

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-101	0	Classification of Emergencies	12/27/83	
EP-102	2	Unusual Event Response	04/02/84	
EP-103	2	Alert Response	04/02/84	
EP-104	2	Site Emergency Response	04/02/84	
EP-105	2	General Emergency Response	04/02/84	
EP-106	0	Written Summary Notification	12/27/83	
EP-110	1	Personnel Assembly and Accountability	04/02/84	
EP-201	0	Technical Support Center (TSC) Activation	11/11/83	
EP-202	0	Operations Support Center (OSC) Activation	11/11/83	
EP-203	0	Emergency Operations Facility (EOF) Activation	11/11/83	
EP-208	1	Security Team Activation	04/02/84	
EP-210	0	Dose Assessment Team	11/11/83	
EP-220	0	Radiation Protection Team Activation	11/11/83	
EP-221	0	Personnel Dosimetry, Bioassay, and Respiratory Protection Group	11/11/83	
EP-222	0	Field Survey Group	11/11/83	
EP-230	1	Chemistry Sampling and Analysis Team Activation	04/02/84	
EP-231	1	Operation of Post-Accident Sampling Systems (PASS)	04/02/84	
EP-232	0	Obtaining Drywell/Suppression Pool Gas Samples from Containment Gas Sampling and Analyzing System	12/27/83	
EP-233	0	Retrieving and Changing Sample Filters and Cartridges from the Containment Leak Detector During Emergencies	12/27/83	

CONTROLLED COPY
 12/27/83

VALID ONLY WHEN RED

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-234	0	Obtaining Containment Gas Samples from the Containment Leak Detector Return Line During Emergencies	12/27/83	
EP-235	0	Obtaining Reactor Water Samples from Sample Sinks Following Accident Conditions	12/27/83	
EP-236	0	Obtaining Cooling Tower Blowdown Line Water Samples Following Radioactive Liquid Release after Accident Conditions	12/27/83	
EP-237	0	Obtaining the Iodine, Particulate, or Gas Samples from the North and South Stack Following Accident Conditions	12/27/83	
EP-238	0	Obtaining Liquid Radwaste Samples from Radwaste Sample Sink Following Accident Conditions	12/27/83	
EP-240	0	Obtaining Off-Gas Samples from the Air Ejector/Holdup Pipe Discharge	12/27/83	
EP-241	0	Sample Preparation and Handling of Highly Radioactive Liquid Samples	12/27/83	
EP-242	0	Sample Preparation and Handling of Highly Radioactive Particulate Filters and Iodine Cartridges	12/27/83	
EP-243	0	Sample Preparation and Handling of Highly Radioactive Gas Samples	12/27/83	
EP-250	0	Personnel Safety Team Activation	11/11/83	
EP-251	0	Plant Survey Group	11/11/83	

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-252	0	Search and Rescue/First Aid	11/11/83	
EP-254	0	Vehicle and Evacuee Control Group	12/27/83	
EP-255	0	Vehicle Decontamination	12/27/83	
EP-260	0	Activation of the Firefighting Group	12/29/83	
EP-261	0	Damage Repair Group	11/11/83	
EP-272	0	Philadelphia Electric Company Officials	12/27/83	
EP-273	0	Limerick Station Supervision Call List	12/27/83	
EP-275	0	Radiation Protection Team Phone List	12/27/83	
EP-276	0	Fire and Damage Control Team Phone List	12/27/83	
EP-277	0	Personnel Safety Team Phone List	12/27/83	
EP-278	0	Security Team Phone List	12/27/83	
EP-279	0	Emergency Operations Facility (EOF) Group Phone List	12/27/83	
EP-280	0	Technical Support Center Phone List	12/27/83	
EP-282	0	Government and Emergency Management Agencies	12/27/83	
EP-284	0	Company Consultants and Contractors	12/27/83	
EP-287	0	Nearby Public and Industrial Users of Downstream Water	12/27/83	
EP-291	0	Staffing Augmentation - 60 Minute Call Procedure	12/27/83	
EP-292	0	Chemistry Sampling and Analysis Team Phone List	12/27/83	
EP-294	0	Dose Assessment Team Phone List	12/27/83	
EP-301	0	Operating the Evacuation Alarm and River Warning System	11/11/83	

EMERGENCY PLAN PROCEDURE INDEX

PROCEDURE NUMBER	REV. NO.	TITLE	DATE SIGNED BY SUPER.	DATE OF LAST PERIODIC REVIEW
EP-303	2	Local Evacuation	04/02/84	
EP-304	0	Partial Plant Evacuation	11/11/83	
EP-305	0	Site Evacuation	11/30/83	
EP-306	0	Evacuation of the Information Center	12/27/83	
EP-307	0	Reception and Orientation of Support Personnel	11/11/83	
EP-312	0	Radioactive Liquid Release	11/30/83	
EP-313	0	Distribution of Thyroid Blocking Tablets	11/30/83	
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	0	Emergency Response Facility Habitability	12/27/83	
EP-401	0	Entry for Emergency Repair and Operations	11/30/83	
EP-410	0	Recovery Phase Implementation	03/29/84	
EP-500	0	Review and Revision of Emergency Plan	11/30/83	

*J. L. Lital 4/2/84*PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDUREEP-102 UNUSUAL EVENT RESPONSE1.0 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.

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

CONTROLLED**COPY****VALID ONLY WHEN RED**

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

EP-303 Local Evacuation

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

9.1.1.4 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.

DO NOT USE BLUE PHONE FOR THESE CALLS. THE BLUE PHONE IS USED FOR CONFERENCE CALLS WITH THE COUNTY AND STATE EMERGENCY MANAGEMENT AGENCIES AT HIGHER LEVEL CLASSIFICATIONS.

- 9.1.1.5 For samples, direct the Shift Chemistry Technician or Chemistry Sampling and Analysis Team Leader if necessary to implement EP-230 Chemistry Sampling and Analysis Team Activation.
- 9.1.1.6 For in-plant surveys, direct a Shift HP Technician or Personnel Safety Team Leader if necessary to implement EP-250 Personnel Safety Team Activation.
- 9.1.1.7 For fire/damage repair, direct a Shift Supervisor or Fire and Damage Control Team Leader to implement EP-260 Fire and Damage Control 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.

9.2 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.

DO NOT USE THE BLUE PHONE FOR THESE CALLS. THE BLUE PHONE IS USED FOR CONFERENCE CALLS WITH THE COUNTY AND STATE EMERGENCY MANAGEMENT AGENCIES AT HIGHER LEVEL CLASSIFICATIONS.

- 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 from Shift HP Technician or Personnel Safety Team Leader.
- C. Fire/Damage Repair status from Shift Supervisor or Fire and Damage Team Leader.
- D. 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, Criteria For Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.
Rev. 1
- 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 Control 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 LGS calling to report an Unusual Event. Please connect me

with _____, the appropriate authority. This is Limerick

Generating Station calling to report an Unusual Event has been

declared on Unit No. _____. Time and date of Unusual

Event classification are _____, _____.
(24 Hr Clock Time) (Date)

The basic problem is _____.

The plant status is (stable) (improving) (degrading) (not known).

There (has been) (has not been) an (airborne) (liquid) radioactive
release from the plant. There is no protective action recommended.

My name is _____. 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 _____

		Centrex	Name of Person Responding
			<u>Notification</u> <u>De-Escalation</u>
a.	Emergency Director (unless already notified by the Interim Emergency Director)		
	G. M. Leitch		
	Alternate		
	J. F. Franz		
b.	Load Dispatcher		
c.	Montgomery County Emergency Management Agency	24 hrs. per day	Do Not Call On De-Escalation
d.	Pennsylvania Emergency Management Agency	24 hrs. per day	Do Not Call On De-Escalation
e.	NRC Operations Center Bethesda, MD		
f.	Penna. Bureau of Rad. Protection Harrisburg, PA		
g.	Manager - Public Info. Ronald Harper		
h.	Director, Emergency Preparedness Roberta Kankus		
	Completed By		TIME/DATE:
	Communicator: Inform (Interim) EMERGENCY DIRECTOR when notifications are completed		

Verified By _____ Time/Date _____

(INTERIM) EMERGENCY DIRECTOR

*J. L. Litch 7/2/84*PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDUREEP-103 ALERT RESPONSE1.0 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

4.0 PREREQUISITES

4.1 EP-101, Classification of Emergencies, completed

5.0 SPECIAL EQUIPMENT

None

CONTROLLED**COPY****VALID ONLY WHEN RED**

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 Select and implement required action below:

IF ANNOUNCEMENT B IS TO BE USED, FIRST DETERMINE THE PROTECTED AREA EXIT POINTS TO BE USED.

A. Make announcement for emergency assembly without accountability check. Call Security Shift Supervision and direct the performance of an accountability check, and activate the Personnel Accountability Group of the Security Team per EP-208.

"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."

- B. Make announcement for emergency assembly with accountability check.

"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). THIS (IS) (IS NOT) A DRILL. THIS (IS) (IS NOT) A DRILL."

- C. Local Evacuation

Implement EP-303

- D. Partial Plant Evacuation

Implement EP-304

- E. If necessary and if conditions outside the plant are safer than inside, direct the evacuation of the site in accordance with EP-305 Site Evacuation.

PROPRIETARY
Direct the Information Center Staff to implement EP-305 Evacuation of the Information Center. Inform the Staff of the wind direction if there is an airborne release.

- 9.1.1.4 If conditions outside the plant are safer than inside, evacuate all construction personnel by notifying Bechtel Safety or Bechtel Security. Direct them to call for a Site Evacuation or a 'Total Project Evacuation' depending upon plant conditions in accordance with Bechtel Procedures.

THIS WILL CALL FOR THE ASSEMBLY OF PERSONNEL AT THE UPPER PARKING LOT AND POST #3. IF YOU WANT NON-ESSENTIAL PERSONNEL OFF-SITE USE EP-305 SITE EVACUATION WHICH WILL AVOID ASSEMBLY AT THE UPPER PARKING LOT AND POST #3.

