.1.2 If the hazard can be contained and when conditions permit, perform recovery/cleanup operations in accordance with EP-401 Entry for Emergency Repair and Operations.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

10.2 NUREG 0654 Rev. 1 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

10.3 EP-110 Personnel Assembly and Accountability

10.4 EP-305 Site Evacuation

10.5 Bechtel Evacuation Procedures

10.6 EP-401 Entry for Emergency Repair and Operations

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-305 SITE EVACUATION

1.0 PURPOSE

The purpose of this procedure is to define the actions to be performed if a site evacuation is required.

2.0 RESPONSIBILITIES

2.1 The (Interim) Emergency Director shall direct the evacuation of the site by performing the necessary steps in this procedure.

2.2 Security shall perform accountability of personnel during the evacuation.

2.3 Bechtel/Subcontractor personnel shall evacuate in accordance with Bechtel procedures.

2.4 Non-essential Unit 1 and Unit 2 personnel shall evacuate.

3.0 APPENDICES

None

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

6.1 An actual or potential release exceeding that specified as an Alert or Site Emergency levels in EP-101 Classifications of Emergencies.

7.0 ACTION LEVEL

This procedure shall be implemented when a symptom of section 6.0 occurs or at the discretion of the (Interim) Emergency Director.

8.0 PRECAUTIONS

8.1 The decision to evacuate personnel as a protective action should be based on the determination that it will result in the lowest personnel exposure in comparison with other protective action options.

8.2 Consider the dose rates at the personnel assembly areas, onsite, and along evacuation routes, number of personnel onsite, and the potential for mitigating or terminating the emergency prior to personnel receiving exposures in excess of the protective action guides.

8.3 Initiate site evacuations before or after the passage of the release, and when practical, evacuation routes shall be given to lead personnel away from the path of the plume.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 (Interim) Emergency Director shall:

9.1.1.1 Select Unit 1 exit points as follows:

Day Shift - TSC and Administration Building
Afternoon Shift - Administration Building
Night Shift - Administration Building

9.1.1.2 Determine the offsite assembly area based on wind direction, weather conditions, and other pertinent information:

Cromby Generating Station or,

Limerick Airport

IF THE WIND DIRECTION IS FROM SOUTHWEST, CONSIDER USING CROMBY GENERATING STATION. ANY OTHER WIND DIRECTION CONSIDER USING LIMERICK AIRPORT.

9.1.1.3 Notify and inform the (Interim) Security Team Leader of the following information:

A. Chosen exit points and selected offsite assembly areas.

B. Implement EP-208, Security Team Activation for Site Evacuation. (step 9.1.1.6)

9.1.1.4 Notify and inform the (Interim) Personnel Safety Team Leader of the following information:

A. Chosen exit points and selected offsite assembly areas.

B. Implement the applicable actions in EP-254, Vehicle and Evacuee Control Group.

9.1.1.5 Evacuate all construction personnel by contacting Bechtel Safety and direct them to call for a "Total Project Evacuation" in accordance with Bechtel procedures, if not already done and direct them to report to the selected offsite assembly areas.

9.1.1.6 Implement the evacuation of the information center in accordance with EP-306 Evacuation of the Information Center if not already done.

9.1.1.7 When the (Interim) Security Leader is ready (see 9.1.1.3), direct the ACTIVATION OF THE ALARM in accordance with EP-301, Operating the Evacuation and River Warning System.

ACTIVATE BOTH THE SIREN AND THE RIVER WARNING MESSAGE.

9.1.1.8 When the alarms are silent, ANNOUNCE EVACUATION as follows:

"ATTENTION ALL PERSONNEL. THIS (IS)(IS NOT) A DRILL. THIS (IS)(IS NOT) A DRILL. THIS IS A SITE EVACUATION. DESIGNATED EMERGENCY PERSONNEL REPORT TO ASSIGNED EMERGENCY RESPONSE FACILITIES. ALL OTHER PERSONNEL EVACUATE THE SITE IMMEDIATELY. NON-ESSENTIAL PERSONNEL EXIT THROUGE THE (name of exit area or areas). ALL EVACUATING PERSONNEL SHALL RE-ASSEMBLE AT THE (CROMBY GENERATING STATION OR THE LIMERICK AIRPORT). THIS (IS)(IS NOT) A DRILL. THIS (IS)(IS NOT) A DRILL.

9.1.1.9 Activate alarms again.

9.1.1.10 Repeat announcement

9.1.1.11 Direct the workers at the RMC facility on Fricks Lock Road to evacuate .

9.2 FOLLOW-UP

9.2.1 Security shall:

9.2.1.1 Perform accountability of personnel in accordance with EP-110, Personnel Assembly and Accountability.

9.2.1.2 Inform the (Interim) Emergency Director of unaccounted for personnel.

9.2.2 (Interim) Emergency Director shall:

9.2.2.1 Direct the (Interim) Personnel Safety Team Leader to initiate search and rescue operations for any unaccounted for personnel in accordance with EP-252, Search & Rescue/First Aid.

9.2.3 Bechtel/Subcontractor (Unit 2) Personnel shall:

9.2.3.1 Evacuate in accordance with Bechtel procedures.

9.2.4 Non-Essential Unit 1 personnel shall:

9.2.4.1 Exit the protected area through the Admin Guard House or Technical Support Center by depositing security badges and dosimetry into containers, and report to the selected offsite assembly area.

9.2.4.2 Follow vehicle evacuation routes as directed by Security personnel.

9.2.5 Designated Emergency Team Personnel shall:

9.2.5.1 Report to their designated assembly area in accordance with Appendix EP-110-1, Emergency Assembly Areas.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

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

10.3 EP-252 Search and Rescue/First Aid

10.4 EP-101 Classification of Emergencies

10.5 EP-110 Personnel Assembly and Accountability

10.6 EP-208 Security Team Activation

10.7 EP-254 Vehicle And Evacuee Control Group

10.8 EP-301 Operation of the Evacuation Alarm and River Warning System

10.9 EP-306 Evacuation of the Information Center

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-307 RECEPTION AND ORIENTATION OF SUPPORT PERSONNEL

1.0 PURPOSE

This procedure defines the actions to be taken to receive and train those support personnel who will be coming on site for an extended period of time to respond to an emergency.

2.0 RESPONSIBILITIES

2.1 The Planning and Scheduling Coordinator shall direct the reception and orientation of support personnel by performing the necessary steps in this procedure.

2.2 Personnel from the Nuclear Training Section or their contractors shall train the support personnel by performing the necessary steps in this procedure.

3.0 APPENDICES

None

4.0 PREREQUISITES

4.1 Emergency Support Center [illegible] reception area is activated.

4.2 Off-site personnel needed for assistance and will be arriving at the reception area.

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

This procedure shall be implemented when the arrival of off-site support personnel requested by the Philadelphia Electric Company is anticipated and the Emergency Support Center or other reception area is activated.

8.0 PRECAUTIONS

8.1 This procedure is not intended for immediate off-site response personnel such as ambulances or fire companies.

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 Planning and Scheduling Coordinator shall:

9.1.1.1 Direct Training personnel through the Training Coordinator to report to the Emergency Support Center or other designated area and perform the appropriate training.

