GINNA STATION
UNIT #1
COMPLETED
DATE :-
TIME :-

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. SC-605 REV. NO. 3

SITE CONTINGENCY CALL LIST

TECHNICAL REVIEW

PORC REVIEW DATE 6-15-83

QC REVIEW

PLANT SUPERINTENDENT

JUN 21 1983
EFFECTIVE DATE

QA ✓ NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 2 PAGES

SC-605

SITE CONTINGENCY CALL LIST

1.0 **PURPOSE:**

1.1 Provide a notification list to activate the Emergency Response Organization.

2.0 **REFERENCES:**

2.1 SC-200

2.2 SC-302

2.3 SC-312

2.4 SC-322

3.0 **INSTRUCTIONS:**

3.1 Notify the below individuals "Report to Ginna Station for a SC Response."

3.1.1 If individual is not at home leave the message.

3.1.2 If assistance is needed contact Line Operators and coordinate their assistance. (Line Operator phone).

3.2 Individuals for Emergency Organization:

3.2.1

3.2.2

3.2.3

3.2.4

3.2.5

3.2.6

3.2.7

3.2.8

3.2.9

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3.2.25

3.2.26

3.2.27

3.2.28

3.2.29

3.3 After completing the above list or when contacted by Technical Support Center, report those people not contacted. (Ginna Phone or).

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PROCEDURE NO. SC-420 REV. NO. 3

ESTIMATING OFF-SITE DOSES

TECHNICAL REVIEW

PORC REVIEW DATE 6-8-83

QC REVIEW

PLANT SUPERINTENDENT

JUN 14 1983

EFFECTIVE DATE

QA Q NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 26 PAGES

SC-420

ESTIMATING OFF-SITE DOSES

1.0 **PURPOSE:**

1.1 The purpose of this procedure is to provide estimates of the post accident dose in the areas around the plant and guidance for the selection of sampling locations. Information is needed early to decide what action be taken to limit the exposure of the general public. Steps must be taken to define the affected areas, assess the extent and significance of the release and provide data on which appropriate protective actions can be based.

2.0 **REFERENCES:**

2.1 Radiation Emergency Plan, SC-1

2.2 N.Y.S. Radiological Emergency Preparedness Plan

2.3 SC-100, SC-442, SC-450

2.4 PC-23.3, PC-23.5 and S-14.2

2.5 EPA-520, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (Feb. 1980).

2.6 Regulatory Guide 1.109

3.0 **INSTRUCTIONS:**

3.1 The following equipment is available for use in estimating doses.

3.1.1 Xu/Q Isopleths, and Xu/Q tabulated values (Table 1).

3.1.2 Map of surrounding area, U.S. Geological Survey (1 inch: 24000 inch scale).

3.1.3 Control Room wind and temperature indicators.

3.1.4 Control Room Radiation Monitor System.

3.1.5 Back-up wind speed and direction indicators at Station 13A, and National Weather Service.

3.2 Preliminary Radiological Estimates and Event Classification

3.2.1 For initial notification purposes, a first-cut estimate of potential offsite doses and releases may be obtained by the Control Room using SC-240, Attachment II. Levels are provided for various accidents evaluated in the Ginna FSAR and in previous AEC Safety Evaluations for Ginna plant siting and design.

3.2.2 It is preferable to base offsite estimates upon measured release values. Vent activity concentrations and release rates can be determined from curves in Procedure S-14.2, and from Procedure PC-23.5. Should vent monitors be inoperable, procedure PC-23.3 should be used estimating plant and steam vent releases, respectively.

3.2.3 An estimate of the 0-2 hr site boundary whole body dose from plant vent noble gas concentration, obtained from S-14.2 (low range monitor), PC-23.5 (hi range monitor) or PC-23.3 (back-up monitor), may be obtained using the following equation:

$$\text{Plant vent (uCi/cc)} \times 18 \frac{\text{Rem}}{\text{uCi/cc}} = \text{0-2 hr whole body dose Rem at site boundary}$$

NOTE: The following assumptions were made for these calculations:

$X/Q = 4.8 \times 10^{-4}$ sec/m^3 (default value in lieu of actual meteorology data; assuming downwind mixing conditions 100 times more conservative than annual average conditions.)