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

- 9.1.1.6 Fill out Appendix EP-103-1 Alert Notification Message and give it to the communicator.
- 9.1.1.7 Direct the communicator to complete notification of the appropriate parties as specified in Appendix EP-103-4 Alert Phone List. The Communicator shall man the NRC RED telephone on a continuous basis if required by procedure A-31. 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.
- 9.1.1.8 Direct the Shift Clerk to activate the 60 minute call list using EP-291 Staffing Augmentation - 60 Minute Call Procedure. 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, contact the Dose Assessment Team Leader and direct him to 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, if habitable.

IF IN THE JUDGEMENT OF THE (INTERIM) EMERGENCY DIRECTOR THE OPERATIONS SUPPORT CENTER IS NOT HABITABLE, HAVE PERSONNEL REPORT TO THEIR ALTERNATE ASSEMBLY AREA IN ACCORDANCE WITH EP-110, PERSONNEL ASSEMBLY AND ACCOUNTABILITY.

- 9.1.1.12 Call the Security Shift Supervision (Tel. no. - later) and direct implementation of EP-208, Security Team Activation, unless previously done.

- 9.1.1.13 For samples, 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 For in-plant surveys, 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 Radiation Protection Team Leader to implement EP-220 Radiation Protection Team Activation.
- 9.1.1.16 For a release at or greater than the Alert level in EP-101 Classification of Emergencies, 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 a Shift Supervisor or Fire and Damage Control Team Leader to implement EP-260, Fire and Damage Control 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.

9.2 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-103-4 Alert Phone List.
- 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 Shift HP Technician or Radiation Protection Team Leader
 - E. Dose projections and protective action recommendations from Shift Technical Advisor or Dose Assessment Team Leader
 - F. Fire/damage repair status from Shift Supervisor 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 P.A. speaker 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 for (Interim) Emergency Director's Signature.

10. REFERENCES

- 10.1 Limerick Generating Station Emergency Plan
- 10.2 NUREG 0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plant.
Rev. 1
- 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 - 60 Minute Call Procedure
- 10.10 EP-201 Technical Support Center (TSC) Activation
- 10.11 EP-202 Operational 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-220	Radiation Protection Team Activation
10.19	EP-230	Chemistry Sampling and Analysis Team Activation
10.20	EP-250	Personnel Safety Team Activation
10.21	EP-260	Fire and Damage Control Team Activation
10.22	EP-261	Damage Repair Group
10.23	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 has been declared on Unit No. _____. Time and date of Alert classification are _____, _____.
(24 Hr Clock Time) (Date)

_____. The plant status is (stable) (improving) (degrading) (not known). There (is presently) (has not been) (is potential for) (has been) a radioactive (airborne) (liquid) release from the plant. Recommended protective actions are (none)* _____. The affected population is (none) _____. My name is _____. This (is) (is not) a drill. This (is) (is not) a drill.

* If an Alert has been declared without prior emergency classification, indicate that no protective actions are necessary.

APPENDIX EP-103-2
Emergency Exposure Guidelines

<u>Function</u>	<u>Projected Whole Body Dose</u>	<u>Thyroid Dose</u>	<u>Authorized By</u>
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 Administra- tive Guide- lines	Station Adminis- trative Guide- lines	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-103-4
ALERT PHONE LIST

Time Initiated:

- a. Emergency Director (unless already notified by the interim Emergency Director)
G. M. Leitch
J. F. Franz (Alternate)

Centrex

Name of Person Responding
Notification De-Escalation

- b. Load Dispatcher
(Tell Him To Initiate Call List 'C')
c. State and County Agencies

Do Not Call On
Escalation or
De-Escalation

- (1) Montgomery County
Office of Emergency 24 hrs.
Preparedness and
Medical Services
(2) Pennsylvania Emergency
Management Agency

d. Penna. Bureau of Rad. Protection
Harrisburg, PA

e. NRC Operations Center
Bethesda, MD

Make this phone call last
and remain on telephone until NRC
disconnects.

Completed By: _____

Time/Date: _____

Communicator: Inform Emergency Director when notifications are completed.

Verified By _____ Time/Date _____
(INTERIM) EMERGENCY DIRECTOR

PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURE*EM Lead 4/28/84*EP-104 SITE EMERGENCY RESPONSE1.0 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 Decontamination Notification Message
- 3.4 EP-104-4 Site Emergency Phone List

CONTROLLED**COPY****VALID ONLY WHEN RED**

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 Unless a Site Evacuation is going to be declared, announce assembly of Emergency Response Personnel as follows:

Call Security Shift Supervision and direct the performance of an accountability check and activate the Personnel Accountability Group of the Security Team per EP-208.

BEFORE MAKING ANNOUNCEMENT, FIRST DETERMINE THE PROTECTED AREA EXIT POINT(S) TO BE USED.

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). THIS (IS) (IS NOT) A DRILL. THIS (IS) (IS NOT) A DRILL.

- 9.1.1.3 If necessary and if conditions outside the plant are safer than inside, direct the evacuation of the site in accordance with EP-305, Site Evacuation, if not already done.
- 9.1.1.4 Direct the Information Center Staff to implement EP-306, Evacuation of the Information Center, if not already done. Inform the staff of the intended direction, if there is an alternate release.
- 9.1.1.5 If conditions outside the plant are safer than inside, evacuate all construction personnel by notifying Bechtel Safety or Bechtel Security. Direct them to call for a Site Evacuation or a "Total Project Evacuation" depending upon plant conditions in accordance with Bechtel Procedures.

THIS WILL CALL FOR THE ASSEMBLY OF PERSONNEL AT THE UPPER PARKING LOT AND POST #3. IF YOU WANT NON-ESSENTIAL PERSONNEL OFF-SITE USE EP-305 SITE EVACUATION WHICH WILL AVOID ASSEMBLY AT THE UPPER PARKING LOT AND POST #3.

- 9.1.1.6 Contact the Station Superintendent and the Shift Technical Advisor, inform them of the situation.
- 9.1.1.7 Fill out Appendix EP-104-1, Site Emergency Notification Message and give it to the Communicator.
- 9.1.1.8 Direct the communicator to complete notification of the appropriate parties as specified in Appendix EP-104-4 Site Emergency Phone List. The Communicator shall man the NRC RED Telephone until concurrence for securing the phone is obtained from NRC.

- 9.1.1.9 If not already accomplished at the Alert stage, direct the shift clerk to activate the 60 minute call list per EP-291, Staffing Augmentation - 60 Minute Call Procedure. If shift clerk is not available, this function may be assigned to any available individual.
- 9.1.1.10 Direct the activation of the Technical Support Center in accordance with EP-201, Technical Support Center (TSC) Activation, if not already activated.
- 9.1.1.11 Contact the Dose Assessment Team Leader and direct the activation of the Emergency Operations Facility in accordance with EP-203, Emergency Operations Facility (EOF) Activation, if not already activated.
- 9.1.1.12 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.
- 9.1.1.13 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, if habitable.
- IF IN THE JUDGEMENT OF THE EMERGENCY DIRECTOR THE OPERATIONS SUPPORT CENTER IS NOT HABITABLE, HAVE PERSONNEL REPORT TO THE CONTROL ROOM.
- 9.1.1.14 Call Security Shift Supervision (Tel.no. (later)) and direct implementation of EP-208, Security Team Activation and performance of an accountability check in accordance with EP-110, Personnel Assembly and Accountability.
- 9.1.1.15 For samples, direct the Shift Chemistry Technician or Chemistry Sampling And Analysis Team Leader to implement EP-230, Chemistry Sampling And Analysis Team Activation.

- 9.1.1.16 For in-plant surveys, direct a Shift HP Technician or Personnel Safety Team Leader to implement EP-250, Personnel Safety Team Activation.
- 9.1.1.17 For field surveys when a release of gaseous radioactive material has occurred or is suspected, direct a Shift HP Technician or Radiation Protection Team Leader to implement EP-220, Radiation Protection Team Activation.
- 9.1.1.18 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.
- 9.1.1.19 For fire/damage repair direct a Shift Supervisor or Fire and Damage Control Team Leader to implement EP-260, Fire and Damage Control Team Activation and/or EP-261, Damage Repair Group.
- 9.1.1.20 For a liquid release, implement EP-312, Radioactive Liquid Release, if required.

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-104-4, Site Emergency Phone List.
- 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 Radiation Protection Team Leader
 - E. Dose projections and protective action recommendations from Shift Technical Advisor or Dose Assessment Team Leader
 - F. Fire/Damage repair status from Shift Supervisor or Fire and Damage Control 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 PA speaker 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 and Radiation Protection 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 for Emergency Directors Signature.

10. REFERENCES

- 10.1 Limerick Generating Station Emergency Plan
- 10.2 NUREG 0654, Criteria For Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.
Rev. 1
- 10.3 EP-101 Classification of Emergencies
- 10.4 A-31 Procedure for Prompt Notification
- 10.5 EP-291 Staffing Augmentation 60 minute Call Procedure
- 10.6 EP-201 Technical Support Center (TSC) Activation

- 10.7 EP-202 Operational 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 Calculations 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-220 Radiation Protection Team Activation
- 10.17 EP-230 Chemistry Sampling and Analysis Team Activation
- 10.18 EP-250 Personnel Safety Team Activation
- 10.19 EP-260 Fire and Damage Control Team Activation
- 10.20 EP-261 Damage Repair Group
- 10.21 EP-312 Radioactive Liquid Release
- 10.22 EP-279 Emergency Operations Facility (EOF) Group Phone List

APPENDIX EP-104-1

SITE AREA 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 has been declared on Unit _____. Time and date of site emergency classification are _____, _____.
(24 Hr Clock Time) (Date)
The basic problem is _____. The plant status is (stable) (improving) (degrading) (not known). There (has not been) (is potential for) (has been) (is presently) a radioactive (airborne) (liquid) release from the plant. Recommended protective actions are (none)* _____. The affected population area is (none) _____. My name is _____. This (is) (is not) a drill. This (is) (is not) a drill.

* If a Site Emergency has been declared without prior emergency classification, indicate that no protective actions are necessary.

