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INITIAL CLASSIFICATION

1.0 GENERAL

The purpose of this procedure is to provide a means of classifying an event or condition at the Point Beach Nuclear Plant into one of four emergency classifications as described in the Point Beach Nuclear Plant Emergency Plan. Each emergency classification requires emergency organization notifications, mobilizations, and actions to be performed in order to appropriately react to the situation and provide for the health and safety of plant and public personnel. They are listed in order of increasing severity.

1.1 Unusual Event

An unusual plant condition which either has occurred or might occur. This condition could possibly lead to a degradation in overall safety. This condition does not represent a significant radioactivity release, involves no offsite response, and may require no augmentation of plant personnel. In spite of the above, prompt notification of the counties and state is required.

1.2 Alert

Plant conditions in which events are in progress or have occurred which involve an actual or potential degradation of plant safety. Radiation releases are not likely to cause an offsite hazard. Prompt offsite notification is necessary and the plant organization may have to be augmented.

1.3 Site Emergency

Plant conditions in which events are in progress or have occurred which involve actual or probable major failures of plant functions. Potential radioactive releases may have an impact on offsite people. Prompt notification of offsite agencies is required. The plant organization must be augmented and the technical support center, onsite operations support center, and emergency support center will be operational. An evacuation may be necessary.

1.4 General Emergency

Plant conditions in which events are in progress or have occurred which involve actual or imminent substantial core degradation and a potential for loss of containment integrity. Potential radioactive releases may have an impact on offsite people. Prompt notification

of offsite agencies is required. The plant organization must be augmented and the technical support center, onsite operations support center, and emergency support center will be operational. An evacuation may be necessary. The emergency news center will be opened.

The Shift Supervisor has the responsibility and authority to take immediate action to mitigate the consequences of the emergency. He will consult with the Duty & Call Superintendent and assign the appropriate emergency classification and initiate the necessary Emergency Plan implementing procedures.

2.0 REFERENCES

2.1 Nuclear Regulatory Commission NUREG-0654, Revision 1, published November, 1980.

2.2 Point Beach Nuclear Plant Emergency Plan Sections 4.1 and 5.1.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 All actions and notifications should be appropriately logged.

3.2 Emergency Plan implementing procedures are not to be used to respond to security threats. One hour notification of the NRC is required using the red phone for security threats.

3.3 Certain events require notification to the NRC within one hour. These items are included on Table 1-1. Those items which are noted as "NRC Only" means that there is no classification for the events and no notification other than the NRC is required. These notifications are not considered as starting the Emergency Plan.

3.4 The "Indications Used" in Table 1-1 are those which one may expect if that level of emergency occurs very quickly. For more slowly developing situations, other indications may be judged appropriate. For example, a primary system leak rate of 40 gpm is an Unusual Event. Subsequently, charging may be lost and, in addition, the leak may worsen. One may not see charging flow 50 gpm greater than letdown flow when in fact an Alert should be declared.

4.0 INITIAL CONDITIONS

None.

NOTE: APPENDIX 1 OF NUREG-0654 (PAGE 1-3) CONTAINS THIS SENTENCE: "THE TIME IS MEASURED FROM THE TIME AT WHICH OPERATORS RECOGNIZE (EMPHASIS ADDED) THAT EVENTS HAVE OCCURRED WHICH MAKE DECLARATION OF THE EMERGENCY CLASS APPROPRIATE.

5.0 PROCEDURE

5.1 Call the Duty & Call Superintendent for consultation to establish the initial classification. If he is unavailable, the Shift Supervisor is responsible for classification.

5.2 Select affected categories related to plant events or conditions at this time. Check (√) all applicable categories.

Category				Refer to Page in Table 1-1
1. _____	_____	_____	Safety System Functions	1
2. _____	_____	_____	Abnormal Primary Leak Rate	1
3. _____	_____	_____	Abnormal Coolant Temperature/ Pressure	2
4. _____	_____	_____	Abnormal Primary/Secondary Leak	2
5. _____	_____	_____	Core Fuel Damage	3
6. _____	_____	_____	Secondary Coolant Anomaly	4
7. _____	_____	_____	Abnormal Effluent	5
8. _____	_____	_____	Major Electrical Failures	5
9. _____	_____	_____	Control Room Evacuation	6
10. _____	_____	_____	Fire	6
11. _____	_____	_____	Plant Shutdown Function	7
12. _____	_____	_____	Abnormal Radiation Levels at Site Boundary	8
13. _____	_____	_____	Fuel Handling Accident	8
14. _____	_____	_____	Serious or Fatal Injury	9
15. _____	_____	_____	Security Threat	9
16. _____	_____	_____	Hazards to Plant Operations	9
17. _____	_____	_____	Natural Events	10
18. _____	_____	_____	Reactivity Transient	10

Category				Refer to Page in Table 1-1
19.	_____	_____	_____ Load Transient	11
20.	_____	_____	_____ Other	11

5.3 Beginning at the indicated page in Table 1-1 (attached), review initiating conditions for all categories checked above.

5.4 Record most severe emergency classification at this time.

_____ _____ _____

5.5 Record date/time of initial classification (subsequent columns for reclassification at a later date and time are provided if reclassification is required).

Initial Date/Time	Subsequent Date/Time	Subsequent Date/Time
_____	_____	_____

NOTE: IF THE SHIFT SUPERVISOR CANNOT COMMUNICATE WITH A DUTY & CALL SUPERINTENDENT, THE SHIFT SUPERVISOR MUST NOTIFY THE STATE AND TWO COUNTIES WITHIN 15 MINUTES OF THE DECLARATION OF ANY CLASS OF EMERGENCY.

5.6 If events or conditions are classified as an Unusual Event, perform EPIP 2.1, "Unusual Event - Immediate Actions."

5.7 If events or conditions are classified as an Alert, perform EPIP 3.1, "Alert - Immediate Actions."

5.8 If events or conditions are classified as a Site Emergency, perform EPIP 4.1, "Site Emergency - Immediate Actions."

5.9 If events or conditions are classified as a General Emergency, perform EPIP 5.1, "General Emergency - Immediate Actions."

NOTE:

"One hour" refers to the requirement to notify NRC within one hour (10 CFR 50.72).

"One hour - Open line" refers to the requirement to notify NRC within one hour and maintain an open line for continuous communication (10 CFR 50.72).

Notes: DCS - Duty & Call Superintendent
DSS - Duty Shift Supervisor
FFDSAR - Final Facility Description & Safety Analysis Report
MASP - Modified Amended PBNP Security Plan

TABLE 1-1

EMERGENCY CLASSIFICATION

Category	Initiating Condition	Indication Used	Emergency Classification
1. Safety System Functions	Unplanned initiation of emergency core cooling with injection to the primary system	Any of the following first-out reactor trip panel annunciation with indicator confirmation noted: 1. "Containment press hi", [PI-945, PI-947, PI-949 (2/3 >5 psig)] 2. "Steam line loop A lo-lo press" [PI-468, PI-469, PI-482 (2/3 <530 psig)] 3. "Steam line loop B lo-lo press" [PI-478, PI-479, PI-483 (2/3 <530 psig)] 4. "Pressurizer lo press SI" [PI-429, PI-430, PI-431 (2/3 <1735 psig)] 5. Wide range pressure <1500 psig	Unusual Event
	Loss of containment integrity requiring shutdown by Technical Specifications	When shutdown commences as determined by DSS and DCS	Unusual Event
	Loss of engineered safety feature requiring shutdown by Technical Specifications	When shutdown commences as determined by DSS and DCS	Unusual Event
	Loss of fire protection system function requiring shutdown by Technical Specifications (i.e., both fire pumps inoperable)	When shutdown commences as determined by DSS and DCS	Unusual Event
2. Abnormal Primary Leak Rate	Exceeding Technical Specification primary system leak rate (10 gpm)	When shutdown commences as determined by DSS and DCS	Unusual Event

Category	Initiating Condition	Indication Used	Emergency Classification
	Leak rate >50 gpm	All of the following: 1. "Volume control tank level hi-lo" [LI-141 and/or LI-112 <8%] 2. Decreasing pressurizer level [LI-426, LI-427, LI-428] 3. "Charging pump speed hi" 4. Charging line flow (FI-128) >50 gpm more than letdown flow (FI-134)	Alert
	Leak rate in excess of available pump capacity including charging, high head SI and low head SI	All of the following: 1. "Volume control tank level hi-lo [LI-141 and/or LI-112 <8%] 2. No pressurizer level indicated [LI-426, LI-427, LI-428] 3. All available pumps running as indicated by the red light at the switch 4. Increasing core exit T/C temp as indicated by P-250 and confirmed on local readout.	Site Emergency
3. Abnormal Coolant Temperature/Pressure	Unexpected decrease in subcooling margin	Both of the following: 1. Alarm on P-250, if operable 2. Confirmation by manual calculation	Unusual Event
	Pressure >2735 psig DNBR <1.30	Pressure >2735 psig on PR-420 and "Code, safety or PORV not closed"	NRC only 1-hour open line (2)
4. Abnormal Primary/ Secondary Leak	Exceeding Technical Specification primary-secondary leak rate	When shutdown commences as determined by DSS and DCS	Unusual Event

Category	Initiating Condition	Indication Used	Emergency Classification
	Gross failure of 1 SG tube (>400 gpm) & loss of offsite power (FFDSAR 14.2.4)	All of the following first-out reactor panel annunciation with confirmation indication: 1. "Pressurizer Lo Press SI," [PI-429, PI-430, PI-431 (2/3 <1735 psig)] 2. a. "Steam generator A level hi" [LI-461, LI-462, LI-463 (2/3 >70%)] or b. "Steam generator B level hi" [LI-471, LI-472, LI-473 (2/3 >70%)] 3. a. "4.16 kv bus undervoltage" & 0 volts on A03 & A04 voltmeters. b. X04 to A03 ammeter on CO2 (0 amps) c. X04 to A04 ammeter on CO2 (0 amps) 4. SI flow >400 gpm indicated by FI-924 & FI-925 and pump discharge pressure corresponding to flow.	Alert
	Rapid failure of >10 SG tubes (4000 gpm) with or without offsite AC	All of the following first-out reactor panel annunciation with confirming indication: 1. "Pressurizer lo press SI" [PI-429, PI-430, PI-431 (2/3 <1735 psig)] 2. a. "Steam generator A level hi" [LI-461, LI-462, LI-463 (2/3 >70%)] or b. "Steam generator B level hi" [LI-471, LI-472, LI-473 (2/3 >70%)] 3. SI flow >4,000 gpm indicated by FI-626 & FI-928.	Site Emergency
5. Core Fuel Damage	Gross fuel damage in core indicated	Both of the following: 1. Letdown line radiation monitor (R9) 100 x alarm setpoint. 2. Sustained offscale & chemical analysis shows fission product concentration increase by 100X.	Unusual Event

Category	Initiating Condition	Indication Used	Emergency Classification
	Massive fuel damage	300 µCi/cc iodine-equivalent as determined by by chemical analysis	Alert
	1. Massive loss of fuel clad integrity 2. With simultaneous loss of primary system integrity 3. With potential loss of containment integrity	Initiating Condition Nos. 1 & 2 exist and No. 3 is possible: 1. 300 µCi/cc iodine-equivalent determined by chemical analysis 2. Primary system leak >1000 gpm indicated by SI flow >1000 gpm (FI-924 & FI-925) and pump discharge pressure corresponding to flow 3. Minimum containment pressure suppression equipment is not available (any of the following): a. No fan coolers operating and <2 spray pumps. b. No spray pumps operating and <2 fan coolers c. <2 fan coolers running with 1 spray pump 4. "Containment press hi" [PI-945, PI-947, PI-949 (2/3 >5 psig)] 5. "Containment spray" with 2/3 + 2/3 >25 psig [PI-945, PI-947, PI-949] [PI-946, PI-948, PI-950]	General Emergency
6. Secondary Coolant Anomaly	Reduction in feedwater enthalpy incident (FFDSAR 14.1.7)	1. a. Decreasing feedwater temp indicated by TO-418A & TO-438A on P-250 and b. confirmed by local temperature indicator on outlet of No. 5 feedwater heater. 2. Unexpected increasing power on excore nuclear instrumentation	Unusual Event
	Steam line break with primary-to-secondary leak rate in excess of 10 gpm (FFDSAR 14.2.5)	All of the following first-out reactor trip panel annunciation with confirmation: 1. Either: a. "Steam line loop A Lo-Lo press" [PI-468, PI-469, PI-482 (2/3 <530 psig)] or b. "Steam line loop B Lo-Lo press" [PI-478, PI-479, PI-483 (2/3 <530 psig)]	Alert

Category	Initiating Condition	Indication Used	Emergency Classification
		2. Confirmed primary-to-secondary leak rate of at least 10 gpm. 3. Either: a. "Steam line loop A isol channel alert" [FI-464, FI-465 (1/2 >3.9×10^6 lb/hr)] or b. "Steam line loop B isol channel alert" [FI-474, FI-475 (1/2 >3.0×10^6 lb/hr)]	
Secondary Coolant Anomaly	Transient initiated by loss of feedwater, followed by loss of auxiliary feedwater for >1 hour (FFDSAR 14.1.11)	All of the following: 1. Decreasing SG levels - "A" SG [LI-461, LI-462, LI-463] "B" SG [LI-471, LI-472, LI-473] 2. No auxiliary feedwater flow - [FI-4002, FI-4007, FI-4014] [FI-4036, FI-4037]	General Emergency
7. Abnormal Effluent	Radiological effluent Technical Specification limits exceeded but <10 times the limit (FFDSAR 14.2.3)	Airborne effluents only	Unusual Event
	Radiological effluent Technical Specification limits exceeded (FFDSAR 14.2.2)	Liquid effluents only	Unusual Event
	Radiological effluents >10 times Technical Specification instantaneous limits. (An instantaneous rate which, if continued for >2 hours, would result in a dose of about 1 mR at the site boundary under average meteorological conditions.)	Airborne effluents only	Alert
8. Major Electrical Failures	Sustained loss of offsite power >15 minutes (FFDSAR 14.1.2)	All of the following: 1. "4.16 kv bus undervoltage" & 0 volts on A03 & A04 voltmeters. 2. X04 to A03 ammeter on C02 (0 amps). 3. X04 to A04 ammeter on C02 (0 amps)	Unusual Event

Category	Initiating Condition	Indication Used	Emergency Classification
	Sustained loss of onsite AC power capability (>15 minutes)	Both of the following: 1. "4.16 kv bus undervoltage" & 0 volts on A05 and A06 voltmeters and "Emergency Diesel Starting System Disabled" for both Diesels	Unusual Event
	Loss of all vital onsite DC power >15 minutes	Both of the following: 1. "Annunciator power failure" on C01, C02, C03, and C04 2. <100 volts on the voltmeters for all batteries	Site Emergency
	Loss of offsite power and loss of all onsite AC power for >15 minutes	All of the following: 1. "4.16 kv bus undervoltage" 0 volts on A03, A04, A05, A06 & "Emerg Diesel starting system disabled" for both Diesels 2. X04 to A03 ammeter on C02 (0 amps) 3. X04 to A04 ammeter on C02 (0 amps)	Site Emergency
	Loss of offsite and all onsite AC power with loss of all auxiliary feedwater for >2 hours	All of the following: 1. Unit aux MW meter X02 on C02 (0 MW) 2. Station aux MW meter X04 on C02 (0 MW) 3. X04 to A03 ammeter on C02 (0 amps) 4. X04 to A04 ammter on C02 (0 amps) 6. X02 to A01 ammeter on C02 (0 amps) 7. a. No auxiliary feedwater flow [FI-4036, FI-4037] b. Decreasing SG level - "A" SG [LI-461, LI-462, LI-463] "B" SG [LI-471, LI-472, LI-473]	General Emergency
9. Control Room Evacuation	Evacuation of control room >15 minutes & no control at remote shutdown station	As required by DSS	Site Emergency
10. Fire	Fire in vital area or on the controlled side of plant lasting >10 minutes after initial use of fire extinguishing equipment.	As reported by Fire Brigade Chief	Unusual Event

Category	Initiating Condition	Indication Used	Emergency Classification
	Fire affecting 1 train of safety systems.	As reported by Fire Brigade Chief	Alert
	Fire affecting 2 trains of safety systems	As reported by Fire Brigade Chief	Site Emergency
11. Plant Shutdown Function	Nonfunctional indications or alarms in the control room on primary system parameters requiring plant	Both of the following: 1. "Annunciator power failure" on C04. 2. Failed indication as determined by DSS.	Unusual Event
	Turbine mechanical failure with consequences	1. Annunciator "Turbine supervisory." 2. Indication on TR-6019 of bearing vibration >7 mils. 3. Bearing vibration alarm on back of C03. 4. Visual confirmation of turbine housing penetration by a blade or disc.	Unusual Event
	Significant loss of effluent monitoring capability & meteorological instruments which impairs ability to perform emergency assessment. Loss of effluent monitoring may/may not require plant shutdown.	1. Loss of LW16 during a release or 2. Loss of R18 during a release or 3. a. Loss of wind speed indication or wind direction indication and b. Loss of R14 and RMS II Channel 1 or c. Loss of R15 and CR9 and RMS II Channel 5 or d. Loss of R21 and RMS II Channel 2 or e. Loss of GW112 and RMS II Channel 6	Unusual Event
	Failure of reactor protection system to complete a trip which brings reactor subcritical	All of the following: Unplanned first out annunciator on C04 with confirmation from associated indicator and intermediate range detector output not decaying and >1 RCC RPI indicates fully withdrawn	Alert

Category	Initiating Condition	Indication Used	Emergency Classification
	All alarms (annunciators) lost >15 minutes while unit is not in cold shutdown	1. "Annunciator power failure" on C01, C02 & 1(2)C03, 1(2)C04	Alert
	Loss of functions needed for cold shutdown for >4 hours while at cold shutdown	Any of the following: 1. Loss of service water Unit 1 = south & west header Unit 2 = north & west header 2. Loss of both trains of RHR 3. Loss of component cooling	Alert
12. Abnormal Radiation Levels at Site	a. Effluent monitors detect levels corresponding to any of the following: (1) >50 mR/hr for ½ hour (2) >250 mR/hr for ½ hour for the thyroid (3) >500 mR/hr whole body for 2 minutes (4) >2500 mR/hr to the thyroid for 2 minutes at the site boundary for adverse meteorology	Airborne effluents only	Site Emergency
	b. Any of the above doses measured in the environs	As reported to DSS by HP Supervisor	
	c. Any of the dose rates projected, based on plant parameters		
	a. Effluent monitors detect levels corresponding to either: (1) 1 R/hr whole body (2) 5 R/hr thyroid at the site boundary under actual meteorological conditions	Airborne effluents only	General Emergency
	b. Either of the above doses measured in environs	As reported to DSS by HP Supervisor	
	c. Either of above dose rates projected based on other plant parameters		
13. Fuel Handling Accident	Major damage to irradiated fuel in containment	Both of the following: 1. As reported to DSS by Core Loading Supvr. 2. Alarm on Victoreen on manipulator & alarm on R11	Alert

Category	Initiating Condition	Indication Used	Emergency Classification
	Fuel damage accident with release of radioactivity to auxiliary building (FFDSAR 14.2.1)	Both of the following: 1. As reported to DSS by Supvr in charge of fuel handling & drumming area vent (R21) 2. Alarm on Victoreen on spent fuel pit bridge.	Alert
14. Serious or Fatal Injury	Transportation of seriously or fatally injured individual from site to hospital (Reference EPIP 11.1)	Reported as judged by DSS (expect hospitalization for at least 48 hours)	Unusual Event
15. Security Threat	Security threat or attempted sabotage or Ongoing security compromise	Per MASP	Per MASP & Appendices 1-Hour Red Phone Only (Open Line) (4)
16. Hazards to Plant Operation	Unusual aircraft activity over facility	Visual observation of Operations Supervisor or security force	Unusual Event
	Near or onsite explosion or flammable or toxic gas release	As reported to DSS by plant personnel making [illegible] observation	Unusual Event
	Missile impacts from any source on facility	Visual observation by Operations Supervisor	Alert
	Missile impact causing damage to two trains of safety systems	Visual observation by Operations Supervisor	Site Emergency
	Aircraft crash in protected area (within the fence)	Visual observation by Operations Supervisor	Alert
	Known explosion damage to facility affecting plant operation. Toxic or flammable gases in facility environment excluding normal process gases	Visual observation by Operations Supervisor	Alert
	Toxic or flammable gases entering into vital areas (control room, auxiliary building, etc.) excluding normal process gases	Visual observation by Operations Supervisor	Site Emergency

Category	Initiating Condition	Indication Used	Emergency Classification
17. Natural Events	Any earthquake	Activation of >2 accelerographs and verified by actual physical ground shaking or by contacting Dr. David Willis, University of Wisconsin, Milwaukee Seismic Center at 1-414/963-4602.	Unusual Event
	Any tornado visible from site	Verification by Operations Supervisor	Unusual Event
	Low Lake Michigan water level	With no CW pumps running, water level is 3.9' below 0' on surge chamber level & confirmed by measuring forebay level at 10.9' below pumphouse floor (7' level)	Unusual Event
	Earthquake greater than operating basis earthquake	Earthquake with attendant structural damage of containment or spent fuel pit	Alert
	Any tornado striking the facility	Visual observation by Operations Supervisor	Alert
	Seiche near design level	>6" of water in turbine hall	Alert
	Winds in excess of design levels	Wind speed indicated as >100 mph	Alert
	Wind with damage	Structural damage to containment	Site Emergency
	Failure of protection for vital equipment at low levels (i.e., caused by seiche > design level<)	Any of the following: 1. >3' water in both EDG rooms. 2. >2' water in vital switchgear room. 3. >2' water in auxiliary feed pump room.	Site Emergency
18. Reactivity Transient	Uncontrolled rod withdrawal (FFDSAR 14.1.1 & 14.1.2)		Unusual Event
	CVCS Malfunction (FFDSAR 14.1.5)		Unusual Event
	Accidental Criticality		NRC Only (3)

Category	Initiating Condition	Indication Used	Emergency Classification
19. Load Transient	Loss of Electrical Load (FFDSAR 14.1.10)		Unusual Event
20. Other	Condition that warrants State and/or local official awareness	DCS & DSS concurrence	Unusual Event
	Condition that warrants establishment of technical support center & emergency support center	DCS & DSS concurrence	Alert
	Condition that warrants use of monitoring teams	DCS & DSS concurrence	Alert
	Personnel contamination	Health Physicist & DCS concurrence	NRC-only 1-hour (10)
	Any unplanned reactor trip	DCS & DSS concurrence	NRC-only 1-Hour (7)
	Strike by employees or guard force	DCS & DSS concurrence	NRC-only 1-Hour (2)
	Loss of red phone (ENS)	DCS & DSS concurrence	NRC-only 1-Hour (13)
	Personnel or procedural error	DCS & DSS concurrence	NRC-only 1-Hour (6)
	10 CFR 20.403	DCS & DSS concurrence	NRC-only 1-Hour (11)

ESTIMATION OF SOURCE TERM

1.0 GENERAL

The purpose of this procedure is to estimate the source term (stack release rate in Ci/second) using the low range operational stack monitors, the Eberline RMS II Radiation Monitoring Systems or direct contact radiation measurements on the plant effluent vents. The plant effluent vent stacks are:

1.1 Auxiliary Building Vent (ABVNT)

1.2 Drumming Area Vent (DAVNT)

1.3 Unit 1 Containment Purge Vent (CONT 1)

1.4 Unit 2 Containment Purge Vent (CONT 2)

1.5 Gas Stripper Building Vent (GSBVNT)

1.6 Combined Air Ejector Decay Duct (CAE)

1.7 Main Steam Safety Valves and Atmospheric Dump Valves

2.0 REFERENCE

2.1 EDS Report to Wisconsin Electric Power Company concerning NUREG-0578, March 7, 1980.

3.0 PRECAUTIONS

3.1 If fuel damage or loss of reactor coolant system integrity has occurred, some or all of the following would be present:

3.1.1 The letdown radiation monitor (R9) may be unusually high or offscale.

3.1.2 The containment radiation monitors (R11 and R12) may be unusually high or offscale.

3.1.3 The containment area monitors (R2 and R7) may be unusually high or offscale.

3.1.4 The charging pump area monitor (R4) may be unusually high or offscale.

3.2 Health Physics procedures and requirements must be followed when applicable (i.e., entering a high radiation area).

3.3 Evaluation of the radiation monitoring system readouts and radiological hazards must be completed prior to any attempt to enter the auxiliary building or facade to take a contact reading on any stack.

3.4 If this procedure is being used for determination of emergency classification, use EPIP 1.8 "Emergency Off-Site Dose Estimations" for determination of projected dose off-site. EPIP 1.8 is a shorter, however more conservative procedure for determination of projected dose.

4.0 INITIAL CONDITIONS

4.1 Applicable portions of EPIP 1.2, "Plant Status", is completed.

5.0 PROCEDURE FOR Xe-133 EQUIVALENT RELEASE RATE ESTIMATE - WORKSHEET NO. 1

5.1 Chemistry/Health Physics Supervisor or Designated Alternate

5.1.1 Obtain EPIP-05 and EPIP-06 of EPIP 1.2, "Plant Status," for the radiation monitoring systems.

NOTE: IF EPIP-05 AND EPIP-06 IN EPIP 1.2, "PLANT STATUS," ARE NOT COMPLETED, OBTAIN THE METER READINGS FOR EACH PLANT EFFLUENT VENT STACK FROM THE REMOTE CONTROL ROOM READOUT AND RECORD THIS ON WORKSHEET NO. 1 AND THEN PROCEED WITH STEP 5.1.3.

5.1.2 Enter the meter readings and flow rates in the appropriate columns on Worksheet No. 1 for the indicated vents. If the readings are offscale, not monitored, or the monitors are inoperable, enter the appropriate word "offscale," "not monitored," or "inoperable" in the meter reading column for the vent affected.

5.1.3 Designate individuals in accordance with ALARA concepts to obtain meter readings of the vents whose Eberline RMS II data is not available and the main steam header by performing Section 5.2 of this procedure if required.

NOTE: IF STEP 5.1.3 NEEDS TO BE COMPLETED BECAUSE EBERLINE RMS II DATA IS NOT AVAILABLE, OR IF A STEAM GENERATOR TUBE RUPTURE IS BELIEVED TO HAVE OCCURRED WHICH PRODUCES THE POTENTIAL FOR RELEASES, OR RELEASES ARE IN PROGRESS FROM THE MAIN STEAM HEADER OR THE ATMOSPHERIC STEAM DUMP, THEN PERFORM SECTION 5.3 OF THIS PROCEDURE AFTER APPROPRIATE MEASUREMENTS HAVE BEEN TAKEN IN SECTION 5.2.

5.1.4 Perform Section 5.3 of this procedure to determine the gross Xe-133 equivalent release rate estimate.

5.2 Direct Stack Survey Team Designees

NOTE: THE FOLLOWING SECTION WILL NOT BE INITIATED UNTIL THE EVALUATION DISCUSSED IN PRECAUTION 3.3 HAS BEEN COMPLETED AND THE SITE MANAGER (DUTY & CALL SUPERINTENDENT), THE DUTY & CALL HEALTH PHYSICS SUPERVISOR, AND THE DUTY SHIFT SUPERVISOR HAVE APPROVED INITIATION. THIS SECTION WILL BE ACCOMPLISHED UNDER THE DIRECTION OF HEALTH PHYSICS SUPERVISION.

5.2.1 Determine the most direct and desirable route to the plant effluent stack to be monitored.

5.2.2 Determine the Health Physics requirements to be met for the passage to the vent areas.

5.2.3 Determine the appropriate survey instrument to be used for the plant effluent vent to be monitored.

5.2.4 Proceed by the route determined in Step 5.2.1 to the stack and record the survey instrument reading in contact with the stack in the columns provided on Worksheet No. 1, Part C, Plant Effluent Vent Stack Contact Readings.

NOTE: IN THE CASE OF THE MAIN STEAM SAFETY VALVES AND ATMOSPHERIC STEAM DUMP VALVES, THE READING WILL BE TAKEN IN CONTACT WITH THE CENTERLINE OF THE MAIN STEAM HEADER, THREE FEET FROM THE MAIN STEAM LINE. SHIELD THE PROBE (WITH A MINIMUM OF .25 INCHES OF LEAD) ON THE SIDES FACING THE MAIN STEAM LINE AND THE CONTAINMENT.

5.3 Chemistry/Health Physics Supervisor or Designated Alternate

5.3.1 Choose the appropriate vent stack readouts in Part A, B, or C of Worksheet No. 1 to convert readings to a Xe-133 equivalent release rate. That is if the low range monitors go offscale, use the high range monitors. Conversely, if the normal monitors are onscale, use the normal monitors, or if both normal and high range monitors are offscale or inoperable, use the vent stack contact readings.

5.3.2 Use the appropriate attached conversion curves for each of the plant effluent vent to convert the chosen vent stack readout, (cpm or R/hour) and flow rate, from Step 5.3.1 to an Xe-133 equivalent release rate in Curies/second and record the value on Worksheet No. 1, Part D, Estimate of Gross Xe-133 Equivalent Release Rate. Enter the appropriate word "offscale," "not monitored," or "inoperable" for the cases where the plant effluent vent was not monitored, offscale, or inoperable.

NOTE: THE FOLLOWING QUALIFYING NOTES MUST BE RECOGNIZED.

1. If the actual flow rate is different than the conversion curves flow rate, a ratio of:

$$\frac{\text{Actual Flow Rate}}{\text{Conversion Curve Flow Rate}}$$

should be applied to determine the release rate.

(Ratio) X Conversion Curve = Adjusted Xe-133 Release Rate
= Equiv. Release Rate

2. If the main steam header vent release rate needs to be determined, the following steps must be applied.

a. Obtain from the Shift Supervisor an estimated flow rate through the main steam header in lbm/hour of steam being dumped to the environment and the specific volume (v) of the steam. At 1000 psia, specific volume is 0.446 $ft.^3/lbm$. At 500 psia, specific volume is 0.928 $ft.^3/lbm$.

_____ lbm/hr x v $\frac{ft.^3}{lbm}$ x 7.86 $\frac{cc}{ft.^3}$ $\frac{hr.}{sec.}$

b. Convert contact reading obtained at the main steam header to µCi/cc using the appropriate attached conversion curve for the main steam header.

_____ µCi/cc

c. Multiply flow rate obtained in Step (a) by the concentration obtained in Step (b) to obtain the release rate (Xe-133 equivalent) from the main steam header.

Flow Rate (cc/sec.) X Concentration (µCi/cc) = Main Steam Header Release Rate

5.3.2 Sum the values (1) through (7) on Worksheet No. 1, Part D, to determine the gross Xe-133 equivalent release rate.

NOTE: IF GRAB SAMPLE RESULTS ARE AVAILABLE, THE RESULT OF SUCH SAMPLES SHOULD BE MORE ACCURATE THAN GROSS MONITOR READINGS AND HENCE SHOULD BE USED IN LIEU OF THE RELEASE RATES CALCULATED ABOVE OR IN ADDITION TO THE ABOVE IF THE RELEASE IS FROM AN UNMONITORED RELEASE PATH.

5.3.3 Report the calculated gross Xe-133 equivalent release rate to the Shift Supervisor and the Technical Support Manager.