Plant vent flow = 77,000 cfm (3.63×10^7 cc/sec)

EPA-520 whole body dose curve (t = 0hr)

3.2.4 Determine the classification of the emergency with respect to plant releases and site boundary doses from the following criteria (from SC-100):

RADIOLOGICAL ESTIMATE	CLASSIFICATION
Radiological effluent Technical Specification limits exceeded (T.S.3.9)	Unusual Event
Radiological effluent greater than 10 times Technical Specification limits.	Alert

Effluent monitors indicate levels corresponding to greater than 50 mrem/hr whole body or 0-2 hr. thyroid dose greater than 500 mrem at the site boundary. Or these doses projected based upon plant parameters, or actual offsite measurements. — Site Emergency

Effluent monitors show levels corresponding to 500 mrem/hr whole body or a 0-2 hr. thyroid dose greater than 1 rem. Or these doses indicated by offsite measurements. — General Emergency

3.2.5 Any preliminary dose estimates used as a basis for emergency classification or protective action recommendations should be refined as follows using release measurements and actual meteorological and field sampling data as they become available.

3.3 Use of Meteorolcgical and Release Data with EPA Curves to Project Doses

3.3.1 Obtain the temperature at 33' and 250' from the "Status Report Form", Control Room, TSC or Computer Terminal. From the 33' temperatures subtract the 250' temperature. If readings from the main weather tower are unavailable, proceed to step 3.3.2.1.

T33'_____

-T250'_____

T_____

3.3.1.1 The mini-computer in the Met. Trailor can be quizzed using the TI-Silent Electronic Data 700 terminal to obtain the last 15 min. averages by dialing 524-5711. When carrier light comes on, type AV77 [RETURN]. The 15 min. average will then be printed.

3.3.2 If Delta T is 2.0 or greater condition is unstable (lapse).

If Delta T is between 0.5 and 2, condition is neutral.

If Delta T is less than .5 or is negative (T250' > T33'), condition is stable (inversion).

Condition is _____

3.3.2.1 In the event that meteorological data are unavailable from the main weather tower, the Emergency Coordinator should direct an individual to proceed to the back-up weather instrument recorder inside the Station 13A control building. The recorder is located next to the communications desk on the north wall.

3.3.2.2 If the primary tower temperature sensors are not available to determine stability, the individual taking the readings should note wind speed (mph) wind direction (degrees) and approximate fluctuation in wind direction (degrees) averaged over the last hour. The wind direction fluctuation is determined by eyeballing or by drawing 2 average lines through the last hour's wind direction extremes, and subtracting the difference.

3.3.2.3 Station 13a wind speed, wind direction and wind direction fluctuation readings are reported to the Technical Support Center by phone (ext. 500 through 507) or by the plant P.A. The individual at Station 13A should request for further instructions from the Emergency Coordinator.

3.3.2.4 To determine atmospheric stability from wind fluctuation, use the following table:

Wind Fluctuation	Stability
< 45 degrees anytime	stable (inversion)
> 45 degrees night time	neutral
45 degrees - 75 degrees daytime	neutral
> 75 degrees daytime	unstable (lapse)

3.3.3 Select the Xu/Q plastic overlay matching the condition determined in 3.3.2 and attach to the area map. (Also tabulated Xu/Q values are given in the attached Table 1).

3.3.4 Obtain wind speed and direction data from the "Status Report Form", the Control Room, TSC, Computer Terminal or alternatively from Station 13A. The direction given will be that <u>from which the wind is blowing</u>.

Wind Speed_____(mph)

Wind Direction_____(degrees)

<u>NOTE</u>: Supplemental weather information is also available from the National Weather Service Offices in Rochester (716-328-7633) or Buffalo (716-632-2223), if necessary.

3.3.5 Align the centerline of the overlay in the downwind direction. The mark on the centerline at the bottom of the overlay should be aligned on a compass point on the map 180 degrees from the degrees given in 3.3.4. To determine this point, do one of the following:

If the degrees given in step 3.3.4 is between 180 and 360, subtract 180.

