

Exelon Nuclear
200 Exelon Way
Kennett Square, PA 19348

www.exeloncorp.com

10CFR50, Appendix E

February 13, 2002

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Limerick Generating Station, Units 1 & 2
Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

ERP-316, Revision 1, "Operation of the Dose Assessment Computer"
ERP-326, Revision 1, "Shift Dose Assessment Personnel (SDAP)"
ERP-360, Revision 4, "Adjustment of Wide Range Gas Monitor Conversion Factors"

Dear Sir/Madam:

Enclosed are revised 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.

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,



M. P. Gallagher
Director - Licensing & Regulatory Affairs
Mid-Atlantic Regional Operating Group

Enclosures

cc: H. J. Miller, Administrator, Region I, USNRC (2 copies)
A. L. Burritt, USNRC Senior Resident Inspector, LGS

A045

ATTACHMENT 1

LIMERICK GENERATING STATION, UNITS 1 & 2

**Docket Nos. 50-352
50-353**

**License Nos. NPF-39
NPF-85**

EMERGENCY RESPONSE PROCEDURES

**ERP-316, "Operation of the Dose Assessment
Computer" - Revision 1**

**ERP-326, "Shift Dose Assessment Personnel (SDAP)"
Revision 1**

**ERP-360, "Adjustment of Wide Range Gas Monitor
Conversion Factors" - Revision 4**

Effective Date: 2/15/02

ERP-316, Rev. 1
Page 1 of 16
KLM/mes

EXELON NUCLEAR
LIMERICK UNITS 1 AND 2
EMERGENCY RESPONSE PROCEDURE

ERP-316 OPERATION OF THE DOSE ASSESSMENT COMPUTER (CM-3)

WARNING

THIS PROCEDURE SHALL BE IMPLEMENTED UPON DECLARATION OF AN EMERGENCY OR AT THE DISCRETION OF THE SHIFT MANAGEMENT AT THE AFFECTED SITE.

1.0 RESPONSIBILITIES

- 1.1 The Dose Assessment Coordinator (DAC) shall perform dose projections using this procedure when required.

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 in the MCR,
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 Collect appropriate data for section(s) of attachment 1 and 6,
IF actual values are not available
THEN use default values as stated in Mesorem. CM-1

3.0 CONTINUING ACTIONS

- 3.1 IF performing dose projections 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".
- 3.2 IF performing dose projections 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.
- 3.3 Verify all data inputs on printout match data sheet.

- 3.4 Advise the Emergency Director and/or Shift Management of results of dose projection.
- 3.5 Repeat dose projections as new information becomes available or until relieved by the PBAPS DAC 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 dose assessment 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 DAC 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 in accordance with ERP-101, Classification of Emergencies, or at the discretion of the affected site 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, "Dose Assessment Coordinator" (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, NRC Inspection 93-03/03, T02541 (section 2.3)
- 6.5.2 CM-2, Letter to NRC, 08/15/86, T01949 (attachment 5)
- 6.5.3 CM-3, Letter to NRC, 12/30/83, T03167 (refers to entire procedure)

ATTACHMENT 1
INPUT PARAMETERS
(Page 1 of 3)

I. EVENT INFORMATION

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)

☐ 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 3)

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 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)

IB. 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 3)

II. EFFLUENT PARAMETERS

IIA. 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 _____ 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 _____ mR/hr

Field Survey Thyroid Dose Rate _____ 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	(μ Ci/cc)
Isotopic Mix in Release Rate	(μ 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 (μ 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 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-2

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 ≤ 10.0 MREM TO ANY ORGAN.
- B) DURING ANY CALENDAR YEAR, < 6.0 MREM TO THE TOTAL BODY
AND ≤ 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
<u>MAIN STACK</u>	<u>Primary</u>	<u>Screen</u>	<u>Backup</u>	<u>Screen</u>
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
<u>VENT STACK</u>				
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
<u>UNMONITORED RELEASE</u>				
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. Mount Holly 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:

NWS Contact: _____ Time _____

Effective Date:

2/15/02

ERP-326, Rev. 1
Page 1 of 11
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EXELON 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 LIMERICK AT THE DISCRETION OF THE AFFECTED SITE SHIFT MANAGEMENT.

1.0 RESPONSIBILITIES

- 1.1 Reports to the shift management at the affected site.
- 1.2 Capable of reporting to the 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 Responsible for dose assessment functions until Technical Support Center (TSC) Dose Assessment Coordinator (DAC) or the Emergency Operations Facility (EOF) Dose Assessment Team (DAT) is assembled and turn-over is completed. CM-1

NOTE

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

CM-2

2.0 INITIAL ACTIONS:

- 2.1 WHEN an alert or higher level emergency is declared OR WHEN requested by shift management at either site, THEN report to the Control Room.
- 2.2 IF performing a dose projection for PBAPS THEN upon reporting to LGS Control Room, obtain a copy of PBAPS ERP-200-6 that was Faxed to 802:2092.