WORKSHEET NO. 1

Xe-133 EQUIVALENT RELEASE RATE

A. LOW RANGE OPERATIONAL VENT STACK READOUTS

Vent	Meter Reading (cpm)	Flow Rate (cfm)	Conversion Curve Attachment No.
Auxiliary Building		61400	1.3-1
Drumming Area		43100	1.3-2
Unit 1 Containment Purge		12500/25000	1.3-3 and 1.3-4
Unit 2 Containment Purge		12500/25000	1.3-5 and 1.3-6
Gas Stripper Building		13000	1.3-7
Combined Air Ejector Decay			1.3-8

B. EBERLINE RMS - II VENT STACK READOUTS

Vent	Meter Reading (R/hour)	Flow Rate (cfm)	Conversion Curve Attachment No.
Auxiliary Building		61400	1.3-9
Drumming Area		43100	1.3-10
Unit 1 Containment Purge		12500/25000	1.3-11 and 1.3-12
Unit 2 Containment Purge		12500/25000	1.3-11 and 1.3-12
Gas Stripper Building			1.3-13
Combined Air Ejector Decay			1.3-14

C. PLANT EFFLUENT VENT STACK CONTACT READINGS

Vent	Meter Reading (mr/hr or R/hr)	Flow Rate (cfm)	Conversion Curve Attachment No.
Auxiliary Building	_____	61400	1.3-15
Drumming Area	_____	43100	1.3-16
Unit 1 Containment Purge	_____	12500/25000	1.3-17 and 1.3-18
Unit 2 Containment Purge	_____	12500/25000	1.3-17 and 1.3-18
Gas Stripper Building	_____	13000	1.3-19
Combined Air Ejector Decay	_____	_____	1.3-20
Main Steam Header	_____	_____	1.3-21

D. ESTIMATE OF GROSS Xe-133 EQUIVALENT RELEASE RATE

Vent	Xe-133 Equivalent Release Rate (Curies/Sec.)
1. Auxiliary Building	_____
2. Drumming Area	_____
3. Unit 1 Containment Purge	_____
4. Unit 2 Containment Purge	_____
5. Gas Stripper Building	_____
6. Combined Air Ejector Decay Duct	_____
7. Main Steam Header	_____

8. Sum _____ (Gross Xe-133 Equiv. Release Rate)

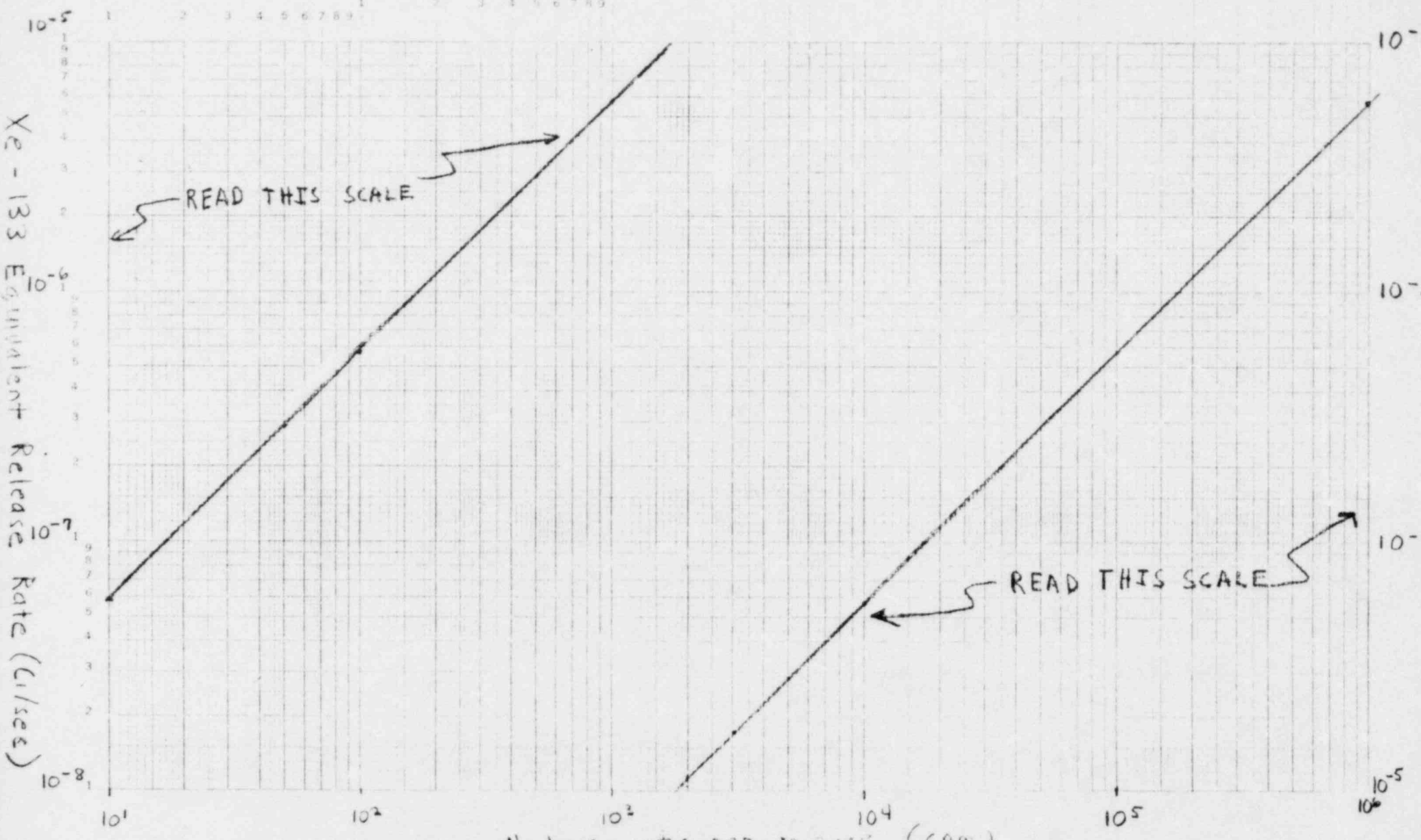
OR

9. Grab Sample Results = _____ Ci/sec.

Completed By _____ Time _____

Date _____

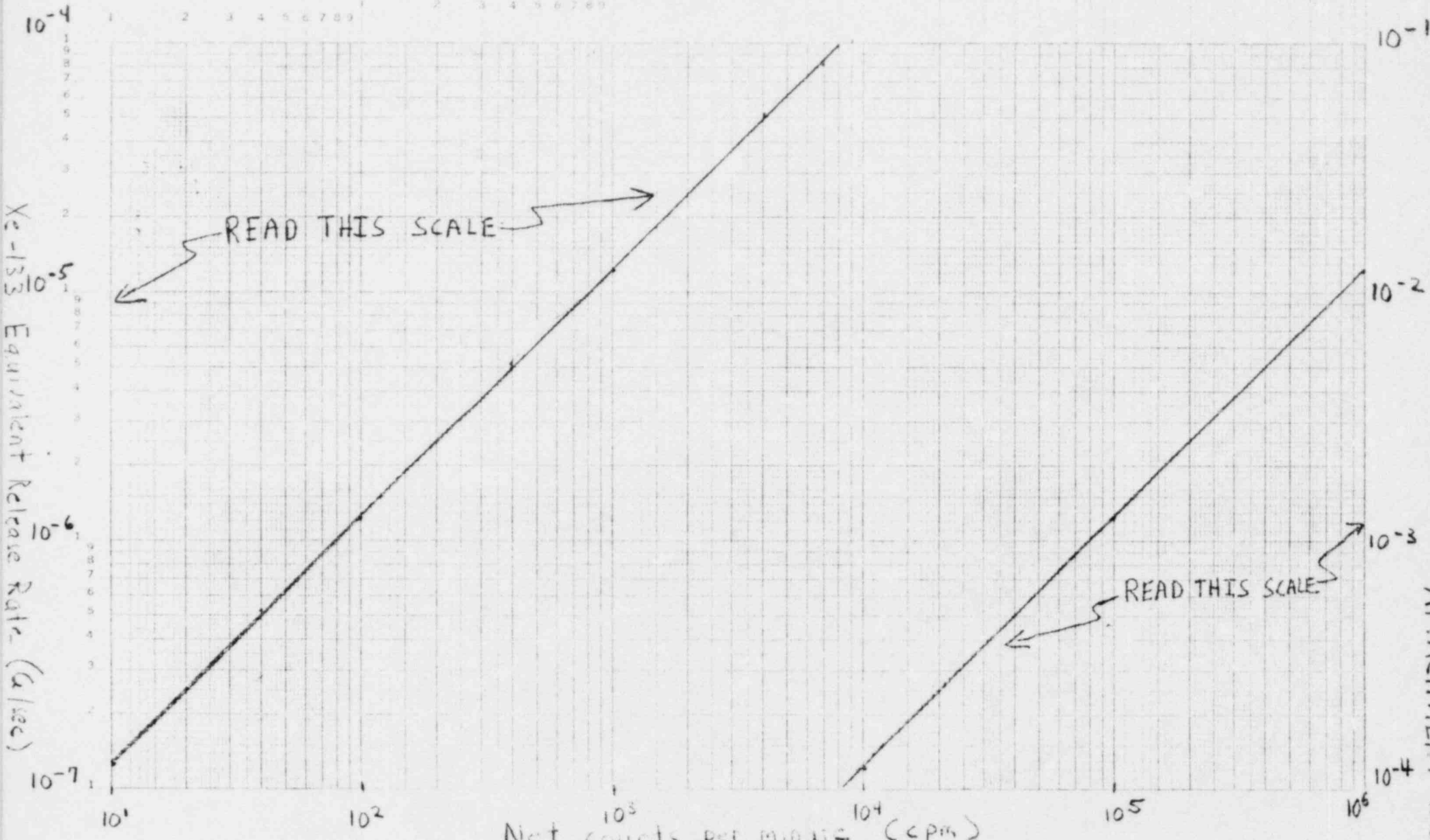
ATTACHMENT 1.3-1



R14 Auxiliary Building Vent Stack (Basis: 61,400 cfm)

ATTACHMENT 1.3-1

ATTACHMENT 1.3-2

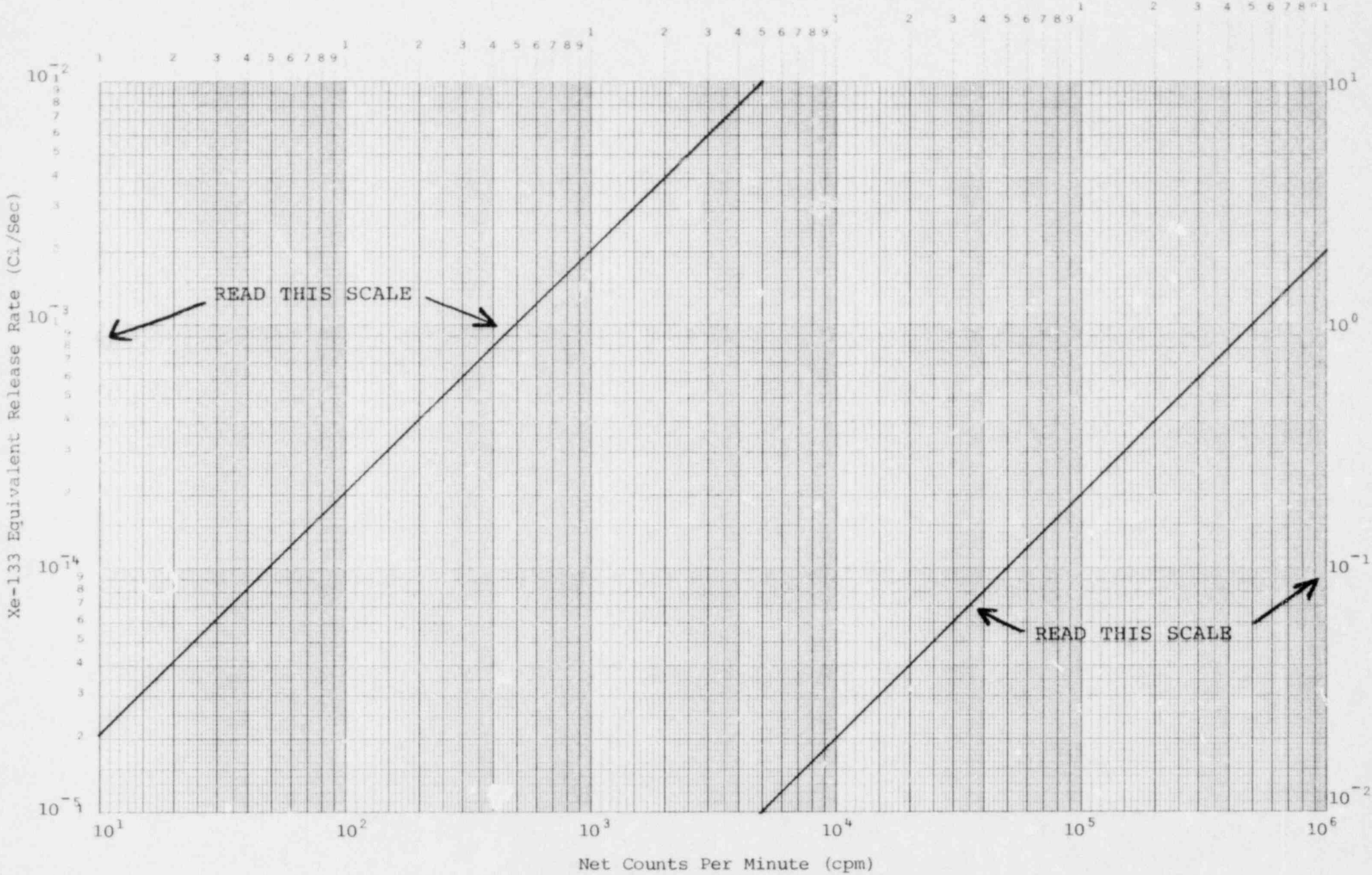


R-21 Drumming Area Vent Stack (Basis: 43,100 cfm)

Xe-133 Equivalent Release Rate (Ci/sec)

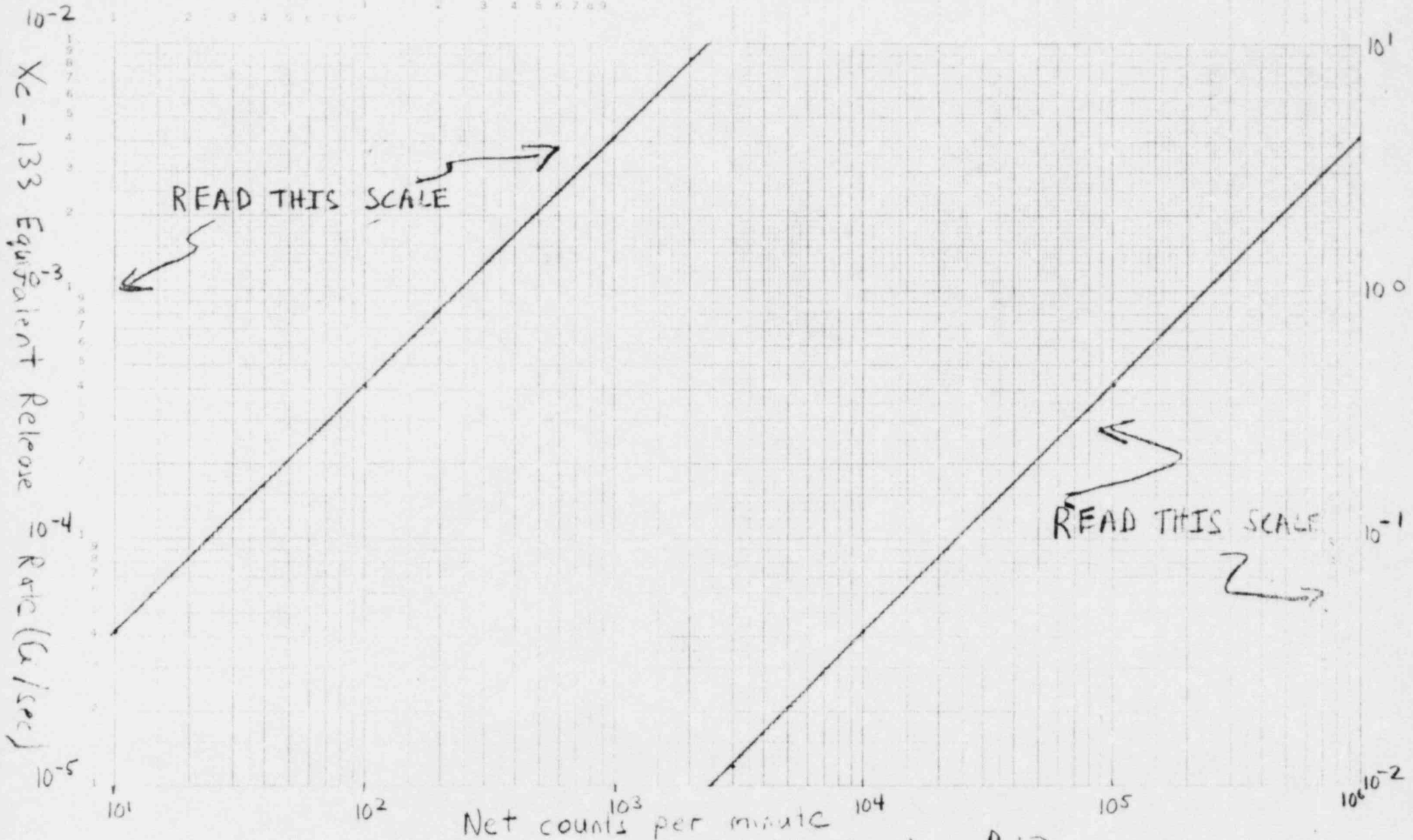
ATTACHMENT 1.3-2

ATTACHMENT 1.3-3



ATTACHMENT 1.3-3

ATTACHMENT 1.3-4

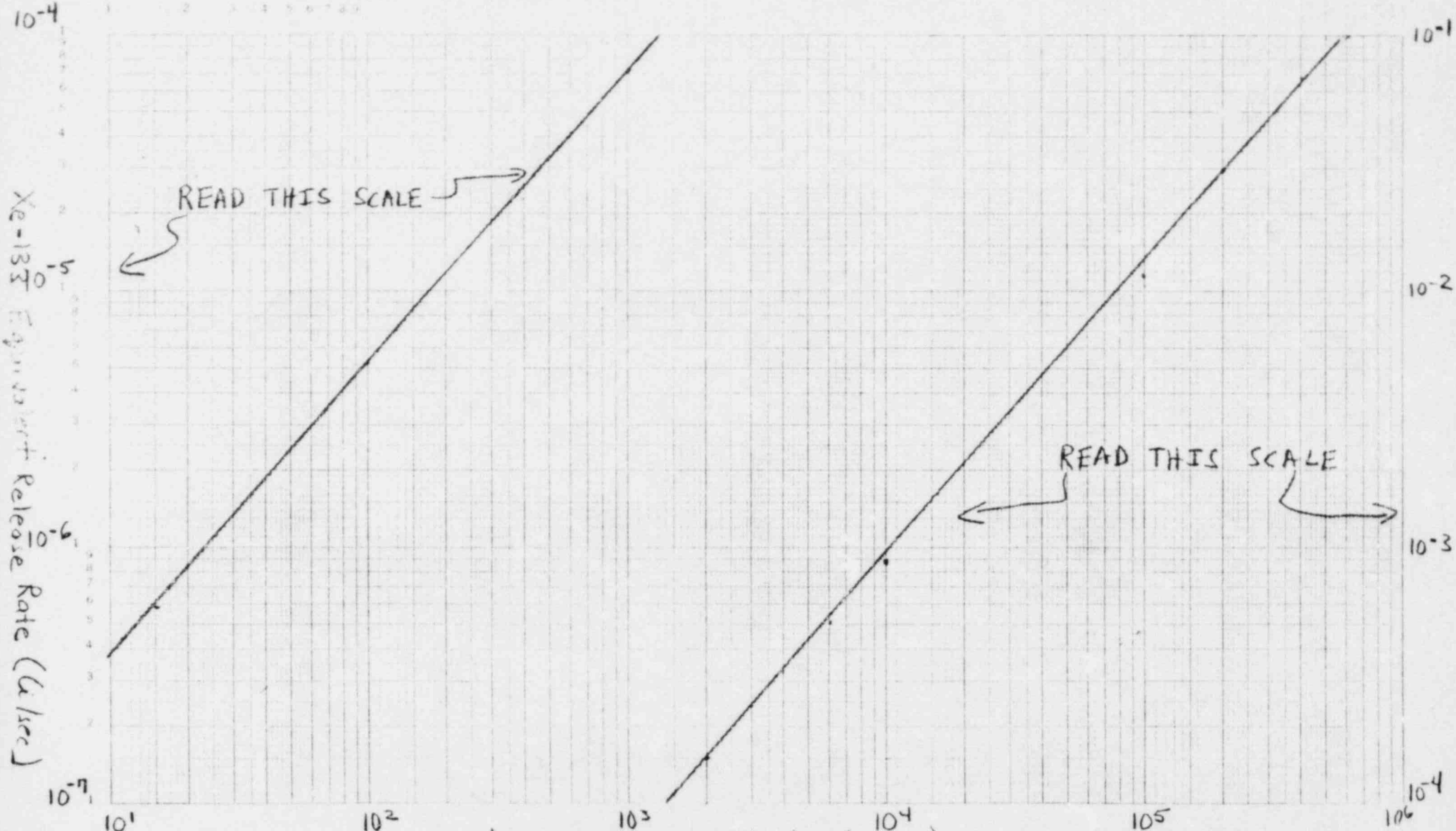


Unit 1 - Containment Noble Gas Monitor - R12

(Basis: 2 Fans / 25,000 cfm)

ATTACHMENT 1.3-4

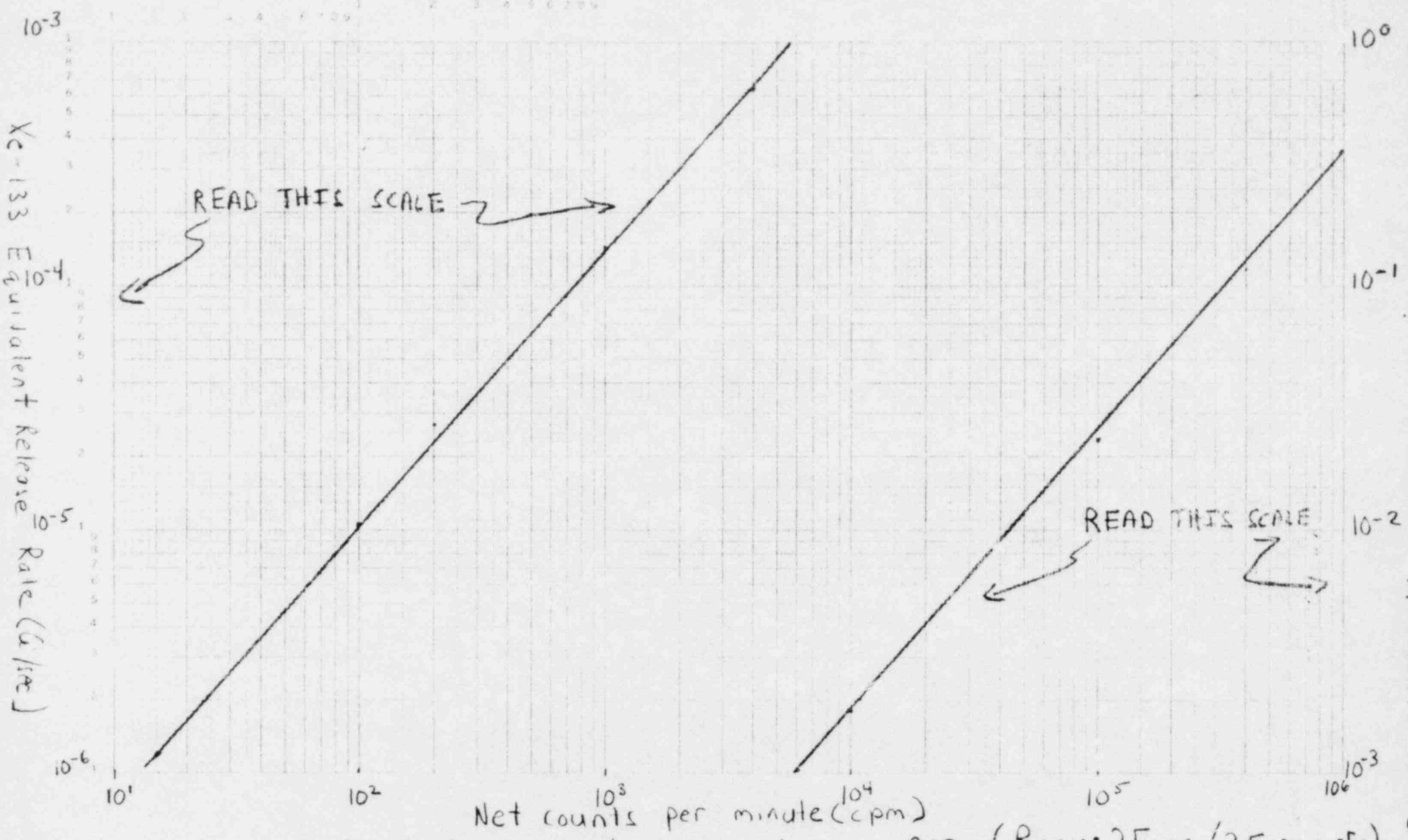
ATTACHMENT 1.3-5



Unit 2 Containment Noble Gas Monitor - R12 (Basis: 1 Fan / 12,500 cfm)

ATTACHMENT 1.3-5

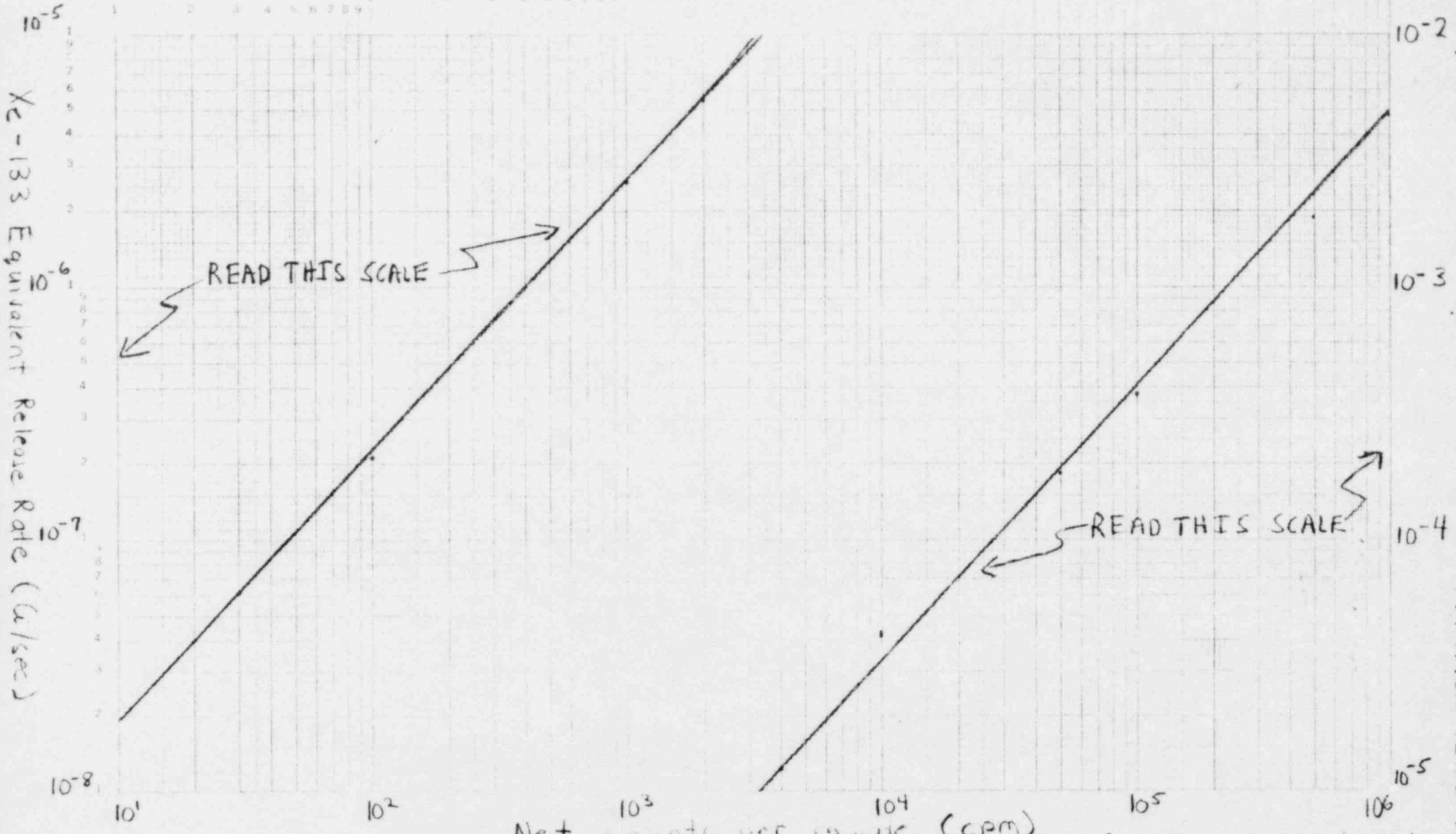
ATTACHMENT 1.3-6



Unit 2 Containment Noble Gas Monitor - R12 (Basis: 2 Fans / 25,000 cfm)

ATTACHMENT 1.3-6

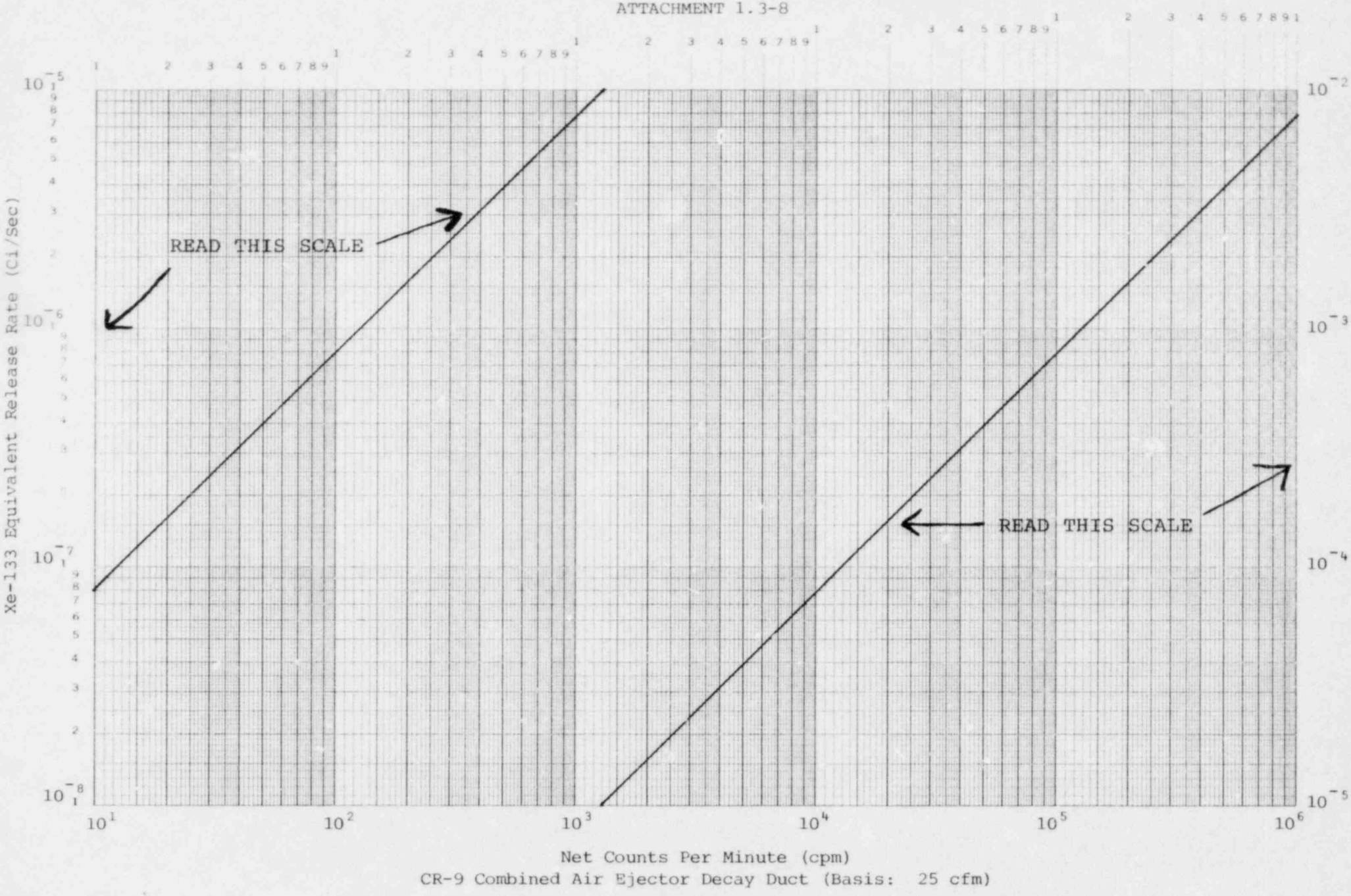
ATTACHMENT 1.3-7



GW112 Gas Stripper Building Vent Stack (Basis: 13,000 cfm)