APPENDIX EP-104-2

EMERGENCY EXPOSURE GUIDELINES

<u>Function</u>	<u>Projected Whole Body Dose</u>	<u>Thyroid Dose</u>	<u>Authorized By</u>
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-104-4
SITE EMERGENCY PHONE LIST

Time Initiated _____

a. Emergency Director (unless already notified by the interim Emergency Director)	<u>Centrex</u>	<u>Name of Person Responding</u> <u>Notification</u> <u>De-Escalation</u>
G. M. Leitch Alternate J. F. Franz		
b. Load Dispatcher (Tell Him To Initiate Call List 'C')		
c. State and County Agencies		
(1) Montgomery County Office of Emergency 24 hrs. Preparedness and Medical Services (2) Pennsylvania Emergency Management Agency		Do Not Call On Escalation Or De-Escalation
d. Penna Bureau of Rad. Protection Harrisburg, PA		
e. NRC Operations Center Bethesda, MD		
Make this phone call last and remain on telephone until NRC disconnects.		

Completed By: _____

Time/Date: _____

Communicator: Inform Emergency Director when notifications are completed

Verified By _____

Time/Date _____

(INTERIM) EMERGENCY DIRECTOR

*J. L. Lital 4/2/87*PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDUREEP-105 GENERAL EMERGENCY RESPONSE1.0 PURPOSE

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

2.0 RESPONSIBILITIES

- 2.1 Shift Supervision shall assume the role of Interim Emergency Director when a General Emergency occurs unless the Emergency Director is present and performs the necessary step 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-105-1 General Emergency Notification Message
- 3.2 EP-105-2 Emergency Exposure Guidelines
- 3.3 EP-105-3 General Emergency De-escalation Notification Message
- 3.4 EP-105-4 General Emergency Phone Lists

**CONTROLLED
COPY****VALID ONLY WHEN RED**

4.0 PREREQUISITES

4.1 EP-101 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 General 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-105-2 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 Direct the evacuation of the site in accordance with EP-305, Site Evacuation, if not already done.

IF CONDITIONS INSIDE THE PLANT ARE SAFER THAN OUTSIDE, CONSIDER KEEPING PERSONNEL ON-SITE IN DESIGNATED ASSEMBLY AREAS.

- 9.1.1.3 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.
- 9.1.1.4 Contact the Station Superintendent and the Shift Technical Advisor, inform them of the situation.
- 9.1.1.5 Fill out Appendix EP-105-1, General Emergency Notification Message, and give it to the communicator.
- 9.1.1.6 Direct communicator to complete notification of the appropriate parties as specified in Appendix EP-105-4, General Emergency Phone List. The communicator shall man until concurrence for securing the phone is obtained from the NRC.
- 9.1.1.7 If not already accomplished during an Alert or Site Emergency Response procedure, direct the shift clerk to activate the 60 minute call list using EP-291, Staffing Augmentation - 60 Minute Call List. If shift clerk is not available, this function may be assigned to any available individual.
- 9.1.1.8 Direct the activation of the Technical Support Center in accordance with EP-201, Technical Support Center (TSC) Activation, if not already activated.
- 9.1.1.9 Contact the Dose Assessment Team Leader using EP-294, Dose Assessment Team Phone List and direct activation of the Emergency Operations Facility in accordance with EP-203, Emergency Operations Facility (EOF) Activation, if not already activated.
- 9.1.1.10 If the EOF has not been activated earlier, during an Alert or Site Emergency Response procedure, direct a communicator to call EOF personnel (directing them to report to the EOF) using EP-279, EOF Group Phone List.

9.1.1.11 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, if habitable.

IF IN THE JUDGEMENT OF THE EMERGENCY DIRECTOR THE OPERATIONS SUPPORT CENTER IS NOT HABITABLE, HAVE PERSONNEL REPORT TO THE CONTROL ROOM.

9.1.1.12 Call Security Shift Supervision (Tel. No. Later) and direct him to implement EP-208 Security Team Activation.

9.1.1.13 For samples, 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 For in-plant surveys, 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 Radiation Protection Team Leader to implement EP-220, Radiation Protection 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 a Shift Supervisor or Fire and Damage Control Team Leader to implement EP-260, Fire and Damage Control 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.

9.2 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. If the conditions change, deescalate to an appropriate classification.
- 9.2.1.3 If classification is de-escalated, fill out Appendix EP-105-3, General 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-105-4, General Emergency Phone List.
- 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 Radiation Protection Team Leader

- E. Dose projections and protective action recommendations from Shift Technical Advisor or Dose Assessment Team Leader
 - F. Fire/Damage Repair status from Shift Supervisor or Fire and Damage Control Team Leader
 - G. Notification results from Communicator
- 9.2.1.5 Discuss protective action recommendations with the Site Emergency Coordinator.
- 9.2.1.6 If not already performed, determine which additional support personnel are necessary for emergency functions and direct the shift clerk or other assigned person to contact those personnel.
- 9.2.1.7 Provide site personnel with PA speaker announcements for any major changes in plant emergency status, such as changing emergency action levels.
- 9.2.1.8 Evaluate the need and order evacuation of effected areas as necessary.
- Refer to the following procedures:
- EP-303 Local Evacuation
 - EP-305 Site Evacuation
 - EP 306 Evacuation of the Information Center
- 9.2.1.9 Perform the following until relieved by the Site Emergency Coordinator:
- A. Discuss protective action recommendations with the Radiation Protection Team Leader and Dose Assessment Team Leader.

- B. Provide protective action recommendations 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 Appendix EP-105-4 General Emergency Phone List for Emergency Director's signature.

10.0 REFERENCES

- 10.1 Limerick Generating Station Emergency Plan
- 10.2 NUREG 0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans in Support of Nuclear Power Plants
- 10.3 EP-101 Classification of Emergencies
- 10.4 EP-201 Technical Support Center (TSC) Activation
- 10.5 EP-202 Operational Support Center (OSC) Activation
- 10.6 EP-203 Emergency Operations Facility (EOF) Activation
- 10.7 EP-291 Staffing Augmentation 60 Minute Call List
- 10.8 EP-305 Site Evacuation
- 10.9 EP-306 Evacuation of the Information Center
- 10.10 EP-317 Determination of Protective Action Recommendations
- 10.11 EP-316 Cumulative Population Dose Calculations For Airborne Releases - Manual Method
- 10.12 EP-110 Personnel Assembly and Accountability
- 10.13 EP-208 Security Team Activation

- 10.14 EP-210 Dose Assessment Team Activation
- 10.15 EP-220 Radiation Protection 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 Control 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 105-1

GENERAL 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 General Emergency has been declared on Unit No. _____. Time (and date of General Emergency) classification are _____, _____. The basic problem
(24 Hr Clock Time) (Date)

is _____.

The plant status is (stable) (improving) (degrading) (not known). There (is presently) (has not been) (is potential for) (has been) a radioactive (airborne) (liquid) release from the plant. Recommended protective actions are * _____. The affected population area is (none) _____.

My name is _____. This (is) (is not) a drill. This (is) (is not) a drill.

* If a General Emergency has been declared without prior emergency classification provide the recommendation to shelter within the 2 mile radius and 5 miles downwind of the plant. If PEMA & BRP are not available, make the recommendation directly to the counties.

APPENDIX EP-105-2
Emergency Exposure Guidelines

<u>Function</u>	<u>Projected Whole Body Dose</u>	<u>Thyroid Dose</u>	<u>Authorized By</u>
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-105-3

GENERAL 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 General Emergency has been
(de-escalated to) (An Unusual Event) (An Alert) (An Site
Emergency) (Terminated). Time and date are
_____, _____. The plant status is (stable)
(24 Hr Clock Time) (Date)
(improving). My name is _____.
This (is) (is not) a drill. This (is) (is not) a drill.

APPENDIX EP-105-4
GENERAL EMERGENCY PHONE LIST

Time Initiated _____

a. Emergency Director (unless already notified by the interim Emergency Director)
G. M. Leitch
(Alternate)
J. F. Franz

Centrex

Name of Person Responding
Notification De-Escalation

b. Load Dispatcher
(Tell Him To Initiate Call List 'C')

c. State and County Agencies

Do Not Call On
De-Escalation

(1) Montgomery County
Office of Emergency 24 hrs.
Preparedness and
Medical Services

(2) Pennsylvania Emergency
Management Agency

(3) Berks County Emergency
Management Agency

(4) Chester County Department
of Emergency Services

d. Penna. Bureau of Rad. Protection
Harrisburg, PA

e. NRC Operations Center
Bethesda, MD

Make this phone call last
and remain on telephone until NRC
disconnects.

Completed By: _____

Time/Date: _____

Communicator: Inform (Interim) Emergency Director when notifications are completed

Verified By _____

Time/Date: _____

(INTERIM) EMERGENCY DIRECTOR

JM Laitch Hc/ST

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 and (Interim) Personnel Safety 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.

CONTROLLED

3.0 APPENDICES

- 3.1 EP-110-1, Emergency Assembly Areas

COPY

4.0 PREREQUISITES

None

VALID ONLY WHEN RED

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, Partial Plant Evacuation is declared and may also be executed when an Unusual Event is declared at the discretion of the Emergency Director.

ACCOUNTABILITY SECTIONS OF THIS PROCEDURE DO NOT APPLY DURING A SITE EVACUATION.

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 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-304 - Partial Plant Evacuation

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 Other personnel shall report to their designated Emergency Assembly Facility/Area (see Appendix EP-110-1). If not assigned to an Emergency Assembly Facility/Area, exit the Protected Area.
 - 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.
- 9.1.3 Emergency Assembly Area Coordinators shall:
 - 9.1.3.1 For Assembly without an accountability check shall 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 shall:
 - 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 personnel to Security at extension listed in Appendix EP-110-1.
- 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. Security shall:

9.1.4.1 For Assembly without accountability:

- A. Await further instructions.

9.1.4.2 For Assembly with accountability:

- A. Contact the Emergency Assembly Areas that have not reported in within 15-30 minutes after the assembly announcement is made.
- B. Inform (Interim) Emergency Director of the accountability status within 30 minutes after an assembly with accountability announcement is made.