- 2.3 IF no FAX arrived,
THEN contact PBAPS Shift Management (807:4687 or 81-231)
AND request ERP-200-6 be Faxed.
- 2.4 IF performing a dose projection for LGS,
THEN request a completed copy of LGS ERP-200-2 from LGS
Shift Management.
- 2.5 IF immediate dose projections are not necessary
THEN become familiar with plant radiological conditions,
effluent radiation monitors and release rates.
- 2.6 IF a probable offsite radiological release exists
OR
IF there is an unexpected or unexplained increase in the
effluent radiation monitors,
THEN perform a dose projection.
- 2.7 Activate computers used for dose assessment.
 - 2.7.1 Turn on computer power.
 - 2.7.2 IF computer and printer do not activate,
THEN ensure individual switches are turned on.
 - 2.7.3 Verify paper is loaded in adequate supply.
 - 2.7.4 At desk top, choose icon for appropriate site that
a dose projection will be performed for.
 - 2.7.5 Log onto the Computer Dose Assessment System. Use
tab key to relocate cursor to next field.
 - 2.7.5.1 Control Room
 - a. Password = MCR
 - b. User ID = 111111
 - 2.7.6 IF equipment failure occurs
THEN using key C-24 (D1512), relocate to the TSC
Dose Assessment Room.
 - 2.7.6.1 TSC
 - a. Password = TSC
 - b. User ID = 222222
 - 2.7.7 After log on, choose F1 or F2 for the appropriate
site that a dose projection will be performed for
(same site as specified in step 2.7.4).

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.

- 2.8 IF performing dose projections in the Control Room,
THEN select F3. Use Auto Mode A (Initiate Automatic Data Collection) and input parameters given by affected site shift Management.
- 2.8.1 Verify all data inputs on printout match data sheet.
- 2.8.2 Advise Shift Management and/or DAC/DAT of results of dose projection.
- 2.8.3 Repeat dose projections as new information becomes available until relieved by the Dose Assessment Coordinator or EOF Dose Assessment Team.
- 2.9 IF performing dose projections in the Limerick TSC,
THEN select F2, Execute Dispersion Model, from the command menu, then select F3, Auto Mode A, and input data from Attachment 1.
- 2.9.1 IF Auto Mode fails,
THEN request additional information from affected site's Shift Management
AND use F1, Fast Mode A. Initiate model from sequential screens.
- 2.10 For unmonitored releases, contact affected site's Shift Management to dispatch Radiation Protection Technician to perform site boundary survey.
- 2.11 IF the dose projection indicates that an emergency action level has been reached,
THEN immediately advise shift management.
- 2.12 Submit any dose projections and protective action recommendations to affected site's shift management for evaluation. For PBAPS, fax to 807:4793.

3.0 CONTINUING ACTIONS

- 3.1 Monitor plant radiological parameters and possible radiological release pathways.

- 3.2 Inform affected site Shift Management if any radiological parameters change significantly.
- 3.3 WHEN the affected site 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 4 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 Shift Management at the affected site or
 - 4.1.2 The Emergency Plan has been exited and no other assistance has been requested by Shift Management at the affected site.

5.0 ATTACHMENTS AND APPENDICES

- 5.1 Attachment 1, "Auto Mode A"
- 5.2 Attachment 2, "Fast Mode A"
- 5.3 Attachment 3, "Meteorological Parameter Resources"
- 5.4 Attachment 4, "Dose Assessment Turnover Sheet"

6.0 SUPPORTING INFORMATION

6.1 PURPOSE

To provide guidance and direction for Shift Dose Assessment Personnel performing dose assessment.

6.2 CRITERIA FOR USE

This procedure is to be implemented upon declaration of an emergency at PBAPS, LGS, or at the discretion of Shift Management at the affected site.

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, "Dose Assessment Coordinator" (LGS)

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

6.4.6 ERP-316, "Operation of the Dose Assessment
Computer" (LGS)

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

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

6.5 COMMITMENT ANNOTATIONS

6.5.1 CM-1, Letter to NRC, 02/11/86, T01935 (section
1.4)

6.5.2 CM-2, Letter to NRC dated 8/8/86, in response to
NRC PB Insp. Rpt. 86-06106, T03210 (section 1.0)

ATTACHMENT 1
AUTO MODE A
(Page 1 of 3)

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. If unknown released duration,
use default value (default is 4 hours).
(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. Has the reactor been scrammed?
(Y or N, <ENTER> = N): Y
- i. 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
- j. Do you wish the model to account for wet disposition?
(Y or N, <ENTER> = N):

Select appropriate tower/sensor data from this table.

ATTACHMENT 1
AUTO MODE A
(Page 2 of 3)

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.
 - 1. At breakdown menu, select F1 "Isotopic Breakdown Unknown".
- m. When projecting dose assessment for LGS, you will be prompted for Iodine Concentration calculations from iodine/noble gas ratio. Enter 'Y' (default value).
- n. When projecting dose assessment for LGS, you will be prompted if release is processed through SGTS.
 - IF yes,
 - THEN provide efficiency and supply information for RERS filters.
- o. IF no for SGTS,
 - THEN you will be prompted to answer "Is this release from drywell atmosphere, suppression chamber atmosphere, or other?".
 - (D, S, O, UNKNOWN = 0 <ENTER> = 0):

ATTACHMENT 1
AUTO MODE A
(Page 3 of 3)

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 = O <ENTER> = O):

1. Would you like an automatic dump to the printer?
(Y or N, <ENTER> = Y):
Output will be produced designated location.
2. Will this be a simultaneous release?
(Y or N, <ENTER> = N):

ATTACHMENT 2
FAST MODE A

1. Select F1, Fast Mode A, from the Command Menu.
2. Ensure appropriate device is selected for printer output.
3. Make appropriate printout selection.
4. 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 until data for all release points has been entered.
5. IF specific receptor data is desired,
THEN select the appropriate receptor from the Receptor Display
Menu
OR select Q to leave the menu.
6. IF another dose projection is desired,
THEN respond "Y" to the prompt
OR respond "N" to leave the system.