9.1.1.2 Direct the Security Team Leader to assign a Security Team Member to report to the Emergency Support Center or other designated area to issue security badges.

9.1.1.3 Direct the Radiation Protection Team Leader to assign a Personnel Dosimetry, Bioassay, Respiratory Protection Group Member to report to the Emergency Support Center or other designated area and issue dosimetry in accordance with the appropriate section of EP-221, Personnel Dosimetry, Bioassay, Rerpiratory Protection Group.

9.2 FOLLOW-UP

9.2.1 Training personnel shall:

9.2.1.1 Request from the Planning and Scheduling Coordinator information regarding the team or staff to which the Support personnel are to report.

9.2.1.2 Request from the Planning and Scheduling Coordinator information regarding the plant status.

9.2.1.3 Assemble personnel in the classroom and provide them with the following information:

A. Basic description of the plant status.

B. Work shift hours they will be assigned to.

C. Arrangements for hotels, meals and transportation.

D. Person to whom they are to report.

9.2.1.4 With the same group conduct a General Employee Training Class. Also, if necessary, conduct a General Respiratory Training Class and Respiratory Fit Test.

9.2.1.5 Conduct training sessions on special topics as necessary such as use of Potassium Iodide tablets, evacuation plans, etc.

9.2.1.6 Contact appropriate Station personnel assigned the responsibility for supervising the support personnel. Request authorization to release personnel to these Station personnel and have them meet the support personnel at the entrance of the Technical Support Center, if activated or the Administration Building Guard Station.

9.2.1.7 Ensure that personnel have appropriate badges and dosimetry before releasing them.

9.2.2 Planning and Scheduling Coordinator shall:

9.2.2.1 Inform the Site Emergency Coordinator and Emergency Director when the designated Support personnel have been properly indoctrinated and trained and are ready for work in the plant or on the site.

REFERENCES

10.1 Limerick Generating Station Emergency Plan

10.2 EP-221 Personnel Dosimetry, Bioassay, Respiratory Protection Group

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-313 DISTRIBUTION OF THYROID BLOCKING TABLETS

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for the administration of potassium iodide (KI) to emergency personnel for use as a thyroid blocking agent to provide protection against airborne radioiodine.

2.0 RESPONSIBILITIES

2.1 The Personnel Safety Team Leader shall determine if potassium iodide is required and direct the administration of the tablets by performing the necessary steps in this procedure.

2.2 The Personnel Dosimetry, Bioassay and Respiratory Protection Group Leader shall administer the potassium iodide tablets by performing the necessary steps in this procedure.

3.0 APPENDICES

3.1 EP-313-1 Potassium Iodide [illegible]

3.2 EP-313-2 Potassium Iodide Administration Record Form

3.3 EP-313-3 Potassium Iodide Consent Form

3.4 EP-313-4 Instruction And Record Sheet For Persons Receiving KI

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

5.1 Potassium Iodide tablets not beyond the expiration date.

6.0 SYMPTOMS

6.1 An actual or potential thyroid dose equal to or greater than 10 REM.

7.0 ACTION LEVEL

7.1 This procedure shall be implemented by the Personnel Safety Team Leader when an actual or potential thyroid dose is equal to or greater than 10 REM for any individual.

8.0 PRECAUTIONS

8.1 The taking of potassium iodide (KI) tablets is voluntary for each individual involved.

8.2 Personnel having allergic reactions to iodine should be administered potassium iodide only if absolutely necessary.

8.3 Prior to administering potassium iodide, ensure that the tablets are not beyond the expiration date.

8.4 All persons using potassium iodide should be familiar with the following possible side effects and report any noticed side effects to Personnel Safety Team Leader.

8.4.1 Skin rashes

8.4.2 Swelling of parotid glands (like mumps)

8.4.3 Metallic taste in mouth

8.4.4 Burning mouth and throat

8.4.5 Sore teeth and gums

8.4.6 Symptoms of a head cold

8.4.7 Gastric upset

8.4.8 Diarrhea

9.0 PROCEDURE

9.1 Actions

9.1.1 Personnel Safety Team Leader shall:

9.1.1.1 Determine the need for administering potassium iodide by completing Appendix EP-313-1 Potassium Iodide Worksheet for each individual needed to perform the task.

9.1.1.2 Discuss with the (Interim) Emergency Director that potassium iodide is needed and obtain his concurrence prior to the administration of the tablets.

9.1.1.3 Enter the names of each individual on Appendix EP-313-2 and direct the Personnel Dosimetry, Bioassay and Respiratory Protection Group Leader to administer the tablets per section 9.2.1 of this procedure.

9.2 Follow-Up

9.2.1 The Personnel Dosimetry, Bioassay and Respiratory Protection Group Leader shall:

9.2.1.1 When directed by the Personnel Safety Team Leader, assemble the personnel to be treated at the Technical Support Center or other area and acquire an adequate supply of tablets from TSC Personnel Entry Area Closet.

9.2.1.2 Discuss with personnel the possible side effects of potassium iodide and that taking the tablets is voluntary. Determine if any personnel are aware of an allergy to iodine. If an individual is allergic, discuss the situation with the Personnel Safety Team Leader.

9.2.1.3 Have each individual sign a copy of Appendix EP-313-3 Potassium Iodide Consent Form, unless one is already on file.

9.2.1.4 Administer to personnel who already have been exposed to radioiodine first, preferably within 2 hours of exposure. The recommended dosage is 130 mg potassium iodide (100 mg iodide) per day for a minimum of three days but preferably 10 consecutive days.

9.2.1.5 Provide each individual receiving KI with a copy of Appendix EP-313-4 Instruction And Record Sheet For Persons Receiving KI and instruct them to report back each day for follow-up dosages. This form is for the individuals information only and is not needed to receive additional dosages.

9.2.1.6 Complete the information required for each person on Appendix EP-313-2 Potassium Iodide Administration Record Form. Use this information to administer follow-up dosages.

9.2.1.7 Inform the Personnel Safety Team Leader when completed.

9.2.2 Personnel Safety Team Leader shall:

9.2.2.1 Notify the Medical Director and Emergency Director of all persons who received potassium iodide.

9.2.2.2 Ensure that the potassium iodide is administered in the proper dosage and for the proper number of doses.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan - Section 6.4.2.3

10.2 NUREG 0654 Rev. 1 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

10.3 Reg. Guide 1.109 Rev. 1 Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I

APPENDIX EP-313-1
POTASSIUM IODIDE WORK SHEET

Date: Time:

Name:_____

Badge Number_____

Area To Be Entered: _____
I-131 Concentration (uCi/cc) in Affected Area:_____
Respiratory Equipment (Check one)

TYPE	PROTECTION FACTOR (PF)	
Air Purifying	50	___
Atmosphere Supplying	2000	___
SCBA	10,000	___
None	1	___

Time Needed To Complete Task: _____ Hours

Previous Thyroid Dose Accumulation During Emergency: _____REM

Perform Calculation:

$$\text{Total Thyroid Dose (REM)} = 1.361P6 \times \text{Concentration I-131} \left(\frac{\text{uCi}}{\text{cc}}\right) \times \text{Task Time (Hours)} \times \frac{1}{PF} + \text{Previous Thyroid Dose (REM)}$$

Total Thyroid Dose = _____ Rem

If Dose equals or is greater than 10 Rem, recommend administration of potassium iodide.