If the degrees given in step 3.3.4 is between 0 and 180, add 180.

Degrees wind is blowing from_____Degrees

+ or - 180 Degrees

Align mark on centerline of overlay (at bottom) at _____Degrees

3.3.6 The Xu/Q plastic overlays and Table 1 values have, for convenience been calculated based upon a wind speed of 1 mph. Thus, in order to determine X/Q $\frac{sec}{m^3}$, it is necessary to divide the isopleth value by the actual wind speed, in mph.

3.3.7 To calculate the downwind concentration of noble gas, particulates or radioiodine, multiply the release rate of radioactivity (Ci/sec) from the plant times the X/Q (sec/m^3) dispersion coefficient determined in step 3.3.6. The resultant concentraation will be in Ci/m^3 or uCi/cc. Perform these calculations on Attachment 1 .

3.3.8 Obtain an initial estimate of release duration from the Emergency Coordinator or Recovery Manager. If this estimate is unavailable, use an initial release duration estimate of 2 hours for dose projection purposes.

3.3.9 Whole body gamma dose is then estimated using Figures 1 through 7, according to the approximate time after shutdown. To estimate gamma dose rate for a given noble gas downwind concentration (right vertical scale) find the corresponding whole body dose rate (mrem/hr) along the left vertical scale.

3.3.10 To estimate whole body gamma dose, find the point on the graph where the noble gas concentration line intersects the projected exposure time. The integrated whole body dose is then found along the diagonal lines on the graph.

3.3.11 To estimate child and adult thyroid dose, find the point on the Figure 8 graph where the downwind radioiodine concentraation line intersects the projected exposure time. The integrated thyroid doses for the adult and child are indicated along the diagonal lines (the child dose being twice the adult's).

3.3.12 Correct thyroid dose estimates for time after shutdown, by multiplying by the appropriate factor indicated in Figure 9.

3.4 Survey Team Data

3.4.1 Note the sample locations on the map that are covered by the Xu/Q overlay. The initial sample taken should be in a high concentration area and on a first stage survey route. Using the attached list of sample locations and teams, notify proper teams where to take samples. When results are received, mark results on appropriate map and status board.

3.4.2 When the initial field sampling results are received, assign a Xu/Q value to the sample results using the Xu/Q value for the line closest to the sample location. For the plastic overlays, all points along a given line are assumed to have the same concentration as the initial sample. The concentration at any other point of interest can be estimated by multiplying the sample concentration by the ratio of the respective Xu/Q values.

EXAMPLE: A sample taken on a Xu/Q line of 5 x 10 E-6 indicated an iodine concentration of 5 x 10 E-7 uCi/cc and dose rate of 100 mrem/hr. Determine the concentration and dose rate expected at a Xu/Q value of 2 X 10 E-7?

SOLUTION:

$$\text{Iodine at } 2 \times 10 \text{ E-7} = \frac{2 \times 10 \text{ E-7}}{5 \times 10 \text{ E-6}} \times 5 \times 10 \text{ E-7} \frac{\text{uCi}}{\text{cc}} = 2 \times 10 \text{ E-8} \frac{\text{uCi}}{\text{c}}$$

$$\text{Dose Rate at } \frac{2 \times 10 \text{ E-7}}{5 \times 10 \text{ E-6}} \times 100 \text{ (mrem/hr)} = 4 \text{(mrem/hr)}$$

3.4.3 Compare measured dose rates and air concentrations to predicted values, and adjust dose projections accordingly.

3.4.4 Notify the survey team to continue surveying the affected area looking for high concentration areas and hot spots.

3.4.5 If the wind direction changes, realign overlay using 3.3.5. Sample new locations indicated by the overlay.

3.4.6 If the wind speed changes, recalibrate the overlay by dividing the original speed by the new wind speed and multiply by the concentration or dose. Resample to check new overlay calibration.

3.4.7 For puff type releases multiply wind speed by elapsed time to find distance radioactive cloud has traveled.

3.4.8 Environmental TLD's, (SC-442) and Post Accident Environmental Samples, (SC-450) may be used to give better values for off-site doses.