ATTACHMENT 3
METEOROLOGICAL PARAMETER RESOURCES
(Listed in order of preference)

1. Main Control Room Instrument Panels (Control Room Only)

2. National Weather Service

A. PENN State NWS: 9-1-814-237-1152 or 9-1-800-697-0010

B. Mount Holly 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:

NWS Contact: _____ Time _____

ATTACHMENT 4

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) Dose Assessment Coordinator (DAC)

PBAPS Phone:

(81:280), 807:4644, 4645

LGS Phone:

Name

b) Dose Assessment Team Leader (DATL)

(257), 803:3843

Phone

Name

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

Effective Date: 2/15/02

ERP-360, Rev. 4

Page 1 of 12

KLM/mes

EXELON NUCLEAR
LIMERICK GENERATING STATION
EMERGENCY RESPONSE PROCEDURE

ERP-360 ADJUSTMENT OF WIDE RANGE GAS MONITOR CONVERSION FACTORS

1.0 RESPONSIBILITIES

- 1.1 The TSC Dose Assessment Coordinator (DAC) shall coordinate the changing, if necessary, of the Wide Range Gas Monitor (WRGM) conversion factors.
- 1.2 The EOF Dose Assessment Team Leader (DATL) shall direct the TSC Dose Assessment Team to change if necessary, the WRGM conversion factors.
- 1.3 The Emergency Director (ED) shall be apprised of any changes to the WRGM conversion factor and any impact the changes may have on Emergency Action Levels (EALs) or Protective Action Recommendations.
- 1.4 The Emergency Response Manager (ERM) shall be apprised of any changes to the WRGM conversion factor and any impact the changes may have on EALs or Protective Action Recommendations.

2.0 INITIAL ACTIONS

2.1 The TSC DAC while activated, shall:

2.1.1 Determine a new WRGM conversion factor approximately 3 hours, 7 hours, 12 hours, 24 hours, 2 days, and 4 days following reactor shutdown or until termination of the release.

2.1.1.1 **IF** the suspected source term is a LOCA, (Major Fuel Damage-D/W Rad monitor ≥ 100 R/mr)
THEN refer to ERP-360-1 to calculate
AND document the new WRGM conversion factors.

2.1.1.2 IF the suspected source term is not a LOCA, (Minor Fuel Damage-D/W Rad monitor <100 R/mr)
THEN obtain an isotopic analysis
AND refer to ERP-360-2 to calculate and document the new WRGM conversion factors.

2.1.2 Inform the ED of the need to change the WRGM conversion factors and any impact the changes may have on EALs or Protective Action Recommendations.

2.1.3 Upon concurrence from the ED, request that a Communicator notify the Shift Supervisor in the Control Room of the planned action.

2.1.4 Direct I&C to apply the new calibration factors to the mid and high-range channels as follows:

NOTE

The Supervisory Key Switch for the WRGM RM-23 Indicating Controller RIX-026-076 is located to the right of the RM-23.

2.1.4.1 Obtain the key for the supervisory key switch for RIX-026-076, located on panel 00-C691.

2.1.4.2 Select the Supervisory Position of the key switch for the WRGM, RY-026-076.

2.1.4.3 At RIX-026-076, press CH2.

2.1.4.4 At RIX-026-076, press 011,
THEN press ITEM.

2.1.4.5 At RIX-026-076, enter the new mid-range value of the conversion factor.

2.1.4.6 At RIX-026-076, press ENTER.

2.1.4.7 At RIX-026-076, press CH2.

2.1.4.8 At RIX-026-076, press CH3.

2.1.4.9 At RIX-026-076, enter 011,
THEN press ITEM.

2.1.4.10 At RIX-026-076, enter the new high-range value of the conversion factor.

- 2.1.4.11 At RIX-026-076, press ENTER.
- 2.1.4.12 At RIX-026-076, press CH3.
- 2.1.4.13 Place key switch on Panel 00-C691 to the NORMAL position and remove key.
- 2.1.4.14 Return the key.

2.2 The EOF DATL shall upon turnover from the TSC:

- 2.2.1 Determine a new WRGM conversion factor approximately 3 hours, 7 hours, 12 hours, 24 hours, 2 days, and 4 days following reactor shutdown or until termination of the release.
 - 2.2.1.1 **IF** the suspected source term is a LOCA, (Major Fuel Damage-D/W Rad monitor ≥ 100 R/mr)
THEN refer to Appendix 1 to calculate and document the new WRGM conversion factors.
 - 2.2.1.2 **IF** the suspected source term is not a LOCA, (Minor Fuel Damage-D/W Rad monitor < 100 R/mr)
THEN obtain an isotopic analysis and refer to ERP-360-2 to calculate and document the new WRGM conversion factors.
- 2.2.2 Inform the ERM of the need to change the WRGM calibration factors and any impact the changes may have on EALs or PAG Recommendations.
- 2.2.3 Upon concurrence from ERM, request the a Communicator notify the Shift Supervisor in the Control Room of the planned action.

3.0 CONTINUING ACTIONS

3.1 The EOF DATL shall:

- 3.1.1 Upon termination of the release, evaluate the applicability of the current conversion factors.

4.0 FINAL CONDITIONS

- 4.1 Upon termination of the emergency, I&C shall return WRGM conversion factors to normal setting.

5.0 ATTACHMENTS AND APPENDICES

- 5.1 ERP-360-1, Mid and High-Range Conversion Factor Adjustment Worksheet for a Suspected LOCA
- 5.2 ERP-360-2, Mid and High-Range Conversion Factor Adjustment Worksheet for Non-LOCA Source Terms

6.0 SUPPORTING INFORMATION

6.1 Purpose

- 6.1.1 The purpose of this procedure is to provide instructions in the determination and the application of WRGM conversion factors during an emergency as a function of time after reactor shutdown.

6.2 Criteria For Use

- 6.2.1 A release of significant magnitude has occurred resulting in the activation of the mid or high-range channel of the WRGM.