APPENDIX EP-313-2
POTASSIUM IODIDE ADMINISTRATION RECORD FORM

NAME	BADGE NUMBER	COMPANY	DATES										DOSAGE

APPENDIX EP-313-3

POTASSIUM IODIDE CONSENT FORM

I_____volunteer to receive 130 milligrams per day for the next 10 days of the thyroid blocking agent potassium iodide. I have been informed by a representative of PECo that this drug will block the absorption of radio-iodine by my thyroid and thereby reduce the exposure to radiation of the thyroid; that potassium iodide does not reduce the uptake of other radioactive materials by the body; nor, does it provide protection against exposure from external radiation. I also understand that there may be some side effects upon taking this drug.

Signature_____

Date_____

APPENDIX EP-313-4

INSTRUCTION AND RECORD SHEET FOR PERSONS RECEIVING KI

Name_____

Badge No._____

CAUTION

IF YOU FEEL SICK, REPORT IMMEDIATELY TO THE PERSONNEL DOSIMETRY, BIOASSAY AND RESPIRATORY PROTECTION GROUP LEADER.

You have just received 130 mgs. of the thyroid blocking agent KI. In order to be most effective you should receive an additional nine (9) doses over the next 9 days. Each day for the next 9 days, take this form and report to the _____ for a thyroid count and another KI pill.

	Date	Thyroid Count Results (Date, Time, Initials)	130 mg KI Tablet Administered (Date, Time, Initials)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

JMC/mgd
C/6/84

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-330 EMERGENCY RESPONSE FACILITY HABITABILITY

1.0 PURPOSE

The purpose of this procedure is to provide habitability guidelines for the Technical Support Center, Operations Support Center, Control Room, Chemistry Lab Area, and Maintenance Staging Area.

2.0 RESPONSIBILITIES

2.1 The (Interim) Personnel Safety Team Leader is responsible for determining the radiological habitability of the Emergency Response Facilities.

2.2 The (Interim) Chemistry Sampling and Analysis Group Leader is responsible for determining the habitability of the Emergency Response Facility if toxic substances are suspected in the atmosphere of the facility.

2.3 The facility director is responsible for determining if an evacuation of the facility is warranted based on the information provided by the HP and/or Chemistry Technician.

3.0 APPENDICES

3.1 EP-330-1 Emergency Response Facility Radiological Habitability Guidelines

3.2 EP-330-2 Determination of Toxic Gas Concentrations

4.0 PREREQUISITES

4.1 An emergency has been declared in accordance with EP-101, Classification of Emergencies.

5.0 SPECIAL EQUIPMENT

5.1 Toxic Gas Detection Equipment

5.2 Oxygen Monitor

5.3 Continuous Air Monitors

5.4 Radiation Survey Meter

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 Known or suspected chemical release as indicated by:

7.1.1 Control Room toxic gas detection system or chlorine gas detection system alarming.

7.1.2 Fire in the plant.

7.1.3 Visual observation or detection by odor in the area of the facility.

7.1.4 Train derailment on or near the site.

7.1.5 Report from Shift Supervision of toxic gas or chlorine release from nearby offsite facility.

7.2 Upon alert or alarm of ERF continuous air monitor.

7.3 Alert or alarm of an ERF area radiation monitor.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The (Interim) Emergency Director shall:

9.1.1.1 Direct the (Interim) Personnel Safety Team Leader to perform habitability surveys of the Emergency Response Facilities and to report the results of the surveys to the appropriate Facility Director.

9.1.2 The (Interim) Personnel Safety Team Leader shall:

9.1.2.1 Direct the Plant Survey Group Leader to perform a radiological habitability evaluation of the Emergency Response Facilities (as required) and to report the results of the surveys to the appropriate Facility Director.

9.1.3 The Plant Survey Group Leader shall:

9.1.3.1 Instruct a Health Physics Technician to:

A. Report to the appropriate Emergency Response Facility and perform a radiological habitability evaluation. Perform a general area dose rate survey, and draw an air sample to determine I-131 concentrations.

B. Compare the evaluation with Appendix EP-330-1 and inform the appropriate Facility Director that,

(1) Present radiological conditions are within the guidelines of Appendix EP-330-1.

(2) Present radiological conditions exceed the guidelines in Appendix EP-330-1 and to what extent the guidelines are exceeded.

D. Report the results back to the Plant Survey Group Leader or (Interim) Personnel Safety Team Leader.

9.1.4 Health Physics Technician shall:

9.1.4.1 For the TSC, OSC, Chemistry Lab Area, and Maintenance Office perform the following:

A. Start a continuous air monitor, if not already operating, and document baseline readings or perform an airborne survey and analysis in accordance with HP-213 and HP-214.

B. If continuous air monitor baseline readings or air sample results exceed the values in Appendix EP-330-1 or the equipment is not operable, notify the Plant Survey Group Leader or (Interim) Personnel Safety Team Leader.

C. Perform a general area survey.

D. Set up a frisker, if there is not one present, at the entrance to the emergency response facility.

9.1.4.2 For the Control Room, perform the following:

A. Determine the status of Control Room ventilation (e.g., isolated).

B. Perform a general area radiation survey.

C. Set up a frisker, if there is not one, at the Control Room entrance.

9.1.4.3 Report the results of the habitability check to the respective emergency response facility personnel indicated below and Plant Survey Group Leader.

	Emergency Response Facility	Emergency Response Facility Personnel
A.	Technical Support Center	Emergency Director
	Operations Support Center	OSC Coordinator
	Control Room	Shift Supervision
	Chemistry Lab Area	Chemistry Sampling And Analysis Group Leader
	Maintenance Office	Senior Person Present or Fire and Damage Team Leader

9.1.5 Chemistry Sampling and Analysis Group Leader shall:

9.1.5.1 When required, instruct a chemistry technician to:

A. Perform a chemistry habitability survey of the appropriate facility using Appendix EP-330-2, Determination of Toxic Gas Concentrations

B. Compare the survey results with Appendix EP-330-2 and inform the appropriate facility director that:

(1) Present atmospheric conditions do not exceed the guidelines in Appendix EP-330-2

(2) Present atmospheric conditions do exceed the guidelines of Appendix EP-330-2 and to what extent the guidelines are exceeded

C. Report the results back to the Chemistry Sampling and Analysis Group Leader.

9.1.5.2 Report the results to the Chemistry Sampling and Analysis Team Leader.

9.1.6 Chemistry Technician shall:

9.1.6.1 Report to the appropriate Emergency Response Facility and perform the following:

USE OF RESPIRATORY PROTECTION EQUIPMENT SHOULD BE CONSIDERED (SCBA) FOR ENTRY INTO A FACILITY WITH SUSPECTED TOXIC SUBSTANCES IN THE ATMOSPHERE.

