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PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-5001

SHIELDS L. DALTROFF
VICE PRESIDENT
ELECTRIC PRODUCTION

June 7, 1982.

Re: Docket Nos. 50-277
50-278

Mr. Harold R. Denton, Director
Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Denton:

Enclosed are ten copies of additional revisions to the Peach Bottom Atomic Power Station Emergency Plan Implementing Procedures. These procedures are submitted, within 30 days of the change, per regulations in 10 CFR 50, Appendix E, Section V.

The procedures being submitted are the following:

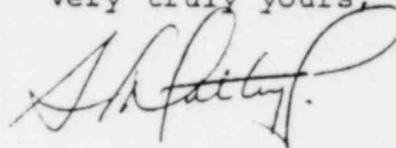
EP-101, Rev. 4
EP-102, Rev. 4
EP-103, Rev. 5
EP-104, Rev. 4
EP-105, Rev. 4
EP-201, Rev. 3
EP-203, Rev. 3
EP-207, Rev. 4
EP-207B, Rev. 3
EP-209, App. I-2, Rev. 4
EP-316, Rev. 2

EP 318, Rev. 0
EP 319, Rev. 0

Pursuant to Section 2.790 (b) of the Commission's regulations, it is hereby requested that the telephone numbers and addresses listed in procedures EP 102, EP 103, EP 104, EP 105, EP 201, EP 203, EP 209, App. I-2 be withheld from public disclosure. An affidavit setting forth the grounds in support of this request is attached hereto.

Three copies have been sent under separate cover to R. C. Haynes.

Very truly yours,



Enclosure

cc: Mr. R. C. Haynes, Administrator
Region I
U.S Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Site Inspector - Peach Bottom

COMMONWEALTH OF PENNSYLVANIA :

: SS.

COUNTY OF PHILADELPHIA :

S. L. Daltroff, being first duly sworn, deposes and states as follows:

1. He is Vice President of Philadelphia Electric Company (hereinafter referred to as the "Company"); he is authorized to execute this Affidavit on behalf of the Company; and he has reviewed Emergency Plan Procedures EP 102, EP 103, EP 104, EP 105, EP 201, EP 203, and EP 209, App. I-2, (hereinafter referred to as "the Documents"), and knows the contents thereof.

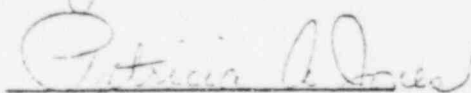
2. The part of the Documents which is sought to be withheld from public disclosure is the listing of the home telephone numbers of employees of the Company, direct-line work telephone numbers of employees of the Company which are not listed in public telephone directories, and home and work numbers of emergency response support personnel and organizations.

3. To the best of his knowledge, information and belief, the telephone numbers set forth in the Documents have been treated as confidential information and have been withheld from public disclosure by the Company.

4. The home telephone numbers in the Documents should be considered by the Nuclear Regulatory Commission as confidential and proprietary information and be withheld from public disclosure on the grounds that disclosure of the home telephone numbers of the employees of the Company and emergency support personnel could constitute an unwarranted invasion of the personal privacy of the individuals involved, disclosure of the work telephone numbers of the Company's employees and of the emergency response personnel and organizations could adversely affect the capability of prompt notification in the event of an emergency; such disclosure is not required in the public interest; and such disclosure could adversely affect the interests of the Company and its ability to effectively implement the notification requirements of the Emergency Plan Procedures.



Subscribed and sworn to
before me this 4th day
of June, 1982



Notary Public

PATRICIA A. JONES
Notary Public, Media Boro, Delaware Co.
My Commission Expires Sept. 13, 1982

RECEIVED

EMERGENCY PLAN PROCEDURES INDEX

MAY 25 1982

PEACH BOTTOM UNITS 2 AND 3

EP INDEX
PAGE 1
REV. 17 *
05/11/82 *

NUMBER	W. J. KNAPP	TITLE	REVIEW --DATE--	REV. NO.	REVISION --DATE--
EP-101		CLASSIFICATION OF EMERGENCIES	05/10/82	4	05/10/82 *
EP-102		UNUSUAL EVENT RESPONSE	05/11/82	4	05/11/82 *
EP-103		ALERT RESPONSE	05/11/82	4	05/11/82 *
EP-104		SITE EMERGENCY RESPONSE	05/11/82	4	05/11/82 *
EP-105		GENERAL EMERGENCY RESPONSE	05/11/82	4	05/11/82 *
EP-110		PERSONNEL ASSEMBLY AND ACCOUNTABILITY	04/14/82	0	04/14/82
EP-201		TECHNICAL SUPPORT CENTER (TSC) ACTIVATION	05/11/82	3	05/11/82 *
EP-202		OPERATIONAL SUPPORT CENTER (OSC) ACTIVATION	04/08/82	2	04/08/82
EP-203		EMERGENCY OPERATIONS FACILITY (EOF) ACTIVATION	05/11/82	3	05/11/82 *
EP-205		RADIATION PROTECTION TEAM ACTIVATION	04/08/82	3	04/08/82
EP-205A		CHEMISTRY SAMPLING AND ANALYSIS GROUP	04/08/82	3	04/08/82
EP-205B		RADIATION SURVEY GROUPS	04/08/82	2	04/08/82
EP-205C		PERSONNEL DOSIMETRY BIOASSAY AND RESPIRATORY PROTECTION GROUP	04/08/82	2	04/08/82
EP-206		FIRE AND DAMAGE TEAM ACTIVATION	04/19/82	4	04/19/82
EP-206A		FIRE FIGHTING GROUP	04/19/82	2	04/19/82
EP-206B		EMERGENCY REPAIR GROUP	02/26/82	1	02/26/82
EP-207		PERSONNEL SAFETY TEAM ACTIVATION	05/11/82	4	05/11/82 *
EP-207A		SEARCH AND RESCUE	04/14/82	2	04/14/82
EP-207B		PERSONNEL ACCOUNTABILITY	05/11/82	3	05/11/82 *
EP-207C		FIRST AID	04/14/82	2	04/14/82
EP-207D		PERSONNEL MONITORING AND DECONTAMINATION	04/08/82	2	04/08/82
EP-207E		VEHICLE AND EVACUEE CONTROL			

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EMERGENCY PLAN PROCEDURES INDEX

PEACH BOTTOM UNITS 2 AND 3

 LP INDEX
 PAGE 2
 REV. 17
 05/11/82

NUMBER	TITLE	REVIEW --DATE--	REV. NO.	REVISION --DATE--
	PROCEDURE	04/08/82	0	04/08/82
EP-207F	VEHICLE DECONTAMINATION PROCEDURE	04/14/82	0	04/14/82
EP-208	SECURITY TEAM	04/01/81	0	04/01/81
EP-209	TELEPHONE LIST FOR EMERGENCY USE	04/26/82	4	04/26/82
EP-209 APPENDIX A	IMMEDIATE NOTIFICATION CALL LIST	04/26/82	4	04/26/82
EP-209 APPENDIX B	PHILADELPHIA ELECTRIC COMPANY OFFICIALS	07/23/81	1	07/23/81
EP-209 APPENDIX C	PEACH BOTTOM STATION SUPERVISION	04/08/82	4	04/08/82
EP-209 APPENDIX D-1	ON SITE EMERGENCY TEAM LEADERS	04/08/82	3	04/08/82
EP-209 APPENDIX D-2	RADIATION SURVLY TEAM	04/26/82	3	04/26/82
EP-209 APPENDIX D-3	FIRE AND DAMAGE TEAM	04/26/82	3	04/26/82
EP-209 APPENDIX D-4	PERSONNEL SAFETY TEAM	04/26/82	3	04/26/82
EP-209 APPENDIX D-5	SECURITY TEAM	04/26/82	3	04/26/82
EP-209 APPENDIX D-6	RE-ENTRY AND RECOVERY TEAM	04/26/82	2	04/26/82
EP-209 APPENDIX D-7	TECHNICAL SUPPORT CENTER TEAM	04/26/82	3	04/26/82
EP-209 APPENDIX E	CORPORATE EMERGENCY TEAM LEADERS AND SUPPORT PERSONNEL	04/26/82	4	04/26/82
EP-209 APPENDIX F	U. S. GOVERNMENT AGENCIES	04/08/82	2	04/08/82
EP-209 APPENDIX G	EMERGENCY MANAGEMENT AGENCIES	10/16/81	2	10/16/81
EP-209 APPENDIX H	COMPANY CONSULTANTS	10/16/81	2	10/16/81
EP-209	FIELD SUPPORT PERSONNEL			

EMERGENCY PLAN PROCEDURES INDEX

PEACH BOTTOM UNITS 2 AND 3

 EP INDEX
 PAGE 3
 REV. 17 *
 05/11/82 *

NUMBER	TITLE	REVIEW --DATE--	REV. NO.	REVISION --DATE--
APPENDIX I-1		04/14/82	6	04/14/82
EP-209 APPENDIX I-2	RAD SERVICES CALL LIST	05/06/82	4	05/06/82 *
EP-209 APPENDIX J	NEARBY PUBLIC AND INDUSTRIAL USERS	07/23/81	1	07/23/81
EP-209 APPENDIX K	MISCELLANEOUS	07/23/81	1	07/23/81
EP-209 APPENDIX L	LOCAL PECO PHONES	07/23/81	1	07/23/81
EP-209 APPENDIX M	D E L E T E D			D E L E T E D
EP-209 APPENDIX N	MEDICAL SUPPORT GROUPS	04/26/82	3	04/26/82
EP-209 APPENDIX P	STAFFING AUGMENTATION - 60 MINUTE CALL PROCEDURE	03/05/82	1	03/05/82
EP-301	OPERATING THE EVACUATION ALARM AND POND PAGE SYSTEM	04/01/81	0	04/01/81
EP-303	PARTIAL PLANT EVACUATION	12/22/81	1	12/22/81
EP-304	D E L E T E D			
EP-305	SITE EVACUATION	03/05/82	3	03/05/82
EP-306	EVACUATION OF THE INFORMATION CENTER	12/22/81	1	12/22/81
EP-307	RECEPTION AND ORIENTATION OF SUPPORT PERSONNEL	04/12/82	0	04/12/82
EP-311	HANDLING PERSONNEL WITH SERIOUS INJURIES, RADIOACTIVE CONTAMINATION EXPOSURE, OR EXCESSIVE RADIATION EXPOSURE EMERGENCY DIRECTOR FUNCTIONS	04/08/82	3	04/08/82
EP-312	RADIOACTIVE LIQUID RELEASE (EMERGENCY DIRECTOR FUNCTIONS)	04/01/81	0	04/01/81
EP-313	CONTROL OF THYROID BLOCKING (KI) TABLETS	04/08/82	0	04/08/82
EP-316	CUMULATIVE POPULATION DOSE CALCULATIONS	05/06/82	2	05/06/82 *

EMERGENCY PLAN PROCEDURES INDEX

EP INDEX
PAGE 4
REV. 17 *
05/11/82 *

PE/CH BOTTOM UNITS 2 AND 3

NUMBER	TITLE	REVIEW --DATE--	REV. NO.	REVISION --DATE--
EP-317	DIRECT RECOMMENDATIONS TO COUNTY EMERGENCY MANAGEMENT AND CIVIL DEFENSE AGENCIES	04/14/82	0	04/14/82
EP-318	LIQUID RELEASE DOSE CALCULATION METHOD FOR DRINKING WATER	05/06/82	0	05/06/82 *
EP-319	LIQUID RELEASE DOSE CALCULATION METHOD FOR FISH	05/06/82	0	05/06/82 *
EP-320	PROCEDURE FOR LEAKING CHLORINE	03/12/82	1	03/12/82
EP-401	ENTRY FOR EMERGENCY REPAIR, OPERATIONS, AND SEARCH AND RESCUE	04/08/82	3	04/08/82
EP-500	REVIEW AND REVISION OF EMERGENCY PLAN (FSAR APPENDIX O)	04/01/81	0	04/01/81

NSH
5/10/82

Y. Snapp
PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM UNITS 2 AND 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-101 CLASSIFICATION OF EMERGENCIES

PURPOSE

To define the method of classification of an event or condition into one of four emergency classifications as described in the Emergency Plan. Additionally this procedure details the method of de-escalation from one emergency action level to another.

REFERENCES

1. Peach Bottom Atomic Power Station Emergency Plan
2. NUREG 0654 Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.
3. EP 102, Unusual Event Immediate Actions
4. EP 103, Alert Immediate Actions
5. EP 104, Site Emergency Immediate Actions
6. EP 105, General Emergency Immediate Actions

ACTION LEVEL

Implemented this procedure whenever Shift Supervision detects conditions which meet the Emergency Action Levels in Appendix EP 101, Classification Table.

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

PRECAUTIONS

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

IMMEDIATE ACTIONS

- 1.0 Shift Supervision or Emergency Director shall:
 - 1.1 Select affected categories related to station events or conditons.

IMMEDIATE ACTIONS (cont'd)

<u>Category</u>	<u>Reference Pages in Appendix EP-101</u>
Unplanned Shutdown	1
Personnel Injury	2
Primary Containment Integrity	3
Radioactive Material Release	4
Fire	5
Environmental	6
Loss of Power	7
Secondary Containment	8
Instrument Failure	9
Fuel Damage	10
Hazards to Station Operation	11
Control Room Evacuation	12
Security	See Contingency Plan

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

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

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

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

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

FOLLOW-UP ACTIONS

- 1.0 If event is classified as Alert, Site Emergency, or General Emergency, Shift Supervision or Emergency Director shall:
 - 1.1 Periodically evaluate the event classification as listed on attached Appendix EP-101. Based upon results of corrective action taken to recover from the emergency situation, escalation or de-escalation of the emergency action level classification will be decided upon by the Emergency Director or Interim Emergency Director. (It is preferable, but not mandatory, to obtain concurrence from the Site Emergency Coordinator and Corporate Headquarters prior to classification reduction). The NRC and appropriate off-site authorities at the Emergency Operations Facility all be informed of the decision to move from one emergency class to the next. All agencies or personnel listed in checkoff lists of EP's 102, 103, 104, and 105 shall be informed as a minimum.
 - 1.2 Provide written summary within eight hours to the NRC concerning basis and circumstances surrounding reduction of emergency action level or closeout of the emergency.

UNPLANNED SHUTDOWN	
UNUSUAL EVENT	ALERT
<p><u>UNPLANNED SHUTDOWN</u></p> <ol style="list-style-type: none"> 1) controlled shutdown due to failure to meet L.C.O. 2) any scram other than planned 	<p><u>SCRAM WITH TRIPLE LO LEVEL</u></p> <ol style="list-style-type: none"> 1) scram alarm <u>and</u> 2) double low level alarm (-48") <u>and</u> 3) triple low level alarm (-130") <u>and</u> 4) increase in containment pressure to greater than 1 psig but less than 2 psig on PR-2/3508 <p><u>SCRAM WITH SMALL LEAK</u></p> <ol style="list-style-type: none"> 1) scram alarm <u>and</u> 2) double low level alarm (-48") <u>and</u> 3) triple low level alarm (-130") <u>and</u> 4) containment high pressure alarm (2 psig) <u>and</u> 5) containment pressure 2 psig or greater on PR 2/3508
SITE EMERGENCY	GENERAL EMERGENCY
<p><u>SCRAM WITH LOCA</u></p> <ol style="list-style-type: none"> 1) scram alarm <u>and</u> 2) double low level alarm (-48") <u>and</u> 3) triple low level alarm (-130") <u>and</u> 4) containment high pressure alarm (2 psig) <u>and</u> 5a) containment pressure 10 psig or greater on PR 2/3508 <u>or</u> 5b) containment dose rate greater than 10^5 R/hr on RI-8/9103A/C and RI-8/9103B/D 	<p><u>SCRAM WITH LOCA & NO ECCS</u></p> <ol style="list-style-type: none"> 1) scram alarm <u>and</u> 2) double low level alarm (-48") <u>and</u> 3) triple low level alarm (-130") <u>and</u> 4) active fuel range level indication shows less than -226" on LI-2/3-2-3-91A, B <u>and</u> 5) failure to reset triple low level alarm after 3 minutes <u>and</u> 6) containment high pressure alarm (2psig) <u>and</u> 7) containment pressure greater than 20 psig on PR-2/3508 <u>and</u> 8) containment dose rate greater than 10^6 R/hr on RI-8/9103A/C and RI-8/9103 B/D

PERSONNEL INJURY	
UNUSUAL EVENT	ALERT
<p><u>INJURIES REQUIRING AMBULANCE AND 48 HOUR TREATMENT</u></p> <p>1) Verbal reports or direct observation</p> <p><u>INJURY WITH EXCESS RADIATION EXPOSURE OR CONTAMINATION</u></p> <p>1) Contaminated injury warranting off-site medical treatment <u>or</u> 2) an acute whole body exposure greater than 3 R</p>	<p>N/A</p>
SITE EMERGENCY	GENERAL EMERGENCY
<p>N/A</p>	<p>N/A</p>

PRIMARY CONTAINMENT

UNUSUAL EVENT	ALERT
<p data-bbox="360 278 690 306"><u>NON-ISOLABLE LEAKAGE</u></p> <ol data-bbox="227 342 849 540" style="list-style-type: none"> 1) Primary containment leakrate is greater than 0.5 percent of volume per 24 hrs. at 49.1 psig <u>or</u> 2) N₂ makeup system is not capable of maintaining pressure (not due to lack of N₂). <p data-bbox="227 634 799 697"><u>FAILURE TO ISOLATE PENETRATION WHEN ISOLATED BY A TRANSIENT</u></p> <ol data-bbox="227 732 799 825" style="list-style-type: none"> 1) incorrect valve position during Group I, II, or III isolation alarms 	<p data-bbox="943 285 1554 312"><u>LOSS OF PRIMARY CONTAINMENT INTEGRITY</u></p> <ol data-bbox="910 348 1538 570" style="list-style-type: none"> 1) Reactor Building vent rad effluent high rad alarm and inability to maintain pressure greater than 0.25 psig on narrow range PR-2/3508 <u>or</u> 2) Torus Room flood alarm with level decrease in torus
SITE EMERGENCY	GENERAL EMERGENCY
<p data-bbox="216 1257 827 1321"><u>LOSS OF PRIMARY CONTAINMENT INTEGRITY WITH LOCA</u></p> <ol data-bbox="216 1353 849 1868" style="list-style-type: none"> 1) erratic containment pressure fluctuations above alarm setpoints of 1.5 psig, <u>and</u> 2) Group II and III isolation alarms, <u>and</u> 3) Containment dose rate greater than 10⁵ R/hr on RI-8/9103A/C and RI-8/9103B/D <u>and</u> 4) Reactor Building area high temperature alarm, <u>or</u> Area Radiation Monitors on PR 2/3-18-55 abnormally high, <u>and</u> Reactor Bldg. vent rad effluent high alarm, <u>or</u> Main Stack Rad effluent on PR 0-17-051 increasing due to SGTS operation. 	<p data-bbox="1179 1357 1235 1385">N/A</p> <p data-bbox="888 1604 1576 1732"><u>SITE EMERGENCY continued</u> <u>POTENTIAL LOSS OF PRIMARY CONTAINMENT HIGH RADIATION</u></p> <ol data-bbox="905 1753 1559 2051" style="list-style-type: none"> 1) containment high pressure alarm. (2.0 psig), <u>and</u> 2) scram, <u>and</u> 3) containment dose rate greater than 10⁵ R/hr on RI-8/9103A/C and RI-8/9103B/D, <u>and</u> 4) Reactor Bldg Area Rad Monitors Alarming, <u>and</u> 5) Vent Stack Rad Effluent monitor high alarm

RADIOACTIVE RELEASE

UNUSUAL EVENT	ALERT
<p style="text-align: center;"><u>INSTANTANEOUS RELEASE EXCEEDING TECH SPECS</u></p> <ol style="list-style-type: none"> 1) A spike on rad effluent monitors: <ol style="list-style-type: none"> a) Main Stack greater than 6×10^3 cps on RR 0-17-051, <u>or</u> b) Reactor Bldg vent greater than 4×10^4 cpm on RR-2/3979 <u>or</u> 2) Analysis of particulate filters or charcoal cartridge: <ol style="list-style-type: none"> a) Main Stack greater than 5×10^1 uCi/sec, <u>or</u> b) Reactor Bldg vent greater than 4×10^1 uCi/sec <p style="text-align: center;"><u>RELEASE EXCEEDING TECH SPEC QUARTERLY LIMIT</u></p> <ol style="list-style-type: none"> 1) A report of the summation of individual release data within the quarterly period. 	<p style="text-align: center;"><u>ACTUAL OR POTENTIAL RELEASE 0.01 REM WHOLE BODY OR 0.05 REM THYROID</u></p> <ol style="list-style-type: none"> 1) Uncontrollable release for more than 20 minutes from the: <ol style="list-style-type: none"> a) main stack greater than 1×10^3 cps on RR 0-17-051 <u>or</u> b) Reactor Bldg vent greater than 5×10^4 cpm on RR-2/3979 <u>or</u> 2) Continued particulate or iodine release such that analysis of particulate filter or charcoal cartridge results in the following estimated release rates: <ol style="list-style-type: none"> a) main stack greater than 5×10^2 uCi/sec <u>or</u> b) Reactor Bldg vent greater than 3×10^3 uCi/sec <u>or</u> 3) Containment dose rate greater than 10^2 R/hr on RI-8/9103 A/C and RI-8/9103 B/D
SITE EMERGENCY	GENERAL EMERGENCY
<p style="text-align: center;"><u>ACTUAL OR POTENTIAL RELEASE 0.01 REM WHOLE BODY OR 0.05 REM THYROID</u></p> <ol style="list-style-type: none"> 1) Uncontrollable release for more than 20 minutes from the: <ol style="list-style-type: none"> a) main stack greater than 1×10^4 cps on RR 0-17-051 <u>or</u> b) Reactor Bldg. vent greater than 5×10^5 cpm on RR-2/3979 <u>or</u> 2) continued particulate or iodine release such that analysis of particulate filter or charcoal cartridge results in the following estimated release rates: <ol style="list-style-type: none"> a) main stack greater than 5×10^3 uCi/sec <u>or</u> b) Reactor Bldg vent greater than 3×10^4 uCi/sec <u>or</u> 3) containment dose rate greater than 10^5 R/hr on RI-8/9103A/C and RI-8/9103B/D 	<p style="text-align: center;"><u>ACTUAL OR POTENTIAL RELEASE 0.01 REM WHOLE BODY OR 0.05 REM THYROID</u></p> <ol style="list-style-type: none"> 1) Uncontrollable release for more than 20 minutes from the: <ol style="list-style-type: none"> a) main stack greater than 1×10^5 cps on RR 0-17-051 <u>or</u> b) Reactor Bldg vent greater than 5×10^6 cpm on RR 2/3979 <u>or</u> 2) continued particulate or iodine release such that analysis of particulate filter or charcoal cartridge results in the following estimated release rates: <ol style="list-style-type: none"> a) main stack greater than 5×10^4 uCi/sec <u>or</u> b) Reactor Bldg vent greater than 3×10^5 uCi/sec <u>or</u> 3) containment dose rate greater than 10^6 R/hr on RI-8/9103A/C and RI-8/9103B/D

FIRE	
UNUSUAL EVENT	ALERT
<p><u>FIRE IN PROTECTED AREA LASTING 10 MIN. OR MORE AFTER INITIAL ATTEMPTS TO EXTINGUISH IT</u></p> <p>1) Alarm and verbal report from SSV</p>	<p><u>FIRE WHICH COULD MAKE AN ECCS INOP</u></p> <p>1) Fire alarm and verbal report from SSV</p>
SITE EMERGENCY	GENERAL EMERGENCY
<p><u>FIRE WHICH MAKES AN ECCS INOP</u></p> <p>1) Fire alarm and verbal report from SSV</p>	<p><u>FIRE WHICH CAUSES DAMAGE TO PLANT SYSTEMS SUFFICIENT TO LEAD TO OTHER GENERAL EMERGENCIES</u></p> <p>1) Fire alarm and verbal report from SSV, and LOCA symptoms, ECCS, or containment failure</p>

ENVIRONMENTAL

UNUSUAL EVENT	ALERT
<p data-bbox="404 266 569 293"><u>EARTHQUAKE</u></p> <p data-bbox="194 329 784 393">1) An actual earthquake detected by seismic instrumentation systems</p> <p data-bbox="305 463 619 491"><u>ABNORMAL POND LEVEL</u></p> <p data-bbox="194 527 834 691">1) Conowingo Pond level on LI-2/3278A, B,C: a) greater than 113 feet <u>or</u> b) less than 104 feet without prior notification by L.D.</p> <p data-bbox="404 740 520 768"><u>TORNADO</u></p> <p data-bbox="194 804 735 832">1) A tornado is observed on site</p> <p data-bbox="371 902 520 929"><u>HURRICANE</u></p> <p data-bbox="194 966 751 1029">1) Hurricane is expected to cross the station</p>	<p data-bbox="1131 272 1296 300"><u>EARTHQUAKE</u></p> <p data-bbox="883 336 1462 400">1) An actual earthquake beyond the Operating Basis Earthquake (OBE)</p> <p data-bbox="1049 470 1362 497"><u>ABNORMAL POND LEVEL</u></p> <p data-bbox="883 534 1544 697">1) Conowingo Pond level on LI-2/3278A,B,C: a) greater than 115 feet <u>or</u> b) less than 98.5 feet without prior notification by L.D.</p> <p data-bbox="1148 746 1263 774"><u>TORNADO</u></p> <p data-bbox="883 810 1478 874">1) A tornado strikes the Power Block with identifiable plant damage</p> <p data-bbox="1115 910 1263 938"><u>HURRICANE</u></p> <p data-bbox="883 974 1511 1038">1) Station is experiencing a hurricane with winds greater than 100 mph</p>
SITE EMERGENCY	GENERAL EMERGENCY
<p data-bbox="421 1244 586 1272"><u>EARTHQUAKE</u></p> <p data-bbox="189 1308 801 1415">1) An earthquake greater than Design Earthquake as detected on seismic instruments</p> <p data-bbox="355 1478 669 1506"><u>ABNORMAL POND LEVEL</u></p> <p data-bbox="189 1542 718 1706">1) Conowingo Pond level on LI-2/3278A,B,C exceeding the following limits: a) greater than 116 feet <u>or</u> b) less than 87 feet</p>	

LOSS OF POWER

UNUSUAL EVENT	ALERT
<p data-bbox="282 261 698 321"><u>LOSS OF OFFSITE OR ONSITE. POWER</u></p> <ol data-bbox="183 357 822 646" style="list-style-type: none"> 1) turbine generator trip with Startup Auxiliary transformer SU2 and SU3 unavailable for service for more than 60 seconds <u>or</u> 2) loss of voltage on the four 4160 volt emergency busses or 480 volt load centers supplied from the four 4160 volt emergency busses for more than 60 seconds. 	<p data-bbox="885 261 1524 321"><u>LOSS OF OFFSITE AND ONSITE AC POWER FOR LESS THAN 15 MINUTES</u></p> <ol data-bbox="885 357 1524 519" style="list-style-type: none"> 1) turbine generator trip with Startup Auxiliary transformer SU2 and SU3 unavailable for service <u>and</u> 2) failure of <u>all</u> diesel generators to energize their busses. <p data-bbox="885 555 1566 583"><u>LOSS OF ALL DC POWER FOR LESS THAN 15 MIN.</u></p> <ol data-bbox="885 619 1541 908" style="list-style-type: none"> 1) less than 105 volts on the 2/3A,B,C & D distribution panels as indicated on Panels 2/3AD03, 2/3CD03, 2/3BD03, 2/3DD03 <u>and</u> 2) less than 21 volts on the 24 volt distribution panels as indicated on Panels 2/3AD28, 2/3CD28, 2/3BD28, 2/3DD28 <u>and</u> 3) loss of all alarms
SITE EMERGENCY	GENERAL EMERGENCY
<p data-bbox="178 1236 819 1295"><u>LOSS OF OFFSITE AND ONSITE AC POWER FOR LONGER THAN 15 MINUTES</u></p> <ol data-bbox="178 1332 819 1527" style="list-style-type: none"> 1) turbine generator trip with SU2 and SU3 unavailable for service for longer than 15 minutes <u>and</u> 2) failure of <u>all</u> diesel generators to energize their busses for longer than 15 minutes <p data-bbox="178 1564 769 1623"><u>LOSS OF ALL 125 VDC POWER FOR LONGER THAN 15 MINUTES</u></p> <ol data-bbox="178 1659 835 2015" style="list-style-type: none"> 1) less than 105 volts on the 2/3A,B, C&D distribution panels as indicated on Panels 2/3AD03, 2/3CD03, 2/3BD03, 2/3DD03 for longer than 15 minutes <u>and</u> 2) less than 21 volts on the 24 volt distribution panels as indicated on Panels 2/3AD28, 2/3CD28, 2/3BD28 2/3DD28 for longer than 15 min. <u>and</u> 3) loss of all alarms for longer than 15 min. 	

SECONDARY CONTAINMENT	
UNUSUAL EVENT	ALERT
<p><u>LOSS OF SECONDARY CONTAINMENT INTEGRITY</u></p> <p>1) loss of secondary containment integrity for greater than 12 hours</p>	N/A
SITE EMERGENCY	GENERAL EMERGENCY
N/A	N/A

INSTRUMENT FAILURE	
UNUSUAL EVENT	ALERT
<p><u>SIGNIFICANT LOSS OF ASSESSMENT OR COMMUNICATION CAPABILITY IN THE MAIN CONTROL ROOM</u></p> <p>1) complete loss of all Main Control Room communication equipment</p>	N/A
SITE EMERGENCY	GENERAL EMERGENCY
N/A	N/A

FUEL DAMAGE

UNUSUAL EVENT	ALERT
<p style="text-align: center;"><u>POSSIBLE FUEL DAMAGE</u></p> <ol style="list-style-type: none"> 1) Air ejector discharge rad monitor high alarm <u>and</u> an increase of 500mR/hr within 30 minutes <u>or</u> a level of 2.5×10^3 mR/hr as indicated on RR-2/3-17-152, <u>or</u> 2) high reactor coolant activity as determined by sample analysis equal to or greater than 3 uCi/gm dose equivalent I-131 	<p style="text-align: center;"><u>FUEL DAMAGE</u></p> <ol style="list-style-type: none"> 1) Air ejector discharge rad monitor indicating greater than 2.5×10^4 mR/hr on RR 2/3-17-152, <u>or</u> 2) High coolant activity of 30 uCi/gm dose equivalent I-131, <u>and</u> main steam line high-high radiation alarm with resultant scram alarm, <u>or</u> 3) spent fuel damage resulting in a refueling floor area radiation monitor alarm <u>or</u> a high radiation alarm on refuel floor exhaust rad monitor
SITE EMERGENCY	GENERAL EMERGENCY
<p style="text-align: center;"><u>FUEL DAMAGE</u></p> <ol style="list-style-type: none"> 1) Following conditions occur: <ol style="list-style-type: none"> a) failure of control rods to fully insert on a scram <u>and</u> b) higher than normal readings on LPRMs adjacent to not-fully-inserted rods <u>and</u> c) high coolant activity as determined by sample analysis equal to or greater than 300 uCi/gm dose equivalent I-131 <u>or</u> 2) Major damage to spent fuel in fuel pool or uncovering of spent fuel as confirmed by a fuel pool area radiation monitor alarm <u>and</u>: <ol style="list-style-type: none"> a) refuel floor exhaust radiation monitor high alarm, <u>or</u> b) refuel floor area radiation monitor alarm <u>or</u> 3) Observed major damage to spent fuel 	<p style="text-align: center;"><u>FUEL DAMAGE</u></p> <ol style="list-style-type: none"> 1) When at least 2 of 4 containment rad monitors indicate levels greater than 10^6 R/hr on RI-8/9103A/C and RI-8/9103B/D <u>and</u> containment pressure exceeds 10 psig on PR 2/3508

HAZARDS	
UNUSUAL EVENT	ALERT
<p><u>MODERATE HAZARDS</u></p> <ol style="list-style-type: none"> 1) Aircraft crash on or near site as determined by Shift Supervision <u>or</u> 2) Significant explosion on or near site as determined by Shift Supervision <u>or</u> 3) Toxic gas release on or near site as determined by Shift Supervision 	<p><u>SEVERE HAZARDS</u></p> <ol style="list-style-type: none"> 1) Aircraft crash on the facility or missile impacts into the Reactor Bldg. Diesel Generator Bldg. or HPSW pump structure as determined by Shift Supervision <u>or</u> 2) Explosion damage to facility affecting plant safety as determined by Shift Supervision <u>or</u> 3) Chlorine gas detected in the Control Room
SITE EMERGENCY	GENERAL EMERGENCY

CONTROL ROOM EVACUATION

UNUSUAL EVENT	ALERT
<p>N/A</p>	<p><u>REMOTE CONTROL ESTABLISHED</u></p> <p>1) Evacuation of Main Control Room anticipated or required and control established at remote shutdown panels as determined by Shift Supervision</p>
SITE EMERGENCY	GENERAL EMERGENCY
<p><u>REMOTE CONTROL NOT ESTABLISHED</u></p> <p>1) Evacuation of Main Control Room and control of shutdown systems <u>not</u> established at remote shutdown panels in 15 minutes as determined by Shift Supervision</p>	<p>N/A</p>

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PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM UNITS 2 AND 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-102 -- UNUSUAL EVENT RESPONSE

PURPOSE

TO DEFINE SITE RESPONSE IN THE EVENT OF AN UNUSUAL EVENT.

REFERENCES

1. PEACH BOTTOM ATOMIC POWER STATION EMERGENCY PLAN

SECTION	TITLE
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4.1.1	UNUSUAL EVENT
5.0	ORGANIZATIONAL CONTROL OF EMERGENCIES
6.1.1	UNUSUAL EVENTS

2. NUREG 0654 CRITERIA FOR PREPARATION AND EVALUATION OF RADIOLOGICAL EMERGENCY RESPONSE PLANS AND PREPAREDNESS IN SUPPORT OF NUCLEAR POWER PLANTS.
3. GP-15 LOCAL EVACUATION
4. EP-101 CLASSIFICATION OF EMERGENCIES

APPENDIX

EP 102-1 UNUSUAL EVENT NOTIFICATION CHECKOFF LIST

IMMEDIATE ACTIONS

1.0 SHIFT SUPERVISION SHALL:

- 1.1 ASSUME THE ROLE OF INTERIM EMERGENCY DIRECTOR.
- 1.2 ACTIVATE EMERGENCY TEAMS AS NECESSARY.
- 1.3 DIRECT THE EVACUATION OF AFFECTED AREAS AS NECESSARY. REFER TO THE FOLLOWING PROCEDURE:

GP-15 LOCAL EVACUATION

- 1.4 CONTACT THE STATION SUPERINTENDENT AND THE SHIFT TECHNICAL ADVISOR AND INFORM THEM OF THE SITUATION.

- 1.5 FILL OUT THE STANDARD PROMPT NOTIFICATION MESSAGE IN APPENDIX EP 102-1 AND GIVE IT TO THE ASSIGNED COMMUNICATOR (PO OR HIGHER CLASSIFICATION) AND DIRECT THE COMMUNICATOR TO COMMENCE NOTIFICATION OF THE APPROPRIATE PARTIES AS SPECIFIED IN THAT APPENDIX.

NOTE: DO NOT USE BLUE RINGDOWN PHONE FOR THESE CALLS.

- 1.6 CLOSELY MONITOR CONDITIONS TO DETERMINE PRESENT HAZARDS TO PERSONNEL AND POTENTIAL ACCIDENT CONDITIONS THAT MAY DEVELOP.

2.0 COMMUNICATOR SHALL:

- 2.1 PERFORM NOTIFICATIONS ON APPENDIX EP 102-1 USING THE STANDARD PROMPT NOTIFICATION MESSAGE INCLUDED IN THAT APPENDIX. SEE EP 209, APPENDIX A FOR ADDITIONAL TELEPHONE NUMBERS IF NECESSARY.