6.3 Special Equipment

None

6.4 References

- 6.4.1 G. A. Technologies, INC, Calibration Report RD-72 Wide Range Gas Monitor High and Mid-Range Detectors, E-255-961 (Rev. 2)
- 6.4.2 LGS RD-72 Transfer Calibration Procedure (0366-9010)
- 6.4.3 Memo, L. G. Pyrih to R. H. Logue, Limerick Generating Station Units 1 and 2, Subject: Wide Range Accident Monitor Calibration Factors, dated Aug. 27, 1984.

6.5 Commitment Annotation

None

MID AND HIGH-RANGE CONVERSION FACTOR ADJUSTMENT WORKSHEET
FOR A SUSPECTED LOCA

Date: _____

Time: _____ Time after reactor shutdown (hrs) _____

Mid-range calibration factor
(Determine from Figure 1): _____ $\frac{\text{cpm}}{\mu\text{Ci/cc}}$

Mid-range conversion factor = $\frac{1}{\text{Mid-range calibration factor}}$

A.

New Mid-range conversion factor = _____ $\frac{\mu\text{Ci/cc}}{\text{cpm}}$ for channel RE26076-1

High-range calibration factor: _____ $\frac{\text{cpm}}{\mu\text{Ci/cc}}$
(Determine from Figure 2)

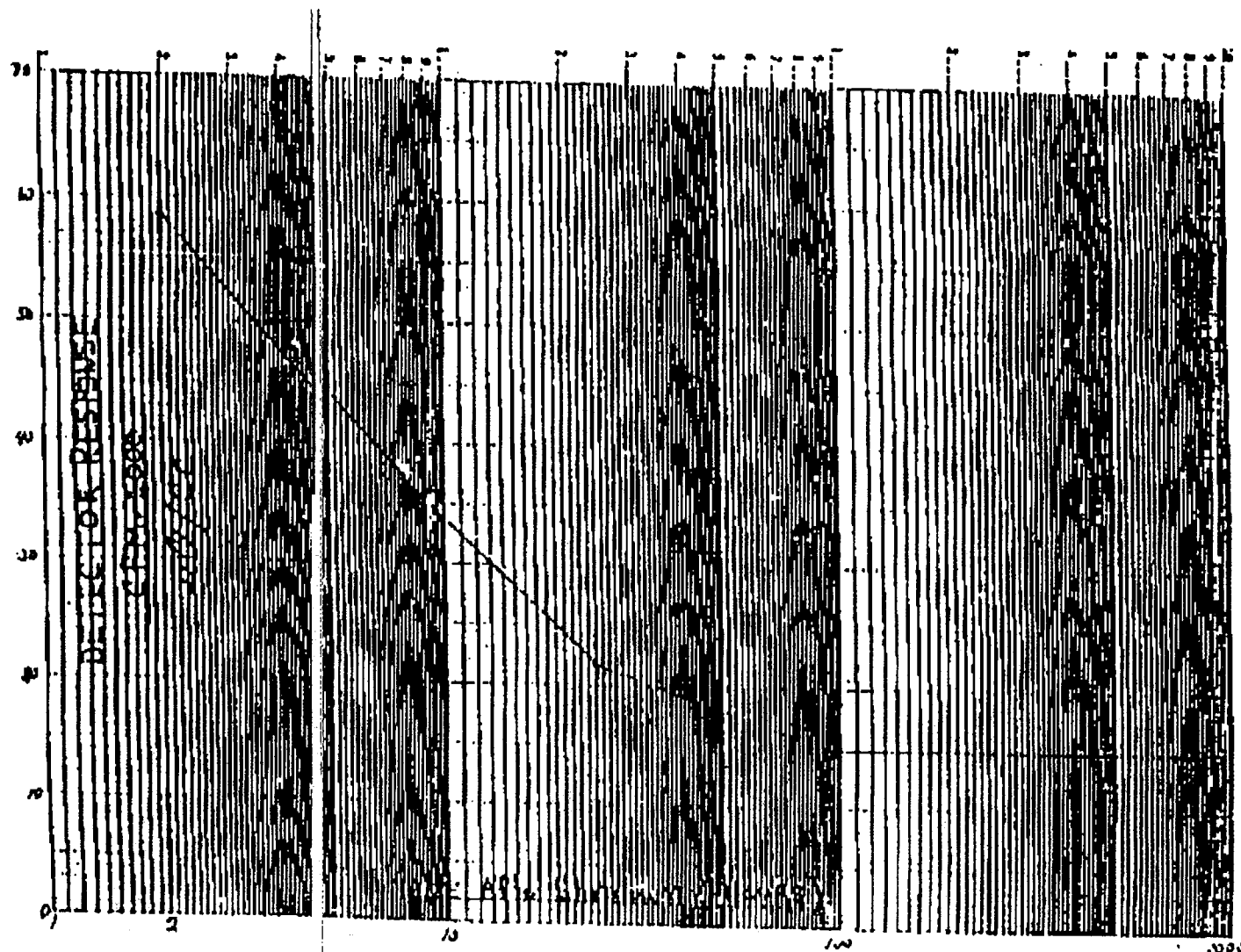
High-range conversion factor = $\frac{1}{\text{High-range calibration factor}}$

B.