3.5 Protective Action Guides

3.5.1 Recommend the appropriate measures to be followed with respect to the general public. Table 2, 3 and 4 give the projected whole body and thyroid dose levels which warrant given protective actions (e.g. sheltering, evacuation) indicated.

3.5.2 Weather forecast information should be considered when planning protective actions.

TABLE I

GINNA SITE VALUES OF $\frac{Xu}{Q}$ AS A FUNCTION OF STABILITY AND DISTANCE
(computed by Pickard, Lowe & Garrick 1/82)

DOWNWIND DISTANCE					
METERS	FEET	MILES	UNSTABLE	NEUTRAL	STABLE
200	660	0.1	2.42 E-4	1.17 E-3	2.06 E-3
400	1,310	0.2	1.06 E-4	6.33 E-4	1.42 E-3
600	1,970	0.4	5.88 E-5	4.02 E-4	1.10 E-3
800	2,620	0.5	3.71 E-5	2.80 E-4	8.78 E-4
1,000	3,280	0.6	2.34 E-5	2.13 E-4	7.17 E-4
1,200	3,940	0.7	1.62 E-5	1.68 E-4	5.97 E-4
1,400	4,590	0.9	1.19 E-5	1.36 E-4	5.05 E-4
1,600	5,250	1.0	9.13 E-6	1.12 E-4	4.42 E-4
1,800	5,910	1.1	7.18 E-6	9.45 E-5	3.91 E-4
2,000	6,560	1.2	5.20 E-6	8.22 E-5	3.48 E-4
2,500	8,200	1.6	2.83 E-6	6.02 E-5	2.70 E-4
3,000	9,840	1.9	1.99 E-6	4.67 E-5	2.23 E-4
3,500	11,500	2.2	1.69 E-6	3.76 E-5	1.88 E-4
4,000	13,100	2.5	1.46 E-6	3.10 E-5	1.61 E-4
4,500	14,800	2.8	1.27 E-6	2.60 E-5	1.39 E-4
5,000	16,400	3.1	1.12 E-6	2.21 E-5	1.22 E-4
5,500	18,000	3.4	9.99 E-7	1.91 E-5	1.08 E-4
6,000	19,700	3.7	9.11 E-7	1.68 E-5	9.78 E-5
6,500	21,300	4.0	8.53 E-7	1.52 E-5	8.89 E-5
7,000	23,000	4.3	8.03 E-7	1.38 E-5	8.12 E-5
7,500	24,600	4.7	7.58 E-7	1.25 E-5	7.45 E-5
8,000	26,200	5.0	7.18 E-7	1.15 E-5	6.86 E-5
8,500	27,900	5.3	6.82 E-7	1.05 E-5	6.34 E-5
9,000	29,500	5.6	6.49 E-7	9.72 E-6	5.88 E-5
9,500	31,200	5.9	6.19 E-7	8.99 E-6	5.49 E-5
10,000	32,800	6.2	5.94 E-7	8.40 E-6	5.24 E-5
11,000	36,100	6.8	5.53 E-7	7.50 E-6	4.79 E-5
12,000	39,400	7.5	5.18 E-7	6.74 E-6	4.40 E-5
13,000	42,700	8.1	4.86 E-7	6.09 E-6	4.06 E-5
14,000	45,900	8.7	4.59 E-7	5.54 E-6	3.76 E-5
15,000	49,200	9.3	4.34 E-7	5.50 E-6	3.49 E-5
16,000	52,500	10.0	4.12 E-7	4.63 E-6	3.26 E-5

NOTE: VALUES ARE BASED ON 1 MPH WINDS

TABLE II

PROTECTIVE ACTION GUIDES FOR WHOLE BODY EXPOSURE TO AIRBORNE RADIOACTIVE MATERIALS

POPULATION AT RISK	PROJECTED WHOLE BODY GAMMA DOSE (REM)
GENERAL POPULATION	1 TO 5(A)
EMERGENCY WORKERS	25
LIFESAVING ACTIVITIES	75

(A) WHEN RANGES ARE SHOWN, THE LOWEST VALUE SHOULD BE USED IF THERE ARE NO MAJOR LOCAL CONSTRAINTS IN PROVIDING PROTECTION AT THAT LEVEL, ESPECIALLY TO SENSITIVE POPULATIONS. LOCAL CONSTRAINTS MAY MAKE LOWER VALUES IMPRACTICAL TO USE, BUT IN NO CASE SHOULD THE HIGHER VALUE BE EXCEEDED IN DETERMINING THE NEED FOR PROTECTIVE ACTION.

