



# PECO NUCLEAR

A Unit of PECO Energy

10CFR50, Appendix E

PECO Energy Company  
965 Chesterbrook Boulevard  
Wayne, PA 19087-5691

June 23, 2000

Docket Nos. 50-352  
50-353

License Nos. NPF-39  
NPF-85

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Subject: Limerick Generating Station, Units 1 & 2  
Emergency Response Procedure Revisions

Dear Sir/Madam:

Enclosed are the following procedure revisions to the Emergency Response Procedures (ERPs) for Limerick Generating Station (LGS), Units 1 and 2. These procedures are required to be submitted within thirty (30) days of their revision in accordance with 10CFR50, Appendix E, and 10CFR50.4.

- ERP-200, Revision 13, "Emergency Director (ED) Response"
- ERP-200, Appendix 2, Revision 0, "Dose Assessment Data Sheet"
- ERP-300, Appendix 3, Revision 1, "Turnover of Dose Assessment Responsibilities"
- ERP-300, Appendix 9, Revision 1, "Protective Action Worksheet"
- ERP-316, Revision 0, "Operation of the Dose Assessment Computer"
- ERP-326, Revision 0, "Shift Dose Assessment Personnel (SDAP)"
- ERP-340, Revision 8, "Field Survey Group"
- ERP-650, Revision 10, "Entry for Emergency Repair and Operations"

Also, enclosed is a copy of a computer generated report index identifying the latest revisions of the LGS ERPs.

If you have any questions or require additional information, please do not hesitate to contact us.

Very truly yours,

James A. Hutton  
Director - Licensing

#### Attachments

cc: H. J. Miller, Administrator, Region I, USNRC (2 copies)  
W. F. Kane, Director of Materials Safety & Safeguard, USNRC  
A. L. Burritt, USNRC Senior Resident Inspector, LGS

A045

## PROCEDURE INDEX REPORT:

FAC	DOC TYPE	PROC TYPE	PROCEDURE NUMBER	CURR REV NBR	TITLE	EFFECTIVE DATE	RESP GROUP	SYSTEM NBR
LG	PROC	ERP	ERP-C-1000	0005	EMERGENCY OPERATIONS FACILITY (EOF) ACTIVATION/DEACTIVATION	04/21/99		
LG	PROC	ERP	ERP-C-1000-1	0002	EOF ACTIVATION CHECKLIST	04/21/99		
LG	PROC	ERP	ERP-C-1000-2	0003	EOF DEACTIVATION CHECKLIST	04/21/99		
LG	PROC	ERP	ERP-C-1000-3	0000	EOF BUSINESS HOURS FIRST RESPONDER CHECKLIST	04/21/99		
LG	PROC	ERP	ERP-C-1000-4	0000	EOF AFTER HOURS FIRST RESPONDER CHECKLIST	04/21/99		
LG	PROC	ERP	ERP-C-1100	0003	EOF STAFF AUGMENTATION INCORPORATED INTO ERP-C-1250	09/14/94		
LG	PROC	ERP	ERP-C-1200	0009	EMERGENCY RESPONSE MANAGER	04/03/00	LWE	
LG	PROC	ERP	ERP-C-1200-1	0000	EMERGENCY RESPONSE MANAGER TURNOVER/BRIEFING FORM	09/14/94		
LG	PROC	ERP	ERP-C-1200-2	0000	PROTECTIVE ACTION RECOMMENDATION WORKSHEET CANCELLED	10/24/95		
LG	PROC	ERP	ERP-C-1200-3	0000	ERM PAR DELIVERY CHECKLIST	04/03/00		
LG	PROC	ERP	ERP-C-1210	0002	ASSISTANT EMERGENCY RESPONSE MANAGER (AERM) CANCELLED	10/24/95		
LG	PROC	ERP	ERP-C-1250	0003	EMERGENCY PREPAREDNESS COORDINATOR/EOF	11/02/98		
LG	PROC	ERP	ERP-C-1250-1	0000	EMERGENCY POWER INSTRUCTIONS	09/14/94		
LG	PROC	ERP	ERP-C-1250-2	0001	EMERGENCY PREPAREDNESS COORDINATOR INSTRUCTIONS FOR ASPEN BACKUP NOTIFICATION SYSTEM	04/02/98		
LG	PROC	ERP	ERP-C-1250-3	0000	EMERGENCY PREPAREDNESS COORDINATOR INSTRUCTIONS TO STOP STAFFING	09/14/94		
LG	PROC	ERP	ERP-C-1250-4	0000	EMERGENCY PREPAREDNESS COORDINATOR INSTRUCTIONS FOR SYSTEM RESET	09/14/94		
LG	PROC	ERP	ERP-C-1300	0009	EMERGENCY OPERATIONS FACILITY (EOF) DOSE ASSESSMENT TEAM LEADER	04/03/00		
LG	PROC	ERP	ERP-C-1300-1	0003	DOSE ASSESSMENT TEAM LEADER INITIAL ACTIONS	04/03/00		
LG	PROC	ERP	ERP-C-1300-2	0000	DOSE ASSESSMENT TURNOVER LIST	09/23/94		
LG	PROC	ERP	ERP-C-1300-3	0003	PROTECTIVE ACTION RECOMMENDATION WORKSHEET	11/02/98		
LG	PROC	ERP	ERP-C-1300-4	0000	OFFSITE SAMPLE ANALYSIS REQUESTS	09/23/94		
LG	PROC	ERP	ERP-C-1300-5	0001	DETERMINATION OF PROTECTIVE ACTION RECOMMENDATIONS (PARS)	11/02/98		
LG	PROC	ERP	ERP-C-1300-6	0001	DOSE ASSESSMENT GROUP INITIAL ACTIONS	04/10/98		
LG	PROC	ERP	ERP-C-1300-7	0000	OBTAINING EPDS MET/RAD DATA	03/26/97		
LG	PROC	ERP	ERP-C-1300-8	0000	USE OF MODE A/MODE B CDM	03/26/97		
LG	PROC	ERP	ERP-C-1300-9	0001	OBTAINING MET DATA FROM NATIONAL WEATHER SERVICE	09/12/97		
LG	PROC	ERP	ERP-C-1310	0003	EMERGENCY OPERATIONS FACILITY (EOF) DOSE ASSESSMENT GROUP CANCELLED	03/26/97		
LG	PROC	ERP	ERP-C-1310-1	0000	DOSE ASSESSMENT GROUP LEADER INITIAL ACTIONS CANCELLED	03/26/97		
LG	PROC	ERP	ERP-C-1310-2	0000	OBTAINING MET DATA FROM NATIONAL WEATHER SERVICE CANCELLED	03/26/97		
LG	PROC	ERP	ERP-C-1310-3	0000	OBTAINING EPDS MET/RAD DATA CANCELLED	03/26/97		
LG	PROC	ERP	ERP-C-1310-4	0000	USE OF MODE A / MODE B OF CDM CANCELLED	03/26/97		
LG	PROC	ERP	ERP-C-1320	0006	EMERGENCY OPERATIONS FACILITY (EOF) FIELD SURVEY GROUP LEADER	04/24/00		
LG	PROC	ERP	ERP-C-1320-1	0002	FIELD SURVEY GROUP LEADER INITIAL ACTIONS	04/10/98		
LG	PROC	ERP	ERP-C-1320-2	0001	FIELD SURVEY GROUP LEADER TURNOVER SHEET	03/26/97		
LG	PROC	ERP	ERP-C-1320-3	0001	FIELD SURVEY GROUP LEADER DATA SHEET	04/24/00		
LG	PROC	ERP	ERP-C-1400	0004	ENGINEERING SUPPORT TEAM	11/02/98		
LG	PROC	ERP	ERP-C-1400-1	0002	ENGINEERING SUPPORT TEAM CHECKLIST	11/02/98		
LG	PROC	ERP	ERP-C-1410	0002	CORE DAMAGE ASSESSMENT	09/09/98		

## PROCEDURE INDEX REPORT:

FAC	DOC TYPE	PROC TYPE	PROCEDURE NUMBER	CURR REV NBR	TITLE	EFFECTIVE DATE	RESP GROUP	SYSTEM NBR
LG	PROC	ERP	ERP-C-1410-1	0000	RADIOLOGICAL DATA	09/14/94		
LG	PROC	ERP	ERP-C-1410-2	0001	HYDROGEN CONCENTRATION DATA	09/09/98		
LG	PROC	ERP	ERP-C-1410-3	0001	CONTAINMENT RADIATION MONITOR DATA	09/09/98		
LG	PROC	ERP	ERP-C-1410-4	0000	METAL WATER REACTION CANCELLED	09/09/98		
LG	PROC	ERP	ERP-C-1410-5	0001	PERCENT OF FUEL INVENTORY AIRBORNE IN THE CONTAINMENT VS. APPROXIMATE SOURCE AND DAMAGE ESTIMATE	09/09/98		
LG	PROC	ERP	ERP-C-1410-6	0001	PROCEDURES FOR ESTIMATING FUEL DAMAGE BASED ON MEASURED I-131 AND XE-133 CONCENTRATIONS	09/09/98		
LG	PROC	ERP	ERP-C-1500	0006	LOGISTIC SUPPORT TEAM	04/14/00		
LG	PROC	ERP	ERP-C-1500-1	0001	MESSAGE AND INFORMATION INSTRUCTIONS	10/24/95		
LG	PROC	ERP	ERP-C-1500-2	0001	HELICOPTER LANDING INFORMATION	10/24/95		
LG	PROC	ERP	ERP-C-1900	0004	RECOVERY PHASE IMPLEMENTATION	11/02/98		
LG	PROC	ERP	ERP-C-1900-1	0000	RECOVERY PHASE IMPLEMENTATION FLOW CHART	06/28/93		
LG	PROC	ERP	ERP-C-1900-2	0002	PEACH BOTTOM ATOMIC POWER STATION RECOVERY ACCEPTANCE CHECKLIST	04/02/98		
LG	PROC	ERP	ERP-C-1900-3	0002	LIMERICK GENERATING STATION RECOVERY ACCEPTANCE CHECKLIST	04/02/98		
LG	PROC	ERP	ERP-C-1900-4	0002	RECOVERY PLAN OUTLINE	04/02/98		
LG	PROC	ERP	ERP-C-1900-5	0002	ASSESSMENT CONSIDERATIONS	12/28/99		
LG	PROC	ERP	ERP-101	0011	CLASSIFICATION OF EMERGENCIES	09/14/99	LWE	
LG	PROC	ERP	ERP-101 BASES	0000	LGS EAL TECHNICAL BASIS MANUAL	09/16/99		
LG	PROC	ERP	ERP-106	0003	WRITTEN SUMMARY NOTIFICATION	11/22/95	LWE	
LG	PROC	ERP	ERP-110	0031	EMERGENCY NOTIFICATION	06/19/00	LWE	
LG	PROC	ERP	ERP-120	0006	STATION EVACUATIONS	11/14/97	LWE	
LG	PROC	ERP	ERP-140	0009	STAFFING AUGMENTATION	02/03/98	LWE	
LG	PROC	ERP	ERP-200	0013	EMERGENCY DIRECTOR (ED) RESPONSE	06/20/00	LWE	
LG	PROC	ERP	ERP-200-1 APP	0010	EMERGENCY NOTIFICATION MESSAGE FORM	10/05/98	LWE	
LG	PROC	ERP	ERP-200-2 APP	0000	DOSE ASSESSMENT DATA SHEET	06/20/00		
LG	PROC	ERP	ERP-230	0014	OPERATIONS SUPPORT CENTER (OSC) DIRECTOR	04/14/00	LWE	
LG	PROC	ERP	ERP-230 APPENDIX 1	0000	OSC - EMERGENCY COMMUNICATIONS EQUIPMENT CHECK LIST	04/14/00		
LG	PROC	ERP	ERP-230 APPENDIX 2	0000	OSC DIRECTOR ACTIVATION CHECK-OFF LIST	04/14/00		
LG	PROC	ERP	ERP-230 APPENDIX 3	0000	OPERATIONS SUPPORT CENTER FACILITY ACCOUNTABILITY LOG	04/14/00		
LG	PROC	ERP	ERP-230 APPENDIX 4	0000	OSC DIRECTOR ACTIVATION	04/14/00		
LG	PROC	ERP	ERP-300	0022	TSC/MCR DOSE ASSESSMENT TEAM	04/03/00	LWE	
LG	PROC	ERP	ERP-300 APPENDIX 1	0000	DOSE ASSESSMENT TEAM ACTIVATION	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 2	0000	DOSE ASSESSMENT TEAM CHECK-OFF LIST	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 3	0001	TURNOVER OF DOSE ASSESSMENT RESPONSIBILITIES	06/19/00		
LG	PROC	ERP	ERP-300 APPENDIX 4	0000	DOSE ASSESSMENT DATA SHEET	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 5	0000	USE OF MESOREM, JR, AUTO MODE A	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 6	0000	OBTAINING RADIOLOGICAL DATA	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 7	0000	OBTAINING MET DATA FROM PLANT MONITORING SYSTEM (PMS)	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 8	0000	OBTAINING METEOROLOGICAL DATA FROM NATIONAL WEATHER SERVICE	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 9	0001	PROTECTIVE ACTION WORKSHEET	06/19/00		
LG	PROC	ERP	ERP-300 APPENDIX 10	0000	USE OF NORTH STACK DOSE RATE TO ESTIMATE RELEASE SOURCE TERM	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 11	0000	OPERATION OF IBM PS/2 MODEL L40SX	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 12	0000	LIMERICK LIQUID RELEASE DOSE CALCULATIONS	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 13	0000	DOSE ASSESSMENT SELF-CHECK	04/03/00		
LG	PROC	ERP	ERP-300 APPENDIX 14	0000	STABILITY CLASS DETERMINATION	04/03/00		
LG	PROC	ERP	ERP-316	0000	OPERATION OF THE DOSE ASSESSMENT COMPUTER (CM-4)	06/20/00		
LG	PROC	ERP	ERP-326	0000	SHIFT DOSE ASSESSMENT PERSONNEL (SDAP)	06/20/00		
LG	PROC	ERP	ERP-330	0000	USE OF NORTH STACK-DOSE RATE TO ESTIMATE RELEASE SOURCE TERM	11/14/94	LWE	