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)
Technical Support Center Staff:	Technical Support Center Display Area Ext.	None	Emergency Director Personnel Safety Team Leader
HP Technicians	Operations Support Center Ext.	See Note 1	Senior HP TA/Technician
Plant Operators Auxiliary Plant Operators	Operations Support Center Ext.	Control Room Ext.	Senior Ranking P.O., A.P.O., or A.O.
Security Guards	Admin Guard Station Ext.	None	Senior Ranking Security Person
Bechtel or Subcontractors in Restricted Area	See Note 2		Supervisors

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 Technician shall report to Admin Bldg. 2ND Floor, HP Area.
- (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)
Control Operators Assit Control Operators Shift Supervision STA	Control Room Ext.	Safe Shutdown Panels For Units 1 and 2 (Only if Control Room uninhabitable)	Shift Superintendent Alt: Shift Supervisor
Chemistry Technicians	Cold Lab 217' El. Bldg. Chemistry Office	2nd Floor Admin Chemistry Ext.	Chemist
PECO Field Engineers	See Note 2		
Escorted Plant	See Note 2		
Visitors Administrative Staff and Unescorted Visitors	See Note 2		
Maintenance Personnel	Maintenance Office		Shift Assistant Foreman
Instrument & Control Technicians	TSC		Senior TSC Staff or Senior Person Present

Notes:

- (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*JM Litch 4/2/04*EP-208 SECURITY TEAM ACTIVATION1.0 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.

3.0 APPENDICES

- 3.1 Appendix EP-208-1 Access Control Group Location
- 3.2 Appendix EP-208-2 Exit Point Staffing for Site Evacuation

4.0 PREREQUISITES

None

5.0 SPECIAL EQUIPMENT

- 5.1 Traffic Vests

CONTROLLED**COPY****VALID ONLY WHEN RED**

6.0 SYMPTOMS

None

7.0 ACTION LEVEL

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

None

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 using EP-278 (Security Team Phone List).

Also call in team members to supplement the staff on site as necessary.

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 Ensure security personnel are equipped with a radio, and a flashlight.
- 9.1.1.5 Advise the Emergency Director concerning the need for support of off-site security agencies, if necessary.
- 9.1.1.6 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.
 - 9.2.1.4 Keep the (Interim) Emergency Director updated on status of the team's activities.
 - 9.2.1.5 If off site re-assembly after site evacuation is required, assign security personnel at the selected re-assembly point to control traffic. These security personnel may be an off-site security agency.
 - 9.2.1.6 Periodically re-evaluate the security situation and make appropriate recommendations to the (Interim) Emergency Director.
 - 9.2.1.7 Implement LGS Emergency Security Procedures as appropriate.
- 9.2.2 The Access Control Group shall:
 - 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 form the TSC.

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

- A. Technical Support Center Personnel Exit Area
- B. Admin Guard Station Personnel Exit Area
- C. Main Access Gate (Gate 1)
- D. Back Access Gate (Post 10)

GUARDS NEED NOT BE STATIONED AT A GATE WHICH IS TO REMAIN LOCKED DURING THE EMERGENCY.

9.2.2.4 Issue emergency dosimetry as directed by the Radiation Protection Team Leader for incoming personnel.

9.2.2.5 During a site evacuation:

- A. Control access and vehicle traffic by providing security personnel at locations required by Appendix EP-208-2. See Appendix EP-208-1 for map of locations.
- B. Notify the (Interim) Emergency Director when security personnel are at their stations so that evacuation can begin.
- C. Security personnel which are stationed at the Technical Support Center and the Admin Guard Station Personnel Exit Area shall direct personnel to deposit security badges in buckets, or other containers provided, but to KEEP DOSIMETRY. If the security computer is working the security personnel will "card out" the badges. If the computer is not working they will compile a list of those badges which have been turned in. This list will be used by the Accountability Group (Section 9.2.3).

9.2.3 The Accountability Group shall:

9.2.3.1 For Personnel Accountability Check without Site Evacuation:

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

9.2.3.2 For Site Evacuation

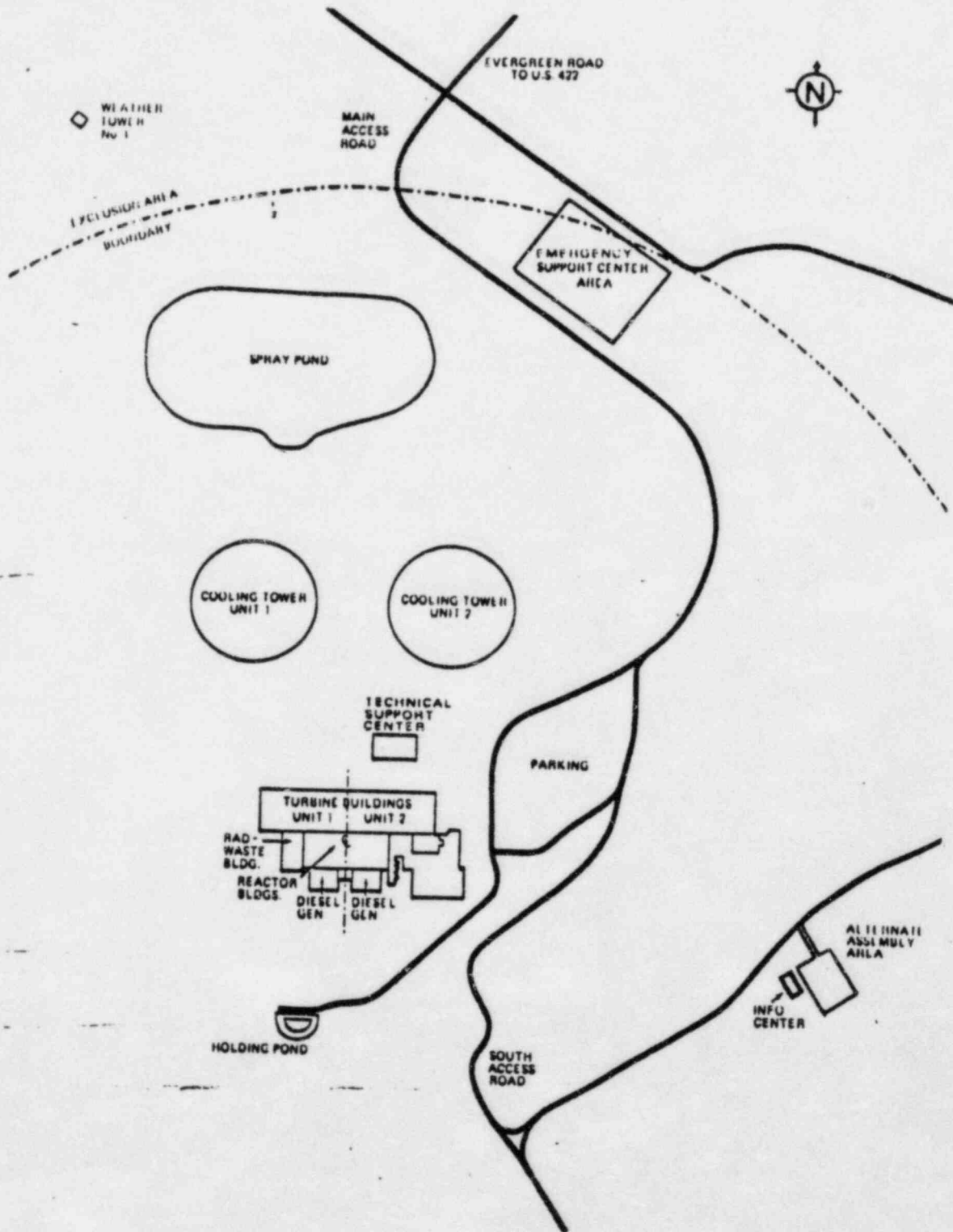
- A. Compile a list of personnel remaining in the protected area. This can be done by using information gathered in section 9.2.2.4 C.
- B. Determine from the Bechtel Command Posts at the North Parking Lot and Post #3 to determine if any Bechtel/Subcontractor personnel are unaccounted for.
- C. Produce a list of missing personnel (if any) using information from steps A. and B. Inform the (Interim) Emergency Director or (Interim) Security Team Leader of unaccounted for personnel so that EP-252 Search and Rescue/First Aid can be implemented.
- D. Forward the list of unaccounted for personnel to the Personnel Safety Team Leader.
- E. Provide updates to the Emergency Director and to the Personnel Safety Team Leader as missing personnel are accounted for.

9.2.4 The Plant Security Group shall:

- 9.2.4.1 Maintain plant security in accordance with emergency security procedures, and as directed by the (Interim) Emergency Director.
- 9.2.4.2 In the event of a Partial Plant Evacuation, assist personnel in the evacuation of affected areas (see EP-110).

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



APPENDIX EP-208-2

EXIT POINT STAFFING FOR SITE EVACUATION

	DAY SHIFT	AFTERNOON SHIFT	NIGHT SHIFT
TSC PERSONNEL EXIT AREA	X		
ADMIN PERSONNEL EXIT AREA	X	X	X
NORTH PARKING LOT	X	X	
POST #3	X	X	X
MAIN ACCESS GATE (GATE 1)	X	X	X
GATE 2	X	X	
BACK ACCESS GATE (POST 10)	X		
CROSS ROAD OUT- SIDE GATE #1	X	X	X
TOTAL-	8	6	4

J. J. Littel 4/2/84

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 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

CONTROLLED

COPY

VALID ONLY WHEN RED

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 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 Cold Chemistry Lab and perform a Chemistry Lab habitability survey in accordance with EP-330, Emergency Response Facility Habitability, from the Personnel Safety Team Leader. 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 Cold Chemistry Lab. Request a Health Physics Technician from the Plant Survey Group Leader in the Operations Support Center (OSC).

- 9.1.3.2 Evaluate sampling conditions and/or locations identified in steps 9.1.3.4 through 9.1.3.7 below and instruct group members to take the necessary samples using indicated procedures.

- 9.1.3.3 Sample primary coolant and drywell atmosphere as necessary with the following procedures:

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 large radioactive liquid spill with potential for discharge to the Schuylkill River, obtain samples of the slowdown 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 and Particulate Samples from The North and South Stack following Accident Conditions

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 Emergency Director and Dose Assessment Team Leader.
- 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 of Babcox and Wilcox 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 Team Leader as required.