FOLLOW-UP ACTIONS

1.0 EMERGENCY DIRECTOR SHALL:

- 1.1 PERIODICALLY EVALUATE THE EVENT CLASSIFICATION IN ACCORDANCE WITH EP 101, CLASSIFICATION OF EMERGENCIES AND ESCALATE OR DEESCALATE THE CLASSIFICATION AS NECESSARY.
- 1.2 DETERMINE WHICH SUPPORT PERSONNEL ARE NECESSARY FOR EMERGENCY FUNCTIONS AND DIRECT THE SHIFT CLERK TO CONTACT THOSE PERSONNEL. IF SHIFT CLERK IS NOT AVAILABLE THIS FUNCTION SHALL BE ASSIGNED TO ANY AVAILABLE INDIVIDUAL.

2.0 SHIFT CLERK SHALL:

- 2.1 NOTIFY ADDITIONAL SUPPORT PERSONNEL TO REPORT TO THE PLANT AS DIRECTED BY THE EMERGENCY DIRECTOR.

APPENDIX EP 102-1
UNUSUAL EVENT NOTIFICATION CHECKOFF LIST

MESSAGE: THIS (IS)(IS NOT) A DRILL. THIS (IS)(IS NOT) A DRILL.
THIS IS PEACH BOTTOM ATOMIC POWER STATION CALLING TO REPORT AN
UNUSUAL EVENT HAS BEEN DECLARED ON UNIT NO. _____. TIME AND DATE
OF UNUSUAL EVENT CLASSIFICATION IS _____. THE BASIC PROBLEM IS

THE PLANT STATUS IS (STABLE)(IMPROVING)(DEGRADING)(NOT KNOWN). THERE
(HAS BEEN)(HAS NOT BEEN) AN (AIRBORNE)(LIQUID) RADIOACTIVE RELEASE
FROM THE PLANT. PROTECTIVE ACTIONS RECOMMENDED ARE (NONE) _____
_____ THE AFFECTED POPULATION AREA IS (NONE) _____
_____. MY NAME IS _____. THIS (IS)
(IS NOT) A DRILL.

NOTIFICATIONS:

PARTY	NAME OF PERSON RESPONDING	TIME OF NOTIFICATION	COMMUNICATOR'S INITIALS
STATION SUPT.	_____	_____	_____
LOAD DISPATCHER	_____	_____	_____
NRC OPERATIONS CENTER (RED PHONE)	_____	_____	_____
PENNSYLVANIA EMERG- ENCY MANAGEMENT AGENCY	_____	_____	_____
YORK COUNTY EMERG- ENCY MANAGEMENT AGENCY	_____	_____	_____
MANAGER-PUBLIC INFORMATION	_____	_____	_____
OR PAGER	_____	_____	_____

TIME NOTIFICATIONS OF ABOVE PARTIES COMPLETED _____
VERIFIED BY _____ DATE _____
(EMERG. DIRECTOR)

FILE SYS-3-1

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PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM UNITS 2 AND 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-103--ALERT RESPONSE

PURPOSE

TO DEFINE SITE RESPONSE IN THE EVENT OF AN ALERT.

REFERENCES

1. PEACH BOTTOM ATOMIC POWER STATION EMERGENCY PLAN

SECTION	TITLE
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4.1.2	ALERT
5.0	ORGANIZATIONAL CONTROL OF EMERGENCIES
6.1.2	ALERT

2. NUREG 0654 CRITERIA FOR PREPARATION AND EVALUATION OF RADIOLOGICAL EMERGENCY RESPONSE PLANS AND PREPAREDNESS IN SUPPORT OF NUCLEAR POWER PLANTS.
3. GP-15 LOCAL EVACUATION
4. EP-101 CLASSIFICATION OF EMERGENCIES

APPENDICES

EP-103-1 ALERT NOTIFICATION CHECKOFF LIST
EP-103-2 PERSONNEL CALL RECORD
EP-103-3 EMERGENCY EXPOSURE LIMITS (EMERGENCY PLAN TABLE 6.1)

PRECAUTIONS

1. PLANNED RADIATION EXPOSURES SHOULD BE LIMITED TO THE ADMINISTRATIVE GUIDE LEVELS IN APPENDIX EP 103-4, EMERGENCY EXPOSURE LIMITS.

IMMEDIATE ACTIONS

- 1.0 SHIFT SUPERVISION SHALL:

- 1.1 ASSUME THE ROLE OF INTERIM EMERGENCY DIRECTOR.
- 1.2 ACTIVATE EMERGENCY TEAMS AS NECESSARY.

- 1.3 DIRECT THE EVACUATION OF AFFECTED AREAS AS NECESSARY. REFER TO THE FOLLOWING PROCEDURES:

GP-15 LOCAL EVACUATION

EP 305 SITE EVACUATION

EP 306 EVACUATION OF THE INFORMATION CENTER

- 1.4 CONTACT THE STATION SUPERINTENDENT AND THE SHIFT TECHNICAL ADVISOR, INFORM THEM OF THE SITUATION.

- 1.5 FILL OUT THE STANDARD PROMPT NOTIFICATION MESSAGE CHECK-OFF APPENDIX EP 103-1 AND GIVE IT TO THE COMMUNICATOR (PO OR HIGHER CLASSIFICATION) AND DIRECT THE COMMUNICATOR TO COMMENCE NOTIFICATION OF THE APPROPRIATE PARTIES AS SPECIFIED IN SECTION 2.1 OF THIS PROCEDURE. THE COMMUNICATOR SHALL MAN THE NRC RED TELEPHONE ON A CONTINUOUS BASIS IF REQUIRED BY PROCEDURE A-31. IF COMMUNICATOR IS REQUIRED FOR URGENT PLANT OPERATIONS RELATED TO THE EMERGENCY, THE CONCURRENCE FOR SECURING THE PHONE SHOULD BE OBTAINED FROM THE NRC PRIOR TO SECURING THIS TELEPHONE.

- 1.6 DIRECT THE SHIFT CLERK TO ACTIVATE THE 60 MINUTE CALL LIST USING EP 209 APP P. IF SHIFT CLERK IS NOT AVAILABLE, THIS FUNCTION SHALL BE ASSIGNED TO ANY AVAILABLE INDIVIDUAL.

- 1.7 DIRECT ONE OF THE ON-SHIFT I&C TECHNICIANS TO ACTIVATE THE TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATIONS FACILITY IN ACCORDANCE WITH EP 201 AND EP-203. INFORM SHIFT CLERK WHICH I&C TECHNICIAN WILL ACTIVATE THE CENTERS AT UNIT 1 IN ORDER THAT THE CLERK WILL KNOW WHICH REMAINING I&C TECHNICIAN TO CALL FOR THE PROMPT MOBILIZATION PROCEDURE.

- 1.8 DIRECT THE RADIATION PROTECTION TEAM LEADER TO INITIATE SITE RADIATION SURVEYS AS NECESSARY, IN ACCORDANCE WITH EP-205, RADIATION PROTECTION TEAM.

- 1.9 INITIATE THE IMPLEMENTATION OF EP 316, CUMULATIVE POPULATION DOSE CALCULATIONS, IF NECESSARY. (EP-316 NEEDED FOR ALERT AS PER PG. 8 ITEM B OF EP-101 APP. 101-1). THE SHIFT TECHNICAL ADVISOR (STA) COULD BE USED TO PERFORM THIS FUNCTION.

- 1.10 ASSIGN AN OPERATIONS SUPPORT CENTER COORDINATOR (SENIOR SHIFT PO OR APO AVAILABLE) AND DIRECT AVAILABLE SHIFT PERSONNEL TO REPORT TO THE OPERATIONS SUPPORT CENTER ON 135' ELEV. TURBINE BLDG. AND TO ACTIVATE IT IN ACCORDANCE WITH EP 202, IF HABITABLE. IF THIS OPERATIONS SUPPORT CENTER IS NOT HABITABLE, DIRECT SHIFT PERSONNEL TO REPORT TO THE CONTROL ROOM.

- 1.11 CLOSELY MONITOR CONDITIONS TO DETERMINE PRESENT HAZARDS

TO PERSONNEL AND POTENTIAL ACCIDENT CONDITIONS THAT MAY DEVELOP.

- 1.12 IF RELEASE HAS OCCURRED, DISPATCH A PLANT SURVEY TEAM MEMBER TO OBTAIN A SITE BOUNDARY DOSE RATE AS SOON AS PRACTICABLE.
- 1.13 IF NECESSARY, INITIATE IMPLEMENTATION OF EP-316 & EP-317, DIRECT RECOMMENDATIONS TO COUNTY EMERGENCY MANAGEMENT AGENCIES.

2.0 COMMUNICATOR SHALL:

- 2.1 PERFORM NOTIFICATIONS ON APPENDIX 103-1 USING THE ALERT NOTIFICATION CHECK OFF APPENDIX EP 103-1. SEE EP 209, APPENDIX A FOR ADDITIONAL TELEPHONE NUMBERS.
- 2.2 REPORT TO THE EMERGENCY DIRECTOR OR INTERIM EMERGENCY DIRECTOR WHEN NOTIFICATIONS ARE COMPLETE.
- 2.3 MAN THE RED NRC TELEPHONE IF REQUIRED BY A-31 UNTIL SITUATION STABILIZES AND RED TELEPHONE COMMUNICATION MAY BE SECURED.

3.0 OPERATIONS SUPPORT CENTER COORDINATOR OR HIS DESIGNEE SHALL:

- 3.1 ACTIVATE THE OPERATIONS SUPPORT CENTER ON 135' ELEV. TURBINE BLDG. IF IT IS HABITABLE, IN ACCORDANCE WITH EP 202. IF THIS OPERATIONS SUPPORT CENTER IS NOT HABITABLE, REPORT TO THE CONTROL ROOM.

4.0 RADIATION PROTECTION TEAM LEADER SHALL:

- 4.1 INITIATE SITE RADIATION SURVEYS IN ACCORDANCE WITH EP-205, RADIATION PROTECTION TEAM WHEN DIRECTED BY THE EMERGENCY DIRECTOR. (THE HP FIELD OFFICE ON 116' ELEV. TURB. BLDG. WILL SERVE AS THE HPGC OSC).

5.0 SHIFT EIC TECHNICIAN SHALL:

- 5.1 ACTIVATE THE TSC AND EDF WHEN DIRECTED BY INTERIM EMERGENCY DIRECTOR IN ACCORDANCE WITH EP-201 USING APPENDIX EP-201-2.

6.0 SHIFT CLERK SHALL:

- 6.1 CONTACT INDIVIDUALS ON EP 209 APP P TO CALL IN THOSE INDIVIDUALS TO MAN TSC AND REQUIRED EMERGENCY TEAMS (60 MINUTE CALL LIST). DOCUMENT CONTACTS ON EP 209 APP P.
- 6.2 INFORM INTERIM EMERGENCY DIRECTOR OR EMERGENCY DIRECTOR WHEN CONTACTS ARE COMPLETED.

EMERGENCY UP-ACTIONS

1.0 EMERGENCY DIRECTOR SHALL:

- 1.1 PERIODICALLY EVALUATE THE EVENT CLASSIFICATION IN ACCORDANCE WITH EP 101, CLASSIFICATION OF EMERGENCIES, AND ESCALATE OR DEESCALATE THE CLASSIFICATION, AS NECESSARY.
- 1.2 OBTAIN THE RESULTS OF THE CUMULATIVE POPULATION DOSE CALCULATIONS AND ONSITE RADIATION SURVEYS FROM THE RADIATION PROTECTION TEAM LEADER, AS NECESSARY.
- 1.3 PERFORM ACTIONS AS NECESSARY TO MITIGATE CONDITIONS OF THE EMERGENCY SITUATION.
- 1.4 DETERMINE WHICH ADDITIONAL SUPPORT PERSONNEL ARE NECESSARY FOR EMERGENCY FUNCTIONS AND DIRECT THE SHIFT CLERK OR OTHER ASSIGNED COMMUNICATOR IN TSC TO CONTACT THOSE PERSONNEL.
- 1.5 PROVIDE SITE PERSONNEL WITH P.A. SPEAKER ANNOUNCEMENTS FOR ANY MAJOR CHANGES IN PLANT EMERGENCY STATUS, SUCH AS CHANGING EMERGENCY ACTION LEVELS, EVACUATIONS AND STARTING AND STOPPING OF RADIOACTIVE RELEASES (IF ANY).

STATION SUPERINTENDENT SHALL:

- 2.1 REPORT TO THE TECHNICAL SUPPORT CENTER OR CONTROL ROOM FOR A BRIEFING OF THE SITUATION.
- 2.2 ASSUME THE ROLE OF EMERGENCY DIRECTOR BY FORMALLY RELIEVING THE INTERIM EMERGENCY DIRECTOR (SHIFT SUPERINTENDENT). ANNOUNCE THAT HE HAS ASSUMED THE ROLE OF EMERGENCY DIRECTOR TO THE ASSEMBLED TECHNICAL SUPPORT CENTER PERSONNEL.
- 2.3 VERIFY THE EMERGENCY CLASSIFICATION.
- 2.4 VERIFY THAT THE TECHNICAL SUPPORT CENTER, THE EMERGENCY OPERATIONS FACILITY, AND THE OPERATIONS SUPPORT CENTER HAVE BEEN ACTIVATED.

3.0 OPERATIONS SUPPORT CENTER COORDINATOR SHALL:

- 3.1 NOTIFY THE INTERIM EMERGENCY DIRECTOR WHEN THEIR RESPECTIVE OPERATIONS SUPPORT CENTER IS ACTIVATED.
- 3.2 SUPPORT THE CONTROL ROOM AND SHIFT SUPERVISION AS NECESSARY.

4.0 RADIATION PROTECTION TEAM LEADER SHALL:

- 4.1 REPORT PROGRESS AND RESULTS OF CUMULATIVE POPULATION DOSE CALCULATIONS AND SITE RADIATION SURVEYS TO THE EMERGENCY DIRECTOR AS NECESSARY.

5.0 SHIFT CLERK OR ASSIGNED TSC COMMUNICATOR SHALL:

- 5.1 NOTIFY ADDITIONAL SUPPORT PERSONNEL TO REPORT TO THE PLANT AS DIRECTED BY THE INTERIM EMERGENCY DIRECTOR. REFER TO EP 209. DOCUMENT ON APP EP-103-2.
- 5.2 NOTIFY THE INTERIM EMERGENCY DIRECTOR WHEN THE ADDITIONAL SUPPORT PERSONNEL HAVE BEEN NOTIFIED.

6.0 SHIFT I&C TECHNICIAN SHALL:

- 6.1 INFORM THE INTERIM EMERGENCY DIRECTOR WHEN THE TSC AND EOF ARE ACTIVATED.
- 6.2 STATION HIMSELF AT THE TSC AS DATA DISPLAY (CCTV) OPERATOR AS DIRECTED BY THE EMERGENCY DIRECTOR.

APPENDIX EP-103-1
ALERT CHECKOFF LIST

MESSAGE: THIS (IS)(IS NOT) A DRILL. THIS (IS)(IS NOT) A DRILL.
THIS IS PEACH BOTTOM ATOMIC POWER STATION CALLING TO REPORT AN ALERT
HAS BEEN DECLARED ON UNIT NO. _____. TIME AND DATE OF ALERT CLASSIFICATION
IS _____. THE BASIC PROBLEM IS _____
_____. THE PLANT STATUS IS (STABLE)(IMPROVING)
(DEGRADING)(NOT KNOWN).
THERE (IS PRESENTLY)(HAS NOT BEEN)(IS POTENTIAL FOR)(HAS BEEN)
A RADIOACTIVE (AIRBORNE)(LIQUID) RELEASE FROM THE PLANT (AT A LEVEL BELOW
THAT CONSIDERED A PUBLIC HAZARD)(AT A LEVEL AT WHICH PROTECTIVE ACTION IS
ADVISABLE). RECOMMENDED PROTECTIVE ACTIONS ARE (NONE) _____
_____. THE AFFECTED POPULATION AREA IS (NONE) _____
_____. MY NAME IS _____. THIS (IS)(IS NOT)
A DRILL. THIS (IS)(IS NOT) A DRILL.

NOTIFICATIONS: PARTIAL
RESPONDING NOTIFICATION

PERSON
INITIALS

TIME OF COMMUNICATION

STATION SUPERINTENDENT _____
LOAD DISPATCHER _____ (TELL HIM TO
INITIATE CALL LIST "C")
PEMA (BLUE PHONE OR _____
MO. COA (BLUE PHONE OR _____
YORK CTY. EMA (BLUE PHONE OR _____
LANC. CTY. EMA (BLUE PHONE OR _____
CHESTER CTY. EMA (BLUE PHONE OR _____
HARFORD CTY. COA (BLUE PHONE OR _____
CECIL CTY. COA (BLUE PHONE OR _____
NRC OPS CTR (RED PHONE) _____

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

TIME NOTIFICATIONS OF PARTIES ABOVE COMPLETED _____.

VERIFIED BY _____ DATE _____
EMERGENCY DIRECTOR

MUST NOTIFY PEMA BY USE OF COMMERCIAL TELEPHONE NO. ON BACKSHIFTS
DO NOT PHONE PEMA ON BACKSHIFTS

APPENDIX EP-103-2
PERSONNEL CALL RECORD

[illegible]

APPENDIX EP-103-3
 EMERGENCY EXPOSURE LIMITS

FUNCTION	PROJECTED WHOLE BODY DOSE	THYROID DOSE	AUTHORIZED BY
1. LIFE SAVING AND REDUCTION OF INJURY	75 REM*	375 REM	EMERGENCY** DIRECTOR
2. OPERATION OF EQUIPMENT TO MITIGATE AN EMERGENCY	25 REM*	125 REM	EMERGENCY** DIRECTOR
3. PROTECTION OF HEALTH AND SAFETY OF THE PUBLIC	5 REM	25 REM	EMERGENCY DIRECTOR
4. OTHER EMERGENCY ACTIVITIES	10 CFR 20 LIMITS	10 CFR 20 LIMITS	EMERGENCY DIRECTOR
5. RE-ENTRY/RECOVERY ACTIVITIES	ADMINISTRA- TIVE GUIDE- LINES	ADMINIS- TRATIVE GUIDE- LINES	N/A

*REFERENCE: EPA-520/1-75-001 TABLE 2.1
 **SUCH EXPOSURE SHALL BE ON A VOLUNTARY BASIS

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PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM UNITS 2 AND 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE.

EP-104 SITE EMERGENCY RESPONSE

PURPOSE

TO DEFINE THE SITE RESPONSE IN THE EVENT
OF A SITE EMERGENCY.

REFERENCES

1. PEACH BOTTOM ATOMIC POWER STATION EMERGENCY PLAN

SECTION	TITLE
4.1.3	SITE EMERGENCY
5.0	ORGANIZATIONAL CONTROL OF EMERGENCIES
6.1.3	SITE EMERGENCY

2. NUREG 0654 CRITERIA FOR PREPARATION AND EVALUATION OF
RADIOLOGICAL EMERGENCY RESPONSE PLANS AND
PREPAREDNESS IN SUPPORT OF NUCLEAR POWER
PLANTS.
3. EP-101 CLASSIFICATION OF EMERGENCIES

APPENDICES

- EP 104-1 SITE EMERGENCY NOTIFICATION CHECKOFF LIST
EP-104-2 PERSONNEL CALL RECORD
EP 104-3 EMERGENCY EXPOSURE LIMITS (EMERGENCY PLAN TABLE 6.1)

PRECAUTIONS

1. PLANNED RADIATION EXPOSURES SHOULD BE LIMITED TO THE
ADMINISTRATION GUIDE LEVELS IN APPENDIX EP 104-4,
EMERGENCY EXPOSURE LIMITS.

IMMEDIATE ACTIONS

- 1.0 SHIFT SUPERVISION SHALL:

- 1.1 ASSUME THE ROLE OF INTERIM EMERGENCY DIRECTOR.
- 1.2 IF NOT ALREADY DONE AT AN EARLIER EMERGENCY ACTION LEVEL,
ACTIVATE EMERGENCY TEAMS AS NECESSARY.
- 1.3 DIRECT THE EVACUATION OF AFFECTED AREAS AS NECESSARY.
REFER TO THE FOLLOWING PROCEDURES:

GP 15 LOCAL EVACUATION

EP 305 SITE EVACUATION

EP 306 EVACUATION OF THE INFORMATION CENTER

- 1.4 CONTACT THE STATION SUPERINTENDENT AND THE SHIFT TECHNICAL ADVISOR, INFORM THEM OF THE SITUATION.
- 1.5 FILL OUT APPENDIX EP 104-1 STANDARD PROMPT NOTIFICATION MESSAGE AND GIVE IT TO THE COMMUNICATOR (PO OR HIGHER CLASSIFICATION) AND DIRECT THE COMMUNICATOR TO COMMENCE NOTIFICATION OF THE APPROPRIATE PARTIES AS SPECIFIED IN SECTION 2.1 OF THIS PROCEDURE. THE COMMUNICATOR SHALL MAN THE NRC RED TELEPHONE ON A CONTINUOUS BASIS, IF REQUIRED BY A-31. IF COMMUNICATOR IS REQUIRED FOR URGENT PLANT OPERATIONS RELATED TO THE EMERGENCY, THE CONCURRENCE FOR SECURING THE PHONE SHOULD BE OBTAINED FROM NRC PRIOR TO SECURING THIS TELEPHONE.
- 1.6 IF NOT ALREADY ACCOMPLISHED AT THE ALERT STAGE, DIRECT THE SHIFT CLERK TO ACTIVATE THE 60 MINUTE CALL LIST USING EP 209 APP P. IF SHIFT CLERK IS NOT AVAILABLE, THIS FUNCTION MAY BE ASSIGNED TO ANY AVAILABLE INDIVIDUAL.
- 1.7 DIRECT ONE OF THE ON-SHIFT I&C TECHNICIANS TO ACTIVATE THE TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATIONS FACILITY IN ACCORDANCE WITH EP 201 AND 203 IF NOT ALREADY ACTIVATED. IF NOT ALREADY PERFORMED PREVIOUSLY, INFORM THE SHIFT CLERK WHICH I&C TECHNICIAN WILL ACTIVATE THE CENTERS AT UNIT 1 IN ORDER TO LET THE CLERK KNOW WHICH REMAINING I&C TECHNICIAN TO CALL FOR THE PROMPT MOBILIZATION PROCEDURE.
- 1.8 DIRECT THE RADIATION PROTECTION TEAM LEADER TO INITIATE ON- AND OFF SITE RADIATION SURVEYS, AS NECESSARY, IF NOT ALREADY DONE IN ACCORDANCE WITH EP 205, RADIATION PROTECTION TEAM.
- 1.9 INITIATE THE IMPLEMENTATION OF EP 316, CUMULATIVE POPULATION DOSE CALCULATIONS, AS NECESSARY.
- 1.10 ASSIGN A 135th ELEV. TURB. BLDG. OPERATIONS SUPPORT CENTER COORDINATOR (SENIOR PO OR APO AVAILABLE) IF NOT ALREADY DONE AND DIRECT AVAILABLE SHIFT PERSONNEL TO REPORT TO THIS OPERATIONS SUPPORT CENTER AND TO ACTIVATE IT IN ACCORDANCE WITH EP 202 IF HABITABLE. IF THIS OPERATIONS SUPPORT CENTER IS NOT HABITABLE, DIRECT SHIFT PERSONNEL TO REPORT TO THE CONTROL ROOM.
- 1.11 CLOSELY MONITOR CONDITIONS TO DETERMINE PRESENT HAZARDS TO PERSONNEL AND POTENTIAL ACCIDENT CONDITIONS THAT MAY DEVELOP.

- 1.12 IF RELEASE HAS OCCURRED, DISPATCH A PLANT SURVEY TEAM MEMBER TO OBTAIN A SITE BOUNDARY DOSE RATE AS SOON AS PRACTICABLE.
- 1.13 IF NECESSARY, INITIATE IMPLEMENTATION OF EP-316 AND EP-317, DIRECT RECOMMENDATIONS TO COUNTY EMERGENCY MANAGEMENT AGENCIES.

2.0 COMMUNICATOR SHALL:

- 2.1 PERFORM NOTIFICATIONS ON APPENDIX 104-1 USING THE STANDARD PROMPT NOTIFICATION MESSAGE INCLUDED. SEE EP-209 APPENDIX A FOR ADDITIONAL TELEPHONE NUMBERS, IF REQUIRED.
- 2.2 REPORT TO THE EMERGENCY DIRECTOR WHEN THE NOTIFICATIONS ARE COMPLETED.
- 2.3 MAN THE RED NRC TELEPHONE IF REQUIRED BY A-31 UNTIL SITUATION STABILIZES AND RED TELEPHONE COMMUNICATIONS MAY BE SECURED.

3.0 OPERATIONS SUPPORT CENTER COORDINATOR OR HIS DESIGNEE SHALL:

- 3.1 ACTIVATE THE OPERATIONS SUPPORT CENTER ON 135' ELEV TURB BLDG, IF IT IS HABITABLE, IN ACCORDANCE WITH EP 202. IF THIS OPERATIONS SUPPORT CENTER IS NOT HABITABLE REPORT TO THE CONTROL ROOM.

4.0 RADIATION PROTECTION TEAM LEADER SHALL:

- 4.1 INITIATE ON- AND OFF SITE RADIATION SURVEYS IN ACCORDANCE WITH EP 205, RADIATION PROTECTION TEAM, WHEN DIRECTED BY THE EMERGENCY DIRECTOR. IF THIS PERSON IS THE HP ENGINEER HE SHOULD REPORT TO THE EOF TO COORDINATE THIS FUNCTION.

5.0 SHIFT I&C TECHNICIAN SHALL:

- 5.1 ACTIVATE THE TSC AND EOF (IF NOT ALREADY ACTIVATED DURING ALERT STAGE) IN ACCORDANCE WITH EP 201 USING APPENDIX EP-201-2 AND PROCEDURE EP-203.

6.0 SHIFT CLERK SHALL:

- 6.1 IF NOT ALREADY IMPLEMENTED DURING ALERT STAGE, CONTACT INDIVIDUALS ON EP 209 APP P TO CALL IN THOSE INDIVIDUALS TO MAIN TSC AND EOF (60 MINUTE CALL LIST). DOCUMENT CONTACTS ON EP 209 APP P.
- 6.2 INFORM INTERIM EMERGENCY DIRECTOR OR EMERGENCY DIRECTOR WHEN CONTACTS ARE COMPLETED.

FOLLOW-UP ACTIONS

1.0 EMERGENCY DIRECTOR SHALL:

- 1.1 PERIODICALLY EVALUATE THE EVENT CLASSIFICATION IN ACCORDANCE WITH EP 101, CLASSIFICATION OF EMERGENCIES AND ESCALATE OR DEESCALATE THE CLASSIFICATION, AS NECESSARY.
- 1.2 OBTAIN RESULTS OF THE CUMULATIVE POPULATION DOSE CALCULATIONS AND ONSITE/OFFSITE RADIATION SURVEYS FROM THE RADIATION PROTECTION TEAM LEADER, AS NECESSARY.
- 1.3 PROVIDE APPROPRIATE INFORMATION FROM THE PREVIOUS EVALUATIONS TO COMMUNICATOR IN THE EOF FOR NOTIFICATION OF THE BUREAU OF RADIATION PROTECTION.
- 1.4 PERFORM ACTIONS AS NECESSARY TO MITIGATE CONDITIONS OF THE EMERGENCY SITUATION.
- 1.5 DETERMINE WHICH ADDITIONAL SUPPORT PERSONNEL ARE NECESSARY FOR EMERGENCY FUNCTIONS AND DIRECT THE SHIFT CLERK OR OTHER ASSIGNED COMMUNICATOR IN TSC OR EOF TO CONTACT THOSE PERSONNEL.
- 1.6 PROVIDE SITE PERSONNEL WITH P.A. SPEAKER ANNOUNCEMENTS FOR ANY MAJOR CHANGES IN PLANT EMERGENCY STATUS, SUCH AS CHANGING EMERGENCY ACTION LEVELS, EVACUATIONS AND STARTING AND STOPPING OF RADIOACTIVE RELEASES (IF ANY).

2.0 STATION SUPERINTENDENT SHALL:

- 2.1 REPORT TO THE TECHNICAL SUPPORT CENTER OR CONTROL ROOM, FOR A BRIEFING OF THE SITUATION.
- 2.2 ASSUME THE ROLE OF EMERGENCY DIRECTOR (IF NOT ALREADY DONE) BY FORMALLY RELIEVING THE INTERIM EMERGENCY DIRECTOR OF THIS RESPONSIBILITY. ANNOUNCE THAT HE HAS ASSUMED THE ROLE OF EMERGENCY DIRECTOR TO THE ASSEMBLED TECHNICAL SUPPORT CENTER PERSONNEL.
- 2.3 VERIFY THE EMERGENCY CLASSIFICATION.
- 2.4 VERIFY THAT THE TECHNICAL SUPPORT CENTER, EMERGENCY OPERATIONS FACILITY AND THE OPERATIONS SUPPORT CENTER HAVE BEEN ACTIVATED.

3.0 135' ELEV. TURBINE BLDG. OPERATIONS SUPPORT CENTER COORDINATOR SHALL

- 3.1 NOTIFY THE INTERIM EMERGENCY DIRECTOR OR EMERGENCY DIRECTOR WHEN THE OPERATIONS SUPPORT CENTER IS ACTIVATED.

3.2 SUPPORT THE CONTROL ROOM AND SHIFT SUPERVISION AS NECESSARY.

4.0 RADIATION PROTECTION TEAM LEADER SHALL:

- 4.1 NOTIFY THE EMERGENCY DIRECTOR WHEN THE EMERGENCY OPERATIONS FACILITY IS MANNED.
- 4.2 REPORT PROGRESS AND RESULTS OF CUMULATIVE POPULATION DOSE CALCULATIONS AND ON AND OFF SITE RADIATION SURVEYS TO THE SITE EMERGENCY COORDINATOR AND EMERGENCY DIRECTOR AS NECESSARY.
- 4.3 NOTIFY THE SITE EMERGENCY COORDINATOR OF THE NEED FOR ASSISTANCE FROM RADIATION MANAGEMENT CORPORATION.

5.0 SHIFT CLERK OR ASSIGNED TSC OR EOF COMMUNICATOR SHALL:

- 5.1 IF NOT ALREADY DONE, NOTIFY ADDITIONAL SUPPORT PERSONNEL TO REPORT TO THE PLANT AS DIRECTED BY THE EMERGENCY DIRECTOR. REFER TO EP 209. DOCUMENT ON APP EP 101-2
- 5.2 NOTIFY EMERGENCY DIRECTOR OR SITE EMERGENCY COORDINATOR WHEN THE ADDITIONAL SUPPORT PERSONNEL HAVE BEEN NOTIFIED.

6.0 ICC TECHNICIANS SHALL: (IF NOT ALREADY PERFORMED AS PER EP-103)

- 6.1 INFORM THE EMERGENCY DIRECTOR WHEN THE CENTERS ARE ACTIVATED, IF NOT PREVIOUSLY DONE.
- 6.2 MAN THE TSC OR EOF DATA DISPLAY (CCTV) POSITIONS AS DIRECTED BY THE EMERGENCY DIRECTOR.

APPENDIX 104-1
 SITE EMERGENCY NOTIFICATION CHECKOFF LIST

MESSAGE: THIS (IS) (IS NOT) A DRILL. THIS (IS) (IS NOT) A DRILL. THIS IS PEACH BOTTOM ATOMIC POWER STATION CALLING TO REPORT A SITE EMERGENCY HAS BEEN DECLARED ON UNIT ____.

TIME AND DATE OF SITE EMERGENCY CLASSIFICATION IS ____.

THE BASIC PROBLEM IS ____.

THE PLANT STATUS IS (STABLE) (IMPROVING) (DEGRADING) (NOT KNOWN). THERE (HAS NOT BEEN) (IS POTENTIAL FOR) (HAS BEEN) (IS PRESENTLY) A RADIOACTIVE (AIRBORNE) (LIQUID) RELEASE FROM THE PLANT (AT A LEVEL BELOW THAT CONSIDERED A PUBLIC HAZARD) (AT A LEVEL AT WHICH PROTECTIVE ACTION IS ADVISABLE). RECOMMENDED PROTECTIVE ACTIONS ARE (NONE) ____.

THE AFFECTED POPULATION AREA IS (NONE) ____.

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

NOTIFICATIONS:

	PERSON RESPONDING	TIME OF NOTIFICATION	COMMUNICATOR'S INITIALS
PABLY STATION SUPERINTENDENT	_____	_____	_____
LOAD DISPATCHER	_____	_____	_____
(TELL HIM TO INITIATE CALL LIST "C")			
PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY (BLUE PHONE OR	_____	_____	_____
MARYLAND CIVIL DEFENSE AGENCY (BLUE PHONE OR	_____	_____	_____
YORK COUNTY EMERGENCY MANAGEMENT AGENCY (BLUE PHONE OR	_____	_____	_____
LANCASTER COUNTY EMERGENCY MANAGE- MENT AGENCY (BLUE PHONE OR	_____	_____	_____
CHESTER COUNTY EMER- GENCY MANAGEMENT AGENCY (BLUE PHONE OR	_____	_____	_____
ARFORD COUNTY CIVIL DEFENSE AGENCY (BLUE PHONE OR	_____	_____	_____

APPENDIX 104-1 (CONT'D)
SITE EMERGENCY NOTIFICATION CHECKOFF LIST

CECIL COUNTY CIVIL
DEFENSE AGENCY
(BLUE PHONE OR _____

PENNSYLVANIA STATE
POLICE - YORK _____

NRC OPERATIONS CENTER**
(RED PHONE) _____

TIME NOTIFICATION OF PARTIES ABOVE COMPLETED. _____

VERIFIED BY _____ DATE _____
EMERGENCY DIRECTOR

FILE SYS-3-1

- * MUST NOTIFY PEMA BY USE OF COMMERCIAL TELEPHONE NO. ON BACKSHIFTS.
(BLUE PHONE NOT MANNED BY PEMA ON BACKSHIFTS).
- ** IF NRC PREVIOUSLY NOTIFIED DURING ALERT CONDITION, THE
ASSIGNED PD COMMUNICATOR CONTINUOUSLY MANNING RED PHONE IN
CONTROL ROOM SHOULD HANDLE THIS NOTIFICATION AUTOMATICALLY
HOWEVER, CHECK WITH CONTROL ROOM TO BE SURE. THIS NOTIFI-
CATION IS MADE.

APPENDIX EP 104-2
PERSONNEL CALL RECORD

DISPOSITION OF CALL

NAME OF PERSON CALLED	TIME CALLED	NO ANSWER	BUSY	ESTIMATED TIME OF ARRIVAL	CALL COMPLETED BY
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APPENDIX EP 104-3
EMERGENCY EXPOSURE LIMITS

<u>FUNCTION</u>	<u>PROJECTED WHOLE BODY DOSE</u>	<u>THYROID DOSE</u>	<u>AUTHORIZED BY</u>
1. LIFE SAVING AND REDUCTION OF INJURY	75 REM*	375 REM	EMERGENCY** DIRECTOR
2. OPERATION OF EQUIPMENT TO MITIGATE AN EMERGENCY	25 REM*	125 REM	EMERGENCY** DIRECTOR
3. PROTECTION OF HEALTH AND SAFETY OF THE PUBLIC	5 REM	25 REM	EMERGENCY DIRECTOR
4. OTHER EMERGENCY ACTIVITIES	10 CFR 20 LIMITS	10 CFR 20 LIMITS	EMERGENCY DIRECTOR
5. RE-ENTRY/RE- COVERY ACTIVITIES	ADMINISTRATIVE GUIDE LINES	ADMINISTRATIVE GUIDE LINES	N/A

* REFERENCE: EPA-520/1-75-001 TABLE 2.1

** SUCH EXPOSURE SHALL BE ON A VOLUNTARY BASIS

Thapp

PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM UNITS 2 AND 3

EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-105 GENERAL EMERGENCY RESPONSE

PURPOSE

TO DEFINE THE SITE RESPONSE IN THE EVENT OF A GENERAL EMERGENCY.