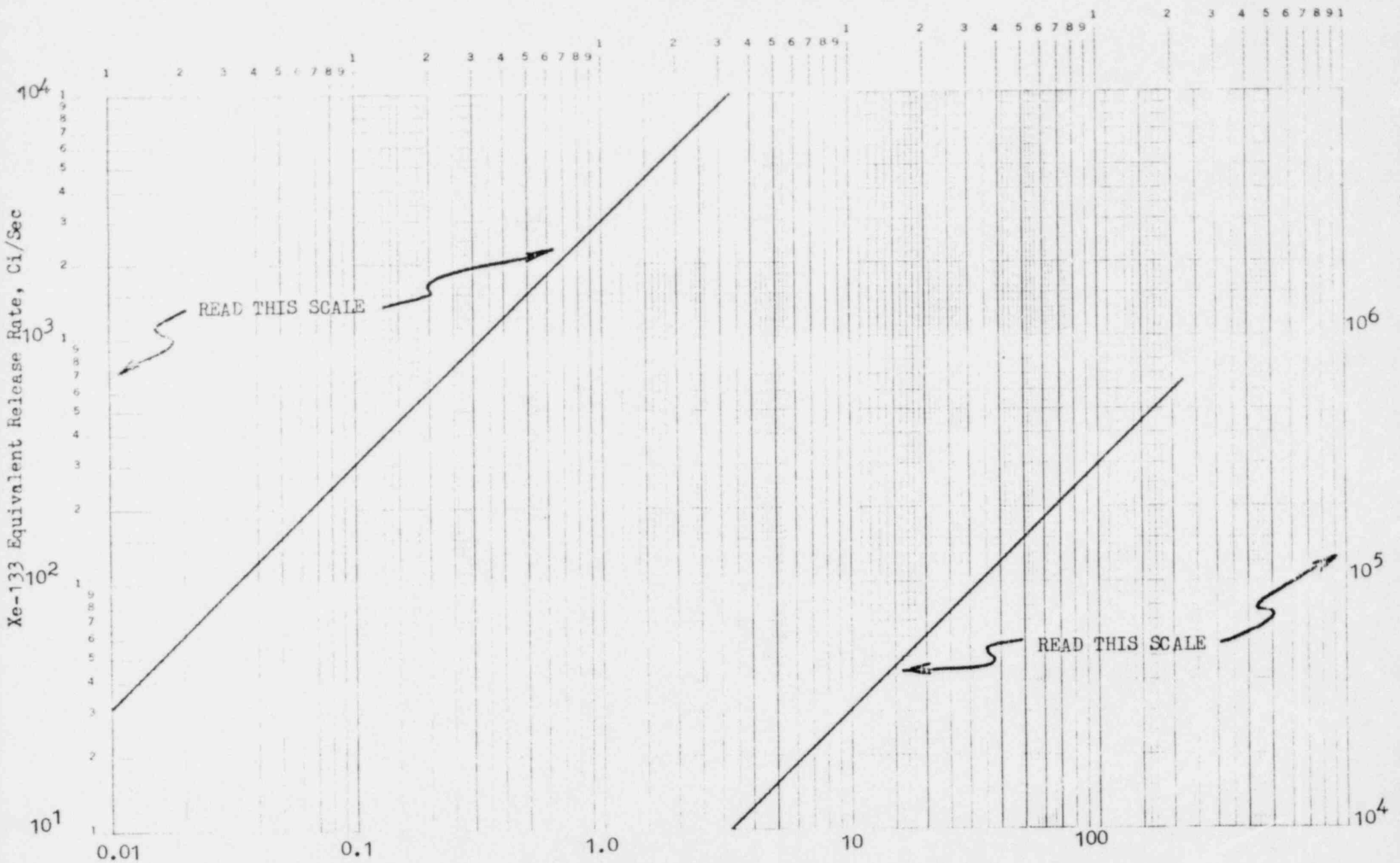
ATTACHMENT 1.3-7

ATTACHMENT 1.3-8



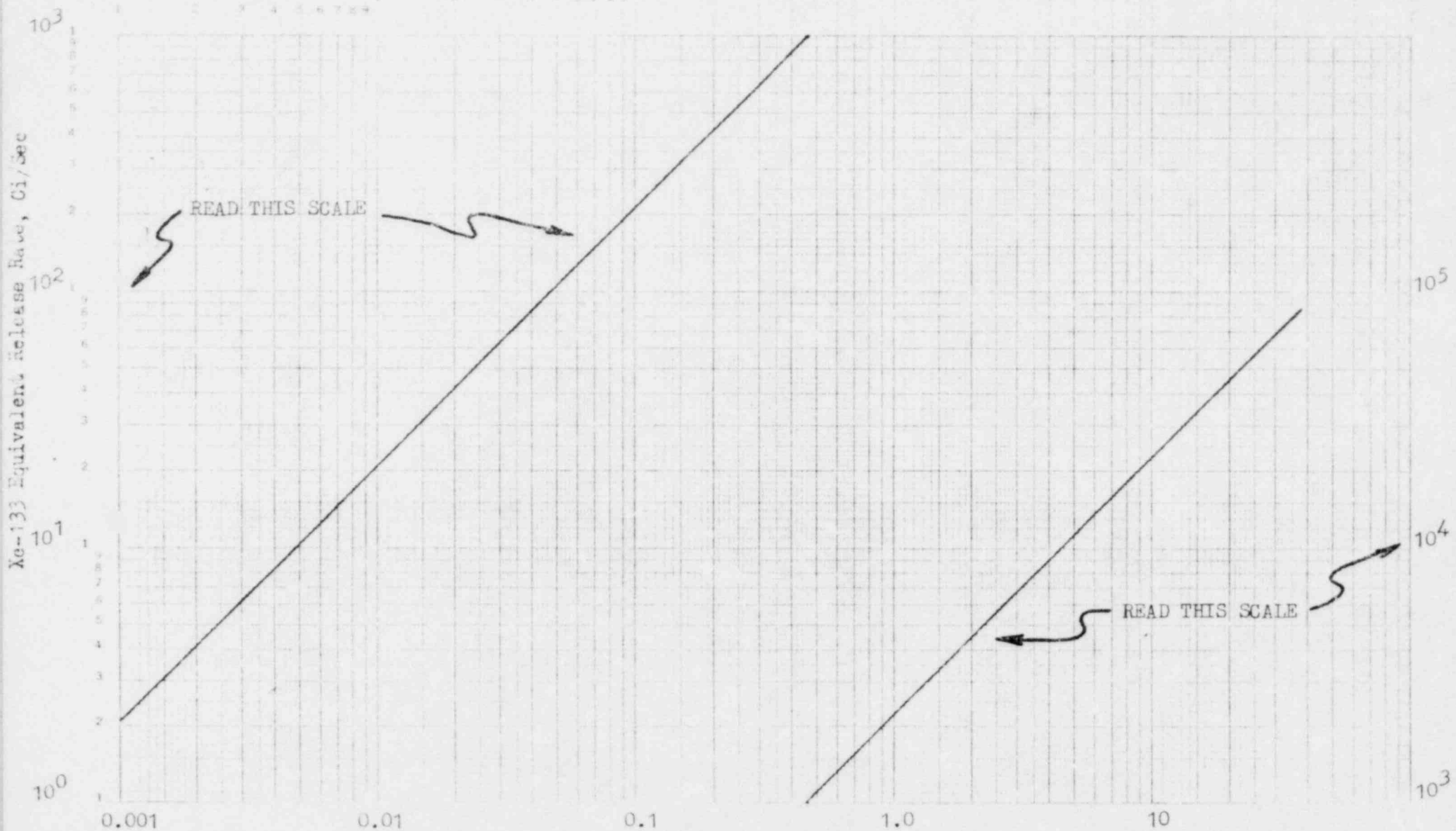
ATTACHMENT 1.3-8

ATTACHMENT 1.3-9



Auxiliary Building Stack (61,400 cfm)
(Measurement at RADECO Pallet with an 8" x 8" x 9" Expansion Chamber)

ATTACHMENT 1.3-10

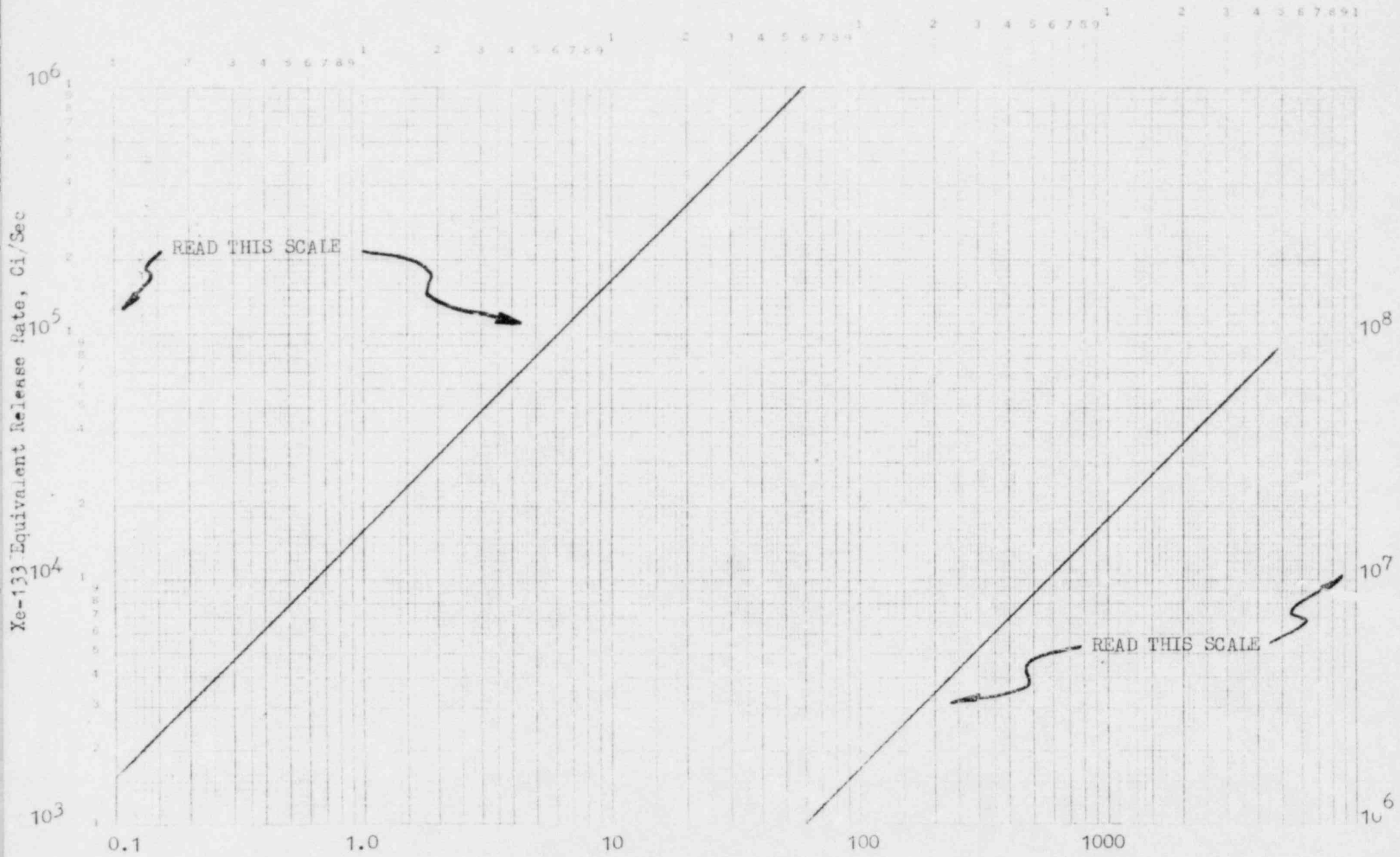


Meter Reading, R/Hr
Drumming Area Stack (43,100 cfm)
(Measurement at RADECO Pallet with an 8" x 8" x 9" Expansion Chamber)

Xe-133 Equivalent Release Rate, Ci/Sec

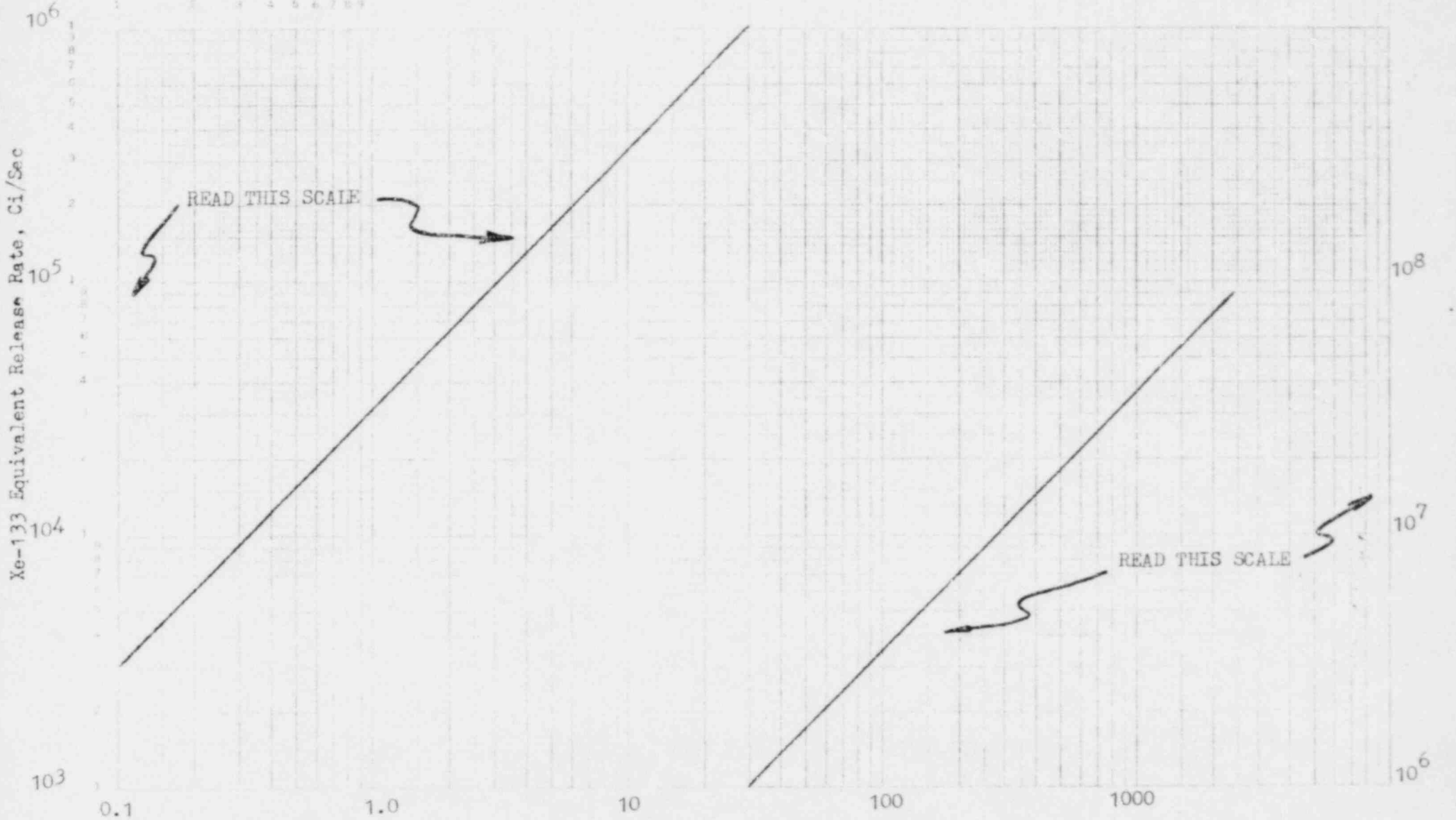
ATTACHMENT 1.3-10

ATTACHMENT 1.3-11

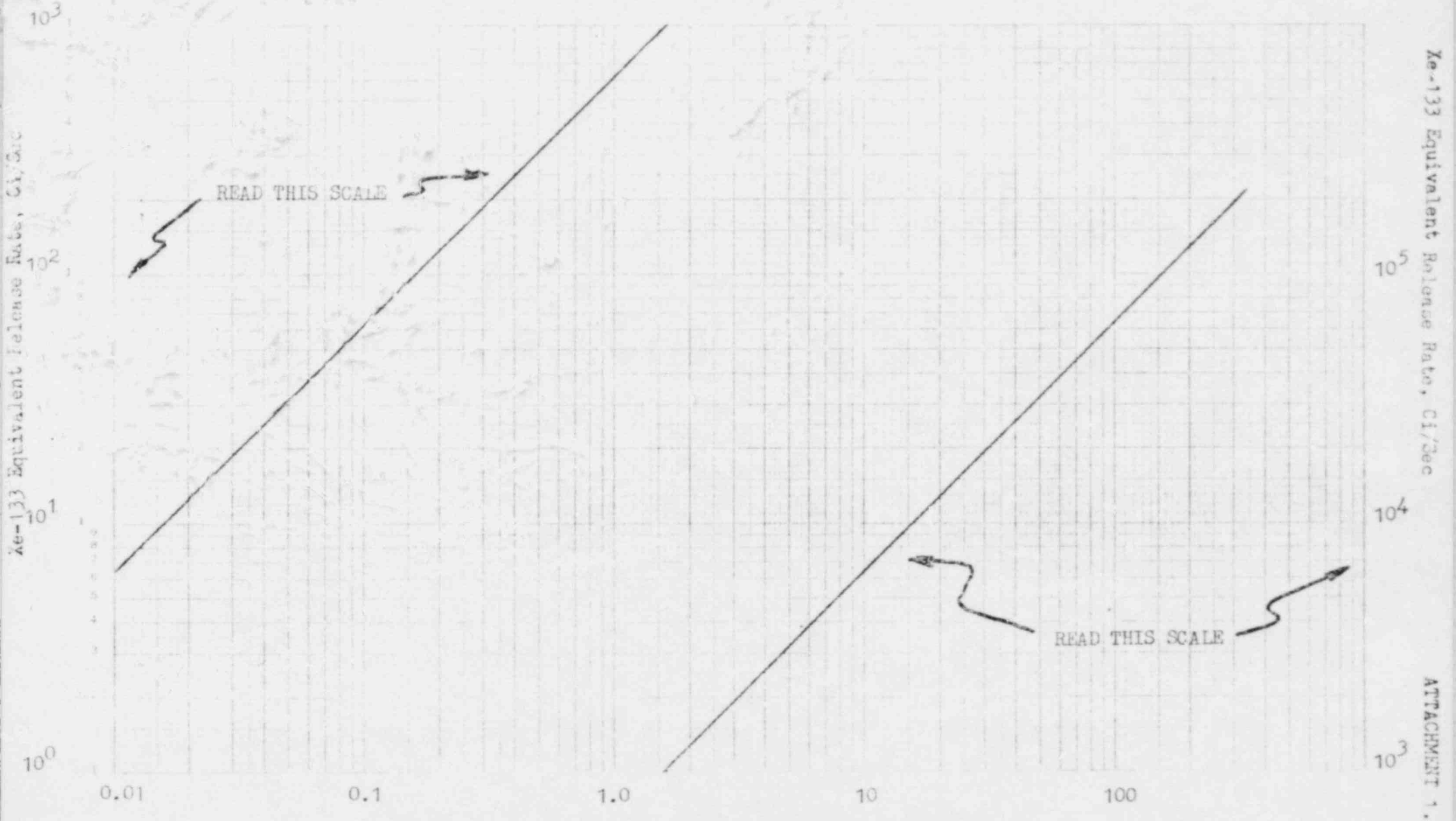


ATTACHMENT 1.3-11

ATTACHMENT 1.3-12

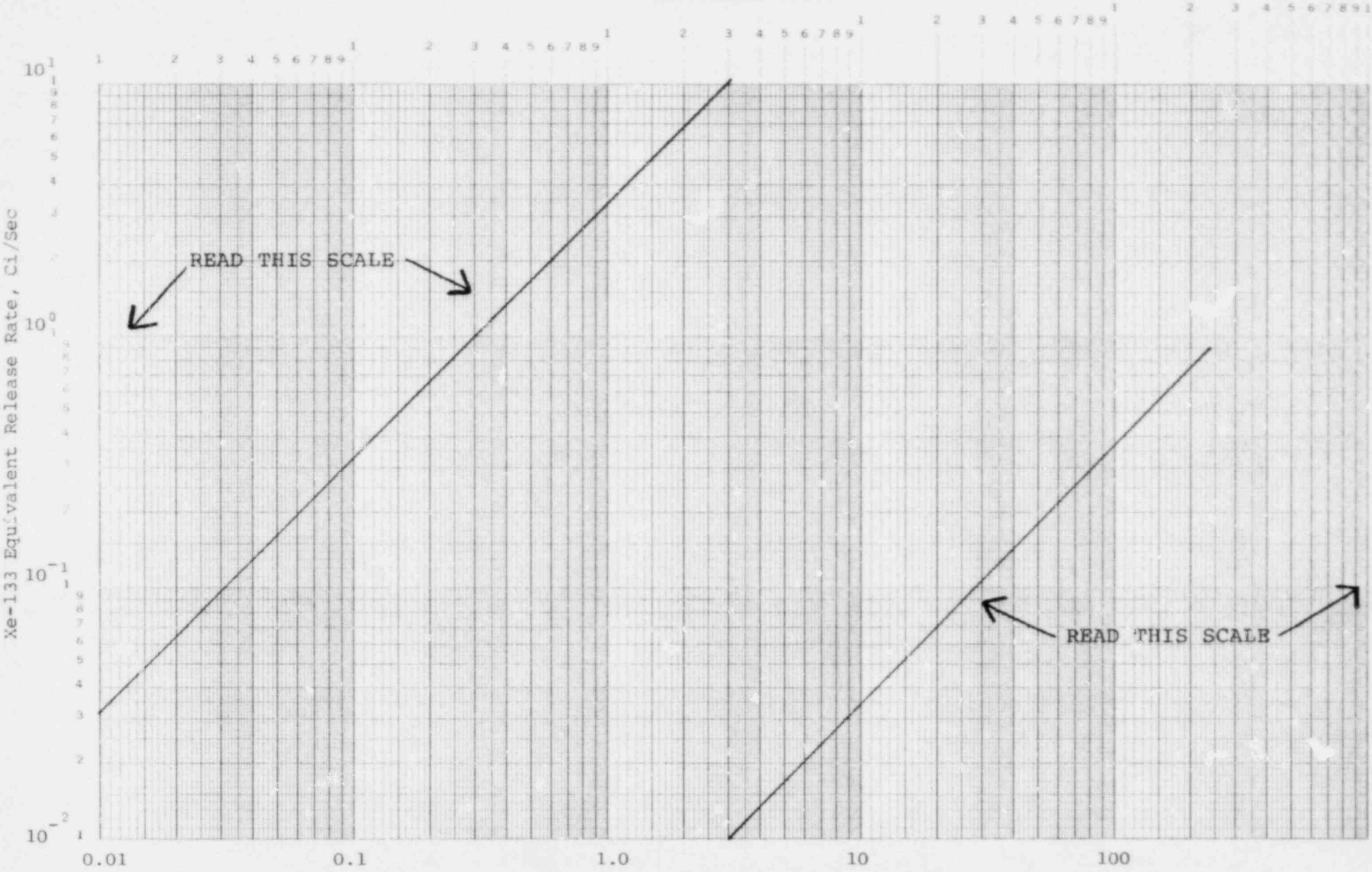


ATTACHMENT 1.3-13



ATTACHMENT 1.3-13

ATTACHMENT 1.3-14



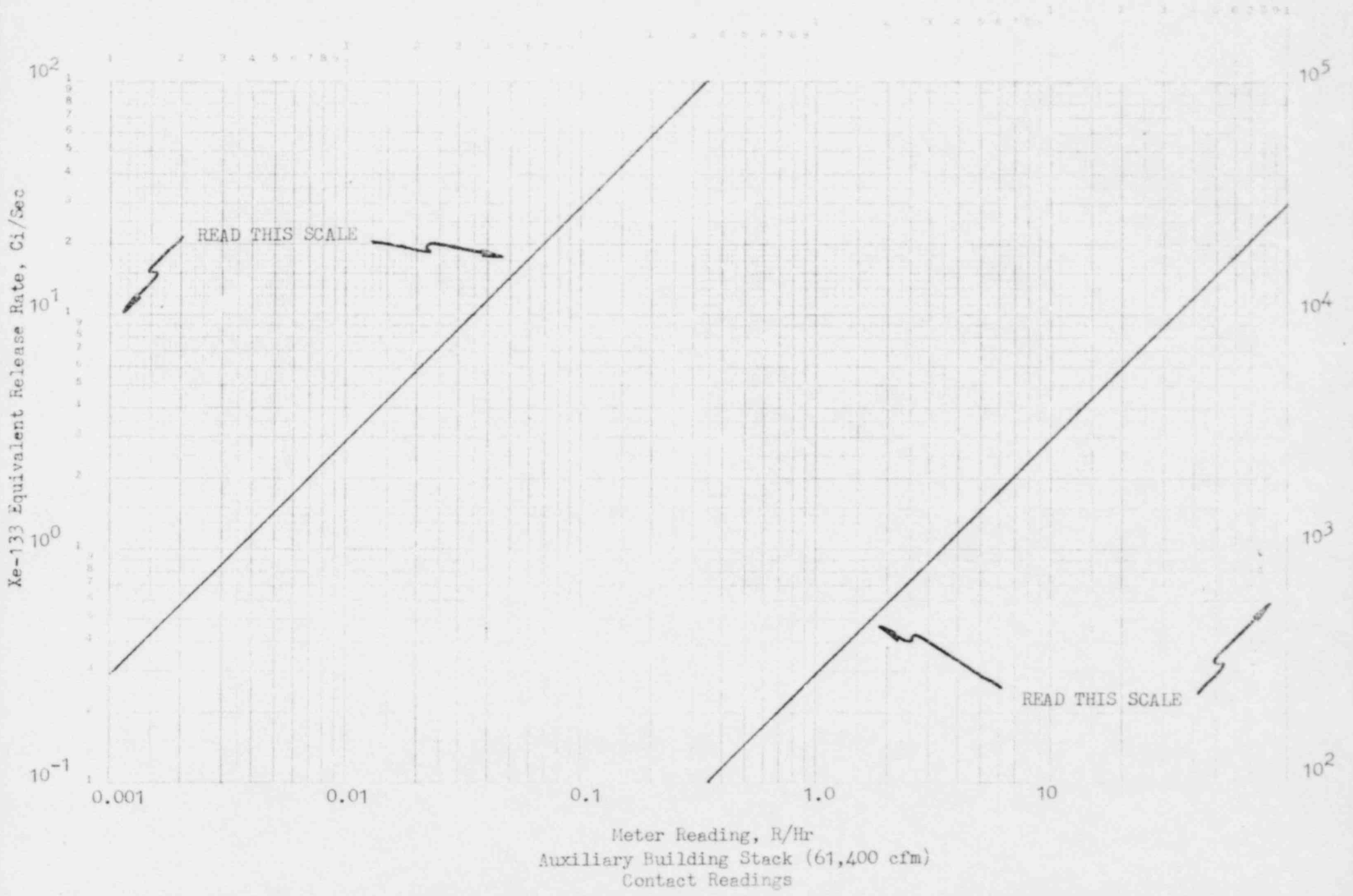
Meter Reading, R/Hr

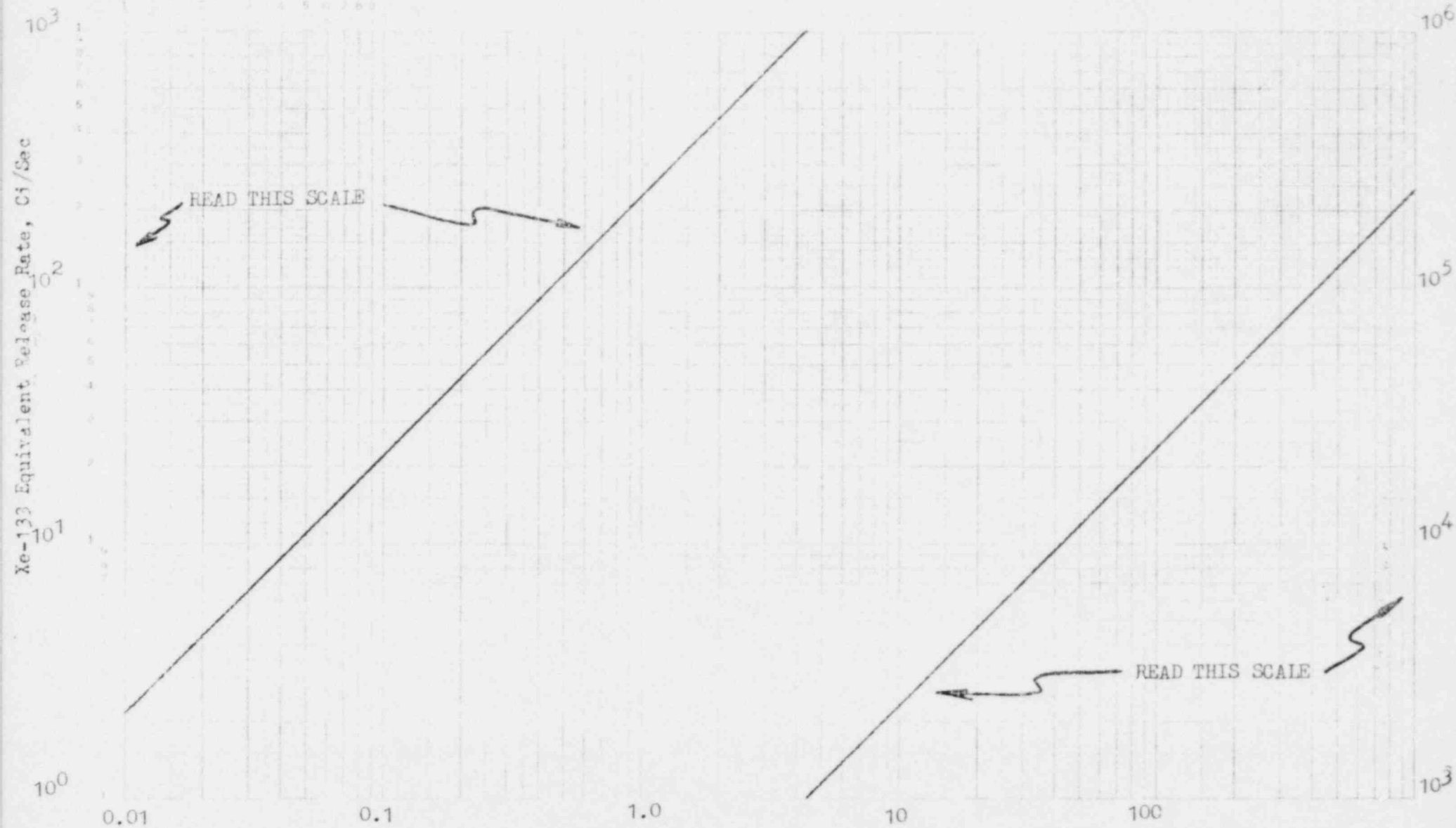
Combined Air Ejector Decay Duct (25 cfm) (Measurement at 4" SCH 40 Exhaust Pipe)