## PROCEDURE INDEX REPORT:

FAC	DOC TYPE	PROC TYPE	PROCEDURE NUMBER	CURR REV NBR	TITLE	EFFECTIVE DATE	RESP GROUP	SYSTEM NBR
LG	PROC	ERP	ERP-330	0000	CANCELLED INCORPORATED INTO ERP-300 APP.10	11/14/94	LWE	
LG	PROC	ERP	ERP-340	0008	FIELD SURVEY GROUP	06/20/00	LWE	
LG	PROC	ERP	ERP-350	0003	RADIOACTIVE LIQUID RELEASE CANCELLED	11/10/94	LWE	
LG	PROC	ERP	ERP-360	0003	ADJUSTMENT OF WIDE RANGE GAS MONITOR CONVERSION FACTORS	10/18/99	LWE	
LG	PROC	ERP	ERP-370	0001	USE OF RMMS FOR DOSE ASSESSMENT CANCELLED	11/10/94	LWE	
LG	PROC	ERP	ERP-400	0012	CHEMISTRY SAMPLING AND ANALYSIS TEAM	09/28/98	LWE	
LG	PROC	ERP	ERP-410	0002	SAMPLE PREPARATION AND HANDLING OF HIGHLY RADIOACTIVE LIQUID SAMPLES	09/28/98	LWE	
LG	PROC	ERP	ERP-420	0002	SAMPLE PREPARATION AND HANDLING OF HIGHLY RADIOACTIVE PARTICULATE FILTERS AND IODINE CARTRIDGES	09/28/98	LWE	
LG	PROC	ERP	ERP-430	0002	SAMPLE PREPARATION AND HANDLING OF HIGHLY RADIOACTIVE GAS SAMPLES	09/28/98	LWE	
LG	PROC	ERP	ERP-440	0002	OFF-SITE ANALYSIS OF HIGH ACTIVITY SAMPLES	03/29/95	LWE	
LG	PROC	ERP	ERP-500	0016	SECURITY TEAM	04/14/00	LWE	
LG	PROC	ERP	ERP-500 APPENDIX 1	0000	SECURITY TEAM ACTIVATION	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 2	0000	SECURITY TEAM STAFFING GUIDELINES	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 3	0000	STAFFING FOR SITE EVACUATION	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 4	0000	SECURITY EVACUATION GUIDANCE	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 5	0000	SECURITY TEAM LEADER CHECK-OFF LIST	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 6	0000	EMERGENCY ASSEMBLY AREAS	04/14/00		
LG	PROC	ERP	ERP-500 APPENDIX 7	0000	FACILITY ACCOUNTABILITY LOG TECHNICAL SUPPORT CENTER	04/14/00		
LG	PROC	ERP	ERP-600	0012	HEALTH PHYSICS TEAM	05/19/98	LWE	
LG	PROC	ERP	ERP-620	0002	PLANT SURVEY GROUP CANCELLED - NO REPLACEMENT	05/02/95	LWE	
LG	PROC	ERP	ERP-630	0003	VEHICLE AND EVACUEE CONTROL GROUP	03/29/95	LWE	
LG	PROC	ERP	ERP-640	0008	EMERGENCY RESPONSE FACILITY HABITABILITY	04/17/99	LWE	
LG	PROC	ERP	ERP-650	0010	ENTRY FOR EMERGENCY REPAIR AND OPERATIONS	06/20/00	LWE	
LG	PROC	ERP	ERP-660	0006	DISTRIBUTION OF THYROID BLOCKING TABLETS	04/17/99	LWE	
LG	PROC	ERP	ERP-700	0014	TECHNICAL SUPPORT TEAM	10/05/98	LWE	
LG	PROC	ERP	ERP-800	0019	MAINTENANCE TEAM	04/14/00	LWE	
LG	PROC	ERP	ERP-800 APPENDIX 1	0000	TASK BRIEFING/DEBRIEFING SHEET	04/14/00		
LG	PROC	ERP	ERP-800 APPENDIX 2	0000	MAINTENANCE TEAM ACTIVATION	04/14/00		
LG	PROC	ERP	ERP-800 APPENDIX 3	0000	TECHNICAL SUPPORT CENTER ACTIVATION	04/14/00		
LG	PROC	ERP	ERP-800 APPENDIX 4	0000	OFFSITE SIRENS ACTIVATION (REF. 6.5.1)	04/14/00		

\*\* END OF REPORT \*\*

Effective Date: 6/20/00

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PECO NUCLEAR  
LIMERICK GENERATING STATION  
EMERGENCY RESPONSE PROCEDURE

ERP-200 EMERGENCY DIRECTOR (ED) RESPONSE

1.0 RESPONSIBILITIES

- 1.1 Shift Manager  
OR designated alternate assumes the title of Emergency Director until relieved.
- 1.2 The on-call TSC Emergency Director shall: (Ref 6.5.4)
  - 1.2.1 Contact the shift manager and obtain situation briefing.
  - 1.2.2 Respond to the Main Control Room or TSC as dictated by plant conditions or emergency classification.
  - 1.2.3 Relieve acting Emergency Director.
  - 1.2.4 Direct actions on-site during the emergency.
  - 1.2.5 Activate appropriate positions of the emergency response organization as indicated by existing and anticipated conditions.
  - 1.2.6 Direct assessment actions and monitor results.
  - 1.2.7 Implement procedure.

2.0 INITIAL ACTIONS

2.1 Unusual Event:

NOTE

IF A GENERAL EMERGENCY IS DECLARED PRIOR TO TECHNICAL SUPPORT CENTER(TSC) OR EMERGENCY OPERATIONS FACILITY EOF ACTIVATION, THE SHIFT MANAGER (INTERIM EMERGENCY DIRECTOR) DELIVERS THE PROTECTIVE ACTION RECOMMENDATION(PAR) TO THE STATE AND COUNTIES PER APPENDIX ERP-200-1, FORM 1 "EMERGENCY NOTIFICATION MESSAGE FORM" SECTION 5.

- 2.1.1 Shift Manager shall ensure Emergency Notifications are completed per ERP-110, "Emergency Notifications" by performing the following: (Ref. 6.5.7).
  - 1. Complete Appendix ERP-200-1
  - 2. Notify the Secondary Alarm Station(SAS) operator, extension 5164 (Prelude extension 181), of emergency condition.

3. Fax the completed form to the SAS operator (Fax Extension 2029), THEN forward to the designated NRC communicator.
4. IF dose assessment is required  
THEN contact Peach Bottom Main Control Room Shift Management (81-231, 807:4687 or 807:4688) and request Shift Dose Assessment Personnel (SDAP) to perform dose projections.
5. Fax a completed "Dose Assessment Data Sheet" (ERP-200-2) to the Peach Bottom SDAP at 807:4793.

2.2 Alert or Higher Classification (Ref 6.5.7).

2.2.1 Shift Manager shall ensure emergency notifications and staffing augmentation are completed by performing the following:

1. Immediately upon verification of Alert or higher classification instruct SAS Operator (extension 5164 or Prelude 181) to perform staffing augmentation per ERP-140, "Staffing Augmentation".
2. Complete Appendix ERP-200-1.
3. Fax the completed form to the SAS operator (Fax extension 2029), THEN forward to the designated NRC communicator
4. IF dose assessment is required  
THEN contact Peach Bottom Main Control Room Shift Management (81-231, 807:4687 or 807:4688) and request Shift Dose Assessment Personnel to perform dose projections.
5. Fax a completed "Dose Assessment Data Sheet" (ERP-200-2) to the Peach Bottom SDAP at 807:4793.

2.3 Emergency Director (TSC) shall:

NOTE

THE POSITION OF ASSISTANT EMERGENCY DIRECTOR IS STAFFED ON AN "AS AVAILABLE" BASIS. IF AN ASSISTANT EMERGENCY DIRECTOR IS UTILIZED, THE EMERGENCY DIRECTOR SHALL DESIGNATE THOSE FUNCTIONS FOR WHICH THE ASSISTANT IS RESPONSIBLE AND ENSURE THAT SHIFT MANAGEMENT, TSC STAFF, THE OSC AND THE EMERGENCY RESPONSE MANAGER ARE AWARE OF THE ASSISTANT'S RESPONSIBILITIES.  
(Ref. 6.5.2)

- 2.3.1 IF relieving the Interim Emergency Director, turnover should be performed using Appendix ERP-200-1, Form 8, "Emergency Director Turnover/Briefing Form".
- 2.3.2 Complete ERP-200-1, Form 6 "Emergency Director Check-Off List".

NOTE

IF THE GENERAL EMERGENCY IS DECLARED  
THEN EMERGENCY DIRECTOR HAS THE RESPONSIBILITY TO MAKE  
PROTECTIVE ACTION RECOMMENDATIONS (PAR) TO THE SENIOR STATE  
OFFICIAL UNTIL RELIEVED BY EMERGENCY RESPONSE MANAGER.

2.3.3 For Conditions at or near a General Emergency

1. Discuss Protective Action Recommendations with Dose Assessment Coordinator.
2. Evaluate plant conditions, i.e. fuel damage, coolant boundary, containment integrity, for additional input into Protective Action Recommendations.

2.3.4 IF TSC becomes uninhabitable,  
THEN

1. Coordinate  
AND direct TSC transfer to Main Control Room.
  - a. Emergency Director
  - b. Health Physics Team Leader
  - c. Technical Support Group Leader
  - d. Up to 5 others designated by the Emergency Director
  - e. All others per ERP-500, "Security Team"

2.3.5 FOR a Site Area Emergency or higher,  
OR if it would result in lower site personnel exposure, at Alert,  
THEN prepare for Site Evacuation per ERP-120 "Station  
Evacuations".

2.4 The Shift Manager shall:

- 2.4.1 In the event of a security computer failure, initiate Appendix ERP-200-1 Form 9, "Main Control Room Accountability Log". (The Security Team Leader shall initiate the accountability log for the Technical Support Center.)

3.0 CONTINUING ACTIONS

Refer to Appendix ERP-200-1, Form 6 "Emergency Director Check-Off List.

4.0 FINAL CONDITIONS

- | 4.1 Emergency director shall:
  - 4.1.1 Participate in Recovery per ERP-C-1900, "Recovery Phase Implementation" with Emergency Response Manager.
  - 4.1.2 Reduce emergency response organization, as appropriate.
  - 4.1.3 Phase out TSC operations.