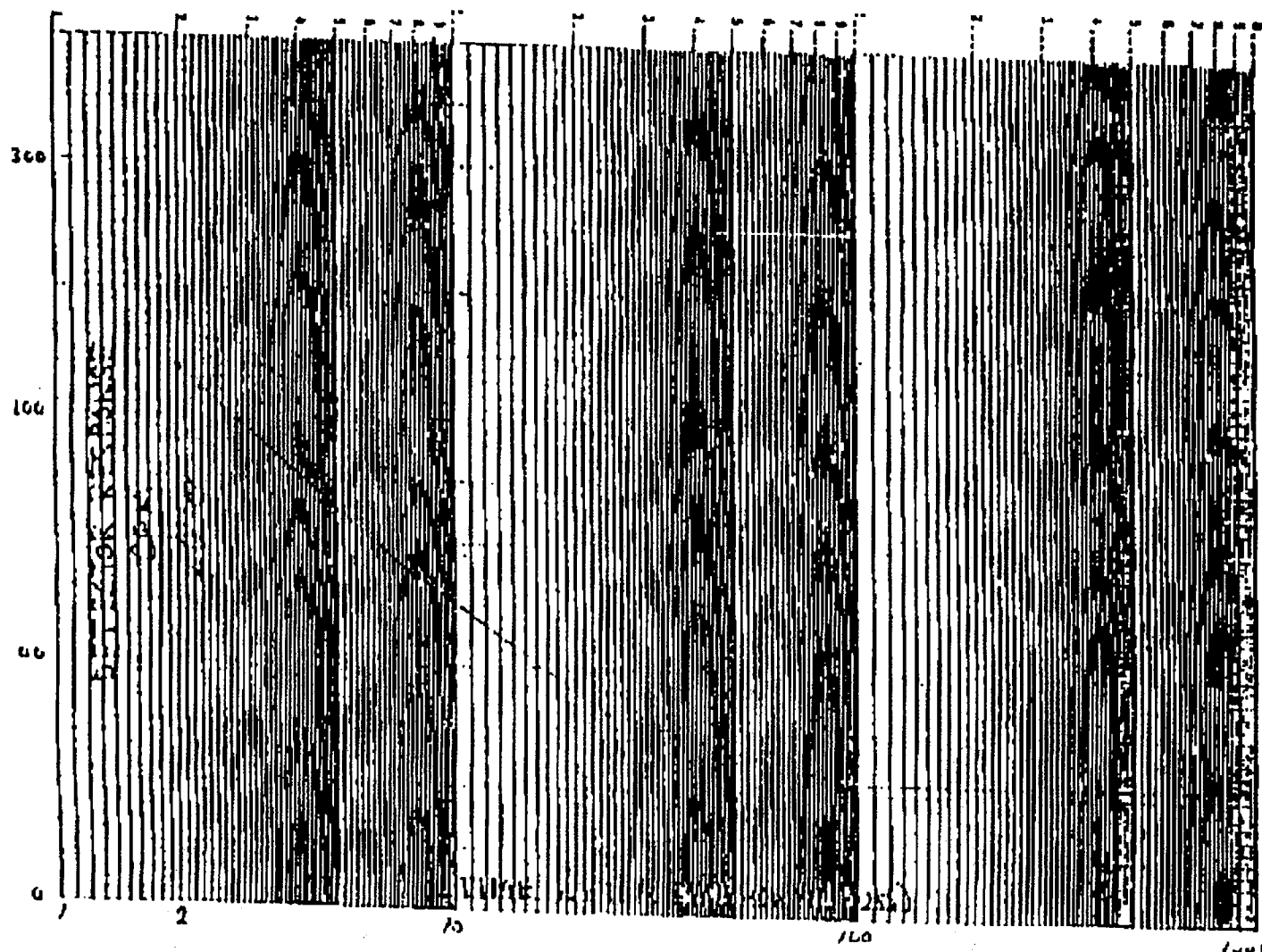
New Mid-range conversion = _____ $\frac{\mu\text{Ci/cc}}{\text{cpm}}$ for channel RE26076-3
--

Apply Value A to channel item 11 of RE26076-1
Apply Value B to channel item 11 of RE26076-3

Appendix ERP-360-1
FIGURE 1
Mid-Range Detector Response Vs. Time



Appendix ERP-360-1
FIGURE 2
Mid-Range Detector Response Vs. Time



APPENDIX ERP-360-2

Mid and High-Range Conversion Factor Adjustment Worksheet for Non-LOCA Source Terms

INSTRUCTIONS

Do one worksheet each for the mid-range and high-range channels.
Complete the worksheets as follows:

1. Fill in the appropriate information at the top of the worksheet.
2. List the suspected or actual isotopic makeup of the release in the first column.
3. Provide the concentration or curie amount in the second column.
4. Determine the fractional abundance of each isotope in the source term. The sum of all isotopic abundances should approximately equal 1.
5. Obtain the values for B, C, and D from the Table of Isotopes, Radiological Health Handbook or any acceptable reference document.
6. Obtain the value for E from Figure 3 and Figure 4 for the mid-range and high-range channel respectively. Use the gamma curve for each gamma emitted and the beta curve for each beta emitted.
7. Determine the isotopic conversion factor for each emission (F) by multiplying column D times E.
8. Calculate the expected yield for each emission (G) by multiplying columns A times F times Cf.

NOTE

CF VALUES ARE DETECTOR CORRECTION FACTIONS OBTAINED FROM TRANSFER CALIBRATION PROCEDURE (0366-9010). THE VALUE IS 1.29 FOR BETA AND 1.07 FOR GAMMA.

9. Calculate the Total Expected Yield for the Source Term (CPM/uCi/cc) by adding all expected yields for each emission in column G.
10. Calculate the new conversion factor for each channel by taking the reciprocal of the Total Expected Yield.
11. Apply the new conversion factor determined in step 9 to channel item 11 for the channel of interest.