A. Perform a check of the Emergency Response Facility for toxic gas concentrations in accordance with Appendix EP-330-2.

B. Use Appendix EP-330-2 to determine if the measured toxic gas concentrations levels are acceptable.

9.1.6.2 Report the results of the survey to the respective emergency response personnel and the Chemistry Sampling and Analysis Group Leader.

A.	Emergency Response Facility	Emergency Response Facility Personnel
	Technical Support Center	Emergency Director
	Operations Support Center	O&C Coordinator
	Control Room	Shift Supervision
	Chemistry Lab Area	Chemistry Sampling And Analysis Group Leader
	Maintenance Office	Senior Person Present or Fire and Damage Team Leader

9.2 FOLLOW-UP

9.2.1 The Facility Director shall:

9.2.1.1 Based on the information provided by the Health Physics Technician or Chemistry Technician determine if the facility should be evacuated or if protective devices are needed.

THIS DECISION SHOULD BE BASED ON THE TYPE OF HAZARD, THE EXPECTED DURATION OF THE HAZARD OR FACILITY OCCUPATION AND IF A SUITABLE ALTERNATE LOCATION IS AVAILABLE. THIS DECISION SHOULD BE DISCUSSED WITH THE (INTERIM) EMERGENCY DIRECTOR, IF APPLICABLE AND IF TIME PERMITS.

9.2.2 Plant Survey Group Leader or (Interim) Personnel Safety Team Leader shall:

9.2.2.1 Establish the frequency and type of follow-up radiological monitoring for the Emergency Response Facilities.

9.2.3 Chemistry Sampling and Analysis Group Leader shall:

9.2.3.1 Establish the frequency and type of follow-up chemical monitoring for the Emergency Response Facilities.

9.2.4 The Health Physics Technician and Chemistry Technician shall:

9.2.4.1 File the survey results and report to their appropriate Group Leader for re-assignment.

10.0 REFERENCES

10.1 NUREG-0696 Rev. 1 - Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

10.2 FSAR 1.13.2 Item II.B.2 - Plant Shielding

10.3 FSAR Table 2.2-6 - Potentially Hazardous Chemicals Requiring Monitoring

10.4 29 CFR 1910.1000

10.5 29 CFR 1910.1017

10.6 HP-210 Radiation Survey Techniques

10.7 HP-212 Airborne Contamination Monitoring--CAMS

10.8 HP-213 Airborne Contamination Sampling Techniques

10.9 HP-214 Air Sample Analysis and Evaluation

APPENDIX EP-330-1

EMERGENCY RESPONSE FACILITY RADIOLOGICAL HABITABILITY GUIDELINES

Whole Body Dose Rate	25 mR/hr
Airborne concentration	0.25 MPC

NOTE

THESE VALUES CORRESPOND TO ADMINISTRATIVE GUIDELINES WHICH WILL BE RETAINED DURING EMERGENCY CONDITIONS, OF 300 mR/DAY AND 20 MPC-HRS/WEEK. ASSUME 12 HOUR OCCUPANCY TIMES PER PERSON PER DAY. IF THE RADIOLOGICAL CONDITIONS EXCEED THESE VALUES, NOTIFY THE PERSONNEL SAFETY TEAM LEADER FOR ACTIONS TO BE TAKEN.

APPENDIX EP-330-2

DETERMINATION OF TOXIC GAS CONCENTRATIONS

Obtain the necessary equipment and check the pump performance by performing the following steps:

NOTE

STEPS A, B AND C ARE TO BE DONE AWAY FROM THE AREA IN QUESTION.

Checking Pump Performance

A. Visually check rubber inlet flange for cracks or tears. Replace if damaged. Tighten inlet clamping nut.

B. Valve Leak Check

1. Insert a fresh sealed detector tube into pump. Misalign red dots on pump and handle. Pull several fairly rapid continuous full pump strokes.

2. Pull handle out 6 mm (1/4 inch) and hold in this position for 1 or 2 seconds.

3. Release handle.

4. If handle returns to within 1.5 mm (1/16 inch) or less of fully closed position, continue to step C.

5. If handle does not return to within 1.5 mm (1/16 inch) of fully closed position (or less), consult Chemistry Supervision.

C. Field Volume Check

1. Insert a fresh sealed detector tube into pump.

2. Align red dots on pump body and handle.

3. Pull handle firmly and at a moderate speed until handle locks into position. Wait 1 minute.

4. Unlock handle by turning it and guide it back. TO PROTECT PUMP STOPPER from breakage, do not release the handle and allow it to spring back when conducting a leak test. Make sure you hold your hand onto the handle and guide it back.

5. Pump handle should return to within 6 mm (1/4 inch) or less of the fully closed position.

6. If pump handle does not close to within 6 mm (1/4 inch) or less, consult Chemistry Supervision.

APPENDIX EP-330-2 (CON'T)

NOTE

STEP C IS TO BE DONE AT THE AREA IN QUESTION.

C. Sampling & Measurement Procedure

1. Break tips off a fresh detector tube by bending each tube end in the tube tip breaker of the pump.

2. Insert tube securely into pump inlet with arrow on tube pointing toward pump.

3. For twin tubes, connect "c" marked ends with rubber tubing after breaking each end. Insert analyzer tube into pump with arrows on tubes pointing toward pump.

4. Make certain pump handle is all the way in. Align guide marks on pump body and handle.

5. Pull handle out to desired stroke volume. Handle can be locked on either 1/2 pump stroke (50 ml) or 1 pump stroke (100 ml).

6. Read concentration at the interface of stained-to-unstained reagent when staining stops. Unlock handle by making 1/4 turn and return it to starting position.

7. In case more pump strokes are indicated in the instruction sheet included in each box of tubes, take additional sample by repeating pump strokes without removing tube.

8. Calculate the result by dividing the reading by the number of pump strokes and record in the Data Sheet.

9. Determine if habitability is within limits remembering there is a percent error on the results. (See Data Sheet).

10. Complete the Data Sheet and forward to the Group Leader.

APPENDIX EP-330-2 (CONT'D)

NAME: _____

DATE: _____

TIME: _____

Perform (check)	Gas (tubes)	Limit (ppm)	Reading (ppm)	No. of pump strokes(n)	Result (ppm)	Habitability Yes/No
	Chlorine*	<.1.0				
	Ammonia	<50				
	Ethylene Oxide	<50				
	Formaldehyde	<3				
	Vinyl Chloride	<1.0				
	Phosyene	<0.1				

Allowable exposure to Air Contaminants

Maximum exposure allowed by OSHA in an 8 hour work shift of a 40 hour work week (Time weighted Averages).

*NIOSH Certified Tubes, ± 25% Accuracy

Non-NIOSH Certified Tubes, ± 50% Accuracy

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-401 ENTRY FOR EMERGENCY REPAIR AND OPERATIONS

1.0 PURPOSE

The purpose of this procedure is to provide guidelines for entering areas for emergency repair and operations that have become adversely affected by the emergency conditions.