(If the measured flow is different, a ratio of ($\frac{\text{Measured Flow}}{25 \text{ cfm}}$) should be applied)

Xe-133 Equivalent Release Rate, Ci/Sec
ATTACHMENT 1.3-14

ATTACHMENT 1.3-15

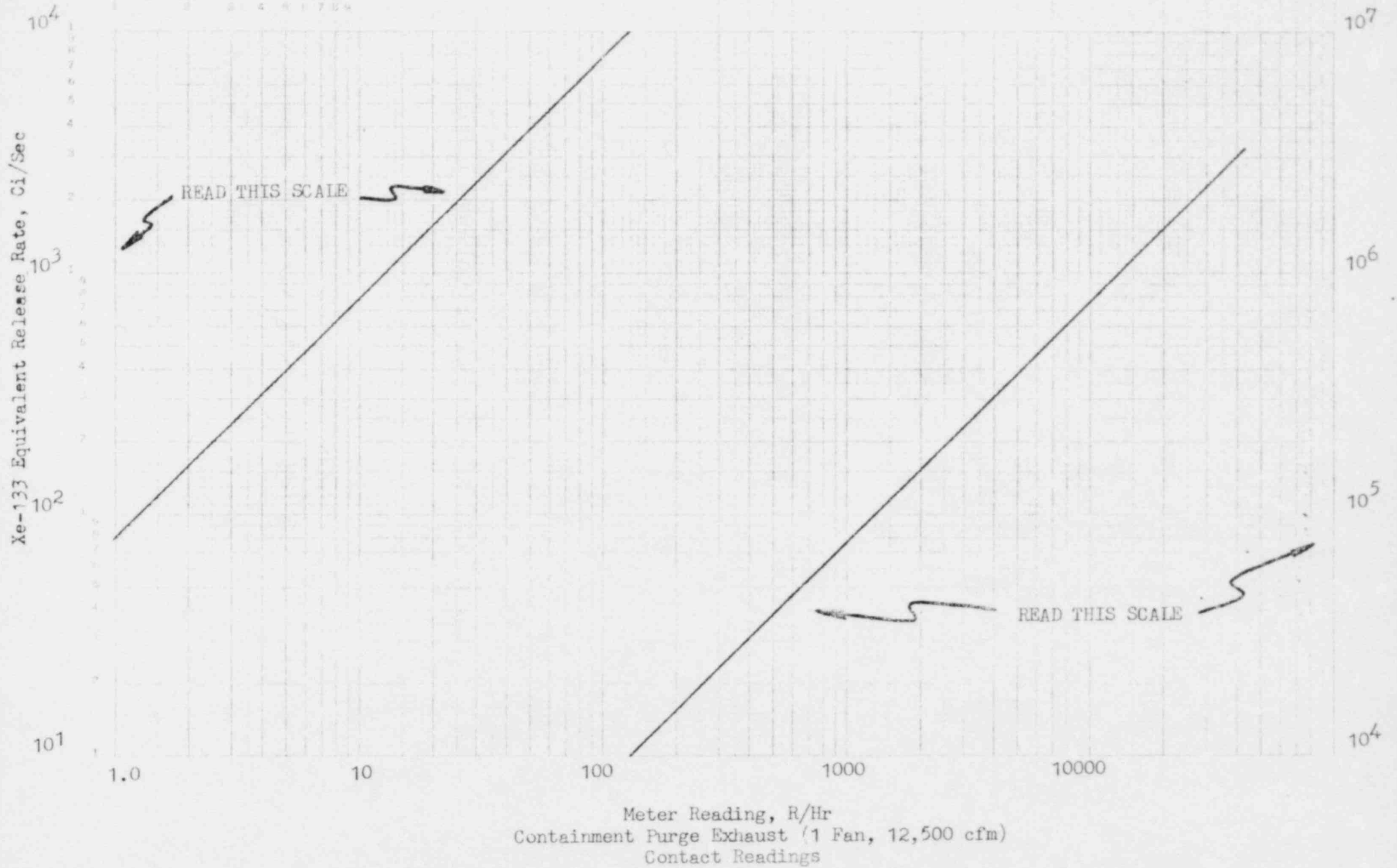




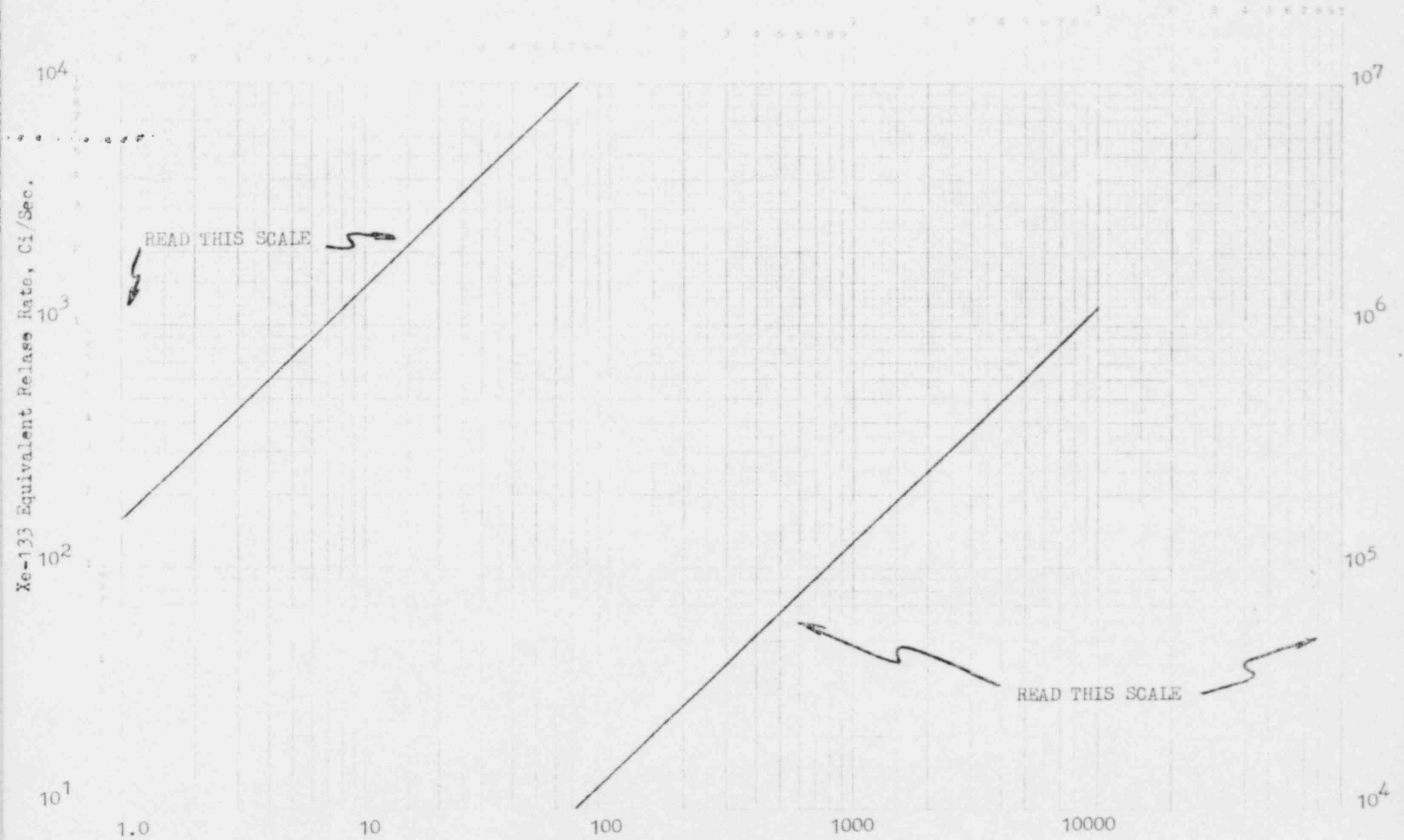
Meter Reading, R/Hr
Drumming Area Stack (43,100 cfm)
Contact Readings

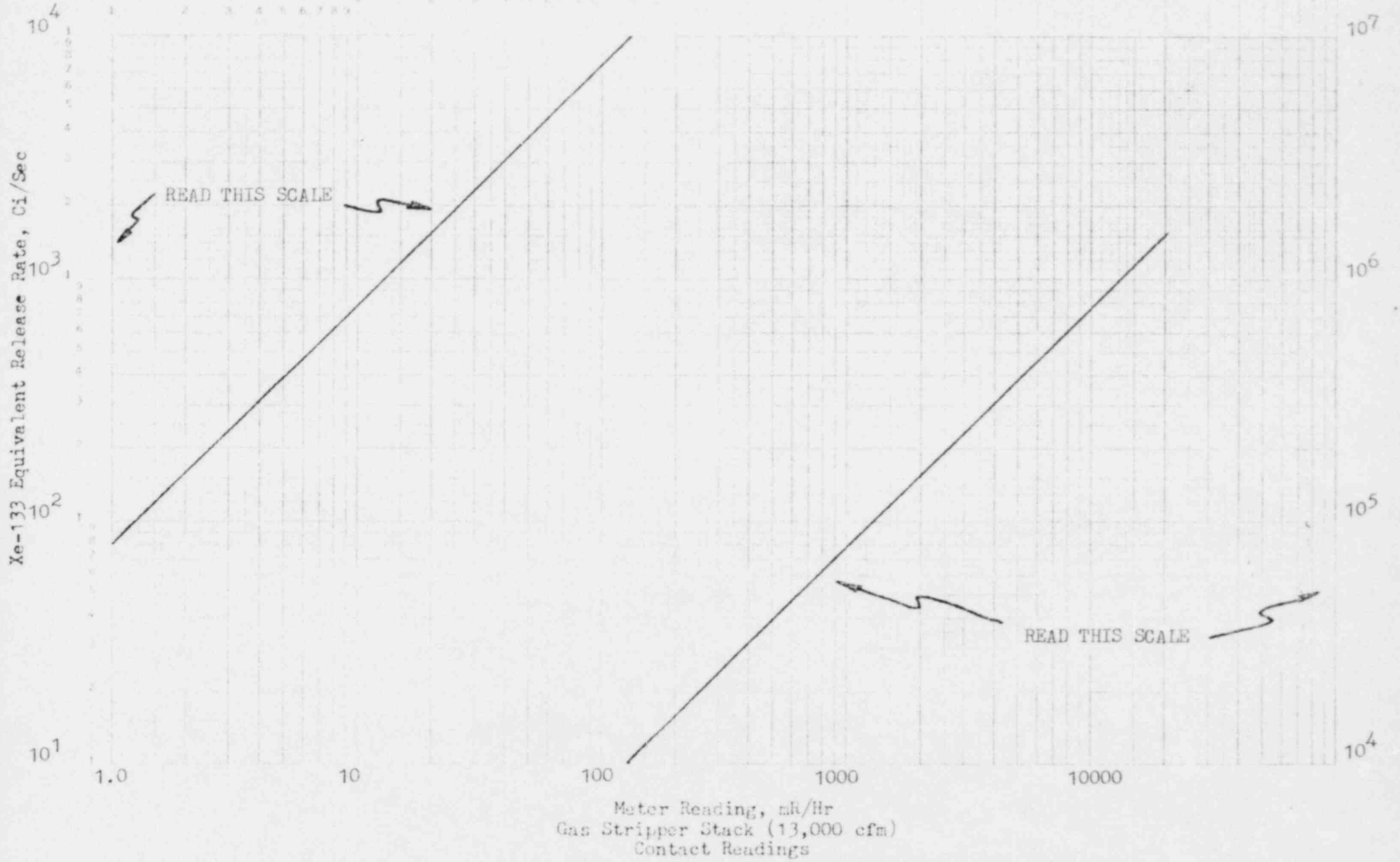
ATTACHMENT 1.3-16

ATTACHMENT 1.3-17

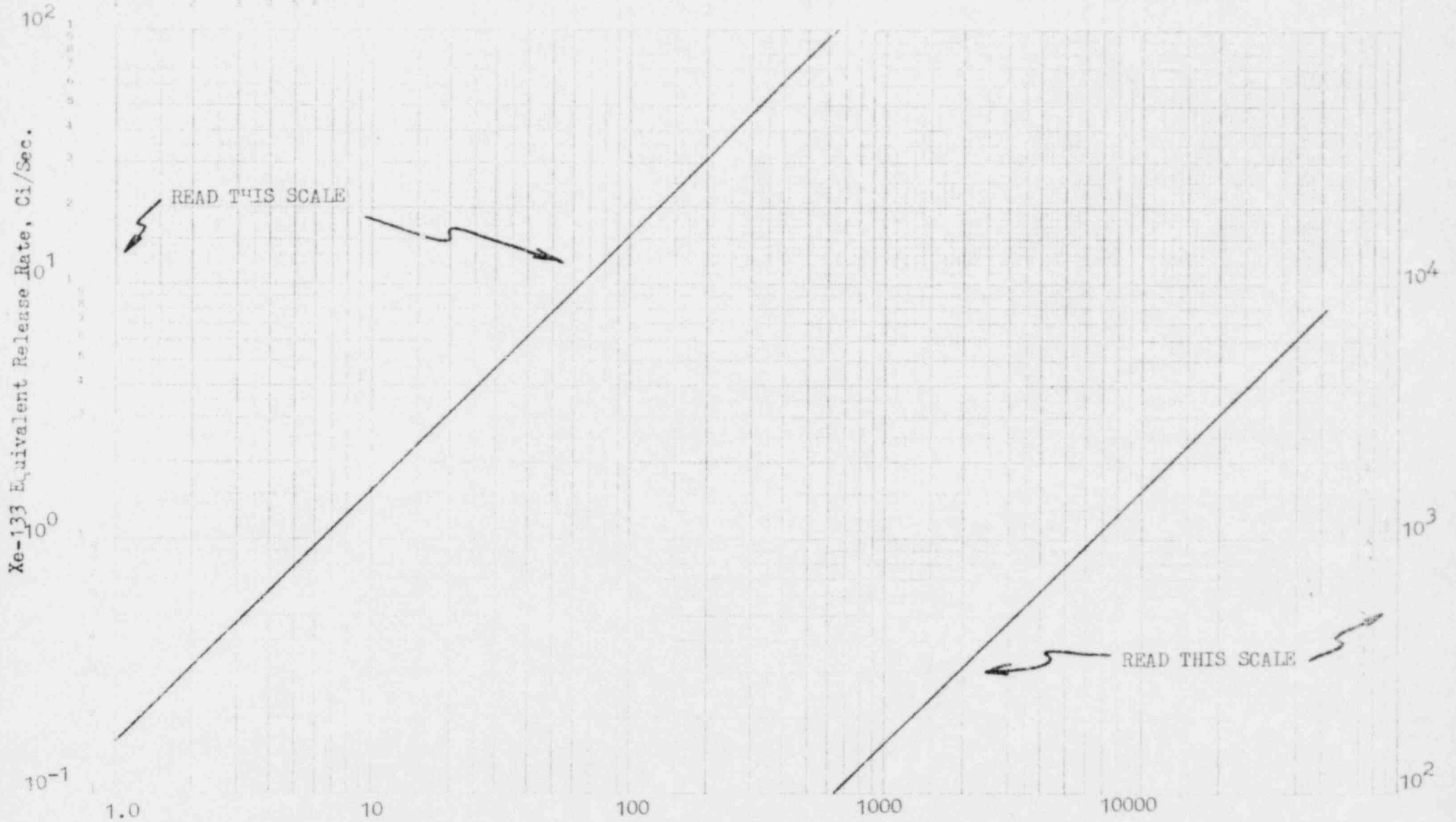


ATTACHMENT 1.3-18




Xe-133 Equivalent Release Rate, Ci/Sec
10^4
10^3
10^2
10^1
10^7
10^6
10^5
10^4
READ THIS SCALE
READ THIS SCALE
1.0
10
100
1000
10000
Meter Reading, mR/Hr
Gas Stripper Stack (13,000 cfm)
Contact Readings

ATTACHMENT 1.3-20

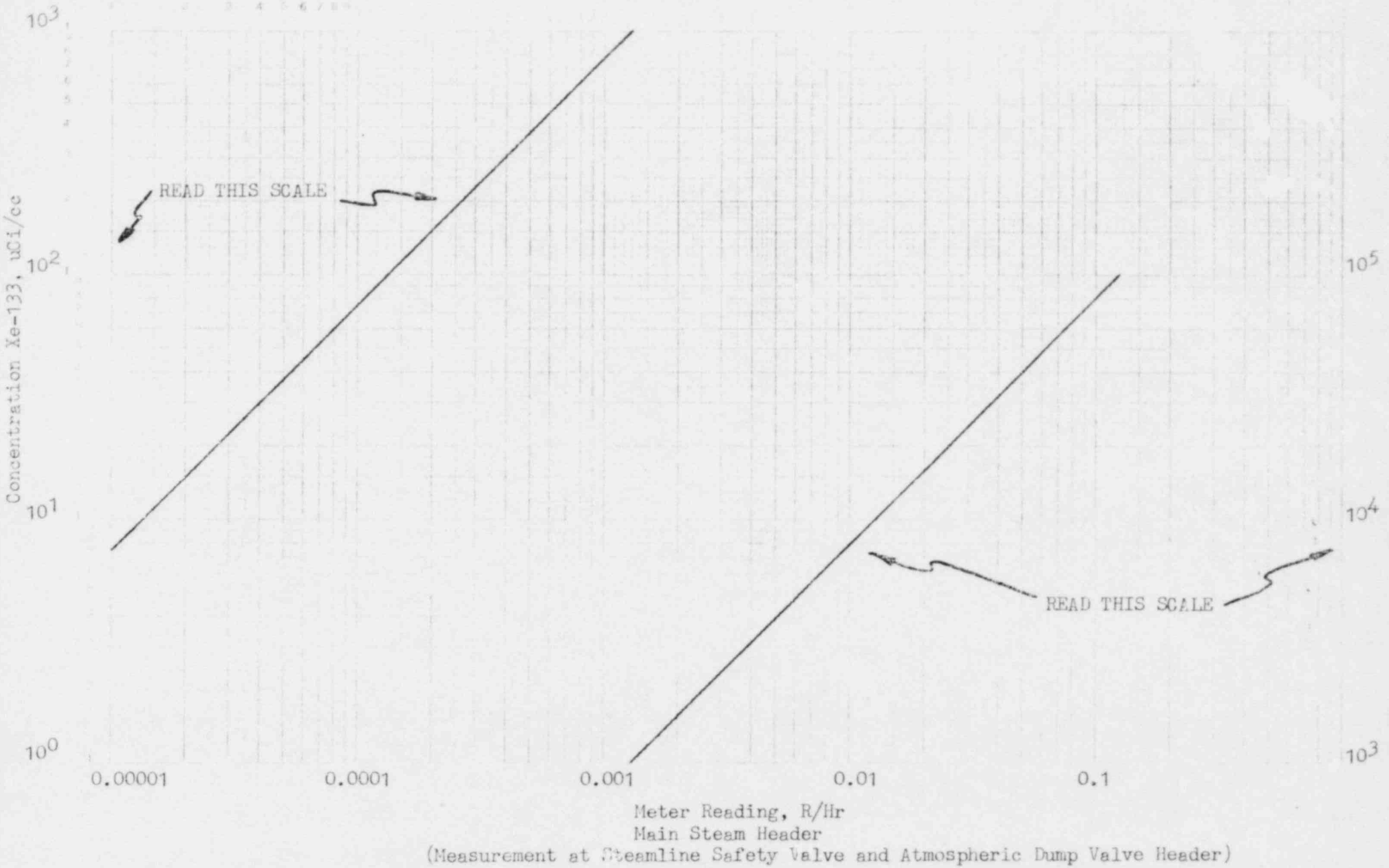


Meter Reading, mR/Hr

Combined Air Ejector Decay Duct (25 cfm) Contact Readings

(If the measured flow is different a ratio of ($\frac{\text{measured flow}}{25 \text{ cfm}}$) should be applied)

ATTACHMENT 1.3-21



RADIOLOGICAL DOSE EVALUATION

1.0 GENERAL

The purpose of this procedure is to provide a method to quickly estimate (1) X/Q using meteorological overlays, (2) thyroid and whole body dose using X/Q and (3) ground deposition using an approximation of D/Q.

2.0 REFERENCES

2.1 U. S. NRC Regulatory Guide 1.109, Calculation of Annual Doses to Man from Routine Release of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Revision 1," October 1977.

2.2 U. S. EPA, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," EPA-520/1-75-001, September 1975. See Appendix D "Technical Bases for Methods that Estimate the Projected Thyroid Dose and Projected Whole Body Gamma Dose from Exposure to Airborne Radioiodines and Radioactive Noble Gases."

2.3 U. S. NRC Regulatory Guide 1.4, "Assumptions used for Evaluating the Potential Radiological Consequences of a Loss-of Coolant Accident for Pressurized Water Reactors," Revision 2, June 1976.

2.4 TID 14844, "Calculation of Distance Factors for Power and Test Reactor Sites," March 23, 1962.

3.0 PRECAUTIONS & LIMITATIONS

3.1 Ensure that all PBNP maps to be used by this procedure and their corresponding meteorological overlays are based on the same scale.

3.2 This procedure will be accomplished in the technical support center by a person designated by the Shift Supervisor or the Technical Support Manager. It will usually be done in conjunction with the Chemistry/Health Physics Supervisor when available.

3.3 This procedure will also be accomplished in the ESC by a person designated by the RadCon/Waste Manager.

3.4 Wind speed and wind direction must be average values obtained from the analog recorders in the control room.

NOTE: DO NOT USE INSTANTANEOUS VALUES.

3.5 If the radiological release duration is unknown, assume a duration of 8 hours.

3.6 If the meteorological parameters cannot be obtained from the control room, obtain the data from the following priority backup list.

3.6.1 Kewaunee Nuclear Power Plant.

3.6.2 National Weather Service in Green Bay. Ask for Two Rivers Coast Guard information, if available.

4.0 INITIAL CONDITIONS

4.1 A release of airborne radioactivity has occurred or a release is anticipated.

4.2 An emergency or potential emergency condition is anticipated to have offsite dose consequences.

5.0 PROCEDURE

5.1 Determination of X/Q, Atmospheric Dispersion Factor

5.1.1 Obtain the following information from the indicated source and enter this data in the appropriate space on form EPIP-07 (attached).

Source	Data
EPIP-04	(a) wind speed in-mph
EPIP-04	(b) wind direction
EPIP-04	(c) time of reactor shutdown
EPIP-04	(d) time of release to containment
EPIP-04	(e) time of release from the plant
Health Physics or Operating logs or projected estimate	(f) duration or expected duration of the release in-hours (see note)
EPIP 1.3 results	(g) gross Xe-133 equivalent release rate in Ci/sec

NOTE: IF RELEASE DURATION IS UNKNOWN, ASSUME 8 HOURS.

5.1.2 Visually check cloud cover and incoming solar radiation. With this information, use Attachment 1.4-1 to ascertain the appropriate stability class. Enter the stability class (h), on form EPIP-07.

NOTE: IF INCOMING SOLAR RADIATION IS STRONG AND WINDS ARE FROM THE EAST OR SOUTHEAST, IT IS A POSSIBILITY THE WIND IS PRODUCED BY A LAKE EFFECT. CALL THE GREEN BAY NATIONAL WEATHER SERVICE FOR AID IN THIS DETERMINATION. IF A LAKE BREEZE IS SUSPECTED, OFFSITE SURVEY TEAMS MUST BE REMINDED TO PAY CLOSE ATTENTION TO WIND DIRECTION.

5.1.3 Place the overlay corresponding to the stability class on the map. Using the plant location as a pivot point, align the centerline of the overlay to the downwind direction from the plant.

NOTE: THE "TICK" MARKS ON THE CENTERLINE OF THE OVERLAYS ARE ONE MILE APART.

5.1.4 Determine the distance (i) to the dose projection location if different from the standard centerline distances listed on form EPIP-07. Note the location description, sector, and distance on form EPIP-07.

Enter the Xu/Q value (j) for the distances of site boundary, two miles, five miles, and ten miles on EPIP-07. The Xu/Q values (j) can be obtained from the overlay in the table in the lower righthand corner of the overlay. If a possible location other than the standard specified location is on a line, enter the Xu/Q (j) value for that line from the overlay on form EPIP-07. If the location is not on a line, move to the next inner-most line (toward the centerline) and enter the Xu/Q (j) value for that line on form EPIP-07.

Example:

Class "C" Xu/Q for 5 miles equals $1.21 \times 10^{-6}\ m^{-2}$

5.1.5 Calculate the X/Q value from the Xu/Q value by using the equation:

$$\frac{X}{Q}\ \frac{sec.}{m^3} = \frac{2.24(sec./m)}{(hrs./mi)} \times \frac{Xu/Q\ (m^{-2})}{Wind\ Speed\ (mi/hr.)}$$

Enter the X/Q values on form EPIP-07.

5.2 Whole Body Dose Estimate

NOTE: IF THE NOBLE GAS SOURCE TERM IS DETERMINED BY GRAB SAMPLE RESULTS WHICH GIVES AN INVENTORY OF SPECIFIC NUCLIDES, THEN A CONSERVATIVE WHOLE BODY DOSE ESTIMATE CAN BE MADE BY COMPLETING FORM EPIP-09.

5.2.1 Enter the gross Xe-133 equivalent release rate (g) on form EPIP-08 from form EPIP-07.

5.2.2 Enter the expected inhalation period, EIP, in hours (f) on form EPIP-08 from form EPIP-07.

5.2.3 Calculate the projected whole body dose on form EPIP-08 by using the equation:

$$D(\text{Rem}) = X/Q\ (\text{sec/m}^3)^{(k)} \times Q\ (\text{Ci/sec})^{(g)} \times Kr\ (\text{Rem m}^3/\text{Ci - Hrs}) \times EIP\ (\text{Hrs})$$

where:

D = whole body dose (Rem)

X/Q = atmospheric dispersion coefficient determined in Step 5.1.5 (sec/m^3) (k)

Q = release rate (Ci/sec) (g)

Kr = Dose Factor ($\frac{\text{rem m}^3}{\text{Ci hrs}}$) Attachment 1.4-2

EIP = Expected Inhalation (Exposure) Period (Hours) (f)

5.3 Thyroid Dose Estimate

5.3.1 Calculate the projected thryoid dose by using the whole body dose calculated in Section 5.2 of this procedure.

5.3.2 Record the projected whole body dose on form EPIP-08 in Section 2.

5.3.3 Choose the appropriate figure based upon the type of accident which has occurred.

a. Loss of Coolant Accident (LOCA) - Figure 1.4-1.

b. Gap Activity Accident - Figure 1.4-4.

c. Fuel Handling Accident - Figure 1.4-4.

d. Steam Generator Tube Rupture - Figure 1.4-5.

NOTE: IF THE TYPE OF ACCIDENT IS UNKNOWN, USE THE LOCA FIGURES.

5.3.4 Obtain the ratio factor that relates the whole body dose to a thyroid dose from the figure chosen with the corresponding appropriate time after the accident and record on form EPIP-08, Section 2.

5.3.5 Calculate the projected thyroid dose my multiplying the whole body dose by the ratio factor obtained in Step 5.3.4 on form EPIP-08, Section 2.

5.4 Radionuclide Ground Deposition Estimation

NOTE: FORM EPIP-10 CAN BE COMPLETED ONLY IF IODINE GRAB SAMPLE RESULTS OR PARTICULATE RELEASE RATES ARE AVAILABLE. IF FORM EPIP-10 CANNOT BE COMPLETED, PROCEED WITH STEP 5.4.5 OF THIS SECTION.

5.4.1 Enter the Xe-133 equivalent release rate or the specific particulate release rate on form EPIP-10 from grab sample results or from environmental monitoring results.

5.4.2 Enter the duration of release expected inhalation period (f) from form EPIP-07 on form EPIP-10.

5.4.3 Enter the value of X/Q (k) on form EPIP-10 as determined in Step 5.1.5

5.4.4 Complete Section 2 of form EPIP-10 to calculate the ground deposition using the equation:

$$\text{Dep } (\mu Ci/m^2) = F \times .05 \text{ (m/sec)} \times 3600 \text{ (sec/hr)} \times 10^6 \text{ } (\mu Ci/Ci) \times X/Q \text{ (sec/m}^3\text{)} \times Q \text{ (Ci/sec)} \times EIP \text{ (hrs)}$$

$$\text{Dep} = F \times 1.8 \times 10^3 \times \underset{(k)}{X/Q} \times \underset{(g)}{Q} \times \underset{(f)}{EIP}$$

Dep = ground deposition ($\mu Ci/m^3$)

X/Q = atmospheric dispersion factor from Step 5.1.5 (sec/m^3) (k)

Q = radionuclide release rate (Ci/sec) (g)

EIP = estimated release duration (hrs) (f)

F = fraction of isotope subject to deposition (unitless)

3600 = conversion (sec/hr)

10^6 = conversion ($\mu Ci/Ci$)

0.05 = assumed deposition velocity (m/sec)

5.4.5 Complete form EPIP-11 from available data and calculations just performed.

5.4.6 Enter the date and time of these calculations and sign form EPIP-11.

5.4.7 Forward completed attachments to the Technical Support Manager for review. The Technical Support Manager will relay results to the Site Manager.

ATTACHMENT 1.4-1

DETERMINATION OF ATMOSPHERIC STABILITY CLASS

Surface Wind Speed, (at 50 meters) mph	Day			Night	
	Incoming Solar Radiation			Thinly Overcast	
	Strong	Moderate	Slight	> 1/2 low cloud	< 1/2 cloud
< 4	A	A-B	B		
4-7	A-B	B	C	E	F
7-11	B	B-C	C	D	E
11-13	C	C-D	D	D	D
>13	C	D	D	D	D

The neutral class D, should be assumed for overcast conditions during day or night.

"Strong" incoming solar radiation corresponds to a solar altitude greater than 60° with clear skies; "slight" incoming solar radiation corresponds to a solar altitude from 15°-35° with clear skies. Cloudiness will decrease incoming solar radiation and should be considered along with solar altitude when determining solar radiation. Incoming radiation that would be strong with clear skies can be expected to reduce to moderate with broken (5/8 to 7/8 cloud cover) middle clouds and to slight with broken low clouds. Night refers to the period from one hour before sunset to one hour after sunrise.