REFERENCES

1. PEACH BOTTOM ATOMIC POWER STATION EMERGENCY PLAN

SECTION	TITLE
4.1.4	GENERAL EMERGENCY
5.0	ORGANIZATIONAL CONTROL OF EMERGENCIES
6.1.4	GENERAL EMERGENCY
2. NUREG 0654 CRITERIA FOR PREPARATION AND EVALUATION OF RADIOLOGICAL EMERGENCY RESPONSE PLANS AND PREPAREDNESS IN SUPPORT OF NUCLEAR POWER PLANTS.
3. EP-101 CLASSIFICATION OF EMERGENCIES

APPENDICES

- EP 105-1 GENERAL EMERGENCY CHECKOFF LIST
EP 105-2 PERSONNEL CALL RECORD
EP 105-3 EMERGENCY EXPOSURE LIMITS (EMERGENCY PLAN TABLE 6.1)

PRECAUTIONS

1. PLANNED RADIATION EXPOSURES SHOULD BE LIMITED TO THE ADMINISTRATIVE GUIDE LEVELS IN APPENDIX EP 105-4 EMERGENCY EXPOSURE LIMITS.

IMMEDIATE ACTIONS

- 1.0 SHIFT SUPERVISION SHALL:
 - 1.1 ASSUME THE ROLE OF INTERIM EMERGENCY DIRECTOR.
 - 1.2 ACTIVATE EMERGENCY TEAMS AS NECESSARY IF NOT ALREADY

ACCOMPLISHED AT AN EARLIER EMERGENCY ACTION LEVEL.

- 1.3 DIRECT THE EVACUATION OF AFFECTED AREAS, AS NECESSARY, REFER TO THE FOLLOWING PROCEDURES:

GP 15 LOCAL EVACUATION

EP 305 SITE EVACUATION

EP 306 EVACUATION OF THE INFORMATION CENTER

- 1.4 CONTACT THE STATION SUPERINTENDENT AND THE SHIFT TECHNICAL ADVISOR, INFORM THEM OF THE SITUATION.
- 1.5 FILL OUT APPENDIX EP 105-1 STANDARD PROMPT NOTIFICATION FORM AND GIVE IT TO THE COMMUNICATOR (PO OR HIGHER CLASSIFICATION)
- 1.6 DIRECT COMMUNICATOR TO COMMENCE NOTIFICATION OF THE APPROPRIATE PARTIES AS SPECIFIED IN SECTION 2.1 OF THIS PROCEDURE. THE COMMUNICATOR SHALL MAN THE NRC RED TELEPHONE ON A CONTINUOUS BASIS IF REQUIRED BY A-31. IF COMMUNICATOR IS REQUIRED FOR URGENT PLANT OPERATIONS RELATED TO THE EMERGENCY, THE CONCURRENCE FOR SECURING THE PHONE SHOULD BE OBTAINED FROM THE NRC PRIOR TO SECURING THIS TELEPHONE.
- 1.7 IF NOT ALREADY ACCOMPLISHED AT THE ALERT OR SITE EMERGENCY STAGE, DIRECT THE SHIFT CLERK TO ACTIVATE THE 60MINUTE CALL LIST USING EP 209 APP P. IF SHIFT CLERK IS NOT AVAILABLE, THIS FUNCTION MAY BE ASSIGNED TO ANY AVAILABLE INDIVIDUAL.
- 1.8 DIRECT ONE OF THE ON-SHIFT IEC TECHNICIANS TO ACTIVATE THE TECHNICAL SUPPORT CENTER AND THE EMERGENCY OPERATIONS FACILITY IN ACCORDANCE WITH EP 201 AND 203 IF NOT ALREADY ACTIVATED.
- 1.9 DIRECT THE RADIATION PROTECTION TEAM LEADER TO INITIATE ON AND OFFSITE RADIATION SURVEYS, AS NECESSARY, IN ACCORDANCE WITH EP 205, RADIATION PROTECTION TEAM IF NOT ALREADY DONE.
- 1.10 INITIATE THE IMPLEMENTATION OF EP 316, CUMULATIVE POPULATION DOSE CALCULATIONS AS NECESSARY, IF NOT ALREADY DONE.
- 1.11 ASSIGN AN OPERATIONS SUPPORT CENTER COORDINATOR (SENIOR PO OR APD AVAILABLE) IF NOT ALREADY DONE AND DIRECT AVAILABLE SHIFT PERSONNEL TO REPORT TO THE OPERATIONS SUPPORT CENTER AND TO ACTIVATE IT IN ACCORDANCE WITH EP 202, IF HABITABLE. IF THE OPERATIONS SUPPORT CENTER IS NOT HABITABLE, DIRECT SHIFT PERSONNEL TO REPORT TO THE CONTROL ROOM.
- 1.12 CLOSELY MONITOR CONDITIONS TO DETERMINE PRESENT HAZARDS TO PERSONNEL AND POTENTIAL ACCIDENT CONDITIONS THAT MAY DEVELOP.
- 1.13 IF RELEASE HAS OCCURRED, DISPATCH A PLANT SURVEY TEAM

MEMBER TO OBTAIN A SITE BOUNDARY DOSE RATE AS SOON AS PRACTICABLE.

- 1.14 IF NECESSARY, INITIATE IMPLEMENTATION OF EP-316 AND EP-317, DIRECT RECOMMENDATIONS TO COUNTY EMERGENCY MANAGEMENT AGENCIES.

2.0 COMMUNICATOR SHALL:

- 2.1 PERFORM NOTIFICATIONS ON APPENDIX EP 105-1 USING THE STANDARD PROMPT NOTIFICATION MESSAGE INCLUDED. SEE EP 209, APPENDIX A, FOR TELEPHONE NUMBERS.
- 2.2 REPORT TO THE EMERGENCY DIRECTOR WHEN THE NOTIFICATIONS ARE COMPLETED.
- 2.3 MAN THE RED NRC TELEPHONE IF REQUIRED BY A-31 UNTIL SITUATION STABILIZES AND RED TELEPHONE COMMUNICATIONS MAY BE SECURED.

3.0 OPERATIONS SUPPORT CENTER COORDINATOR OR HIS DESIGNEE SHALL:

- 3.1 ACTIVATE THE OPERATIONS SUPPORT CENTER, IF IT IS HABITABLE, IN ACCORDANCE WITH EP 202. IF THE OPERATIONS SUPPORT CENTER IS NOT HABITABLE REPORT TO THE CONTROL ROOM.

4.0 RADIATION PROTECTION TEAM LEADER SHALL:

- 4.1 INITIATE ON AND OFF SITE RADIATION SURVEYS IN ACCORDANCE WITH EP 205, RADIATION PROTECTION TEAM WHEN DIRECTED BY THE EMERGENCY DIRECTOR. IF THIS PERSON IS ALSO THE HP ENGINEER HE SHOULD REPORT TO THE EGF TO COORDINATE THIS FUNCTION.

5.0 SHIFT ILC TECHNICIANS SHALL:

- 5.1 ACTIVATE THE TSC AND EGF (IF NOT ALREADY ACTIVATED DURING ALERT OR SITE EMERGENCY STAGE) IN ACCORDANCE WITH EP 201 AND EP 203.

6.0 SHIFT CLERK SHALL:

- 6.1 IF NOT ALREADY IMPLEMENTED DURING ALERT OR SITE EMERGENCY STAGE, CONTACT INDIVIDUALS ON EP 209 APP P TO CALL IN THOSE INDIVIDUALS TO MAN THE TSC AND EGF (60 MINUTE CALL LIST). DOCUMENT CONTACTS ON EP 209 APP P.
- 6.2 INFORM INTERIM EMERGENCY DIRECTOR OR EMERGENCY DIRECTOR WHEN CONTACTS ARE COMPLETED.

ALL OPERATIONS

1.0 EMERGENCY DIRECTOR SHALL:

- 1.1 PERIODICALLY EVALUATE THE EVENT CLASSIFICATION IN ACCORDANCE WITH EP 101, CLASSIFICATION OF EMERGENCIES. IF THE CONDITIONS CHANGE, DEESCALATE TO AN APPROPRIATE CLASSIFICATION.
- 1.2 OBTAIN RESULTS OF THE CUMULATIVE POPULATION DOSE CALCULATIONS AND ONSITE/OFFSITE RADIATION SURVEYS FROM THE RADIATION PROTECTION TEAM LEADER.
- 1.3 REFERRING TO EP-317, PROVIDE APPROPRIATE INFORMATION FROM THE PREVIOUS EVALUATIONS AND PROTECTIVE ACTION RECOMMENDATIONS TO A COMMUNICATOR IN THE EOF FOR NOTIFICATION OF THE BUREAU OF RADIATION PROTECTION.
- 1.4 PERFORM ACTIONS AS NECESSARY TO MITIGATE CONDITIONS OF THE EMERGENCY SITUATION.
- 1.5 IF NOT ALREADY PERFORMED, DETERMINE WHICH ADDITIONAL SUPPORT PERSONNEL ARE NECESSARY FOR EMERGENCY FUNCTIONS AND DIRECT THE SHIFT CLERK OR THE COMMUNICATOR IN THE TSC OR EOF TO CONTACT THOSE PERSONNEL.
- 1.6 PROVIDE SITE PERSONNEL WITH PA SPEAKER ANNOUNCEMENTS FOR ANY MAJOR CHANGES IN PLANT EMERGENCY STATUS, SUCH AS CHANGING EMERGENCY ACTION LEVELS, EVACUATIONS, AND STARTING AND STOPPING OF RADIOACTIVE RELEASES (IF ANY).

2.0 STATION SUPERINTENDENT SHALL:

- 2.1 REPORT TO THE TECHNICAL SUPPORT CENTER OR CONTROL ROOM FOR A BRIEFING OF THE SITUATION.
- 2.2 ASSUME THE ROLE OF EMERGENCY DIRECTOR (IF NOT ALREADY DONE) BY FORMALLY RELIEVING THE INTERIM EMERGENCY DIRECTOR. ANNOUNCE THAT HE HAS ASSUMED THE ROLE OF EMERGENCY DIRECTOR TO THE ASSEMBLED TECHNICAL SUPPORT CENTER PERSONNEL.
- 2.3 VERIFY THE EMERGENCY CLASSIFICATION.
- 2.4 VERIFY THAT THE TECHNICAL SUPPORT CENTER, EMERGENCY OPERATIONS FACILITY AND THE OPERATIONS SUPPORT CENTER HAVE BEEN ACTIVATED.

3.0 OPERATIONS SUPPORT CENTER COORDINATOR SHALL:

- 3.1 NOTIFY THE INTERIM EMERGENCY DIRECTOR WHEN THE OPERATIONS SUPPORT CENTER IS ACTIVATED.
- 3.2 SUPPORT THE CONTROL ROOM AND SHIFT SUPERVISION AS NECESSARY.

4.0 RADIATION PROTECTION TEAM LEADER SHALL:

- 4.1 NOTIFY THE EMERGENCY DIRECTOR WHEN THE EMERGENCY OPERATIONS FACILITY IS ACTIVATED.
- 4.2 REPORT PROGRESS AND RESULTS OF CUMULATIVE POPULATION DOSE CALCULATIONS AND ON AND OFF SITE RADIATION SURVEYS TO THE EMERGENCY DIRECTOR, AS NECESSARY.
- 4.3 NOTIFY THE SITE EMERGENCY COORDINATOR OF THE NEED FOR ASSISTANCE FROM RADIATION MANAGEMENT CORPORATION.

5.0 SHIFT CLERK OR ASSIGNED TSC OR EOF COMMUNICATOR SHALL:

- 5.1 WHEN REQUESTED, NOTIFY ADDITIONAL SUPPORT PERSONNEL TO REPORT TO THE PLANT AS DIRECTED BY THE EMERGENCY DIRECTOR. REFER TO EP 209.
- 5.2 NOTIFY EMERGENCY DIRECTOR OR SITE EMERGENCY COORDINATOR WHEN ADDITIONAL SUPPORT PERSONEL HAVE BEEN NOTIFIED. DOCUMENT ON APP EP-105-2.

6.0 IGC TECHNICIANS SHALL: (IF NOT ALREADY PERFORMED AS PER EP-103 OR EP-104)

- 6.1 INFORM THE EMERGENCY DIRECTOR WHEN CENTERS ARE ACTIVATED.
- 6.2 MAN THE TSC AND EOF DATA DISPLAY (CCTV) POSITIONS AS DIRECTED BY THE EMERGENCY DIRECTOR.

APPENDIX EP-105-1
GENERAL EMERGENCY NOTIFICATION CHECKOFF LIST

MESSAGE: THIS (IS) (IS NOT) A DRILL. THIS (IS) (IS NOT) A
DRILL. THIS IS PEACH BOTTOM ATOMIC POWER STATION CALLING TO REPORT
A GENERAL EMERGENCY HAS BEEN DECLARED ON UNIT NO. _____. TIME
AND DATE OF GENERAL EMERGENCY CLASSIFICATION IS _____. THE
BASIC PROBLEM IS _____.
THE PLANT STATUS IS (STABLE) (IMPROVING) (DEGRADING) (NOT KNOWN).
THERE (IS PRESENTLY) (HAS NOT BEEN) (IS POTENTIAL FOR) (HAS BEEN)
A RADIOACTIVE (AIRBORNE) (LIQUID) RELEASE FROM THE PLANT (AT A LEVEL
BELOW THAT CONSIDERED A PUBLIC HAZARD) (AT A LEVEL AT WHICH PROTECTIVE
ACTION IS ADVISABLE). RECOMMENDED PROTECTIVE ACTIONS ARE (NONE)
_____. THE AFFECTED POPULATION
AREA IS (NONE) _____. MY
NAME IS _____. THIS (IS) (IS NOT) A
DRILL. THIS (IS) (IS NOT) A DRILL.

NOTIFICATIONS:

	PERSON RESPONDING	TIME OF NOTIFICATION	COMMUNICATOR'S INITIALS
PBRIY STATION SUPERINTENDENT	_____	_____	_____
LOAD DISPATCHER	_____	_____	_____
(TELL HIM TO INITIATE CALL LIST "C")			
PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY* (BLUE PHONE OR	_____	_____	_____
MARYLAND CIVIL DEFENSE AGENCY (BLUE PHONE OR	_____	_____	_____
YORK COUNTY EMERGENCY MANAGEMENT AGENCY (BLUE PHONE OR	_____	_____	_____
LANCASTER COUNTY EMERGENCY MANAGEMENT AGENCY (BLUE PHONE OR	_____	_____	_____
CHESTER COUNTY EMERGENCY MANAGEMENT AGENCY (BLUE PHONE OR	_____	_____	_____
HARFORD COUNTY CIVIL DEFENSE AGENCY (BLUE PHONE OR	_____	_____	_____

APPENDIX EP-105-1 (CONT'D)
GENERAL EMERGENCY NOTIFICATION CHECKOFF LIST

CECIL COUNTY CIVIL
DEFENSE AGENCY
(BLUE PHONE OR

PENNSYLVANIA STATE
POLICE - YORK

NRC OPERATIONS CENTER**
(RED PHONE)

TIME NOTIFICATION OF PARTIES ABOVE COMPLETED -----

VERIFIED BY ----- DATE -----
EMERGENCY DIRECTOR

FILE - SYS-3-1

* MUST NOTIFY PERA BY USE OF COMMERCIAL TELEPHONE NO. ON BACKSHIFTS.
(BLUE PHONE NOT MANNED BY PERA ON BACKSHIFTS.)

** IF NRC PREVIOUSLY NOTIFIED DURING ALERT OR SITE EMERGENCY
CONDITION, THE ASSIGNED PO COMMUNICATOR CONTINUOUSLY MANNING
THE RED PHONE IN CONTROL ROOM SHOULD HANDLE THIS
NOTIFICATION AUTOMATICALLY. HOWEVER, CHECK WITH CONTROL ROOM
TO BE SURE THIS NOTIFICATION IS MADE.

APPENDIX EP 105-2
PERSONNEL CALL RECORD

NAME OF	TIME	DISPOSITION OF CALL	ESTIMATED	CALL
PERSON CALLED	CALLED	NO ANSWER BUSY	TIME OF ARRIVAL	COMPLETED BY

APPENDIX EP-105-3
EMERGENCY EXPOSURE LIMITS

FUNCTION	PROJECTED WHOLE BODY DOSE	THYROID DOSE	AUTHORIZED BY
1. LIFE SAVING AND REDUCTION OF INJURY	75 REM*	375 REM	EMERGENCY** DIRECTOR
2. OPERATION OF EQUIPMENT TO MITIGATE AN EMERGENCY	25 REM*	125 REM	EMERGENCY** DIRECTOR
3. PROTECTION OF HEALTH AND SAFETY OF THE PUBLIC	5 REM	25 REM	EMERGENCY DIRECTOR
4. OTHER EMERGENCY ACTIVITIES	10 CFR 20 LIMITS	10 CFR 20 LIMITS	EMERGENCY DIRECTOR
5. RE-ENTRY/RECOVERY ACTIVITIES	ADMINISTRATIVE GUIDELINES	ADMINISTRATIVE GUIDELINES	N/A

*REFERENCE: EPA-520/1-75-001 TABLE 2.1

**SUCH EXPOSURE SHALL BE ON A VOLUNTARY BASIS

APPENDIX EP-201-12

ISC PHONE CALL

TEST RING DOWN PHONES:

HPEC OSC (WALL)
HOECC 7TH FLOOR
CONTROL ROOM DATA TAKER (WALL)
CONTROL ROOM (TABLE)
PA, MD, AND 5 COUNTIES
LOAD DISPATCHER
CONTROL ROOM (WALL)
NRC RED PHONE
WHITE - BUREAU OF RAD. PROTECTION
BLUE - PA, MD, AND 5 RISK COUNTIES

TEST DIAL PHONES FOR DIAL TONE:

COMPUTER TERMINAL
EMERGENCY ANALYSIS TEAM WALL PHONE
FIRE/DAMAGE TEAM LEADER
EMERG ANALYSIS TEAM/TELECOPIER
TECHNICAL ENGINEER
EMERG ANALYSIS TEAM
EMERG DIRECTOR
EMERG DIRECTOR'S TABLE
PERSONNEL SAFETY TEAM LEADER
TSC STATUS BOARD
DATA DISPLAY OPERATORS
DATA DISPLAY OPERATORS
NRC OFFICE

NOTE.

INFORM THE PERSONNEL SAFETY TEAM LEADER TO
TEST THE APPROPRIATE EVACUATION ASSEMBLY
RING DOWN PHONE WHEN EVACUATION ASSEMBLY AREA
(PUB OR NORTH SUB STATION) IS MANNED.

NSP
MAY 11 1982

Map
PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM UNITS 2 AND 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-201--TECHNICAL SUPPORT CENTER (TSC) ACTIVATION

PURPOSE

TO DESCRIBE THE INSTRUCTIONS AND ACTIONS REQUIRED FOR THE ACTIVATION, MANNING AND CONDUCT OF OPERATIONS OF THE TECHNICAL SUPPORT CENTER (TSC).

REFERENCES:

PEACH BOTTOM ATOMIC POWER STATION EMERGENCY PLAN

SECTION	TITLE
3.4.2	SUMMARY OF THE EMERGENCY PLAN, ALERT
5.0	ORGANIZATIONAL CONTROL OF EMERGENCIES
6.1.2	ALERT
6.1.3	SITE EMERGENCY
6.1.4	GENERAL EMERGENCY
7.1.2	TECHNICAL SUPPORT CENTER (TSC)
NUREG	CRITERIA FOR PREPARATION AND EVALUATION OF RADIOLOGICAL EMERGENCY RESPONSE PLANS AND PREPAREDNESS IN SUPPORT OF NUCLEAR POWER PLANTS.
NUREG 0596	FUNCTIONAL CRITERIA FOR EMERGENCY RESPONSE FACILITIES

APPENDICES

- EP-201-1 EQUIPMENT ACTIVATION OF TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATIONS FACILITY
- EP-201-2 ACTIONS OF FIRST HP TO ARRIVE AT TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATIONS FACILITY
- EP-201-3 ACTIONS OF FIRST TEST ENGINEER TO ARRIVE AT TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATIONS FACILITY
- EP-201-4 TECHNICAL SUPPORT CENTER ORGANIZATION AND MANNING

EP-201-5 TECHNICAL SUPPORT CENTER FACILITY LAYOUT

EP-201-6 PLANT STATUS BOARD

EP-201-7 EVENT CHRONOLOGY STATUS BOARD

EP-201-8 OFFSITE COMMUNICATIONS STATUS BOARD

EP-201-9 STAFF ASSIGNMENT STATUS BOARD

EP-201-10 PROCEDURE FOR OPERATION OF TSC TV MONITORS

EP-201-11 SITE RADIOLOGICAL STATUS BOARD

EP-201-12 TSC TELEPHONE CHECKOFF LIST

ACTION LEVEL:

THE TSC IS ACTIVATED WHEN AN EVENT HAS BEEN CLASSIFIED AS AN ALERT, SITE EMERGENCY OR GENERAL EMERGENCY IN ACCORDANCE WITH EP-101, CLASSIFICATION OF EMERGENCIES, OR AT THE DISCRETION OF THE EMERGENCY DIRECTOR.

PRECAUTIONS:

1. VERIFY TSC HABITABILITY PRIOR TO OR DURING ACTIVATION.
2. MAINTAIN ACCOUNTABILITY OF PERSONNEL AND STAFF REPORTING TO THE TSC THROUGHOUT THE INCIDENT.
3. ENSURE TSC VENTILATION SYSTEM IS OPERATING AND THAT AIR SAMPLES ARE PERIODICALLY TAKEN TO MEASURE POTENTIAL AIRBORNE CONTAMINATION.
4. ENSURE THAT ALL PERTINENT ACTIONS AND NOTIFICATIONS ARE LOGGED. AN OFFICIAL LOG IS LOCATED IN THE TECHNICAL SUPPORT CENTER AND INDICATED AS SUCH.

PROCEDURE:

IMMEDIATE ACTIONS:

1.0 EMERGENCY DIRECTOR SHALL:

- 1.1 ASSIGN ONE OF THE ON-SHIFT TSC TECHNICIANS TO PERFORM THE STEPS OUTLINED IN SECTION 2.0 OF THESE IMMEDIATE ACTIONS.
- 1.2 ASSIGN AN INDIVIDUAL (TEST ENGINEER OR TECHNICAL ASSISTANT) THE DUTIES OF THE EMERGENCY DIRECTOR COMMUNICATOR AND DIRECT THE INDIVIDUAL TO PERFORM THE STEPS OUTLINED IN SECTION 3.0 OF THESE IMMEDIATE ACTIONS.

- 1.3 DIRECT THE FIRST HP STAFF MEMBER TO ARRIVE AT THE TSC TO PERFORM THE STEPS OUTLINED IN SECTION 4.0 OF THESE IMMEDIATE ACTIONS.
- 1.4 DIRECT THE FIRST TEST ENGINEER STAFF MEMBER TO ARRIVE AT THE TSC TO PERFORM THE STEPS OUTLINED IN SECTION 5.0 OF THESE IMMEDIATE ACTIONS.
- 1.5 OBTAIN CONTINUOUS STATUS UPDATES ON PLANT CONDITIONS FROM THE CONTROL ROOM AND MAINTAIN A LOG RECORD OF ALL SIGNIFICANT EVENTS AND ACTIONS.

NOTE: THE ABOVE LOG SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION:

- A. DATE AND TIME
- B. SIGNIFICANT EVENT/ACTION
- C. SIGNIFICANT ACTIONS TAKEN

- 1.6 PROVIDE STATUS BRIEFINGS ON THE EMERGENCY AND PERTINENT PLANT CONDITIONS TO APPROPRIATE TSC STAFF UPON THEIR ARRIVAL.
- 1.7 INFORM THE CONTROL ROOM THAT THE TSC IS OPERATIONAL UPON COMPLETION OF STEPS OUTLINED IN SECTION 2.0 AND 3.0 OF THESE IMMEDIATE ACTIONS.
- 1.8 ENSURE THE MANNING AND OPERATIONS OF THE TSC IS SET UP IN ACCORDANCE WITH THE STIPULATED FOLLOW-UP ACTIONS OF THIS PROCEDURE.

2.0 ON-SHIFT TSC TECHNICIAN SHALL:

- 2.1 GO TO THE GUARDHOUSE, PICK UP THE EMERGENCY RADIO KIT AND EMERGENCY KEY RING, AND THEN PROCEED TO UNIT 1 BY USING ONE OF THE DEDICATED TSC VEHICLES PARKED IN FRONT OF MEDICAL TRAILER. KEYS FOR THESE VEHICLES ARE ALSO IN GUARDHOUSE.
- 2.2 UTILIZE ATTACHED APPENDIX EP-201-1 (POSTED COPIES OF THIS APPENDIX CAN BE FOUND ON THE FIRST FLOOR OF UNIT 1 BY THE ENTRANCE, INSIDE DOOR OF EDF AND INSIDE DOOR OF TSC) TO SET UP LIGHTING, HVAC, RADIATION MONITORS, AND CLOSED CIRCUIT TV MONITORS IN BOTH THE EDF AND TSC.

NOTE: THE EDF EQUIPMENT IS MADE OPERATIONAL WHEN THE TSC EQUIPMENT IS MADE OPERATIONAL IN ORDER TO PLACE THE EDF IN A STATE OF READINESS CONDITION IF NEEDED.

- 2.3 INFORM THE EMERGENCY DIRECTOR WHEN TSC/EDF

EQUIPMENT SET-UP IS COMPLETE AND OF ANY EQUIPMENT PROBLEMS NOTED.

- 2.4- REMAIN AT THE TSC AS THE DATA DISPLAY OPERATOR TO MAN THE TV CAMERA STATION IN THE TSC AND PERFORM ANY NEEDED REQUEST FROM THE EMERGENCY DIRECTOR. UTILIZE APPENDIX EP-201-10 FOR TV MONITOR OPERATION INSTRUCTIONS.

3.0 EMERGENCY DIRECTOR COMMUNICATOR SHALL:

- 3.1 UTILIZING APPENDIX EP-201-12 (TSC TELEPHONE CHECKOFF LIST) VERIFY COMMUNICATIONS CAPABILITY EXISTS FROM THE TECHNICAL SUPPORT CENTER.
- 3.2 INFORM THE EMERGENCY DIRECTOR WHEN THE ABOVE COMMUNICATIONS CAPABILITIES HAVE BEEN VERIFIED OR OF ANY DISCREPANCIES NOTED.
- 3.3 MAN COMMUNICATIONS LINES AS DIRECTED BY EMERGENCY DIRECTOR AND MAINTAIN A COMMUNICATIONS LOG CONTAINING INFORMATION RECEIVED FROM AND SENT TO EMERGENCY CENTERS AND OFFSITE AGENCIES.

NOTE: THE ABOVE LOG RECORD SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION:

- A. DATE AND TIME (USE MILITARY TIME NOTATION)
- B. INCOMING/OUTGOING
- C. MESSAGES RECEIVED OR SENT
- D. NAME OF PERSON INFORMATION WAS RECEIVED OR SENT TO
- E. NAME AND INITIALS OF PERSON MAKING ENTRIES

- 3.4 INFORM THE EMERGENCY DIRECTOR PROMPTLY OF ALL INFORMATION RECEIVED FROM AND SIGNIFICANT RESPONSE ACTIONS TAKEN BY SITE GROUPS AND OFFSITE AGENCIES.

4.0 FIRST HP STAFF MEMBER SHALL:

- 4.1 PERFORM THE STEPS OUTLINED ON APPENDIX EP-201-2 AND REPORT COMPLETION TO THE EMERGENCY DIRECTOR.

NOTE: POSTED COPIES OF APPENDIX EP-201-2 CAN BE FOUND ON THE FIRST FLOOR OF UNIT 1 BY THE ENTRANCE, INSIDE DOOR OF EDF AND INSIDE DOOR OF TSC.

5.0 FIRST TEST ENGINEER SHALL:

- 5.1 PERFORM THE STEPS OUTLINED ON APPENDIX EP-201-3 AND UPON COMPLETION, INFORM THE EMERGENCY DIRECTOR THAT MANNING OF TLD DISTRIBUTION HAS COMMENCED AT

THE ENTRANCE OF UNIT 1.

NOTE: POSTED COPIES OF APPENDIX EP-201-3 CAN BE FOUND ON THE FIRST FLOOR OF UNIT 1 BY THE ENTRANCE, INSIDE DOOR OF EGF AND INSIDE DOOR OF TSC.

6.0 PERSONNEL SAFETY TEAM LEADER SHALL:

- 6.1 TAKE STATION AS DESIGNATED BY THE EMERGENCY DIRECTOR TO PROVIDE NECESSARY PERSONNEL AND ON-SITE RADIATION STATUS.
- 6.2 ASSIGN ASSISTANT(S) AS NECESSARY TO MAN THE SITE RADIOLOGICAL STATUS BOARD.
- 6.3 COORDINATE WITH THE HPEC OSC FOR ON-SITE RADIATION PROBLEMS WHICH MAY DEVELOP.

FOLLOW-UP ACTIONS:

1.0 EMERGENCY DIRECTOR SHALL:

- 1.1 UTILIZE ATTACHED APPENDIX EP-201-4 AND APPENDIX EP-201-5 TO ENSURE THAT PERSONNEL REQUIRED TO MAN THE TSC ARE IN PLACE FOR EMERGENCY SUPPORT FUNCTIONS.
- 1.2 ASSIGN THREE INDIVIDUALS (TEST ENGINEERS OR TECHNICAL ASSISTANTS) AS STATUS BOARD RECORDERS AS DELINEATED BELOW:
 - A. ONE INDIVIDUAL FOR THE PLANT STATUS BOARD (SEE APPENDIX EP-201-7).
 - B. ONE INDIVIDUAL FOR THE EVENT CHRONOLOGY STATUS BOARD (SEE APPENDIX EP-201-7).
 - C. ONE INDIVIDUAL FOR THE OFFSITE COMMUNICATIONS STATUS BOARD (SEE APPENDIX EP-201-3) AND STAFF ASSIGNMENT STATUS BOARD (SEE APPENDIX EP-201-9).
- 1.3 DIRECT THE STATUS BOARD RECORDERS TO PERFORM THE STEPS OUTLINED IN SECTION 2.0 OF THESE FOLLOW-UP ACTIONS.
- 1.4 ASSIGN AN INDIVIDUAL (TEST ENGINEER OR TECHNICAL ASSISTANT) TO MAN THE DEDICATED COMMUNICATION LINES TO THE CONTROL ROOM AND OPERATIONS SUPPORT CENTER AND DIRECT THE INDIVIDUAL TO PERFORM THE STEPS OUTLINED IN SECTION 3.0 OF THESE FOLLOW-UP ACTIONS.

- 1.5 DISPATCH AN INDIVIDUAL (TEST ENGINEER OR TECHNICAL ASSISTANT) TO THE CONTROL ROOM TO TRANSMIT REQUESTED CONTROL ROOM PARAMETERS AND INFORMATION TO THE TSC.
- 1.6 ASSIGN AN INDIVIDUAL (CLERICAL STAFF) AS A TELEPHONE CALL DIRECTOR OPERATOR TO MAN THE TELEPHONE CONSOLE IN THE TSC AND DIRECT THE INDIVIDUAL TO PERFORM THE STEPS OUTLINED IN SECTION 3.0 OF THESE FOLLOW-UP ACTIONS.
- 1.7 ENSURE THAT TWO INDIVIDUAL (INSTRUMENT/CONTROL TECHNICIAN) ARE ASSIGNED AS DATA DISPLAY OPERATORS TO MAN THE TV CAMERA STATION IN THE TSC.
- 1.8 BRIEF THE TSC STAFF PERIODICALLY (AT LEAST EVERY 30 MINUTES) ON THE STATUS OF THE EMERGENCY AND PERTINENT PLANT CONDITIONS.
- 1.9 RELY ON THE PERSONNEL SAFETY TEAM LEADER FOR STATUS AS TO CONTAMINATED/INJURED PERSONNEL, SITE OR LOCAL EVACUATIONS, AND ON-SITE RADIOLOGICAL PROBLEM AREAS.

2.0 STATUS BOARD RECORDERS SHALL:

- 2.1 SET UP THE ASSIGNED STATUS BOARD GIVEN TO YOU.

NOTE: FORMAT AND CONTENT OF THE STATUS BOARD ARE GIVEN IN THE FOLLOWING APPENDICES:

- A. APPENDIX EP-201-6. PLANT STATUS BOARD
- B. APPENDIX EP-201-7. EVENT CHRONOLOGY STATUS BOARD
- C. APPENDIX EP-201-8. OFFSITE COMMUNICATIONS STATUS BOARD
- D. APPENDIX EP-201-9. STAFF ASSIGNMENT STATUS BOARD
- E. APPENDIX EP-201-11. SITE RADIOLOGICAL STATUS BOARD

- 2.2 CONTACT THE FOLLOWING INDIVIDUALS FOR THE VARIOUS STATUS BOARD INFORMATION.

- A. DATA DISPLAY OPERATORS FOR PLANT STATUS INFORMATION
- B. COMMUNICATOR TO CONTROL ROOM FOR EVENT CHRONOLOGY INFORMATION
- C. EMERGENCY DIRECTOR OR CONTROL ROOM FOR OFFSITE COMMUNICATION INFORMATION.
- D. EMERGENCY DIRECTOR FOR STAFF ASSIGNMENT

INFORMATION.

- E. HP&C OSC FOR SITE RADIOLOGICAL STATUS.
- F. DESIGNATED SITE EVACUATION ASSEMBLY AREA COORDINATOR FOR EVACUATION INFORMATION.

- 2.3 POST APPROPRIATE INFORMATION ON ASSIGNED STATUS BOARD AND MAINTAIN A LOG RECORD OF ALKL STATUS BOARD ENTRIES.

NOTE: PLANT STATUS INFORMATION AND EVENT CHRONOLOGY INFORMATION SHOULD BE TRANSMITTED TO APPROPRIATE STATUS BOARD RECORDERS AT THE EOF.

- 2.4 REVIEW AND UPDATE THE STATUS BOARD AS CHANGES IN PLANT CONDITIONS OR INFORMATION WARRANT.

NOTE: AT LEAST EVERY 15 MINUTES.

- 2.5 INFORM THE EMERGENCY DIRECTOR AS SIGNIFICANT CHANGES IN STATUS BOARD INFORMATION ARE NOTED.

3.0 COMMUNICATORS SHALL:

- 3.1 MAN COMMUNICATION LINES ASSIGNED TO YOU.
- 3.2 MAINTAIN A COMMUNICATIONS LOG CONTAINING INFORMATION RECEIVED FROM AND SENT TO OTHER EMERGENCY RESPONSE FACILITIES AND OTHER SUPPORT ORGANIZATIONS.

NOTE: THE ABOVE LOG RECORD SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION:

- A. DATE AND TIME (USE MILITARY TIME NOTIFICATION)
- B. INCOMING/OUTGOING
- C. MESSAGES RECEIVED OR SENT
- D. NAME OF PERSON INFORMATION WAS RECEIVED FROM OR SENT TO
- E. NAME AND INITIALS OF PERSON MAKING ENTRIES

- 3.3 INFORM THE EMERGENCY DIRECTOR PROMPTLY OF ALL INFORMATION RECEIVED FROM OR SENT TO MEMBERS OF THE EMERGENCY RESPONSE ORGANIZATION OR SUPPORT ORGANIZATIONS.