5.0 ATTACHMENTS AND APPENDICES (issued as separate document)

- 5.1 ERP-200-1 Emergency Director Forms
  - 5.1.1 Form 1, Emergency Notification Message Form
  - 5.1.2 Form 2, Unusual Event - Station Announcements
  - 5.1.3 Form 3, Alert - Station Announcements
  - 5.1.4 Form 4, Site Area Emergency - Station Announcements
  - 5.1.5 Form 5, General Emergency - Station Announcements
  - 5.1.6 Form 6, Emergency Director Check-Off List
  - 5.1.7 Form 7, Unaffected Unit Operations
  - 5.1.8 Form 8, Emergency Director Turnover/Briefing Form
  - 5.1.9 Form 9, Main Control Room Accountability Log
- | 5.2 ERP-200-2 Dose Assessment Data Sheet

6.0 SUPPORTING INFORMATION

- 6.1 Purpose
  - 6.1.1 Provide guidelines for Emergency Director response to an emergency classification.
- 6.2 Criteria For Use
  - 6.2.1 Implemented when an event has been classified per ERP-101, "Classification of Emergencies".

6.3 Special Equipment

None

6.4 References

- | 6.4.1 Nuclear Emergency Plan



- 5.4.2 NUREG 0654, Rev. 2 Criteria for Preparations and Evaluation of Radiological Emergency Response Plans in Support of Nuclear Power Plants
- 6.4.3 ERP-101, Classification of Emergencies
- 6.4.4 ERP-110, Emergency Notifications
- 6.4.5 ERP-120, Station Evacuations
- 6.4.6 ERP-140, Staffing Augmentation
- 6.4.7 ERP-230, Operations Support Center (OSC) Director
- 6.4.8 ERP-300, Dose Assessment Team
- | 6.4.9 ERP-325, Shift Dose Assessment Personnel (PBAPS)
- 6.4.10 ERP-400, Chemistry Team
- 6.4.11 ERP-500, Security Team
- 6.4.12 ERP-600, Health Physics Team
- 6.4.13 ERP-630, Vehicle and Evacuee Control Group
- 5.4.14 ERP-800, Maintenance Team
- 6.4.15 ERP-C-1000, Emergency Operations Facility (EOF) Activation/Deactivation
- 6.4.16 ERP-C-1200, Emergency Response Manager
- 6.4.17 ERP-C-1900, Recovery Phase Implementation
- | 6.4.18 SE-11, Medical Emergency
- 6.4.19 UFSAR Section 1.13.2
- 6.4.20 Severe Accident Management Plans
- 6.4.21 Technical Support Guidelines
- 6.4.22 NEI 91-04 Severe Accident Issue Closure Guidelines
- 6.5 Commitment Annotation
- 6.5.1 A/R 0412127 Eval. NBR. 17 - TMI Action Plan Item I.A.1.2 (Entire Procedure ERP-200 and Appendix ERP-200-1, Form 6)
- 6.5.2 A/R A0801081 NBR. 01 (Inspection Report 50-352/353-93-19/19-Section 2.3 NOTE)
- 6.5.3 EP Action Item Q0004510 (Appendix ERP-200-1, Form 6, Page 2 of 5)
- 6.5.4 EP Action Item Q0004909 (Step 1.2)

- 5.5.5 EP Action Item Q0004907 (Appendix ERP-200-1, Form 6, Page 3 of 5)
- 6.5.6 PPIS A/R A0860443 EAL 1 (Appendix ERP-200-1, Forms 4 and 5)
- 6.5.7 EP Action Item Q0005493 (2.1.1)
- 6.5.8 EP Action Item Q0005405 (Appendix ERP-200-1, Form 6).

Effective Date: 6/20/00

APPENDIX ERP-200-2  
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DOSE ASSESSMENT DATA SHEET

1.0	Time /Date of the release?	Time _____	Date _____
2.0	Is the release in progress?	(circle one)	YES NO
2.1	If yes, time the release has been in progress?	Time _____	
2.2	If no, time until the release begins?	Time _____	
3.0	Has the reactor scrammed?	(Circle one)	YES NO
3.1	If yes, when did the reactor reach 0% power?	Time _____	Date _____
4.0	Release Point (Indicate all that apply)	<input type="checkbox"/> Unit 1 South Stack <input type="checkbox"/> Unit 2 South Stack <input type="checkbox"/> North Stack <input type="checkbox"/> Unmonitored	
5.0	Is release process through SGTS?	(circle one)	YES NO
6.0	Is release processed through RERS	(Circle One)	YES NO
7.0	Is this release from		
7.1	Drywell	(Circle One)	YES NO
7.2	If yes, are sprays on?	(Circle One)	YES NO
7.3	Suppression Chamber	(Circle One)	YES NO
7.4	Is Suppression Chamber saturated or subcooled	(Circle One)	YES NO
7.5	Other	_____	

Completed by \_\_\_\_\_

Date/Time \_\_\_\_\_

Fax to Shift Dose Assessment Personnel at 807.4793

Effective Date: 6/19/00

ERP-300 APPENDIX 3

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MES/mes

## TURNOVER OF DOSE ASSESSMENT RESPONSIBILITIES

Turnover of dose assessment responsibility from one Dose Assessment Team/location to another Dose Assessment Team/location should include the transmittal of any available information listed below:

1. Time of reactor trip/scram \_\_\_\_\_
2. Plant status\_\_\_\_\_
3. Release point \_\_\_\_\_
4. Start time of release \_\_\_\_\_
5. Estimated duration of release \_\_\_\_\_
6. Method(s) used to calculate doses:  
AUTO-A ☐  
FAST-A ☐  
MODE-A ☐
7. DBA \_\_\_\_\_
8. Results of dose calculations, based on dose projections,  
Protective Action Recommendations:  
  
\_\_\_\_\_  
\_\_\_\_\_
9. Site Evacuation Assembly Area \_\_\_\_\_
10. Phone # where DAC can be reached Extension 2620 - Prelude 122
11. Shift Dose Assessment Person shall report to the TSC upon  
completion of turnover to DAC.

FIELD SURVEY TURNOVER CHECK LIST

## 1. Team Status

	TEAM COLOR	MEMBER NAMES	AVAILABLE EXPOSURE	INITIAL** LOCATION
TEAM 1		Tech		
		Driver		
TEAM 2		Tech		
		Driver		
TEAM 3		Tech		
		Driver		
TEAM 4		Tech		
		Driver		

\*\* Initial location is 2 miles downwind on either edge of plume width.

2. Dose Ratio \_\_\_\_\_
3. Request HP technicians from Health Physics Team Leader.
4. Direct Field Survey Personnel to:
  - a. Obtain key (From HP Field Office).for the Field Survey Equipment Room in the Site Management Building
  - b. Meet the I&C driver at the Northwest corner of the Site Management Building.
5. Inform Security Team Leader that Field Survey Members will be exiting and retaining their dosimetry  
AND direct they not be detained leaving site.
6. Select proper map overlay isopleth  
AND hang on maps.
7. Perform radio communications test with each team.
8. IF EP channel activity is busy with communications other than Field Survey  
THEN request EP coordinator to contact Load Dispatcher Supervisor at 801-5141 to free up Emergency Planning radio channel.
9. Direct each team to initial location. (2 miles downwind on either edge of plume width)

\_\_\_\_\_  
COMPLETED BY\_\_\_\_\_  
TIME/DATE

Effective Date: 6/19/00

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PROTECTIVE ACTION WORKSHEET

SECTION I

TO BE COMPLETED BY DOSE ASSESSMENT TEAM:

DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ WINDSPEED: \_\_\_\_\_ mph DIRECTION (FROM): \_\_\_\_\_ °

DOSE ASSESSMENT RECOMMENDATIONS:

BAND 0-2 Miles \_\_\_\_\_ 2-5 Miles \_\_\_\_\_ 5-10 Miles \_\_\_\_\_ > 10 Miles \_\_\_\_\_

AFFECTED SECTORS AND SECTOR ON EITHER SIDE OF AFFECTED SECTORS FROM MESOREM PRINTOUT

Ingestion Pathway Recommendations \_\_\_\_\_ Dose Ratio (Mesorem Jr.) \_\_\_\_\_

SECTION II

TO BE COMPLETED BY EMERGENCY DIRECTOR:

PLANT STATUS RECOMMENDATIONS: (ERP-101)

0-2 Miles \_\_\_\_\_ 2-5 Miles \_\_\_\_\_ 5-10 Miles \_\_\_\_\_

SECTION III

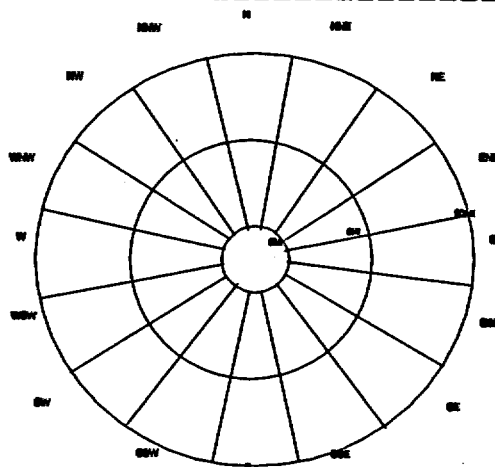
TO BE COMPLETED BY EMERGENCY DIRECTOR:

ACTIONS RECOMMENDED TO STATE:

DOSE	PROTECTIVE ACTIONS	SECTORS
0-2 Miles		
2-5 Miles		
5-10 Miles		
>10 Miles		

Ingestion Pathway Recommendations \_\_\_\_\_ Dose Ratio (Mesorem Jr.) \_\_\_\_\_

- NOTES: 1. IF TOTAL PROJECTED TPARD IS LESS THAN 5 REM AND TOTAL PROJECTED CDE IS LESS THAN 25 REM SHELTER PAR MAY BE SUBSTITUTED FOR EVACUATE PAR FOR UNIQUE CIRCUMSTANCES (WEATHER/ROAD COND/ETC.)
2. INCLUDE AFFECTED SECTORS FROM PREVIOUS PAR IN ANY REVISED PAR.



MARK AFFECTED AREAS:

S - SHELTER

E - EVACUATE

COMPLETED BY/TIME \_\_\_\_\_ / \_\_\_\_\_

Effective Date: 6/20/00

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PECO NUCLEAR  
LIMERICK UNITS 1 AND 2  
EMERGENCY RESPONSE PROCEDURE

ERP-316 OPERATION OF THE DOSE ASSESSMENT COMPUTER (CM-4)

**WARNING**

**THIS PROCEDURE SHALL BE IMPLEMENTED UPON DECLARATION OF AN EMERGENCY AT PEACH BOTTOM OR AT THE DISCRETION OF THE PEACH BOTTOM SHIFT MANAGEMENT.**

1.0 RESPONSIBILITIES

- 1.1 The Shift Dose Assessment Person (SDAP) is responsible for dose assessment functions until Technical Support Center or the Emergency Operations Facility (EOF) Dose Assessment Team (DAT) is assembled and turn-over is completed. CM-1

2.0 INITIAL ACTIONS

- 2.1 Activate computers used for dose assessment.

2.1.1 Turn on computer power.

2.1.2 IF computer and printer do not activate  
THEN ensure individual switches are turned on.

2.1.3 Verify paper is loaded in adequate supply.

2.1.4 Log onto the Computer Dose Assessment System.

2.1.4.1 Control Room  
a. Password = MCR  
b. User ID = 111111

2.1.4.2 TSC  
a. Password = TSC  
b. User ID = 222222

- 2.2 IF equipment failure occurs  
THEN using a D1512 key relocate to the Technical Support Center (TSC) Dose Assessment Room.

NOTE

THE PASSWORD AND USER ID FOR THE CONTROL ROOM DOSE ASSESSMENT COMPUTER WILL ALLOW ACCESS TO FAST MODE A, AUTO MODE A, OR LIQUID DOSE CALCULATIONS.

THE PASSWORD AND USER ID FOR THE TSC DOSE ASSESSMENT COMPUTER WILL ALLOW ACCESS TO FAST MODE A, MODE A, AUTO MODE A, LIQUID DOSE CALCULATIONS, OR BACK CALCULATION SOURCE TERM.