ATTACHMENT 1.4-2

WHOLE BODY DOSE RATE CONVERSION FACTORS

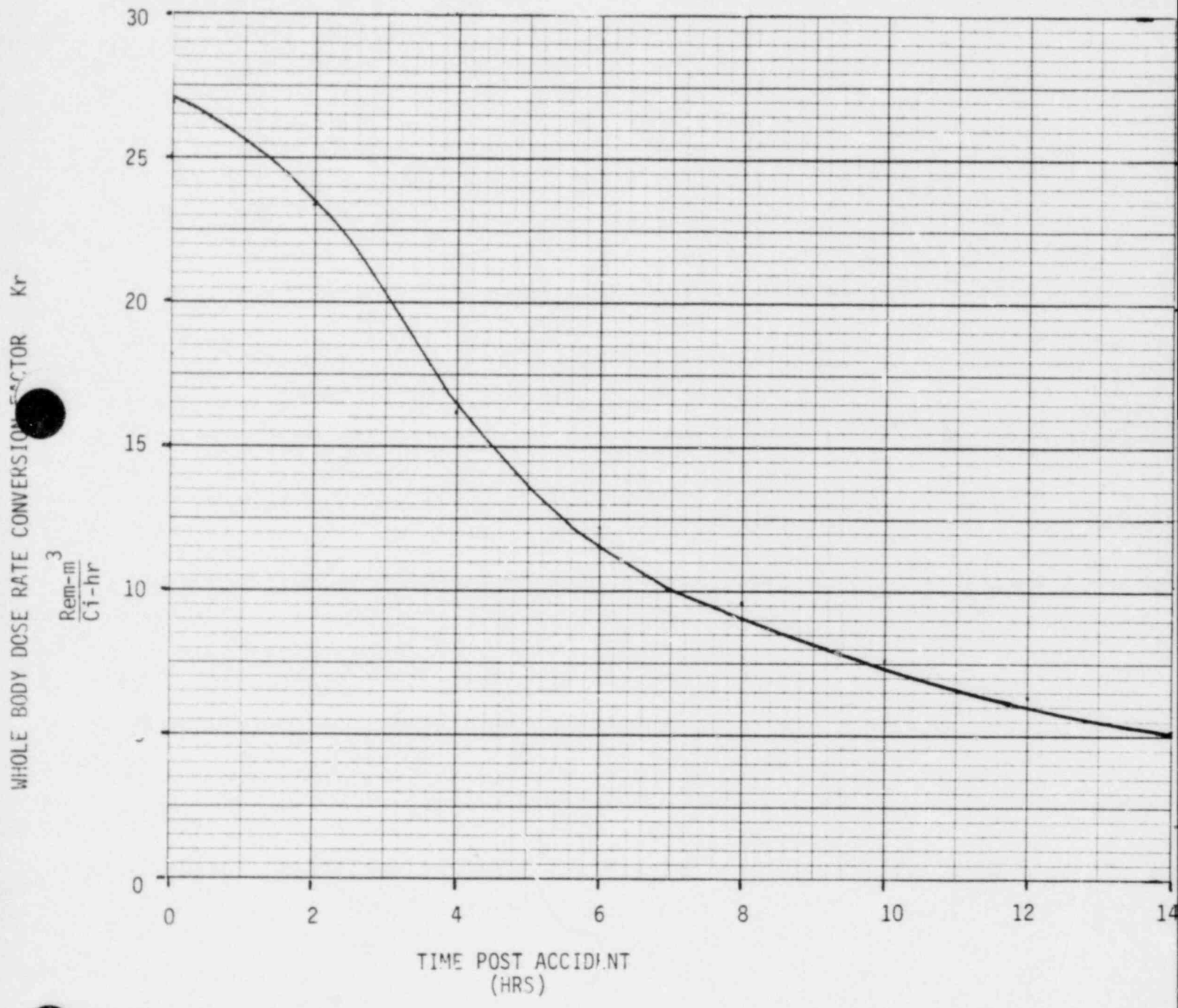
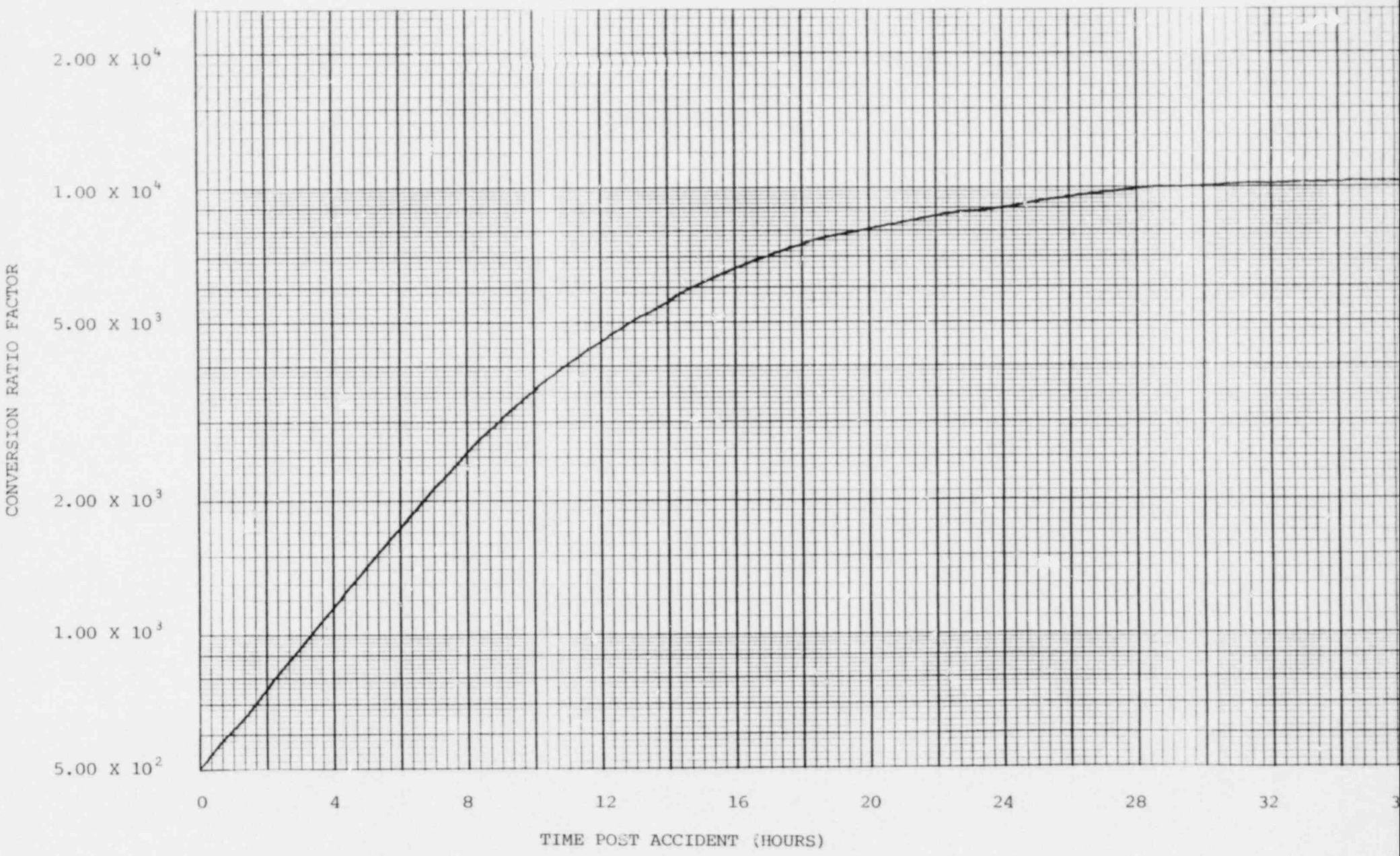


FIGURE 1.4-1

THYROID DOSE RATIO FACTOR LOSS OF COOLANT ACCIDENT



FIGURES 1.4-2 AND 1.4-3 HAVE BEEN DELETED

FIGURE 1.4-4
THYROID DOSE CONVERSION FACTOR
FUEL HANDLING ACCIDENT
OR GAP ACTIVITY ACCIDENT

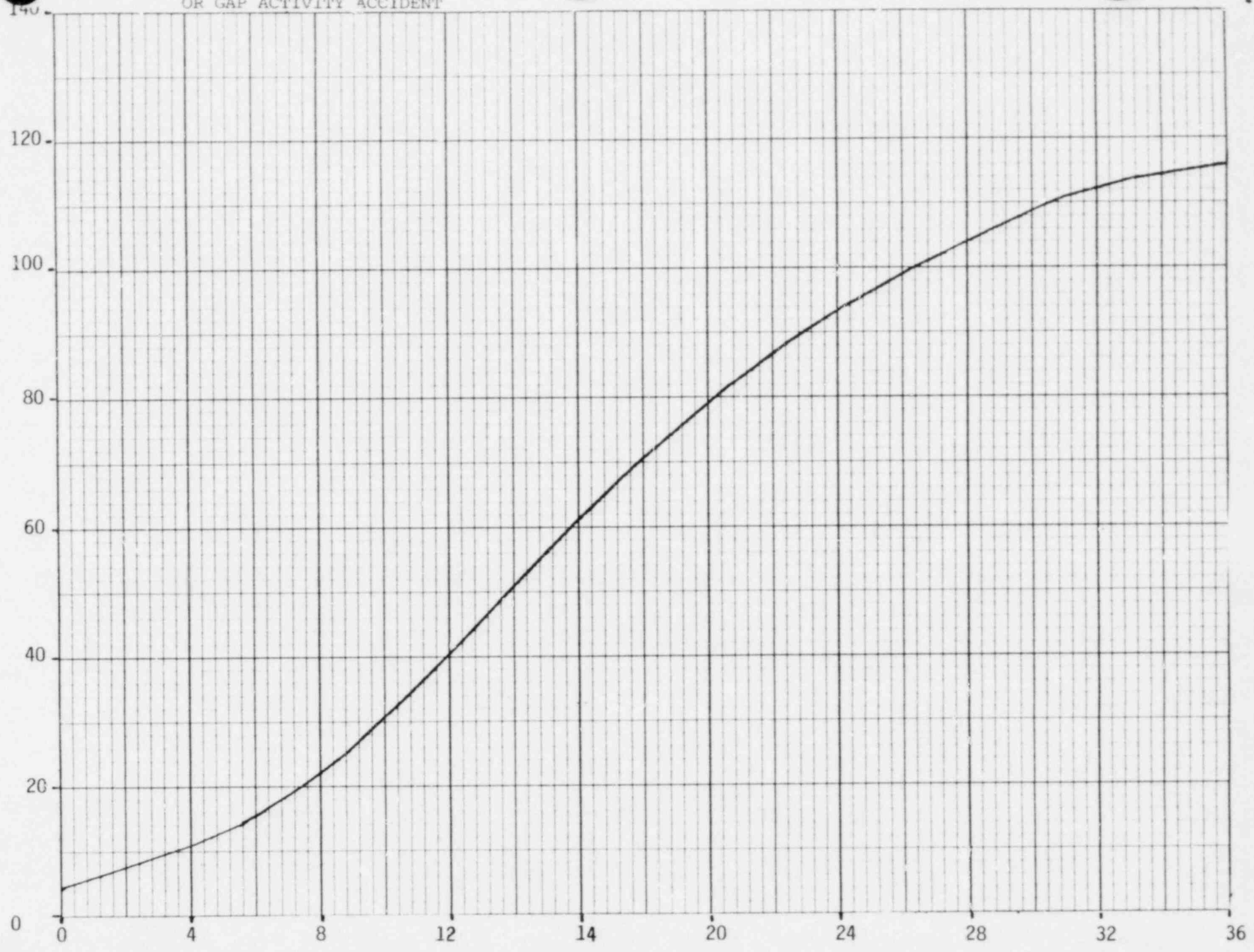
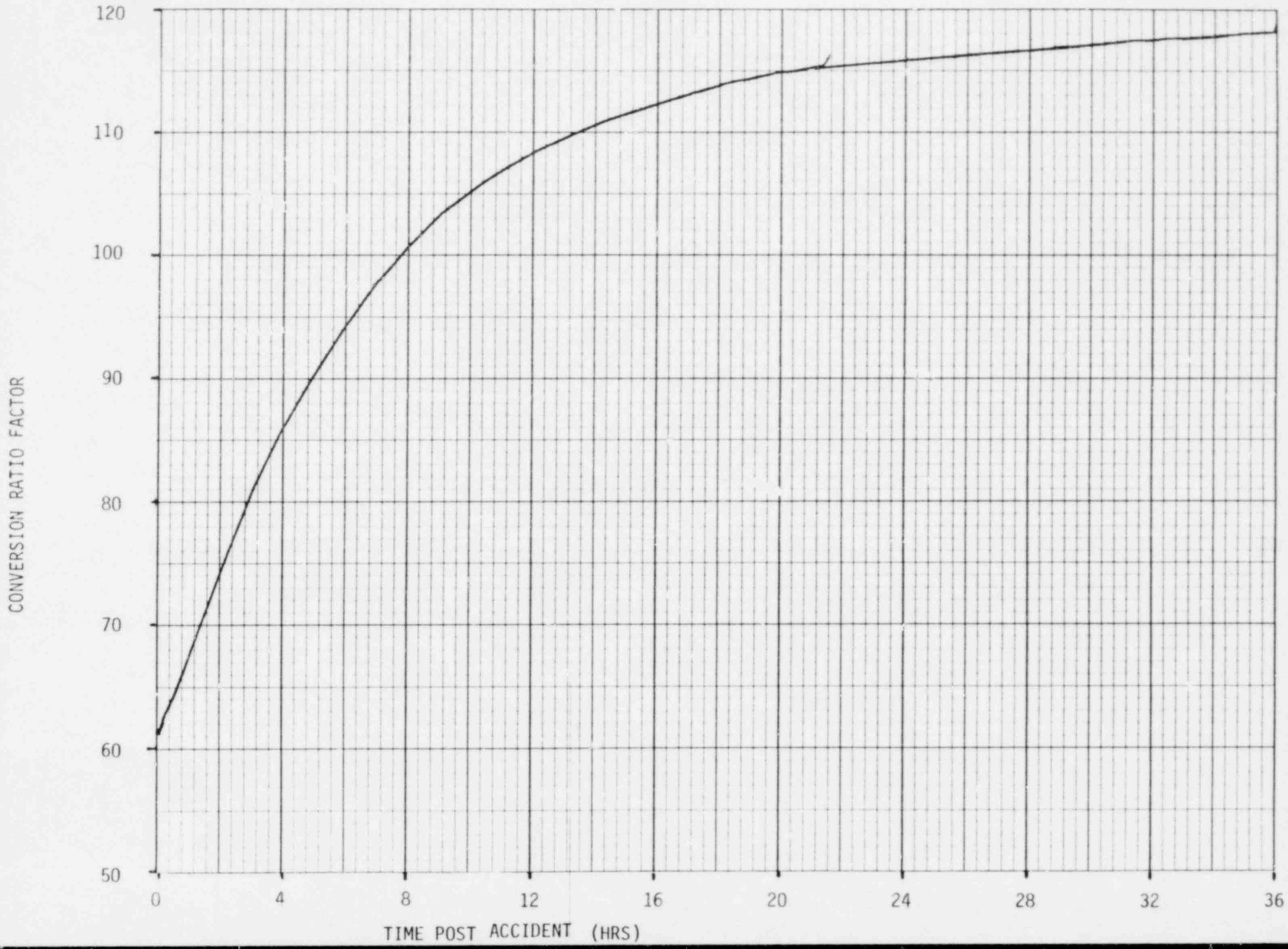


FIGURE 1.4-5
THYROID DOSE RATIO FACTOR
STEAM GENERATOR TUBE RUPTURE



PROTECTIVE ACTION EVALUATION

1.0 PURPOSE

The purpose of this procedure is to provide a basic guide to determine protective action recommendations to be given to the public authorities and to provide a method to transmit these recommendations and other essential data for assessment to the appropriate public authorities.

2.0 REFERENCES

2.1 NUREG-0654, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November, 1980.

2.2 NUREG-0654, Appendix 1, "Emergency Action Level Guidelines for Nuclear Power Plants."

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Ask for the name and title of the person or agency being contacted prior to transmitting any information.

3.2 If unable to contact an individual or agency, continue with the transmissions to the other individuals or agencies and then attempt to contact the persons or agencies who have not been contacted.

3.3 All actions and recommendations should be appropriately logged.

3.4 If the radiological release duration is unknown, assume a duration of 8 hours for use during an evaluation of the need for a protective action recommendation.

3.5 When protective action recommendations are made, consider the recommendation over a 90° sector centered on the average wind direction and a full 360° area near (2 miles) the plant.

4.0 INITIAL CONDITIONS

4.1 Applicable portions of EPIP 1.2, "Plant Status," completed.

4.2 EPIP 1.3, "Estimation of Source Term," completed.

4.3 EPIP 1.4, "Radiological Dose Evaluation," completed.

4.4 Site Emergency or General Emergency has been declared.

5.0 PROCEDURE

5.1 Technical Support Manager

5.1.1 Obtain the completed attachments of EPIP 1.4, "Radiological Dose Evaluation," from the person completing them.

5.1.2 Review the results of the dose projection calculations and deposition calculations for all affected areas.

5.1.3 Review Attachments 1.5-1 and 1.5-2.

5.1.4 Based on actual plant conditions, expected plant conditions in the future, weather conditions, local protection available to the public, evacuation times and any other constraints, determine the most appropriate Protective Actions to reduce exposure to the public and relay the information to the emergency support center.

5.2 Emergency Support Manager

NOTE: THE FOLLOWING STEPS MUST BE DONE BY THE EMERGENCY SUPPORT MANAGER OR HIS DESIGNATED ALTERNATE. UNTIL HE ARRIVES IN THE EMERGENCY SUPPORT CENTER, THE SITE MANAGER IS ACTING AS EMERGENCY SUPPORT MANAGER.

5.2.1 Review the recommendation of the Technical Support Manager and/or Rad/Con Waste Manager.

5.2.2 Complete Section 2 (follow-up message) of the incident report form contained in the appropriate offsite agency notification procedure, (for example, if the incident is classified as a Site Emergency, then Section 2 of the Incident Report Form of EPIP 4.3, "Site Emergency - Offsite Agency Notification," would be completed).

5.2.3 Contact the NRC and the persons and agencies notified on NAWAS of the emergency and provide the information contained in Section 2 of the incident report form to them.

5.2.4 For a General Emergency, form EPIP-16 in EPIP 5.3, "General Emergency - Offsite Agency Notification," shall be used as the basis for followup messages to offsite technical personnel such as NSSS vendor and corporate engineering staff.

ATTACHMENT 1.5-1

Recommended protective actions to reduce whole body and thyroid dose from exposure to a gaseous plume

Projected Dose (Rem) to Individual in General Public		Recommended Action[a]	Comments
Whole body or Thyroid	<1 <5	No planned protective actions.[b] State may issue an advisory to seek shelter and await further instructions.	Previously recommended protective actions may be reconsidered or terminated.
Whole body or Thyroid	1 to <5 5 to <25	Seek shelter as a minimum. Consider evacuation. Evacuate unless constraints make it impractical. Monitor environmental radiation levels.	If constraints exist, special consideration should be given for evacuation of children and pregnant women.
Whole body or Thyroid	5 and above 25 and above	Conduct mandatory evacuation. Monitor environmental radiation levels and adjust area for mandatory evacuation based on these levels. Control access.	Seeking shelter would be an alternative if evacuation were not immediately possible.

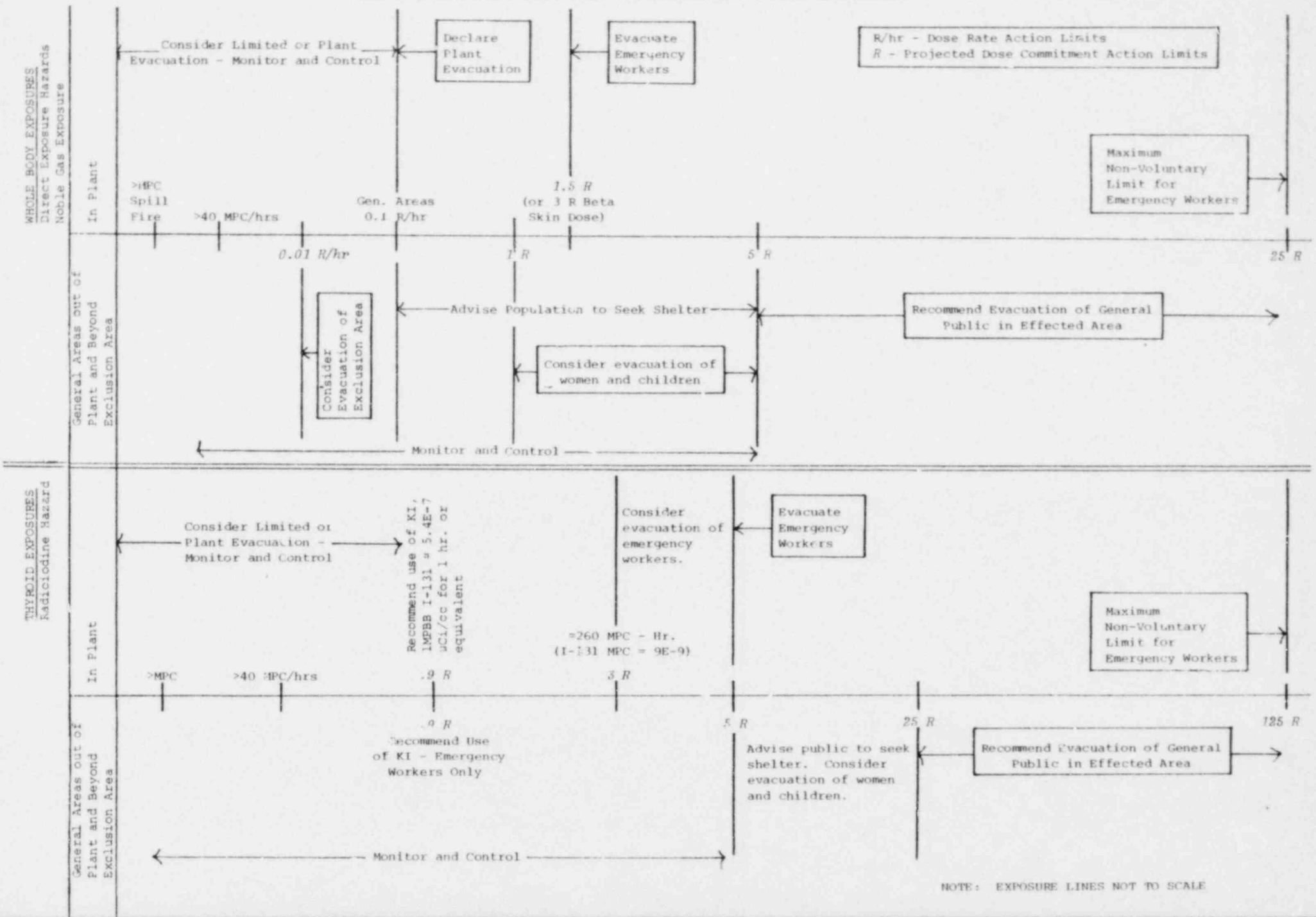
(a) These actions are recommended for planning purposes. Protective action decisions at the time of the incident must take into consideration existing conditions and the dangers associated with certain protective actions.

(b) At the time of the incident, officials may implement low-impact protective actions in keeping with the principle of maintaining radiation exposure as low as reasonable achievable.

Reference: Abstracted from EPA 520/1-75-001, "Manual of Protective Actions Guides and Protective Actions for Nuclear Incidents," Table 5.1 (Revised 6/79)

ATTACHMENT 1.5-2

SUMMARY OF PERSONNEL DOSE RATE/PROJECTED DOSE COMMITMENT ACTION LIMITS



NOTE: EXPOSURE LINES NOT TO SCALE

EVALUATION OF CORE DAMAGE

1.0 PURPOSE

The purpose of this procedure is to estimate core damage using a mathematical model based on an actual primary coolant sample activity, estimated volume introduced into the primary system through safety injection and a correction factor based on the time since reactor shutdown. This evaluation should be performed by the Core Physics Coordinator or a Duty Technical Advisors and routed to the Technical Support Manager and Site Manager.

2.0 REFERENCE

Calculations performed by the Nuclear Engineering Section of Wisconsin Electric Power Company documented in a report to G. A. Reed dated October 5, 1981 "C & HP Items Related to NUREG-0737."

3.0 PRECAUTIONS

3.1 If fuel damage or loss of reactor coolant system integrity has occurred, some or all of the following would be present:

3.1.1 The letdown radiation monitor (R9) may be unusually high or offscale.

3.1.2 The containment radiation monitors (R11 & R12) may be unusually high or offscale.

3.1.3 The containment area monitors (R2 & R7) may be unusually high or offscale.

3.2 Health Physics procedures and requirements must be followed when applicable (e.g., when entering a high radiation area).

3.3 Evaluation of the radiation monitoring system readouts and radiological hazards must be completed prior to any attempt to enter the auxiliary building to take a primary sample.

4.0 INITIAL CONDITIONS

4.1 Applicable portions of EPIP 1.2, "Plant Status," are completed.

4.2 A reactor coolant sample has been taken and a contact reading of the sample bomb has been taken or a final total sample activity has been completed by implementing EPIP 7.3.2 "Post-Accident Sampling & Analysis of Potentially High Level Reactor Coolant."

4.3 A contact reading of the sample bomb in R/hr was taken and listed on form EPIP-30 or an actual sample activity has been received from lab analysis.

5.0 PRIMARY COOLANT SAMPLE ACTIVITY ESTIMATE PROCEDURE

5.1 Note the time of the sample contact reading taken in Section 4.3 on form EPIP-33.

5.2 Determine the amount of time since reactor shutdown to sample contact reading using the equation:

Reactor Shutdown Time - Contact Reading Time = Time Since Shutdown

5.3 Convert the R/hr reading obtained using the teletector to Ci/ml using the following conversion factors.

Time Since Shutdown (Hr)	Ci/ml per R/hr (Conversion Factor)
1	2.31×10^{-2}
8	5.93×10^{-2}
24	1.77×10^{-1}
148	4.24×10^{-1}
720	2.05×10^{-1}

5.4 Interpolate conversion factors for times between those values listed.

5.5 Enter the conversion factor from Section 5.3 on form EPIP-33.

5.6 Determine the estimated Sample Activity using the equation:

Estimated Sample Activity (Ci/ml) =

Sample Bomb Contact Reading* (R/hr) x Conversion Factor $\frac{\text{Ci/ml}}{\text{R/hr}}$

*Contact reading is on shielded sample bomb which incorporates 3 inches of external solid lead shielding.

5.7 Enter the estimated Sample Activity on form EPIP-33.

6.0 EXAMPLE

Coolant Sample Activity Estimate (Shielded Bomb)

Teletector reading = 2.75 R/hr

Reading time = 1700

Reactor Shutdown Time = 0900

Time since shutdown: 1700 hours - 0900 hours = 8 hours

$$2.75 \text{ R/hr} \times 5.93 \times 10^{-2} \frac{\text{Ci/ml}}{\text{R/hr}} = 1.63 \times 10^{-1} \text{ Ci/ml}$$

7.0 CORE DAMAGE ESTIMATE PROCEDURE

7.1 Calculate the estimated percentage of core damage using the following formula and table of correction factors. Interpolate correction factors for times between those listed. Use best estimate for safety injection volume.

7.1.1 Estimated Sample Activity (ESA) _____Ci/ml

7.1.2 Estimated Safety Injection Volume (ESIV) _____gallons

Available safety injection dilution sources are:

Accumulators: 2 at 1,000 gallons each

Refueling water storage tank: 275,000 gallons

Boric acid storage tank: 1 of 3 at 5,000 gallons each

Spray additive tank: 2,574 gallons

7.1.3 Correction Factor for Time Since Shutdown [CF(t)] _____hours

7.1.4 Enter the values from Sections 7.1.1, 7.1.2, and 7.1.3 on form EPIP-33. Calculate the percent core damage using the following formula and table and enter the result on form EPIP-33.

$$\text{Percent Core Damage (\%)} = \frac{\text{ESA} \times (32{,}500 + \text{ESIV})}{\text{CF(t)}}$$

Time (Hours) Since Shutdown	Correction Factor [CF(t)]
1	958
4	669
8	547
12	483
24	383
100	211
148	167
296	88.7
544	38.0
720	24.9

7.1.5 Route form EPIP-33 to the Site Manager and Technical Support Manager.

8.0 EXAMPLE

Percentage Core Damage Estimate

Estimated Sample Activity = 1.63×10^{-1} Ci/ml

Time since shutdown = 2.83 hours

Estimated safety injection volume = 2,000 gallons

$$\text{Percentage core damage (\%)} = \frac{1.63 \times 10^{-1}\ \text{Ci/ml} \times (32{,}500 + 2{,}000)}{547}$$

Percentage core damage (%) = 9%

EMERGENCY OFF-SITE DOSE ESTIMATIONS

1.0 GENERAL

The purpose of this procedure is to permit the expeditious classification of an accident or event based on estimated off-site doses. The procedure provides a methodology to quickly estimate (1) stack release rates (source terms) and (2) off-site whole body and thyroid doses.

2.0 REFERENCES

2.1 U. S. NRC Regulatory Guide 1.109, Calculation of Annual Dose to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50 Appendix I, Revision 1, October, 1977

2.2 U. S. EPA "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," EPA-520/1-75-001, September 1975, Appendix D

2.3 TID 14844 "Calculation of Distance Factors for Power and Test Reactor Sites," March 23, 1982

2.4 EDS Report to Wisconsin Electric Power Company concerning NUREG-0578, March 7, 1980.

2.5 Point Beach Nuclear Plant, Final Facility Description & Safety Analysis Report (FFDSAR)

3.0 PRECAUTIONS & LIMITATIONS

3.1 This procedure is primarily intended for use in the control room by a person designated by the Shift Supervisor such as the Duty Technical Advisor.

3.2 This procedure is to be used only for immediate initial dose projections. The initial dose projections are to be refined using EPIP 1.3 and 1.4 once more data becomes available, i.e., meteorological data, air samples, and off-site survey dose measurements.

3.3 It is recognized that the RadCon/Waste Manager, in conjunction with the Chemistry & Health Physics Supervisor, is ultimately responsible for off-site dose assessments. However, the initial projections will normally be done by the Shift Supervisor or assigned designee for purposes of classifying the event or accident because of augmentation time.

4.0 INITIAL CONDITIONS

4.1 An emergency or potential condition is anticipated to have off-site dose consequences.

4.2 A release of airborne radioactivity has occurred, or a release is anticipated, requiring a conservative estimate of the off-site dose consequences.

5.0 PROCEDURE

5.1 Calculation of Xe-133 Equivalent Release Rates (Source Terms)

5.1.1 Airborne effluents may be discharged from PBNP through the following vent stacks:

a. Auxiliary building vent (ABVNT)

b. Drumming area vent (DAVNT)

c. Unit 1 containment purge vent (Cont. 1)

d. Unit 2 containment purge vent (Cont. 2)

e. Gas stripper building vent (GSBVNT)

f. Combined air ejector decay duct (CAE)

g. Main steam safety valves and atmospheric dump valves

5.1.2 The source terms (vent release rate in Ci/second) may be estimated by using any of the following monitoring systems.

a. Low range operational stack monitors (designed to monitor low-level releases).

b. Eberline RMS II radiation monitoring system (designed to monitor high-level releases).

c. Contact readings using a hand-held survey meter (to be used when other monitor systems are non-operable).

5.1.3 The decision as to which monitoring system is to be used to estimate the source terms is dependent on the level of release and the operability of the monitor.

5.1.4 Meter readings are to be entered in the appropriate column on EPIP-34. If meter readings are "off-scale" or "inoperable," enter the appropriate comment in the meter reading column on EPIP-34. A source term estimate must be made for each vent which is exhibiting readings above normal operating readings.

5.1.5 Direct contact readings using a hand-held survey meter are required under the following conditions:

a. Meter readings from the low range monitoring system or the RMS II system are not available.

b. A steam generator tube rupture has occurred necessitating a hand-held meter reading at the main steam header.