APPENDIX EP-201-1 EQUIPMENT ACTIVATION OF TSC AND EOE

1. WITH THE PORTABLE RADIO OBTAINED FROM GUARDHOUSE IN HAND, GO TO THE EMERGENCY OPERATIONS FACILITY DOOR ON SECOND FLOOR AND ENTER USING KEY B9178.
2. GO TO THE LIGHTING PANELS LOCATED JUST OUTSIDE THE NORTH DOOR. ON PANEL P-23 TURN ON BREAKERS 2, 4, AND 6. ON PANEL P-43 TURN ON BREAKER 5.
3. GO TO TECHNICAL SUPPORT CENTER DOOR ON THIRD FLOOR AND ENTER THE ROOM USING KEY PG-6. LEAVE THE PORTABLE RADIOS HERE. PLUG IN CHARGER CORD.
4. GO TO LIGHTING PANEL P-47 LOCATED BEHIND THE STATUS BOARDS (NEXT TO THE XEROX MACHINE) AND TURN ON ALL BREAKERS LABELED "TSC LIGHTING."
5. GO TO THE VENTILATION PANEL AT THE NORTHWEST CORNER OF THE TECHNICAL SUPPORT CENTER. TURN ON THE VENTILATION SYSTEM USING THE PROCEDURE POSTED THERE. (S.19.1).
6. TURN ON THE PARTICULATE-IODINE-NOBLE GASES MONITOR (PING) LOCATED AT THE NORTHEAST CORNER OF THE TECHNICAL SUPPORT CENTER USING THE PROCEDURE ON THE PING.
7. TURN ON THE 4 TV MONITORS AND THE VIDEO RECORDER LOCATED IN CENTER OF THE TECHNICAL SUPPORT CENTER USING THE PROCEDURE NEAR MONITORS. NOTIFY THE UNIT 2 AND 3 CONTROL ROOM OPERATORS TO ENERGIZE THE CAMERAS AND REMOVE THE LENS COVERS.
8. GO TO THE 1ST FLOOR, AND TURN ON THE PING MONITOR FOR THE EMERGENCY OPERATIONS FACILITY INSIDE THE ENTRANCE USING THE PROCEDURE ATTACHED TO IT.
9. TURN ON THE 2 TV MONITORS LOCATED IN THE EMERGENCY OPERATIONS FACILITY USING THE PROCEDURE NEAR THE MONITORS.
10. RETURN TO THE TECHNICAL SUPPORT CENTER, THIRD FLOOR, AND MAN THE TV CAMERA STATION AS DIRECTED BY THE EMERGENCY DIRECTOR. INFORM UNIT 2 AND 3 SHIFT SUPERVISION THAT YOU HAVE ENERGIZED THE TECHNICAL SUPPORT CENTER AND THE EMERGENCY OPERATIONS FACILITY.

APPENDIX EP-201-2 ACTIONS OF FIRST HP TO ARRIVE AT ISC AND EJE

1. PROCEED TO THE FIRST FLOOR BY UNIT ONE ENTRANCE TO INVENTORY AND PREPARE THE EMERGENCY EQUIPMENT LOCKER.
2. OBTAIN TWO (2) HAND-HELD RADIOS FROM THE I&C TECHNICIAN IN THE TECHNICAL SUPPORT CENTER ON THE THIRD FLOOR. LEAVE THESE RADIOS IN THE EMERGENCY OPERATIONS FACILITY FOR THE USE OF THE FIELD SURVEY TEAMSAS REQUIRED.
3. PREPARE THE EMERGENCY TLD'S IN THE GREEN RADIATION EMERGENCY EQUIPMENT BOXES FOR USE. THESE BOXES ARE LOCATED IN THE HALLWAY LEADING TO THE ALTERNATE CHEM. LAB. THERE TLD'S SHOULD BE INVENTORIED AND READIED FOR SUBSEQUENT USE BY ALL THOSE WHO ENTER THE UNIT ONE EMERGENCY CENTERS.

APPENDIX EP-201-3 ACTIONS OF FIRST TEST ENGINEER TO ARRIVE AT ISC AND EDF

1. GO TO THE FIRST FLOOR BY UNIT ONE ENTRANCE AND GET EMERGENCY TLD'S FROM THE RADIATION EQUIPMENT LOCKERS. IF PORTABLE FRISKER IS NOT ALREADY AT UNIT ONE ENTRANCE, GET IT FROM THE EMERGENCY OPERATIONS FACILITY AND SET IT UP AT THE DESK JUST INSIDE THE GLASS DOOR.
2. GO TO THE FIRST FLOOR ENTRANCE OF UNIT ONE. DISTRIBUTE TLD TO ALL PERSONNEL WHO POSSESS EMERGENCY RESPONSE ROLES. LOG TLD NUMBERS VERSUS NAMES. WHEN AVAILABLE, THIS FUNCTION SHALL BE ASSUMED BY A GUARD.

FP-201
PAGE 11
REV. 3
EGF:LJM/LHD

APPENDIX EP-201-7 EVENT CHRONOLOGY STATUS BOARD

TIME	EVENT	EVENT
	NO.	

APPENDIX LE-201-2 OFFSITE COMMUNICATIONS STATUS BOARD

TIME	OFFSITE COMMUNICATIONS	RESPONSE/COMMENT
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APPENDIX EP-201-9 STAFF ASSIGNMENT STATUS BOARD

TITLE	NAME	LOCATION
SHIFT SUPERINTENDENT		
SHIFT SUPERVISOR		
EMERGENCY DIRECTOR		
TECHNICAL ENGINEER		
PERSONNEL SAFETY TEAM LEADER		
FIRE/DAMAGE TEAM LEADER		
SITE EMERGENCY COORDINATOR		
HEALTH PHYSICS/CHEMISTRY COORDINATOR		
RADIATION PROTECTION TEAM LEADER		
DOSE ASSESSMENT GROUP LEADER		
FIELD SURVEY GROUP LEADER		
EOF LIAISON		
PROCEDURE SUPPORT COORDINATOR		
PLANNING COORDINATOR		
MECHANICAL ENGINEER LIAISON		
ELECTRICAL ENGINEER LIAISON		
EMERGENCY SUPPORT OFFICER		

APPENDIX EP-201-10
PROCEDURE FOR OPERATION OF ISC/EQE TV MONITORS

1.0 PURPOSE:

THE FOLLOWING PROCEDURE DEFINES THE REQUIRED STEPS FOR THE OPERATION OF THE TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATIONS FACILITY TV MONITORING OF THE MAIN CONTROL ROOM.

2.0 SCOPE:

THIS PROCEDURE IS TO BE FOLLOWED BY ALL PERSONNEL WHO USE THE VIDEO-MONITORING SYSTEM IN THE CONTROL ROOM.

3.0 REFERENCES:

OPERATING INSTRUCTIONS, CONTROLS FOR MOTORIZED —
ZOOM LENSES. (VICON INDUSTRIES, INC.) X85-780
6280-E-114-S-1

4.0 RESPONSIBILITY:

THE PERSON(S) OPERATING THIS EQUIPMENT SHALL BE RESPONSIBLE FOR SAFE OPERATION.

5.0 PREREQUISITES:

PERSON(S) OPERATING THIS EQUIPMENT SHOULD HAVE A KNOWLEDGE OF ITS OPERATION IN ADDITION TO REVIEWING THE OPERATING INSTRUCTIONS, AND SHOULD BE VERY FAMILIAR WITH THE LAYOUT OF INSTRUMENTS IN THE CONTROL ROOM.

6.0 PROCEDURE:

6.1 IN THE EMERGENCY OPERATIONS FACILITY (2ND FLOOR OF UNIT 1) TURN ON BOTH CONTROLLERS, AS THEY ACT AS MASTER CONTROLLERS FOR THE CONTROLLERS ON THE THIRD FLOOR.

6.2 IN THE TECHNICAL SUPPORT CENTER (3RD FLOOR OF UNIT 1), TURN ON THE FOUR TV MONITORS, AND THEIR ASSOCIATED CONTROLLERS.

6.3 PUSH 'CLOSE' BUTTON ON IRIS A FEW SHORT TIMES TO ENSURE PROPER LIGHTING.

6.4 JOYSTICK OPERATES CAMERA MOVEMENT.

NOTE: PAN AND TILT SPEED ARE A FUNCTION

OF HOW FAR THE JOYSTICK IS MOVED AWAY
FROM THE CENTER 'REST' POSITION.

6.5 MOTOR SPEED IS DETERMINED BY KNOB
(ON/OFF).

NOTE: THE MOTOR SPEED NOT ON THE LENS
CONTROLLER WILL HAVE TO BE OPTOMIZED
FOR EACH INDIVIDUAL CAMERA (FOR FOCUS
AND ZOOM IT WILL BE APPROXIMATELY MID-
POT). TO GET IRIS CONTROL, THE SPEED
POT MUST BE FULLY CLOCKWISE.

NOTE 1: FUSE FOR ALL CAMERAS IS IN THE TRW PANEL
IN THE CONTROL ROOM, INSIDE THE RIGHT DOOR
ON THE LEFT SIDE.

NOTE 2: CONTROL ROOM TV CAMERA SWITCHES ARE
LOCATED AT THE BASE OF EACH TV CAMERA.
SWITCH IS LABELED "ACPOWER FEED ON/OFF".

APPENDIX EP-201-12

TSC PHONE CALL

TEST BING DOWN PHONES:

HP&C OSC (WALL)
HOECC 7TH FLOOR
CONTROL ROOM DATA TAKER (WALL)
CONTROL ROOM (TABLE)
PA, MD, AND 5 COUNTIES
LOAD DISPATCHER
CONTROL ROOM (WALL)
NRC RED PHONE
WHITE - BUREAU OF RAD. PROTECTION
BLUE - PA, MD, AND 5 RISK COUNTIES

TEST DIAL PHONES FOR DIAL TONE:

COMPUTER TERMINAL
EMERGENCY ANALYSIS TEAM WALL PHONE
FIRE/DAMAGE TEAM LEADER
EMERG ANALYSIS TEAM/TELECOPIER
TECHNICAL ENGINEER
EMERG ANALYSIS TEAM
EMERG DIRECTOR
EMERG DIRECTOR'S TABLE
PERSONNEL SAFETY TEAM LEADER
TSC STATUS BOARD
DATA DISPLAY OPERATORS
DATA DISPLAY OPERATORS
NRC OFFICE

NOTE.

INFORM THE PERSONNEL SAFETY TEAM LEADER TO
TEST THE APPROPRIATE EVACUATION ASSEMBLY
RING DOWN PHONE WHEN EVACUATION ASSEMBLY AREA
(PUB OR NORTH SUB STATION) IS MANNED.

MAY 11 1982

Thapp

PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM UNITS 2 AND 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-203 EMERGENCY OPERATIONS FACILITY (EOF) ACTIVATION

PURPOSE

TO DESCRIBE THE INSTRUCTIONS AND ACTIONS REQUIRED FOR THE ACTIVATION, MANNING, AND CONDUCT OF OPERATIONS OF THE EMERGENCY OPERATIONS FACILITY (EOF).

REFERENCES

1. PEACH BOTTOM ATOMIC POWER STATION EMERGENCY PLAN

SECTION TITLE

3.4.3 SUMMARY OF EMERGENCY PLAN, SITE OR GENERAL EMERGENCY
5.0 ORGANIZATIONAL CONTROL OF EMERGENCIES
6.1.3 SITE EMERGENCY
6.1.4 GENERAL EMERGENCY
7.1.4 EMERGENCY OPERATIONS FACILITY

2. NUREG 0654 CRITERIA FOR PREPARATION AND EVALUATION OF RADIOLOGICAL EMERGENCY RESPONSE PLANS AND PREPAREDNESS IN SUPPORT OF NUCLEAR POWER PLANTS.

3. NUREG 0696 FUNCTIONAL CRITERIA FOR EMERGENCY RESPONSE FACILITIES

APPENDICES

EP-203-1 EMERGENCY OPERATIONS FACILITY ORGANIZATION AND MANNING
EP-203-2 EMERGENCY OPERATIONS FACILITY LAYOUT
EP-203-3 PLANT STATUS BOARD
EP-203-4 EVENT CHRONOLOGY STATUS BOARD
EP-203-5 STAFF ASSIGNMENT STATUS BOARD
EP-203-6 HEADQUARTERS SUPPORT REQUESTS STATUS BOARD
EP-203-7 OFFSITE COMMUNICATIONS STATUS BOARD
EP-203-8 FIELD MONITORING DATA STATUS BOARD
EP-203-9 DOSE ASSESSMENT DATA STATUS BOARD
EP-203-10 PROCEDURE FOR OPERATION OF EMERGENCY OPERATIONS FACILITY TV MONITOR
EP-203-11 ACTIVATION PROCEDURE FOR PING IN EMERGENCY OPERATIONS FACILITY

2. ON-LEVEL

THE EOF IS ACTIVATED WHEN AN EVENT HAS BEEN CLASSIFIED AS A SITE EMERGENCY OR GENERAL EMERGENCY IN ACCORDANCE WITH EP-101.

CLASSIFICATION OF EMERGENCIES, OR AT THE DISCRETION OF THE SITE EMERGENCY COORDINATOR.

PRECAUTIONS

1. VERIFY EOF HABITABILITY PRIOR TO ACTIVATION.
2. MAINTAIN ACCOUNTABILITY OF PERSONNEL AND STAFF REPORTING TO THE EOF THROUGHOUT THE INCIDENT.
3. ENSURE EOF VENTILATION SYSTEM IS OPERATING AND THAT AIR SAMPLES ARE PERIODICALLY TAKEN TO MEASURE POTENTIAL AIRBORNE CONTAMINATION.
4. ENSURE THAT ALL PERTINENT ACTIONS AND NOTIFICATIONS ARE LOGGED.

PROCEDURE

- 1.0 DESIGNATED SENIOR ENGINEER ACTING AS THE INTERIM SITE EMERGENCY COORDINATOR SHALL:
 - 1.1 PERFORM THE FOLLOWING ACTIONS UNTIL RECEIVED BY THE SITE EMERGENCY COORDINATOR OR DESIGNATED ALTERNATE.
 - 1.2 ASSIGN AN INDIVIDUAL (TEST ENGINEER, TECHNICAL ASSISTANT, OR JUNIOR TECHNICAL ASSISTANT) THE DUTIES OF THE SITE EMERGENCY COORDINATOR COMMUNICATOR AND DIRECT THE INDIVIDUAL TO PERFORM THE STEPS OUTLINED IN SECTION 2.0 OF THESE IMMEDIATE ACTION.
 - 1.3 OBTAIN AVAILABLE TWO-WAY RADIOS FROM THE I&C TECHNICIAN IN THE TECHNICAL SUPPORT CENTER FOR THE RADIATION SURVEY GROUPS.
 - 1.4 OBTAIN CONTINUOUS STATUS UPDATES ON PLANT CONDITIONS FROM THE CONTROLROOM OR TECHNICAL SUPPORT CENTER AND MAINTAIN A LOG RECORD OF ALL SIGNIFICANT EVENTS AND ACTIONS.
 - 1.5 ENSURE THE MANNING AND OPERATIONS OF THE EMERGENCY OPERATIONS FACILITY IS SET UP IN ACCORDANCE WITH THE STIPULATED FOLLOW-UP ACTIONS OF THIS PROCEDURE.
 - 1.6 PROVIDE STATUS BRIEFINGS ON THE EMERGENCY AND PERTINENT PLANT CONDITIONS TO THE SITE EMERGENCY COORDINATOR AND APPROPRIATE EOF STAFF UPON THEIR ARRIVAL.
 - 1.7 INFORM THE CONTROL ROOM AND TECHNICAL SUPPORT CENTER WHEN THE EMERGENCY OPERATIONS FACILITY HAS BEEN ACTIVATED AND MANNED.
- 2.0 SITE EMERGENCY COORDINATOR COMMUNICATOR SHALL:
 - 2.1 VERIFY COMMUNICATIONS CAPABILITY BY COMPLETING TELEPHONE C.O.L. FOR EOF (APPENDIX EP-203-12).

- 2.2 INFORM THE SITE EMERGENCY COORDINATOR OR INTERIM SITE EMERGENCY COORDINATOR WHEN THE ABOVE COMMUNICATIONS CAPABILITIES HAVE BEEN VERIFIED OR OF ANY DISCREPANCIES NOTED AS NOTED ON TELEPHONE C.O.L. APPENDIX.
- 2.3 MAN COMMUNICATIONS LINES IN THE SITE EMERGENCY COORDINATOR OFFICE AND MAINTAIN A COMMUNICATIONS LOG CONTAINING INFORMATION RECEIVED FROM AND SET TO OTHER FACILITIES AND OTHER ORGANIZATIONS.

FOLLOW-UP ACTIONS

1.0 SITE EMERGENCY COORDINATOR OR INTERIM SITE EMERGENCY COORDINATOR SHALL:

- 1.1 UTILIZE ATTACHED APPENDIX EP-203-1 AND APPENDIX EP-203-2 TO ENSURE THAT PERSONNEL REQUIRED TO MAN THE EOF ARE IN PLACE FOR EMERGENCY SUPPORT FUNCTIONS.
- 1.2 ASSIGN AN INDIVIDUAL (TEST ENGINEER OR TECHNICAL ASSISTANT) AS A STATUS BOARD RECORDER FOR THE PLANT STATUS BOARD (SEE APPENDIX EP-203-3), THE EVENT CHRONOLOGY STATUS BOARD (SEE APPENDIX EP-203-5) AND DIRECT THE INDIVIDUAL TO PERFORM THE STEPS OUTLINED IN SECTION 4.0 OF THESE FOLLOW-UP ACTIONS.
- 1.3 ASSIGN AN INDIVIDUAL (TEST ENGINEER OR TECHNICAL ASSISTANT) AS A STATUS BOARD RECORDER FOR THE HEADQUARTERS SUPPORT REQUESTS STATUS BOARD (SEE APPENDIX EP-203-6) AND OFFSITE COMMUNICATIONS STATUS BOARD (SEE APPENDIX EP-203-7) AND DIRECT THE INDIVIDUAL TO PERFORM THE STEPS OUTLINED IN SECTION 4.0 OF THESE FOLLOW-UP ACTIONS.
- 1.4 ASSIGN AN INDIVIDUAL (INSTRUMENT/CONTROL TECHNICIAN) AS A DATA DISPLAY OPERATOR TO MAN THE TV CAMERA STATION IN THE EOF. THIS DATA DISPLAY OPERATOR SHOULD REFER TO APPENDIX EOP-203-10 FOR TV MONITOR OPERATION.
- 1.5 ASSIGN AN INDIVIDUAL (CLERICAL STAFF) AS A MESSAGE ROUTER TO ROUTE INFORMATION IN THE EOF AND OTHER APPROPRIATE FACILITIES.
- 1.6 ASSIGN AN INDIVIDUAL (SECRETARIAL STAFF) AS A TYPIST TO PERFORM, IF NECESSARY, ANY TYPING AND CLERICAL WORK AT THE EOF.
- 1.7 ASSIGN TWO INDIVIDUALS (CLERICAL STAFF) AS TELEPHONE CALL DIRECTOR OPERATORS TO MAN ANY REQUIRED COMMUNICATIONS EQUIPMENT IN THE EOF COMMUNICATION EQUIPMENT ROOM.
- 1.8 ENSURE THAT AN INDIVIDUAL (TEST ENGINEER) IS ASSIGNED AS A COMMUNICATOR FOR THE SITE EMERGENCY COORDINATOR TO PERFORM THE ACTIONS SPECIFIED IN SECTION 5.0 OF THESE FOLLOW-UP ACTIONS.
- 1.9 INFORM THE CONTROL ROOM AND THE TECHNICAL SUPPORT CENTER THAT THE EMERGENCY OPERATIONS FACILITY IS OPERATIONAL AND MANNED UPON COMPLETION OF PERTINENT STEPS OUTLINED IN THESE FOLLOW-UP

ACTIONS.

- 1.10 BRIEF THE EOF STAFF PERIODICALLY ON THE STATUS OF THE EMERGENCY AND PERTINENT PLANT CONDITIONS.
- 1.11 DIRECT THE COMMUNICATOR FOR THE SITE EMERGENCY COORDINATOR TO MAINTAIN A LOG RECORD OF ALL SIGNIFICANT EVENTS AND ACTIONS.

NOTE: THE ABOVE LOG SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION:

- A. DATE AND TIME
- B. SIGNIFICANT EVENT/ACTION
- C. SIGNIFICANT ACTIONS TAKEN

- 1.12 DIRECT THE COMMUNICATOR FOR THE SITE EMERGENCY COORDINATOR TO TRANSMIT ALL STATUS BOARD INFORMATION TO THE HEADQUARTERS EMERGENCY SUPPORT CENTER STATUS BOARD RECORDER.

2.0 RADIATION PROTECTION TEAM LEADER SHALL:

- 2.1 ASSIGN AN INDIVIDUAL (HP TECHNICIAN) AS A FIELD SURVEY GROUP RADIO COMMUNICATOR TO MAINTAIN RADIO CONTACT WITH FIELD SURVEY SQUADS WHEN THEY ARE DISPATCHED.
- 2.2 ASSIGN AN INDIVIDUAL (HP TECHNICIAN) AS A STATUS BOARD RECORDER FOR THE FIELD MONITORING DATA STATUS BOARD (SEE APPENDIX EP-203-8) AND DIRECT THE INDIVIDUAL TO PERFORM THE STEPS OUTLINED IN SECTION 4.0 OF THESE FOLLOW-UP ACTIONS.
- 2.3 ASSIGN AN INDIVIDUAL (HP TECHNICIAN) AS TELEPHONE COMMUNICATOR TO MAN APPROPRIATE COMMUNICATION LINES ASSIGNED TO THE RADIATION PROTECTION TEAM LEADER AND PERFORM THE STEPS OUTLINED IN SECTION 5.0 OF THESE FOLLOW-UP ACTIONS.

3.0 DOSE ASSESSMENT GROUP LEADER SHALL:

- 3.1 ASSIGN TWO INDIVIDUAL TO PERFORM DOSE PROJECTION CALCULATIONS AT THE EOF.
- 3.2 ASSIGN AN INDIVIDUAL (HP TECHNICIAN) AS A STATUS BOARD RECORDER FOR THE DOSE ASSESSMENT DATA STATUS BOARD (SEE APPENDIX EP-203-9) AND DIRECT THE INDIVIDUAL TO PERFORM THE STEPS LISTED IN SECTION 4.0 OF THESE FOLLOW-UP ACTIONS.

4.0 STATUS BOARD RECORDERS SHALL:

- 4.1 SET UP THE ASSIGNED STATUS BOARD GIVEN TO YOU.

NOTE: FORMAT AND CONTENT OF THE STATUS BOARDS ARE GIVEN IN THE FOLLOWING APPENDICES:

- A. APPENDIX EP-203-3, PLANT STATUS BOARD
- B. APPENDIX EP-203-4, EVENT CHRONOLOGY STATUS BOARD
- C. APPENDIX EP-203-5, STAFF ASSIGNMENT STATUS BOARD
- D. APPENDIX EP-203-6, HEADQUARTERS SUPPORT REQUESTS STATUS BOARD
- E. APPENDIX EP-203-7, OFFSITE COMMUNICATIONS STATUS BOARD
- F. APPENDIX EP-203-8, FIELD MONITORING DATA STATUS BOARD
- G. APPENDIX EP-203-9, DOSE ASSESSMENT DATA STATUS BOARD

4.2 CONTACT THE FOLLOWING INDIVIDUALS FOR THE VARIOUS STATUS BOARD INFORMATION.

- A. TSC PLANT STATUS BOARD RECORDER FOR PLANT STATUS INFORMATION.
- B. TSC EVENT CHRONOLOGY STATUS BOARD RECORDER FOR EVENT CHRONOLOGY INFORMATION.
- C. SITE EMERGENCY COORDINATOR FOR STAFF ASSIGNMENT INFORMATION AND HEADQUARTERS SUPPORT REQUESTS.
- D. EMERGENCY DIRECTOR, SITE EMERGENCY COORDINATOR, OR CONTROL ROOM FOR OFFSITE COMMUNICATION INFORMATION.
- E. FIELD SURVEY GROUP RADIO COMMUNICATOR FOR FIELD MONITORING DATA.
- F. DOSE ASSESSMENT GROUP LEADER FOR DOSE ASSESSEMENT DATA.

4.3 POST APPROPRIATE INFORMATION ON ASSIGNED STATUS BOARD AND MAINTAIN A LOG RECORD OF ALL STATUS BOARD ENTRIES.

4.4 REVIEW AND UPDATE THE STATUS BOARD AS CHANGES IN PLANT CONDITIONS OR INFORMATION WARRANTS.

NOTE: AT LEAST EVERY 15 MINUTES.

4.5 INFORM THE APPROPRIATE COORDINATOR, TEAM OR GROUP LEADER AS SIGNIFICANT CHANGES IN STATUS BOARD INFORMATION ARE NOTED.

5.0 COMMUNICATORS SHALL:

5.1 MAN COMMUNICATION LINES ASSIGEND TO YOU.

5.2 MAINTAIN A COMMUNICATIONS LOG CONTAINING INFORMATION RECEIVED FROM AND SENT TO OTHER EMERGENCY RESPONSE FACILITIES AND OTHER SUPPORT ORGANIZATIONS.

NOTE: THE ABOVE LOG RECORD SHALL INCLUDE AS A MINIMUM THE FOLLOWING:

- A. DATA AND TIME (USE MILITARY TIME NOTATION)
- B. INCOMING/OUTGOING

- C. MESSAGES RECEIVED OR SENT
 - D. NAME OF PERSON INFORMATION WAS RECEIVED FROM OR SENT TO
 - E. NAME AND INITIALS OF PERSON MAKING ENTRIES
- 5.3 INFORM THE APPROPRIATE COORDINATOR, TEAM OR GROUP LEADER
PROMPTLY OF ALL INFORMATION RECEIVED FROM OR SENT TO MEMBERS OF
THE EMERGENCY RESPONSE ORGANIZATION OR SUPPORT ORGANIZATIONS.

EP-203
PAGE 7
REV. 3
EF:LHD

EP-203
PAGE 2
REV. 3
EF:LHD

APPENDIX EP-203-4 EVENT CHRONOLOGY STATUS BOARD

TIME	EVENT NO.	EVENT
------	-----------	-------

APPENDIX EP-203-2 STAFF ASSIGNMENT STATUS BOARD

TITLE	NAME	LOCATION
SHIFT SUPERINTENDENT		
SHIFT SUPERVISOR		
EMERGENCY DIRECTOR		
TECHNICAL ENGINEER		
FIRE/DAMAGE TEAM LDR.		
PERSONNEL SAFETY TEAM LDR.		
SITE EMERG. COORD.		
HEALTH PHYSICS/CHEM. COORD.		
RADIATION PROTECTION TEAM LDR.		
DOSE ASSESSMENT GROUP LEADER		
FIELD SURVEY GROUP LEADER		
EOF LIAISON		
PROCEDURE SUPPORT COORDINATOR		
PLANNING COORDINATOR		
MECH. ENGR. LIAISON		
ELEC. ENGR. LIAISON		
EMERGENCY SUPPORT OFFICER		

EP-203
PAGE 10
REV. 3
EPILMO

APPENDIX EP-203-6 HEADQUARTERS SUPPORT-BEOWULSIS-SIAINS-00880

TIME SUBMITTED TO ITEM RESPONSE-SIAINS

APPENDIX EP-203-7 OFFSITE COMMUNICATIONS STATUS BOARD

TIME	OFFSITE COMMUNICATIONS	RESPONSE/COMMENT
------	---------------------------	------------------

LP-203
PAGE 12
REV. 3
EPLHO

APPENDIX 12-203-H FIELD MONITORING DATA STATUS-02880

LINE LOCATION DATA SAM-2 COMMENT

APPENDIX EP-203-10

PROCEDURE FOR OPERATION OF ISC/EQE IV MONITORS

1.0 PURPOSE:

THE FOLLOWING PROCEDURE DEFINES THE REQUIRED STEPS FOR THE OPERATION OF THE TECHNICAL SUPPORT CENTER AND EMERGENCY OPERATIONS FACILITY TV MONITORING OF THE MAIN CONTROL ROOM.

2.0 SCOPE:

THIS PROCEDURE IS TO BE FOLLOWED BY ALL PERSONNEL WHO USE THE VIDEO-MONITORING SYSTEM IN THE CONTROL ROOM.

3.0 REFERENCES:

OPERATING INSTRUCTIONS, CONTROLS FOR MOTORIZED ZOOM LENSES. (VICON INDUSTRIES, INC.) X85-780 6280-E-114-5-1

4.0 RESPONSIBILITY:

THE PERSON(S) OPERATING THIS EQUIPMENT SHALL BE RESPONSIBLE FOR SAFE OPERATION.

5.0 PREREQUISITES:

PERSON(S) OPERATING THIS EQUIPMENT SHOULD HAVE A KNOWLEDGE OF ITS OPERATION IN ADDITION TO REVIEWING THE OPERATING INSTRUCTIONS, AND SHOULD BE VERY FAMILIAR WITH THE LAYOUT OF INSTRUMENTS IN THE CONTROL ROOM.

6.0 PROCEDURE:

- 6.1 ON THE SECOND FLOOR OF THE UNIT 1 BUILDING, TURN ON BOTH CONTROLLERS, AS THEY ACT AS MASTER CONTROLLERS FOR THE CONTROLLERS ON THE THIRD FLOOR.
- 6.2 ON THE THIRD FLOOR OF THE UNIT 1 BUILDING, TURN ON THE FOUR TV MONITORS AND THEIR ASSOCIATED CONTROLLERS.
- 6.3 PUSH 'CLOSE' BUTTON ON IRIS A FEW SHORT TIMES TO ENSURE PROPER LIGHTING.
- 6.4 JOGSTICK OPERATES CAMERA MOVEMENT.
NOTE: PAN AND TILT SPEED ARE A FUNCTION OF HOW FAR THE JOGSTICK IS MOVED AWAY FROM THE CENTER "REST" POSITION.
- 6.5 MOTOR SPEED IS DETERMINED BY KNOB (ON/OFF).
NOTE: THE MOTOR SPEED NOT ON THE LENS CONTROLLER WILL HAVE TO BE OPTIMIZED FOR EACH INDIVIDUAL CAMERA (FOR FOCUS AND ZOOM IT WILL BE APPROXIMATELY MID-POT). TO GET IRIS CONTROL, THE SPEED POT MUST BE FULLY CLOCKWISE.

NOTE 1: FUSE FOR ALL CAMERAS IS IN THE TRW PANEL IN THE CONTROL ROOM.
INSIDE THE RIGHT DOOR ON THE LEFT SIDE.

NOTE 2: CONTROL ROOM TV CAMERA SWITCHES ARE LOCATED AT THE BASE
OF EACH TV CAMERA. SWITCH IS LABELED "AC POWER FEED ON/OFF."

APPENDIX EP-203-11

ACTIVATION OF THE EEBLINE PING-2A IN THE EMERGENCY OPERATIONS FACILITY

1. OPEN FRONT PANEL BY TURNING BLACK KNOBS COUNTERCLOCKWISE AND PULLING OUT.
2. TURN "KEYBOARD" KEY ON (CLOCKWISE).
3. ACTIVATE PUMP BY PUSHING THE FOLLOWING SEQUENCE ON THE KEYBOARD:

PUMP, ON/+, ENTER

WHEN THE PUMP STARTS, CHECK PAPER PRINTOUT TO ENSURE THAT A STATUS CONDITION OF "NORMAL" FOR CHANNELS 1 THRU 5 EXISTS. IF THE PRINTOUT DOES NOT SHOW "NORMAL" AND TIME PERMITS, FOLLOW STEP B OF HPO/CO-140.

IF THE PUMP FAILS TO START, GO TO THE GRAY CABINET IN THE C.O.F. AND OBTAIN AN AC AIR SAMPLER AND PLUG IT INTO THE WALL RECEPTACLE BY THE PING-2A.

APPENDIX EP-203-12

EQE PHONE C.D.L.

TEST RING DOWN PHONES:

MUDDY RUN NEWS CENTER
HOECC - 7TH FLOOR
TSC

TEST DIAL PHONES EQB DIAL TONE:

S.E.C.

S.E.C. COMMUNICATOR

NRC OFFICE

DOSE ASSESSMENT GROUP LEADER

DOSE ASSESSMENT GROUP

RAD PROTECTION TEAM LEADER

RAD PROTECTION TEAM

HP&C COORDINATOR

FIELD DATA MONITORING

PEMA/3RP/MCO OFFICE - WALL PHONE

EOF TELECOPIER

ELECT. ENG. LIAISON

MECH. ENG. LIAISON

PROCEDURE SUPPORT COORDINATOR

INPO

PLANNING COORDINATOR

EOF LIAISON

3RD TABLE

3RD TABLE

PEMA/3RP/MCO OFFICE

3RD TABLE

PA. BUR. OF RAD PROTECTION

CONFERENCE ROOM

S.E.C. WALL PHONE

BING DOWN - DO NOT IESI:

NRC RED PHONE

BLUE - MD. & 5 COUNTIES

WHITE - PA. BUR. OF RAD PROTECTION

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PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM UNITS 2 AND 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-207 PERSONNEL SAFETY TEAM ACTIVATION

PURPOSE

TO DEFINE THE ACTIONS NECESSARY TO ACTIVATE AND ASSEMBLE THE PERSONNEL SAFETY TEAM. THE PERSONNEL SAFETY TEAM PERFORMS THE FUNCTIONS OF SEARCH AND RESCUE, FIRST AID, AND PERSONNEL AND VEHICLE MONITORING AND DECONTAMINATION.

REFERENCES

1. PEACH BOTTOM ATOMIC POWER STATION EMERGENCY PLAN

<u>SECTION</u>	<u>TITLE</u>
5.2.2.2.2	PERSONNEL SAFETY TEAM
6.4.1	PROTECTIVE COVER, EVACUATION, AND PERSONNEL ACCOUNTABILITY

2. HEALTH PHYSICS OPERATING/CHEMISTRY OPERATING PROCEDURES

<u>NUMBER</u>	<u>TITLE</u>
HPD/CD-6	PERSONNEL CONTAMINATION SURVEY TECHNIQUES
HPD/CD-7	PERSONNEL DECONTAMINATION PROCEDURE
HPD/CD-8	DECONTAMINATION OF TOOLS AND EQUIPMENT
HPD/CD-14	IDENTIFICATION AND CONTROL OF TOOLS AND EQUIPMENT IN CONTROLLED AREAS.

3. NUREG 0654 CRITERIA FOR PREPARATION AND EVALU-
ATION OF RADIOLOGICAL EMERGENCY RESPONSE
PLANS AND PREPAREDNESS IN SUPPORT OF NUCLEAR
POWER PLANTS.

APPENDIX

EP-207-1 EMERGENCY EXPOSURE LIMITS (EMERGENCY PLAN TABLE 6.1)

ACTION LEVEL

THE EMERGENCY DIRECTOR OR INTERIM EMERGENCY DIRECTOR SHALL
ACTIVATE THE PERSONNEL SAFETY TEAM AT HIS DISCRETION.

PRECAUTIONS

1. TEAM MEMBER'S EXPOSURE SHOULD BE LIMITED TO THE ADMINISTRATIVE GUIDE LEVELS IN APPENDIX EP 207-1, EMERGENCY EXPOSURE LIMITS. THE EMERGENCY DIRECTOR SHALL APPROVE ANY TEAM MEMBER EXCEEDING PEACH BOTTOM QUARTERLY EXPOSURE LIMITS. PERSONNEL SAFETY TEAM MEMBERS SHALL CONTROL THEIR OWN EXPOSURE IN ACCORDANCE WITH ALARA CONCEPTS.