- 2.3 Complete appropriate section(s) of attachment 1 titled, "Input Parameters" (part 1 required for any dose projection).  
IF actual values are not available  
THEN use default values given on attachment. CM-2

3.0 CONTINUING ACTIONS

- 3.1 IF performing dose projections for Peach Bottom in the Limerick Control Room,  
THEN select either, Fast Mode A or Auto Mode A.
- 3.1.1 For Auto Mode A, see attachment 2 titled, "Auto Mode A".
  - 3.1.2 For Fast Mode A, see attachment 3 titled, "Fast Mode A".
  - 3.1.3 For Liquid Dose Calculations, see attachment 5 titled, "Liquid Release".
  - 3.1.4 Verify all data inputs on printout match data sheet.
  - 3.1.5 Advise Peach Bottom Shift Management and DAC of results of dose projection.
  - 3.1.6 Repeat dose projections as new information becomes available until relieved by the Peach Bottom Dose Assessment Coordinator or EOF Dose Assessment Team.
- 3.2 IF performing dose projections for Peach Bottom in the Limerick TSC,  
THEN select F2, Execute Dispersion Model from the command menu.
- 3.2.1 For Auto Mode A, see attachment 2 titled, "Auto Mode A".
  - 3.2.2 For Fast Mode A, see attachment 3 titled, "Fast Mode A".
  - 3.2.3 For Mode A, see attachment 4 titled, "Mode A".
  - 3.2.4 For Liquid Dose Calculations, see attachment 5 titled, "Liquid Release".



3.2.5 For unmonitored releases, evaluate source term based on field survey data.

3.2.5.1 Select F5, Back Calculate Source Term from the command menu  
AND enter data from attachment 1 titled, "Input Parameters" Part 4, in response to system prompts.

3.2.6 Verify all data inputs on printout match data sheet.

3.2.7 Advise Peach Bottom Emergency Director and Dose Assessment Coordinator of results of dose projection.

3.2.8 Repeat dose projections as new information becomes available or until relieved by the Peach Bottom Dose Assessment Coordinator or EOF Dose Assessment Team.

#### 4.0 FINAL CONDITIONS:

4.1 Terminate use of the procedure when:

4.1.1 The Emergency Director determines that the Shift Dose Assessment Personnel function is not longer required.

4.1.2 The potential for and/or actual airborne release has been alleviated.

4.1.3 The Peach Bottom Dose Assessment Coordinator or EOF Dose Assessment Team has taken over the dose assessment function.

4.2 Records generated are compiled for review and submitted to the Nuclear Records Management System (NRMS).

#### 5.0 ATTACHMENTS AND APPENDICES

5.1 Attachment 1 - "Input Parameters"

5.2 Attachment 2 - "Auto Mode A"

5.3 Attachment 3 - "Fast Mode A"

5.4 Attachment 4 - "Mode A"

5.5 Attachment 5 - "Liquid Release"

5.6 Attachment 6 - "Meteorological Parameter Resources"

#### 6.0 SUPPORTING INFORMATION

##### 6.1 PURPOSE

To provide directions for using the Dose Assessment Computer System.

## 6.2 CRITERIA FOR USE

This procedure shall be implemented when an Alert or higher level emergency has been declared at Peach Bottom in accordance with ERP-101, Classification of Emergencies, or at the discretion of the Peach Bottom Emergency Director.

## 6.3 SPECIAL EQUIPMENT

6.3.1 Mesorem Jr.

## 6.4 REFERENCES

6.4.1 Nuclear Emergency Plan

6.4.2 ERP-301, "Dose Assessment Coordinator (DAC) "

6.4.3 ERP-300, "MCR/TSC Dose Assessment Team" (LGS)

6.4.4 ERP-315, Operation of the Dose Assessment Computer" (PBAPS)

6.4.5 ERP-325, "Shift Dose Assessment Personnel" (PBAPS)

6.4.6 ERP-326, "Shift Dose Assessment Personnel" (LGS)

6.4.7 Offsite Dose Calculation Manual (ODCM)

6.4.8 MESOREM, Jr., System Atmospheric Dispersion and Dose Assessment Program (Version 8.3)

6.4.9 EPA-400, "Manual for Protective Action Guides and Protective Actions for Nuclear Incidents"

## 6.5 COMMITMENT ANNOTATION

6.5.1 CM-1, Letter to NRC, 02/11/86, T01935 (section 1.1)

6.5.2 CM-2, NRC Inspection 93-03/03, T02541 (section 2.3)

6.5.3 CM-3, Letter to NRC, 08/15/86, T01949 (attachment 5)

6.5.4 CM-4, Letter to NRC, 12/30/83, T03167 (refers to entire procedure)

ATTACHMENT 1  
INPUT PARAMETERS (Ref. 6.5.2)  
(Page 1 of 4)

**PART 1. Information required for any dose projection.**

**I. EVENT INFORMATION**

Affected Station \_\_\_\_\_ Unit \_\_\_\_\_

Accident Type ☐ LOCA. ☐ Minor damage, ☐ MCA Data (Default = LOCA)

Time of Release in Military Format \_\_\_\_:\_\_\_\_ (HH:MM)

Date of Release in Standard Format \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/YY)

Night or Day? \_\_\_\_ (N or D)

Adverse Weather or Normal Weather? \_\_\_\_ (A or N)

Estimated Release Duration: \_\_\_\_:\_\_\_\_ (HH:MM) (Default Value 4:00)

Has the Release been in Progress? \_\_\_\_ (Y or N)

- If Yes: Time Release has been in Progress \_\_\_\_:\_\_\_\_ (HH:MM)

- If No: Time Until Release Begins: \_\_\_\_:\_\_\_\_ (HH:MM)

Has the Reactor reached 0% Power? \_\_\_\_ (Y or N)

Time of Reactor reaching 0% Power \_\_\_\_:\_\_\_\_ (HH:MM)

Account for Wet Deposition? \_\_\_\_ (Y or N)

Release Points (check one or more)

☐ Unit 2 Rx Building Vent Stack ☐ Unit 3 RX Building Vent Stack

☐ Unit 2 Torus Hardened Vent ☐ Unit 3 Torus Hardened Vent

☐ Main Stack ☐ Unmonitored Release

Is release from ☐ Drywell ☐ Suppression Pool ☐ Other

Drywell sprays ☐ ON ☐ OFF

Is Suppressions Chamber ☐ Saturated ☐ Supercooled ☐ Unknown

Simultaneous Release? \_\_\_\_ (Y or N)

Verify Standby Gas Treatment Efficiency. Utilize 95.0% default value until the current efficiency can be verified by Peach Bottom Shift Management and/or System Engineer or by the most recent surveillance test.

ATTACHMENT 1  
INPUT PARAMETERS  
(Page 2 of 4)

PART 2. Information required only if Auto Mode A is unavailable.

I. METEOROLOGICAL PARAMETERS

(For backup or alternate source inputs, refer to the attachment 6 titled, "Meteorological Parameter Resources")

IA. For Unit 2 Vent Stack Release or Unit 3 Vent Stack Release or Unit 2 Torus Hardened Vent Release or Unit 3 Torus Hardened Vent Release

Wind Speed \_\_\_\_\_ mph from Tower 2, 75 ft.

Wind Direction \_\_\_\_\_ from Tower 2, 75 ft.

Delta Temperature \_\_\_\_\_ °F from Tower 2, 315' - 33'

Ambient Temperature \_\_\_\_\_ °F for Tower 2, 33 ft.

Precipitation \_\_\_\_\_ (60 minute total from MET screen or 'N' = not available)

IB. For Main Stack Release

Wind Speed \_\_\_\_\_ mph from Tower 2, 320 ft.

Wind Direction \_\_\_\_\_ from Tower 2, 320 ft.

Delta Temperature \_\_\_\_\_ °F from Tower 2, 316' - 33'

Ambient Temperature \_\_\_\_\_ °F for Tower 2, 33 ft.

Precipitation \_\_\_\_\_ (60 minute total from MET screen or 'N' = not available)

IC. For Unmonitored Release

Wind Speed \_\_\_\_\_ mph from River Tower

Wind Direction \_\_\_\_\_ from River Tower

Delta Temperature \_\_\_\_\_ °F from Tower 2, 316' - 33'

Ambient Temperature \_\_\_\_\_ °F for Tower 2, 33 ft.

Precipitation \_\_\_\_\_ (60 minute total from MET screen or 'N' = not available)

ATTACHMENT 1  
INPUT PARAMETERS  
(Page 3 of 4)

II. EFFLUENT PARAMETERS

IIA. For Unit 2 Vent Stack Release

Count Rate \_\_\_\_\_  $\mu\text{Ci/cc}$

(Check which parameter used)

\_\_\_\_\_ Low Range (red), panel 20C010  
\_\_\_\_\_ Mid Range (blue), panel 20C010  
\_\_\_\_\_ High Range (green), panel 20C010

Flow Rate \_\_\_\_\_ kcfm (FR-2805, panel 20C010)

IIB. For Unit 3 Vent Stack Release

Count Rate \_\_\_\_\_  $\mu\text{Ci/cc}$

(Check which parameter used)

\_\_\_\_\_ Low Range (red), panel 30C010  
\_\_\_\_\_ Mid Range (blue), panel 30C010  
\_\_\_\_\_ High Range (green), panel 30C010

Flow Rate \_\_\_\_\_ kcfm (FR-3805, panel 30C010)

IIC. For Unit 2 Torus Hardened Vent Release

Count Rate \_\_\_\_\_ cpm (RIS-80291, panel 20C010)

Torus Pressure \_\_\_\_\_ psig (check which parameter used)

\_\_\_\_\_ PI-4952, panel 20C484A  
\_\_\_\_\_ PI-4953, panel 20C484B

IID. For Unit 3 Torus Hardened Vent Release

Count Rate \_\_\_\_\_ cpm (RIS-90291, panel 30C010)

Torus Pressure \_\_\_\_\_ psig (check which parameter used)

\_\_\_\_\_ PI-5952, panel 30C484A  
\_\_\_\_\_ PI-5953, panel 30C484B

ATTACHMENT 1  
INPUT PARAMETERS  
(Page 4 of 4)

IIIE. For Main Stack Release

Count Rate \_\_\_\_\_  $\mu\text{Ci/cc}$

(Check which parameter used)

\_\_\_\_\_ Low Range (red), panel 00C014

\_\_\_\_\_ Mid Range (blue), panel 00C014

\_\_\_\_\_ High Range (green), panel 00C014

Flow Rate \_\_\_\_\_  $\text{kcfm}$  (FRS-0470, panel 30C010)

PART 3. Information required for known isotopic projections.

I. Isotopic Breakdown

If known, enter sample results.

Kr 83m	_____	Xe 131m	_____
Kr 85m	_____	Xe 133m	_____
Kr 85	_____	Xe 135m	_____
Kr 87	_____	Xe 135	_____
Kr 88	_____	Xe 137	_____
Kr 89	_____	Xe 138	_____

Total Noble Gas Concentration \_\_\_\_\_  $\mu\text{Ci/cc}$   $\mu\text{Ci/cc}$

I-131 \_\_\_\_\_ I-133 \_\_\_\_\_ I-135 \_\_\_\_\_

I-132 \_\_\_\_\_ I-134 \_\_\_\_\_

Total Iodine Concentration \_\_\_\_\_  $\mu\text{Ci/cc}$

PART 4. Unknown Isotopic Breakdown for Unmonitored Release

Field Survey Whole Body Dose Rate \_\_\_\_\_  $\text{mR/hr}$

Field Survey Thyroid Dose Rate \_\_\_\_\_  $\text{mR/hr}$

Distance from the plant to where the field survey readings were  
obtained \_\_\_\_\_ miles.

Angle between the field reading location and 0 degrees North \_\_\_\_\_

Angle is positive in the clockwise direction and must be 180 degrees  
from the wind direction already inputted.

ATTACHMENT 2  
AUTO MODE A  
(Page 1 of 4)

1. From Mode A or Auto A Menu Choose;
  - a. F3 -- Auto Mode A - Initiate automatic data collection
2. Choose DBA from Accident Menu
3. Answer the following prompts:
  - a. Enter the time of the release in military format  
(Current system time = <ENTER> = 07:42)
  - b. Enter the date of the release in standard format  
(Current system time = <ENTER> = 09/23/93):
  - c. Night or Day?  
(N or D, <ENTER> = D):
  - d. Adverse Weather or Normal Weather?  
(A or N, <ENTER> = N):
  - e. Enter estimated release duration.  
(00:01 to 999:00, <ENTER> = 4: 0):

NOTE:

TO USE AUTO MODE A THE FOLLOWING PROMPT MUST BE ANSWERED "Y", OTHERWISE, YOU WILL BE PROMPTED TO SWITCH TO FAST MODE A. (AUTO DATA COLLECTION CANNOT HAPPEN FOR A RELEASE THAT HAS NOT YET OCCURRED).