TABLE III

PROTECTIVE ACTION GUIDES FOR THYROID DOSE

DUE TO INHALATION FROM A PASSING PLUME

POPULATION AT RISK	PROJECTED THYROID DOSE REM
GENERAL POPULATION	5 - 25
EMERGENCY WORKERS	125
LIFESAVING ACTIVITIES	(A)

(A) NO SPECIFIC UPPER LIMIT IS GIVEN FOR THYROID EXPOSURE SINCE IN THE EXTREME CASE COMPLETE THYROID LOSS MIGHT BE AN ACCEPTABLE PENALTY FOR A LIFE SAVED. HOWEVER, THIS SHOULD NOT BE NECESSARY IF RESPIRATORS AND/OR THYROID PROTECTION FOR RESCUE PERSONNEL ARE AVAILABLE AS THE RESULT OF ADEQUATE PLANNING.

TABLE IV

PROJECTED DOSE (REM) TO THE POPULATION	RECOMMENDED ACTIONS[a]	COMMENTS
Whole Body < 1 Thyroid < 5	No planned protective actions [b] State may issue an advisory to seek shelter and await further instructions. Monitor environmental radiation levels.	Previously recommended protective actions may be reconsidered or terminated.
Whole Body 1 to < 5 Thyroid 5 to < 25	Seek shelter as a minimum. Consider evacuation. Evacuate unless constraints make it impractical. Monitor environmental radiation levels. Control access.	If constraints exist, special consideration should be given for evacuation of children and pregnant women.
Whole body 5 and above Thyroid 25 and above	Conduct mandatory evacuation. Monitor environmental radiation levels and and adjust area for mandatory evacuation based on these levels. Control access.	Seeking shelter would be an alternative if evacuation were not immediately possible.
Projected Dose (Rem) to Emergency Team Workers		
Whole Body 25 Thyroid 125	Control exposure of emergency team members to these levels except for lifesaving missions. (Appropriate controls for emergency workers, include time limitations, respirators, and stable iodine.)	Although respirators and stable iodine should be used where effective to control dose to emergency team workers, thyroid dose may not be a limiting factor for lifesaving missions.
Whole body 75	Control exposure of emergency team members performing lifesaving missions to this level. (Control of time of exposure will be most effective.)	

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

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

ATTACHMENT I

RELEASE VENT:_____

TIME/DATE:_____

POST-SHUTDOWN TIME:_____(HR)

EFFLUENT MONITOR READINGS:

_____ uCi/cc Gas (Monitor No._____)

_____ uCi/cc Particulate (Monitor No._____)

_____ uCi/cc Radioiodine (Monitor No._____)

_____ CFM Vent Flow

(1) To convert CFM to cc/sec

_____CFM x 2.83 x E + 4 cc/CFM x 1 min/60 sec = _____cc/sec

NOBLE GAS:

(2) To calculate release RATE in Ci/sec from monitors

_____uCi/cc x _____cc/sec x E - 6 Ci/uCi = _____Ci/sec

(3) To predict downwind concentration

$\frac{\text{sec-mph}}{\text{m}^3}$ (Xu/Q) _____ x _____Ci/sec x 1/( )mph = _____uCi/cc at _____
(windspeed) (distance)

PARTICULATE:

(4) To calculate release RATE in Ci/sec from monitors

_____uCi/cc x _____cc/sec x E - 6Ci/uCi = _____Ci/sec

(5) To predict downwind concentration

$\frac{\text{sec-mph}}{\text{m}^3}$ (Xu/Q) _____ x _____Ci/sec x 1/( )mph = _____uCi/cc at _____
(windspeed) (distance)