5.1.6 Direct contact readings using a hand-held survey meter are not to be initiated until the following conditions are accomplished:

a. An evaluation of the radiological hazards must be completed prior to any attempt to enter the auxiliary building or facade to take survey readings on any stack or vent.

b. Before the surveys are done, the proper survey meter and the most direct and desirable route to the stack to be monitored must be chosen.

c. The surveys will be accomplished under the direction of the Health Physics Supervisor. The surveys must be approved by the Site Manager, Duty & Call Health Physics Supervisor, and the Duty Shift Supervisor.

5.1.7 For surveying the main steam safety valves and atmospheric dump valves, the reading will be taken in contact with the centerline of the main steam header, three feet from the main steam line. The survey probe is to be shielded with a minimum of 0.25 inches of lead on the side of the probe facing the main steam line and the containment.

5.1.8 The following data must be obtained from the Shift Supervisor in order to estimate release rates from the main steam header:

a. Estimated flow rate of steam through the main steam header in lbs/hr.

b. Specific volume of the steam in ft^3/lb. At 1000 psia, specific volume of 0.486 ft^3/lb. At 500 psia, specific volume is 0.928 ft^3/lb.

Enter this data on the appropriate column in Section 3.0 of EPIP-34.

5.1.9 Sum the values on EPIP-34, Section 4.0, to determine the gross Xe-133 equivalent release rate.

5.2 Whole Body Dose Projections

5.2.1 Off-site whole body doses may be calculated at the site boundary using the following equation:

$D(REM) = X/Q \times Q \times Kr \times EP$

Where:

D = whole body dose (Rem)
X/Q = atmospheric dispersion coefficient (sec/m^3)
Q = gross Xe-133 equivalent release rate (Ci/sec.)

$Kr = \text{Dose Factor } \frac{(rem\text{-}m^3)}{Ci\text{-}hrs}$

EP = exposure period (hrs) (conservatively 8 hours)

Projected off-site doses may be calculated by entering the total Xe-133 equivalent release rate calculated on EPIP-34 in the appropriate column on EPIP-35 and multiplying the variables in the equations.

5.2.3 Enter the expected exposure period in the appropriate column on EPIP-35. (A dose per hour is calculated by entering an exposure period of one (1) hour.)

NOTE: THE X/Q VALUES LISTED ON EPIP-35 ARE ESTIMATED BASED ON CALCULATED ACCIDENT METEROLOGY FOR 0-2 HRS. AS GIVEN IN THE FFDSAR. IF REAL TIME METEOROLOGICAL DATA IS AVAILABLE, X/Q VALUES CAN BE CALCULATED AS OUTLINED IN EPIP 1.4 SECTION 5.1. REFINEMENT OF THE PROJECTED OFF-SITE DOSES MAY BE ACCOMPLISHED BY SUBSTITUTING THE REAL TIME X/Q CALCULATED VALUE FOR THE ESTIMATED X/Q ON EPIP-35.

5.3 Thyroid Dose Projection

5.3.1 Calculate the projected thyroid dose at the site boundary on Section 2.0 of EPIP-35 by using the following equation:

Thyroid Dose = Whole Body Dose x Conversion Factor

5.3.2 The conversion factor is dependent on the type of accident which has occurred. Conversion factors are tabulated for the following accidents:

a. Loss of coolant accident (LOCA)

b. Gap activity accident

c. Fuel handling accident

d. Steam generator tube rupture

5.3.3 Choose the appropriate type accident and calculate the thyroid dose in Section 2.0 of EPIP-35 by multiplying the whole body dose calculated in Sectin 1.0 by the conversion factor.

NOTE: IF THE TYPE OF ACCIDENT IS NOT KNOWN, USE THE LOSS OF COOLANT CONVERSION FACTOR.

5.4 Classification of the Event Based on Estimated Off-Site Doses

5.4.1 The event is to be classified as a Site Emergency if the projected off-site doses meet any of the following criteria:

a. Effluent monitors detect levels corresponding to any of the following doses at or beyond the site boundary:

(1) >50 mR/hr whole body for ½ hour

(2) >250 mR/hr for ½ hour for the thyroid

(3) >500 mR/hr whole body for 2 minutes

(4) >2500 mR/hr to the thyroid for 2 minutes

b. Any of the above dose rates are projected, based on plant parameters.

5.4.2 The event is to be classified as a General Emergency if the projected off-site doses meet any of the following criteria:

a. Effluent monitors detect levels corresponding to any of the following doses at or beyond the site boundary:

(1) 1 R/hr whole body

(2) 5 R/hr thyroid

b. Either of above dose rates are projected based on plant parameters.

LIMITED PLANT EVACUATION

1.0 GENERAL

This procedure describes the steps to be taken in the event of a limited plant evacuation.

2.0 REFERENCES

None

3.0 PRECAUTIONS AND LIMITATIONS

3.1 All actions and notifications should be appropriately logged.

3.2 Health Physics personnel may require evacuation of rooms, areas, or the affected portions thereof to prevent the unnecessary spread of contamination.

4.0 INITIAL CONDITIONS

A limited plant evacuation will be considered when any of the following conditions exist.

4.1 Unanticipated radiation level increase at any area radiation monitor in excess of 100 mr/hr.

4.2 A non-scheduled containment evacuation alarm

4.3 Unanticipated airborne activity at any area gas or particulate monitor which indicates activity in excess of the maximum permissible concentrations specified in Appendix B Table I to 10 CFR Part 20.

4.4 Excessive radioactive surface contamination levels due to a major spill of radioactive materials.

4.5 Other emergency conditions, such as fire, that may endanger human life or health as deemed necessary by the Duty Shift Supervisor or Health Physics Supervisor.

5.0 PROCEDURE

5.1 Shift Supervisor/Designee

5.1.1 Identify the areas that have to be evacuated.

5.1.2 Choose the assembly area where personnel will be relocated. If possible use the following areas:

a. Health physics station, if evacuation is from areas within the controlled area

or

b. Plant cafeteria, if evacuation is from areas outside the controlled area.

5.1.3 Fill in the underlined announcement blanks in Step 5.1.4 with the appropriate information determined in Steps 5 1.1 and 5.1.2.

5.1.4 Sound the plant evacuation alarm (and fire alarm if appropriate) and announce over the PA system: (NOTE: AN ANNOUNCEMENT CANNOT BE MADE WHILE THE ALARM IS SOUNDING.)

"ATTENTION, ALL PERSONNEL: THERE ARE CONDITIONS AT THE PLANT THAT WARRANT A LIMITED PLANT EVACUATION IN THE _____ AREA(S). ALL PERSONNEL IN THE AREA(S)
(Specify Area)
EVACUATE IMMEDIATELY AND REPORT TO THE _____ AND AWAIT FURTHER INSTRUCTIONS."
(Specify Area)

5.1.5 Repeat the alarm sounding and announcement two more times. Repeat the alarm and announcement again after an interval of two to five minutes.

5.1.6 Notify the Duty & Call Superintendent and Health Physicist of the limited plant evacuation.

5.1.7 Initiate EPIP 8.1, "Personnel Assembly and Accountability," if not already done.

5.1.8 Initiate EPIP 7.0, "CHP Radiological Response and Preparedness," as required.

5.1.9 Reevaluate the ability to re-enter evacuated area(s) and attempt to isolate affected area(s) as required.

5.1.10 Consider the initiation of EPIP 6.2, "Plant Evacuation," if the hazard continues to increase in severity.

5.1.11 Work may resume in evacuated area(s) when it has been determined by the Shift Supervisor and a Chemistry & Health Physics Supervisor that no significant radiation hazard or other hazard to personnel remain.

5.2 Health Physicist/Health Physics Supervisor

5.2.1 Determine the scope of the radiation and contamination problem by implementing radiation surveys of affected area(s).

5.2.2 Specifying appropriate protective devices, commence a decontamination operation and set up appropriate health physics postings of the affected area(s), if required.

EPIP 7.1.1
MINOR
Revision 2
04-30-82

CHEMISTRY & HEALTH PHYSICS GROUP PERSONNEL NOTIFICATION AND INITIAL RESPONSE WHEN CHEMISTRY & HEALTH PHYSICS PERSONNEL ARE ON SITE

1.0 PURPOSE

The purpose of this procedure is to establish guidelines for the initial response of the Chemistry & Health Physics group in support of an Alert, Site or General Emergency which may require Chemistry & Health Physics response during normal duty hours while Chemistry & Health Physics personnel are on site. A rapid and organized response by the Chemistry & Health Physics Group is necessary to facilitate early assessment of site radiological conditions. The three major areas of concern are as follows:

a. The area within the protected area including the plant buildings.

b. The area outside of the protected area but within the exclusion area (site boundary perimeter lines).

c. Those areas off-site (beyond the exclusion area).

2.0 PRECAUTIONS & LIMITATIONS

2.1 Assigned personnel will wear the prescribed protective clothing, dosimetry devices, and other prescribed protective equipment when on their job assignments.

2.2 Whenever possible, standard health physics procedures are to be followed.

2.3 It is to be understood that these are implementation guidelines and that the existing plant and radiological conditions may necessitate changes to these guidelines and/or the sequence in which they are implemented. Appendix "A" should be used to verify completion of procedural steps.

3.0 CHEMISTRY & HEALTH PHYSICS GROUP INITIAL RESPONSE

3.1 Upon notification that an Alert, Site, or General Emergency is in effect, all Chemistry & Health Physics group personnel on site not already assigned an emergency function will report to the health physics station.

3.2 Upon arrival at the health physics station, the Health Physics Director and Radiochemist will take a roll call of Health Physics and Chemistry personnel, respectively. Personnel not accounted for will be paged. If an evacuation has been ordered, the Shift Lieutenant will be notified of missing personnel.

3.3 The Health Physics Director and Radiochemist will appoint a Senior Health Physics Supervisor and Senior Chemistry Supervisor, respectively, to assist the Chemistry/Health Physics Supervisor direct group operation in event of an escalation to a Site Emergency.

3.4 The Health Physics Director will establish a communications link with the TSC.

3.5 The Health Physics Director will assign one Health Physics Supervisor and two Radiation Control Operators to the OSC/TSC to implement EPIP 7.2.2. The Radiochemist will assign one Chemistry Supervisor and two Radiochemical Technicians to the OSC/TSC to help implement EPIP 7.2.2. They should obtain the following equipment:

Dosimeters (0-500 mR)	As available
Dosimeters (0-5000 mR)	25 ea.
Dosimeter Chargers	2 ea.
Teletector	As available
PIC 6A	As available
Other Instruments and Equipment	As available

3.6 Under direction of the Senior Health Physics Supervisor, Health Physics personnel will collect and make ready the following equipment or their equivalents. This is for SBCC.

Rad Owl One	1 ea.
Mini-Scaler battery pack	1 ea.
HPI-1010	1 ea.
Self-Contained Breathing Units	4 ea.

3.7 The remaining Chemistry & Health Physics supervision and personnel will remain alert for further instructions from the Chemistry/Health Physics Supervisor in the TSC.

3.8 In the event of a limited plant evacuation (EPIP 6.1), the Health Physics Director will direct health physics response from the health physics station. The Radiochemist will direct Chemistry response from the health physics station. The Chemistry/Health Physics Supervisor in the TSC will be kept informed of these actions.

3.9 In the event of the need for protected area/off-site surveys, the Health Physics Director will make assignments as necessary and inform the Chemistry/Health Physics Supervisor in the TSC.

4.0 CHEMISTRY & HEALTH PHYSICS GROUP RESPONSE FOR A SITE OR GENERAL EMERGENCY

4.1 The Health Physics Director will report to the site boundary control center utilizing the site emergency vehicle. The balance of Chemistry & Health Physics personnel will report to the health physics station.

4.2 The Senior Health Physics Supervisor will assign two (2) Nuclear Plant Specialists - Health Physics and two (2) Radiation Control Operators to report, using personal vehicles, to the site boundary control center to assist the Health Physics Director.

4.3 In the event of a plant evacuation, the Senior Health Physics Supervisor and Radiochemist will:

4.3 1 Assign personnel as follows:

OSC/TSC	SBCC
Health Physics Supervisor (all)	Rad Control Operators (2)
Nuclear Plant Specialist - Chemistry (all)	Nuclear Plant Specialist - Health Physics (all)
Radiochemist (1)	AOT's assigned to HP (all)
Rad Control Operators (2)	
Rad/Chem Technician (all)	

4.3.2 Assign one site boundary control center individual to get a carryall vehicle equipped with a radio, KRQ-717 (other than the assigned site emergency vehicle), and wait with the vehicle at the west entrance door near Ready Stores. This vehicle will be used to transport equipment to the site boundary control center.

4.3.3 Assign one site boundary control center individual to activate Chemistry & Health Physics facilities at the emergency support center and then report to the site boundary control center.

4.3.4 Upon completion of the above procedure guidelines, the Senior Health Physics Supervisor will direct the Health Physics personnel assigned to the site boundary control center to report utilizing private vehicles and/or health physics assigned Company vehicles (maximum of two).

APPENDIX "A"

EPIP 7.1.1 CHECKLIST

CHEMISTRY & HEALTH PHYSICS GROUP PERSONNEL NOTIFICATION AND INITIAL RESPONSE WHEN CHEMISTRY & HEALTH PHYSICS PERSONNEL ARE ON SITE

Date _____

		INITIALS	TIME
1.0	ALERT STATUS		
1.1	Chemistry & Health Physics group personnel report to the health physics station.	_____	_____
1.2	All Chemistry & Health Physics group personnel on duty present and/or accounted for.	_____	_____
1.3	Shift Security Lieutenant notified of missing personnel.	_____	_____
1.4	Communications link with TSC established.	_____	_____
1.5	Personnel assigned to OSC/TSC as per Sections 3.5 and 3.6.	_____	_____
2.0	SITE OR GENERAL EMERGENCY STATUS		
2.1	Alert status procedural steps complete.	_____	_____
2.2	Personnel assigned to the SBCC as per Section 3.4.	_____	_____
2.3	Equipment listed in Sections 3.5 & 3.6 assembled.	_____	_____
2.4	For a plant evacuation, acting Health Physics Supervisor will: (Section 4.3)		
2.4.1	Assign personnel to the TSC/OSC and SBCC (Section 4.3.1).	_____	_____
2.4.2	Assign one SBCC individual to get a carryall vehicle and wait at the west entrance door by Ready Stores (Section 4.3.2).	_____	_____
2.4.3	Assign one SBCC individual to activate the ESC (Section 4.3.3).	_____	_____

		INITIALS	TIME
2.4.4	Monitor loading of equipment (Section 4.3) into carryall and direct driver to proceed to the SBCC.	_____	_____
2.4.5	Direct Chemistry & Health Physics personnel to proceed to the SBCC or TSC/OSC as assigned (Section 4.3).	_____	_____

ROUTINE CHECK, MAINTENANCE, CALIBRATION & INVENTORY SCHEDULE FOR HEALTH PHYSICS EMERGENCY PLAN EQUIPMENT

1.0 PURPOSE

The purpose of this procedure is to establish the routine checks, maintenance, calibration and inventory schedules for health physics related material and equipment applicable to the Emergency Plan.

2.0 EMERGENCY PLAN EQUIPMENT STORAGE LOCATIONS

2.1 Emergency Plan equipment is normally maintained in a state of operational readiness at the following locations.

2.1.1 Health physics station

2.1.2 Emergency support center (ESC)

2.1.3 Operations support center (OSC)

2.1.4 Site boundary control center (SBCC)

2.1.5 Control room

2.1.6 Two Rivers Community Hospital (NFAR and triage area)

2.1.7 Point Beach Nuclear Plant first aid room (see EPIP 11.0)

2.1.8 South gatehouse.

2.1.9 Other items of Emergency Plan equipment such as first aid kits, burn kits, stretchers, and the emergency vehicle are maintained at specified locations throughout the plant.

3.0 ROUTINE CHECK, MAINTENANCE AND CALIBRATION SCHEDULES

Routine checks, maintenance and calibration of Emergency Plan equipment will be consistent with the schedule outlined in Attachment "A" and the instructions contained in EPIP 7.4.2, "Emergency Plan Equipment Routine Check, Maintenance & Calibration Instructions."

4.0 INVENTORY SCHEDULE

4.1 Inventory of health physics related Emergency Plan equipment will be consistent with the schedules provided in Attachment "A".

4.2 Inventory of Emergency Plan equipment will be accomplished utilizing the inventory checklists listed below and attached to this procedure. Missing or deficient items noted by the inventory will be promptly replaced by personnel assigned to accomplish the inventory. The results of all inventories will be reviewed by the Health Physics Supervisor who will ensure that all discrepancies are corrected. The completed inventory forms will then be forwarded to the Superintendent - Technical Services and the Health Physicist.

4.2.1 Inventory Checklists

a. Site boundary control center (form EPIP-24a)*

b. OSC, ESC, and South Gatehouse (form EPIP-24b)*

c. Two Rivers Community Hospital (form EPIP-24c)*

d. Control room (form EPIP-24d)*

e. Emergency vehicle (form EPIP-24e)

f. First aid kits (form EPIP-24f)

g. Burn kits (form EPIP-24g)

h. PBNP first aid room (form EPIP-24h)*

i. Stretchers (form EPIP-24i)

*The form needs to be filled out with an item by item count on an annual basis. Quarterly checks can be accomplished by verification of administrative controls such as seals.

ATTACHMENT "A"

EMERGENCY PLAN EQUIPMENT ROUTINE CHECK, MAINTENANCE, CALIBRATION AND INVENTORY SCHEDULE

No.	Item	Cross Reference	Weekly	Monthly	Quarterly	Semi-Annual	Annual
1.	Emergency Vehicle						
	a. Radio operational test		X				
	b. Vehicle visual inspection and engine start		X				
	c. Emergency equipment inventory			X			
	d. Vehicle test drive		X[1]	X[2]			
	1. November through March						
	2. April through October						
2.	First Aid Burn Kits and Stretchers						
	a. Inventory				X[3]		
	3. January, April, July, September						
3.	Vamp Portable Area Monitors						
	a. Functional check			X			
	b. Calibration					X	
4.	Emergency Center Air Samplers (115 V AC)						
	a. Functional test			X			
	b. Preventive maintenance (where applicable)					X	
	c. Flow rate calibration					X	
5.	SBCC Air Sampler (Battery 12 V DC)						
	a. Functional test			X			
	b. Flow rate calibration					X	

No.	Item	Cross Reference	Weekly	Monthly	Quarterly	Semi-Annual	Annual
6.	AC Generator (Gasoline Powered)						
	a. Functional test				X		
	b. Spare gasoline changed					X	
	c. Maintenance						X
7.	Batteries - Replacement						
	a. Traffic warning lights				See Note 4		X
	b. Survey/counting instruments						X
	c. Flashlights						X
	d. Portable radios (KRQ 717)						X
	e. Dosimeter chargers						X
	4. Alkaline type batteries to be used where possible and to be replaced yearly. Standard carbon cells, if used, to be replaced quarterly.						
8.	Potable Water (Stored)						
	a. Water changed					X	
9.	Counting Instruments						
	a. Functional test			X			
	b. Calibration					X	
	c. Counting efficiency determination					X	
10.	Frisker Type Instruments						
	a. Functional test			X			
	b. Calibration					X	
	c. Efficiency determination					X	
11.	Portable Survey Instruments						
	a. Functional test			X			
	b. Calibration					X	

No.	Item	Cross Reference	Weekly	Monthly	Quarterly	Semi-Annual	Annual
12.	Pocket Dosimeters and TLD's						
	a. Dosimeter drift/response check					X	
	b. TLD's changed					X	
13.	Respirators						
	a. Inspection				X		
14.	MSC SCBA Units						
	a. Inspection				X		
	b. Functional test				X		
15.	Bio-Paks (Oxygen Rebreathers)						
	a. Inspection				X		
	b. Functional test					X	
	c. Periodic maintenance					X	
16.	Inventory of Emergency Plan Equipment - Complete				X[5]		
	5. This inventory includes all equipment listed for each center on forms EPIP-24a, b, c, d and h.						
17.	Portable Radio (KRQ 717) Functional Check				X		
18.	Traffic Warning Light Functional Check				X		
19.	Technical Support Center AMS-2/RM-14 Air Monitoring System						
	a. Calibration						X
20.	Silver Zeolite (AgZ) Moisture Indicator Check						X

EMERGENCY PLAN EQUIPMENT ROUTINE CHECK, MAINTENANCE AND CALIBRATION INSTRUCTIONS

1.0 PURPOSE

The purpose of this procedure is to provide instructional guidelines for the performance of routine checks, maintenance, calibration and inventory of health physics related Emergency Plan equipment.

2.0 PRECAUTIONS

2.1 Personnel handling radioactive sources or other radioactive material will use remote handling equipment, shielding as appropriate and common sense to prevent unnecessary personal exposure.

2.2 A calibrated survey meter will be used when working with sources of radioactive material.

2.3 Appropriate personnel monitoring devices (TLD, high and low range dosimeters) will be worn.

2.4 General safety precautions will be adhered to at all times.

3.0 GENERAL INSTRUCTIONS

3.1 Shortages of material or equipment found during inventory will be noted on the appropriate inventory form. Restocking of all missing items will be accomplished expeditiously as possible and noted on the inventory record.

3.2 Items of equipment requiring repair or calibration by other than Health Physics requires the initiation of a maintenance request. The words "Emergency Plan Equipment" will be written in bold letters in the "Defect/Request" block of the maintenance request form.

3.3 Equipment removed from an Emergency Plan location for other than short periods (one day) for calibration or routine maintenance will be replaced with a similar item from the health physics station unless otherwise directed by the Health Physics Supervisor.

4.0 PORTABLE SURVEY INSTRUMENTS AND AREA MONITORS (VAMP)

4.1 Portable survey instruments and area monitors normally assigned for Emergency Plan use (forms EPIP-24a-h) are scheduled for routine calibration consistent with HP 13.2, "Portable Survey Instruments and Calibration Procedures," and form EPIP-28, "Emergency Plan Instrument Calibration Schedule."

4.2 Functional checking and testing of portable survey instruments and vamp area monitors will consist of response testing each instrument with a radioactive source placed in a known and consistent geometry. Results are recorded on form EPIP-25b.

4.3 Functional Check and Test

4.3.1 Eberline PIC-6A, Rad Owl Two, Radector III, Mini-Rad, HPI-1010 and VAMP Area Monitors

These instruments do not have an installed check source. A small Cs-137 check source, serial number CS-11, will be utilized for response testing of these instruments.

5.0 FRISKER-TYPE SURVEY INSTRUMENTS

5.1 Frisker-type survey instruments normally assigned for Emergency Plan usage (form EPIP-24a-h) are scheduled for routine calibration and efficiency determinations consistent with HP 13.3, "Personal Friskers and Portal Monitor Description and Calibration," and form EPIP-29, "Emergency Plan Counting Equipment and Frisker Calibration Schedule."

5.2 Functional checking and testing of frisker-type instruments will consist of exposing the instrument to a known source in a consistent geometry. Results are recorded on form EPIP-29.

5.3 Functional Check and Test

5.3.1 Install fresh batteries and verify that the battery check position operates where applicable.

5.3.2 Thyac III, Model 490

Retract the beta shield and expose the GM tube detector. Place the detector opening directly over the uranium beta source that is attached to the instrument case. Record the results.

5.3.2 GSM-5

Attach a HP-210 detector to the GSM-5 and place the detector on the SH-4 holder for reproducible geometry. Use the Sr-90 check source, serial number S-23, for the response check. Record the results.

5.3.3 RM-3C

Attach an HP-210 detector to the RM-3C and place the detector on the SH-4 holder for reproducible geometry. Use the Sr-90 check source, serial number S-23, for the response check. Record the results.

6.0 COUNTING INSTRUMENTS

6.1 Counting equipment normally assigned for Emergency Plan use (form EPIP-24a-h) are scheduled for routine calibration and efficiency determinations on form EPIP-29, "Emergency Plan Counting Equipment and Frisker Calibration Schedule," and will be completed consistent with HP 13.5, "Counting Equipment Efficiency Determinations."

6.2 Functional checking and testing of counting equipment will consist of response testing each instrument with a known radioactive source in a consistent geometry. Results are recorded on form EPIP-29.

6.3 Functional Check and Test

6.3.1 Nuclear Chicago Counter Scaler

Attach an HP-210 detector to the instrument and place the detector on the SH-4 holder in reproducible geometry. Use the Sr-90 check source, serial number S-23, for the response check. Record the results.

7.0 AIR SAMPLERS

7.1 Air samplers normally assigned for Emergency Plan usage (form Nos. EPIP-24a-h) will be maintained and flow calibrated using the procedures in HP 13.6, "Maintenance and Calibration of RAP-1 and RAS-1 Air Samplers," and HP 13.10, "Maintenance and Calibration of High Volume Air Samplers." Record results on applicable forms listed in the above procedures.

7.2 Functional checking and testing of the various types of air samplers is described below. Record results on form EPIP-25b.

7.3 Functional Check and Test

7.3.1 115 V AC Power Air Samplers

Install filters and operate air samplers for five minutes.

7.3.2 Battery (12 V DC) Powered Air Samplers

a. Check electrical leads for damage. The battery clips should not be bent and should engage the battery terminals firmly.

b. Install air filters and connect the electrical leads to a vehicle battery and operate the vehicle engine at a fast idle rate.

c. Operate the air sampler for approximately two minutes. Any overheating of the sampler is an indication of a problem.

8.0 DOSIMETRY DEVICES

8.1 Dosimeters normally assigned for Emergency Plan use will be drift and response checked consistent with HP 10.1.3, "Dosimeter Calibration/ Response and Drift Check Procedure." Note the required entry on form EPIP-25d.

9.0 RESPIRATORY EQUIPMENT

Respiratory protection equipment assigned for Emergency Plan use will be inspected, tested and maintained consistent with HP 12.1, "Respiratory Protection." Note required entry on form EPIP-25c, and d.

10.0 FIRST AID KITS, BURN KITS, AND STRETCHERS

10.1 First aid and burn kits found with the lead seal intact do not have to be physically inventoried. Kits found with the lead seal broken will be inventoried and the missing items replaced. Note required entries on EPIP-24f, "First Aid Kit Inventory Checklist," form EPIP-24g, "Emergency Burn Kit Inventory," and EPIP 24-i, "Stretchers."

11.0 EMERGENCY VEHICLE

Visual inspection of the emergency vehicle will be accomplished per form EPIP-25a, "Emergency Vehicle Checklist". The test run, when required, should follow the route from the plant to Highway 42 via Nuclear Road, then right to Tapawingo Road and return to the plant. The radio operational check between the vehicle and the control room will be made from Highway 42.

12.0 SILVER ZEOLITE FILTER MOISTURE CHECK

Visual inspection of the moisture indicating devices should be performed annually. Check each filter's indicator. If it is blue, the filter has no moisture in it. If it is pink, moisture is present and the filter should have the excess moisture driven off. (Reference file HP 9.6, RadeCo Company letter to R. S. Bredvad from Francis S. Smith, dated 5-29-81, for procedure.)

13.0 GASOLINE POWERED AC GENERATOR

13.1 Functional Test

13.1.1 Check oil level at full mark.

13.1.2 Ensure all loads are disconnected from the alternator and install grounding stake.

13.1.3 Add a small amount of gasoline to the fuel tank.

13.1.4 Open the fuel valve.

13.1.5 Make sure the stop switch is away from the spark plug.

13.1.6 Choke the engine.

13.1.7 Start, by pulling the starter cord.

13.1.8 Run for at least 30 minutes, place a small load on the unit during the test (high volume or low volume air sampler).

13.1.9 Remove the load from the unit and shut the fuel valve. Allow the unit to stop on loss of fuel.

13.2 Maintenance

Annual maintenance to be done according to Maintenance callup procedure by Maintenance group.

PERSONNEL ASSEMBLY AND ACCOUNTABILITY

1.0 GENERAL

The purpose of this procedure is to detail a method for (1) the assembly of personnel on the plant site in the event of an emergency situation and (2) the subsequent accounting of personnel. The goal of this procedure is to account for all personnel within 30 minutes of the evacuation alarm.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Personnel accountability roster sheets (forms EPIP-17 and EPIP-18, attached) must be completed quickly and accurately and forwarded to the appropriate supervisor as soon as possible.

3.0 INITIAL CONDITIONS

3.1 An emergency has been declared as a result of plant conditions.

3.2 A limited plant, plant, or an exclusion area evacuation has been ordered requiring the accountability of all personnel on the plant site.

3.3 The Shift Supervisor has determined that personnel assembly and accountability is necessary.

4.0 PROCEDURE

4.1 Shift Supervisor

4.1.1 Determine and communicate as required any special instructions necessary for safe evacuation of personnel in the plant (for example, verbally communicate the assembly areas, designate any assembly area not to be used, designate certain areas of the plant to be avoided, etc.).

Assembly Areas

For Evacuation:

Control Room*

Technical Support Center*

Site Boundary Control Center*

Emergency Support Center*

Security Building (Extension Building)* and Gatehouse

For Limited Plant Evacuation:

Health Physics Station
Cafeteria

For Plant Evacuation:

Operations Support Center*, El. 8', TSC Building
Evacuation Assembly Area El. 18.5', TSC Building

For Exclusion Area Evacuation:

Two Creeks Town Hall

*Center for emergency operation.

4.2 Security Shift Lieutenant

4.2.1 Designate an individual to perform Section 4.4 of this procedure for security posts.

4.2.2 Obtain a list of all personnel currently on the plant site from the appropriate security systems (badge checks, computer printouts, etc.)

4.2.3 As attendance is reported from the assembly areas (see Section 4.1.1), indicate on the list obtained in Step 4.2.2 that the individual has been accounted for.

4.2.4 After the assembly areas and security personnel have submitted their rosters, compile a list of missing personnel using form EPIP-17.

4.2.5 Attempt to contact missing personnel using the Gai-tronics system.

4.2.6 If unable to contact the missing personnel, obtain from the missing person's supervisor the last known or probable location and/or job assignment. Enter this data on form EPIP-17.

4.2.7 Transmit copies of form EPIP-17 to the Maintenance Supervisor.

4.2.8 Update form EPIP-17 as changes to rosters arrive and as missing personnel are located.

4.2.9 Transmit any changes in form EPIP-17 to the Maintenance Supervisor immediately.

4.3 Designated Supervisor at the Assembly Area (Including Centers for Emergency Operations)

4.3.1 Upon arrival at the assembly area, one supervisor should compile a roster of all personnel in his group who are present and accounted for using form EPIP-18 (attached). At each in-plant center, there should be a roster of persons who are to report to that center. Each person present should be checked off.

4.3.2 When it is felt that the roster is completed as well as possible, notify the Security Shift Lieutenant at the central alarm station (CAS) or at the site boundary control center of any missing people by badge number.

4.3.3 Update the respective group roster as personnel arrive at or depart from the assembly area.

4.3.4 Report changes of the roster to the Security Shift Lieutenant periodically or as determined necessary by the Security Shift Lieutenant.

4.4 Security Officer/Designee

4.4.1 Compile a roster of all security personnel using form EPIP-18.

4.4.2 Upon completion of the roster, notify the Security Shift Lieutenant. Alert him to any missing personnel.

4.4.3 Maintain the roster current as personnel arrive at or depart from the security building or security posts.

HOSPITAL ASSISTANCE

1.0 INTRODUCTION

As outlined in EPIP 11.1, this procedure specifies plans to be used in the event of serious personal injury or illness at Point Beach. Since the possibility exists that treatment of an injured person may be complicated by radioactive contamination, a fully equipped, isolated and controlled access treatment room, the Nuclear First Aid Room or NFAR, has been provided at Two Rivers Community Hospital in Two Rivers, Wisconsin. This room is equipped with filtered ventilation, sink, decontamination supplies, protective clothing, signs, radiation monitoring equipment, and other necessary equipment. The Health Physicist and the Company Medical Director are responsible for the training and retraining of hospital and plant personnel involved in offsite medical plans.