APPENDIX ERP-360-2

DATE: _____
TIME: _____
Time after reactor shutdown: _____

Mid and High-Range Calibration Factor Adjustment Worksheet
for Non-LOCA Source Terms
(See notes on following page)

MID-RANGE

HIGH-RANGE

Source Term		Intensity	Radiations Produced			$\frac{\text{cpm}}{\text{uCi/cc}}$ from Graph	$\frac{\text{cpm}}{\text{uCi/cc}}$ D x E	Expected Yield A x F x CF	cf-beta = 1.29 cf-gamma = 1.07
Isotope	Concentration or Activity		E (MeV)	B or	No. per Dis				
		A	B	C	D	E	F	G	
									ENTER THE RECIPROCAL OF THE TOTAL EXPECTED YIELD IN CHANNEL ITEM 11: $\frac{1}{\text{TOTAL EXP. YIELD}} =$ $\frac{\text{uCi/cc}}{\text{CPM}}$
=		= 1							

APPENDIX ERP-360-2

NOTES

- A = Fractional abundance of each isotope in source term.
The sum of all isotopes should approximately equal 1.
- B,C,D = Obtain these values from the Table of the Isotopes or
the Radiological Health Handbook.
- E = Obtain these values as a function of beta or gamma
energy from Figure 1 (Mid-range detector) and Figure 2
(High-range detector) of this Appendix.
- F = D times E
- G = A times F times Cf
- Cf = These values are actual values obtained from the
transfer calibration procedure (0366-9010) and are 1.29
for betas and 1.07 for gammas.