RADICICDINE:

(6) To calculate release RATE in Ci/sec from monitors

_____uCi/cc x _____cc/sec x E - 6Ci/uCi = _____Ci/sec

(7) To predict downwind concentration

$\frac{\text{sec-mph}}{\text{m}^3}$ (Xu/Q) _____ x _____Ci/sec x 1/( )mph = _____uCi/cc at_____
(windspeed) (distance)

EMERGENCY OFF-SITE SAMPLE POINTS

SAMPLE POINT NUMBER	LOCATION	TEAM			FIRST STAGE			SECOND STAGE		
		RED	GREEN	ORANGE	RED	GREEN	ORANGE	RED	GREEN	ORANGE
1	LAKE & KNICKERBOCKER	X	X	X	X		X		X	X
2	BRICK CHURCH & KNICKERBOCKER	X			X					
3	BRICK CHURCH & ONTARIO CENTER		X			X				
4	BRICK CHURCH & SLOCUM	X			X					
5	LAKE & SLOCUM	X	X	X	X	X			X	X
6	BEAR CREEK HARBOR		X	X			X		X	
7	PUTMAN & FURNACE			X			X			
8	TRIMBLE & FURNACE			X			X			
9	KNICKERBOCKER & KENYON			X			X			
10	ONTARIO CENTER RD. & KENYON	X	X		X	X				
11	SLOCUM & KENYON	X			X					
12	RT-104 & ONTARIO CENTER	X	X			X		X		
13	RT-104 & KNICKERBOCKER	X					X			
14	RT-104 & LAKESIDE		X			X				
15	BERG & LAKESIDE		X			X				
16	BOSTON & LAKESIDE		X			X				
17	LAKE & LAKESIDE		X			X			X	X
18	ONTARIO-ON-THE-LAKE									X
19	SHEPHERD & FISHER			X			X			
20	TRIMBLE & FISHER			X			X			X
21	RT-104 & FISHER			X						X
22	TRUMMONDS & ARBOR			X						X

EMERGENCY OFF-SITE SAMPLE POINTS

SAMPLE POINT NUMBER	LOCATION	TEAM			FIRST STAGE			SECOND STAGE		
		RED	GREEN	ORANGE	RED	GREEN	ORANGE	RED	GREEN	ORANGE
23	TRUMMONDS & WALWORTH-ONTARIO			X						X
24	RT-350 & PADDY LANE	X						X		
25	RT-350 & 286	X						X		
26	WALWORTH	X						X		
27	STONY LONESOME & LAKE		X						X	
28	PULTNEYVILLE		X	X					X	X
29	SALMON CREEK & EATON			X						X
30	SALMON CREEK & RT-104			X						X
31	RT-21 & RT-104		X						X	
32	MARION (RG&E) SUB-STATION		X						X	
33	PLANK ROAD & LINCOLN	X						X		
34	COUNTY LINE & LAKE		X	X					X	X
35	COUNTY LINE & BOSTON			X						X
36	COUNTY LINE & BERG			X						X
37	COUNTY LINE & RT-104			X						X
38	RT-250 & STATE			X						X
39	SALT & PLANK	X						X		
40	EASTERN MONROE SERVICE CENTER PLANK ROAD			X						X
41	PENFIELD		X						X	
42	SALT & SCHLEGEL	X						X		
43	SALT & WOODWARD	X						X		
44	KLEM & WHITING		X						X	

EMERGENCY OFF-SITE SAMPLE POINTS

SAMPLE POINT NUMBER	LOCATION	TEAM			FIRST STAGE			SECOND STAGE		
		RED	GREEN	ORANGE	RED	GREEN	ORANGE	RED	GREEN	ORANGE
45	LAKE ROAD & ROUTE 250		X						X	
46	COUNTY LINE & PLANK	X						X		
47	RT-21 & FARNSWORTH		X						X	
48	RT-21 & POUND		X						X	
49	FURNACE & KENYON			X			X			
50	RT-350 & PLANK	X						X		
51	PLANT & FIVE MILE LINE		X						X	