- f. Has the release been in progress?  
(Y or N, <ENTER> = N): Y
- g. Time the release has been in progress.  
(Format is (HH:MM), <ENTER> = 0: 0):
- h. When did the reactor reach 0% power?
  1. Date = <ENTER> = 09/23/93:
  2. Time in 24 hour format = <ENTER> = (00:00)  
Time since reactor shutdown will be displayed
- i. Do you wish the model to account for wet disposition?  
(Y or N, <ENTER> = N):

Select appropriate tower/sensor data from this table.

ATTACHMENT 2  
AUTO MODE A  
(Page 2 of 4)

NOTE:

METEOROLOGICAL AND RADIOLOGICAL DATA FOR THE TIME IN QUESTION WILL BE DISPLAYED. ANY OF THIS DATA CAN BE EDITED BY THE USER. ANY DATA MARKED WITH A CHECK MARK TO THE LEFT IS BAD DATA AND WILL NOT BE USED BY THE SYSTEM. THE BAD DATA MARK CAN BE REMOVED BY PRESSING ALT-B WITH THE CURSOR ON THAT DATA. THIS WILL CAUSE THE PROGRAM TO USE THAT DATA AS GOOD DATA. DATA MARKED WITH AN "R" IS DATA THAT IS OUT OF RANGE. THIS DATA CANNOT BE USED BY THE PROGRAM AND MUST BE CORRECTED.

The Auto Mode A Screen is then displayed:

- j. View data and press F10 to continue.
  - 1. If any of the data points are out of range, a warning will be displayed at the bottom of the screen and the cursor will go to the bad data point. This situation must be corrected before continuing.
  - 2. If any meteorological data points are displayed as "bad data", the backup sensor will be used by the program. If radiological data for the release point in question is bad, or if all of a particular met quantity is bad, Auto Mode A will cease and the operator will be forced to use Fast Mode A or Mode A.
- k. Choose release point from release point menu.
  - 1. Met Data that will be used will be displayed.
- l. Enter whether isotopic breakdown is known or unknown at breakdown menu.
  - 1. If unknown isotopic breakdown.

For PBAPS Main Stack, (For other release points, no SGTS prompt)

Enter the current stand-by-gas-treatment efficiency.  
Range is [ .0000 to 99.99 ] -  
[<ENTER> = 95.0 ]

Use the default value unless instructed otherwise.



ATTACHMENT 2  
AUTO MODE A  
(Page 3 of 4)

NOTE:

DEPENDING ON RELEASE POINT AND ANSWERS TO THESE PROMPTS, SEVERAL PROMPTS WILL APPEAR CONCERNING THE RELEASE PATH. THESE ARE USED TO DETERMINE THE NOBEL GAS TO IODINE RATIO AND ALL HAVE "UNKNOWN" AS AN OPTION. THIS PROMPT IS AN EXAMPLE:

IS THIS RELEASE FROM DRYWELL ATMOSPHERE, SUPPRESSION CHAMBER ATMOSPHERE, OR OTHER?

(D, S, O, UNKNOWN = 0 <ENTER> = 0):

2. If known isotopic breakdown,

a. Then choose from isotope mix menu:

Isotopic Mix in Percentages	(%)
Isotopic Mix in Concentration	( $\mu$ Ci/cc)
Isotopic Mix in Release Rate	( $\mu$ Ci/sec)

b. How long after scram was the sample taken?

(Enter 00:00 if the sample was taken before the scram)  
(Make sure a colon ":" separates the hours and minutes)  
(Format is (HH:MM), <ENTER> = 0: 0):

c. Enter each noble gas and iodine isotope: (in units chose at menu)

d. Enter total iodine concentration ( $\mu$ Ci/cc).  
Range is ( .0000 to 1.0000E+08)  
(<ENTER> = .0000 ):

e. Do you wish to enter additional isotopes?  
(Y or N, <ENTER> = N): Y

f. If answered "Y", additional isotopes may be entered.

ATTACHMENT 2  
AUTO MODE A  
(Page 4 of 4)

NOTE:

ADDITIONAL NUCLIDES MAY BE ENTERED BY SYMBOL, MASS NUMBER, AND RELEASE RATE IN  $\mu\text{Ci/cc}$ . A MAXIMUM OF UP TO 33 NUCLIDES MAY BE ENTERED. ENTER THE SYMBOL UP TO 2 LETTERS AT THE FIRST PROMPT, THE ATOMIC WEIGHT UP TO 3 DIGITS AT THE SECOND PROMPT ALONG WITH THE CHARACTER "M" IF THE NUCLIDE IS IN THE METASTABLE STATE.

(I.E Xe <-- AT THE FIRST PROMPT  
133M <-- AT THE SECOND PROMPT)

- g. Enter the nuclide symbol. (<ENTER> = No other radionuclides):
- h. Enter nuclide mass number, including M for metastable:
- i. Enter the amount of release in  $\mu\text{Ci/cc}$ .  
Range is ( .0000 to 1.0000E+20)  
(<ENTER> = .0000 ):
- j. View isotopic breakdown.
- 3. Would you like an automatic dump to the printer?  
(Y or N, <ENTER> = Y):  
Output will be produced designated location.
- 4. Will this be a simultaneous release?  
(Y or N, <ENTER> = N):
- 5. Receptor Display Menu will appear.

NOTE:

THESE OPTIONS ARE SELF EXPLANATORY EXCEPT FOR F7 RECEPTOR INFORMATION. THIS OPTION GIVES THE OPPORTUNITY TO DISPLAY ALL INFORMATION FOR A PARTICULAR RECEPTOR.

TPARD = TOTAL PROTECTIVE ACTION RECOMMENDED DOSE =  
EXTERNAL DOSE + ADULT CEDE + 4 DAY.

4DAY = SHINE DOSE FROM 4 DAYS' EXPOSURE TO GROUND  
DEPOSITION FROM RELEASE.

PAT = PLUME ARRIVAL TIME

DOSE RATIO = RATION OF EXTERNAL DOSE + CEDE (TEDE) TO EXTERNAL DOSE. THIS RATION GIVES A METHOD TO ESTIMATE TEDE FROM EXTERNAL DOSE (DRD READING). USED PRIMARY FOR FIELD TEAM DOSE ESTIMATION.

ATTACHMENT 3  
FAST MODE A

1. Select F1, Fast Mode A, from the Command Menu.
2. IF isotopic breakdown unknown  
THEN select F1, Loss of Coolant Accident;  
IF isotopic breakdown is known  
THEN select F10, MCA Data
3. Enter data recorded on attachment titled  
"Input Parameters" in response to system  
prompts and menus.
4. Ensure appropriate device is selected for printer output.
5. Make appropriate printout selection.
6. IF a release is in progress from more than one  
release point  
THEN enter a "Y" after the prompt, "Will this be a  
simultaneous release?"  
AND repeat from step 3.1.2 until data for all  
release points has been entered.
7. IF specific receptor data is desired,  
THEN select the appropriate receptor from  
the Receptor Display Menu  
OR select Q to leave the menu.
8. IF another dose projection is desired,  
THEN respond "Y" to the prompt  
OR respond "N" to leave the system.

ATTACHMENT 4  
MODE A

1. Select F1, update data, from the command menu.
2. Select files to be updated from File Menu.
3. Enter data recorded on attachment titled, "Input Parameters", in response to system prompts and menus.
4. Once all files have been updated, select "Q" to return to the Command Menu.
5. Select F2, Execute Dispersion Model, from the Command Menu.
6. Select F2, Mode A, from Mode A Menu.
7. Make appropriate printout selection.
8. Respond to prompts to calculate a simultaneous release, view specific receptor data, run another dose projection, or exit the system, as desired.

ATTACHMENT 5  
LIQUID RELEASE  
(Page 1 of 2)

NOTE:

THIS ATTACHMENT APPLIES TO LIQUID RELEASES THRU THE DISCHARGE CANAL TO THE RIVER OR LIQUID RELEASES EXITING THE SITE BY MEANS OTHER THAN THE DISCHARGE CANAL. CM-3

1. From Mode A or Auto Mode A Menu, select F4, Liquid Dose Calculations and enter data from this attachment.
2. Source of sample:

NOTE:

BEFORE: DILUTION CORRECTION APPLIED  
AFTER: DILUTION CORRECTION NOT APPLIED

\_\_\_\_\_ Before (Liquid release is to the discharge canal and the sample was obtained prior to dilution in the discharge canal.)

\_\_\_\_\_ After (Liquid release is to the discharge canal and the sample has been obtained from the discharge canal after dilution by circulation water pump flow OR liquid release is exiting the site by means other than the discharge canal.)

3. Estimated duration of the liquid release: \_\_\_\_\_ hours
4. Number of circ water pumps in operation = \_\_\_\_\_
5. Estimated volume of the liquid release: \_\_\_\_\_ gallons
6. Isotopic concentrations from analysis of release sample:

Zn-65 \_\_\_\_\_  $\mu\text{Ci/ml}$

Cs-134 \_\_\_\_\_  $\mu\text{Ci/ml}$

Co-60 \_\_\_\_\_  $\mu\text{Ci/ml}$

Cs-137 \_\_\_\_\_  $\mu\text{Ci/ml}$

I-131 \_\_\_\_\_  $\mu\text{Ci/ml}$

ATTACHMENT 5  
LIQUID RELEASE  
(Page 2 of 2)

7. Make appropriate printout selection.

NOTE:

LIQUID EFFLUENT RELEASE LIMIT PER THE OFFSITE DOSE  
CALCULATION MANUAL (ODCM). ODCMS 3.8.B.2

- A) DURING ANY CALENDAR QUARTER,  $< 3.0$  MREM TO THE TOTAL  
BODY AND  $\leq 10.0$  MREM TO ANY ORGAN.
- B) DURING ANY CALENDAR YEAR,  $< 6.0$  MREM TO THE TOTAL BODY  
AND  $\leq 20.0$  MREM TO ANY ORGAN.

8. IF results exceed ODCM limits,  
THEN the Peach Bottom Emergency Director should ensure notification  
of the Department of Environmental Resources and downstream domestic  
water users from the Emergency Response Telephone Directory.

**ATTACHMENT 6**  
**METEOROLOGICAL PARAMETER RESOURCES**  
(Listed in order of preference)

1. Main Control Room Instrument Panels (Control Room Only)
2. Plant Monitoring System (PMS) (Primary for TSC)

Select appropriate tower/sensor data from this table

Release Point		PMS		PMS
MAIN STACK	Primary	Screen	Backup	Screen
Wind Speed (mph)	Twr 2-320'	MET	Twr 2-75'	MET
Wind Direction (Deg Azm)	Twr 2-320'	MET	Twr 2-75'	MET
Delta Temperature (Deg F)	Twr 2-316'-33'	MET	Twr 2-150'-33'	MET
Sigma Theta (Deg. Azm)	Twr 2-75'	MET	None	MET
Ambient Temperature (Deg F)	Twr 2-33'	MET	None	MET
Precipitation (in/hr)	Twr 2	MET	TwrA	MET
VENT STACK				
Wind Speed (mph)	Twr 2-75'	MET	Twr 2-320'	MET
Wind Direction (Deg Azm)	Twr 2-75'	MET	Twr 2-320'	MET
Delta Temperature (Deg F)	Twr 2-316'-33'	MET	Twr 2-150'-33'	MET
Sigma Theta (Deg. Azm)	Twr 2-75'	MET	None	MET
Ambient Temperature (Deg F)	Twr 2-33'	MET	None	MET
Precipitation (in/hr)	Twr 2	MET	Twr A	MET
UNMONITORED RELEASE				
Wind Speed (mph)	River Twr 33'	MET	Twr 2-75'	MET
Wind Direction (Deg Azm)	River Twr 33'	MET	Twr 2-75'	MET
Delta Temperature (Deg F)	Twr 2-316'-33'	MET	Twr 2-150'-33'	MET
Sigma Theta (Deg. Azm)	Twr 2-75'	MET	None	MET
Ambient Temperature (Deg F)	Twr 2-33'	MET	None	MET
Precipitation (in/hr)	Twr 2	MET	Twr A	MET

3. National Weather Service

- A. PENN State NWS: 9-1-814-237-1152 or 9-1-800-697-0010  
B. Philadelphia NWS: 9-1-609-261-6604

Obtain the following meteorological parameters:

Wind Direction (WD30)	_____	deg. az.
Wind Speed (WD30)	_____	knots
Cloud Cover (CLCVR)	_____	tenths
Cloud Ceiling (CLCEG)	_____	ft
Ambient Temperature	_____	deg. F
Precipitation	_____	in/hr

Forecast:

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NWS Contact: \_\_\_\_\_ Time \_\_\_\_\_

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PECO NUCLEAR  
LIMERICK UNITS 1 AND 2  
EMERGENCY RESPONSE PROCEDURE

ERP-326 SHIFT DOSE ASSESSMENT PERSONNEL (SDAP)

**WARNING**

**THIS PROCEDURE SHALL BE IMPLEMENTED UPON DECLARATION OF AN EMERGENCY AT PEACH BOTTOM OR AT THE DISCRETION OF THE PEACH BOTTOM SHIFT MANAGEMENT.**

**1.0 RESPONSIBILITIES**

- 1.1 Reports to the Peach Bottom shift management.
- 1.2 Capable of reporting to the Limerick Control Room within 15 minutes when requested to perform dose projections.
- 1.3 Provides off-site dose projections and applicable protective action recommendations due to radiological releases or projected radiological releases within 30 minutes of the initiating event (accident, transient).
- 1.4 Turns over radiological information to the Dose Assessment team when activated.