APPENDIX ERP-360-2

FIGURE 3

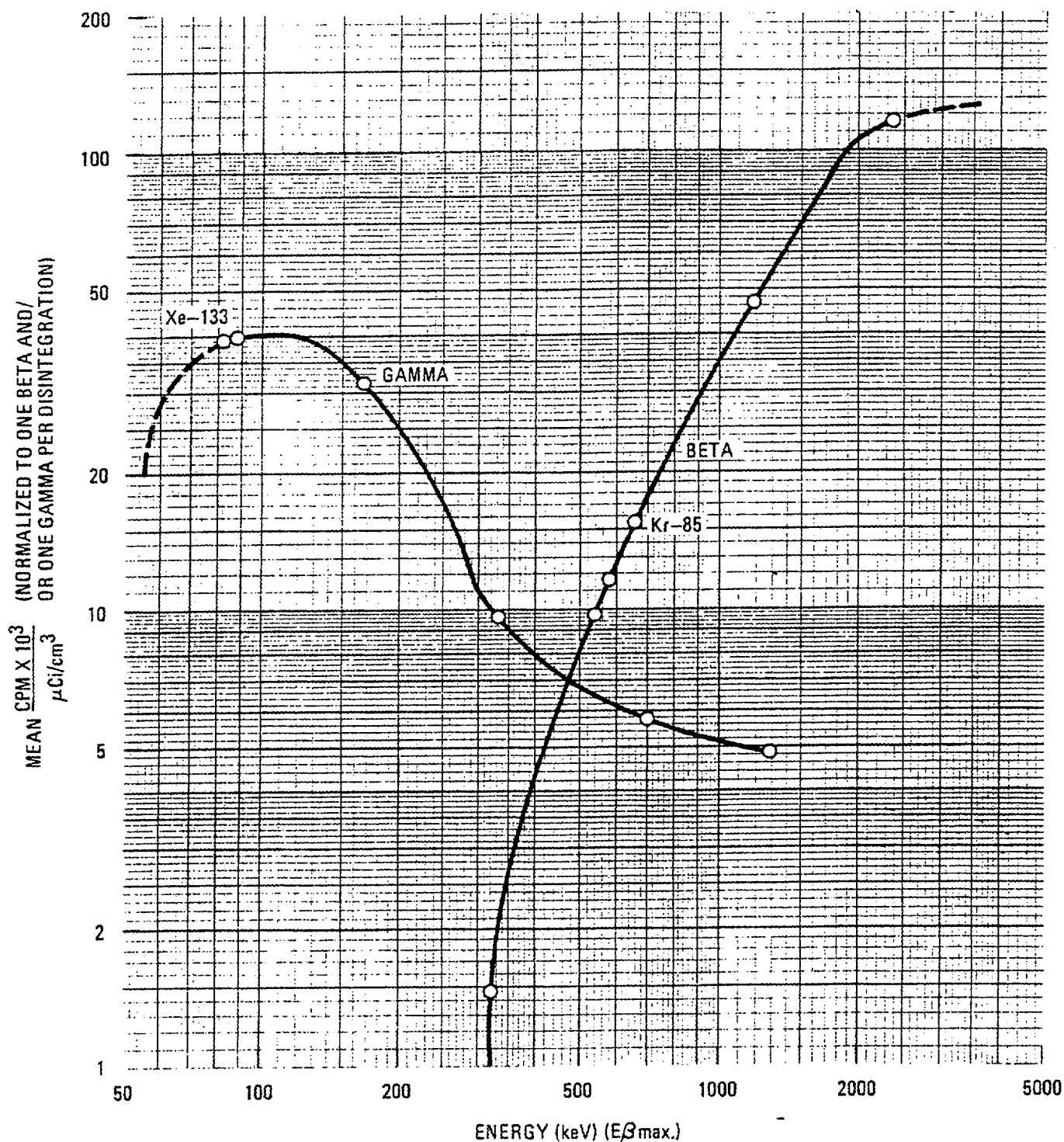


Fig. 3. Mid-range detector energy response curve

APPENDIX ERP-360-2

FIGURE 4

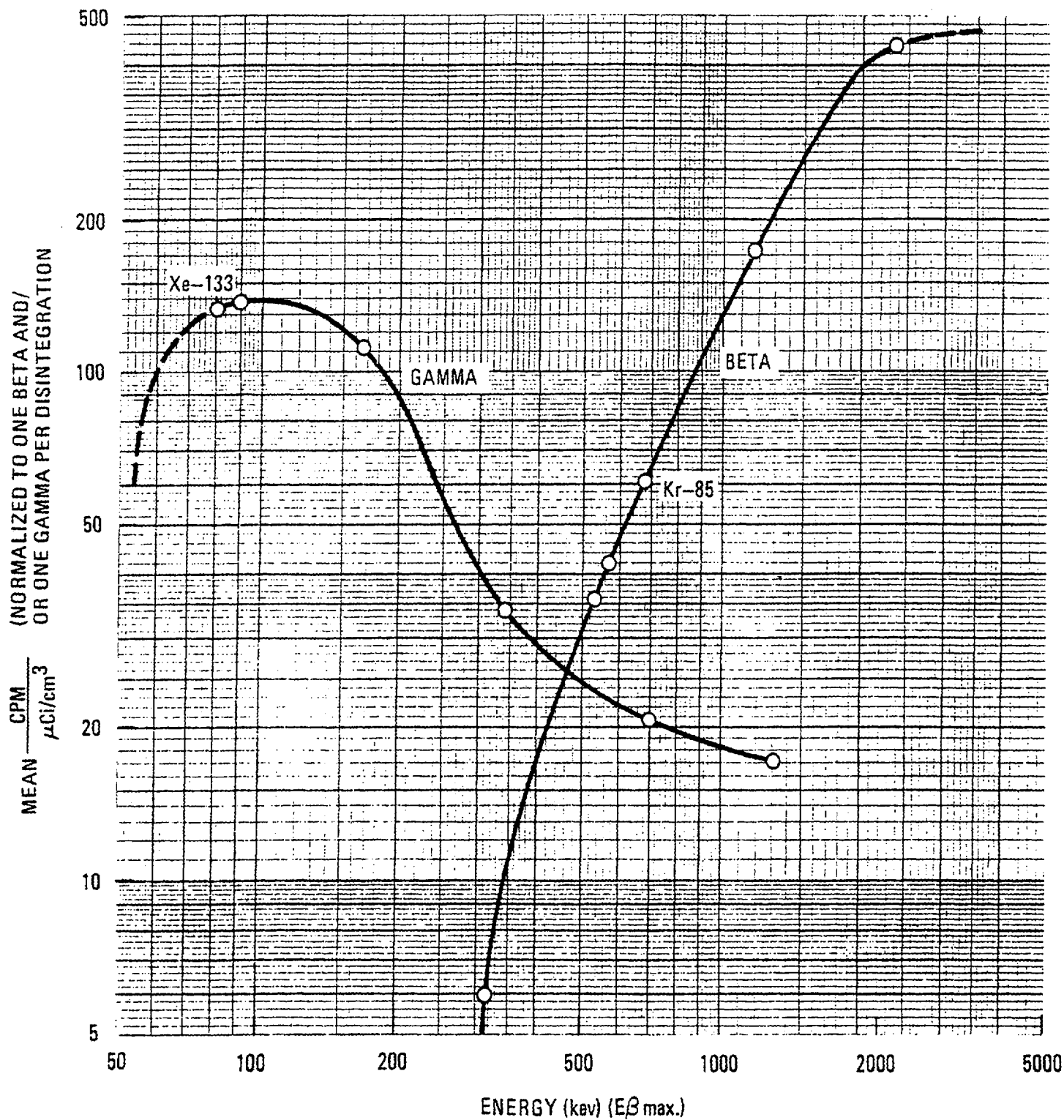


Fig. 4. High-range detector energy response curve

ATTACHMENT 2

LIMERICK GENERATING STATION, UNITS 1 & 2

**Docket Nos. 50-352
50-353**

**License Nos. NPF-39
NPF-85**

EMERGENCY RESPONSE PROCEDURES

REPORT INDEX

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	0006	EMERGENCY OPERATIONS FACILITY (EOF) ACTIVATION/DEACTIVATION	06/25/01		
LG	PROC	ERP	ERP-C-1000-1	0004	EOF ACTIVATION CHECKLIST	06/25/01		
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-1000-5	0000	MINIMUM STAFFING POSITIONS NECESSARY TO ACTIVATE THE EOF	06/25/01		
LG	PROC	ERP	ERP-C-1100	0003	EOF STAFF AUGMENTATION INCORPORATED INTO ERP-C-1250	09/14/94		
LG	PROC	ERP	ERP-C-1200	0011	EMERGENCY RESPONSE MANAGER	06/25/01	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-1200-4	0000	MINIMUM STAFFING POSITIONS NECESSARY TO ACTIVATE THE EOF	03/30/01		
LG	PROC	ERP	ERP-C-1210	0002	ASSISTANT EMERGENCY RESPONSE MANAGER (AERM) CANCELLED	10/24/95		
LG	PROC	ERP	ERP-C-1250	0004	EMERGENCY PREPAREDNESS COORDINATOR/EOF	06/25/01		
LG	PROC	ERP	ERP-C-1250-1	0000	EMERGENCY POWER INSTRUCTIONS	09/14/94		
LG	PROC	ERP	ERP-C-1250-2	0002	EMERGENCY PREPAREDNESS COORDINATOR INSTRUCTIONS FOR ASPEN BACKUP NOTIFICATION SYSTEM	05/11/01		
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	0010	EMERGENCY OPERATIONS FACILITY (EOF) DOSE ASSESSMENT TEAM LEADER	08/29/00		
LG	PROC	ERP	ERP-C-1300-1	0004	DOSE ASSESSMENT TEAM LEADER (DATL) INITIAL ACTIONS	06/25/01		
LG	PROC	ERP	ERP-C-1300-2	0000	DOSE ASSESSMENT TURNOVER LIST	09/23/94		
LG	PROC	ERP	ERP-C-1300-3	0004	PROTECTIVE ACTION RECOMMENDATION WORKSHEET	03/30/01		
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	0002	DOSE ASSESSMENT GROUP MEMBER (DAGM) INITIAL ACTIONS	06/25/01		
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	0007	EMERGENCY OPERATIONS FACILITY (EOF) FIELD SURVEY GROUP LEADER	08/29/00		
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	0002	FIELD SURVEY GROUP LEADER DATA SHEET	08/29/00		
LG	PROC	ERP	ERP-C-1400	0005	ENGINEERING SUPPORT TEAM	06/25/01		