2.0 RESPONSIBILITIES

2.1 The Personnel Safety Team Leader is responsible for insuring the guidelines of this procedure are implemented.

2.2 The Interim Personnel Safety Team Leader and/or Plant Survey Group Leader are responsible for implementation of this procedure.

3.0 APPENDICES

3.1 EP-401-1, Emergency Exposure Guidelines

3.2 EP-401-2, Emergency Radiation [illegible]

3.3 EP-401-3, Access Control [illegible] Guide

3.4 EP-401-4, Health Physics Considerations During Emergencies

4.0 PREREQUISITES

4.1 An emergency has been declared in accordance with EP-101, Classification of Emergencies.

4.2 The (Interim) Personnel Safety Team Leader has authorized the entry.

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 Entry into an area in which the radiological conditions are unknown and suspected to be hazardous is required.

7.2 Constraints of time and/or the uncertainty or nature of various radiological conditions preclude the use of routine Health Physics procedures.

8.0 PRECAUTIONS

8.1 No one person shall be left alone during the entry.

8.2 Planned radiation exposures should be limited to the administrative guide levels in Appendix EP-401-1 Emergency Exposure Guidelines. Performance of a task involving exposure above 10CFR 20 limits requires Emergency Director's authorization.

8.3 Radiation exposures shall be kept As Low As Reasonably Achievable (ALARA).

8.4 Until it has been confirmed otherwise, airborne radioactivity will be assumed to be present in all affected areas of the plant.

8.5 To the extent practicable, routine health physics procedures will be utilized.

9.0 PROCEDURE

9.1 Actions

9.1.1 The (Interim) Personnel Safety Team Leader shall:

9.1.1.1 Provide radiological conditions information to the (Interim) Emergency Director as an aid in planning emergency operations and maintenance activities.

9.1.1.2 Inform the Plant Survey Group Leader of planned emergency activities, the associated plant conditions and protective requirements and the priority of the activity as it affects mitigation of the emergency condition.

9.1.1.3 Determine emergency exposure limitations for emergency activities.

9.1.1.4 Provide emergency exposure limitations to the Plant Survey Group Leader for entry into affected areas (for anticipated exposures greater than 10CFR20 use EP-311, Emergency Exposure Authorization).

9.1.1.5 Provide guidelines for TLD evaluations to the Plant Survey Group Leader.

9.1.1.6 Determine resource support requirements from the Plant Survey Group Leader and provide that support from available on-site resources or identify that need to the E.O.F.

9.1.1.7 Inform the (Interim) Emergency Director of significant exposures, uptakes or skin contamination problems which have occurred during entries into affected areas.

9.1.2 Plant Survey Group Leader shall:

9.1.2.1 Utilize Appendix EP-401-2, Emergency Radiation Work permit to specify entry requirements, unless information is available to relieve specific requirements as specified below.

A. A filter respirator may be substituted for an SCBA if it is known that high radioiodine levels are not present or the use of a SCBA would physically restrict entry into the area. Sources of information on the presence or absence of radioiodine include:

1. The (Interim) Emergency Director's estimate of fuel damage.

2. Radioiodine concentrations from ventilation process monitors (Process Radiation Monitors) for the entry area.

IF A SCBA IS NOT USED DUE TO PHYSICAL ACCESS RESTRICTIONS AND RADIOIODINE IS KNOWN OR SUSPECTED TO BE PRESENT, THYROID BLOCKING AGENT SHOULD BE EVALUATED IN ACCORDANCE WITH EP-313.

B. Health Physics escort requirements may be waived if one of the entry team members (who will not be doing physical work) is a qualified self-monitor; alarming dosimeters are utilized by the team members; and the entry is of short duration and well defined in terms of location and work to be performed.

9.1.2.2 Determine the team member's current quarterly exposure by reviewing personnel exposure records and daily dose cards or questioning the individuals.

9.1.2.3 Instruct the team members on their allowable exposure for the entry based upon a maximum quarterly exposure of 2500 mRem.

ALLOWABLE EXPOSURES ABOVE 2500 mRem/QUARTER MUST BE AUTHORIZED BY THE (INTERIM) EMERGENCY DIRECTOR.

9.1.2.4 Review Appendix EP-401-3, Access Control Briefing Guide, with the team members prior to the entry.

9.1.3 After the emergency entry, the Plant Survey Group Leader shall:

9.1.3.1 Have personnel monitored for contamination in accordance with HP-817, Personnel Contamination Monitoring.

9.1.3.2 Have contaminated personnel detained until they can be decontaminated in accordance with HP-818, Personnel Decontamination.

9.1.3.3 Have Appendix EP-401-3, Access Control Briefing Guide completed.

9.1.3.4 Have personnel exposures of team members documented on the R.W.P. Access and Exposure Control log sheets (HP-313).

IF A SIGNIFICANT EXPOSURE (ABOVE LEVELS IDENTIFIED BY THE PERSONNEL SAFETY TEAM LEADER) WAS RECEIVED BY A TEAM MEMBER(S), INFORM THEM THEY WILL NOT BE ALLOWED FURTHER ENTRY UNTIL A DOSIMETRY EVALUATION HAS BEEN COMPLETED.

9.1.3.5 Have survey results documented on Survey Data Sheet(s).

9.1.3.6 Have air samples analyzed in accordance with HP-214, Air Sample Analysis.

9.1.3.7 Brief the Personnel Safety Team Leader on the results of the entry.

9.2 Follow-Up

9.2.1 The Personnel Safety Team Leader shall:

9.2.1.1 Determine, in conjunction with the Emergency Director, when the plant situation has stabilized to the point where it is possible to establish the ongoing radiological controls program using the guidelines in Appendix EP-401-4, Health Physics Considerations During Emergencies. Where practical, normal Health Physics procedures should be used.

10.0 REFERENCES

10.1 Limerick Generating Station Emergency Plan

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

10.3 EP-313 Distribution of Thyroid Blocking (KI) Tablets

10.4 NCRP Report No. 39 Basic Radiation Protection Criteria

10.5 HP-313, Radiation Work Permits

10.6 HP-817, Personnel Contamination Monitoring

10.7 HP-818, Personnel Decontamination

10.8 EP-311, Emergency Exposure Authorization

APPENDIX EP-401-1
Emergency Exposure Guidelines

Function	Projected Whole Body Dose	Thyroid Dose	Authorized By
1. Life Saving and Reduction of Injury	75 rem*	375 rem	(Interim) Emergency** Director
2. Operation of Equipment to Mitigate an Emergency	25 rem*	125 rem	(Interim) Emergency** Director
3. Protection of Health and Safety of the Public	5 rem	25 rem	(Interim) Emergency** Director
4. Other Emergency Activities	10 CFR 20 limits	10 CFR 20 limits	(Interim) 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-401-2

EMERGENCY RADIATION WORK PERMIT (ERWP)

ORIGINAL | NRF NO.

RADIATION WORK PERMIT
[illegible] EMERGENCY RADIATION WORK PERMIT (ERWP)

[illegible] [illegible] DATE

[illegible] ENTER THE ABOVE AREA DURING ACCIDENT CONDITIONS OR WHEN RADIOLOGICAL CONDITIONS ARE UNKNOWN.