**NOTE**

SHIFT DOSE ASSESSMENT PERSONNEL ACTIVELY PERFORMING DOSE PROJECTIONS SHALL HAVE NO OTHER RESPONSIBILITIES DURING EMERGENCIES THAT DETRACT FROM DOSE ASSESSMENT CALCULATIONS.

CM-1

**2.0 INITIAL ACTIONS:**

- 2.1 WHEN an alert or higher level emergency is declared OR WHEN requested by Peach Bottom shift management THEN report to the Limerick Control Room.
- 2.2 Establish communication and receive a briefing on the emergency situation from Peach Bottom Shift Management (807:4687 or 81-231).
- 2.3 Request Dose Assessment Data sheet (ERP-200-2) from Peach Bottom Shift Management to be completed and faxed to 802:2092.



- 2.4 IF a probable offsite radiological release exists  
OR IF there is an unexpected or unexplained increase in the  
main stack or vent stack radiation monitors,  
THEN obtain a consumable copy of ERP-316 and complete  
appropriate sections.
- 2.4.1 IF the dose projection indicates that an emergency  
action level has been reached,  
THEN immediately advise Peach Bottom shift  
management.
- 2.4.2 Inform and submit via Fax (807:4793) any dose  
projections and protective action recommendations  
to Peach Bottom shift management for evaluation.
- 2.5 IF Peach Bottom Shift Management request a field survey team  
to be dispatched  
AND the TSC is not yet activated,  
THEN:
- 2.5.1 Contact the Peach Bottom HP field office.
- 2.5.2 Request the team to proceed to the site boundary  
to perform field survey.
- 2.5.3 Instruct field survey to relay result through  
Shift Management to the SDAP.
- 2.6 IF immediate dose projections are not necessary  
THEN become familiar with plant radiological conditions,  
main stack release rates and vent stack release rates.

### 3.0 CONTINUING ACTIONS

- 3.1 Monitor plant radiological parameters and possible  
radiological release pathways.
- 3.2 Inform Peach Bottom Shift Management if any radiological  
parameters change significantly.
- 3.3 WHEN the Peach Bottom Dose Assessment Coordinator (DAC)  
arrives at the TSC,  
THEN:
- 3.3.1 Provide the DAC with current information,  
including any protective action recommendations,  
and any previous dose projections.
- 3.3.2 Discuss whether to remain in the Control Room or  
terminate the SDAP position.
- 3.4 WHEN the EOF dose assessment team is activated,  
THEN perform turnover using attachment titled, "Dose  
Assessment Turnover Sheet".

#### 4.0 FINAL CONDITIONS

##### 4.1 Exit this procedure when either:

- 4.1.1 turnover to the Dose Assessment team is completed and no other assistance is requested by Peach Bottom Shift Management or
- 4.1.2 the Emergency Plan has been exited and no other assistance has been requested by Peach Bottom Shift Management.

#### 5.0 ATTACHMENTS AND APPENDICES

##### 5.1 Attachment 1, "Dose Assessment Turnover Sheet"

#### 6.0 SUPPORTING INFORMATION

##### 6.1 PURPOSE

To provide guidance and direction for Shift Dose Assessment Personnel.

##### 6.2 CRITERIA FOR USE

This procedure is to be implemented upon declaration of an emergency at Peach Bottom or at the discretion of Peach Bottom Shift Management.

##### 6.3 SPECIAL EQUIPMENT

- 6.3.1 None

##### 6.4 REFERENCES

- 6.4.1 ERP-200, "Emergency Director" (PBAPS)
- 6.4.2 ERP-200, "Emergency Director" (LGS)
- 6.4.3 ERP-301, "Dose Assessment Coordinator" (PBAPS)
- 6.4.4 ERP-300, "MCR/TSC Dose Assessment Team" (LGS)
- 6.4.5 ERP-305, "Operation of the Dose Assessment Computer" (LGS)
- 6.4.6 ERP-315, "Operation of the Dose Assessment Computer" (PBAPS)
- 6.4.7 ERP-316, "Operation of the Dose Assessment Computer" (LGS)
- 6.4.8 ERP-325, "Shift Dose Assessment Personnel" (PBAPS)

6.4.9 ERP-C-1300, "Dose Assessment Team"

6.5 COMMITMENT ANNOTATIONS

6.5.1 CM-1, Letter to NRC dated 8/8/86, in response to  
NRC PB Insp. Rpt. 86-06106, T03210 (section 2.0)

ATTACHMENT 1

DOSE ASSESSMENT TURNOVER SHEET

Turnover of dose assessment responsibility from one Dose Assessment team/location to another Dose Assessment team/location should include the transmittal of any available information listed below:

1. Affected Station \_\_\_\_\_ Unit \_\_\_\_\_

2. Contact person:

a) Peach Bottom Dose Assessment Coordinator (DAC)

\_\_\_\_\_  
Name

\_\_\_\_\_  
Phone (81:280), 807:4644, 4645

b) Dose Assessment Team Leader (DATL)

\_\_\_\_\_  
Name

\_\_\_\_\_  
Phone (257), 803:3843

3. Time of reactor trip/scram \_\_\_\_\_

4. Plant Status \_\_\_\_\_

5. Release Point \_\_\_\_\_

6. Start time of release \_\_\_\_\_

7. Estimated duration of release \_\_\_\_\_

8. Method(s) used to calculate doses ☐ Auto-A ☐ Fast-A ☐ Mode A

9. Design Basis Accident \_\_\_\_\_

10. Site evacuation assembly area \_\_\_\_\_

11. Results of dose calculations, based on dose projection, Protective Action Recommendation.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Completed By

\_\_\_\_\_  
Date/Time

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PECO NUCLEAR  
LIMERICK GENERATING STATION  
EMERGENCY RESPONSE PROCEDURE

ERP-340 FIELD SURVEY GROUP

1.0 RESPONSIBILITIES

- 1.1 Dose Assessment Coordinator (DAC) directs actions of Field Survey Team Members per ERP-300 until relieved by EOF Field Survey Group Leader.
- 1.2 Field Survey Team (FST) Members conduct field surveys.

2.0 INITIAL ACTIONS

- 2.1 DAC performs initial dispatch of Field Survey Teams per ERP-300-3.
- 2.2 Field Survey Team Members shall:
  - 2.2.1 Obtain key to Site Management Building and Equipment Storage Locker from Health Physics (HP) Field Office or Technical Support Center (TSC) key locker.
  - 2.2.2 Keep all dosimetry upon leaving protected area.
  - 2.2.3 Report to the Site Management Building.
  - 2.2.4 Contact DAC by phone (ext. 2620) and provide:
    - 2.2.4.1 Name (HP and Driver)
    - 2.2.4.2 Social Security Number (HP and Driver)
    - 2.2.4.3 Team color designation (by kit selected)
  - 2.2.5 Obtain Emergency Equipment:
    - 2.2.5.1 Field Survey Kit
    - 2.2.5.2 Emergency Dosimetry
    - 2.2.5.3 Radio Equipment
      - a. Hand held radio
      - b. Two batteries
      - c. Antenna
      - d. Cigarette Lighter Adapter

- 2.2.6 IF seal on Field Survey Kit is broken  
THEN obtain a sealed kit OR perform inventory per G0000579.
- 2.2.7 Perform Step 1 of ERP-340-2.
- 2.2.8 Notify DAC of any equipment that did not function correctly or is missing.

NOTE:	RELOCATE TO A MINIMUM OF 50 FEET FROM ANY SITE BUILDING PRIOR TO COMMUNICATION CHECK
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- 2.2.9 Perform radio communication check with DAC.

NOTE:	CHANNEL 1 IS USED TO COMMUNICATE WITH THE FIELD SURVEY GROUP LEADER, CHANNEL 2 IS USED TO COMMUNICATE WITH OTHER FIELD SURVEY TEAMS.
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- 2.2.9.1 IF vehicle has installed radio  
THEN use installed radio as primary communications.
- a. Switch radio on
  - b. Perform radio check
- 2.2.9.2 IF vehicle dose not have installed radio  
but DOES have cigarette lighter,  
THEN use portable radio with charger.
- a. Locate radio charger in vehicle
  - b. Plug charger into cigarette lighter
  - c. Put radio into charger face down
  - d. Place magnetic-based antenna on roof
  - e. Perform check using charger speaker and microphone
- 2.2.9.3 IF vehicle does not have an installed  
radio  
OR cigarette lighter,  
THEN use portable radio only.
- a. Switch radio on
  - b. Adjust Squelch
  - c. Perform radio check
- 2.2.10 Ensure E-520/HP-270 or equivalent is operating at all times.
- 2.2.11 Proceed to initial location as directed.

### 3.0 CONTINUING ACTIONS

NOTE: SECTION 3.1 IS TO BE PERFORMED ONLY IN THE EVENT THAT EMERGENCY OPERATIONS FACILITY(EOF) DOSE ASSESSMENT IS NOT STAFFED TO PERFORM THESE FIELD SURVEY GROUP LEADER (FSGL) FUNCTIONS.

#### 3.1 DAC shall:

##### 3.1.1 Direct activities of the field survey teams.

3.1.1.1 Maintain communications with field survey teams

3.1.1.2 Record data on Appendix ERP-340-1

3.1.1.3 Provide status updates to the Field Survey Teams

NOTE: DIRECT READING DOSIMETER (DRD) READING X PROJECTED DOSE RATIO EQUALS ESTIMATED TEDE

3.1.1.4 Keep FST informed of projected dose ratio  
AND assist FST in using ratio to estimate Total Effective Dose Equivalent(TEDE) dose.

##### 3.1.2 Inform Dose Assessment Team Leader (DATL) of results from field surveys, particularly where:

3.1.2.1 Actual readings differ significantly from expected (projected) values.

3.1.2.2 Field dose rate equals or exceeds 250 mRem/hr.

3.1.2.3 Field radioiodine concentration equals or exceeds  $6.5 \times 10^{-7}$   $\mu\text{Ci/cc}$ .

3.1.3 IF field radioiodine concentration exceeds  $2 \times 10^{-8}$   $\mu\text{Ci/cc}$   
THEN initiate team member DAC-hr tracking.

3.1.4 IF informed by FST that team DAC -hr exceeds 850 DAC hrs OR dose projections indicated that team DAC -hr may reach 950 DAC-hr  
THEN arrange for relief team dispatch OR initiate process for Potassium Iodine(KI) administration per ERP-660.

- 3.1.5 IF informed by FST that team dose exceeds 75% of authorized level  
THEN arrange for relief field team dispatch  
OR initiate dose extension per ERP-650.
- 3.1.6 WHEN scan results of field air sample is available  
THEN calculate efficiency factor using the following equation  
AND transmit to teams.
- Eff Factor =  $\frac{\text{Estimated Concentration}}{\text{Actual Concentration}}$
- 3.1.7 IF Field Survey Team members or vehicles become contaminated,  
THEN inform the Health Physics Team Leader.
- 3.1.8 WHEN directed by DATL  
THEN turnover FSGL duties to EOF FSGL using Appendix ERP-300-3.