10.0 REFERENCES

- 10.1 Limerick Generating Station Emergency Plan
- 10.2 NUREG 0654, Rev. 1 - 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 Station
- 10.4 EP-232 Obtaining Drywell Gas Samples From the Containment Atmosphere Control System
- 10.5 EP-233 Retrieving and Changing Sample Filters and Cartridges from the Drywell Radiation Monitor

- 10.6 EP-234 Obtaining Drywell Gas Samples from Drywell Radiation Monitor Sampling Station
- 10.7 EP-235 Obtaining Reactor Water Samples from Sample Sinks Following Accident Conditions
- 10.8 EP-236 Obtaining Blowdown Line Samples Following Radioactive Liquid Releases Following Accident Conditions
- 10.9 EP-237 Obtaining the Iodine and Particulate Samples from the North and South Stack following Accident Conditions
- 10.10 EP-238 Obtaining Liquid Radwaste Samples from the Radwaste Sample Sink Following Accident Conditions
- 10.11 EP-240 Off Gas Samples from the Off Gas Hydrogen Analyzer following Accident Conditions
- 10.12 EP-241 Sample Preparation and Chemical Analysis of Highly Radioactive Liquid Samples
- 10.13 EP-242 Sample Preparation and Analysis of Highly Radioactive Particulate Filters and Iodine Cartridges
- 10.14 EP-243 Sample Preparation and Analysis of Highly Radioactive Gas Samples
- 10.15 EP-292 Chemistry Sampling and Analysis Team Phone List

APPENDIX EP-230-1
Emergency Exposure Guidelines

<u>Function</u>	<u>Projected Whole Body Dose</u>	<u>Thyroid Dose</u>	<u>Authorized By</u>
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)	<u>REVIEWED</u>	<u>PREREQUISITES</u>	<u>SPECIAL EQUIPMENT</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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	_____

J. J. Latt 4/2/84

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))

CONTROLLED

COPY

VALID ONLY WHEN RED

- 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 The following considerations should be made when
determining the types of samples to be taken and the
routes to be used.
 - 4.1.1 Present plant conditions
 - 4.1.2 Which analyzers are operable
 - 4.1.3 Travel time to and from the sample point
 - 4.1.4 Time required to obtain the sample
 - 4.1.5 Radiological conditions in route to and
within the sample area
 - 4.1.6 Projected dose rates of the sample
- 4.2 Prior to entering the plant to obtain the sample,
prepare the hot lab for receiving the sample, using
the following.
 - 4.2.1 Shielding is available for the sample
 - 4.2.2 Remote handling tools are in place (as
required)
 - 4.2.3 Protective clothing and equipment are
readily available.
 - 4.2.4 Copies of the appropriate sample handling
and analysis procedures are on hand.
- 4.3 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. (For
blowdown precautions see points 8.4 and 8.5 of this
procedure)

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 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

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 an air pump and mechanical damage may result.
- 8.5 The drain and blow out sequence will take precedence over any other operation.

THE DRAIN AND BLOW OUT OPERATION MAY BE PERFORMED AT ANY TIME BY MERELY TURNING SUMP DRAIN SYSTEM SWITCH HC-715-1 TO ANY POSITION OTHER THAN OFF. ANY OTHER OPERATION SEQUENCE THAT MAY BE OCCURRING WILL IMMEDIATELY BE STOPPED AND WHEN SUMP DRAIN SYSTEM SWITCH HC-715-1 IS RETURNED TO THE OFF POSITION THE SAMPLE STATION OPERATION WILL RETURN TO THE STEP PREVIOUSLY INTERRUPTED, UNLESS OTHER SWITCHES WERE CHANGED IN THE MEANTIME.

- 8.6 Minimum amount of time should be spent near the surface of the sample enclosure.
- 8.7 The indicator for Area Radiation Detector RE-507 is on the control panel and its reading should be noted.

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 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 Direct the Chemistry Sampling and Analysis Group Leader to collect and analyze the PASS samples.
- 9.1.2 Chemistry Sampling and Analysis Group Leader shall:
 - 9.1.2.1 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 for handling and analyzing the sample.
 - C. Provide constant coverage of the sampling and analysis portions of this procedure.
 - 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)

<u>Sample</u>	<u>Sampling Time</u>
1. Drywell or Suppression Pool Atmosphere	25 Min.
2. Secondary Containment Atmosphere	10 Min.
3. Primary Coolant Jet Pump	20 Min.
4. RHR	25 Min.

9.1.2.3 Select the appropriate sample point.

<u>Sample</u>	<u>Equip. No.</u>	<u>Location</u>
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 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.

<u>SAMPLE LOCATION</u>	<u>SWITCH</u>	<u>SWITCH NAME</u>	<u>POSITION</u>
A. <u>Upper Drywell (291')</u> or <u>Lower Drywell (242')</u>	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. <u>Suppression Pool (222')</u> (-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

<u>SAMPLE LOCATION</u>	<u>SWITCH</u>	<u>SWITCH NAME</u>	<u>POSITION</u>
C. <u>Suppression Pool (222')</u> (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

* Only necessary if containment isolation signal is present

E. <u>"A" RHR</u>	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

<u>SAMPLE LOCATION</u>	<u>SWITCH</u>	<u>SWITCH NAME</u>	<u>POSITION</u>
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.

9.1.2.5 Have the shift verify that the liquid return line to the Suppression Pool is open by placing the following switch in the appropriate position:

<u>UNIT</u>	<u>SWITCH</u>	<u>SWITCH NAME</u>	<u>POSITION</u>
1	HS-52-101D	Supp Pool Suction	OPEN
2	HS-52-101A	Supp Pool Suction	OPEN

9.1.2.6 Determine the appropriate route to be taken.

A. SUGGESTED 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.

- 9.1.2.7 Obtain the key to the control panel power from the (Interim) Chemistry Sampling and Analysis Team Leader and give it to a designated member of the group.
- 9.1.2.8 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 collection points
 - E. Routes to be taken
 - F. Precautions for operating the PASS
 - G. Sample transport techniques
 - H. Projected amount of time required to collect and transport 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)
- 9.1.2.9 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.
- 9.1.2.10 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.

9.1.3 The Health Physics Technician shall:

9.1.3.1 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

9.1.3.2 Provide constant coverage while obtaining and transporting samples from the PASS.

9.1.3.3 Take appropriate radiation survey equipment and ensure that equipment is functional and calibrated.

9.1.3.4 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.

- 9.1.3.5 Survey the sample area (concentrating especially on the PASS) and the sample container once the sample has been collected and the shielded sample cask.
 - 9.1.3.6 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.
 - 9.1.3.7 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 Obtain and don the appropriate protective clothing and equipment (as required by the H.P. technician or RWP).
 - 9.1.4.3 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.
 - 9.1.4.4 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
- 9.1.4.5 Obtain the key to the control panel power from the Group Leader.
 - 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)

<u>Appendix</u>	<u>Title</u>
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

IF THE ROUTE IS INACCESSIBLE, EXIT IMMEDIATELY AND CONSULT CHEMISTRY SAMPLING AND ANALYSIS GROUP LEADER FOR ALTERNATIVE ROUTES.

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 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 Leader shall:

9.2.1.1 Notify Shift Supervision that a sample has been taken and the aligned valves may be returned to the "NORMAL" position.

- 9.2.1.2 Have group member(s) dose monitored to ensure that exposure limits have not been exceeded.
- 9.2.1.3 Inform the Chemistry Sampling and Analysis Team Leader that the required sample is in the hot lab.
- 9.2.1.4 Instruct the group members to perform calculations (if any) on the Data Sheet of the appropriate Appendix.
- 9.2.1.5 Collect the Control Panel Power Key from the group member and return it to the Team Leader.
- 9.2.1.6 Instruct the appropriate group members to refer to the appropriate procedure for guidance on sample preparation and handling.

<u>Sample</u>	<u>Procedure No.</u>
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

- 9.2.1.7 Obtain and review ALL Data Sheets and report the sample results to the Chemistry Sampling and Analysis Team Leader.
- 9.2.1.8 Enter Data into RMMS, if appropriate.
- 9.2.2 Chemistry Sampling and Analysis Group members shall:
 - 9.2.2.1 Prepare, handle, and analyze the sample using the appropriate procedure
 - 9.2.2.2 Report the results to the Chemistry Sampling and Analysis Group Leader

9.2.2.3 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-102 - General Arrangement Plan at El. 217'-0"
- 10.3 M-30, Rev. 2 - Post Accident Sampling P&ID
- 10.4 M-42, Rev. 14 - 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 - Rev. 13, 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.
2. Check that the Demineralized Flush Water Tank 00T 945 is full and is pressurized at 100 psig and the Valves (30-0014, 30-1100(30-2100)) are open to the sample station.
3. 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. TO ESTABLISH THIS FLOW WITH DEMINERALIZED WATER, USE FLUSH SYSTEM SWITCH HC-628-1 IN POSITIONS 7 AND 6 BY ROTATING THE SWITCH COUNTER CLOCKWISE.

4. 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" or "B".
5. Drain Collector Tank, Trap and Sump by turning Switch HC-715-1 clockwise through its eight positions pausing approximately 5 seconds at each position.
6. Turn all switches (except for HC-723 which is left in position 4) to their "OFF" position.
7. Close nitrogen bottle valve.
8. Close FCV-627 by setting PCV-627 to 0 psig.

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. Open N2 bottle valve and regulate 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.
4. Turn Switch HC-723 (GAS SAMPLE SELECTOR SWITCH) to the desired sample location:

<u>POSITION</u>	<u>LOCATION</u>
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:

<u>SAMPLE LOCATION</u>	<u>SWITCH</u>	<u>SWITCH NAME</u>	<u>POSITION</u>
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 25 to 35 SCFM. 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 shielded container near the sample site and decide later what to do with the sample, or place the sample vial in a shielded container for transportation to the hot lab and decide later what to do with the sample. 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 in 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, turn to unlock and withdraw the gas vial positioner. 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. Drain the system per Appendix EP-231-1.
15. If this is the last sample required, turn all switches to the upright and "OFF" position (except for HC-723 which is left in position 4) before turning power "OFF".

APPENDIX EP-231-2

PROCEDURE FOR OBTAINING A 14.4 ML GAS SAMPLE (CONT.)