2.0 PROCEDURE FOR HANDLING SERIOUSLY INJURED PERSONS

2.1 General Description (Detailed instructions and responsibilities in subsequent subsections)

2.1.1 Injury or Sickness Resulting in Loss of Consciousness or Mobility in the Clean Area

Control room personnel and the Shift Supervisor will be notified of the apparent nature and extent of the injury and location of the injured person. If an injury occurs in a "clean area"; i. e., an area free of contamination, first aid should be administered by trained plant personnel and the injured person should be transported for medical treatment as necessary.

2.1.2 Injury or Sickness Resulting in Loss of Consciousness or Mobility in the Controlled Area

Although an injury in a contaminated area is not likely to involve gross radioactive contamination, special procedures are to be used for handling an injured and potentially contaminated person. The Shift Supervisor is to direct first aid measures and have the injured person moved to the health physics station where, if call out time allows, health physics professionals will take charge. The

circumstances of the injury and the condition of the injured influence action with respect to decontamination of the injured, removal of protective clothing, and transport to the hospital.

In any case where a victim sustains serious injury, medical aid takes precedence over decontamination procedures.

2.1.3 Subsequent Action

NOTE: IF THE TSC IS ACTIVATED, THE MAINTENANCE SUPERVISOR SHOULD ASSUME THE DUTY SHIFT SUPERVISOR RESPONSIBILITIES FROM BELOW.

a. The Duty Shift Supervisor is to assign an individual to drive the emergency vehicle to transfer the injured person to the hospital. He will inform the driver as to which entrance to use. If the victim is contaminated, the west entrance at the NFAR will be used. Otherwise the regular emergency entrance will be used. An employee trained in first aid (normally a Chemistry & Health Physics Supervisor on day shift) should accompany the injured person in the emergency vehicle.

b. The health physics professionals are to be notified and proceed to the Two Rivers Community Hospital to assist in decontamination procedures as required.

NOTE: IF THERE IS MORE THAN ONE SERIOUS INJURY COMPLICATED BY CONTAMINATION, THE FIRST VICTIM TO ARRIVE AT THE HOSPITAL SHOULD BE DIRECTED TO THE NFAR. SUBSEQUENT VICTIMS SHOULD BE DELIVERED TO THE NORMAL EMERGENCY ROOM ENTRANCE.

c. The Shift Supervisor is to notify the Two Rivers Community Hospital (see Attachment 11.1-1 to EPIP 11.1) of the nature of the emergency, if contaminated or clean, and expected time of arrival at the hospital.

d. The Shift Supervisor will notify the Site Manager of the injury.

e. The Site Manager or his designated alternate should notify the injured person's family.

f. PBNP 8.8, "Injuries, Accident Reporting & Industrial Safety" should be used for documentation and followup of the injury.

2.1.4 Responsibility of Hospital Personnel

Upon being notified that a seriously injured, contaminated person is being transferred, hospital personnel in charge of emergencies will assure that a physician and sufficient

personnel are available, evacuate the NFAR of all persons and materials not deemed necessary and assist in moving the injured person upon arrival. Any person or item leaving the treatment room will be monitored for radioactive contamination. All items leaving the treatment room will be contained in sealed plastic bags if found to be contaminated.

2.1.5 Following Emergency Treatment

After emergency treatment is completed, the patient will be decontaminated with the assistance of Point Beach Health Physics personnel. The NFAR and all supplies and equipment involved will be thoroughly decontaminated by Point Beach personnel. In addition, surveys will be made in areas nearby to ensure that radioactive contamination has not occurred. All liquid and solid wastes accumulated as a result of treatment and decontamination will be transferred to the Point Beach Nuclear Plant for disposal in the plant waste disposal facilities.

2.2 Person Discovering the Injured Person

2.2.1 Immediately notify the Duty Shift Supervisor of the injury and the location of the patient.

2.2.2 If the patient is in a radiation field greater than 25 Rem/hour, or if serious airborne contamination is present, move the patient to an area with lower radiation dose rates, if possible.

NOTE 1: IN ALL CASES ANY ACTIONS TAKEN SHOULD MINIMIZE THE POSSIBILITY OF FURTHER INJURY TO THE PATIENT. IF MOVING THE PATIENT WILL CAUSE EVEN MORE SERIOUS INJURY TO THE PATIENT, THE RADIATION EXPOSURE IS OF SECONDARY IMPORTANCE. GET ADDITIONAL HELP BEFORE MOVING THE PATIENT.

NOTE 2: IF THE PATIENT IS IN AN EXTREMELY HIGH RADIATION FIELD (500 REM/HOUR OR GREATER) MOVE THE PATIENT IMMEDIATELY, REGARDLESS OF HIS INJURIES.

2.2.3 Remain with the patient. Perform emergency first aid and assist in transferring him to the emergency vehicle as directed by the Duty Shift Supervisor.

2.2.4 Accompany the patient to the hospital and assist the emergency vehicle driver in radiation control and monitoring if required.

2.3 Duty Shift Supervisor

2.3.1 If the injury occurs on day shift, notify the Point Beach Industrial Safety Coordinator or a Chemistry & Health Physics supervisor of the injury and the patient's location.

2.3.2 Assign an emergency vehicle driver from available Operations personnel or from the Chemistry & Health Physics Group and dispatch the driver and vehicle to a suitable exit.

NOTE: IF THE PLANT EMERGENCY VEHICLE IS NOT AVAILABLE, CONTACT THE TWO RIVERS FIRE DEPARTMENT FOR ASSISTANCE. NOTIFY THE PLANT GUARD AND DIRECT THE TWO RIVERS VEHICLE TO THE APPROPRIATE BUILDING EXIT UPON ITS ARRIVAL. SEE ATTACHMENT 11.1-1 FOR TELEPHONE NUMBER. VERIFY APPROPRIATE USE OF PERSONNEL MONITORING DEVICES AS SET FORTH IN SECTION 4.2.

2.3.3 Assure that first aid coverage is provided and instruct the person administering first aid to accompany the patient to the hospital.

2.3.4 Notify the Two Rivers Community Hospital and inform them of:

a. Nature of the injury or illness, if known.

b. Condition of the patient.

c. Whether or not patient is radioactively contaminated.

d. Means of transportation and expected time of arrival.

REFER TO ATTACHMENT 11.1-1 FOR TELEPHONE NUMBER.

2.3.5 If patient is radioactively contaminated, notify Health Physics personnel.

2.3.6 Assure that radiation monitoring instruments are placed in the emergency vehicle if the patient is radioactively contaminated.

NOTE: FIRST CHOICE INSTRUMENTS ARE THE EBERLINE PIC-6A AND THE EBERLINE RM-14 WITH HP210 PANCAKE PROBE.

2.3.7. Notify the Duty & Call Superintendent.

2.4 Emergency Vehicle Driver

2.4.1 Upon being assigned, obtain the necessary radiation monitoring instruments from the Health Physics Station, if required.

2.4.2 Stand by with the vehicle at the designated building exit and assist persons in handling the patient.

2.4.3 After receiving the patient, proceed directly to the Two Rivers Community Hospital.

a. Noncontaminated patients will be taken to the emergency ambulance entrance.

b. Contaminated patients will normally be taken to the entrance on the west end of the hospital.

2.4.4 Enroute to the hospital, call the control room via the vehicle radio to establish contact for relaying information on changes in the patient's condition or other pertinent information.

2.4.5 Upon arrival, assist in transferring the injured person to the treatment room and if the patient is radioactively contaminated, maintain radiation control and monitoring until relieved by Health Physics personnel.

2.5 Health Physics Personnel

2.5.1 Upon notification, proceed to the Two Rivers Community Hospital to assist in patient decontamination procedures.

2.5.2 Upon arrival, identify yourselves to hospital personnel and provide assistance as requested.

2.5.3 Insure that radioactive contamination is not being spread into hallways of the hospital or outside the entrance door. Maintain restricted areas and post as necessary.

2.5.4 Monitor hospital personnel (refer to Section 4.3) and equipment entering and leaving the restricted area.

NOTE: POINT BEACH NUCLEAR PLANT PERSONNEL SHOULD REMEMBER THAT THE ATTENDING PHYSICIAN'S ORDERS MUST BE OBEYED AND ONLY THE PHYSICIAN IS IN DIRECT CHARGE OF THE SITUATION.

2.5.5 Following the emergency treatment, monitor the patient prior to transferring to another area.

2.5.6 Monitor equipment and personnel and decontaminate as required.

2.5.7 Bag all disposable or radioactively contaminated items and place bags in the plant emergency vehicle. Note items of hospital-owned equipment which may require replacement.

2.5.8 Decontaminate the treatment room and adjoining areas as necessary.

2.6 Health Physicist

As soon as possible following the emergency, the Health Physicist will have the treatment room surveyed and insure that decontamination of any hospital facilities used is complete.

2.7 Duty & Call Superintendent

2.7.1 Notify the Manager - Nuclear Operations Section of the emergency.

2.7.2 If the Two Rivers Fire Department emergency vehicle was used to transport a radioactively contaminated patient, notify the Fire Department and request that the vehicle remain at the hospital until plant personnel check for radioactive contamination of the vehicle and/or its equipment.

3.0 PROCEDURE FOR HOSPITAL PERSONNEL

The information obtained from the Point Beach Nuclear Plant Duty Shift Supervisor will determine the actions of hospital personnel.

3.1 Patient Not Contaminated by Radioactive Material

These patients will be handled by standard Two Rivers Community Hospital emergency procedures.

3.2 Patient Contaminated by Radioactive Material

3.2.1 The hospital will assure that a qualified physician and sufficient qualified personnel are available to administer treatment to the injured person.

3.2.2 The NFRA will be evacuated of all personnel not involved in the treatment of the incoming patient.

3.2.3 Those hospital personnel needed for treatment or handling of the injured will don protective clothing.

3.2.4 After the victim is in the NFAR, all persons exiting, and items being removed from, the NFAR will be monitored for contamination.

3.2.5 All contaminated items will be sealed in plastic bags and deposited in the NFAR for further disposition.

3.2.6 After treatment has been completed, the patient will be transferred to another location. Point Beach Health Physics personnel will then decontaminate the NFAR and transfer all contaminated material to Point Beach Nuclear Plant for ultimate disposal.

NOTE: ALL ITEMS SUCH AS PROTECTIVE CLOTHING, ABSORBENT PAPER, ETC., NECESSARY FOR USE BY HOSPITAL PERSONNEL IN TREATMENT OF CONTAMINATED PATIENTS WILL BE SUPPLIED BY WISCONSIN ELECTRIC POWER COMPANY AND WILL BE KEPT IN THE NFAR.

4.0 MONITORING OF MEDICAL PERSONNEL

Assisting personnel will be provided with monitoring devices whenever contamination is involved or whenever such personnel are required on site or within any evacuated area.

4.1 Plant Emergency Vehicle

Use of plant emergency vehicle with plant personnel in attendance requires no additional personnel monitoring devices during the transient from the plant to the hospital.

4.2 Two Rivers Fire Department Emergency Vehicle

Use of the Two Rivers Fire Department emergency vehicle with Fire Department personnel in attendance requires personnel monitoring devices for all non-plant personnel. A self-reading pocket dosimeter and a TLD badge will be issued from the unused TLD supply stored at the south gatehouse. A Visitor TLD Badge Issue Report will be completed as soon as practicable. Upon releasing these personnel, their pocket dosimeters will be read and recorded on the Visitor TLD Badge Issue Report. The TLD badges will be retrieved and processed as soon as possible.

4.3 Hospital Personnel

Self-reading pocket dosimetry devices and TLD badges will be issued to all hospital personnel assisting in the treatment of an injury which has been further complicated with significant radioactive contamination that could pose as a source of exposure to those personnel. These devices will be obtained from the supply stored at the south gatehouse and taken directly to the NFAR at the Two Rivers Community Hospital by the Health Physics personnel dispatched to the hospital. A Visitor's TLD Badge Issue Report will be completed as soon as practicable. As soon as hospital personnel have completed their treatment of the injured person, the pocket dosimeter will be read and recorded on the Visitor TLD Badge Issue Report and the TLD will be retrieved and processed as soon as possible.

4.4 Additional Facilities

If there are requirements to transport an injured employee with significant radioactive contamination to additional hospital facilities or to another hospital, all personnel in the proximity of the injured person will be issued self-reading pocket dosimetry devices and TLD badges. These devices will be retrieved and processed as soon as practicable.

4.5 High Whole Body Exposure Incidents

For those incidents where personnel may be transferred to the hospital due to a high whole body exposure (greater than 25 R), personnel monitoring for non-plant personnel is not necessary unless the high whole body exposure is complicated by radioactive contamination. In this case, personnel monitoring devices would be issued as outlined in preceding sections.

5.0 ARRANGEMENTS FOR OFFSITE MEDICAL ASSISTANCE FOR SERIOUS INJURIES OR CONTAMINATED INJURIES

5.1 Two Rivers Community Hospital

Arrangements have been made with the hospital for treatment of Point Beach Nuclear Plant patients. Hospital personnel have been instructed and trained with regard to potentially radioactive patients and contamination. Hospital personnel are periodically retrained by plant personnel and Company medical representatives. Refer to Attachment 11.1-1 for telephone numbers.

The following health physics supplies are available in the nuclear first aid room at the Two Rivers Community Hospital.

Item	NFAR Quantity	Triage Area
Absorbent paper	50 feet	--
Bags, plastic, assorted sizes (need garbage can size)	50	50
Bucket, plastic	1	1
Decontamination supplies:		
Cotton applicators, pkg.	1	1
Decon soap, 1 qt. bottle	1	1
Hand brush	2	2
Potassium permanganate, 7 cap. pkg.	1	1
Sodium bisulfite, 7 cap. pkg.	1	1
Filter paper for smear surveys, pkg. and envelopes	2	2
Gloves:		
Cotton pall bearers, pair	8	8
Rubber, pair	8	8
Half-face respirators with particulate filters	4	4
Marking pens, pkg.	1	1
Mops, sponge, with spare sponge	2	2
Protective clothing:		
Lab coats	6	6
Surgeon's cap	6	6
Plastic shoe covers	25	25
Medical Assistance Plan	1	1
Emergency Call List	1	1
Radiation warning signs and tags, assorted	10	10
Radiation warning tape, roll	1	1
Tape, masking:		
1" roll	2	2
2" roll	2	2
Victoreen Thyac survey meter with end window, GM probe	1	1
D-cell batteries, box	1	1
Masslinn mop	1	1
Barrier tape	1	1
Dosimeters:		
0-500 mRem	10	--
0-2 Rem	5	--
Mini-rad survey instrument	1	1
Scissors	1	1
Tuck tape, rolls	2	2
Miscellaneous forms		
CHP-21, Survey Form (Blank)	1 pad	--
CHP-34, Dosimetry Rezero Sheet	5	5
CHP-39, Personnel Contamination Report	5	5
CHP-82, Quarterly Inventory Hospital	5	5
CHP-83, High-Range Dosimeter Issue Sheet	5	5

5.2 Area Physicians

At least two area physicians have taken radiological health instruction courses under full or partial sponsorship of the Company and are on the Two Rivers Community Hospital staff.

5.3 Two Rivers Fire Department Emergency Vehicle

Arrangements have been made for the City of Two Rivers emergency vehicle to respond in the event of injury to persons at the Energy Information Center or in the event the plant emergency vehicle is already in use. Refer to Attachment 11.1-1 for telephone numbers.

5.4 Backup Hospital - University of Wisconsin Hospital, Madison

Arrangements have been made with the University of Wisconsin Hospital in Madison, Wisconsin, to provide backup services in the event that the services of Two Rivers Community Hospital become temporarily unavailable or that additional services are required. The University Hospital provides its own training and equipment; Point Beach Nuclear Plant has no maintenance obligations in these areas.

PERSONNEL EXPOSURE & SEARCH AND RESCUE TEAMS

1.0 GENERAL

The purpose of this procedure is to provide the guidance and requirements necessary to conduct efficient search and rescue operations.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Proper radiological controls are to be maintained during search and rescue operations. Proper health physics practices must be adhered to in accordance with EPIP 12.1, "Reentry Procedures for Emergency Operations."

3.0 INITIAL CONDITIONS

3.1 EPIP 8.1, "Personnel Assembly and Accountability," is completed or persons are known to be missing or in need of help.

3.2 Review EPIP 12.1, "Reentry Procedures for Emergency Operations."

4.0 PROCEDURE

4.1 Maintenance Supervisor

4.1.1 Assemble a search and rescue team or teams, each team consisting of at least two persons. Of the two personnel, at least one will be trained in first aid. At least one will be qualified in health physics and both will be familiar with the plant.

NOTE: FOR THE PURPOSES OF THIS PROCEDURE, THE HEALTH PHYSICS QUALIFIED PERSON WILL BE CALLED THE HEALTH PHYSICS REPRESENTATIVE.

4.1.2 Appoint the most qualified team member as the search and rescue team leader. The search and rescue team leader will be in charge of the team while conducting search and rescue operations.

4.1.3 Coordinate all search and rescue teams so that duplication of effort and unnecessary radiation exposure does not occur.

4.1.4 Work with the Plant Operations Manager and Chemistry/Health Physics Supervisor.

4.1.5 Use a map of the plant to mark off areas which have been searched.

4.1.6 Recall the search and rescue team(s) when search and rescue operations are no longer necessary or when all missing persons are accounted for.

4.2 Health Physics Representative

4.2.1 Ensure that all team members meet the personnel dosimetry, protective clothing and respiratory requirements of EPIP 12.1, "Reentry Procedures for Emergency Operations."

4.2.2 Ensure that no team member receives a whole body dose greater than 100 Rem while conducting search and rescue operations.

4.2.3 The Health Physics representative will have the authority to secure search and rescue operations of the team and to order the team out of contaminated or radiation areas.

4.3 Search and Rescue Team Leader

4.3.1 Obtain the following information prior to performing search and rescue operations:

a. Identification of each missing individual.

b. Last known location of each individual.

c. The job each individual was working on.

d. Any significant plant status known that may affect the search.

e. Allowable radiation exposure limits for each team member.

4.3.2 Ensure that the team is equipped with a first aid kit and knows the locations of stretchers.

4.3.3 Proceed to the last known location of the missing individual and if necessary expand the search to adjacent areas.

4.3.4 Maintain close communications with the Maintenance Supervisor on all team actions including notification when any personnel are located.

NOTE: TEAM MEMBERS SHOULD NOT SEPARATE WITHOUT THE DIRECT PERMISSION OF THE MAINTENANCE SUPERVISOR AND TEAM LEADER.

4.3.5 Provide first aid and medical care as necessary and transport or escort the located individual(s) to a safe location as soon as possible.

DRILLS & EXERCISES

1.0 GENERAL

1.1 Purpose

To describe:

1.1.1 Responsibilities of the Manager - Nuclear Operations, Emergency Planning Coordinator, Superintendent - Training, and Health Physicist as associated with drills and exercises.

1.1.2 Types of drills and exercises which must be conducted.

1.1.3 Frequency of drills and exercises to be conducted.

1.1.4 Procedure to be followed in order to conduct a drill or exercise.

1.2 Definitions

1.2.1 Drill

Supervised instruction period aimed at testing, developing and maintaining skills in a particular operation. A drill is often a component of an exercise.

1.2.2 Exercise

A test to demonstrate the effectiveness of the Emergency Plan and the capability of the State and local personnel and resources to adequately respond to an accident. Exercises will be scheduled in accordance with Emergency Plan Section 8.2.2.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 All announcements over the public address system, notifications of any agencies and messages associated with the drill or exercise should be preceded by and terminated with the words, "This is a drill."

2.2 If a drill is in progress and a real emergency or casualty situation arises, the drill will be terminated immediately and appropriate announcements will be made stressing that an actual emergency or casualty situation exists.

3.0 RESPONSIBILITIES

3.1 Manager - Nuclear Operations

3.1.1 The Manager - Nuclear Operations has the overall responsibility for the drill or exercise. All Emergency Plan drills or exercises conducted must have the approval of the Manager - Nuclear Operations.

3.1.2 The Manager - Nuclear Operations shall assign personnel to correct any deficiencies in the Emergency Plan or EPIP's noted during drills and exercises.

3.2 Superintendent - Training, Emergency Planning Coordinator & Health Physicist

The Superintendent - Training, Emergency Planning Coordinator and Health Physicist have the reponsibility to:

3.2.1 Coordinate efforts with other appropriate emergency organizations and agencies.

3.2.2 Schedule a date and time to conduct the drill or exercise.

3.2.3 Develop and prepare scenarios for drills and exercises to meet the frequency requirements of Section 4.0 of this procedure.

3.2.4 Obtain approval for the drill or exercise from the Manager - Nuclear Operations.

3.2.5 Conduct the drill or exercise.

3.2.6 Critique the results of the drill or exercise.

3.2.7 Retain critique results to facilitate training and Emergency Plan/EPIP changes.

4.0 DRILLS - TYPES & SCHEDULES

NOTE: WHERE APPROPRIATE, THE FOLLOWING DRILLS AND EXERCISES SHOULD BE UNANNOUNCED AND SCHEDULED AT ALL HOURS OF THE DAY.

4.1 Communication Drills

4.1.1 Communications with Federal, Wisconsin, Manitowoc and Kewaunee County governments within the plume exposure pathway EPZ will be tested monthly. This drill meets the requirements to annually test communications with Federal and State emergency response organizations within the ingestion pathway EPZ.

4.1.2 Communications between PBNP, Wisconsin, and Manitowoc and Kewaunee County emergency operations centers, and field assessment teams will be tested annually.

4.2 Fire Drills

Fire drills will be conducted in accordance with the PBNP Fire Protection Manual.

4.3 Medical Emergency Drills

4.3.1 Medical emergency drills will include at least one simulated contaminated victim.

4.3.2 Medical emergency drills requiring participation by the Two Rivers Community Hospital will be conducted every two years. Point Beach conducts its drill in odd numbered years, while Kewaunee Nuclear Power Plant conducts their drill in even numbered years.

4.3.3 Medical emergency drills requiring the participation of the Two Rivers ambulance service will be conducted once every four years. See Section 4.3.2 for arrangement with Kewaunee Nuclear Power Plant.

4.4 Radiological Monitoring & Health Physics Drills

4.4.1 These drills will be conducted semiannually.

4.4.2 These drills will include analyses of, and measurement of simulated airborne radioactivity and direct radiation measurements in the environment.

4.5 Chemistry Drills

Chemistry drills consisting of coolant and containment atmosphere sampling exercises will be performed annually.

4.6 Site Accountability & Evacuation Drills

Site accountability and evacuation drills will be conducted annually.

4.7 Seach & Rescue Drills

Search and rescue drills will be conducted annually.

5.0 CONDUCTING DRILLS & EXERCISES

5.1 Superintendent - Training, Emergency Planning Coordinator & Health Physicist

5.1.1 Prepare a drill or exercise scenario using form EPIP-19 (attached). Schedule the date and time the drill or exercise is to be conducted. Submit the drill or exercise scenario and schedule to the Manager - Nuclear Operations for approval.

5.1.2 Assign drill observers and perform the following:

a. Brief drill observers on the scenario, including any details or information they are to provide to the drill participants.

b. Assign drill observers to specific locations. Provide each drill observer with a drill observation sheet form EPIP-20 (attached).

NOTE: OFFSITE ORGANIZATIONS MAY SUPPLY THEIR OWN OBSERVERS.

5.1.3 As determined for each drill or exercise, notify offsite organizations of the drill or exercise in advance to confirm their level of participation.

5.1.4 Scenarios for the major annual exercise should be provided, for review, to FEMA Region V and NRC Region III at least 45 days prior to the date of the exercise. Any exercise controller documents associated with the annual exercise should be provided for review to FEMA Region V and NRC Region III 30 days prior to the date of the exercise

5.1.5 Conduct the drill or exercise using the following guidelines:

a. Announcements associated with the drill or exercise shall be preceded and terminated by the words:

"THIS IS A DRILL, THIS IS A DRILL."

b. During a drill or exercise, any action to alter actual plant operating conditions resulting from the drill or exercise will be simulated unless otherwise approved by the Manager - Nuclear Operations.

5.1.6 Collect the drill observation sheets from the drill observers. Critique drill or exercise with the drill observers and participants as soon as possible after the termination of the drill.

5.1.7 Complete the drill/exercise evaluation report (form EPIP-21, attached).

5.1.8 Submit the drill/exercise evaluation report to the Manager's Supervisory Staff for its review.

5.2 Manager - Nuclear Operations

5.2.1 Review the drill/exercise evaluation report and note any apparent deficiences.

ACCOUNTING SHORT FORM

Group	Accounted For Yes	Accounted For No	Name & Badge of Missing	Last Location	Search & Rescue Sent	Found (Time)
Operations						
Duty Shift (including Duty Technical Advisors)						
Chemistry & Health Physics						
Operations Support Center (Mustering Area)						
Maintenance & Construction						
Operations Relief Crew						
Administrative & Engineering - Quality & Regulatory Services						
Technical Services (Reactor Engineering, I&C, Training)						
Nuclear Regulatory Commission						
Technical Support Center						

POINT BEACH NUCLEAR PLANT

SITE BOUNDARY CONTROL CENTER
EMERGENCY PLAN INVENTORY CHECKLIST

Item No.	Item	Required	On Hand
	Sampling Equipment and Supplies		
1.	AC generator (5,000 watt)	1	
3.	Electric high volume air sampler	1	
4.	Poly gas sample bottles	12	
5.	Charcoal cartridges for air sampler, high volume	48	
6.	Charcoal cartridges for air sampler, low volume	50	
7.	Silver zeolite cartridges for air sampler, low volume	5	
8.	Filters for air samplers (pkg. of 100)	2	
9.	Gasoline for AC generator (gallons)	2	
10.	Sample tags	50	
11.	Plastic bags	50	
12.	100' extension cord	2	
13.	Planchets	20	
	Respiratory Protection Equipment		
14.	Full-face respirators	2	
15.	Half-face respirators	2	
16.	Full-face filter cartridge	12	
17.	Half-face filter cartridge	10	
	Fire Protection Equipment		
18.	Fire extinguisher, dry chemical	1	
	Radiation Survey and Monitoring Instrument		
19.	Victoreen Radgun (.01 mR/hr - 10 kR/hr)	1	
20.	Radector III (.1 mR/hr - 1,000 R/hr)	1	
21.	Victoreen Model 490 Thyac III	1	
22.	PIC-6A survey instrument (1 mR/hr - 1,000 R/hr)	2	
23.	RM3C personnel survey frisker	1	
24.	Johnson Associates, GSM-5, 0-50k cpm, 0-200 mR/hr	1	
25.	MSC-1 sampler holder for GSM-5	1	
26.	Check sources 2 - Cs-137 and 1 - Sr-90	3	
27.	Filters for smears (pkg. of 100)	2	
28.	Nuclear Chicago counter scaler	1	
29.	Coin envelopes (box)	1/2	
30.	HP-210 probe	2	
31.	SH4 probe holder	1	
32.	Earphones for Thyacc III survey instrument	3	
33.	Side window probe	2	
34.	Cord, BNC-BNC connector	2	
35.	Cord, amphenol - BNC connector	2	

		Required	On Hand
	Personnel Monitoring Equipment		
36.	Personnel Thermoluminescent Dosimeters (TLD)	100	
37.	Radiological dosimeters, 0-5 R	12	
38.	Radiological dosimeter charger	2	
	First Aid and Decontamination Supplies		
39.	First aid kit	1	
40.	Burn kit	1	
41.	Emergency drinking water tablets (bottles; 50 tables per bottle)	5	
42.	Water (gallons)	20	
43.	Decon soap, powder (5 lb.)	1	
44.	Decon soap, liquid (qt.)	1	
45.	Hand brush	4	
46.	Cotton applicators (box)	1	
47.	Potassium permanganate (4 oz.)	1	
48.	Sodium bisulfate (1 lb.)	1	
49.	Kim towels (box)	1	
50.	Masselin (pkg.)	1	
51.	"409" cleaner (btl.)	2	
52.	"Spic'n Span" (box)	2	
53.	Masselin mop	1	
54.	Regular sponge map	2	
55.	Rag mop	1	
56.	Wringer	1	
57.	Large mop bucket	1	
58.	Kim wipes (box)	1	
59.	Bucket, plastic	2	
60.	Cotton swabs (packets)	5	
61.	Gauze sponges, 2" x 2" (100 per pkg.)	1	
62.	Nail brushes	4	
	Radiation Hazard Signs and Supplies		
63.	Radiation warning tape (roll)	1	
64.	Radiation placards	10	
65.	Radioactive material and radiation hazard signs	10	
66.	Radiation contamination hazard tags	10	
67.	Contamination, high radiation, racioactive material, and radiation area inserts (ea.)	10	
68.	Yellow/magenta ribbon (rolls)	8	
69.	Yellow/magenta rope (roll)	1	

		Required	On Hand
	Communication Equipment and Supplies		
70.	Portable 2-way radio KRQ-717	1	
71.	Telephone, plan PBX-extension with outside line capability	1	
72.	WE telephone book	1	
73.	Two Rivers/Manitowoc telephone book	1	
	Traffic Signs and Equipment		
74.	Traffic cones for barricades	20	
75.	Traffic lights for barricades	8	
76.	Chains and padlocks for barricades	4	
77.	Traffic flashlight	4	
78.	"Closed Area" placards	6	
79.	Traffic warning light batteries (spare)		
	Clothing and Toiletry Supplies		
80.	Coveralls	25	
81.	Rainwear	6	
82.	Rubber boots	10	
83.	Shoe covers, plastic	25	
84.	Overshoes, winter	6	
85.	Gloves, rubber disposable	6	
86.	Gloves, cotton disposable	6	
87.	Mittens, winter	6	
88.	Towels	12	
89.	Washcloths	12	
	Stationery and Miscellaneous Supplies		
90.	Desk table and chair	1	
91.	Writing paper (pad)	1	
92.	Pens and pencils	Assortment	
93.	Tape, masking (rolls)	2	
94.	Tuck tape (rolls)	10	
95.	Logbook	1	
96.	Absorbent paper (roll)	1	
97.	Paper cups (bag)	1	
98.	Plastic bags	50	
99.	Scissors	1	
100.	Pocketknife	1	
101.	Screwdrivers (set)	1	
102.	Plastic funnel	4	
103.	Flashlight	1	
104.	Batteries (for flashlight and survey instruments)	50	
105.	Flashlight bulbs	6	

		Required	On Hand
Stationery and Miscellaneous Supplies, continued ...			
106.	Bulbs, incandescent	8	
107.	Electric clock	1	
108.	Electric heater	5	
109.	Wet/dry vacuum cleaner	1	
110.	Metal drum (55-gallon)	1	
111.	Dzl-lene (quart), gasoline stabilizer	1	
112.	Lead bricks	12	
113.	Safety solvent (low)	1	
114.	Metal funnels	2	
115.	Pencil sharpener	1	
116.	Chalk	1	
117.	Bulletin Board	1	
118.	Chalkboard	1	
119.	Table (reg.)	1	
120.	Picnic tables	2	
121.	Calculator	1	
	Emergency Plan Documents		
122.	PBNP Emergency Plan	1	
123.	Health Physics Administrative Control Policies and Procedures Manual	1	
124.	Dose Isopleth/Map Package	1	
125.	Personnel Roster	10	
126.	Potassium Iodide Approval, Use List	1	
127.	DOE, Region V, Radiological Assistance Handbook	1	
128.	State of Wis. Peacetime Radiological Response Plan	1	
	EPIP Forms		
129.	EPIP-01, Emergency Plan Airborne Radiation Survey	5	
130.	EPIP-02, Emergency Plan Survey Record	5	
131.	EPIP-03, Dose Factor Calculation Sheet	5	
132.	EPIP-04, Status Report on Plant Systems and Controls	5	
133.	EPIP-05, Worksheet for Status Report on RMS for Unit	5	
134.	EPIP-06, Worksheet for Status Report on RMS for Plant	5	
135.	EPIP-07, X/Q Determination	5	
136.	EPIP-08, Estimated Whole Body and Thyroid Projected	5	
137.	EPIP-09, Estimated Whole Body Calculation Worksheet	5	
138.	EPIP-10, Estimated Ground Deposition Calculation	5	
139.	EPIP-17, List of Missing Personnel	5	
140.	EPIP-18, Assembly Area Roster	5	
141.	Xe-133 Equivalent Release Rate, Worksheet No. 1	5	