3.2 Field Survey Team Members shall:

**WARNING**

ALWAYS FOLLOW PECO ENERGY VEHICLE AND  
PERSONNEL SAFETY TECHNIQUES.

3.2.1 At each survey location:

- 3.2.1.1 Perform airborne, radiation and contamination survey, per ERP-340-2 step 2, unless directed otherwise by FSGL.

**NOTE**

SURVEY NUMBER INCLUDES BOTH LETTER AND NUMBER. LETTER IS DETERMINED BY TEAM DESIGNATED COLOR, NUMBER IS SEQUENTIAL BY TEAM. EXAMPLE-SURVEY G-3 WOULD BE THE 3RD SURVEY PERFORMED BY THE GREEN TEAM.

- 3.2.1.2 Enter survey data on Field Survey Data Sheet, Appendix ERP-340-3.
- 3.2.1.3 Unless directed otherwise by FSGL proceed to a Low Background Area.



3.2.2 While enroute to Low Background Area, transmit Data Items #1 through 5 from Field Survey Data Sheet Appendix ERP-340-3.

3.2.2.1 IF unable to contact FSGL by radio  
THEN:

- a. Switch to Channel 2 and attempt a communications relay with another team
- b. Telephone TSC at (610) 326-9860  
OR EOF at (610) 380-3847 or 3848.

3.2.3 Upon arrival at Low Background Area:

NOTE

THE AIR SAMPLE CALCULATIONS USED IN APPENDIX ERP-340-3, FIELD SURVEY DATA SHEET USE THE METHODOLOGY DESCRIBED IN HP-204.

3.2.3.1 Remove and count filter per HP-C-214.

3.2.3.2 Run air sampler for one minute with silver zeolite cartridge in place to purge cartridge of noble gases.

3.2.4 Field count smears per HP-C-211.

3.2.5 Field count iodine cartridge per HP-204.

3.2.6 Complete Field Survey Data Sheet.

3.2.7 Transmit Data Items #6 and 7 to Field Survey Group Leader.

3.2.8 Perform additional surveys as directed.

#### 4.0 FINAL CONDITIONS

4.1 Survey all personnel and vehicles for radioactive contamination before returning to site.

4.2 Deliver all samples to Chemistry Group at Radwaste 217'  
OR as directed.

4.3 Deliver data sheets to DAC.

- 4.4 Inventory Field Survey Kit  
AND report results to Health Physics Team Leader in the TSC.

5.0 APPENDICES

- 5.1 ERP-340-1, Field Survey Group Leader Data Sheet  
5.2 ERP-340-2, Field Survey Team Member Checklist  
5.3 ERP-340-3, Field Survey Data Sheet

6.0 SUPPORTING INFORMATION

6.1 Purpose

- 6.1.1 To provide guidelines for actions of Field Survey Group.

6.2 Criteria for Use

- 6.2.1 Field Survey Group shall be activated at Alert level or as determined by The Emergency Director.

6.3 Special Equipment

- 6.3.1 Radio with battery packs and charger  
6.3.2 Field survey kits  
6.3.3 Vehicle  
6.3.4 Emergency Dosimetry

6.4 References

- 6.4.1 HP-204  
6.4.2 HP-C-214  
6.4.3 Letter #JGF-89-11  
6.4.4 Manual of Protective Actions for Nuclear Incidents (EPA 520-1-75-001-A January 1990)  
6.4.5 NUREG/CR-3011 Dose Projection Considerations for Emergency Conditions at Nuclear Power Plant  
6.4.6 HP-C-211  
6.4.7 ERP-600  
6.4.8 ERP-300

6.4.9 ERP-650

6.4.10 G0000579

6.4.11 EPA400-R-92-001, Oct. 1991, Manual of Protective  
Action Guides and Protective Actions for Nuclear  
Incidents.

6.5 Commitment Annotation

6.5.1 A.I Q0001944

6.5.2 OEAP A0370948-AE02 (Entire Procedure)

**APPENDIX ERP-340-1**

DATE \_\_\_\_\_

FSGL

## FIELD SURVEY GROUP LEADER DATA SHEET

	DATA NUMBER										
SURVEY NUMBER	1										
SURVEY LOCATION	2										
TIME OF SURVEY	3										
OPEN WINDOW mR/hr	4										
CLOSED WINDOW	5*										
GROSS SMEAR (cpm) MASSLIN	6										
	6										
IODINE CONCENTRATION μCi/cc	7*										
DOSE RATIO											

\*IF CLOSED WINDOW(#5) >250 OR IODINE CONCENTRATION(#7) >6.5 x 10<sup>-7</sup>, NOTIFY DOSE ASSESSMENT COORDINATOR IMMEDIATELY

APPENDIX ERP-340-2  
FIELD SURVEY TEAM MEMBER CHECK LIST  
(PAGE 1 of 2)

1. BEFORE LEAVING SITE

INSTRUMENT INVENTORY					
INSTRUMENT TYPE	SERIAL NUMBER	CALIBRATI ON DUE	BATTERY CHECK	RESPONSE CHECK	CHECK-OFF
RO-2A					
E-520					
E-140N HP210T					
Radeco H 890C				N/A	
A) All Equipment accounted for and operable					
B) Ensure all team members have Emergency Dosimetry and it is zeroed (0-1500mR and 0-5R DRD's)					
C) Notified DAC by phone X2620					
D) Radio communication check performed					
1) Kit color designation _____ team					
E) Have been briefed on situation, etc.					
F) E520/HP270 is ON					

2. INSTRUCTIONS AT SURVEY LOCATION AND WHILE IN TRANSIT

- A) Performed radiation survey while in transit to specified survey location
- B) Notified DAC or FSGL at EOF of arrival and dose rate encountered
- C) Start air sample
  - 1) Particulate filter and silver zeolite cartridge marked to indicate direction of air flow
  - 2) Flow Rate observed and recorded not to exceed 3 scfm
  - 3) 10 cubic feet minimum volume
- D) Performed open/closed waist level survey using E-520/HP-270

- E) Perform gross masslin smear survey
- F) Move to low background area
- G) Transmit data points 1-5 from ERP-340-3

3. AT LOW BACKGROUND COUNTING AREA

- A) Remove and count particulate filter
- B) Count Smear(s)
- C) Perform purge of silver zeolite cartridge
- D) Calculate I-131 Concentration
- E) Transmit data points 6 and 7 from ERP-340-3
- F) Calculate DAC-hr
- G) Complete Field Survey Data Sheet
- H) When advised to return, monitor self, driver and vehicle for contamination and relay findings to FSGL
- I) All samples turned over to Chemistry Group at Chemistry Control Point in Radwaste Enclosure
- J) Turn over all completed forms to DAC for subsequent disposition.

APPENDIX ERP-340-3  
FIELD SURVEY DATA SHEET  
(PAGE 1 of 2)

READ NUMBERED DATA TO FSGL/DAC W/O UNITS UNLESS DIRECTED OTHERWISE	
SURVEY NUMBER (#1)	SURVEY LOCATION (#2)
AIRBORNE SURVEY DATA	
SURVEY TIME (#3) _____ Time Off _____ Duration (Time Off-Survey Time) _____	
Initial Flow Rate cfm _____ + Final Flow Rate cfm _____ = _____/2=Avg Flow Rate cfm _____	
Retention Factor (RF)=(20-Avg Flow Rate) _____ Volume (Duration x Avg Flow Rate) _____	
RADIATION SURVEY DATA (WAIST HIGH)	
OPEN WINDOW mR/hr (#4) _____	CLOSED WINDOW mR/hr (#5) _____
CONTAMINATION SURVEY DATA GROSS SMEARS (MASSLIN)	
LOCATION	net cpm (#6)
LOCATION	net cpm (#6)
AIRBORNE SURVEY CALCULATIONS	
Gross cpm Filter	net cpm Filter
Gross cpm Cartridge	net cpm Cartridge
ESTIMATE RADIOIODINE CONCENTRATION & DAC FRACTION	
Eff Factor = 1 unless FSGL notifies otherwise	
IODINE CONCENTRATION uCi/cc = $\frac{\text{Net cpm Cartridge}}{(7.86 \times 10^5) (\text{Volume}) (\text{RF}) (\text{Eff Factor})}$ = (#7) _____	
DAC FRACTION = $\frac{\text{Estimated Radioiodine Concentration}}{2.0 \times 10^8}$ = _____ DAC I-131 (Ref 6.5.1)	

APPENDIX ERP-340-3  
FIELD SURVEY DATA SHEET  
(PAGE 2 of 2)

<u>(IF REQUESTED BY FSGL/DAC)</u>		
TEAM DOSE AND DAC-HR ESTIMATION		
Estimate time in plume(hr) _____ x DAC Fraction _____ = Current DAC - hr _____		
Previous DAC-hr _____ + Current DAC-hr _____ = Team DAC-hr _____		
IF TEAM DAC -HR EXCEEDS 850, NOTIFY FSGL IMMEDIATELY		
Completed by: _____		
Date: _____		
	HP TECH	DRIVER
1. Prev. Est. TEDE		
2. Prev. DRD Reading.		
3. Current DRD Reading.		
4. Current Est. Proj. Dose Ratio		
IF TOTAL DOSE EXCEEDS 75% OF CURRENT AUTHORIZED LEVEL, NOTIFY FSGL IMMEDIATELY		
HP TECH		
Current HP DRD Reading (3) _____ - Prev. HP DRD Reading (2) _____ = Current HP Exp. _____		
Current HP Exp _____ x Current Est. Dose Ratio (4) _____ = Current HP TEDE _____		
Prev. HP TEDE (1) _____ + Current HP TEDE _____ = total TEDE _____		
I&C TECH		
Current Driver DRD Rdng (3) _____ - Prev. Driver DRD Rdng (2) _____ = Current Driver Exp. _____		
Current Driver Exp _____ x Current Est. Dose Ratio (4) _____ = Current Driver TEDE _____		
Previous Driver TEDE (1) _____ + Current Driver TEDE _____ = Total TEDE _____		



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PECO NUCLEAR  
LIMERICK GENERATING STATION  
EMERGENCY RESPONSE PROCEDURE

ERP-650 ENTRY FOR EMERGENCY REPAIR AND OPERATIONS

1.0 RESPONSIBILITIES

- 1.1 Emergency Director authorizes emergency exposures.
- 1.2 Health Physics Team Leader
  - 1.2.1 Directs implementation of procedure.
  - 1.2.2 Directs implementation of emergency RWP. (Ref. 6.5.2)
  - 1.2.3 Determines exposure limits.

2.0 INITIAL ACTIONS

- 2.1 Health Physics Team Leader shall:

NOTE:

IMPLEMENTATION OF ERWP "TO BE USED UPON ACTIVATION OF THE OSC TO SUPPORT EMERGENCY REPAIR AND OPERATIONS" ALLOWS FOR EXPOSURES UP TO 5 REM AND DOES NOT REQUIRE ED APPROVAL TO EXCEED ADMINISTRATIVE LIMITS DESCRIBED IN HP-C-106.

- 2.1.1 Direct implementation of ERWP "To Be Used Upon Activation Of The OSC To Support Emergency Repair And Operations".
- 2.1.2 Discuss with Health Physics Group Leader:
  - 2.1.2.1 Implementation of ERWP "To Be Used Upon Activation Of The OSC To Support Emergency Repair And Operations."
  - 2.1.2.2 Planned emergency activities.
  - 2.1.2.3 Associated plant conditions.
  - 2.1.2.4 Protective Requirements.

2.1.2.5 Priority of activity.

2.1.2.6 Exposure estimates.

**NOTE:**

ONLY THE EMERGENCY DIRECTOR CAN AUTHORIZE EXPOSURE GREATER THAN 5R.

**NOTE:**

EMERGENCY DIRECTOR MAY VERBALLY AUTHORIZE EXPOSURE AND COMPLETE DOCUMENTATION AT A LATER TIME.

2.1.3 If the anticipated dose is greater than the authorized limit associated with LG09500097 (5R) consider use of one of the following:

2.1.3.1 Emergency RWP "Protection of Valuable Property, With Emergency Director Approval", (up to 10 REM limit) with ED approval per ERP-650, Appendix 2.

2.1.3.2 Emergency RWP "Lifesaving Or Protection Of Large Population With Emergency Director Approval (up to a 25 REM limit), with ED approval per ERP-650, Appendix 2.