IMMEDIATE ACTIONS

1.0 EMERGENCY DIRECTOR OR INTERIM EMERGENCY DIRECTOR SHALL:

- 1.1 DESIGNATE A PLANT OPERATOR TO ASSUME THE ROLE OF INTERIM PERSONNEL SAFETY TEAM LEADER AND DIRECT THIS PERSON TO ASSEMBLE THE INTERIM PERSONNEL SAFETY TEAM FROM AVAILABLE RESOURCES.
- 1.2 INFORM THE INTERIM PERSONNEL SAFETY TEAM LEADER OF THE REASON FOR THE TEAM BEING ACTIVATED.
- 1.3 INSTRUCT THE INTERIM PERSONNEL SAFETY TEAM LEADER TO ASSEMBLE THE INTERIM PERSONNEL SAFETY TEAM IN THE OPERATIONS SUPPORT CENTER ON 135' ELEV. TURB. BLDG. OR THE CONTROL ROOM, IF THE 135' ELEV. OPERATIONS SUPPORT CENTER IS NOT HABITABLE, FOR INSTRUCTIONS (OR AS DIRECTED BY THE EMERGENCY DIRECTOR OR INTERIM EMERGENCY DIRECTOR).
- 1.4 CALL THE PERSONNEL SAFETY TEAM LEADER. IF THE SITUATION PERMITS, DISCUSS THE PROBLEM WITH THE PERSONNEL SAFETY TEAM LEADER SO HE CAN ASSESS THE SITUATION AND DETERMINE HOW MANY TEAM MEMBERS WILL BE NECESSARY FOR ANTICIPATED OPERATIONS. IF SITE EVACUATION HAS OCCURRED, THE PERSONNEL SAFETY TEAM LEADER AND ALTERNATE WILL BE STATIONED AT THE DESIGNATED ASSEMBLY AREA (EITHER NORTH SUBSTATION OR PUB).

2.0 INTERIM PERSONNEL SAFETY TEAM LEADER SHALL:

- 2.1 ASSIGN AVAILABLE PERSONNEL FROM THE OPERATIONS SUPPORT CENTER OR MAIN CONTROL ROOM TO THE REQUIRED PERSONNEL SAFETY TEAM SUB-GROUPS TO CARRY OUT APPLICABLE PORTIONS OF THE FOLLOWING PROCEDURES AS NECESSARY.

EP 207A SEARCH AND RESCUE
EP 207C FIRST AID
EP 207D PERSONNEL MONITORING AND DECONTAMINATION (ASSEMBLY AREA)

3.0 INTERIM PERSONNEL SAFETY TEAM MEMBERS SHALL:

- 3.1 FOLLOW THE DIRECTIONS OF THE INTERIM PERSONNEL SAFETY TEAM LEADER.

4.0 PERSONNEL SAFETY TEAM LEADER SHALL:

- 4.1 REPORT TO THE TECHNICAL SUPPORT CENTER AND COORDINATE WITH PERSONNEL SAFETY TEAM TO PROVIDE EMERGENCY DIRECTOR WITH SITE RADIOLOGICAL DATA/PERSONNEL INJURY/CONTAMINATION STATUS AND SITE EVACUATION STATUS.
- 4.2 UTILIZE NECESSARY MEMBERS OF THE PERSONNEL SAFETY TEAM TO MAN SITE RADIOLOGICAL STATUS BOARD AND COMMUNICATIONS IN THE TECHNICAL SUPPORT CENTER.
- 4.3 ENSURE PERSONNEL SAFETY TEAM MEMBERS AVAILABLE AT ASSEMBLY AREAS (HPCC OSC ON 116' ELEV. TURB. BLDG AND DESIGNATED EVACUATION ASSEMBLY AREA).

TI

- 4.4 ASSIGN TEAM MEMBERS TO FUNCTIONAL GROUPS AS NECESSARY IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:

SEARCH AND RESCUE

EP 207A

FIRST AID

EP 207C

PERSONNEL MONITORING AND DECONTAMINATION

EP 207D

VEHICLE AND EVACUEE CONTROL

EP 207E

VEHICLE DECONTAMINATION PROCEDURE

EP 207F

- 4.5 DESIGNATE GROUP LEADERS FOR THE FUNCTIONAL GROUPS FORMED.
- 4.6 MAINTAIN COMMUNICATIONS VIA ANY AVAILABLE MEANS WITH THE GROUPS AFTER THEY HAVE BEEN SENT TO PERFORM THEIR ASSIGNED TASKS.

5.0 PERSONNEL SAFETY TEAM MEMBERS SHALL:

- 5.1 REPORT TO THE AREAS DESIGNATED BY THE INTERIM PERSONNEL SAFETY TEAM LEADER OR PERSONNEL SAFETY TEAM LEADER AS QUICKLY AS POSSIBLE.
- 5.2 FOLLOW THE DIRECTIONS OF THE INTERIM PERSONNEL SAFETY TEAM LEADER OR THE PERSONNEL SAFETY TEAM LEADER.

APPENDIX EP 207-1
EMERGENCY EXPOSURE LIMITS

FUNCTION	PROJECTED WHOLE BODY DOSE	THYROID DOSE	AUTHORIZED BY
1. LIFE SAVING AND REDUCTION OF INJURY	75 REM*	375 REM	EMERGENCY** DIRECTOR
2. OPERATION OF EQUIPMENT TO MITIGATE AN EMERGENCY	25 REM*	125 REM	EMERGENCY** DIRECTOR
3. PROTECTION OF HEALTH AND SAFETY OF THE PUBLIC	5 REM	25 REM	EMERGENCY DIRECTOR
4. OTHER EMERGENCY ACTIVITIES	10 CFR 20 LIMITS	10 CFR 20 LIMITS	EMERGENCY DIRECTOR
5. RE-ENTRY/ RECOVERY ACTIVITIES	ADMINISTRATIVE GUIDELINES	ADMINISTRATIVE GUIDELINES	N/A

*REFERENCE: EPA-520/1-75-001 TABLE 2.1
 **SUCH EXPOSURE SHALL BE ON A VOLUNTARY BASIS

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PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM UNITS 2 AND 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-207B PERSONNEL ACCOUNTABILITY

PURPOSE:

TO DEFINE THE ACTIONS TO BE TAKEN WHENEVER THERE HAS BEEN AN EMERGENCY AT THE PLANT THAT REQUIRES A SITE EVACUATION AND THE ACCOUNTING OF PERSONNEL TO ENSURE ALL HAVE SAFELY EVACUATED.

REFERENCES

1. PEACH BOTTOM ATOMIC POWER STATION EMERGENCY PLAN

SECTION	IIIE
5.2.2.2.4	SECURITY TEAM
6.4.1.1.C	PROTECTIVE COVER, EVACUATION, AND PERSONNEL ACCOUNTABILITY
7.4	PROTECTIVE FACILITIES
2. NUREG 0654 CRITERIA FOR PREPARATION AND EVALUATION OF RADIOLOGICAL EMERGENCY RESPONSE PLANS AND PREPAREDNESS IN SUPPORT OF NUCLEAR POWER PLANTS.

APPENDIX

NONE

ACTION LEVEL

THIS PROCEDURE WILL BE IMPLEMENTED WHENEVER PERSONNEL ARE EVACUATED BEYOND THE SECURITY AREA.

PRECAUTIONS

1. PERSONNEL SHOULD ALWAYS RETAIN THEIR DOSIMETRY WHEN EVACUATING UNLESS TOLD TO DO OTHERWISE.

MEDIAIE ACTIONS

1.0 SENIOR RANKING SECURITY OFFICER ON SHIFT SHALL:

1.1 DIRECT AT LEAST ONE SECURITY TEAM MEMBER TO STAND AT EACH OF THE ROTO-GATES AT THE EXIT OF THE SECURITY BUILDING. DIRECT THE TEAM MEMBERS TO INFORM PERSONNEL EXITING THE SECURITY BUILDING TO DEPOSIT THEIR SECURITY BADGES IN THE BUCKETS PROVIDED, BUT KEEP THEIR DOSIMETRIC DEVICES.

1.2 DIRECT SECURITY TEAM MEMBERS TO PERFORM THE FOLLOWING:

- A) PERIODICALLY TRANSPORT THE SECURITY BADGES TO THE AUXILIARY SECONDARY ALARM SYSTEM.
- B) "CARD-OUT" THE SECURITY BADGES.
- C) PLACE "CARDED-OUT" SECURITY BADGES ON THE SECURITY BADGE BOARD.
- D) COMPILE A LIST OF NAMES OF PERSONNEL STILL ON SITE.
- E) TRANSPORT THE LIST TO THE PERSONNEL SAFETY TEAM LEADER AT THE TECHNICAL SUPPORT CENTER.

2.0 SECURITY TEAM MEMBERS DESIGNATED BY THE SENIOR RANKING SECURITY OFFICER ON SHIFT SHALL:

- 2.1 PREVENT USE OF THE CARD READERS AT THE EXIT OF THE SECURITY BUILDING.
- 2.2 STATION THEMSELVES AT THE ROTO-GATES AT THE EXIT OF THE SECURITY BUILDING, AND DIRECT EXITING PERSONNEL TO DEPOSIT THEIR SECURITY BADGES IN THE BUCKETS PROVIDED.
- 2.3 COMPILE A LIST OF NAMES OF PERSONNEL STILL ON SITE.
- 2.4 TRANSPORT THE LIST TO THE PERSONNEL SAFETY TEAM LEADER OR THE EMERGENCY DIRECTOR IN TECHNICAL SUPPORT CENTER OR SHIFT SUPERINTENDENT (INTERIM EMERGENCY DIRECTOR).

FOLLOW-UP ACTIONS

1.0 PERSONNEL SAFETY TEAM LEADER SHALL:

- 1.1 ATTEMPT TO LOCATE THE MISSING PERSONNEL WHOSE NAMES APPEAR ON THE LIST BY CONTACTING APPROPRIATE GROUP SUPERVISORS OR PAGING THE INDIVIDUAL(S) INVOLVED.
- 1.2 INFORM THE EMERGENCY DIRECTOR OF THE UNACCOUNTED PERSONNEL AND RECOMMEND SEARCH AND RESCUE GROUPS BE FORMED FROM AVAILABLE PERSONNEL SAFETY TEAM MEMBERS.
- 1.3 FORM SEARCH AND RESCUE GROUPS FROM THOSE QUALIFIED PERSONNEL AVAILABLE IN THE ASSEMBLY AREA IN ACCORDANCE WITH EP 207A, SEARCH AND RESCUE, WHEN DIRECTED BY THE INTERIM EMERGENCY DIRECTOR OR EMERGENCY DIRECTOR.

NSA
MAY 6 1997

Knapp
EP-209 APPENDIX I-2 RAD SERVICES CALL LIST

BLANCIAK, M.
CASEY, J.
CHASE, D.
DICK, D.
GASPER, J.
LATA, C.
LEONE, B.
MILLER, T.
SARGE, R.
SUESS, T.

PITTSBURGH, PA OFFICE
RAD SERVICES INSTRUMENT
CALIBRATION AND REPAIR
SUBSIDIARY

TRIANGLE RESOURCES, INC.


MAY 6 1982

PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM UNITS 2 AND 3
EMERGENCY PLAN IMPLEMENTING PROCEDURE

EP-316 CUMULATIVE POPULATION DOSE CALCULATIONS

PURPOSE

TO PROVIDE METHODS OF ESTIMATING THE SITE BOUNDARY AND OFFSITE AIRBORNE CONCENTRATIONS AND RESULTING WHOLE BODY DOSE RATE AND/OR THYROID DOSES.

REFERENCES

1. PEACH BOTTOM ATOMIC POWER STATION EMERGENCY PLAN

SECTION

TITLE

5.2.2.2.1.C

RADIATION PROTECTION TEAM - DOSE ASSESSMENT

6.2.1

ASSESSMENT METHODS FOR DETERMINING

MAGNITUDE OF RELEASE TO THE ATMOSPHERE

6.2.3

POPULATION EXPOSURE ESTIMATES

2. 10 CFR20, APPENDIX B

3. NUREG 0654

CRITERIA FOR PREPARATION AND EVALUATION OF
RADIOLOGICAL EMERGENCY RESPONSE PLANS AND
PREPAREDNESS IN SUPPORT OF NUCLEAR POWER
PLANTS

4. EP-103

ALERT IMMEDIATE ACTIONS

5. EP-104

SITE EMERGENCY IMMEDIATE ACTIONS

6. EP-105

GENERAL EMERGENCY IMMEDIATE ACTIONS

7. EP-205

RADIATION PROTECTION TEAM ACTIVATION

8. EP-205A

CHEMISTRY SAMPLING AND ANALYSIS GROUP

9. EP-317 DIRECT RECOMMENDATIONS TO COUNTY EMERGENCY
MANAGEMENT AND CIVIL DEFENSE AGENCIES

APPENDICES

EP 316-1 CALIBRATION CURVES

EP 316-2 INPUT DATA SHEET FOR EP 317 DIRECT RECOMMENDATIONS TO
COUNTY EMERGENCY MANAGEMENT AND CIVIL DEFENSE AGENCIES

- A - DATA SHEET/WORK SHEETS
- B - CALIBRATION CURVES
- C - DEFINITION OF TURBULENCE CLASS AND POPULATION
DISTRIBUTION
- D - DOSE RATE CURVES
- E - DISPERSION FACTORS
- F - INPUT DATA SHEET FOR EP 317

ACTION LEVEL

AN ALERT OF HIGHER LEVEL EMERGENCY HAS BEEN DECLARED IN
ACCORDANCE WITH EP-101, "CLASSIFICATION OF EMERGENCIES".

PRECAUTIONS

CALCULATIONS PERFORMED IN THIS PROCEDURE SHOULD BE CHECKED BY AN
INDEPENDENT REVIEWER. CALCULATIONAL RESULTS SHOULD BE VERIFIED
AS SOON AS PRACTICABLE BY PLANT SURVEY SQUADS (SITE BOUNDARY DOSE
RATES) OR FIELD SURVEY SQUADS (OFFSITE DOSES).

IMMEDIATE ACTIONS

- 1.0 THE EMERGENCY DIRECTION, RADIATION PROTECTION TEAM LEADER,
DOSE ASSESSMENT GROUP LEADER OR THEIR DESIGNEE SHALL:
- 1.1 CONTACT THE RADIATION PROTECTION TEAM LEADER AND DIRECT HIM
TO HAVE THE CHEMISTRY SAMPLING AND ANALYSIS GROUP COLLECT AND
ANALYZE GAS, IODINE, AND PARTICULATE SAMPLES FROM THE MAIN

STACK AND ROOF VENTS IN ACCORDANCE WITH EP 205A CHEMISTRY SAMPLING AND ANALYSIS GROUP.

- 1.2 DIRECT THE RADIATION PROTECTION TEAM LEADER TO HAVE THE CHEMISTRY SAMPLING AND ANALYSIS GROUP LEADER PROVIDE SAMPLE ANALYSIS RESULTS TO THE INDIVIDUAL PERFORMING THIS CALCULATION AS SOON AS RESULTS ARE AVAILABLE.
- 1.3 PERFORM THE RAPID ASSESSMENT CALCULATIONS IN SECTION 1 OF THIS PROCEDURE AND DETERMINE THE HIGHEST WHOLE BODY AND/OR THYROID DOSE.
- 1.4 RECORD THE RESULTS ON APPENDIX F INPUT DATA SHEET FOR EP-317 AND FORWARD THAT SHEET TO THE PERSON PERFORMING THE CALCULATIONS FOR EP-317 DIRECT RECOMMENDATIONS TO COUNTY EMERGENCY MANAGEMENT AND CIVIL DEFENSE AGENCIES.
- 1.5 PERFORM THE REFINED ASSESSMENT CALCULATIONS IN SECTION 2 AS TIME PERMITS OR AS NECESSARY.
- 1.6 REPEAT STEP 1.4 WITH THE RESULTS OF THE REFINED CALCULATIONS.
- 1.7 CONTINUE TO PERFORM THE ABOVE STEPS AS NEW DATA BECOMES AVAILABLE, UNTIL YOU ARE RELIEVED OF THIS DUTY OR UNTIL YOU ARE INSTRUCTED THAT THESE CALCULATIONS ARE NO LONGER REQUIRED.

EP-316 INDEX

1. RAPID ASSESSMENTS FOR CONTROL ROOM PERSONNEL

1.1 WORST CASE METEOROLOGY

- 1.1.1 HIGHEST SITE BOUNDARY WHOLE BODY DOSE RATE DUE TO MAIN STACK NOBLE GAS RELEASE
- 1.1.2 HIGHEST SITE BOUNDARY WHOLE BODY DOSE RATE DUE TO ROOF VENT NOBLE GAS RELEASE
- 1.1.3 HIGHEST OFF-SITE THYROID DOSE DUE TO MAIN STACK IODINE RELEASE.
- 1.1.4 HIGHEST OFF-SITE THYROID DOSE DUE TO ROOF VENT IODINE RELEASE.

1.2 DETERMINATION OF NOBLE GAS RELEASE RATES WHEN NORMAL MAIN STACK OR ROOF VENT MONITORS ARE OFF-SCALE.

1.3 ACTUAL METEOROLOGY

2. REFINED ASSESSMENTS FOR DOSE ASSESSMENT PERSONNEL

2.1 WHOLE BODY DOSE RATES DUE TO NOBLE GAS RELEASES

- 2.1.1 PLUME CENTERLINE DOSE RATES
- 2.1.2 OFF-PLUME CENTERLINE DOSE RATES
- 2.1.3 ASSESSMENT OF TOTAL NOBLE GAS FROM HIGH RANGE MONITORS

2.2 THYROID DOSE RATE DUE TO IODINE RELEASES

- 2.2.1 PLUME CENTERLINE DOSE RATES
- 2.2.2 OFF-PLUME CENTERLINE DOSE RATES
- 2.2.3 DETERMINATION OF THYROID DOSE RATE FROM FIELD SURVEY DATA.

2.3 GROUND DEPOSITION CONCENTRATION

2.3.1 ASSESSMENT OF OFF-SITE PLUME CENTERLINE
DEPOSITION CONCENTRATION

2.3.2 OFF-PLUME CENTERLINE DEPOSITION CONCENTRATION

2.4 DETERMINATION OF PLUME TRAVEL TIME

2.5 DETERMINATION OF ATMOSPHERIC DISPERSION COEFFICIENTS
(X/Q)

2.5.1 UNDEPLETED (X/Q) FOR WHOLE BODY DOSES

2.5.2 DEPLETED (X/Q) FOR THYROID DOSES

SECTION 1 RAPID ASSESSMENTS FOR CONTROL ROOM PERSONNEL

1.1 WHOLE BODY DOSE RATES DUE TO NOBLE GAS RELEASES

1.1.1 HIGHEST SITE BOUNDARY DOSE RATE DUE TO MAIN STACK RELEASES

1. RECORD THE SITE BOUNDARY DOSE RATE CORRESPONDING TO THE PEAK CPS ON THE MAIN STACK RADIATION RECORDER (PANEL NO. _____, INSTRUMENT NO. _____). USE THE MR/HR TO CPS SCALE MOUNTED ON THE RECORDER.

CPS

MR/HR

NOTE IF MAIN STACK MONITOR IS OFF-SCALE, USE HIGH RANGE MONITOR (SEE SECTION 1.2 STEPS 1-3)

2. A. RECORD HIGH RANGE MONITOR READING

MR/HR

- B. RECORD THE MONITOR CORRECTION FACTOR (FROM DATA SHEETS IMMEDIATELY IN FRONT OF RECORDER) THAT CONVERTS THE HIGH RANGE MONITOR READING TO A SITE BOUNDARY DOSE RATE

CORRECTION
FACTOR

3. CALCULATE THE SITE BOUNDARY DOSE RATE:
DOSE RATE = MONITOR READING (ITEM 2. A.)
X CORRECTION FACTOR (ITEM 2. B.)

DOSE RATE = _____ MR/HR

THIS IS THE HIGHEST POSSIBLE SITE BOUNDARY WHOLE BODY DOSE RATE BASED ON THE WORST CASE METEOROLOGICAL CONDITIONS AND MAIN STACK NOBLE GAS SOURCE COMPOSITION.

1.1.2 HIGHEST SITE BOUNDARY DOSE RATE DUE TO ROOF VENT RELEASES

USE THE HIGHER VALUE INDICATED FOR EACH UNIT.
IGNORE BACKGROUND UNDER EMERGENCY CONDITIONS.

1. RECORD PEAK COUNT RATE (CPM) FROM EACH UNIT'S ROOF VENT RADIATION RECORDER. (UNIT 2 PANEL NO. _____, INSTRUMENT NO. _____ AND UNIT 3 PANEL NO. _____, INSTRUMENT NO. _____).

UNIT 2 UNIT 3

1. ____ CPM ____ CPM

2. USING THE MR/HR TO CPM SCALE MOUNTED ON EACH RECORDER, CONVERT EACH CPM MEASUREMENT TO MR/HR.

NOTE IF NORMAL ROOF VENT MONITORS ARE OFF SCALE, USE HIGH RANGE MONITORS (SEE SECTION 1.2 PAGE 8). THESE VALUES MUST BE CONVERTED TO A SITE BOUNDARY DOSE RATE BY USE OF A MONITOR CORRECTION FACTOR POSTED IMMEDIATELY IN FRONT OF THE HIGH RANGE RECORDERS.

2. ____ MR/HR ____ MR/HR

3. OBTAIN THE SITE BOUNDARY DOSE RATE BY ADDING THE UNIT 2 AND UNIT 3 DOSE RATES.

3. _____
U/2 AND U/3 MR/HR

THIS IS THE HIGHEST POSSIBLE SITE BOUNDARY WHOLE BODY DOSE RATE BASED ON WORST CASE WIND CONDITIONS AND ROOF VENT NOBLE GAS SOURCE COMPOSITION.

4. IF APPROPRIATE, ADD THE MAIN STACK SITE BOUNDARY DOSE RATE (SECTION 1.1, ITEM 3 OF THIS PROCEDURE)

+
MAIN STACK

TOTAL MR/HR

THIS IS THE HIGHEST POSSIBLE SITE BOUNDARY WHOLE BODY DOSE RATE BASED ON WORST CASE WIND CONDITIONS AND TOTAL NOBLE GAS SOURCE COMPOSITION.

1.2 DETERMINATION OF NOBLE GAS RELEASE RATES WHEN NORMAL MAIN
STACK OR ROOF VENT MONITORS ARE OFF-SCALE - NO ISOTOPIC DATA
AVAILABLE

- | | ROOF VENT
U2 | U3 | MAIN
STACK |
|---|-----------------|------|---------------|
| 1. DETERMINE THE DOSE RATES FROM THE HI-RANGE ROOF VENT AND MAIN STACK MONITORS. READING IN MR/HR . . . | ---- | ---- | ---- |
| 2. DETERMINE THE AVERAGE BACKGROUND OF HI-RANGE ROOF VENT AND MAIN STACK MONITORS BASED UPON THE MOST RECENT PURGE DATA READING IN MR/HR. | ---- | ---- | ---- |
| 3. CALCULATE THE NET READING:
(DATA FROM ITEM 1) - (DATA FROM ITEM 2)
NET MR/HR (IF <0 RECORD AS 0) . . | ---- | ---- | ---- |
| 4. RECORD THE DATA FROM ITEM 3 IN COLUMN A OF TABLE 2 BELOW. | | | |
| 5. DETERMINE VENT AND STACK FLOWS, RECORD THESE FLOWS, IN CFM, IN COLUMN B BELOW. | | | |
| 6. CALCULATE THE RELEASE RATE BY MULTIPLYING COLUMNS A X B X C. RECORD THE RELEASE RATES IN COLUMN D. | | | |

TABLE 2

	A	B	C	D
	NET MR/HR	FLOW-CFM	CONVERSION EACIQR	RELEASE RATE UCI/SEC
UNIT 2 VENT			6.74 X P2	
UNIT 3 VENT			6.74 X P2	
MAIN STACK			6.74 X P2	

4/29/82

MPG/MJM/DOC:LHD/LJM

1.1.3 HIGHEST OFF-SITE THYROID DOSE DUE TO MAIN STACK RELEASE.

1. OBTAIN MAIN STACK IODINE ACTIVITY RELEASED FROM THE CHEMISTRY SAMPLING AND ANALYSIS GROUP LEADER

1. A. _____ UCI I-131
RELEASED

1. B. _____ UCI I-133
RELEASED

2. DETERMINE THE WIND SPEED USING ONE OF THE FOLLOWING RECORDERS:

USE: 320 FT. MICROWAVE TOWER AEROVANE PANEL NO. _____
INSTRUMENT NO. _____
IF NOT AVAILABLE:

USE: 75 FT. MICROWAVE TOWER AEROVANE PANEL NO. _____
INSTRUMENT NO. _____
IF NOT AVAILABLE:

USE: HILL POLE AEROVANE PANEL NO. _____
INSTRUMENT NO. _____

- A. CHECK WHICH AEROVANE RECORDER USED:

_____ 320 FT. _____ 75 FT. _____ HILL POLE

- B. USE THE RIGHT HAND TRACE ON THE RECORDER FOR WIND SPEED. VISUALLY DETERMINE THE AVERAGE WIND SPEED FOR THE PERIOD OF THE RELEASE. IF 75 FT. OR HILL POLE AEROVANE ARE USED, MULTIPLY WIND SPEED BY 2. IF WIND SPEED IS LESS THAN 1 MPH, USE WIND SPEED OF 1 MPH.

2. B. _____ MPH
(WIND SPEED)

3. DOSE CALCULATION - INFANT THYROID IN ALL CASES.

- A. I-131 DOSE INHALATION:

_____ X (4.35 X 10⁻⁵) - _____ = _____ MREM
(ITEM 1. A.) (ITEM 2. B.)

4/28/82

MPG/MJM/DOC:LHD/LJM

UCI I-131)

(WINDSPEED)

CALCULATE INGESTION DOSE IF APRIL THROUGH NOVEMBER,
OTHERWISE DOSE = 0.

INGESTION:

$$\frac{\text{_____}}{\text{(ITEM 1. A., I-131)}} \times 3.10 \times 10^{-2} = \frac{\text{_____}}{\text{(ITEM 2. B., WINDSPEED)}} \text{ MREM}$$

ADD INGESTION PLUS INHALATION DOSES:

TOTAL I-131 DOSE 3. A. _____ MREM

B. I-133 DOSE

INHALATION:

$$\frac{\text{_____}}{\text{(ITEM 1. B., UCI, I-133)}} \times 1.05 \times 10^{-5} = \frac{\text{_____}}{\text{(ITEM 2. B., WINDSPEED)}} \text{ MREM}$$

CALCULATE INGESTION DOSE IF APRIL THROUGH NOVEMBER,
OTHERWISE DOSE = 0.

INGESTION:

$$\frac{\text{_____}}{\text{(ITEM 1B, UCI, I-133)}} \times 2.88 \times 10^{-4} = \frac{\text{_____}}{\text{(ITEM 2B, WINDSPEED)}} \text{ MREM}$$

ADD INHALATION PLUS INGESTION DOSES:

TOTAL I-133 DOSE 3B. _____ MREM

TOTAL IODINE DOSE:

$$\frac{\text{_____}}{\text{(ITEM 3A, I-131 DOSE)}} + \frac{\text{_____}}{\text{(ITEM 3B, I-133 DOSE)}} = \text{_____ MREM}$$

THIS IS THE HIGHEST POSSIBLE OFF-SITE THYROID DOSE BASED ON
THE WORST CASE METEOROLOGICAL CONDITIONS AND MAIN STACK
IODINE SOURCE COMPOSITION. IT IS 0.65 MILES FROM PRAPS.

4/28/82

MPG/MJM/DOC:LHD/LJM

1.1.4 HIGHEST OFF-SITE THYROID DOSE DUE TO ROOF VENT IODINE RELEASES.

1. OBTAIN COMBINED IODINE ACTIVITY RELEASE, UNIT 2 & UNIT 3 VENTS FROM CHEMISTRY SAMPLING AND ANALYSIS GROUP LEADER.

1A. ____ UCI I-131
RELEASED

1B. ____ UCI I-133
RELEASED

2. DETERMINE WIND SPEED FROM THE 75 FT MICROWAVE TOWER AEROVANE RECORDER. IF THE 75 FT AEROVANE IS UNAVAILABLE, USE THE 320 FT. MICROWAVE TOWER IF BOTH ARE UNAVAILABLE, USE THE HILL ROLE AEROVANE

A. CHECK WHICH AEROVANE RECORDER USED;

____ 75FT ____ 320FT ____ HILL POLE

- B. USE THE RIGHT HAND TRACE ON THE FOR WIND SPEED. VISUALLY DETERMINE THE AVERAGE WIND SPEED FOR THE PERIOD OF THE RELEASE. IF 320 FT AEROVANE IS USED, DIVIDE WIND SPEED BY 2. IF WIND SPEED IS LESS THAN MPH, USE WIND SPEED IMPH.

2B. ____ MPH
(WINDSPEED)

3. DOSE CALCULATION - INFANT THYROID IN ALL CASES.

A. I-131 DOSE

INHALATION:

____⁻⁵ X (3.39 X 10⁻⁵) - ____ = ____ MREM
(ITEM 1A, (ITEM 2B,
UCI-131) WINDSPEED)

CALCULATE INGESTION DOSE IF APRIL THROUGH NOVEMBER, OTHERWISE DOSE = 0

INGESTION:

____⁻³ X 5.23 X 10⁻³ - ____ = ____ MREM
(ITEM 1A, (ITEM 2B,
UCI I-131) WIND SPEED)

ADD INGESTION PLUS INHALATION DOSES:

TOTAL I-131 DOSE 3A. ____ MREM

4/28/82

MPG/MJM/DOC:LHD/LJM

B. I-133 DOSE

INHALATION:

$$\frac{\text{ITEM 1B, UCI I-133}}{\text{ITEM 2B, WINDSPEED}} \times 8.16 \times 10^{-6} = \text{MREM}$$

CALCULATE INGESTION DOSE IF APRIL THROUGH NOVEMBER, OTHERWISE DOSE = 0

INGESTION:

$$\frac{\text{ITEM 1B, UCI I-133}}{\text{ITEM 2B, WIND SPEED}} \times 4.85 \times 10^{-5} = \text{MREM}$$

ADD INGESTION PLUS INHALATION DOSES:

TOTAL I-133 DOSE 3B. _____ MREM

TOTAL IODINE DOSE:

$$\text{ITEM 3A, I-131 DOSE} + \text{ITEM 3B, I-133 DOSE} = \text{MREM}$$

THIS IS THE HIGHEST POSSIBLE OFF-SITE THYROID DOSE BASED ON THE WORST CASE METEOROLOGICAL CONDITIONS AND UNIT 1 AND/OR UNIT 2 ROOF VENT IODINE SOURCE COMPOSITION. IT IS 0.6 MILES FROM PBAPS.

1.3 ACTUAL METEOROLOGY

1.3.1 HIGHEST PLUME CENTERLINE WHOLE BODY DOSE RATES DUE TO NOBLE GAS RELEASES.

1. RECORD THE POINT OF RELEASE ON THE WORKSHEET 1 APPENDIX A.
2. ESTIMATE THE AVERAGE COUNT RATE OVER A 30 MINUTE TIME INTERVAL FROM THE HIGHEST CHANNEL.
3. RECORD THE FLOW RATE FROM THE APPROPRIATE RELEASE POINT IN CFM.

4. RECORD THE APPROPRIATE PRESSURE CORRECTION FACTOR ON THE DATA SHEET. USE 1.1 IF THE FACTOR IS UNAVAILABLE.
5. CALCULATE THE CORRECTED COUNT RATE.
 $\text{CORRECTED COUNT RATE} = \text{COUNT RATE} \times \text{PRESSURE CORRECTION FACTOR}$
6. USE THE APPROPRIATE CALIBRATION CURVE. APPENDIX B TO CONVERT COUNT RATE TO UCI/SEC.
7. DETERMINE THE AVERAGE WINDSPEED FOR THE TIME INTERVAL. USE THE APPROPRIATE AEROVANE AS LISTED BELOW:

FOR MAIN STACK RELEASES:
320° AEROVANE READING OR
75° AEROVANE READING MULTIPLIED BY 2 OR
HILLPOLE AEROVANE READING MULTIPLIED BY 2

FOR ROOF VENT RELEASES:
75° AEROVANE READING OR
HILLPOLE AEROVANE READING OR
320° AEROVANE READING DIVIDED BY 2
8. DETERMINE THE DIRECTION TOWARD WHICH THE WIND IS BLOWING BY ADDING 180 DEGREES TO AVERAGE WIND DIRECTION FROM RECORDER. IF GREATER THAN 360 DEGREES, SUBTRACT 360 DEGREES FROM THE SUM.
9. DIVIDE THE RELEASE RATE BY THE WINDSPEED
 $\frac{\text{UCI}}{\text{S-MPH}}$
10. DETERMINE THE TURBULENCE CLASS BY EXAMINING THE WIND DIRECTION TRACE AND COMPARING THIS WITH THE TURBULENCE CLASS EXAMPLES SHOWN IN APPENDIX C.
11. SELECT THE APPROPRIATE GRAPH FOR THE RELEASE POINT AND TURBULENCE CLASS IN APPENDIX D.
12. HIGHEST OFFSITE PLUME CENTERLINE DOSE RATES ARE AT THE FOLLOWING DOWNWIND DISTANCES:

4/28/82

MPG/MJM/DOC:LHD/LJM

GRAPH 2DISTANCE

1	.6
2	.6
3	1.0
4	4.2
5	.6
6	.6
7	.6
8	.6

1.3.2 HIGHEST PLUME CENTERLINE THYROID DOSE RATES
DUE TO IODINE RELEASES.

1. OBTAIN MAIN STACK OR ROOF VENT IODINE ACTIVITY RELEASED FROM THE CHEMISTRY SAMPLING AND ANALYSIS GROUP LEADER. ENTER THE DATA ON WORKSHEET 5 APPENDIX A.
2. DETERMINE THE ESTIMATED TIME PERIOD OF RELEASE IN HOURS.
3. DETERMINE THE AVERAGE WINDSPEED FOR THE TIME INTERVAL. USE THE APPROPRIATE AEROVANE AS LISTED BELOW:

FOR MAIN STACK RELEASES:

320° AEROVANE READING OR
75° AEROVANE READING MULTIPLIED BY 2 OR
HILLPOLE AEROVANE READING MULTIPLIED BY 2

FOR ROOF VENT RELEASES:

75° AEROVANE READING OR
HILLPOLE AEROVANE READING OR
320° AEROVANE READING DIVIDED BY 2

4. DETERMINE THE DIRECTION WHICH THE WIND IS BLOWING BY ADDING 180 DEGREES TO THE AVERAGE WIND DIRECTION FROM THE RECORDER. IF THE SUM IS GREATER THAN 360 DEGREES, SUBTRACT 360 DEGREES.
5. DETERMINE THE TURBULENCE CLASS BY EXAMINING THE WIND DIRECTION TRACE AND COMPARING THIS WITH THE TURBULENCE CLASS EXAMPLES SHOWN IN APPENDIX C.
6. TO CALCULATE INHALATION DOSE FROM TOTAL IODINE (I131 & I133) ACTIVITY RELEASED FIRST CALCULATED THE INHALATION FACTOR.

4/28/82

MPG/MJM/DOC:LHD/LJM

INHALATION FACTOR = $\frac{(UCI\ I-131)(47) + (UCI\ I-133)11.3}{11.3}$

7. DIVIDE THE INHALATION FACTOR BY THE WINDSPEED AND THE RELEASE TIME IN HOURS.

$$\frac{\text{INHALATION FACTOR}}{\text{RELEASE TIME HRS} \times \text{WINDSPEED MPH}} = \frac{\text{UCI}}{\text{HR-MPH}}$$

8. SELECT APPROPRIATE GRAPH FOR RELEASE POINT AND TURBULENCE CLASS IN APPENDIX D TO FIND HIGHEST PLUME CENTERLINE INHALATION DOSE RATE.
9. HIGHEST OFFSITE PLUME CENTERLINE DOSE RATES ARE AT THE FOLLOWING DOWNWIND DISTANCES.