REASON FOR ENTRY:

[illegible] REQUIREMENTS

HOOD	X	FILTER RESPIRATOR		DOSIMETER 0-5R [illegible] RANGE	X
SURGEON'S CAP	X	AIR LINE RESPIRATOR		EXTREMITY HAND	
GLOVE LINERS	X	SELF CONTAINED	X	EXTREMITY FOOT	
PLASTIC GLOVES 1 PR	X			LAPEL AIR SAMPLER (ON AT LEAST ONE PERSON PER GROUP)	X
RUBBER GLOVES	X				
COVERALLS 2 PR	X	GLASSES			
SHOE COVERS 2 PR	X	TAPED OPENINGS	X	ION CHAMBER REQUIRED FOR ENTRY	X
PLASTIC PANTS		TAPED ZIPPER / HOOD	X	ALARMING DOSIMETER	X
PLASTIC SUIT				CONSTANT HP COVERAGE	
BOOTS / RUBBERS	X			ESCORT HP COVERAGE	X
		SELF FRISK	X		

SPECIAL INSTRUCTIONS —

① AT LEAST 2 PERSONS REQUIRED FOR ENTRY, AT LEAST ONE OF WHICH IS AN HP.

② OBTAIN READINGS OF ANY ARMs WITHIN THE AREA PRIOR TO ENTERING THE AREA.

③ KNOW & UNDERSTAND AUTHORIZED PERSONNEL EXPOSURES FOR ALL PERSONNEL ENTERING THE AREA. EXIT THE AREA IMMEDIATELY IF ANY INDIVIDUAL IN THE GROUP IS APPROACHING HIS AUTHORIZED EXPOSURE LIMIT.

④ 0-5R DOSIMETER REQUIRED IF EXPOSURES IN EXCESS OF 1,000 mR ARE EXPECTED

RADIATION EXPOSURE DATA — SEE MOST RECENT ATTACHED SURVEY

R.W.P. REQUESTED BY | OF | DIV / TIME | DATE

R.W.P. ISSUED BY | HEALTH PHYSICS | TIME | DATE

SUPPLEMENTAL RADIATION SURVEYS REQUIRED EVERY

SURVEY NO.	HP	DATE	STAY TIME FOR "[illegible]"	SURVEY NO.	HP	DATE	STAY TIME FOR 100MR/[illegible]
INITIAL							

R.W.P. TERMINATED BY ______ TIME ______ DATE ______

APPENDIX EP-401-2

EMERGENCY RADIATION WORK PERMIT (ERWP)

RADIATION WORK PERMIT
[illegible]

R.W.P. ACCESS and EXPOSURE CONTROL

LOCATION ______________________ R.W.P. NO ______________

JOB DESCRIPTION ______________________ PAGE ____ OF ____

YOUR NAME INDICATES UNDERSTANDING AND COMPLIANCE WITH JOB REQUIREMENTS

R.W.P. READ & PRINT NAME	DATE	SOCIAL SECURITY NUMBER	JOB GROUP CODE (SEE BELOW)	SPECIFIC REASON FOR ENTRY (TASK TO BE PERFORMED)	AUTH EXP / MASK CODE	TIME IN / TIME OUT	EXIT TIME	DOSE IN / DOSE OUT	TOTAL EXP	HP ONLY: MPC HOURS	HP ONLY: COMP BY
NAME - This line for 0-200 mR Dosimeter											
X - this line for 0-500 mR Dosimeter					X	X	X			X	X
X - This line for 0-1,500 mR Dosimeter					X	X	X			X	X
X - this line for 0-5,000 mR Dosimeter					X	X	X			X	X

MASK CODES

F - FILTER RESPIRATOR
A - AIRLINE RESPIRATOR
S - SELF CONTAINED
NA - NONE

JOB GROUP CODES

BALANCE GROUP	BA	INSTRUMENT LAB	IL	OPERATOR	OP
BOILER GROUP	BO	INSERVICE INSPECTION	ISI	PIPEFITTER	PF
CARPENTERS	CA	INSPECTOR	IN	QUALITY ASSURANCE	QA
ELECTRICIANS	EL	JANITOR	JA	RIGGERS	R
GENERAL ELECTRIC	GE	LABORER	LA	TEST ENGINEERS	TE
HEALTH PHYSICS	HP	MACHINIST	MA	TURBINE GROUP	TG
HELPER	HE			WELDERS	WE

APPENDIX EP-401-3

ACCESS CONTROL BRIEFING GUIDE

I. PRE-ENTRY BRIEFING

Team Members _____ _____
_____ _____

Date of Entry: _____ Time of Entry: _____ EREP # _____
Purpose: _____
_____

INITIAL

_____ 1. Potential hazards - radiological and non-radiological.
_____ 2. Dose rates and activity levels.
_____ 3. Dosimetry type (TLC, high range self-reading extremity, finger, etc.) issued and use understood.
_____ 4. Respiratory protection - type, lapel sampler.
_____ 5. Protective clothing.
_____ 6. Stay times on exposure limit discussed and understood.
Initials of Entry Team: _____, _____, _____, _____, _____.
_____ 7. Instruments to be used.
_____ 8. Review documentation required for entry and personnel exposure records if time permits.
_____ 9. Define and explain as detailed any system malfunctions, breaks, or hazards from operating equipment.
_____ 10. Surveys to be performed (air, cont. rad.).

Briefing Performed By: _____

II. EXIT BRIEFING

_____ 1. Determine exposure and time in area.
_____ 2. Monitor for personnel contamination, document positive findings.
_____ 3. Determine approximate dose-rates from survey meter.
_____ 4. Document any noticeable radiological or operations concerns, i.e., gas leaks, liquid spills, alarms, equipment malfunction, etc.
_____ 5. Document recommended bioassay.
_____ 6. Take nasal swabs of presons in airborne contamination areas.
_____ 7. Obtain any survey data sheets.

Debriefing Performed By: _____
Time of Debriefing: _____
Comments: _____
_____
_____

APPENDIX EP-401-4

HEALTH PHYSICS CONSIDERATIONS

DURING EMERGENCIES

I. Access Control

1. Are the affected areas defined?
2. Are access routes defined?
3. Are barriers and postings in place?
4. Are access doors locked or guarded?
5. Are control points set up?

II. Contamination Control

1. Is the affected area isolated?
2. Are personnel monitoring points defined?

III. Surveillance

1. Has ARM and PRM data been reviewed?
2. Has habitability been checked in emergency response facilities?
3. Is air sampling and analysis taking place?
4. Is radiation, airborne and contamination data documented? distributed?
5. Is alpha surveillance necessary?
6. Have plant air and water systems been monitored?