2.1.3.3 For greater than 25 REM a specific RWP must be developed.

2.2 Health Physics Group Leader shall:

2.2.1 Determine radiological conditions:

2.2.2 Discuss radiological conditions for planned entries with Health Physics Team Leader.

2.2.3 Specify entry requirements.

2.2.3.1 Evaluate the need for thyroid blocking agents per ERP-660.

2.2.4 Determine team member's dose balance.

2.2.5 Inform team members of allowable exposure.

2.2.6 WHEN directed by Health Physics Team Leader, THEN brief entry team per ERP-650-4.

- 2.2.7 Verify the Personnel Assignment Status and Exposure Control Board updated for personnel responding to accident assessment and mitigation.

### 3.0 CONTINUING ACTIONS

#### 3.1 Emergency Director shall;

- 3.1.1 Ensure appropriate notification(s) required by 10CFR20.2202 be made.
- 3.1.2 Ensure appropriate reports required by 10CFR20.2203 be generated.

#### 3.2 Health Physics Team Leader shall:

- 3.2.1 Inform Emergency Director of doses received in excess of 10CFR20 limits.
- 3.2.2 Ensure incidents(s) (See Appendix ERP-650-1) are brought to the attention of the Occupational Health & Safety at Ext. 801-4371 or 801-4375.
- 3.2.3 Ensure completion of ERP-650-2.
- 3.2.4 Ensure exposure data is reported to individual.

#### 3.3 Health Physics Group Leader shall:

- 3.3.1 Complete Appendix ERP-650-4, Section II, Exit Debriefing Access Control Briefing Guide.
- 3.3.2 Document exposure of team members.
- 3.3.3 Ensure completion of ERWP sign in sheet.
- 3.3.4 Ensure survey results are documented and debrief Health Physics Team Leader.

### 4.0 FINAL CONDITIONS

- 4.1 Routine Health Physics procedures can be utilized for entries into affected areas.
- 4.2 Records generated are compiled and reviewed for submittal to NRMS.

### 5.0 ATTACHMENTS AND APPENDICES

- 5.1 ERP-650-1, Emergency Dose Authorization Guidelines
- 5.2 ERP-650-2, Emergency Dose Authorization Form
- 5.3 ERP-650-3, Potential Biological Effects Associated with Emergency Exposure Guidelines.

- 5.4 ERP-650-4, Access Control Briefing Guide
- 5.5 ERP-650-5, Health Physics Considerations
- 5.6 ERP-650-6, Criteria for Medical Evaluation

## 6.0 SUPPORTING INFORMATION

### 6.1 Purpose

- 6.1.1 Provide guidelines for entering areas for emergency repair and operations.

### 6.2 Criteria For Use

- 6.2.1 An emergency has been declared in accordance with ERP-101, Classification Of Emergencies.

### 6.3 Special Equipment

None

### 6.4 References

- 6.4.1 Nuclear Emergency Plan
- 6.4.2 NUREG 0654, Rev. 2 Criteria for Preparations and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
- 6.4.3 NCRP Report No. 39, Basic Radiation Protection Criteria
- 6.4.4 ERP-200, Emergency Director Response
- 6.4.5 HP-C-106, Dosimetry Program
- 6.4.6 HP-C-214, Collection and Analysis of Air Samples
- 6.4.7 HP-C-310, Radiation Work Permits (RWP)
- 6.4.8 ERP-660, Distribution of Thyroid Blocking (KI) Tablets
- 6.4.9 HP-C-108, Planned Special Exposures
- 6.4.10 10CFR20.2202, Notification of Incidents
- 6.4.11 10CFR20.2207, Reports of Over Exposures and Excessive Levels and Concentrations
- 6.4.12 EPA 400-R-92-001
- 6.4.13 BEIR (Biological Effects of Ionizing Radiation) III

6.5 Commitment Annotation

6.5.1 OEAP AO370949-AE02 (Entire Procedure)

6.5.2 EP Action Item Q0004965

Appendix ERP-650-1

EMERGENCY DOSE AUTHORIZATION GUIDELINES

<u>Dose Limit *</u> (Rem)	<u>Activity</u>	<u>Condition</u>	<u>ERWP Title</u>
5	all		To Be Used Upon Activation Of The OSC To Support Emergency Repair And Operations
10	protecting valuable property	lower dose not practicable	Protection Of Valuable Property, With Emergency Director Approval
25	life saving or protection of large population	lower dose not practicable	Lifesaving Or Protection Of Large Population With Emergency Director Approval
>25	life saving or protection of large populations	only on a voluntary basis to persons fully aware of the risks involved. (See Appendix 3)	developed as necessary

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\*Sum of external effective dose equivalent and committed effective dose equivalent to non-pregnant adults from exposure and intake during an emergency situation. Workers performing services during emergencies should limit dose to the lens of the eye to three times the listed value and doses to any other organ (including skin and body extremities) to ten times the listed value. These limits apply to all doses from an incident, except those received in unrestricted areas as members of the public.

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Appendix ERP-650-2

EMERGENCY DOSE AUTHORIZATION FORM  
(Page 1 of 2)

SECTION A (To be completed by Health Physics Team)

1. Name(to receive exposure): \_\_\_\_\_ 2. Soc.Sec. #: \_\_\_\_\_
3. Sex \_\_\_\_\_ 4. Age \_\_\_\_\_
5. Individual TLD Number: \_\_\_\_\_
6. Employer/Work Group: \_\_\_\_\_ \
7. Task(s) to be Performed: \_\_\_\_\_
8. Location: \_\_\_\_\_
9. Estimated time to complete the task \_\_\_\_\_ min.
10. Estimated exposure:  
TEDE \_\_\_\_\_ Lens of Eye \_\_\_\_\_  
Other Organ LDE \_\_\_\_\_  
Authorized Limit \_\_\_\_\_ Rem
11. Date of Authorization: \_\_\_\_\_
12. Conditions:

Individual shall be a volunteer for >25 REM TEDE.

Individual is technically qualified for assigned tasks.

Individual is familiar with radiological consequences of exposures.

Pregnant females shall not take part.

Individual has not received prior emergency exposure.

13. Basis for Authorization: \_\_\_\_\_  
(From Appendix 1)
14. Emergency Director: \_\_\_\_\_ (Signature)

SECTION B (To be completed by volunteer if expected exposure is >25 REM)

I have been briefed in the radiological consequences of the proposed emergency exposure. I have not received a previous emergency dose. I consider myself in good general health.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Appendix ERP-650-2 (CONTINUED)

EMERGENCY DOSE AUTHORIZATION FORM  
(Page 2 of 2)

SECTION C (Attached exposure evaluation)

1. Dose equivalent assigned for entry: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. TLD/Dosimetry Results: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Bioassay Results: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Medical Evaluation/Action: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Doctor: \_\_\_\_\_

SECTION D

1. Disposition (Allow additional exposure, restricted access, etc.):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Individual assigned to follow up report(s): \_\_\_\_\_
3. Health Physics Team Leader: \_\_\_\_\_ Date: \_\_\_\_\_
4. Individual: \_\_\_\_\_ Date: \_\_\_\_\_



Appendix ERP-650-3

**POTENTIAL BIOLOGICAL EFFECTS ASSOCIATED WITH EMERGENCY EXPOSURE**  
**GUIDELINES**

Health Effects Associated with Whole-Body Absorbed Doses Received Within a Few Hours(\*a)

Whole Body Absorbed Dose (rad)	Early Fatalities(*b) (percent)	Whole Body Absorbed Dose (rad)	Prodromal Effects(*c) (percent affected)
140	5	50	2
200	5	100	15
300	50	150	50
400	85	200	85
460	95	250	98

(\*a) Risk will lower for protracted exposure periods.

(\*b) Supportive medical treatment may increase the dose at which these frequencies occur by approximately 50 percent.

(\*c) Forewarning symptoms of more serious health effects associated with large doses of radiation.

Approximate Cancer Risk to Average Individuals from 25 Rem Effective Dose Equivalent Delivered Promptly

Age at exposure (years)	Appropriate risk of premature death (deaths per 1,000 persons exposed)	Average years of life lost if premature death occurs (years)
20 to 30	9.1	24
30 to 40	7.2	19
40 to 50	5.3	15
50 to 60	3.5	11

Appendix ERP-650-4

ACCESS CONTROL BRIEFING GUIDE

I. PRE-ENTRY BRIEFING

Team Members \_\_\_\_\_

Date of Entry: \_\_\_\_\_

Time of Entry: \_\_\_\_\_

ERWP # \_\_\_\_\_

Purpose: \_\_\_\_\_

CHECK

- \_\_\_\_\_ 1. Potential hazards - radiological AND non-radiological.
- \_\_\_\_\_ 2. Dose rates AND activity levels.
- \_\_\_\_\_ 3. Dosimetry type (TLD, high range self-reading extremity, etc.) issued AND use understood.
- \_\_\_\_\_ 4. Respiratory protection - type, lapel sampler.
- \_\_\_\_\_ 5. Protective clothing.
- \_\_\_\_\_ 6. Stay times on exposure limit discussed AND understood.  
Initials of Entry Team: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
- \_\_\_\_\_ 7. Instruments to be used.
- \_\_\_\_\_ 8. Review documentation required for entry AND personnel exposure records if time permits.
- \_\_\_\_\_ 9. Define AND explain as detailed any system malfunctions, breaks, OR hazards from operating equipment.
- \_\_\_\_\_ 10. Surveys to be performed (air, cont. rad.).
- \_\_\_\_\_ 11. Complete ERP-650-2 if required.
- \_\_\_\_\_ 12. Ensure completion of ERWP sign-in sheet.

Briefing Performed By: \_\_\_\_\_

II. EXIT BRIEFING

- \_\_\_\_\_ 1. Determine exposure AND time in area.
- \_\_\_\_\_ 2. Monitor for personnel contamination, document positive findings.
- \_\_\_\_\_ 3. Determine approximate dose-rates from survey meter.
- \_\_\_\_\_ 4. Document any noticeable radiological OR operations concerns, i.e., gas leaks, liquid spills, alarms, equipment malfunction, etc.
- \_\_\_\_\_ 5. Document recommended bioassay.
- \_\_\_\_\_ 6. Take nasal swabs of persons in airborne contamination areas.
- \_\_\_\_\_ 7. Obtain any survey data sheets.

Debriefing Performed By: \_\_\_\_\_

Time of Debriefing: \_\_\_\_\_

Comments: \_\_\_\_\_

Appendix ERP-650-5

HEALTH PHYSICS CONSIDERATIONS

DURING EMERGENCIES

(Page 1 of 2)

I. Access Control

1. Are affected areas defined?
2. Are access routes defined?
3. Are barriers AND postings in place?
4. Are access doors locked OR guarded?
5. Are control points set up?

II. Contamination Control

1. Is affected area isolated?
2. Are personnel monitoring points defined?

III. Surveillance

1. Has ARM AND PRM data been reviewed?
2. Has habitability been checked in emergency response facilities?
3. Is air sampling AND analysis taking place?
4. Is radiation, airborne AND contamination data documented?  
distributed?
5. Is alpha surveillance necessary?
6. Have plant air AND water systems been monitored?

Appendix ERP-650-5

HEALTH PHYSICS CONSIDERATIONS

DURING EMERGENCIES (CONT'D)

(Page 2 of 2)

IV. Exposure Control

1. Is personnel exposure data available?
2. Are exposures being logged AND tracked?
3. Have beta/gamma ratios been evaluated?

V. Bioassay

1. Have individuals been identified for bioassay?

VI. Equipment

1. Dosimetry
2. Respiratory Protection
3. Instrumentation
4. Clothing
5. Documentation

VII. Manpower

1. Short Term needs
2. Long term needs

Appendix ERP-650-6

CRITERIA FOR MEDICAL EVALUATION  
RE: EMERGENCY EXPOSURE

The following criteria should be applied as a minimum to any individual potentially exposed to excessive radiation levels:

IF an individual's emergency dose equivalent exceeds any of following:

- 1) 10 Rem whole body
- 2) 30 Rem thyroid
- 3) 60 Rem skin
- 4) 150 Rem extremity
- 5) internal disposition equivalent to one organ burden

THEN the details of the exposure incident shall be brought to the attention of the Director, Occupational Health and Safety. The Director, Occupational Health and Safety shall determine the need, extent, and nature of any clinical, biological or biochemical examinations, or the need for expert consultation.