		Required	On Hand
	EPIP Procedures		
142.	EPIP 1.4, Radiological Dose Evaluation	5	_____
143.	EPIP 1.5, Protective Action Evaluation	5	_____
144.	EPIP 7.1.1, Chemistry & Health Physics Personnel Notification and Initial Response when Chemistry & Health Physics Personnel are On-Site	5	_____
145.	EPIP 7.2.1, Activation of Health Physics Facilities at Site Boundary Control Center	5	_____
146.	EPIP 7.2.2, Activation of Health Physics Facilities at Operations Support Center	5	_____
147	EPIP 7.2.3, Activation of Health Physics Facilities at Technical Support Center	5	_____
	CHP Forms		
148.	CHP-02, Iodine Airborne Survey (pad of 50)	1	_____
149.	CHP-21, Miscellaneous Survey (pad of 50)	1	_____
150.	CHP-31, Radiation Work Permit (pad of 50)	1	_____
151.	CHP-34, Dosimeter Rezero (pad of 50)	1	_____
152.	CHP-37, Irregular or Offscale Dosimeter Report (pad of 50)	1	_____
153.	CHP-22, Air Particulate Sample (pad of 50)	1	_____
154.	CHP-25, Counting Log Sheet (pad of 50)	1	_____
155.	CHP-33b, Visitors' Monitored per 10 CFR 20 (pad of 50)	1	_____
156.	CHP-33c, Visitor Personnel Monitoring Record (pad of 50)	1	_____
157.	CHP-35, Dosimeter Summary Sheet (pad of 50)	1	_____
158.	CHP-38, Lost or Damaged TLD Report (pad of 50)	1	_____
159.	CHP-39, Personnel Contamination Report (pad of 50)	1	_____
160.	CHP-40, Visitor TLD Badge Issue Report (pad of 50)	1	_____
161.	CHP-44, Timekeeping Log - High Radiation Work Location (pad of 50)	1	_____
162.	CHP-56 Personal Bioassay Evaluation (pad of 50)	1	_____
163.	CHP-106, Occupational External Radiation Exposure History (pad of 50)	1	_____
	Emergency Plan Sampling Kits		
164.	Emergency Plan Sampling Kits - Each kit contains the following:	2	_____
	1. Battery powered air sampler	1	_____
	2. Scott cartridge holder	1	_____
	3. Silver Zeolite cartridge holder	1	_____
	4. Stop watch with batteries	1	_____
	5. Air Particulate filters (env.)	1	_____
	6. Silver Zeclite cartridge	5	_____
	7. Scott charcoal cartridge	5	_____
	8. PIC-6A survey meter	1	_____
	9. Water filled gas sample bottle (1 liter)	2	_____

		Required	On Hand
10.	Liquid sample cubitainers (1 liter)	2	
11.	Scissors	1 pair	
12.	Plastic suit	2 sets	
13.	Gloves (surgeons)	6 pair	
14.	Dosimeters (0 - 5,000 mR)	2	
15.	Dosimeter charger	1	
16.	Plastic Bags		
	12 x 18 inch size	6	
	5 x 8 inch size	6	
	3 x 5 inch size	12	
17.	Flashlight with spare bulb and batteries	1	
18.	Smears (100 each/box)	2	
19.	Tuck Tape (roll)	1	
20.	Sharpie, Flair pen, grease pencil and pencil	4	
21.	Sample ID tags (pad)	1	
22.	Sampling Procedures		
	EPIP 7.3.1 Airborne Sampling and Direct Dose Rate Survey Guidelines	5 ea	
	EPIP 7.3.1 Atmospheric Radioactive Iodine Sample Attachment Collection and Counting	5 ea	
23.	Sampling Forms		
	EPIP-01 Airborne Radiation Survey Record	5 ea	
	EPIP-02 Emergency Plan Survey Record	5 ea	
	Sample Identification Survey Map	5 ea	
	2 and 5 Mile Sample Identification Survey Map	5 ea	
24.	CHP-34 Rezero Sheet	5 ea	

By _____ Date _____

Reviewed By _____ Date _____
(Health Physics Supervisor)

POINT BEACH NUCLEAR PLANT

TSC, ESC, SOUTH GATE & OSC
EMERGENCY PLAN INVENTORY CHECKLIST

Date _____

Item No.	Item	Suggested Inventory	Inv. Check
	Air Sampling Equipment		
1.	Low volume air sampler	1	____
2.	High volume air sampler	2	____
3.	AMS-2 cart mounted air sampler	1	____
4.	Particulate filters, low volume, box	1	____
5.	Charcoal filters, low volume, box	1	____
6.	Particulate filters, high volume, box	1	____
7.	Charcoal filters, high volume, box	1	____
8.	Silver zeolite filters	15	____
9.	Plastic bottles, 1 liter	12	____
10.	50' extension cord	2	____
	Dosimetry Equipment		
11.	Dosimeters (0-5,000 mR)	40	____
12.	Dosimeters (0-200 R)	6	____
13.	Dosimeter charger	2	____
14.	Batteries, Size AA, pkg.	1	____
	Survey & Monitoring Equipment		
15.	Victoreen Vamp	1	____
16.	Rad Owl II	1	____
17.	Thyac III - side window probe	1	____
18.	Batteries, Size D	24	____
19.	Batteries, Size 9 volt	6	____
20.	Smear filters, box	20	____
21.	Smear envelopes, box	2	____
21a.	¼" lead detector shield (teletector)	1	____
	Signs		
22.	Three-pocket placards	24	____
23.	"Radiation Area" inserts	24	____
24.	"High Radiation Area" inserts	24	____
25.	"RWP Required" inserts	24	____
26.	"Airborne Area" inserts	24	____
27.	"Contaminated Area" inserts	24	____
28.	"Radioactive Materials" inserts	24	____

Item No.	Item	Suggested Inventory	Inv. Check
	Respiratory Protection Equipment		
29.	Clear-Vue respirator	6	____
30.	Ultra-Vue respirator	6	____
31.	Filter cartridges, box	1	____
32.	Smoke test kit	1	____
33.	Bio-Pak 60	7	____
	CHP Forms		
34.	CHP-02, Iodine Airborne Survey, pad	1	____
35.	CHP-21, Miscellaneous Surveys, pad	1	____
36.	CHP-31, Radiation Work Permit, pad	1	____
37.	CHP-34, Dosimeter Rezero, pad	1	____
38.	CHP-37, Irregular or Offscale Dosimeter Report, pad	1	____
39.	CHP-22, Air Particulate Sample, pad	1	____
	EPIP Forms		
40.	EPIP-01, Emergency Plan Airborne Radiation Survey	10	
41.	EPIP-02, Emergency Plan Survey Record	10	____
42.	EPIP-03, Dose Factor Calculation Sheet	10	____
43.	EPIP-04, Status Report on Plant Systems & Controls	5	____
44.	EPIP-05, Work Sheet for Status Report on RMS for Unit	5	____
45.	EPIP-06, Work Sheet for Status Report on RMS for Plant	5	____
46.	EPIP-07, X/Q Determination	5	____
47.	EPIP-08, Estimated Whole Body & Thyroid Projected	5	____
48.	EPIP-09, Estimated Whole Body Calculation Work Sheet	5	____
49.	EPIP-10, Estimated Ground Deposition Calculation	5	____
50.	EPIP-17, List of Missing Personnel	5	____
51.	EPIP-18, Assembly Area Roster	5	____
52.	Xe-133 Equivalent Release Rate, Worksheet No. 1	5	____
	EPIP Procedures		
53.	EPIP 1.4, Radiological Dose Evaluation	5	____
54.	EPIP 1.5, Protective Action Evaluation	5	____
55.	EPIP 7.1.1, Chemistry & Health Physics Personnel Notification & Initial Response When Chemistry & Health Physics Personnel are On-Site	5	____

Item No.	Item	Suggested Inventory	Inv. Check
	EPIP Procedures, continued ...		
56.	EPIP 7.2.1, Activation of Health Physics Facilities at Site Boundary Control Center	5	____
57.	EPIP 7.2.2, Activation of Health Physics Facilities at Technical Support Center/ Operations Support Center	5	____
	Miscellaneous		
59.	Barricade tape, yellow/magenta, rolls	5	____
60.	Tuck tape, rolls	2	____
61.	Hot spot tags	50	____
62.	Radiation material hazard tags	50	____
63.	Radioactive material contamination tags	50	____
64.	Yellow/magenta tape, rolls	6	____
65.	Yellow/black warning tape, roll	5	____
66.	Plastic bags, 3 x 5	50	____
67.	Plastic bags, 5 x 7	50	____
68.	Potassium iodine use (personnel list)	1	____
	Protective Clothing		
74.	Coveralls	20 pr	____
75.	Cotton gloves	20 pr	____
76.	Rubber gloves	20 pr	____
77.	Pallbearer gloves	20 pr	____
78.	Cloth hoods	20	____
79.	Canvas booties	20 pr	____
80.	Plastic suits	20 sets	____
81.	Shoecovers, white plastic	1 cs	____
82.	PBNP Emergency Plan	1	____
83.	Emergency Plan Implementing Procedures	1	____
84.	PBNP HP Administrative Policies & Procedures Manual	1	____
85.	Air sample number assignment list	1	____
86.	Bio-Pak 60 manual	1	____
87.	Log book	1	____
88.	CS-137 Check Source	1	____
	EMERGENCY SUPPORT CENTER		
1.	Coveralls, cotton	12 pr	____
2.	Gloves, cotton	12 pr	____
3.	Hoods, cloth	12	____
4.	Low volume air sampler	1	____
5.	Filters, charcoal	6	____
6.	Filters, air particulate	1 box	____

Item No.	Item	Suggested Inventory	Inv. Check
	Emergency Support Center, continued ...		
7.	Rad Owl II survey instrument	1	____
8.	Cs-137 check source	1	____
9.	Dosimeters, high range (0-5,000 mR)	12	____
10.	Dosimeter rezero unit	1	____
11.	Shoecovers, white plastic	50 pr	____
12.	Victoreen Vamp	1	____
13.	Respirators, clear-vue	6	____
14.	Respirators, ultra-vue	6	____
15.	Filters, respirator particulate	1 box	____
16.	PBNP Emergency Plan	1	____
17.	Emergency Plan Implementing Procedures	1	____
SOUTH GATE			
	Air Sampling		
69.	Low volume air sampler	1	____
70.	Particulate filters, box	1	____
71.	Charcoal filters, box	1	____
	Radiation Survey & Monitoring Instruments		
72.	Vamp area monitor	1	____
73.	Extension cord, 50'	1	____

By _____ Date _____

Reviewed By _____ Date _____
(Health Physics Supervisor)

POINT BEACH NUCLEAR PLANT

EMERGENCY VEHICLE INVENTORY CHECKLIST

DATE _____

	Item	Required	On Hand
1.	First aid kit*	1	_____
2.	Burn kit	1	_____
3.	Oxygen resuscitator	1	_____
4.	Stretcher	1	_____
5.	Pillow	1	_____
6.	Scott foam ambulance blanket	2	_____
7.	Miscellaneous medical forms	1 pkg.	_____
8.	TLD's and TLD issue forms	10 ea.	_____
9.	Mini-rad survey instruments	2	_____
10.	Thyac III	2	_____

*If the lead seal is broken, the contents of the first aid kit must be inventoried.

Inventory By _____ Date _____

Reviewed By _____ Date _____
Health Physics Supervisor

POINT BEACH NUCLEAR PLANT

MONTHLY HEALTH PHYSICS INSTRUMENT AND AIR SAMPLER FUNCTIONAL TEST CHECKLIST

DATE _____

Reference: EPIP 7.4.1 - Routine Check, Maintenance, Calibration and Inventory Schedule of Health Physics Emergency Plan Equipment

EPIP 7.4.2 - Emergency Plan Equipment Routine Checks, Maintenance and Calibration Instructions

SITE BOUNDARY CONTROL CENTER

INSTRUMENTATION

Item No.	Type of Equipment	Serial Number	Check Source Used	Source Check Criteria		Results	
1.	Thyac III	_____	Installed	_____	cpm	_____	cpm
2.	GSM-5	_____	S-23	_____	cpm	_____	cpm
3.	RM-3C	_____	S-23	_____	cpm	_____	cpm
4.	PIC-6A	_____	Cs-11	_____	mR/hr	_____	mR/hr
5.	PIC-6A	_____	Cs-11	_____	mR/hr	_____	mR/hr
6.	PIC-6A	_____	Cs-11	_____	mR/hr	_____	mR/hr
7.	PIC-6A	_____	Cs-11	_____	mR/hr	_____	mR/hr
8.	Radector III	_____	Cs-11	_____	mR/hr	_____	mR/hr
9.	HPI-1010	_____	Cs-11	_____	mR/hr	_____	mR/hr
10.	Nuclear Chicago	_____	S-23	_____	cpm	_____	cpm

AIR SAMPLERS

Item No.	Type	Satisfactory Functional Test
1.	High Volume	_____
2.	Battery (12 V DC)	_____

NOTE: SOURCE CHECK CRITERIA TO BE ENTERED FROM CURRENT CALIBRATION STICKER ON EACH UNIT. RESULTS MUST BE WITHIN ±20% OF THIS VALUE.

OPERATIONS SUPPORT CENTER

INSTRUMENTATION

Item No.	Type of Equipment	Serial Number	Check Source	Source Check Criteria	Results
1.	Rad Owl II	_____	Cs-6	_____ mR/hr	_____ mR/hr
2.	Thyac III	_____	Int.	_____ cpm	_____ cpm
3.	Thyac III	_____	Int.	_____ cpm	_____ cpm
4.	Vamp Area Monitor	_____	Cs-6	_____ mR/hr	_____ mR/hr

AIR SAMPLERS

Item No.	Description	Satisfactory Functional Test
1.	Low Volume (115 V AC)	_____
2.	High Volume (115 V AC)	_____
3.	High Volume (115 V AC)	_____
4.	AMS-2 (cart-mounted)	_____

	Check Source Criteria	Check Source Criteria
a. AMS-2	_____ cpm	_____ cpm
b. RM-14	_____ cpm	_____ cpm

Use check source CS-6.

EMERGENCY SUPPORT CENTER

INSTRUMENTATION

Item No.	Type of Equipment	Serial Number	Check Source	Check Source Criteria	Check Source Results
1.	Rad Owl II	_____	Cs-5	_____ mR/hr	_____ mR/hr
2.	Vamp Area Monitor	_____	Cs-5	_____ mR/hr	_____ mR/hr

AIR SAMPLERS

Item No.	Description	Satisfactory Functional Test
1.	Low Volume (115 V AC)	_____

SOUTH GATE

INSTRUMENTATION

Item No.	Type of Equipment	Serial Number	Check Source Used	Source Check Criteria	Results
1.	VAMP Monitor	_____	Cs-6	_____ mR/hr	_____ mR/hr

AIR SAMPLERS

Item No.	Type of Equipment	Satisfactory Functional Test
1.	Low Volume	_____

CONTROL ROOM

INSTRUMENTATION

Item No.	Type of Equipment	Serial Number	Check Source Used	Source Check Criteria	Results
1.	Radector III	_____	Cs-3	_____ mR/hr	_____ mR/hr

FIRST AID ROOM

INSTRUMENTATION

Item No.	Type of Equipment	Serial Number	Check Source Used	Source Check Criteria		Results	
1.	Thyac III	_____	Internal	_____	cpm	_____	cpm

EMERGENCY VEHICLE

INSTRUMENTATION

Item No.	Equipment	Number	Used	Criteria		Results	
1.	Thyac III	_____	Internal	_____	cpm	_____	cpm
2.	Thyac III	_____	Internal	_____	cpm	_____	cpm
3.	Mini-Rad	_____	Cs-3	_____	mR/hr	_____	mR/hr
4.	Mini-Rad	_____	Cs-3	_____	mR/hr	_____	mR/hr

Checked By _____ Date _____

Reviewed By _____ Date _____
Health Physics Supervisor

POINT BEACH NUCLEAR PLANT

QUARTERLY EMERGENCY PLAN CHECKLIST

DATE _____

Reference: EPIP 7.4.1 - Routine Check, Maintenance, Calibration and Inventory of Schedule of Health Physics Emergency Plan Equipment

EPIP 7.4.2 - Emergency Plan Equipment Routine Checks, Maintenance and Calibration Instructions

SITE BOUNDARY CONTROL CENTER

RESPIRATORY EQUIPMENT

Item No.	Type	Serial No.	Inspection
1.	Full-face	_____	_____
2.	Full-face	_____	_____
3.	Half-face	_____	_____
4.	Half-face	_____	_____

COMMUNICATIONS

Portable Radio KRQ-717	Functional check with control room	_____

WARNING LIGHTS, TRAFFIC

Traffic Warning Lights	All traffic warning lights functioning	_____

AC GENERATOR (Gasoline Powered)

Functional Test _____

DRY CELL BATTERY REPLACEMENT

NOTE: If Alkaline batteries are used, battery changeout is required annually rather than quarterly.

Item No.	Type of Equipment	Battery Type	Quantity	Changed	Date Due
1.	Traffic Warning Light				
2.	Survey/Frisker Instruments				
3.	Flashlights				
4.	Portable Radio				
5.	Dosimeter Charger				

CONTROL ROOM

RESPIRATORY EQUIPMENT

Item No.	Type of Equipment	Serial Number	Inspection	Functional Test
1.	Bio-Pak			
2.	Bio-Pak			
3.	MSA-SCBA			
4.	MSA-SCBA			
5.	Supplied Air Mask			
6.	Supplied Air Mask			
7.	Supplied Air Mask			
8.	Supplied Air Mask			
9.	Supplied Air Mask			
10.	Supplied Air Mask			
11.	Supplied Air Mask Hose			
12.	Supplied Air Mask Hose			
13.	Supplied Air Mask Hose			
14.	Supplied Air Mask Hose			
15.	Supplied Air Mask Hose			
16.	Supplied Air Mask Hose			
17.	Supplied Air Valve			
18.	Supplied Air Valve			
19.	Supplied Air Valve			
20.	Supplied Air Valve			
21.	Supplied Air Valve			
22.	Supplied Air Valve			

Control Room Respiratory Equipment, continued ...

Item No.	Type of Equipment	Serial Number	Inspection
23.	Supplied Air Hose	_____	_____
24.	Supplied Air Hose	_____	_____
25.	Supplied Air Hose	_____	_____
26.	Supplied Air Hose	_____	_____
27.	Supplied Air Hose	_____	_____
28.	Supplied Air Hose	_____	_____
29.	Spare Mask	_____	_____
30.	Spare Mask	_____	_____
31.	Spare Mask	_____	_____
32.	Spare Mask	_____	_____

TECHNICAL SUPPORT CENTER/OPERATIONS SUPPORT CENTER

RESPIRATORY EQUIPMENT

Item No.	Type of Equipment	Serial Number	Inspection	Serial Number	Inspection
1.	Clear-Vue	1. _____	_____	4. _____	_____
		2. _____	_____	5. _____	_____
		3. _____	_____	6. _____	_____
2.	Ultra-Vue	1. _____	_____	4. _____	_____
		2. _____	_____	5. _____	_____
		3. _____	_____	6. _____	_____
3.	Bio-Pak	1. _____	_____	3. _____	_____
		2. _____	_____	4. _____	_____

GATEHOUSE

COMMUNICATIONS

Portable Radios KRQ717 (2 units) — Functional Test with Control Room _____

EMERGENCY SUPPORT CENTER

RESPIRATORY EQUIPMENT

Item No.	Type of Equipment		Serial Number	Inspection		Serial Number	Inspection
1.	Clear-Vue	1.			4.		
		2.			5.		
		3.			6.		
2.	Ultra-Vue	1.			4.		
		2.			4.		
		3.			6.		
3.	Bio-Paks	1.			3.		
		2.					

REMARKS: _____

NOTE: Include maintenance request numbers for all items requiring repairs.

Inventory By _____ Date _____

Reviewed By _____ Date _____

POINT BEACH NUCLEAR PLANT

SEMI-ANNUAL AND ANNUAL EMERGENCY PLAN CHECKLIST

DATE _____

Reference: EPIP 7.4.1 - Routine check, Maintenance, Calibration and Inventory of Schedule of Health Physics Emergency Plan Equipment

EPIP 7.4.2 - Emergency Plan Equipment Routine Checks, Maintenance and Calibration Instructions

SITE BOUNDARY CONTROL CENTER

AIR SAMPLERS

Item No.	Type	Preventive Maintenance	Flow Rate Calibration
1.	High Volume (115 V AC)	_____	_____
2.	DC Battery Powered	_____	_____

DOSIMETERS

Pocket Dosimeters — Drift/Response Checked

Date Last Completed _____

Date Due _____

TLD's

TLD's Changed* — Date Changed _____

Date Due _____

*Includes TLD's from emergency vehicle.

ANNUAL BATTERY REPLACEMENT

NOTE: If regular carbon batteries have been used, they should be replaced quarterly.

Item No.	Type of Equipment	Battery Type	Quantity	Changed	Date Due
1.	Traffic Warning Light				
2.	Survey/Frisker Instruments				
3.	Flashlights				
4.	Portable Radio				
5.	Dosimeter Charger				

MISCELLANEOUS

Item No.		
1.	Potable Water (20 gal.)	a. Date Changed _____ b. Date Due _____
2.	Gasoline	a. Date Changed _____ b. Date Due _____
3.	Fire Extinguisher	Serial Number _____ Date Last Inspected _____
4.	AgZ Filters	Moisture Indicator Checked _____
5.	AC Generator	Periodic Maintenance _____

TECHNICAL SUPPORT CENTER/OPERATIONS SUPPORT CENTER

AIR SAMPLERS

Item No.		Preventive Maintenance	Flow Rate Calibration
1.	High Volume (115 V AC)		
2.	Low Volume (115 V AC)		
3.	AMS-2 Cart Mounted		

DOSIMETERS

Pocket Dosimeters — Drift/Response Checked

Date Last Completed _____

Date Due _____

MISCELLANEOUS

1. AgZ Filters — Moisture Indicator Checked _____

RESPIRATORY EQUIPMENT

Item No.		Serial Number	Functional Test	Periodic Maintenance
1.	Bio-Pak	_____	_____	_____
		_____	_____	_____
		_____	_____	_____
		_____	_____	_____

EMERGENCY SUPPORT CENTER

AIR SAMPLERS

Item No.	Type	Preventive Maintenance	Flow Rate Calibration
1.	High Volume (115 V AC)	_____	_____
2.	Low Volume (115 V AC)	_____	_____

DOSIMETERS

Pocket Dosimeters — Drift/Response Checked

Date Last Completed _____

Date Due _____

RESPIRATORY EQUIPMENT

Item No.	Type of Equipment	Functional Test	Periodic Maintenance
1.	Bio-Pak	_____	_____
		_____	_____
		_____	_____

MISCELLANEOUS

1. AgZ Filters Moisture Indicator Checked _____

SOUTH GATE

AIR SAMPLERS

Item No.	Equipment	Preventive Maintenance	Flow Rate Calibration
1.	Low Volume	_____	_____

CONTROL ROOM

DOSIMETERS

Pocket Dosimeters Drift/Response Checked

Date Last Completed _____

Date Due _____

RESPIRATORY EQUIPMENT

Item No.	Type of Equipment	Serial Number	Inspection	Functional Test	Periodic Maintenance
1.	Bio-Pak	_____	_____	_____	_____
2.	Bio-Pak	_____	_____	_____	_____
3.	MSA SCBA	_____	_____	_____	N/A
4.	MSA SCBA	_____	_____	_____	N/A
5.	Supplied Air	___/___	_____	_____	N/A
	(Comp. Unit)	___/___	_____	_____	N/A
6.	Supplied Air	___/___	_____	_____	N/A
	(Comp. Unit)	___/___	_____	_____	N/A
7.	Supplied Air	___/___	_____	_____	N/A
	(Comp. Unit)	___/___	_____	_____	N/A
8.	Supplied Air	___/___	_____	_____	N/A
	(Comp. Unit)	___/___	_____	_____	N/A

Item No.	Type of Equipment	Serial Number	Inspection	Functional Test	Periodic Maintenance
9.	Supplied Air	/			N/A
	(Comp. Unit)	/			N/A
10.	Supplied Air	/			N/A
	(Comp. Unit)	/			N/A

REMARKS: _____

Checked By _____ Date _____

Reviewed By _____ Date _____
Health Physics Supervisor

POINT BEACH NUCLEAR PLANT

SEARCH & RESCUE AND EMERGENCY OPERATIONS CHECKLIST

Consider the following items during final briefing of search and rescue team in the operations support center:

1. Dosimeters _____
2. Protective clothing. _____
3. Respiratory protection and projected time to depletion. _____
4. Thyroid blocking agent. _____
5. Radio communications include spare batteries. _____
6. Keys _____
7. Information as to intent of team, suggested routes, dose rates, and precautions. _____
8. Backout areas. _____
9. Portable survey instruments. _____
10. Exposure limits. _____
11. Existing personnel exposures. _____
12. First aid qualification. _____
13. Answer any questions. _____
14. Procedural checkoff. _____

POINT BEACH NUCLEAR PLANT

ESTIMATE OF CORE DAMAGE WORKSHEET

1. Sample Bomb Contact Reading (R/Hr) _____

   Time of Reading _____

2. Reactor Shutdown - Contact Reading = Time Since Shutdown (Hr)

   _____ - _____ = _____

3. Estimated Sample Activity (ESA):

   ESA (Ci/m) = Sample Bomb Contact Reading (R/Hr) x Conversion Factor (1) (Ci/ml / R/hr)

   _____ x _____ = _____

   (1) Section 5.3 of EPIP 1.7.

4. Estimate of Core Damage

   Percent Core Damage (%) = $\frac{\text{ESA} \times (32{,}000 + \text{ESIV}^{(2)})}{\text{Correction Factor [CF(t)]}^{(2)}}$

   = ($\frac{\text{_____}}{\text{ESA}}$ x $\frac{\text{_____}}{32{,}000 + \text{ESIV}}$) ÷ $\frac{\text{_____}}{\text{CF(t)}}$

   = _____

   (2) Section 7.0 of EPIP 1.7

CALCULATIONS PERFORMED BY: _____

TIME/DATE: _____ SIGNATURE: _____

REVIEWED BY: _____

Route this form to the Technical Support Manager and Site Manager upon completion.

POINT BEACH NUCLEAR PLANT

CALCULATION OF Xe-133 EQUIVALENT RELEASE RATES

1.0 LOW RANGE OPERATIONAL VENT STACK READINGS

	Flow Rate (CFM)	Meter Reading (CPM)		Conversion Factor $\frac{\text{Curies}}{\text{sec-cpm}}$		Release Rate (Curies/sec)
Auxiliary Building	61400	_____	X	5.8×10^{-9}	=	_____
Drumming Area	43100	_____	X	1.2×10^{-8}	=	_____
Unit 1 Containment Purge	12500	_____	X	2.1×10^{-6}	=	_____
	25000	_____	X	4.2×10^{-6}	=	_____
Unit 2 Containment Purge	12500	_____	X	2.1×10^{-6}	=	_____
	25000	_____	X	4.2×10^{-6}	=	_____
Gas Stripper Building	13000	_____	X		=	_____
Combined Air Ejector	25	_____	X	7.8×10^{-9}	=	_____

2.0 EBERLINE RMS-11 VENT STACK READOUTS

	Flow Rate (CFM)	Meter Reading (CPM)		Conversion Factor $\frac{\text{Curies}}{\text{sec-cpm}}$		Release Rate (Curies/sec)
Auxiliary Building	61400	_____	X	3.0×10^{3}	=	_____
Drumming Area	43100	_____	X	2.2×10^{3}	=	_____
Unit 1 Containment Purge	12500	_____	X	1.6×10^{4}	=	_____
	25000	_____	X	3.2×10^{4}	=	_____
Unit 2 Containment Purge	12500	_____	X	1.6×10^{4}	=	_____
	25000	_____	X	3.2×10^{4}	=	_____
Gas Stripper Building	13000	_____	X	6.2×10^{2}	=	_____
Combined Air Ejector	25	_____	X	3.6	=	_____

3.0 PLANT EFFLUENT VENT STACK CONTACT READINGS

	Flow Rate (CFM)	Meter Reading (R/hr)		Conversion Factor $\frac{\text{Curies-hr}}{\text{sec-R}}$		Release Rate (Curies/sec)
Auxiliary Building	61400	_____	X	3.0×10^2	=	_____
Drumming Area	43100	_____	X	2.3×10^2	=	_____
Unit 1 Containment	12500	_____	X	8.0×10^1	=	_____
	25000	_____	X	1.6×10^2	=	_____
Unit 2 Containment	12500	_____	X	8.0×10^1	=	_____
	25000	_____	X	1.6×10^2	=	_____
Gas Stripper Building	13000	_____	X	8.0×10^4	=	_____
Combined Air Ejector	25	_____	X	1.6×10^2	=	_____

	Estimated Steam Release (lb/hr)	X	Specific Volume (ft^3/lbm)	X	Conversion Factor $\frac{\text{hr-cm}^3}{\text{sec-ft}^3}$	X	Meter Reading (R/hr)	X	Conversion Factor $\frac{\text{Curies-hr}}{\text{cm}^3\text{-R}}$	=	Release Rate Ci/sec
Main Steam Header	_____	X	_____	X	7.86	X	_____	X	8.0×10^{-1}	=	_____

Assume 1000 psia steam which will give conservatively small specific volume.
At 1000 psia specific volume = .446 ft^3/lbm.

4.0 ESTIMATE OF GROSS Xe-133 EQUIVALENT RELEASE RATES

Vent	Xe-133 Equivalent Release Rate (Curies/sec)
Auxiliary Building	
Drumming Area	
Unit 1 Containment Purge	
Unit 2 Containment Purge	
Gas Stripper Building	
Combined Air Ejector Decay Duct	
Main Steam Header	
TOTAL	

Completed By _____ Date _____ Time _____

POINT BEACH NUCLEAR PLANT

DOSE CALCULATIONS

1.0 ESTIMATION OF SITE BOUNDARY WHOLE BODY DOSES

X/Q (sec/m^3)	X	Release Rate (Ci/sec)	X	Dose Conversion Factor $\frac{(REMS\text{-}m^3)}{Ci\text{-}hr}$	X	Exposure Period (Hours)	=	Whole Body Dose (REMS)
2.6×10^{-4}	X	_____	X	26.9	X	_____	=	_____

2.0 ESTIMATION OF SITE BOUNDARY THYROID DOSES

	Type of Accident	Conversion Factor		Whole Body Dose		Thyroid Dose (REM)
1.	Loss of Coolant (LOCA)	5.02×10^2	X	_____	=	_____
2.	Gap Activity Accident	4.84	X	_____	=	_____
3.	Fuel Handling Accident	4.84	X	_____	=	_____
4.	Steam Generator Accident	6.25	X	_____	=	_____

Completed By _____ Date _____ Time _____