APPENDIX EP-401-4

HEALTH PHYSICS CONSIDERATIONS

DURING EMERGENCIES (CONT'D)

IV. Exposure Control

1. Is personnel exposure data available?

2. Are exposures being logged and tracked?

3. Have DRD/TLD comparisons been done?

5. Have beta/gamma ratios been evaluated?

V. Bioassay

1. Have individuals been identified for bioassay?

VI. Equipment

1. Dosimetry-	TLDs (extremity), DRDs (high range), alarming dosimeters
2. Respiratory Protection-	masks, filters, SCBA bottles, air lines
3. Instrumentation-	high range meters, lapel air samplers, teledose systems, sampling media
4. Clothing	
5. Documentation-	survey forms, log sheets

VII. Manpower

1. Short term needs.

2. Long term needs.

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-410 RECOVERY PHASE IMPLEMENTATION

1.0 PURPOSE

The procedure provides guidance for implementing a recovery effort following an emergency. For an Unusual Event or Alert only minor recovery actions should be required. However, for the emergencies with more severe consequences (Site and General Emergencies), complex recovery actions may be required.

2.0 Responsibilities

2.1 The Emergency Director, Site Emergency Coordinator, Emergency Support Officer and Federal/State Government Liaison shall determine entry into recovery phase.

3.0 APPENDICES

3.1 EP-410-1 LGS Plant Parameter Status Sheet

3.2 EP-410-2 Plant Parameter [illegible]

3.3 EP-410-3 Recovery Acce[illegible]

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

7.1 The Emergency Director, the Site Emergency Coordinator, Emergency Support Officer, and Federal/State Government Liaison will decide when an on-site recovery effort is required. Federal and State Authorities should be appraised of the decision to enter the recovery phase.

7.2 The following guidelines should be used to determine when the emergency is under control and a recovery effort may be implemented:

7.2.1 Radiation levels are steady or decreasing with time.

7.2.2 Any release of radioactive materials to the environment has ceased or is controlled within technical specification limits.

7.2.3 Fire, flooding, or similar emergency conditions no longer constitute a hazard to the plant or plant personnel.

7.2.4 Measures have been successfully taken to correct or compensate for malfunctioning equipment.

7.2.5 Reactor core is being adequately cooled.

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 Site Emergency Coordinator shall:

9.1.1 Initiate a conference call between Emergency Support Officer, Site Emergency Coordinator, Emergency Director and Federal/State Government Liaison.

9.1.2 Analyze reactor, containment, and critical system status using the attached plant status sheet. The reactor, containment, and critical systems should be analyzed for present condition and capability to perform intended functions. (Refer to Appendix EP-410-10 and Appendix EP-410-2)

9.1.3 Develop a list of acceptable or unacceptable plant conditions and systems or equipment failures. Identify corrective actions to be taken. (Refer to Appendix EP-410-3). Based upon the analysis of these plant conditions, decide whether entry into the recovery phase is justified. If recovery justified, proceed to the steps below.

9.1.4 Review (as appropriate) the plant status with the NRC, FEMA, and PEMA and address their concerns. The Site Emergency Coordinator should notify all parties listed in the EP-105 call list appendix of the intent to enter into the recovery phase.

9.1.5 When the Recovery phase is formally implemented, the Recovery manager should obtain the assistance of the Site Emergency Coordinator, Emergency Director, and Federal/State Government Liaison in resolving the following recovery instructions.

9.1.5.1 Review the Recovery Acceptance Checklist (Appendix EP-410-3) and determine the priority of recovery work.

9.1.5.2 Prepare an outline of major tasks and establish the organization responsible for implementation.

9.1.5.3 Obtain participation of General Electric, Bechtel, Catalytic and other firms as appropriate.

9.1.5.4 Establish a schedule for monitoring plant parameters, such as reactor coolant, drywell atmosphere, liquid and gaseous effluents, etc.

9.1.5.5 Verify personnel radiation exposures received during accident conditions.

9.1.5.6 Review and assess plant accident events, data logs, etc. to develop a comprehensive accident report and a recovery plan summary for submittal to regulatory agencies.

9.1.5.7 Consider available manpower sources and arrange through headquarters or the Planning Coordinator necessary personnel. (Work through INPO as necessary).

9.1.5.8 Review emergency and plant supplies as well as warehouse stock levels to ensure inventories are returned to pre-emergency levels.

9.1.5.9 Establish what activities will require procedures and develop them accordingly.

9.1.5.10 Determine the number of personnel needed to continue maintaining the plant.

9.1.5.11 Establish an Environmental monitoring schedule.

9.1.5.12 Establish an in-plant area radiological surveillance schedule.

10.0 REFERENCES

10.1 LGS Emergency Plan

10.2 NUREG 0654, Section M.2 and M.3

10.3 EP-C-203

APPENDIX EP-410-1
LGS PLANT PARAMETER STATUS - UNIT NO. ____

DATE: _____

Radiological Parameters Time ____

North Stack ____ uCi/cc ____ uCi/sec
North Stack Flow ____ cfm
South Stack ____ uCi/cc ____ uCi/sec
South Stack Flow ____ cfm
D/W Rad Monitor ____ R/hr
R/X Encl Exh ____ mr/hr
Refuel Floor Exh. ____ mr/hr
Air Ejector Offgas ____ mr/hr
R/W Monitor ____ cpm

Meteorological Parameters Time

Ave. Wind Direction ____ (from)
Ave. Ambient Temp. ____ degrees F
Precipitation _____
Stability Class _____
Wind Speed ( ) ____ (Tower 1)
Wind Speed ( ) ____ (Tower 2)
Wind Speed ( ) ____ (Satellite)

POWER SUPPLIES Time ____

Source	Supplying	Unavail/ Reason
220 kv 1 offsite		
500 kv 2 offsite		
D-1		
D-2		
D-3		
D-4		

Bus	Offsite	Diesel	Unavail
D1 1			
D1 2			
D1 3			
D1 4			

Reactor Parameters Time ____

Power _____ %
Level _____ inches
Pressure _____ psig

Reactivity Control Time ____

Of Rods not inserted ____

SBLC Inj. Unavail/Reason

A _____
B _____
C _____

SBLC Tank Level ____

Pressure Control Time ____

#Bypass Valves Open ____

SRV's A B C D E F G H J K L M N S
Open _____
Closed _____
Was Open _____

Level Control Time ____

F.W.A. on Unavail/Reason

B _____
C _____

CRD A _____
B _____
HPCI _____
RCIC _____
Cond. A _____
B _____
C _____
C.S.A _____
C.S.B _____
C.S.C _____
C.S.D _____
LPCI A _____
B _____
C _____
D _____
RHRSW A _____
B _____
C _____
D _____
Cond. Trans. _____
Refuel Trans. _____
SBLC _____

LGS PLANT PARAMETER STATUS - UNIT NO. (CONT'D)

DATE: _____

Containment Parameters

Drywell pressure ____ psig
Drywell Temp ____ f
Suppression Pool Temp ____ f
*Suppression Pool Level ____ ft
Containment ____ %O2 ____ %H2

Containment Control Time ____

RHR	Sup. Pool Cool	Sup. Pool Spray	D/W Spray	S/D Cool	Unavail/ Reason
A					
B					
C					
D					

RHRSW	On	Unavail/Reason
A		
B		
C		
D		

Isolations	Isolated/Exceptions
I MSIV	
II RHR	
III RWCU	
VII Containment	
VII MISC	