Data Sheet for 14.4 ML Gas Sample

1. Sample Source _____ Date _____ Time _____
2. Sample Flow _____ FI-725 (scfh)
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)

$$V = \frac{(14.7)(14.4)(T F + 460)}{(530)(P \text{ PSIA})}$$

Name _____

APPENDIX EP-231-3

PROCEDURE FOR OBTAINING IODINE/PARTICULATE SAMPLE

1. Drain the system per Appendix EP-231-3
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.

<u>SAMPLE SOURCE</u>	<u>POSITION</u>
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:

<u>SAMPLE LOCATION</u>	<u>SWITCH</u>	<u>SWITCH NAME</u>	<u>POSITION</u>
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 25 to 35 scfh. 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.
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.
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.

APPENDIX EP-231-3

PROCEDURE FOR OBTAINING IODINE/PARTICULATE SAMPLE (CONT)

12. Turn Switch HC-712 to position 5 which will admit an air or 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 put them in plastic bags. Tape bags closed. Put drawer back into sample enclosure. Use a pole or rope to increase distance while transporting.
14. Turn Switch HSS-57-146 or HSS-57-147 opened in Step 7 to the CLOSE position.
15. Drain the system per Appendix EP-232-1.
16. If this is the last sample required, turn all switches (except HC-723 which is left in position 4) to the upright and "OFF" position before turning off power. Return all system valves to the normal position. Close N2 bottle valve.

APPENDIX EP-231-3

PROCEDURE FOR OBTAINING IODINE/PARTICULATE SAMPLE (CONT)

Data Sheet for Iodine/Particulate Sample

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) (scfh)
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)

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

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. Check that the Demineralized Flush Water Tank 00T 945 is full and is 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 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 a 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.

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.
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. 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.

APPENDIX EP-231-4

PROCEDURE FOR OBTAINING A SMALL VOLUME LIQUID SAMPLE (CONT)

Also, if a RHR sample is desired, close the normal RHR sample lines by turning the respective switch:

<u>SAMPLE LOCATION</u>	<u>SWITCH</u>	<u>SWITCH NAME</u>	<u>POSITION</u>
"A" RHR	HS-51-199A(299A)	RHR Hx Normal Sample ISLN Loop A	OPEN
"B" RHR	HS-51-199B(299B)	RHR Hx Normal Sample ISLN Loop B	OPEN

11. Raise the sample bottle into position on the needles by moving the lever on the side of the cask.
12. 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.
13. 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 is 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.
14. 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.
15. Record the following on the data sheet:
 Flow/FI-664, Pressure/PI-661, Temperature/TI-660,
 Conductivity/CI-663 and Radiation/RI-665.

APPENDIX EP-231-4

PROCEDURE FOR OBTAINING A SMALL VOLUME LIQUID SAMPLE (CONT)

16. 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.
17. 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.
18. Unscrew the lift rod and lower the sample bottle.
19. Remove the sample from the cask by using cotton liners and gloves. If the sample is greater than 100 mR/hr, use the lead pig to carry the sample to the Hot Lab.
20. 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.
21. When the flush is complete, turn HC-626 (Liquid Sample Source Selector Switch) "OFF" FIRST and then HC-616-1 to "OFF" (position 2).
22. Turn Switch HS-51-199A(299A) or HS-51-199B(299B) opened in Step 10 to the CLOSE position.
23. Drain the system per Appendix EP-232-1.
24. Turn all switches to their normal "OFF" position (except HC-723 which is left in position 4). Turn PCV-627 back to 0 psig. Close N2 bottle valve.

APPENDIX EP-231-4

PROCEDURE FOR OBTAINING A SMALL VOLUME LIQUID SAMPLE (CONT)

Data Sheet for Small Volume Liquid Sample

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)

Name _____

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE
AND/OR A DISSOLVED GAS SAMPLE

1. Drain the system per Appendix EP-231-1.
2. Open the N2 bottle valve and regulate to approximately 100 psig.
3. Check that the demineralized water tank is full. Open the demineralized water discharge valve and the nitrogen inlet valve. Verify that the demineralized water tank is pressurized to at least 100 psig.
4. 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. With cask in fully lowered position, roll cask into position under the sample station.
7. 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.
8. 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.
9. Using the hydraulic pump slowly raise the cask, checking for proper alignment. Stop pumping when top cask ring is inside and the large volume cask is just below the bottom of the sample station.
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.

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE
AND/OR A DISSOLVED GAS SAMPLE (CONT)

11. Make certain that HC-616-1 (Small Volume Sample Switch) is in the "OFF" position.
12. 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:

<u>SAMPLE LOCATION</u>	<u>SWITCH</u>	<u>POSITION</u>
"A" RHR	HS-51-199A(299A)	(LATER)
"B" RHR	HS-51-199B(299B)	(LATER)

13. 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.
14. Adjust PCV-627 so that the flow on FI-664 is at least 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.

15. 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 PCV-627 use PCV-627).
16. 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.
17. Turn Switch HC-601 to position 2. Observe that P-601 starts.

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE
AND/OR A DISSOLVED GAS SAMPLE (CONT)

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 Switch HC-601 to position 3 to isolate the sample and start the dissolved gas separator. Leave in this position for approximately 10 seconds.

20. 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.

21. IF IT IS NOT DESIRABLE TO INTRODUCE TRACER GAS, TURN HC-601 TO POSITION 5 QUICKLY AND VALVE WILL NOT ROTATE.

Turn HC-601 to position 5. Let some of the dissolved gas separate from the liquid.

22. Read and record initial pressure PI-662.

23. 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.

24. Turn HC-601 to position 7. This will bring the rest of dissolved gas into V-610. Leave in position for 10 seconds.

25. Read and record PI-662 on P-1. This will be the approximate pressure of the liquid loop.

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE
AND/OR A DISSOLVED GAS SAMPLE (CONT)

26. 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.
27. 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.
28. 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.
29. 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.
30. 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. 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.
31. Turn HC-601 to "OFF".
32. 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.
33. Lower the cask on the cart by relieving hydraulic oil pressure with the small petcock handle on the hydraulic cylinder.
34. Slide the lead shield drawer back into the enclosure to cover opening for the needles.

APPENDIX EP-231-5

PROCEDURE FOR OBTAINING A LARGE VOLUME LIQUID SAMPLE
AND/OR A DISSOLVED GAS SAMPLE (CONT)

35. Roll the cask out from under the sample station and 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.
36. 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.
37. Perform a flush of the liquid system with Switch HC-628-1 per Appendix EP-231-6.
38. If this is the last sample desired, turn all switches to the upright and "OFF" position before turning power off and return valves to their normal position. Close N2 bottle valve and tracer gas bottle valve.

APPENDIX EP-231-5

DATA SHEET FOR LARGE VOLUME LIQUID SAMPLE AND/OR DISSOLVE GAS SAMPLE
 (CONT)

1. Sample Source _____ Date _____ Time _____
- 1a. Krypton Tracer Gas Pressure _____ psig
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
7. Conductivity Meter _____ Scale _____ CI-663
8. Radiation _____ RI-665
9. Tracer Gas Supply System Pressure _____ psig
- 9a. Initial Pressure P-0 _____ PI-662
10. Pressure P-1 _____ PI-662
11. Stabilized Pressure P2 _____ PI-662
12. Sample Pressure P3 _____ PI-662
13. V1 H2 (From GC) _____ ml
14. V2 O2 (from GC) _____ ml
15. V2 Kr (from GC) _____ ml
16. Vol % O2 _____ %

$$\text{Vol \% O2} = \frac{V2 \text{ O2} - .2P-0}{17317} \times \frac{Kr}{V2 \text{ Kr}} (P-0 + 14.7)$$

17. Vol % H2 _____ %

$$\text{Vol \% H2} = \frac{V1 \text{ H2}}{17317} \times \frac{Kr}{V2 \text{ Kr}} (P-0 + 14.7)$$