GRAPH #	DISTANCE
9	.50
10	.50
11	1.00
12	3.75
13	.50
14	.50
15	.50
16	.50

10. RECORD DISTANCE AND DOSE RATE ON WORKSHEET 6, APPENDIX A.
11. ADD THE INHALATION DOSE RATE FROM ALL RELEASE POINTS FOR TOTAL INHALATION THYROID DOSE RATE.
12. TO CALCULATE THE INGESTION DOSE FIRST CALCULATE THE INGESTION FACTOR. (IF NOVEMBER TO APRIL THE INGESTION DOSE IS ZERO.)

$$\text{INGESTION FACTOR} = (UCI\ I-131 \times 33500) + (UCI\ I-131 \times 311)$$

13. DIVIDE THE INGESTION FACTOR BY THE WIND SPEED AND THE RELEASE TIME IN HOURS.

$$\frac{\text{INGESTION FACTOR}}{\text{RELEASE TIME (HRS)} \times \text{WINDSPEED (MPH)}} = \frac{\text{UCI}}{\text{HR-MPH}}$$

14. SELECT THE APPROPRIATE GRAPH FOR RELEASE POINT AND TURBULENCE CLASS IN APPENDIX D TO FIND HIGHEST PLUME CENTERLINE INGESTION DOSE RATE.

15. HIGHEST PLUME CENTERLINE INGESTION DOSE RATES ARE AT .5 MILES FOR ALL TURBULANCE CLASSES.
16. RECORD DISTANCE AND DOSE RATE ON WORKSHEET 6, APPENDIX A.
17. TO FIND TOTAL THYROID DOSE RATE ADD INHALATION AND INGESTION DOSE RATES.

SECTION 2 REFINED DOSE ASSESSMENT FOR DOSE ASSESSMENT PERSONNEL

2.1 WHOLE BODY DOSE RATES DUE TO NOBLE GAS RELEASES

USE DATA SHEET 1 APPENDIX A FOR INPUT

2.1.1 PLUME CENTERLINE DOSE RATES

1. RECORD THE POINT OF RELEASE ON THE WORK SHEET 1 APPENDIX A
2. ESTIMATE THE AVERAGE COUNT RATE OVER A 30 MINUTE TIME INTERVAL FROM THE HIGHEST CHANNEL.
3. RECORD THE FLOW RATE FROM THE APPROPRIATE RELEASE POINT IN CFM.
4. RECORD THE APPROPRIATE PRESSURE CORRECTION FACTOR ON THE DATA SHEET. USE 1.1 IF THE FACTOR IS UNAVAILABLE.
5. CALCULATE THE CORRECTED COUNT RATE.

$\text{CORRECTED COUNT RATE} = \text{COUNT RATE} \times \text{PRESSURE CORRECTION FACTOR}$

6. USE THE APPROPRIATE CALIBRATION CURVE APPENDIX B TO CONVERT COUNT RATE TO UCI/SEC.
7. DETERMINE THE AVERAGE WINDSPEED FOR THE TIME INTERVAL. USE THE APPROPRIATE AEROVANE AS LISTED BELOW:

FOR MAIN STACK RELEASES:

320° AEROVANE READING OR
75° AEROVANE READING MULTIPLIED BY 2 OR
HILLPOLE AEROVANE READING MULTIPLIED BY 2

FOR ROOF VENT RELEASES:

75° AEROVANE READING OR
HILLPOLE AEROVANE READING OR
320° AEROVANE READING DIVIDED BY 2

8. DETERMINE THE DIRECTION TOWARD WHICH THE WIND IS BLOWING BY ADDING 180 DEGREES TO AVERAGE WIND DIRECTION FROM RECORDER. IF GREATER THAN 360 DEGREES, SUBTRACT 360 DEGREES FROM THE SUM.
9. DIVIDE THE RELEASE RATE BY THE WINDSPEED $\frac{\text{UCI}}{\text{S-MPH}}$

10. DETERMINE THE TURBULENCE CLASS BY EXAMINING THE WIND DIRECTION TRACE AND COMPARING THIS WITH THE TURBULENCE CLASS EXAMPLES SHOWN IN APPENDIX C.
11. SELECT THE APPROPRIATE GRAPH FOR THE RELEASE POINT AND TURBULENCE CLASS IN APPENDIX D AND FIND THE PLUME CENTERLINE DOSE RATES. RECORD THE DISTANCES AND DOSE RATES ON WORK SHEET 2 APPENDIX A.
12. IF GROUND CONCENTRATION IS NEEDED, DIVIDE THE DOSE RATE
IN MR/HR BY $2.85 \times 10^{+6}$ TO OBTAIN
UCI/CC

$$\text{UCI} = \frac{\text{DOSE RATE MR/HR}}{2.85 \times 10^{+6}}$$

13. ADD DOSE RATE FROM ALL RELEASE POINTS FOR TOTAL DOSE RATE.

2.1.2 OFF-PLUME CENTERLINE DOSE RATES.

NOTE: OVERLAYS ARE NOT APPLICABLE OF OFF-CENTERLINE ROOF VENT DATA.

1. TO DETERMINE THE GROUND CONCENTRATION AND WHOLE BODY DOSE RATES FOR LOCATIONS NOT ON PLUME CENTERLINE, SELECT THE APPROPRIATE OVERLAY FOR THE EXISTING TURBULENCE CLASS.
2. MOUNT THE OVERLAY ON THE MAP WITH THE ORIGIN AT THE MAIN STACK.
3. ROTATE THE OVERLAY TO ALIGN THE CENTERLINE WITH THE DIRECTION OF WIND FLOW.
4. SELECT THE LOCATIONS OF INTEREST AND RECORD THEM ON WORK SHEET 3 APPENDIX A. ESTIMATE THE DECIMAL FRACTION OF REDUCTION FROM THE CENTERLINE USING THE VALUES ON THE OVERLAY FOR THE SELECTED LOCATIONS. ENTER THE OFF-CENTERLINE DECIMAL FRACTION ON THE DATA SHEET.
5. MULTIPLY THE CENTERLINE CONCENTRATION OR DOSE RATE BY THE DECIMAL FRACTION TO OBTAIN THE OFF CENTERLINE CONCENTRATION OR DOSE RATE AT THE POINT OF INTEREST.

6. POPULATION DISTRIBUTION, APPENDIX C IS PROVIDED FOR MAN
REM DOSE CALCULATIONS.

2.1.3 ASSESSMENT OF TOTAL NOBLE GAS RELEASE FROM HIGH RANGE
MONITORS.

1. DETERMINE THE NET DOSE RATES FROM THE HIGH RANGE
MONITOR OF THE APPROPRIATE RELEASE POINT WHEN THE
NORMAL RADIATION MONITOR IS OFF SCALE. RECORD THIS
ON WORK SHEET 4 APPENDIX A
2. DETERMINE THE APPROPRIATE VENT OR STACK FLOW RATE
IN CFM.
3. FROM THE GAMMA SCAN OF THE VENT OR STACK SAMPLES,
RECORD THE ABUNDANCE OF EACH ISOTOPE LISTED. IF
UNAVAILABLE, ASSUME 100% XE-133.
4. MULTIPLY THE ABUNDANCE BY THE LISTED CONVERSION
FACTOR FOR EACH ISOTOPE LISTED. THE CONVERSION
FACTOR CONVERTS UCI/CC TO MREM.
5. SUM THE VALUES OF THE ABUNDANCE MULTIPLIED BY THE
CONVERSION FACTOR.
6. DETERMINE THE INVERSE SUM.
7. CALCULATE THE RELEASE RATE.

NET MR/HR X FLOW CFM X INVERSE SUM X 472 =RELEASE RATE
UCI/SEC

USE THIS RELEASE RATE FOR WORK SHEET 1 APPENDIX A AND
CONTINUE WITH PROCEDURE IN SECTION 2.1.1 STEP 9.

2.2 THYROID DOSE RATE DUE TO IODINE RELEASES

2.2.1 PLUME CENTERLINE DOSE RATES

1. OBTAIN MAIN STACK OR ROOF VENT IODINE ACTIVITY
RELEASED FROM THE CHEMISTRY SAMPLING AND ANALYSIS
GROUP LEADER. ENTER THE DATA ON WORK SHEET 5
APPENDIX A.
2. DETERMINE THE ESTIMATED TIME PERIOD OF RELEASE IN
HOURS.

3. DETERMINE THE AVERAGE WINDSPEED FOR THE TIME INTERVAL. USE THE APPROPRIATE AEROVANE AS LISTED BELOW:

FOR MAIN STACK RELEASES:

320° AEROVANE READING OR
 75° AEROVANE READING MULTIPLIED BY 2 OR
 HILLPOLE AEROVANE READING MULTIPLIED BY 2

FOR ROOF VENT RELEASES:

75° AEROVANE READING OR
 HILLPOLE AEROVANE READING OR
 320° AEROVANE READING DIVIDED BY 2

4. DETERMINE THE DIRECTION WHICH THE WIND IS BLOWING BY ADDING 180 DEGREES TO THE AVERAGE WIND DIRECTION FROM THE RECORDER. IF THE SUM IS GREATER THAN 360 DEGREES, SUBTRACT 360 DEGREES.
5. DETERMINE THE TURBULENCE CLASS BY EXAMINING THE WIND DIRECTION TRACE AND COMPARING THIS WITH THE TURBULENCE CLASS EXAMPLES SHOWN IN APPENDIX C.
6. TO CALCULATE INHALATION DOSE FROM TOTAL IODINE (I-131 & I-133) ACTIVITY RELEASED FIRST CALCULATE THE INHALATION FACTOR.

INHALATION FACTOR: $(UCI-I-131)(47) + (UCI-I-133)(11.3)$

7. DIVIDE THE INHALATION FACTOR BY THE WINDSPEED AND THE RELEASE TIME IN HOURS.

$$\frac{\text{INHALATION FACTOR}}{\text{RELEASE TIME (HRS)} \times \text{WINDSPEED (MPH)}} = \frac{UCI}{(\text{HR-MPH})}$$

8. SELECT THE APPROPRIATE GRAPH FOR THE RELEASE POINT AND TURBULENCE CLASS IN APPENDIX D TO FIND THE PLUME CENTERLINE DOSE RATES. RECORD THE DISTANCES AND DOSE RATES ON DATA SHEET 6 APPENDIX A.
9. ADD THE INHALATION DOSE RATE FROM ALL RELEASE POINTS FOR TOTAL INHALATION THYROID DOSE RATE.
10. TO CALCULATE THE INGESTION DOSE FIRST CALCULATE THE INGESTION FACTOR. (IF NOVEMBER TO APRIL THE INGESTION DOSE IS ZERO).

4/29/82

MPG/MJM/DOC:LHD/LJM

$$\text{INGESTION FACTOR} = (\text{UCI I-131} \times 33500) + (\text{UCI I-133} \times 311)$$

11. DIVIDE THE INGESTION FACTOR BY THE WIND SPEED AND THE RELEASE TIME IN HOURS.

$$\frac{\text{INGESTION FACTOR}}{\text{RELEASE TIME (HRS)} \times \text{WINDSPEED (MPH)}} = \frac{\text{UCI}}{\text{HR-MPH}}$$

12. SELECT THE APPROPRIATE GRAPH FOR THE RELEASE POINT AND TURBULENCE CLASS, IN APPENDIX D, TO FIND THE INGESTION DOSE RATES. RECORD THE DISTANCES AND DOSE RATES ON WORK SHEET 6 APPENDIX A.
13. ADD THE INGESTION DOSE RATE FROM ALL RELEASE POINTS FOR TOTAL INGESTION DOSE RATE.

NOTE: DOSE RATES ARE ONLY APPLICABLE TO THE TIME PERIOD OF RELEASE FROM ITEM 2.

2.2.2 OFF PLUME CENTERLINE THYROID DOSE RATE CALCULATIONS.

NOTE: OVERLAYS ARE NOT APPLICABLE TO OFF-CENTERLINE ROOF VENT DATA.

1. TO DETERMINE THYROID DOSES FOR LOCATIONS OTHER THAN ALONG THE PLUME CENTERLINE, SELECT THE APPROPRIATE OVERLAY FOR THE EXISTING TURBULENCE CLASS.
2. MOUNT THE OVERLAY ON THE CONTROL CENTER MAP WITH THE ORIGIN AT THE MAIN STACK.
3. ROTATE THE OVERLAY TO ALIGN THE CENTERLINE WITH DIRECTION OF WIND FLOW.
4. SELECT THE LOCATION(S) OF INTEREST AND RECORD THEM ON WORK SHEET 7 APPENDIX A. ESTIMATE THE DECIMAL FRACTION OF REDUCTION FROM THE CENTERLINE USING THE VALUES ON THE OVERLAY FOR THE SELECTED LOCATION(S). ENTER THE OFF-CENTERLINE DECIMAL FRACTION ON THE DATA SHEET.
5. MULTIPLY THE CENTERLINE DOSE OR CONCENTRATION BY THE DECIMAL FRACTION TO OBTAIN THE OFF CENTERLINE DOSE OR CONCENTRATION AT THE POINT OF INTEREST.
6. POPULATION DISTRIBUTION IS PROVIDED IF NEED FOR POPULATION MAN REM DOSE CALCULATIONS (APPENDIX C)

4/28/82

MPG/MJM/DOC:LHD/LJM

2.2.3 DETERMINATION OF THYROID DOSE RATES FROM FIELD SURVEY DATA.

1. OBTAIN I-131 CONCENTRATION IN AIR NEAR PLUME CENTERLINE FROM FIELD SURVEY DATA.
2. CALCULATE THE INHALATION DOSE RATE.

$$\text{CONCENTRATION } \frac{\text{UCI}}{\text{CC}} \times 1.692 \times 10^9 \frac{\text{CC}}{\text{UCI}} \times \frac{\text{HR}}{\text{HR}} = \text{DOSE RATE } \frac{\text{MR}}{\text{HR}}$$

RECORD THIS DOSE RATE ON WORK SHEET 7 APPENDIX A AT THE APPROPRIATE DISTANCE.

3. FOR MAIN STACK RELEASES USE THE APPROPRIATE OVERLAY TO DETERMINE THE DECIMAL FRACTION FOR THE FIELD SURVEY LOCATION. FIND THE TOTAL CENTERLINE DOSE RATE AT THE LOCATION.

$$\text{TOTAL CENTERLINE DOSE RATE} = \frac{\text{DOSE RATE FROM FIELD SURVEY DATA}}{\text{DECIMAL FRACTION}}$$

4. SELECT THE APPROPRIATE GRAPH FOR THE TURBULENCE CLASS AND RELEASE POINT IN APPENDIX D TO DETERMINE OTHER DOSE RATES FOR VARIOUS DISTANCES FROM THE RELEASE POINT. RECORD THIS DATA ON WORK SHEET 7, APPENDIX A.

2.3 GROUND DEPOSITION CONCENTRATION

2.3.1 ASSESSMENT OF OFF-SITE PLUME CENTERLINE DEPOSITION CONCENTRATION

1. OBTAIN MAIN STACK OR COMBINED ROOF VENT I-131, CS-137, SR-89 AND SR-90 ACTIVITY RELEASED FROM THE CHEMISTRY SAMPLING AND ANALYSIS GROUP LEADER. ENTER THIS DATA ON WORK SHEET 8 APPENDIX A.
2. DETERMINE THE ESTIMATED TIME PERIOD OF RELEASE IN HOURS.
3. DETERMINE THE AVERAGE WINDSPEED FOR THE TIME INTERVAL. USE THE APPROPRIATE AEROVANE AS LISTED BELOW:

FOR MAIN STACK RELEASES:
320° AEROVANE READING OR

75° AEROVANE READING MULTIPLIED BY 2 OR
HILLPOLE AEROVANE READING MULTIPLIED BY 2

FOR ROOF VENT RELEASES:

75° AEROVANE READING OR
HILLPOLE AEROVANE READING OR
320° AEROVANE READING DIVIDED BY 2

4. DETERMINE THE DIRECTION WHICH THE WIND IS BLOWING BY ADDING 180 DEGREES TO AVERAGE WIND DIRECTION FROM THE RECORDER. IF THE SUM IS GREATER THAN 360 DEGREES, SUBTRACT 360 DEGREES.
5. DETERMINE THE TURBULENCE CLASS BY EXAMINING THE WIND DIRECTION TRACE AND COMPARING THIS WITH THE TURBULENCE CLASS EXAMPLES SHOWN IN APPENDIX C.
6. CALCULATE RELEASE RATE DIVIDED BY THE WINDSPEED, MULTIPLIED BY THE FACTOR. (FACTOR = 1.0 FOR CALCULATING DEPOSITION)
7. USE THE APPROPRIATE GRAPH FOR THE RELEASE POINT AND TURBULENCE CLASS TO FIND OFF-SITE PLUME CENTERLINE DEPOSITION CONCENTRATION. ENTER THIS DATA ON WORK SHEET 9, APPENDIX A.

2.3.2 OFF-PLUME CENTERLINE DEPOSITION CONCENTRATION CALCULATIONS.

1. TO DETERMINE DEPOSITION CONCENTRATIONS FOR LOCATIONS OTHER THAN ALONG THE PLUME CENTERLINE, SELECT THE APPROPRIATE OVERLAY FOR THE EXISTING TURBULENCE CLASS.
2. MOUNT THE OVERLAY ON THE CONTROL CENTER MAP WITH THE ORIGIN AT THE MAIN STACK.
3. ROTATE THE OVERLAY TO ALIGN THE CENTERLINE WITH DIRECTION OF WIND FLOW.
4. SELECT THE LOCATION(S) OF INTEREST AND FROM THE VALUES ON THE OVERLAY ESTIMATE THE DECIMAL FRACTION OF REDUCTION FROM THE CENTERLINE. ENTER DATA ON WORKSHEET 10, APPENDIX A.
5. MULTIPLY THE CENTERLINE DEPOSITION BY THE DECIMAL FRACTION TO OBTAIN THE OFF CENTERLINE DEPOSITION AT THE POINT OF INTEREST.

2.4 DETERMINATION OF PLUME TRAVEL TIME

1. TO DETERMINE THE TIME FOR THE PLUME TO REACH A DISTANCE:

$$\text{TIME (HOURS)} = \frac{\text{RECEPTOR DISTANCE (MILES)}}{\text{WINDSPEED (MILES PER HOUR)}}$$

2.5 DETERMINATION OF ATMOSPHERIC DISPERSION COEFFICIENTS (X/Q)

NOTE: USE APPENDIX E FOR DISPERSION FACTORS

2.5.1 UNDEPLETED (X/Q) FOR WHOLE BODY DOSES.

1. MAIN STACK RELEASES:

$$\text{-- (SEC/M)}^3 = \frac{\text{DISPERSION FACTORS FROM TABLE 1 X } 10^{-8}}{\text{WINDSPEED (MILES PER HOUR)}}$$

2. ROOF VENT RELEASES:

$$\text{-- (SEC/M)}^3 = \frac{\text{DISPERSION FACTORS FROM TABLE 2 X } 10^{-8}}{\text{WINDSPEED (MILES PER HOUR)}}$$

2.5.2 DEPLETED (X/Q) FOR THYROID DOSES.

1. MAIN STACK RELEASES:

$$\text{-- (SEC/M)}^3 = \frac{\text{DISPERSION FACTORS FROM TABLES 3 X } 10^{-10}}{\text{WINDSPEED (MILES PER HOUR)}}$$

2. ROOF VENT RELEASES:

$$\text{-- (SEC/M)}^3 = \frac{\text{DISPERSION FACTORS FROM TABLES 4 X } 10^{-11}}{\text{WINDSPEED (MILES PER HOUR)}}$$

EP-316
Page 25 of 71, Rev. 2
4/28/82
MPG/MJM/DOC:LHD/LJM

APPENDIX A
DATA SHEET 1
WORKSHEETS 1-10

4/28/82

MPG/MJM/DOC:LHD/LJM

DATA SHEET 1

METEOROLOGY

DATE _____

TIME _____

WINDSPEED

320° _____ MPH

75° _____ MPH

HILLPOLE _____ MPH

WIND DIRECTION

20 MIN AVE _____

0

WIND FROM _____

TURBULENCE CLASS _____

RELEASE DATA

	NORMAL COUNT RATE MONITOR	PRESSURE CORRECTION EQUIP	FLOW RATE	HIGH RADIATION MONITOR
MAIN STACK	_____ CPS	_____	_____ CFM	_____ MR/HR
U2 ROOF VENT	_____ CPM	_____	_____ CFM	_____ MR/HR
U3 ROOF VENT	_____ CPM	_____	_____ CFM	_____ MR/HR

4/28/82

MPG/MJM/DOC:LHD/LJM

WORKSHEET 1
PART 13 & 2.1.1I. MAIN STACK OR ROOF VENT RELEASES NOBLE GASES SOURCE OF
RELEASE

COUNT RATE

FLOW RATE CFM

PRESSURE CORRECTION FACTOR

CORRECTED COUNT RATE

UCI/SEC (FROM GRAPHS) RELEASE RATE
(OR FROM SECTION 2.1.1)UCI
SEC

WIND SPEED

MAIN STACK

320° READING
2 X 75° READING
2 X HILLPOLE READING

ROOF VENT

320° READING - 2
75° READING
HILLPOLE READING

____MPH

WIND DIRECTION (FROM)

WIND DIRECTION + 180 (IF > 180 DEG. SUBT. 180)

RELEASE RATE/WINDSPEED

TURBULENCE CLASS

NAME: _____

DATE: _____

TIME: _____

PLUME CENTERLINE DOSE RATES

NAME: _____
DATE: _____
TIME: _____

EP-316

Page 29 of 71, Rev. 2

4/28/82

MPG/MJM/DOC:LHD/LJM

WORKSHEET 3
PART 2.1.2

OFF CENTERLINE DOSE RATES

LOCATION	FRACTION	UCI/CC	MR/HR	POPULATION	MAN-REM

$$\text{MAN-REM} = \frac{(\text{MR}) \times (\text{T HR}) \times (\text{POPULATION})}{(\text{HR}) \times 1000} \quad (\text{IN SECTOR})$$

NAME: _____

DATE: _____

TIME: _____

WORKSHEET 4
PART 2.1.3

REFINED ASSESSMENT OF TOTAL NOBLE GAS
RELEASE FROM HIGH RANGE MONITORS AND
ISOTOPIC FRACTIONAL ABUNDANCE

ISOTOPE

ABUNDANCE X CONVERSION =

KR-85	.12
KR-85M	7.3
KR-87	55.0
KR-88	81.0
XE-131M	.16
XE-133	.70
XE-133M	1.60
XE-135	13.0
XE-135M	24.0
XE-137	7.8
XE-138	36.0

SUM=-----

FACTOR = $\frac{1}{\text{SUM}}$

NET MR/HR X FLOW CFM X FACTOR X 472 = $\frac{\text{UCI}}{\text{SEC}}$

----- X ----- X ----- X 472 = -----

RELEASE SOURCE -----

NAME: -----

DATE: -----

TIME: -----

WORKSHEET 5
PARTS 1.3.2 & 2.2.1

II. THYROID DOSE DUE TO IODINE RELEASES

SOURCE OF RELEASE _____

IODINE ACTIVITY _____ UCI I-131

TIME PERIOD _____

FINISH _____
START _____

_____ UCI I-133

_____ HRS

AVE. WIND SPEED _____

MAIN STACK

320' READING
2 X 75' READING
2 X HILLPOLE READING

ROOF VENT

320' READING - 2
75' READING
HILLPOLE READING

_____ MPH

WIND DIRECTION (FROM) _____

0

WIND DIRECTION + 180 _____

(IF GREATER THAN 360 DEGREES, SUBT 360 DEGREES) _____

TURBULENCE CLASS _____

INHALATION FACTOR (UCI I-131)(47)+(UCI I-133)(11.3) _____

INHALATION FACTOR _____

RELEASE TIME (HRS) X WINDSPEED (MPH) _____

UCI

HR-MPH _____

INGESTION FACTOR = (UCI I-131)(33500)+(UCI I-133)(311) _____

INGESTION FACTOR _____

RELEASE TIME (HRS) X WINDSPEED(MPH) _____

UCI

HR-MPH _____

NAME: _____

EP-316

Page 32 of 71, Rev. 2

4/28/82

MPG/MJM/DOC:LHD/LJM

DATE:

TIME:

WORKSHEET 6
PARTS 1.3.2 & 2.2.1

THYROID DOSE RATE MR/HR

DISTANCE	MAIN STACK		ROOF VENT 2		ROOF VENT 3		TOTAL	
	INGEST.	INHAL.	INGEST.	INHAL.	INGEST.	INHAL.	INGEST.	INHAL.

NAME: _____

DATE: _____

TIME: _____

4/28/82

MPG/MJM/DOC:LHD/LJM

WORKSHEET 7
PARTS 2.2.2 & 2.2.3

OFF PLUME CENTERLINE THYROID DOSE RATES

TOTAL CENTER LINE		DOSE RATE		POPULATION	MAN-REM
LOCATION	DOSE RATE	ERACTION	MB/HR		

FIELD SURVEY $\text{UCI} \times 1.692 \times 10^9 = \text{INHALATION DOSE RATE} \frac{\text{MB}}{\text{HR}}$
 CONCENTRATION CC

MAN REM = $\frac{\text{MB}}{\text{HR}} \times \text{T HR} \times \text{POPULATION IN}$
 $\frac{\text{MB}}{\text{HR}} \times \text{SECTOR}$
 1000

NAME: _____

DATE: _____

ME: _____

4/28/82

MPG/MJM/DOC:LHD/LJM

WORKSHEET 8
PART 2.3.1

III. GROUND DEPOSITION

SOURCE OF RELEASE _____

ACTIVITY

I-131 _____

CS-137 _____

SR-89 _____

SR-90 _____

TIME PERIOD

FINISH _____
START _____

_____ HRS

AVE. WIND SPEED

MAIN STACK

320° READING

2 X 75° READING

2 X HILLPOLE READING

ROOF VENT

320° READING - 2

75° READING

HILLPOLE READING

_____ MPH

WIND DIRECTION (FROM) _____

0

WIND DIRECTION + 180

(IF GREATER THAN 360 DEGREES, SUBT. 360 DEGREES)

TURBULENCE CLASS _____

RELEASE RATE/WINDSPEED

_____ UCI
_____ HR-MPH

NAME: _____

EP-316
Page 36 of 71, Rev. 2
4/28/82
MPG/MJM/DOC:LHO/LJM

DATE: _____

TIME: _____

MPG/MJM/DOC:LHD/LJM

PLUME CENTERLINE DEPOSITION CONCENTRATION RATE

UCI/M ² -HR

DISTANCE MAIN STACK BOQE_VENI_2 BOQE_VENI_3 IQIAL

NAME: _____

DATE: _____

TIME: _____

EP-316

Page 38 of 71, Rev. 2

4/28/82

MPG/MJM/DOC:LHD/LJM

WORKSHEET 10
PART 2.3.2

OFF-PLUME CENTER LINE DEPOSITION

DECIMAL	CENTERLINE GROUND DEPOSITION	GROUND DEPOSITION RATE 2
LOCATION	ERACTION	RATE
		UCI/M-HR

NAME: _____

DATE: _____

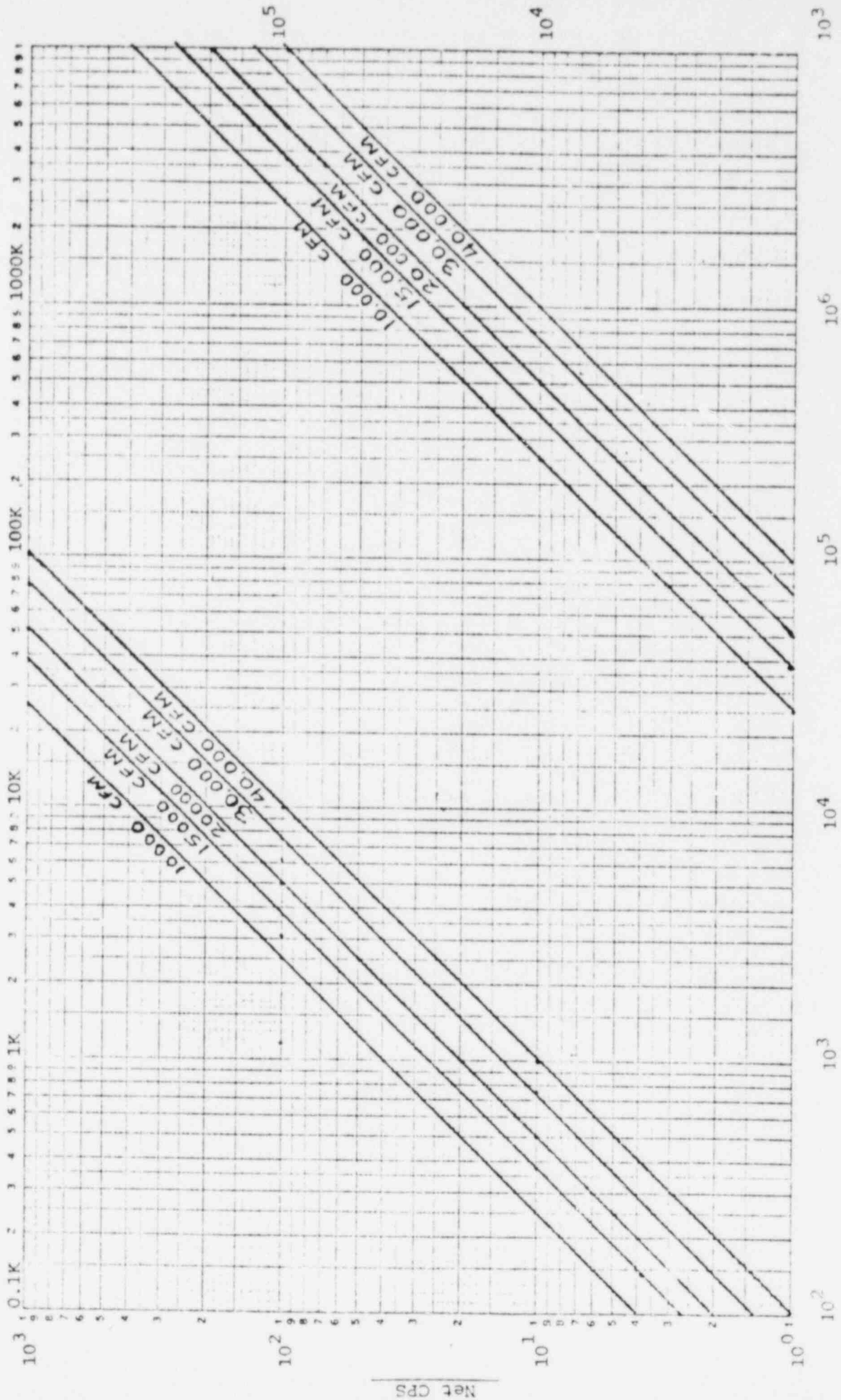
TIME: _____

APPENDIX B

CALIBRATION CURVES

1. MAIN STACK
2. 2A & 2B ROOF VENTS
3. 2A & 3C ROOF VENTS
4. HIGHEST OFF-SITE DOSE
RATE VS. COUNT RATE RAPID

MAIN STACK



Bases: 1. 72 hour delay

2. Main Stack Dilutions (10, 15, 20, 30, 40, cfm x 10^3)

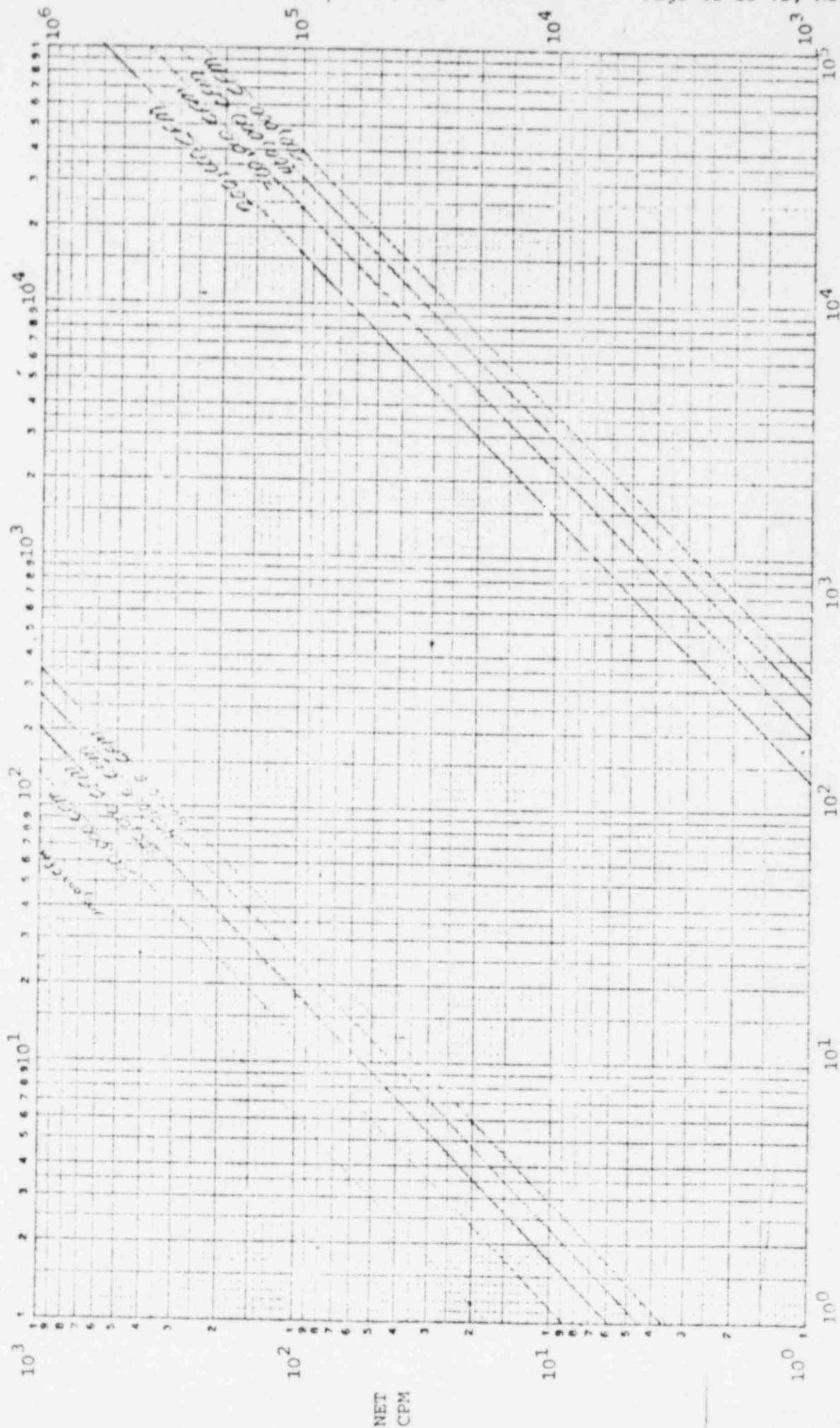
3. MEDN-12237

Calc.: uCi/sec Fission Gases

Main Stack

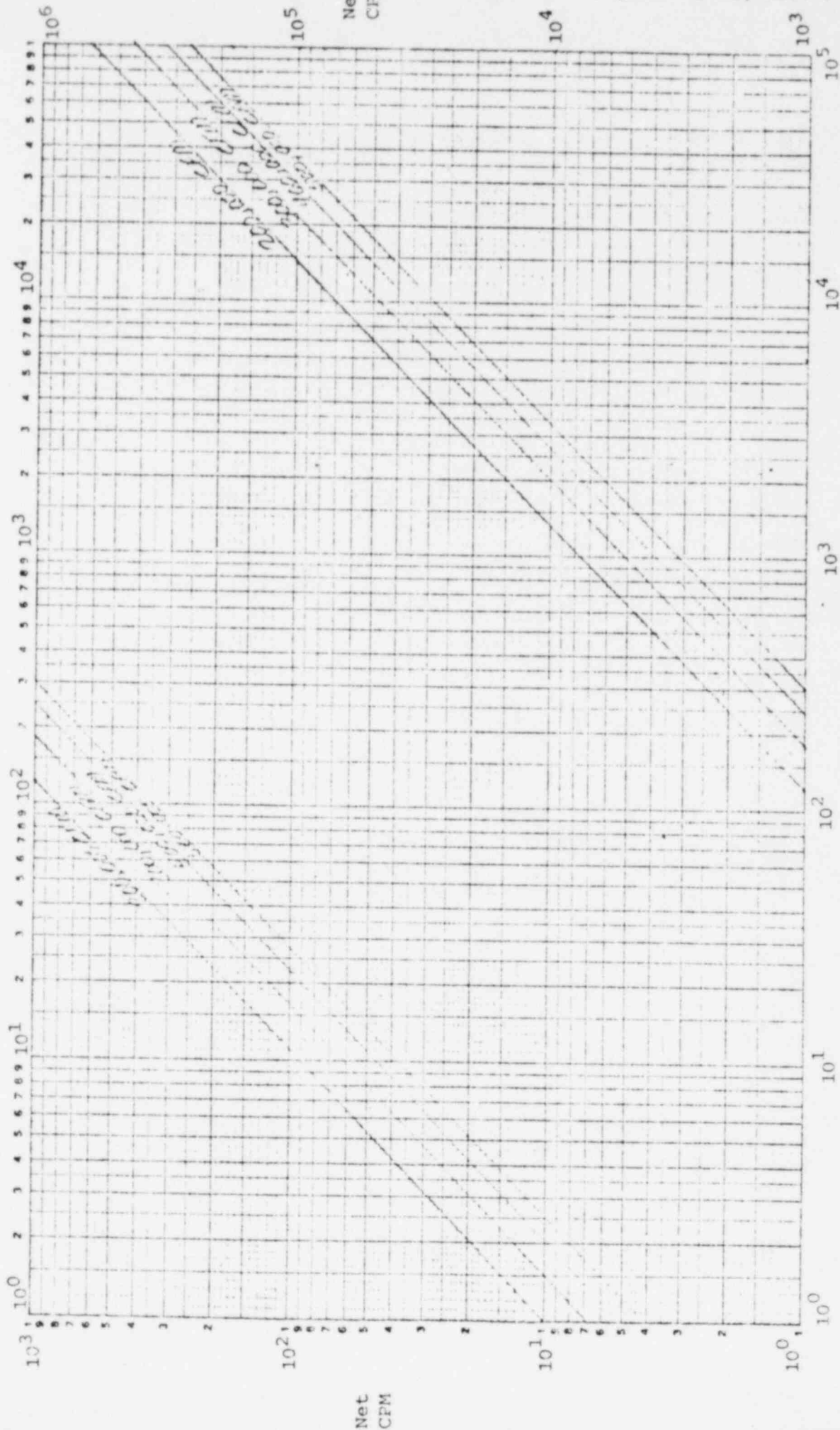
(approx. for A&B channels averaged)