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-1400-1	0002	ENGINEERING SUPPORT TEAM CHECKLIST	11/02/98		
LG	PROC	ERP	ERP-C-1410	0002	CORE DAMAGE ASSESSMENT	09/09/98		
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	0002	PERCENT OF FUEL INVENTORY AIRBORNE IN THE CONTAINMENT VS. APPROXIMATE SOURCE AND DAMAGE ESTIMATE	06/01/01		
LG	PROC	ERP	ERP-C-1410-6	0002	PROCEDURES FOR ESTIMATING FUEL DAMAGE BASED ON MEASURED I-131 AND XE-133 CONCENTRATIONS	06/25/01		
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	0012	CLASSIFICATION OF EMERGENCIES	02/08/02	LWE	
LG	PROC	ERP	ERP-101 BASES	0003	LGS EAL TECHNICAL BASIS MANUAL	02/08/02		
LG	PROC	ERP	ERP-106	0003	WRITTEN SUMMARY NOTIFICATION	11/22/95	LWE	
LG	PROC	ERP	ERP-110	0033	EMERGENCY NOTIFICATION	06/12/01	LWE	
LG	PROC	ERP	ERP-120	0007	STATION EVACUATIONS	12/07/01	LWE	
LG	PROC	ERP	ERP-140	0010	STAFFING AUGMENTATION	12/07/01	LWE	
LG	PROC	ERP	ERP-200	0015	EMERGENCY DIRECTOR (ED) RESPONSE	12/07/01	LWE	
LG	PROC	ERP	ERP-200-1 APP	0012	EMERGENCY DIRECTOR FORMS	12/07/01	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	0023	DOSE ASSESSMENT COORDINATOR	01/31/02	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	0001	OPERATION OF THE DOSE ASSESSMENT COMPUTER (CM-3)	02/15/02		

PROCEDURE INDEX REPORT:

FAC	DOC TYPE	PROC TYPE	PROCEDURE NUMBER	CURR REV NBR	TITLE	EFFECTIVE DATE	RESP GROUP	SYSTEM NBR
LG	PROC	ERP	ERP-326	0001	SHIFT DOSE ASSESSMENT PERSONNEL (SDAP)	02/15/02		
LG	PROC	ERP	ERP-330	0000	USE OF NORTH STACK-DOSE RATE TO ESTIMATE RELEASE SOURCE TERM CANCELLED INCORPORATED INTO ERP-300 APP.10	11/14/94	LWE	
LG	PROC	ERP	ERP-340	0009	FIELD SURVEY GROUP	01/31/02	LWE	
LG	PROC	ERP	ERP-350	0003	RADIOACTIVE LIQUID RELEASE CANCELLED	11/10/94	LWE	
LG	PROC	ERP	ERP-360	0004	ADJUSTMENT OF WIDE RANGE GAS MONITOR CONVERSION FACTORS	02/15/02	LWE	
LG	PROC	ERP	ERP-370	0001	USE OF RMMS FOR DOSE ASSESSMENT CANCELLED	11/10/94	LWE	
LG	PROC	ERP	ERP-400	0013	CHEMISTRY SAMPLING AND ANALYSIS TEAM	07/24/01	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	0013	HEALTH PHYSICS TEAM	01/31/02	LWE	
LG	PROC	ERP	ERP-620	0002	PLANT SURVEY GROUP CANCELLED - NO REPLACEMENT	05/02/95	LWE	
LG	PROC	ERP	ERP-630	0004	VEHICLE AND EVACUEE CONTROL GROUP	01/31/02	LWE	
LG	PROC	ERP	ERP-640	0008	EMERGENCY RESPONSE FACILITY HABITABILITY	04/17/99	LWE	
LG	PROC	ERP	ERP-650	0011	ENTRY FOR EMERGENCY REPAIR AND OPERATIONS	01/31/02	LWE	
LG	PROC	ERP	ERP-660	0007	DISTRIBUTION OF THYROID BLOCKING TABLETS	01/31/02	LWE	
LG	PROC	ERP	ERP-700	0016	TECHNICAL SUPPORT TEAM	02/15/01	LWE	
LG	PROC	ERP	ERP-800	0020	MAINTENANCE TEAM	12/15/00	LWE	
LG	PROC	ERP	ERP-800 APPENDIX 1	0000	TASK BRIEFING/DEBRIEFING SHEET	04/14/00		
LG	PROC	ERP	ERP-800 APPENDIX 2	0001	MAINTENANCE TEAM ACTIVATION	07/24/01		
LG	PROC	ERP	ERP-800 APPENDIX 3	0001	TECHNICAL SUPPORT CENTER ACTIVATION	12/15/00		
LG	PROC	ERP	ERP-800 APPENDIX 4	0001	OFFSITE SIRENS ACTIVATION (REF. 6.5.1)	12/15/00		

** END OF REPORT **