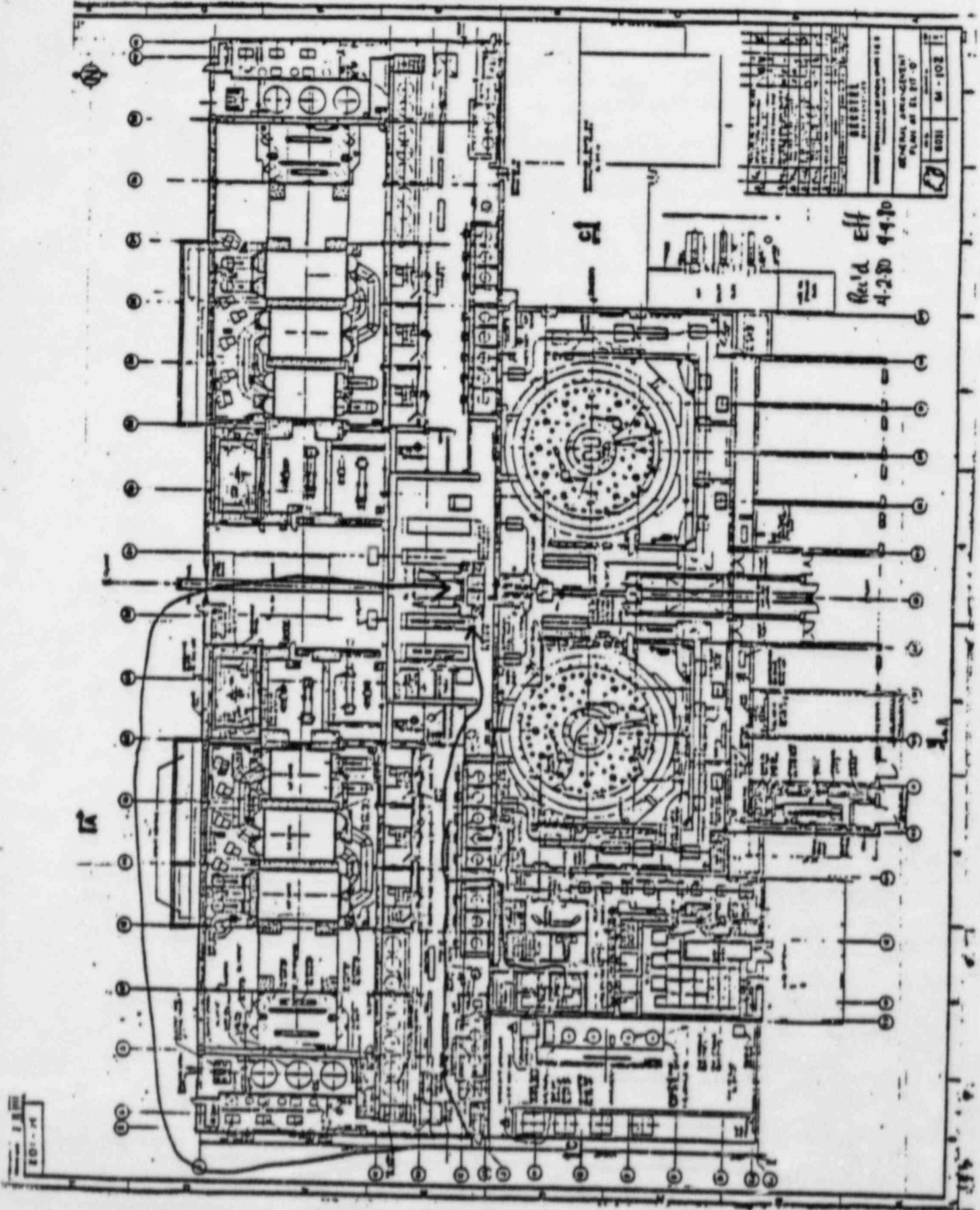
Name _____

APPENDIX EP-231-6

PROCEDURE FOR FLUSHING THE LIQUID AND DISSOLVED GAS SYSTEM

1. Open the N2 bottle valve and regulate to 100 psig.
2. Check that the demin water tank is full. Open the demin water discharge valve and the nitrogen inlet valve. Verify that the demin water tank is pressurized to at least 100 psig.
3. Make sure that FCV-627 is open by adjusting PCV-627 to 15 psig.
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



APPENDIX EP-231-8
 DIAGRAM OF CONTROL PANEL - LEFT SIDE

EP-231 Rev. 1
 Appendix 8
 Page 37 of 40
 TJY/jmv

Liquid
 PRESSURE
 PSIG PI-661

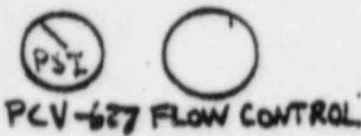
Dissolved
 GAS & PRESSURE
 PSIA PI-662

SAMPLE
 GAS & PRESSURE
 PSIA PJ-708

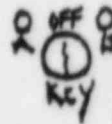
SAMPLE
 RETURN FLOW
 GPM PJ-664

LIQUID OF
 SAMPLE
 TEMP. TI-660

GAS SAMPLE
 TEMP. TI-724
 °F

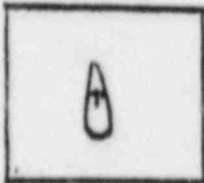


HC-715-1 DRAIN
 SYSTEM SWITCH

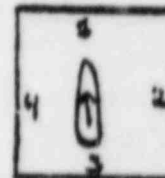
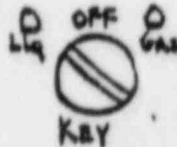


STATUS LIGHTS

- Plot Running
- Plot Keenline
- Plot Blank
- OT-117 Trip High Level

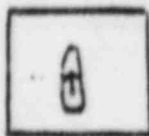


HC-626 LIQ. SAMPLE
 SERVICE SELECTOR SWITCH



HC-723 GAS SAMPLE
 SELECTOR SWITCH

- Drywell ATII
- Suppression Pool ATII
- 2nd Cont. ATM
- SPARE



BOTTLE IN
 YES NO

HC-616-1 SMALL
 VOLUME SAMPLE SWITCH

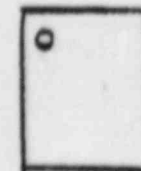
BOTTLE IN
 YES NO



PREP FOR SAMPLE

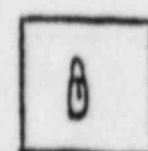


HC-705-15ml
 GAS SAMPLE SWITCH

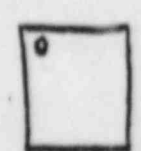


CARTRIDGE IN
 YES NO

YES NO



HC-702 1/2 CART.
 SAMPLE SWITCH

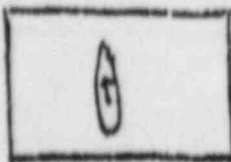


NO BOTTLE YES/NO OFF ONLY LIQUID BOTTLE



HC-601 DISSOLVED GAS & LIQ.
 SAMPLE SWITCH

LOW PRESS. OFF UNIT PREP FOR SAMPLE



HC-628-1
 Flush
 System
 Switch

Red Green

RHR HX
 OUTLET Normal
 Sample ISLN
 LOOP B



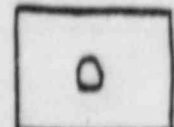
HV-51-199A

Red Green

RHR HX
 OUTLET Normal
 Sample ISLN
 LOOP B

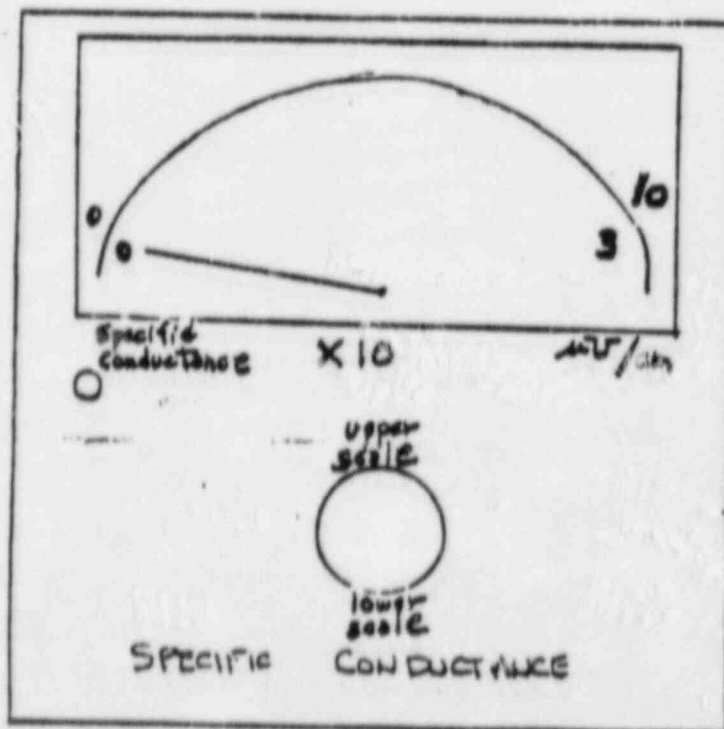
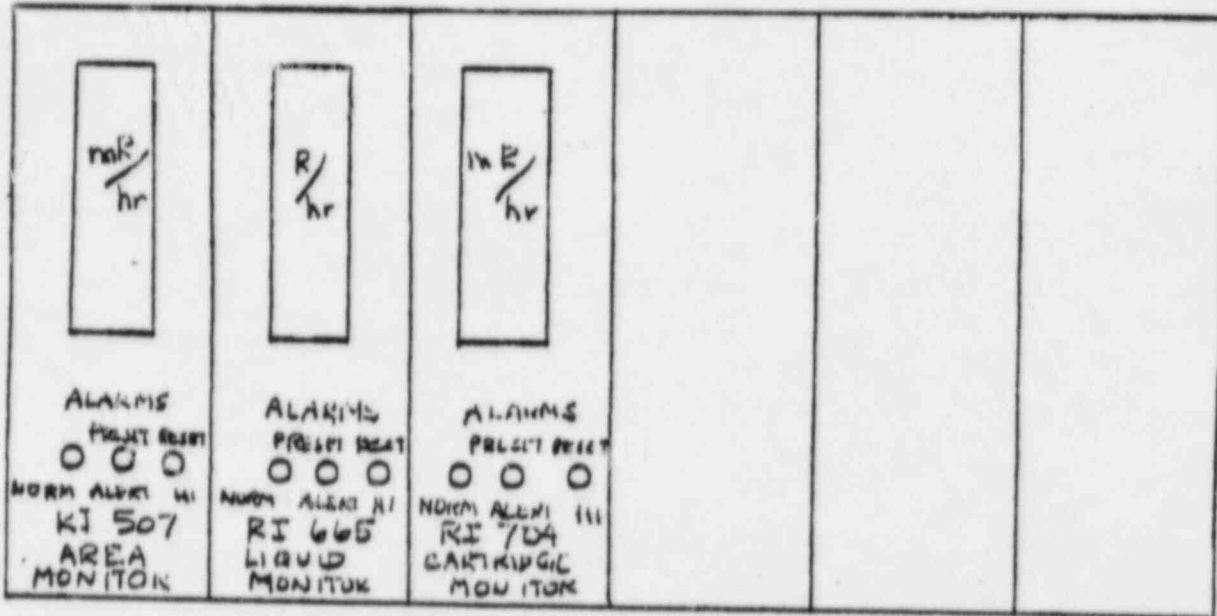


HV-51-199B



KC-712
 CARTRIDGE
 SAMPLE
 TESTER

APPENDIX EP-231-9
DIAGRAM OF CONTROL PANEL - RIGHT SIDE

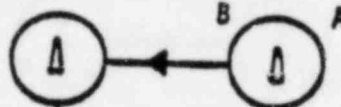


APPENDIX EP-231-10
 CONTROL PANEL SWITCH LAYOUT

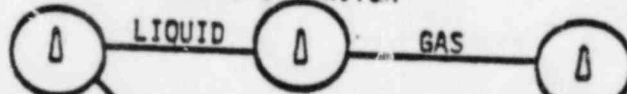
HC-715-1, SUMP DRAIN SYSTEM SWITCH

1. OFF
2. BLOW COLLECTOR
3. DRAIN COOLER TRAP
4. BLOW COLLECTOR
5. EVACUATE COLLECTOR
6. SUMP TO COLLECTOR
7. BLOW COLLECTOR
8. OFF