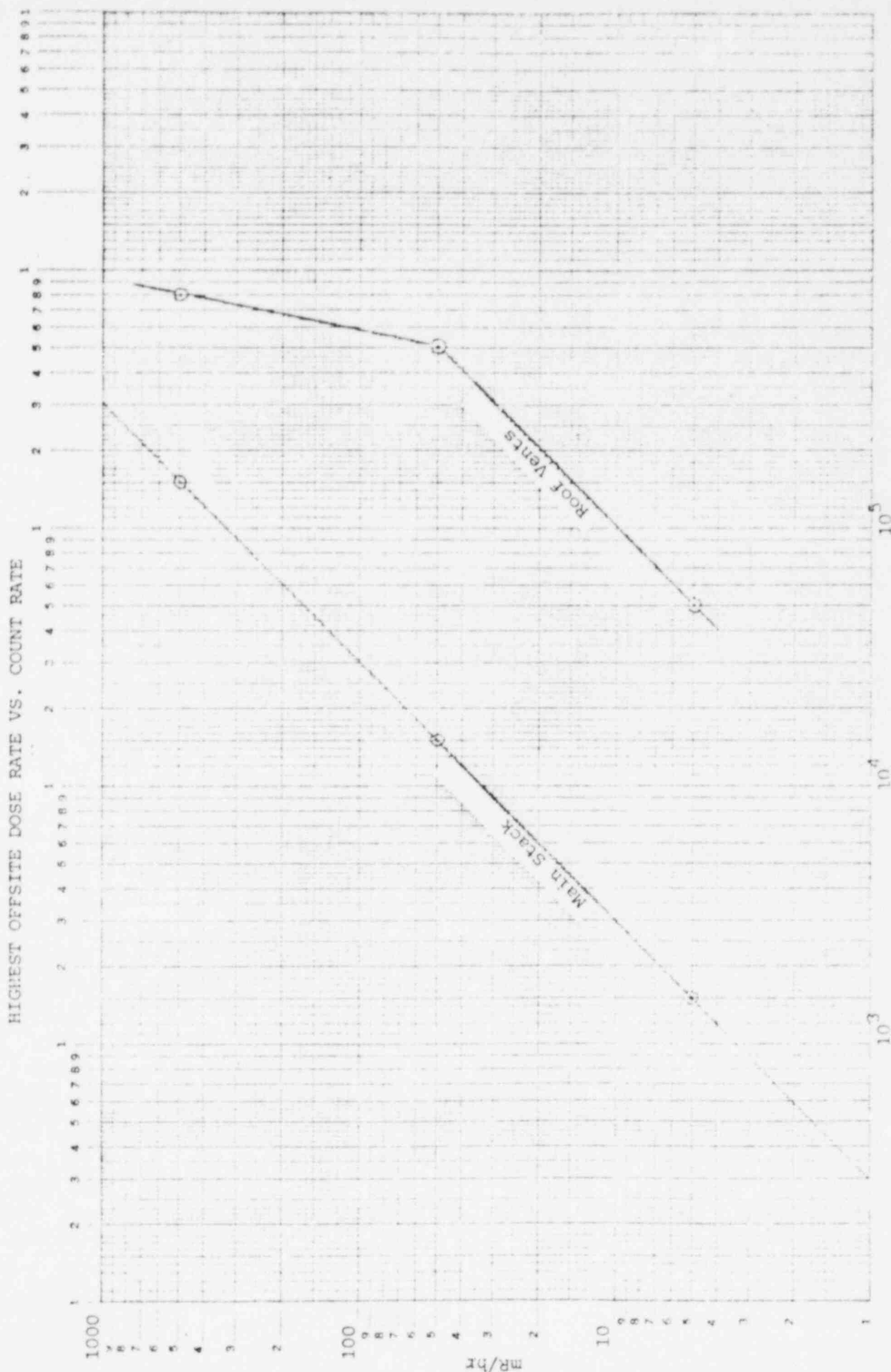
2A & 2B Roof Vents



uCi/sec as Kr^{85}
 Aver. of 2A & 2B

3A & 3B Roof Vents





For Main Stack:
 Dose Rate = CPS
 (mr/hr) 300

Main Stack CPS
 U/2 or U/3 Roof Vent CPM

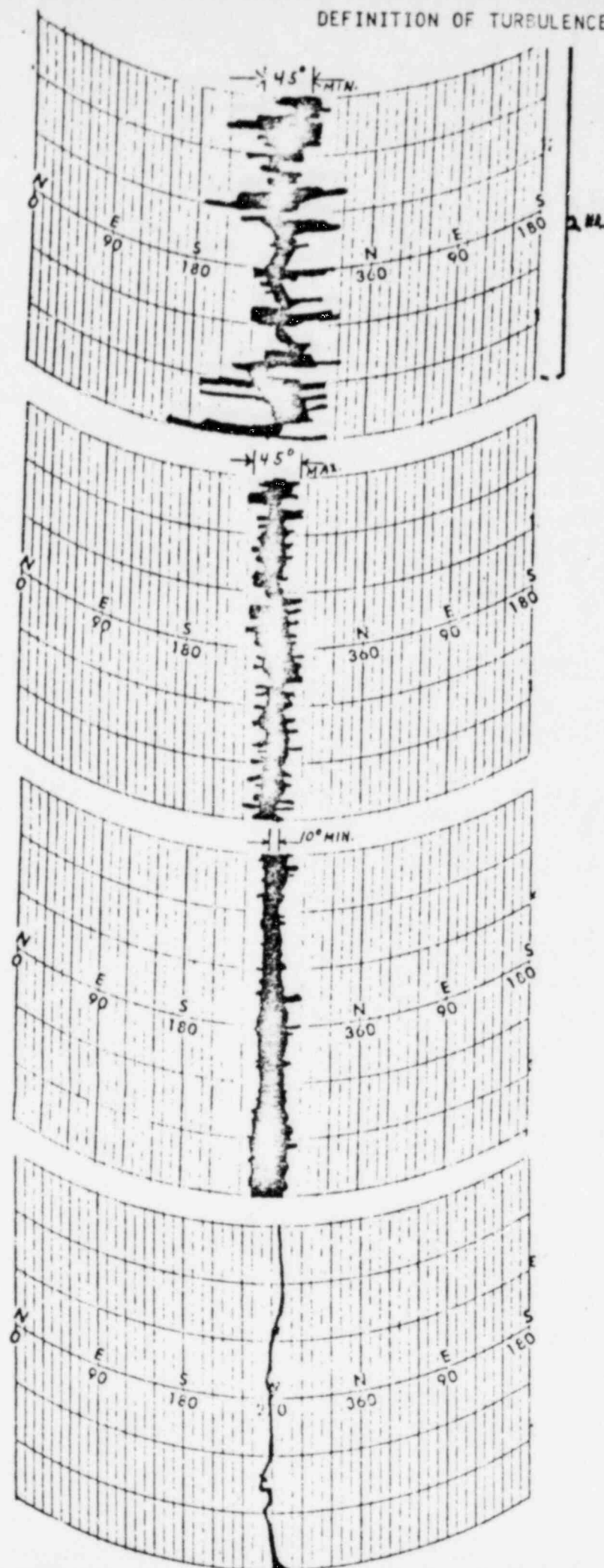
APPENDIX C

1. TURBULENCE CLASSES
2. POPULATION DISTRIBUTION

DEFINITION OF TURBULENCE CLASSES

EP-316

Page 45 of 71, Rev. 2



CLASS I or III

LARGE, LAZY CONVECTIVE EDDIES CAUSED BY HEATING AIR CLOSE TO THE GROUND. MOST FREQUENT ON SUMMER MORNINGS WHEN WIND SPEEDS ARE LIGHT AND LAKE BREEZES ARE NOT PRESENT. MINIMUM RANGE OF FLUCTUATIONS 45°. NO MAXIMUM LIMIT.

CLASS II

TYPICAL DAYTIME TRACE HAVING A MIXTURE OF CONVECTIVE AND MECHANICAL TURBULENCE. FLUCTUATIONS ARE MORE SUBDUED WITH ON-SHORE WINDS THAN OFFSHORE. RANGE OF FLUCTUATIONS 10°-45°.

CLASS IV

TYPICAL TURBULENCE ASSOCIATED WITH OVERCAST, STORMY, OR NOCTURNAL SITUATIONS HAVING RELATIVELY STRONG WINDS. MECHANICAL TURBULENCE PREDOMINATES. MINIMUM RANGE 10°. NO MAXIMUM LIMIT.

CLASS V

CLASSIC TEMPERATURE INVERSION CASE WITH ALMOST NO TURBULENCE EITHER NOCTURNAL OR OR ASSOCIATED WITH DAYTIME LAKE BREEZES, ESPECIALLY IN THE SPRING. SHORT-TERM FLUCTUATIONS DO NOT EXCEED 10°, BUT TRACE MAY MEANDER DURING THE HOUR.

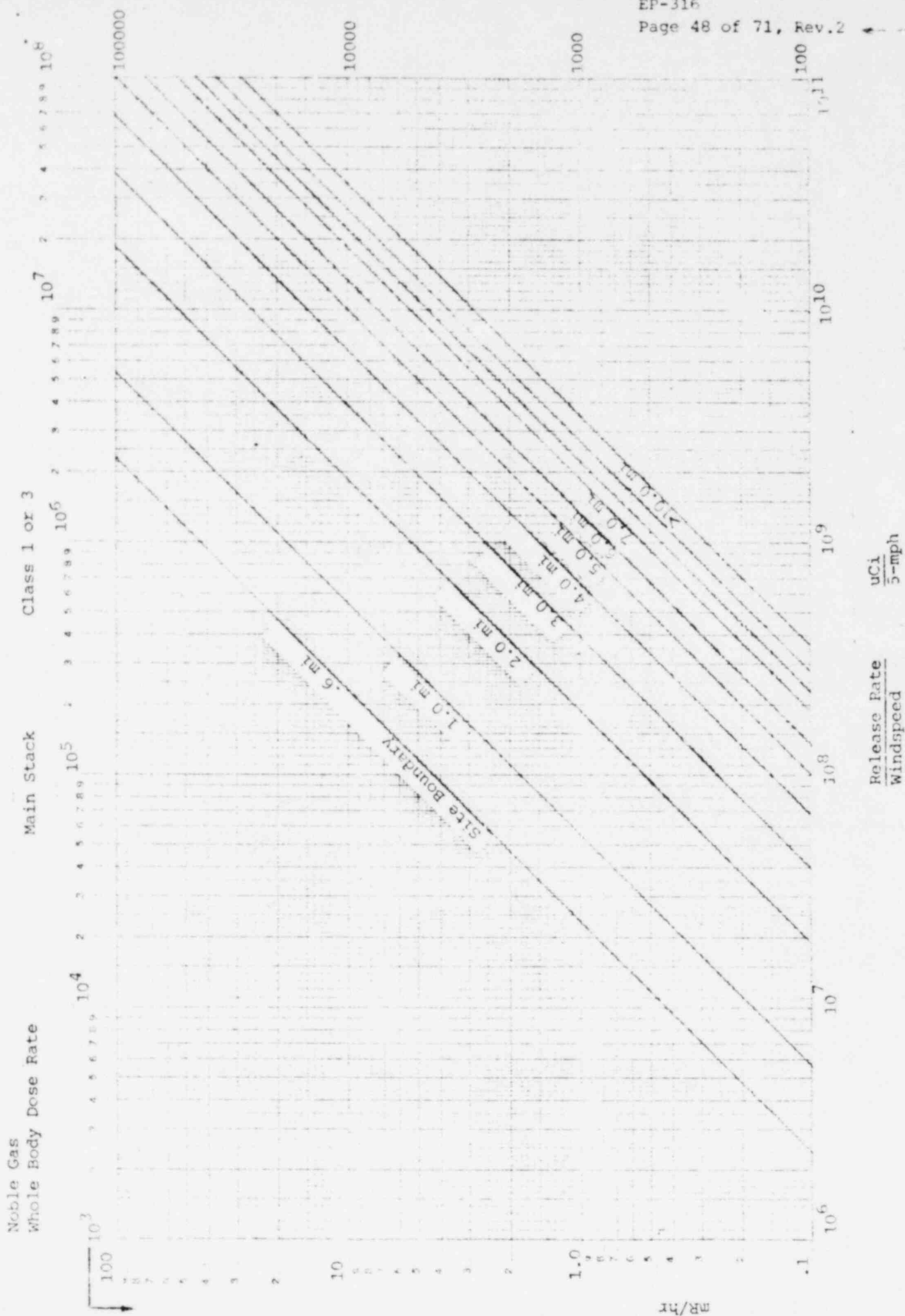
POPULATION DISTRIBUTION WITHIN 10 MILE EMERGENCY PLANNING ZONE

22 1/2° Sector ⁽¹⁾ (Sector Centerline)	1-Mile Zones ⁽¹⁾ (See Figure 10.2)									
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
A (N)	0	0	204	109	123	164	153	297	572	554
B (NNE)	0	0	109	86	95	227	232	540	590	648
C (NE)	0	45	114	173	105	282	99	171	392	162
D (ENE)	0	13	63	97	308	220	165	144	275	234
E (E)	0	46	237	148	190	266	148	365	405	202
F (ESE)	0	0	266	101	220	54	312	238	212	491
G (SE)	0	0	4	34	57	199	361	532	319	238
H (SSE)	3	11	3	34	235	213	501	529	482	468
J (S)	0	34	42	165	81	81	146	1061	890	630
K (SSW)	0	62	22	67	314	218	221	288	258	134
L (SW)	0	42	22	658	734	440	224	294	272	311
M (WSW)	8	14	106	232	118	129	132	255	173	235
N (W)	8	59	25	112	384	1165	230	148	70	429
P (WNW)	95	50	6	126	126	98	244	224	123	134
Q (NW)	34	101	98	313	146	82	90	81	266	154
R (NNW)	67	17	32	77	5	230	432	158	275	630

(1) Sector and zone designations are per Table J-1 of NUREG-0654.

APPENDIX D - DISEASE RATE CURVES

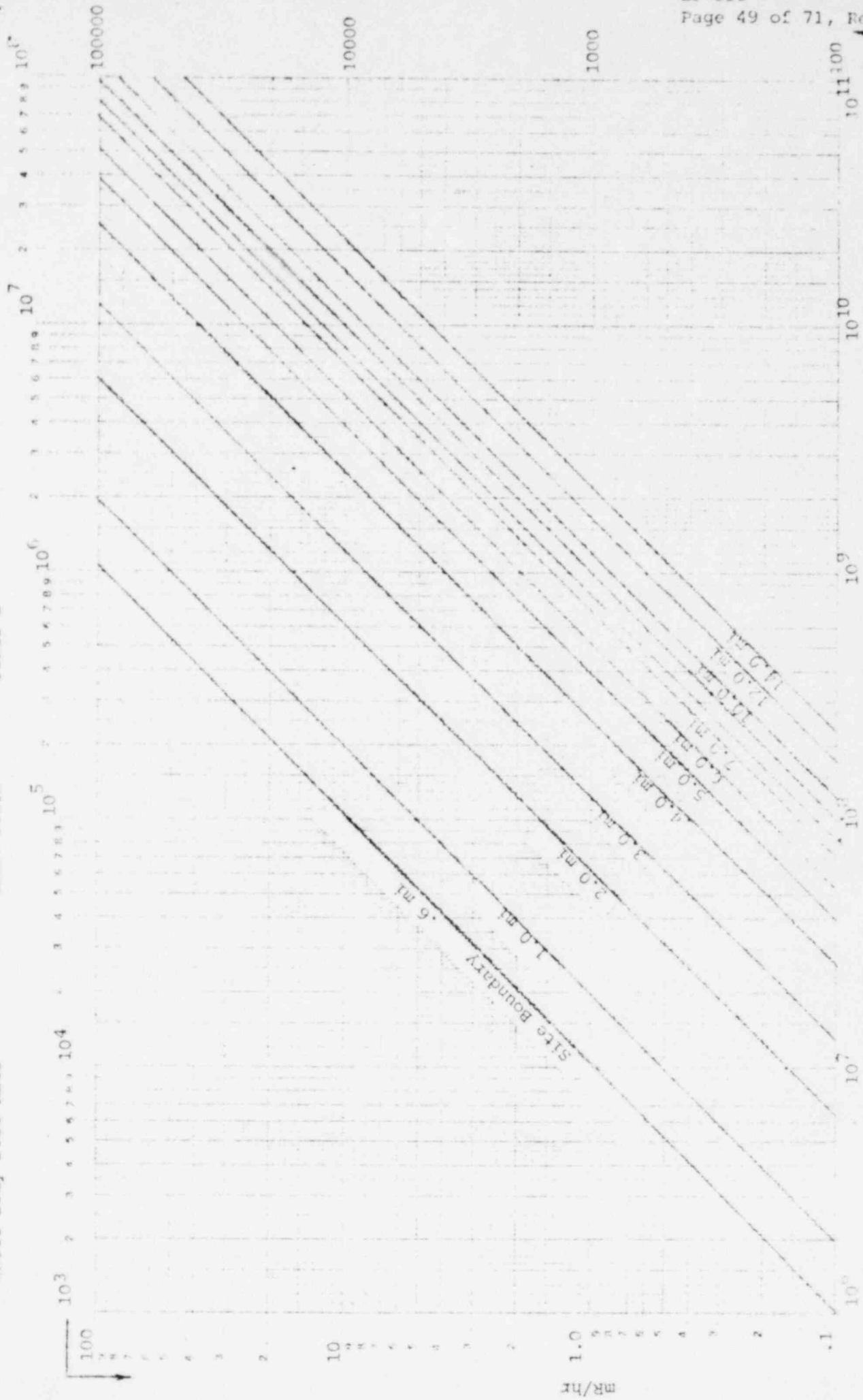
1	NOBLE GAS MAIN STACK CLASS 1 OR 3	3
2	"	2
3	"	4
4	"	5
5	NOBLE GAS ROOF VENT CLASS 1 OR 3	3
6	"	2
7	"	4
8	"	5
9	THYROID ROOF MAIN STACK CLASS 1 OR 3	3
10	"	2
11	"	4
12	"	5
13	THYROID ROOF VENT CLASS 1 OR 3	3
14	"	2
15	"	4
16	"	5



able Gas
Whole Body Dose Rate

Main Stack

Class 2

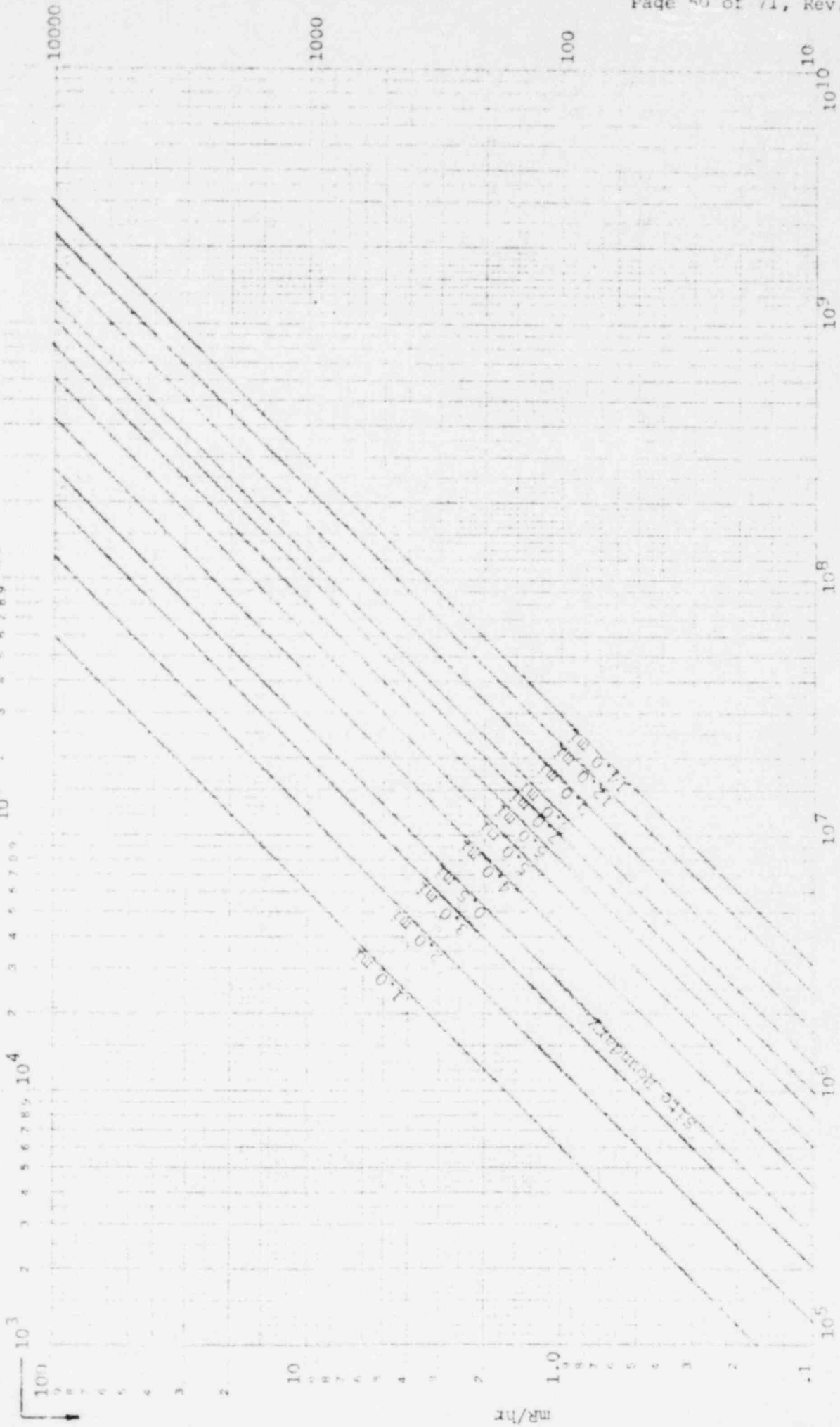


46 15/22

Noble Gas
Whole Body Dose Rate

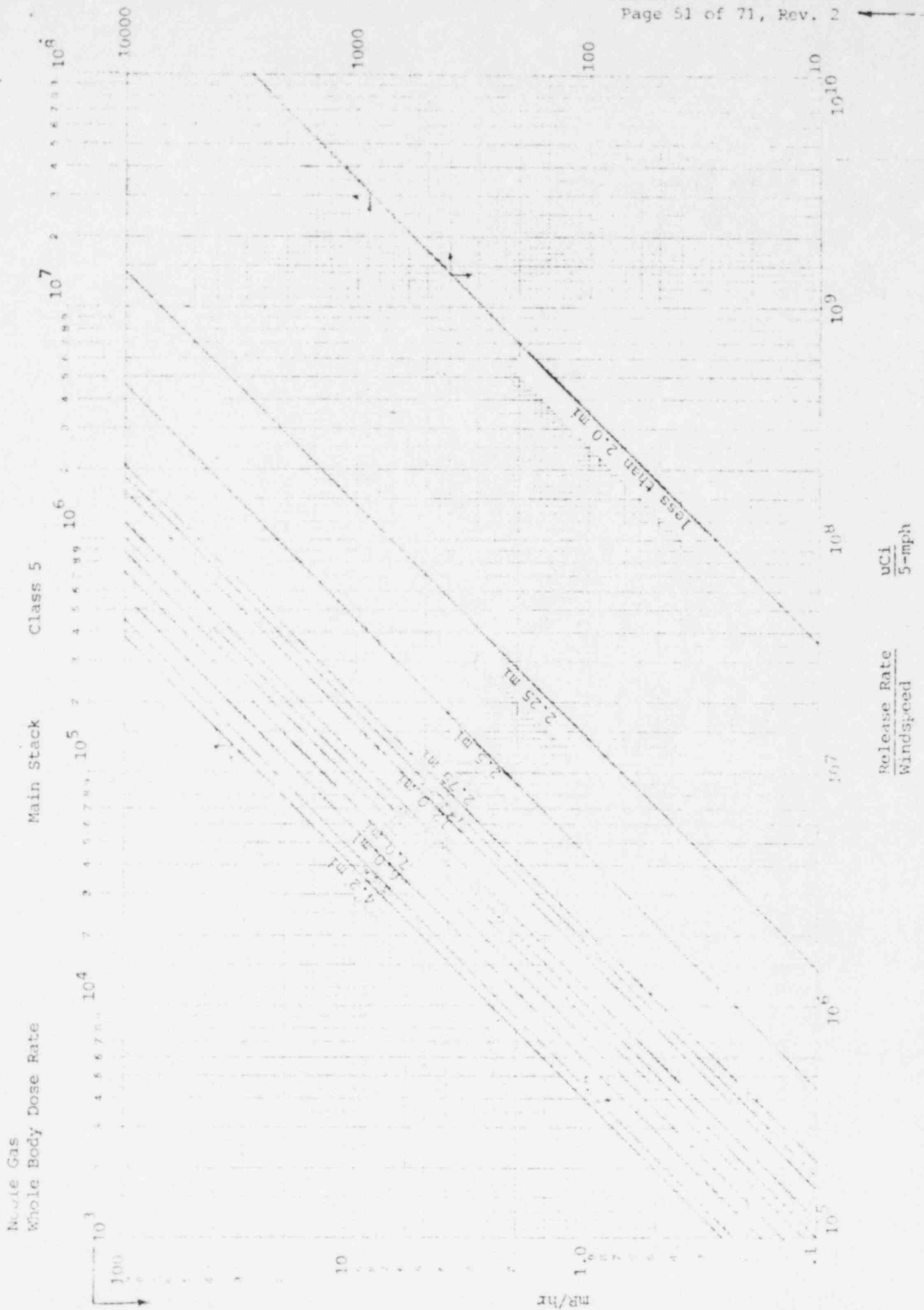
Main Stack

Class 4



Release Rate
Wind Speed

$\frac{uCi}{5-mph}$



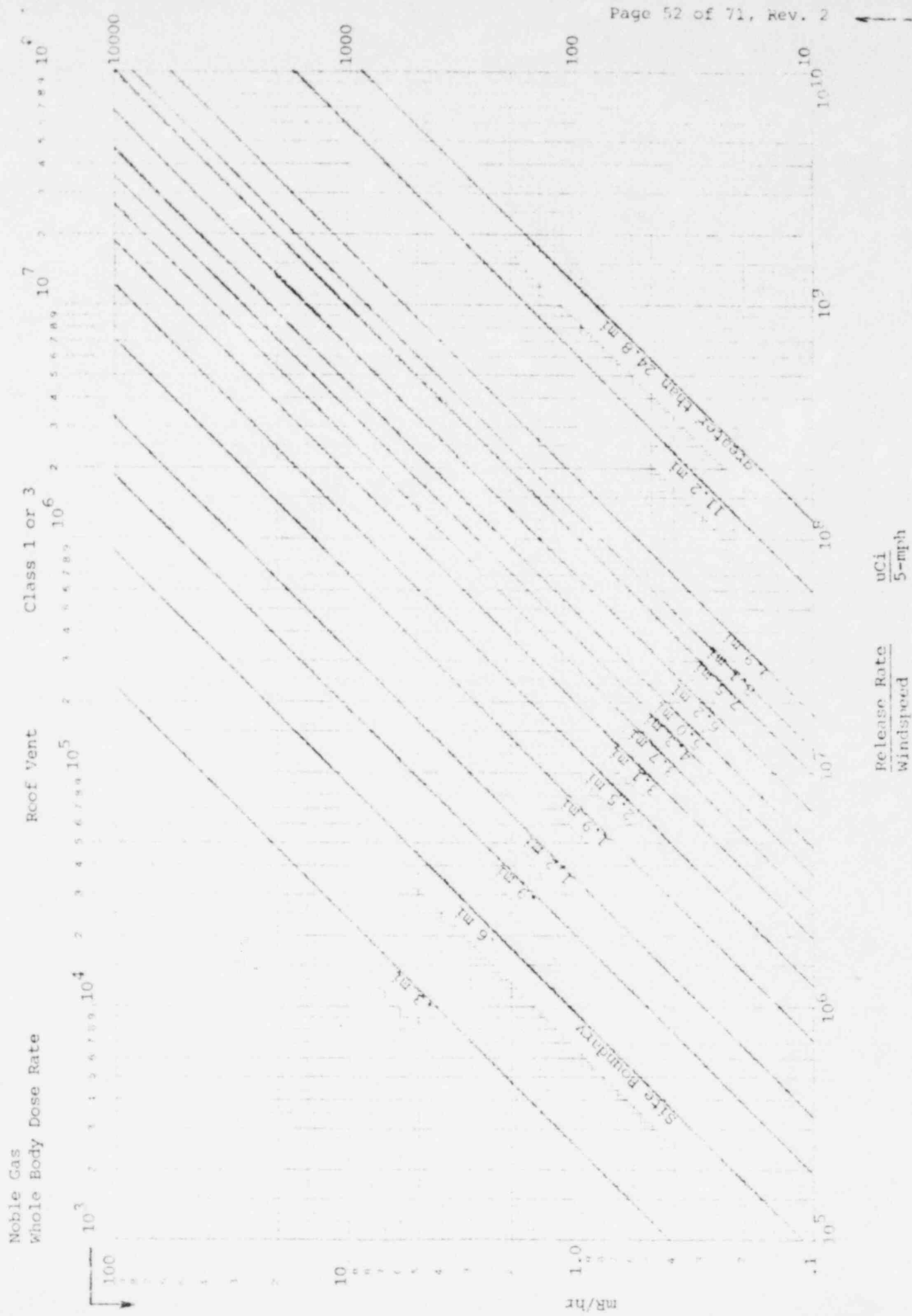
46 72 46

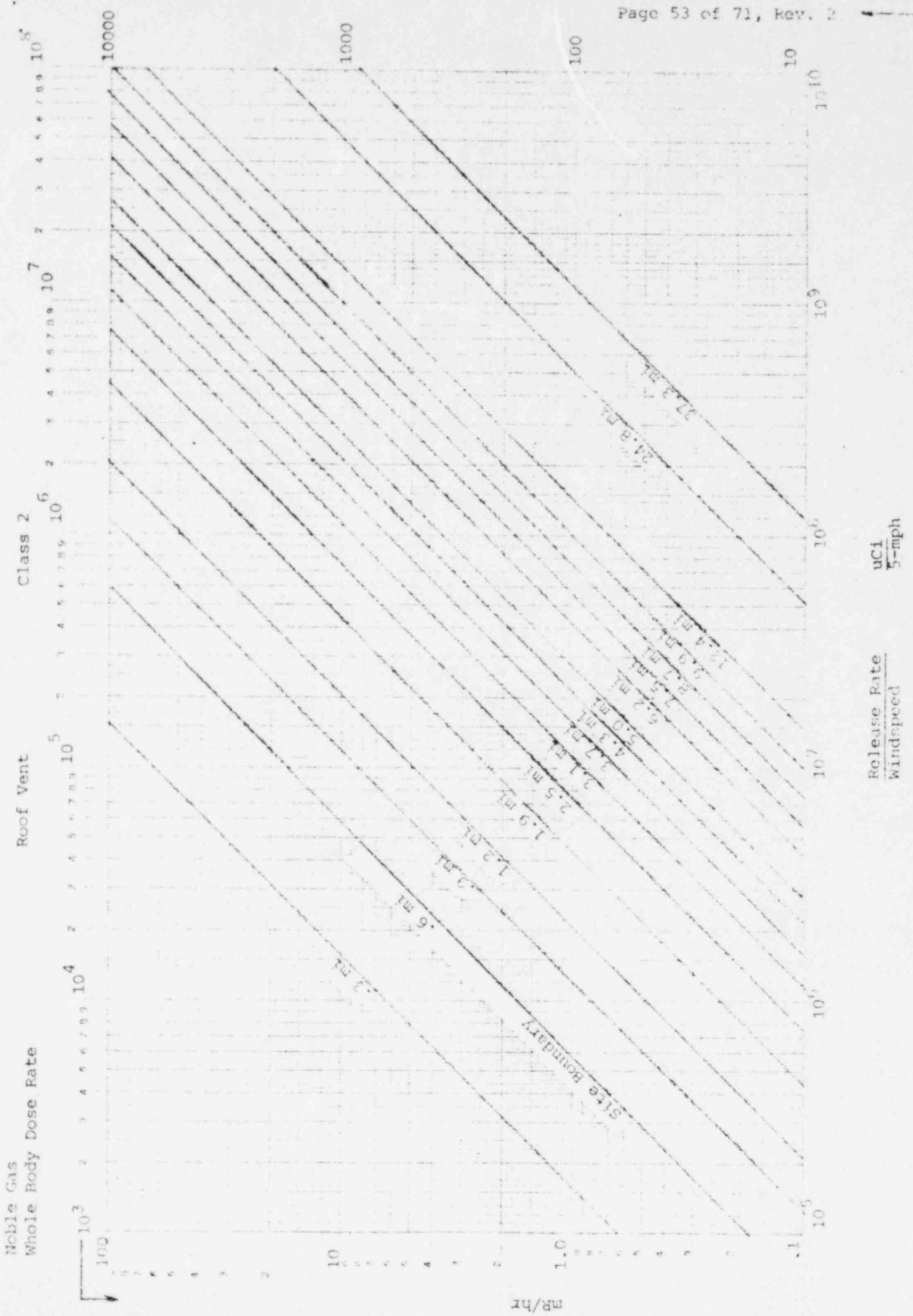
100 200 300 400 500 600 700 800 900 1000