SGTS	On	Unavail/Reason
Train A		
B		
Fan A		
B		

Containment H2 Recombiners	ON	Unavail/Reason
A		
B		

APPENDIX EP-410-2
PLANT PARAMETER TRENDS

Time										
Reactor Press psig										
Reactor Power %										
Reactor Level in										
Drywell Press psig										
Drywell Temp degrees F										
Suppression Pool Level ft										
Suppression Pool Temp degrees F										
Containment Rad R/hr										
North Stack Rad uCi/sec										

APPENDIX EP-410-3

UNIT # RECOVERY ACCEPTANCE CHECKLIST

A. REACTOR PARAMETERS

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. POWER			
2. LEVEL			
3. PRESSURE			

B. CONTAINMENT PARAMETERS

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. DRYWELL PRESS			
2. DRYWELL TEMPERATURE			
3. LEVEL (SUPPRESSION POOL)			
4. TEMPERATURE (SUPPRESSION POOL)			
5. CONT. OXYGEN			
6. CONT. HYDROGEN			

C. REACTIVITY CONTROL

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. CONTROL RODS			
2. SBLC			

D. PRESSURE CONTROL

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. BYPASS VALVES			
2. SRV'S			

E. LEVEL CONTROL AND HEAT REMOVAL

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. FEEDWATER			
2. CRD			
3. HPCI			
4. RCIC			
5. CONDENSATE			
6. CORESPRAY			
7. RHR S/D COOLING			
8. LPCI			
9. RHRSW			
10. COND. TRANSFER			
11. REFUEL TRANSFER			
12. ESW			
13. SBLC			

F. TANK LEVELS

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. CST			
2. RST			
3. MAIN CONDENSER			
4. SPRAY POND			

G. CONTAINMENT CONTROL

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. SUPPRESSION POOL COOLING			
2. SUPPRESSION POOL SPRAY			
3. D/W SPRAY			
4. SBGTS			

H. CONTAINMENT ISOLATIONS

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. GRP I			
2. GRP II			
3. GRP III			
4. GRP IV			
5. GRP V			

I. POWER SUPPLIES

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. OFFSITE #1			
2. OFFSITE #2			
3. D1 DIESEL			
4. D2 DIESEL			
5. D3 DIESEL			
6. D4 DIESEL			
7. D1-1 BUS			
8. D1-2 BUS			
9. D1-3 BUS			
10. D1-4 BUS			

J. RADIOLOGICAL PARAMETERS

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. NORTH STACK RELEASE			
2. SOUTH STACK RELEASES			
3. D/W RAD. MONITOR LEVEL			
4. REFUEL FLOOR EXHAUST			
5. RADWASTE EXHAUST			
6. AIR EJECTOR/OFF GAS RELEASE			
7. MAIN STACK FLOW			
8. VENT STACK FLOW			

K. METEOROLOGICAL PARAMETERS

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. WIND SPEED			
2. WIND DIRECTION			
3. PRECIPITATION			
4. STABILITY CLASS			

L. REGULATORY CONTACT

	ACCEPTABLE	UNACCEPTABLE	REMARKS
1. NRC			
2. PEMA			
3. FEMA			

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-500 REVIEW AND REVISION OF EMERGENCY PLAN

1.0 PURPOSE

This procedure describes the method for annual review of the Emergency Plan and the incorporation of any necessary revision.

2.0 RESPONSIBILITIES

2.1 The Superintendent, Nuclear Generation shall appoint an Emergency Plan reviewer.

2.2 The reviewer shall review the Emergency Plan in accordance with this procedure.

3.0 APPENDICES

None

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

None

8.0 PRECAUTIONS

None

9.0 PROCEDURE

9.1 ACTIONS

9.1.1 The Superintendent, Nuclear Generation, shall appoint one member of the Electric Production Department staff to conduct the annual review of the Emergency Plan.

9.1.2 The staff member shall review the Plan and other documents indicated below and recommend revisions which are required as a result of the following considerations:

9.1.2.1 Written critiques and evaluations of drills and exercises, especially recommended corrective actions.

9.1.2.2 Changes in plant organization, structures or personnel or capabilities.

9.1.2.3 Changes in function, organization of supporting organizations.

9.1.2.4 Changes in State or Federal regulations.

9.1.2.5 Interfaces in State or local emergency plans.

9.1.2.6 Modifications to the plant or site which could affect emergency planning.

9.1.2.7 Recommendations from other organizations, such as state, federal agencies and other utilities, organizations and INPO.

9.1.2.8 Changes in construction or operating status.

9.1.2.9 Significant changes in areas surrounding the site, such as changes in population density or land usage.

9.1.2.10 Adequacy of emergency equipment, training and readiness testing.

9.1.2.11 Changes in other plant operating or administrative procedures.

9.1.3 The reviewer shall confirm letters of agreement.

9.1.4 The reviewer shall document the results of his review in a letter to the Station Superintendent. The letter shall state the areas reviewed (with those listed above, as a minimum), the results for each area, and the recommended revisions. This letter shall be retained for at least five years.

9.1.4.1 A separate letter of the results of the review shall be written and sent to the NRC and the Pennsylvania Emergency Management Agency.

9.1.5 If in the opinion of the person reviewing the plan, only minor changes are needed, the reviewer shall formalize the proposed changes and submit them for review by the Plant Operations Review Committee (PORC). A minor change is one which does not impact the functioning of the Plan.

9.1.6 If in the opinion of the person reviewing the plan, substantial changes are needed, a three-person review committee shall be convened by the Superintendent, Nuclear Generation to develop the necessary changes. The committee shall consist of one member from the LGS staff, one member from the Electric Production Department not on the LGS staff, and one member appointed by the Nuclear Review Board (NRB). The review committee shall recommend the necessary changes to the Plant Operations Review Committee (PORC), based on the considerations of Steps 9.1.2.1 through 9.1.2.11. A major change is one which impacts the implementation of the Plan.

9.1.6.1 The recommended changes and any additional PORC recommendations shall be presented to the Nuclear Review Board (NRB) for approval.

9.1.6.2 Proposed changes approved by the NRB shall be incorporated into the Emergency Plan by the person or persons who reviewed the Plan or their designees.

9.1.7 Revised pages of the Emergency Plan shall be prepared and shall be distributed to personnel and groups on the Emergency Plan Distribution List. Holders of the Emergency Plan will be requested to acknowledge receipt of the revised pages. The receipts shall be returned to the Emergency Preparedness Section, who will ensure proper filing.

9.1.8 Emergency Plan Implementing Procedures shall be revised to reflect any changes in the Emergency Plan (the Implementing Procedures are also reviewed and revised, independent of the annual plan review, according to other prescribed administrative procedures). Controlled copies of revisions shall be distributed in accordance with Administrative Procedures.

9.1.9 If changes to the Emergency Plan affect contract support groups, they should be informed of these changes.

9.1.10 Discussion of changes shall be incorporated into training programs, as appropriate.

10.0 REFERENCES

10.1 LGS Emergency Plan

10.2 NUREG 0654, Rev. 1 Criteria For Preparation & Evaluation And Of Radiological Emergency Response Plans Preparedness In Support Of Nuclear Power Plants

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

August 8, 1984

50-353/352 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