HC-600, POWER SELECTOR SWITCH



HC-700, LIQUID OR GAS SELECTOR SWITCH



HC-723, GAS SAMPLE SELECTOR SWITCH

1. DRYWELL ATMOSPHERE
2. SUP'N POOL ATMOSPHERE
3. SECONDARY CONT'MT ATM
4. SPARE

HC-705, 10 ML GAS SAMPLE SWITCH

1. OFF
2. CIRCULATE GAS
3. EVACUATE BOTTLE
4. TAKE SAMPLE
5. FLUSH SYSTEM

HC-1720



HC-712, IODINE CARTRIDGE SAMPLE SWITCH

1. OFF
2. CIRCULATE GAS
3. GAS THRU CARTRIDGE
4. EVACUATE CARTRIDGE
5. FLUSH CARTRIDGE

HC-704



(TIMED SAMPLE)

KC-712

C-626, LIQUID SAMPLE SOURCE SELECTOR SWITCH

- JET PUMP LINE ON BYPASS
- JET PUMP LINE
- OFF
- RPV OR SUPPRESSION POOL
- RPV OR SUP'N POOL ON BYPASS

HC-616-1, SMALL VOL SAMPLE SW

1. TAKE SAMPLE
2. OFF
3. FLUSH LOOP

P-601, DISSOLVED GAS AND LIQUID SAMPLE SWITCH

- OFF
- START P-701 AND FLOW
- START P-601
- CIRCULATE AND SEPARATE GAS
- INJECT TRACER GAS
- CIRCULATE TRACER GAS
- COLLECT DISSOLVED GAS
- CIRCULATE AGAIN
- COLLECT DIS'LVD GAS AGAIN
- TAKE GAS SAM AND/OR RELIEVE
- TAKE LIQUID SAMPLE

HC-652



HC-629-1

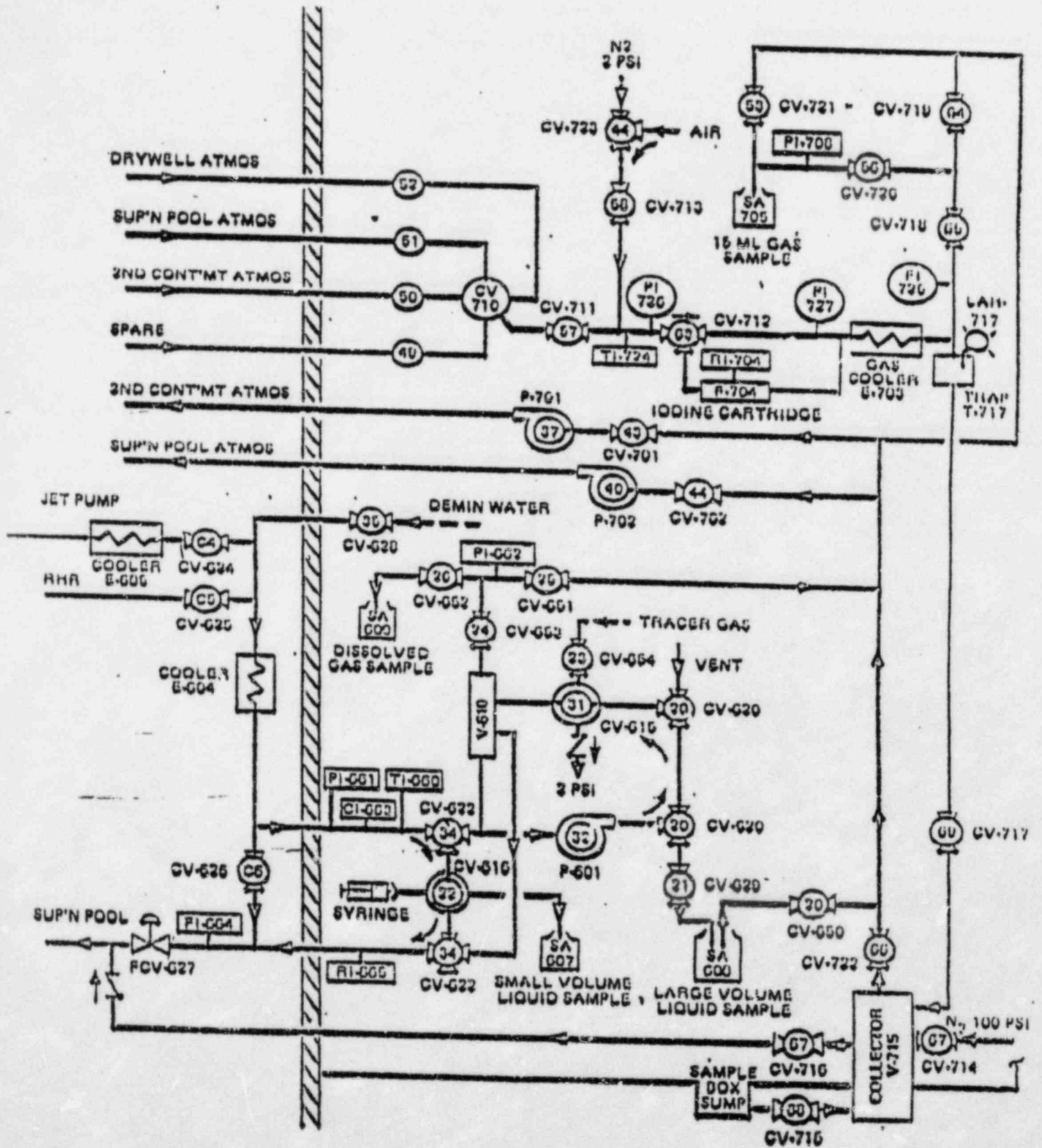


HC-628-1, FLUSH SYSTEM SWITCH

1. OFF
2. START FLUSH
3. FLUSH V-610 LOOP
4. FLUSH P-601 LOOP
5. FLUSH CV-615
6. FLUSH PIPING STATION
7. FLUSH CV-622 LOOP
8. OFF



APPENDIX EP-231-11
SCHEMATIC OF POST ACCIDENT SAMPLE STATION



*EA Litch 4/2/84*PHILADELPHIA ELECTRIC COMPANY
LIMERICK GENERATING STATION
EMERGENCY PLAN IMPLEMENTING PROCEDUREEP-303 LOCAL EVACUATION1.0 PURPOSE

The purpose of this procedure is to define the steps necessary to be taken by site personnel in the event that a local evacuation is required.

2.0 RESPONSIBILITIES

- 2.1 Personnel in an affected area requiring local evacuation shall evacuate the area and notify the control room.
- 2.2 Shift Supervision shall announce the evacuation and initiate cleanup/recovery of a local area by performing the necessary steps in this procedure.

3.0 APPENDICES

None

4.0 PREREQUISITES

- 4.1 Implementation of EP-101, Classification of Emergencies is not required.

5.0 SPECIAL EQUIPMENT

None

6.0 SYMPTOMS

- 6.1 An alarm condition from a local area radiation monitor or continuous air monitor.

CONTROLLED**COPY****VALID ONLY WHEN RED**

- 6.2 Observation of a localized, uncontrolled or unexpected release, leakage or spill of radioactive material or toxic agent which represents a hazard to personnel in a local area.
- 6.3 Other localized hazard such as a room flood, fire or smoke.

7.0 ACTION LEVEL

This procedure shall be implemented by shift supervision when the symptoms in section 6.0 of this procedure occur. This procedure is for localized areas only, that is, hazards contained in a room or single elevation or localized outside area within an enclosure.

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. If radioactive contamination is suspected, remain at the safe area until frisked by Health Physics Personnel.

9.1.2 Shift Supervision shall:

9.1.2.1 Upon receipt of information of a localized hazard or from control room indications, make the following announcement over the P.A. system:

"This (is) (is not) a drill. This (is) (is not) a drill. All personnel evacuate the (location of hazard) and assemble at (location of assembly area). This (is) (is not) a drill. This (is) (is not) a drill."

9.1.2.2 Perform actions that shall contain the hazard in a localized area.

9.2 FOLLOW-UP

- 9.2.1 Shift Supervision shall:
- 9.2.1.1 Direct health physics in the case of radiation hazard or chemistry in the case of a toxic reagent hazard to:
- A. Determine the extent of the hazard.
 - B. Post and limit access to the area as required.
 - C. Ensure that all personnel have left the hazard area and are not contaminated.
 - D. Report back to shift supervision on status.
- 9.2.1.2 Take actions necessary to terminate or cleanup the hazard, if needed refer to the Preparedness Prevention and Contingency Plan.
- 9.2.1.3 Log the occurrence and notify the Station Superintendent.
- 9.2.1.4 If the problem cannot be contained, consult EP-101, Classifications of Emergencies and direct the evacuation of other areas or the site in accordance with the following procedures.

EP-304 Partial Plant Evacuation
EP-305 Site Evacuation

10.0 REFERENCES

- 10.1 Limerick Generating Station Emergency Plan
- 10.2 EP-101 Classifications of Emergencies
- 10.3 EP-304 Partial Plant Evacuation
- 10.4 EP-305 Site Evacuation
- 10.5 Limerick Generating Station Preparedness Prevention and Contingency Plan.

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-5020

M. J. COONEY
MANAGER
NUCLEAR PRODUCTION
ELECTRIC PRODUCTION DEPARTMENT

May 4, 1964

Re: DOCKET NOS. 50-352
50-353

Dr. Thomas E. Murley
Region 1
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
651 Park Avenue
King of Prussia, PA 19406

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20545

Gentlemen:

Enclosed are two copies of Limerick Generating Station emergency plan implementing procedures. These procedures are submitted per regulations in 10 CFR 50, Appendix B, Section V.

The procedures being submitted are the following:

EP-102, Rev. 2	EP-208, Rev. 1
EP-103, Rev. 2	EP-230, Rev. 1
EP-104, Rev. 2	EP-231, Rev. 1
EP-105, Rev. 2	EP-303, Rev. 2
EP-110, Rev. 1	

Pursuant to Section 2,790 of the Commission's regulations, it is hereby requested that the names and telephone numbers listed in in procedures EP-102, page 7; EP-103, pages 3 and 12; EP-104, pages 3 and 12; EP-105, page 12 be withheld from public disclosure. An affidavit setting forth the grounds in support of this request is attached hereto.

X005
1/2