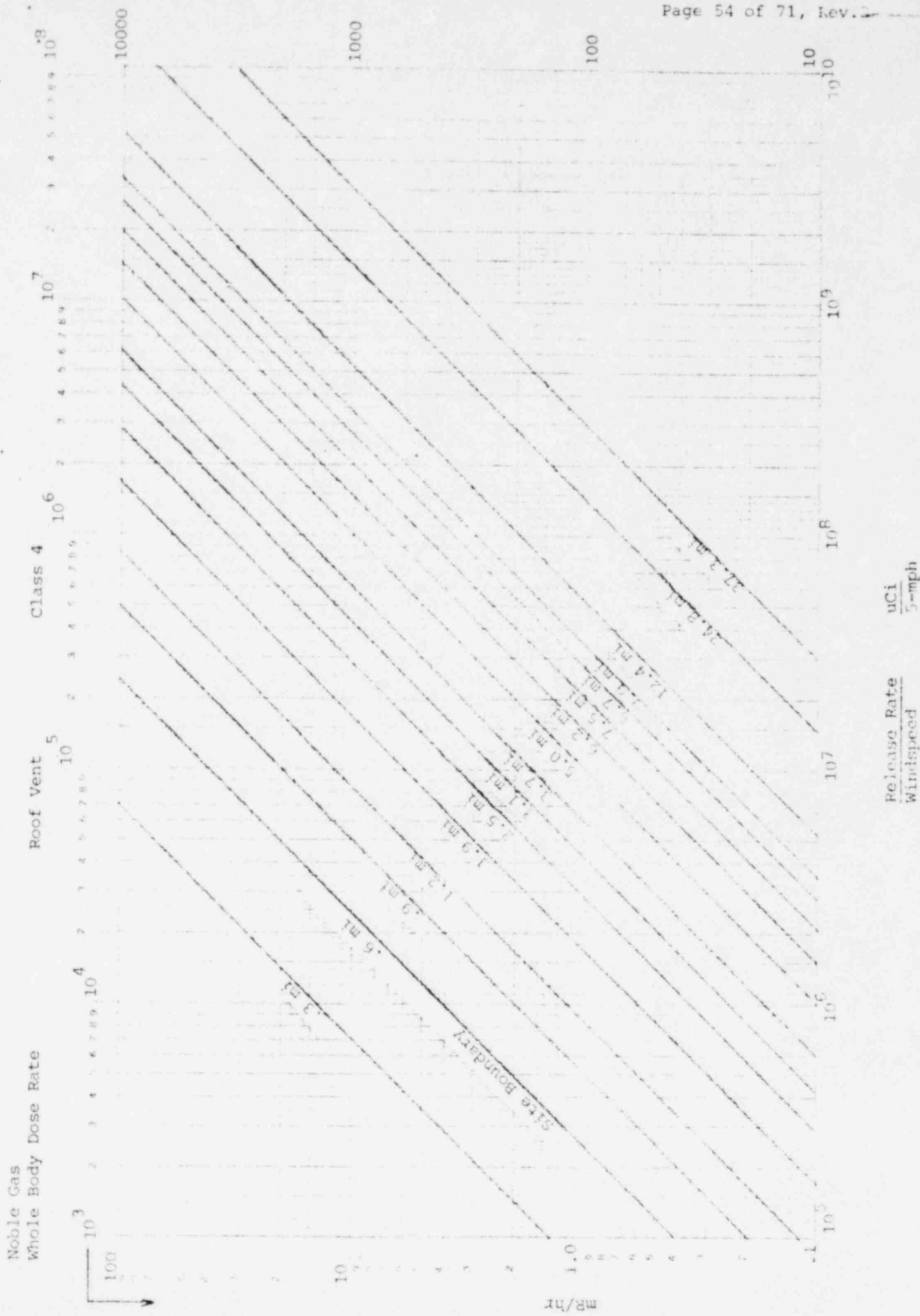
100

100

100







Release Rate
Wind Speed

$\frac{uCi}{5-mph}$

Class 5

Thyroid Dose Rates Due to Iodine Releases
(Ground Deposition)

Main Stack

Class 1 or 3



Release Rate \times factor $\frac{u_{Ci}}{u_{hr-mph}}$

Thyroid Dose Rates Due to Iodine Releases
(Ground Deposition)

Main Stack

Class 2



Release Rate x factor $\frac{\text{mCi}}{\text{hr-mph}}$

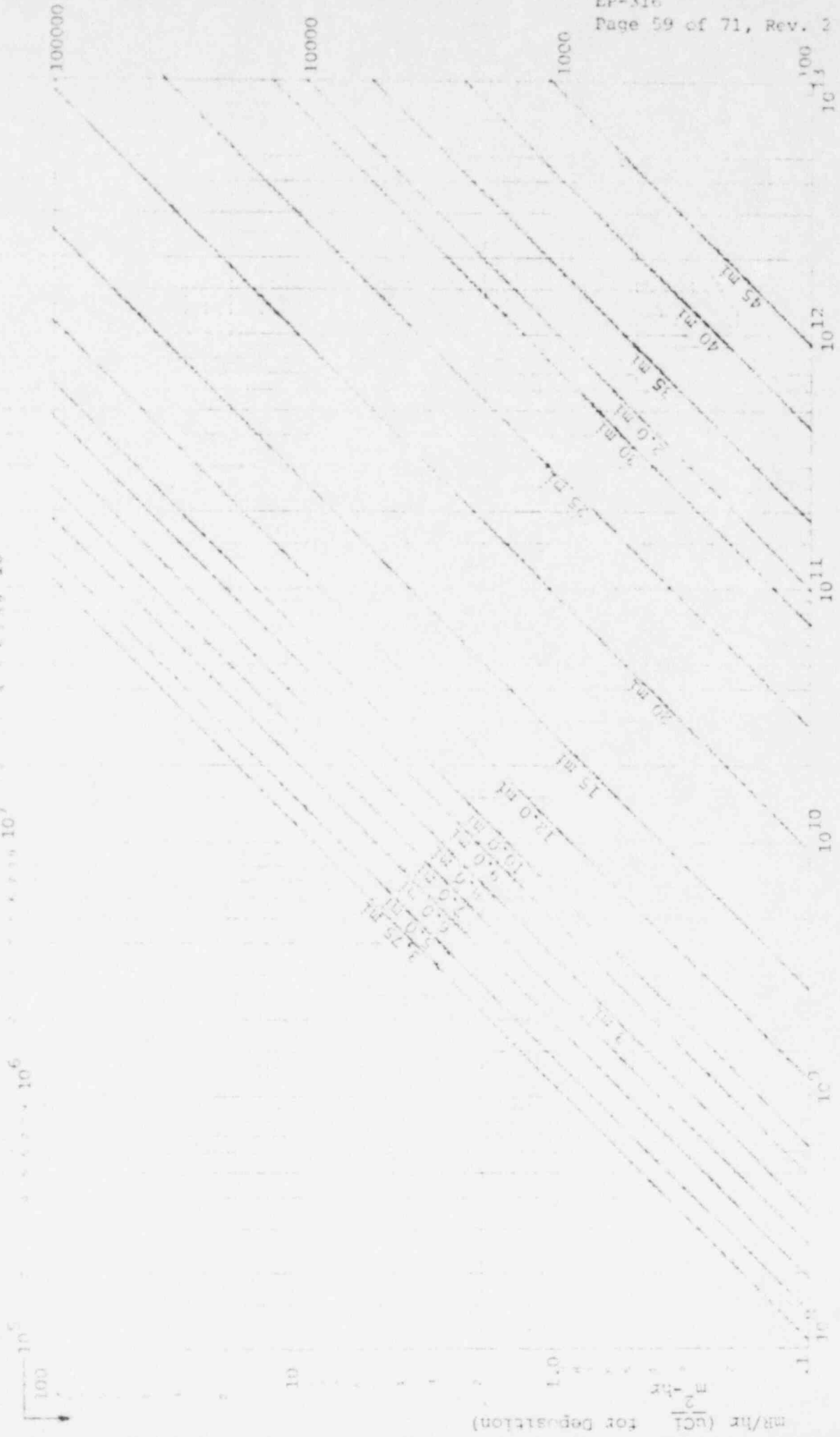
Class 4



Thyroid Dose Rates Due to Iodine Releases
(Ground Deposition)

Main Stack

Class 5



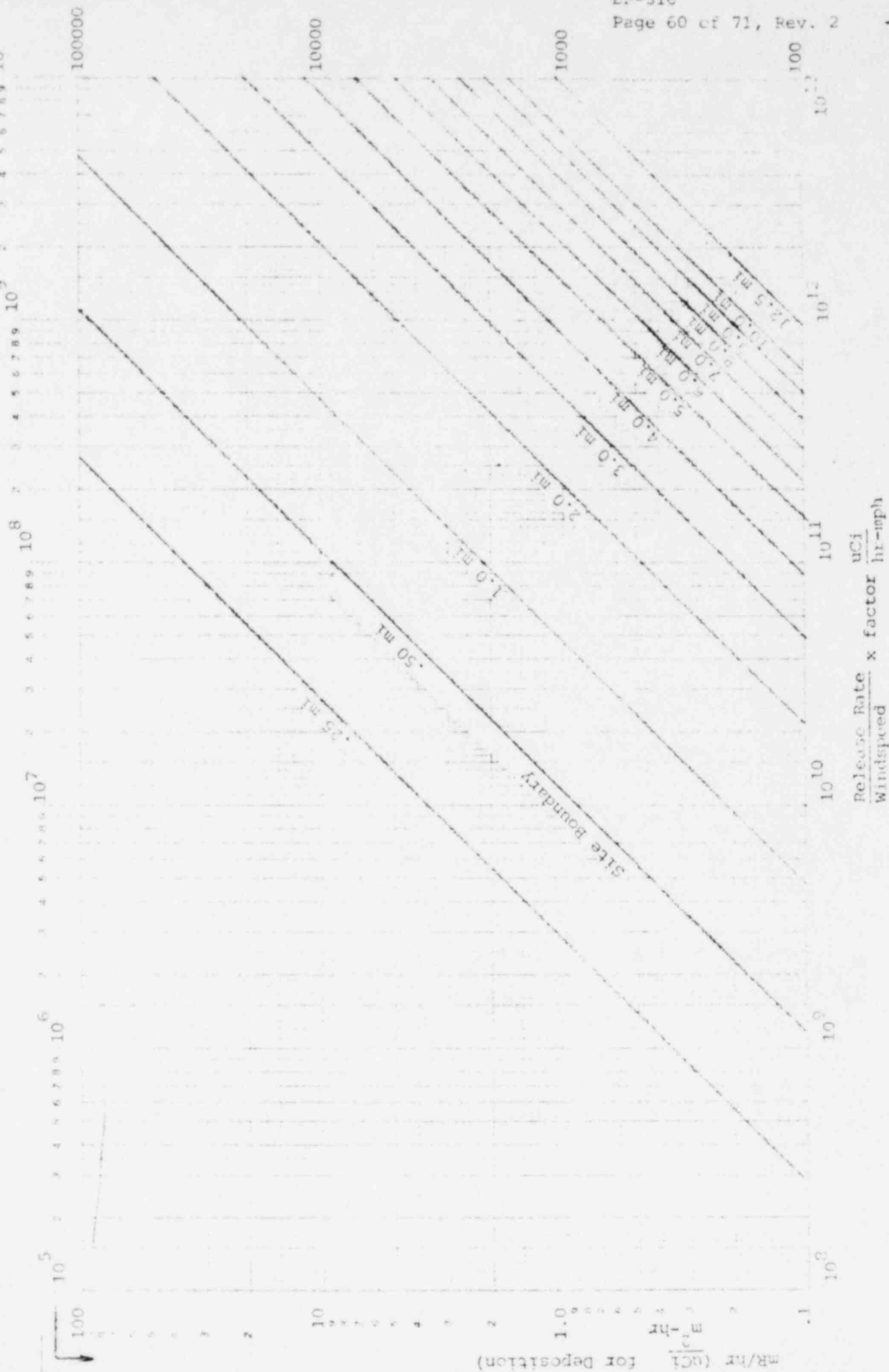
Thyroid Dose Rates Due to Iodine Releases
(Ground Deposition)

Roof Vent

Class 1 or 3

13

46 7000

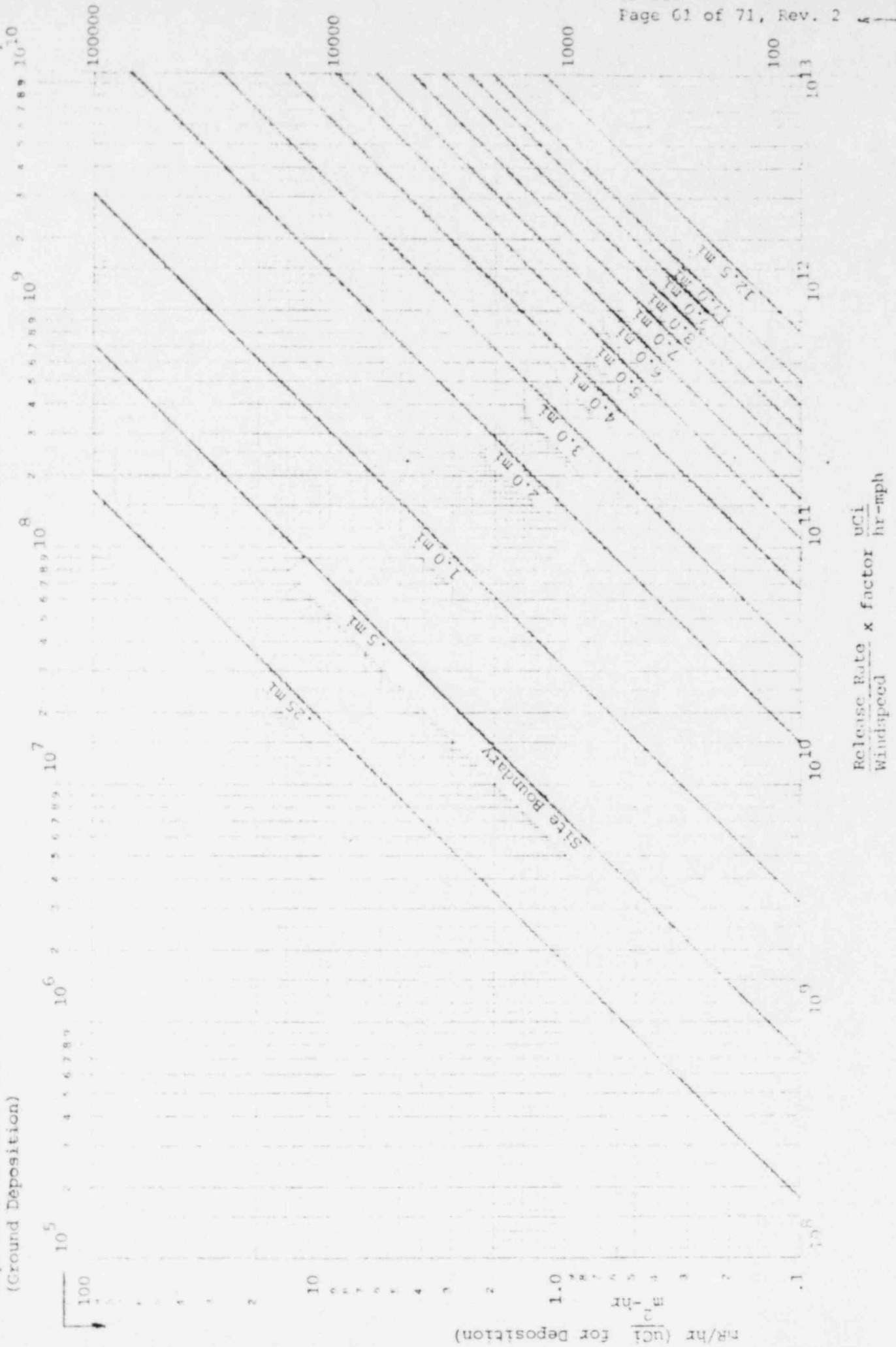


14

Thyroid Dose Rates Due to Iodine Releases
(Ground Deposition)

Roof Vent

Class 2



Thyroid Dose Rates Due to Iodine Releases
(Ground Deposition)

Roof Vent

Class 4

15



Release Rate
Wind speed

x factor $\frac{\text{uCi}}{\text{hr-mph}}$

Thyroid Dose Rates Due to Iodine Releases
(Ground Deposition)

Roof Vent

Class

10¹¹
10¹⁰
10⁹

10¹⁰
10⁹

10⁹
10⁸
10⁷

10⁸
10⁷

10⁶

100000

10000

1000

100

10¹⁴

10¹³

10¹²

10¹¹

10¹⁰

10⁹



Release Rate $\frac{\text{mCi}}{\text{hr-mph}}$ x factor

LP-116
Page 64 of 71, Rev. 2
4/28/82
WPS/NJM/GTC:LRD/LJM

APPENDIX E
DISPERSION FACTORS

TABLE 1
MAIN STACK NOBLE GAS

Dispersion Factors Vs Distance				
Distance Miles from Main Stack	Dispersion Factors by Turbulence Class			
	Class I or III	Class II	Class IV	Class V
0.5	2000	3900	1350	<10
0.75	960	2500	4000	<10
1.0	640	1800	5800	<10
1.25	440	1250	5200	<10
1.5	330	950	4100	<10
1.75	240	710	3400	<10
2.0	190	560	2900	10
2.25	150	460	2600	250
2.50	130	400	2400	800
2.75	110	350	2050	1700
3.0	90	290	1800	3100
3.25	79	240	1500	4900
3.50	69	200	1200	6500
3.75	60	170	1000	8100
4.0	53	140	850	9000
4.25	48	125	750	9100
4.50	44	110	660	9000
4.75	40	100	630	8500
5.0	36	90	600	8000
5.5	30	80	520	7000
6.0	26	69	450	6200
6.5	22	59	390	5500
7.0	19	51	350	5000
7.5	18	47	320	4500
8.0	16	43	290	4100
8.5	14	39	230	3700
9.0	13	35	210	3500
9.5	11	31	200	3200
10.0	10	29	200	3000
10.5	<10	27	190	2800
11.0	<10	24	180	2600
11.5	<10	22	170	2400
12.0	<10	21	160	2200
12.5	<10	19	150	2100
13.0	<10	18	140	2050
13.5	<10	17	130	2000
14.0	<10	16	120	1900

<u>Distance (mi)</u>	<u>Class I or III</u>	<u>Class II</u>	<u>Class IV</u>	<u>Class V</u>
17.50	230	510	1,800	21,000
18.00	210	480	1,600	18,000
18.50	200	450	1,500	16,000
19.00	190	430	1,400	14,000
19.50	180	410	1,300	13,000
20.00	170	390	1,300	11,000
21.00	160	350	1,100	8,900
22.00	140	320	990	7,100
23.00	130	290	890	5,700
24.00	120	270	800	4,600
25.00	110	250	720	3,700
30.00	78	170	450	1,400
35.00	58	120	300	560
40.00	44	94	210	240
45.00	35	74	150	110
50.00	28	59	120	56

ROOF VENT NOBLE GAS

TABLE 2

ALL TURBULENCE CLASSES FOR ANY DIRECTION
DISPERSION FACTORS FOR ROOF VENT RELEASE
CALCULATED FOR WORST DIRECTION FOR GIVEN DISTANCE

<u>DISTANCE</u> <u>(MILES)</u>	<u>CLASS I OR III</u>	<u>CLASS II</u>	<u>CLASS IV</u>	<u>CLASS V</u>
.3	14,894	22,577	48,767	189,374
.6	3,992	6,268	14,470	61,548
.9	1,844	2,959	7,063	31,214
1.2	1,066	1,732	4,243	19,199
1.9	493	813	2,072	9,643
2.5	284	477	1,248	5,910
3.1	186	316	838	4,039
3.7	132	224	607	2,959
4.3	99	168	464	2,274
5.0	76	132	363	1,812
5.6	60	105	298	1,481
6.2	52	85	242	1,239
6.8	43	69	208	1,051
7.5	36	63	177	907
8.1	29	54	155	791
8.7	27	47	132	697
9.3	22	40	119	618
9.9	20	36	105	553
10.6	18	31	94	502
11.2	6	29	85	452
11.8	15	27	78	412
12.4	13	25	69	376
24.8	3	7	25	114
37.3	3	3	12	58

TABLE 3

DISPERSION FACTORS VERSUS DISTANCE
FOR MAIN STACK RELEASES

FOR THYROID DOSE RATE & GROUND DEPOSITION

Dispersion Factors by Turbulence Class

<u>Distance (mi)</u>	<u>Class I or III</u>	<u>Class II</u>	<u>Class IV</u>	<u>Class V</u>
.25	450,000	390,000	640	<1
.50	190,000	360,000	120,000	<1
.75	94,000	220,000	280,000	<1
1.00	57,000	150,000	330,000	<1
1.25	38,000	100,000	440,000	<1
1.50	27,000	75,000	350,000	23
1.75	20,000	57,000	290,000	220
2.00	16,000	45,000	230,000	1,000
2.35	13,000	36,000	190,000	3,000
2.50	10,000	29,000	160,000	6,000
2.75	8,600	25,000	150,000	220,000
3.00	7,300	21,000	130,000	260,000
3.25	6,300	18,000	110,000	290,000
3.50	5,400	16,000	93,000	320,000
3.75	4,700	11,000	59,000	930,000
4.00	4,100	9,500	51,000	860,000
4.25	3,600	8,400	45,000	800,000
4.50	3,300	7,500	40,000	740,000
4.75	2,900	6,800	36,000	810,000
5.00	2,700	6,100	32,000	740,000
5.50	2,200	5,100	26,000	630,000
6.00	1,900	4,300	22,000	530,000
6.50	1,600	3,700	18,000	460,000
7.00	1,400	3,200	15,000	400,000
7.50	1,200	2,800	13,000	340,000
8.00	1,100	2,400	11,000	290,000
8.50	940	2,100	9,800	250,000
9.00	840	1,900	8,600	210,000
9.50	750	1,700	7,600	180,000
10.00	680	1,500	6,700	160,000
10.50	620	1,400	6,000	140,000
11.00	570	1,300	5,400	120,000
11.50	520	1,200	4,800	100,000
12.00	480	1,100	4,400	89,000
12.50	440	990	4,000	77,000
13.00	410	920	3,600	67,000
13.50	380	850	3,300	58,000
14.00	350	790	3,000	51,000
14.50	330	740	2,800	45,000
15.00	310	690	2,600	39,000
15.50	290	650	2,400	34,000
16.00	270	610	2,200	30,000
16.50	250	570	2,000	26,000
17.00	240	540	1,900	23,000

TABLE 4

ALL TURBULENCE CLASSES FOR ANY DIRECTION
DISPERSION FACTORS FOR ROOF VENT RELEASE
CALCULATED FOR WORST DIRECTION FOR GIVEN DISTANCE

FOR THYROID DOSE RATE & GROUND CONCENTRATION

Dispersion Factors by Turbulence Class

<u>Distance (mi)</u>	<u>Class I or III</u>	<u>Class II</u>	<u>Class IV</u>	<u>Class V</u>
.25	3,660,000	5,740,000	7,220,000	365,000
.50	900,000	1,380,000	1,560,000	30,606
.75	390,000	595,000	614,000	6,080
1.00	216,000	325,000	313,000	1,800
1.25	136,000	204,000	184,000	660
1.50	87,000	128,000	100,000	150
1.75	63,500	92,000	68,000	70
2.00	48,100	69,200	48,600	40
2.25	37,600	53,700	36,000	20
2.50	30,200	42,800	27,500	10
2.75	24,700	34,900	21,500	7
3.00	20,600	28,900	17,200	4
3.25	17,500	24,200	13,900	3
3.50	14,900	20,700	11,500	2
3.75	13,000	17,800	9,580	1
4.00	11,300	15,400	8,060	<1
4.25	9,900	13,500	6,860	<1
4.50	8,800	11,900	5,890	<1
4.75	7,800	10,600	5,090	<1
5.00	7,070	9,500	4,440	<1
5.50	5,790	7,700	3,430	<1
6.00	4,820	6,350	2,700	<1
6.50	4,080	5,330	2,170	<1
7.00	3,490	4,530	1,760	<1
7.50	3,010	3,880	1,460	
8.00	2,630	3,370	1,220	
8.50	2,320	2,950	1,030	
9.00	2,050	2,600	880	
9.50	1,840	2,300	750	
10.00	1,640	2,050	650	
10.50	1,480	1,840	560	
11.00	1,350	1,660	490	
11.50	1,220	1,500	430	
12.00	1,120	1,370	380	
12.50	1,030	1,250	340	
13.00	950	1,140	300	
13.50	870	1,050	270	
14.00	810	970	240	
14.50	750	900	220	
15.00	700	830	200	
15.50	650	770	180	
16.00	610	720	160	
16.50	570	670	150	

<u>Distance (mi)</u>	<u>Class I or III</u>	<u>Class II</u>	<u>Class IV</u>	<u>Class V</u>
17.00	530	630	140	
17.50	500	590	130	
18.00	470	550	120	
18.50	450	520	110	
19.00	420	490	100	
19.50	400	460	90	
20.00	380	430	80	
21.00	340	390	70	
22.00	310	350	60	
23.00	280	320	50	<1
24.00	260	290	50	<1
25.00	240	260	40	<1
30.00	160	170	20	<1
35.00	120	120	10	<1
40.00	90	90	10	<1
45.00	70	70	6	<1
50.00	50	50	5	<1

EP-316

Page 71 of 71, Rev. 2

4/28/82

MPG/MJM/DOC:LHD/LJM

EP-316 APPENDIX F

1. AREA OF CONCERN

A. DESCRIPTION _____
B. DISTANCE _____ MILES
C. SECTOR _____
D. WINDSPEED _____ MPH

2. A) PROJECTED WHOLE BODY DOSE: _____

B) PROJECTED THYROID DOSE (INHALATION) _____ HR(S)

3. EXPECTED RELEASE DURATION

4. FIELD SURVEY DATA

A) WHOLE BODY DOSE RATE _____ R/HR

B) THYROID DOSE RATE _____ R/HR

5. MOST RELIABLE DOSE (PROJECTED OR FIELD SURVEY)

A) WHOLE BODY _____ REM

B) THYROID _____ REM

6. GROUND DEPOSITION

I 131 _____ UCI/M

CS 137 _____ UCI/M

SR 90 _____ UCI/M

SR 89 _____ UCI/M

MAY 6 1982

EP-318: LIQUID RELEASE DOSE CALCULATION METHOD FOR DRINKING WATER

1. PURPOSE: TO DETERMINE LIQUID RELEASE DOSE PROJECTIONS BASED ON UNDILUTED EFFLUENT SAMPLES AND DILUTED SAMPLES FROM THE DISCHARGE CANAL FOR DRINKING WATER.

2. REFERENCES:

NUREG 0133
REG. GUIDE 1.109

3. DEFINITIONS

D_T = THE CUMMULATIVE DOSE COMMITMENT TO THE TOTAL BODY OR ANY ORGAN, T, FROM LIQUID EFFLUENTS FOR THE TOTAL TIME PERIOD IN MREM.

C_i = THE AVERAGE CONCENTRATION OF RADIONUCLIDE, I, IN AN UNDILUTED LIQUID EFFLUENT SAMPLE OR DILUTED SAMPLE FROM THE DISCHARGE CANAL DURING TIME PERIOD ΔT FROM ANY LIQUID RELEASE IN UCI/ML.

F = THE NEAR FIELD DILUTION FACTOR FOR C_i DURING ANY LIQUID EFFLUENT RELEASE. DEFINED AS THE RATIO OF THE VOLUME OF UNDILUTED LIQUID WASTE RELEASED IN GALLONS OVER ΔT TO THE VOLUME OF WATER FLOW FROM THE DISCHARGE CANAL IN GALLONS PER MINUTE OVER ΔT . F = 1.0 FOR A DILUTED LIQUID RELEASE.

ΔT = THE LENGTH OF THE TIME PERIOD OVER WHICH C_i AND F ARE AVERAGED FOR THE LIQUID RELEASE IN HOURS.

A = THE SITE RELATED INGESTION DOSE COMMITMENT FACTOR TO THE TOTAL BODY OR ORGAN, T, FOR EACH RADIONUCLIDE IN MREM-ML PER UCI-HR.

D_F = THE RATIO OF THE CONCENTRATION AT LOCATION III (DOWNSTREAM FROM PLANT SITE) FOR THE FLOW RATE OF INTEREST TO THE CONCENTRATION AT THE LOCATION OF INTEREST FOR THE SAME TIME AND FLOW RATE.

4. PROCEDURE:

DOSE CONTRIBUTIONS FROM LIQUID EFFLUENTS RELEASED TO UNRESTRICTED AREAS SHALL BE CALCULATED FOR DRINKING WATER USING THE EQUATION BELOW:

$$D_T = \frac{A \cdot I \cdot C \cdot E}{D_F}$$

1. RECORD TIME PERIOD OVER WHICH C & F ARE AVERAGED. 1. _____
2. RECORD VOLUME OF RELEASE OVER ΔT . 2. _____
3. RECORD VOLUME OF WATER FLOW FROM DISCHARGE CANAL OVER ΔT . 3. _____
4. CALCULATE F. (WORKSHEET) 4. _____
5. RECORD C; FOR EACH NUCLIDE IN UCI/ML.

CO-60 _____
 I-131 _____
 CS-134 _____
 CS-137 _____

6. RECORD A FOR EACH NUCLIDE FOR TOTAL BODY OR ORGAN (SEE TABLE 1)

 TOTAL BODY LIVER THYROID

CO-60

I-131

CS-134

CS-137

7. RECORD CURRENT RIVER FLOW 7. _____

8. RECORD D_f FOR CORRESPONDING RIVER FLOW (7) AND POINT OF INTEREST (SEE TABLE 2)

BALTIMORE WATER INTAKE -----
CHESTER WATER INTAKE -----
CONOWINGO TAILRACE -----

9. CALCULATE D_f FOR EACH NUCLIDE TO TOTAL BODY OR ORGAN (WORKSHEET)

10. RECORD DOSE PROJECTION

10. -----

TABLE 1: A-DOSE COMMITMENT FACTORS (MBREM-ML PER
 UCI-HR)

	INITIAL BODY	LIVER	THYROID
CO-60	4.8×10^2	2.15×10^2	-----
I-131	4.02×10^2	7.18×10^2	2.98×10^5
CS-134	1.09×10^4	1.36×10^4	-----
CS-137	6.43×10^3	1.02×10^4	-----

TABLE 2: D - DILUTION FACTORS

RIVER FLOW (GCS)	BALTIMORE WATER INTAKE	CHESTER WATER INTAKE	CONOWINGO TAILRACE
2500	8.0×10^1	4.0	1.12×10^2
5000	7.50×10^1	9.09	7.50×10^1
10,000	8.63×10^1	2.23×10^1	5.31×10^1
15,000	8.56×10^1	3.85×10^1	4.28×10^1
25,000	8.46×10^1	9.30×10^1	4.28×10^1
50,000	9.29×10^1	4.33×10^2	2.50×10^1
100,000	1.05×10^2	-----	2.20×10^1
150,000	1.04×10^2	-----	2.0×10^1

WORKSHEET

CALCULATE $F = \frac{\text{VOLUME OF RELEASE OVER } \Delta T}{\text{VOLUME OF WATER FLOW FROM DISCHARGE CANAL OVER } T}$

CALCULATE $D_T = \frac{\Sigma \text{--A--IAGE--}}{\Delta T}$

$D_T(\text{CU-60}) =$

$D_T(\text{I-131}) =$

$D_T(\text{CS-134}) =$

$D_T(\text{CS-137}) =$

$\frac{\Sigma (Q)}{D_T} = \text{-----}$

MAY 6 1982

EP-319: LIQUID RELEASE DOSE CALCULATION METHOD FOR FISH

1. PURPOSE: TO DETERMINE LIQUID RELEASE DOSE PROJECTIONS FOR FISH BASED ON UNDILUTED EFFLUENT SAMPLES AND DILUTED SAMPLES FROM THE DISCHARGE CANAL.

2. REFERENCES:

NUREG-0133
REG. GUIDE 1.109

3. DEFINITIONS

D_T = THE CUMMULATIVE DOSE COMMITMENT TO THE TOTAL BODY OR ANY ORGAN, T, FROM LIQUID EFFLUENTS FOR THE TOTAL TIME PERIOD IN MREM.

C_i = THE AVERAGE CONCENTRATION OF RADIONUCLIDE, I, IN AN UNDILUTED LIQUID EFFLUENT SAMPLE OR DILUTED SAMPLE FROM THE DISCHARGE CANAL DURING TIME PERIOD ΔT FROM ANY LIQUID RELEASE IN UCI/ML.

F = THE NEAR FIELD DILUTION FACTOR FOR C DURING ANY LIQUID EFFLUENT RELEASE. DEFINED AS THE RATIO THE VOLUME OF UNDILUTED LIQUID WASTE RELEASED IN GALLONS OVER T TO THE VOLUME OF WATER FLOW FROM THE DISCHARGE CANAL IN GALLONS PER MINUTE OVER ΔT . F = 1.0

ΔT = THE LENGTH OF THE TIME PERIOD OVER WHICH C_i AND F ARE AVERAGED FOR THE LIQUID RELEASE IN HOURS.

A = THE SITE RELATED INGESTION DOSE COMMITMENT FACTOR TO THE TOTAL BODY OR ORGAN, T, FOR EACH RADIONUCLIDE IN MREM-ML PER UCI-HR.

4. PROCEDURE:

DOSE CONTRIBUTIONS FROM LIQUID EFFLUENTS RELEASED TO UNRESTRICTED AREAS SHALL BE CALCULATED USING THE EQUATION BELOW:

$$D_T = A \Delta T C_i F$$

1. RECORD TIME PERIOD OVER WHICH C_i & F ARE AVERAGED.

1. _____

2. RECORD VOLUME OF RELEASE OVER ΔT . 2. _____
3. RECORD VOLUME OF WATER FLOW FROM DISCHARGE CANAL OVER ΔT . 3. _____
4. CALCULATE F. (WORKSHEET) 4. _____
5. RECORD C FOR EACH NUCLIDE IN UCI/ML.

P-32 _____
CO-60 _____
I-131 _____
CS-134 _____
CS-137 _____

6. RECORD A FOR EACH NUCLIDE FOR TOTAL BODY OR ORGAN (SEE TABLE 1)

TOTAL BODY LIVER THYROID

CO-60

I-131

CS-134

CS-137

7. CALCULATE D_T FOR EACH NUCLIDE, TO TOTAL BODY OR ORGAN (WORKSHEET).
8. RECORD DOSE PROJECTION. 8. _____

TABLE 1: A-DOSE COMMITMENT FACTORS (MREM-ML PER
 UCI-HR)

	TOTAL BODY	LIVER	THYROID
P-32	5.93×10^4	1.04×10^5	-----
CO-60	6.51×10^2	2.92×10^2	-----
I-131	1.12×10^2	1.99×10^2	8.24×10^4
CS-134	6.72×10^5	8.33×10^5	-----
CS-137	3.97×10^5	6.30×10^5	-----

EP-319

PAGE 4 OF 4. REV. 0

3/15/82

DOC:LHD

WORKSHEET

CALCULATE F = $\frac{\text{VOLUME OF RELEASE OVER } 4 \text{ T}}{\text{VOLUME OF WATER FLOW FROM DISCHARGE CANAL OVER T}}$

CALCULATE $D_T = \frac{A \cdot I \cdot Q_F}{\dots}$

$D_T(P-32) =$

$D_T(CO-60) =$

$D_T(I-131) =$

$D_T(CS-134) =$

$D_T(CS-137) =$

$\Sigma(D)_T = \dots$