Projected whole body gamma dose as a function of gamma exposure rate and projected duration of exposure

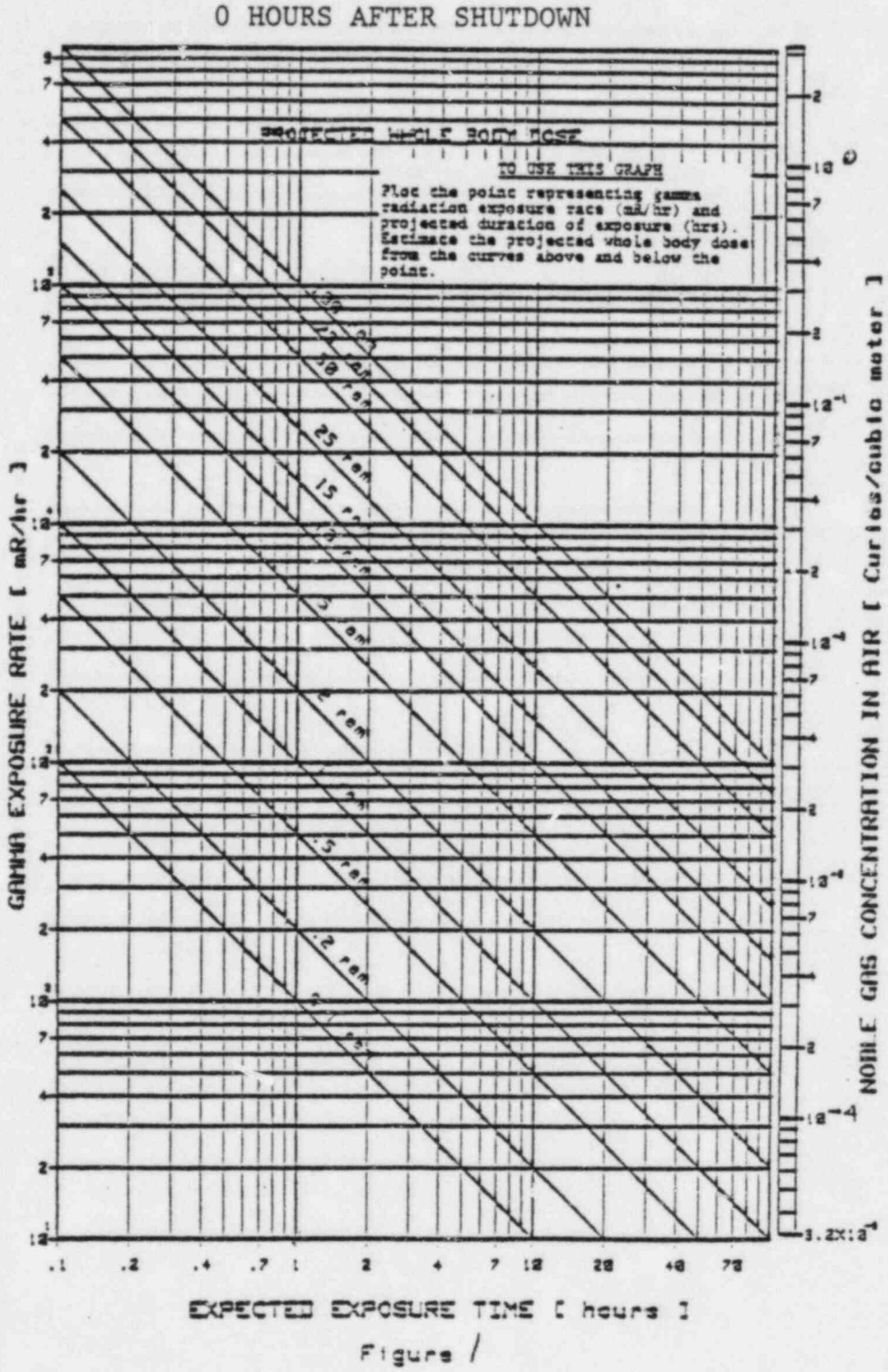
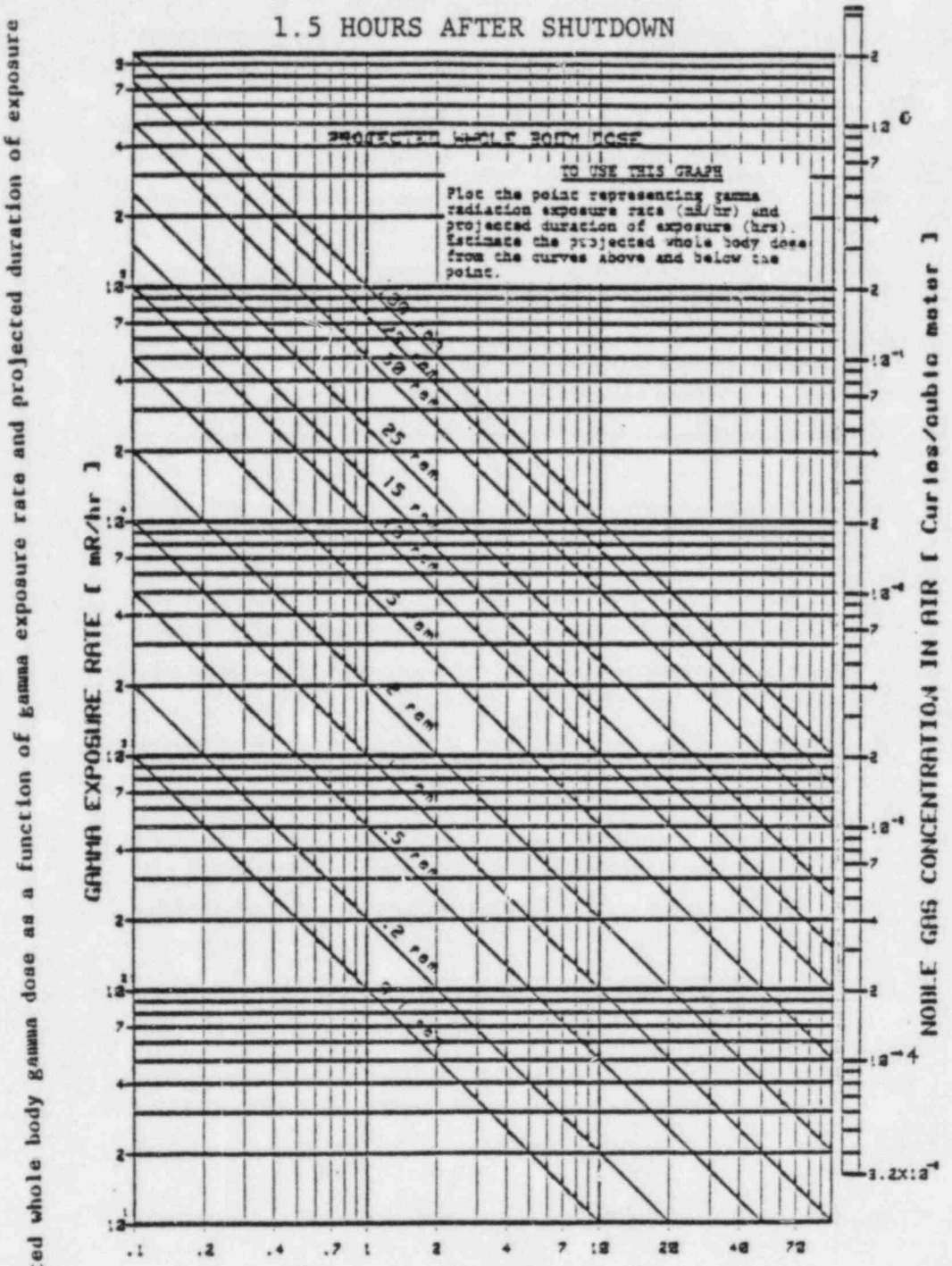


Figure 1



Projected whole body gamma dose as a function of gamma exposure rate and projected duration of exposure

Figure 2

Projected whole body gamma dose as a function of gamma exposure rate and projected duration of exposure

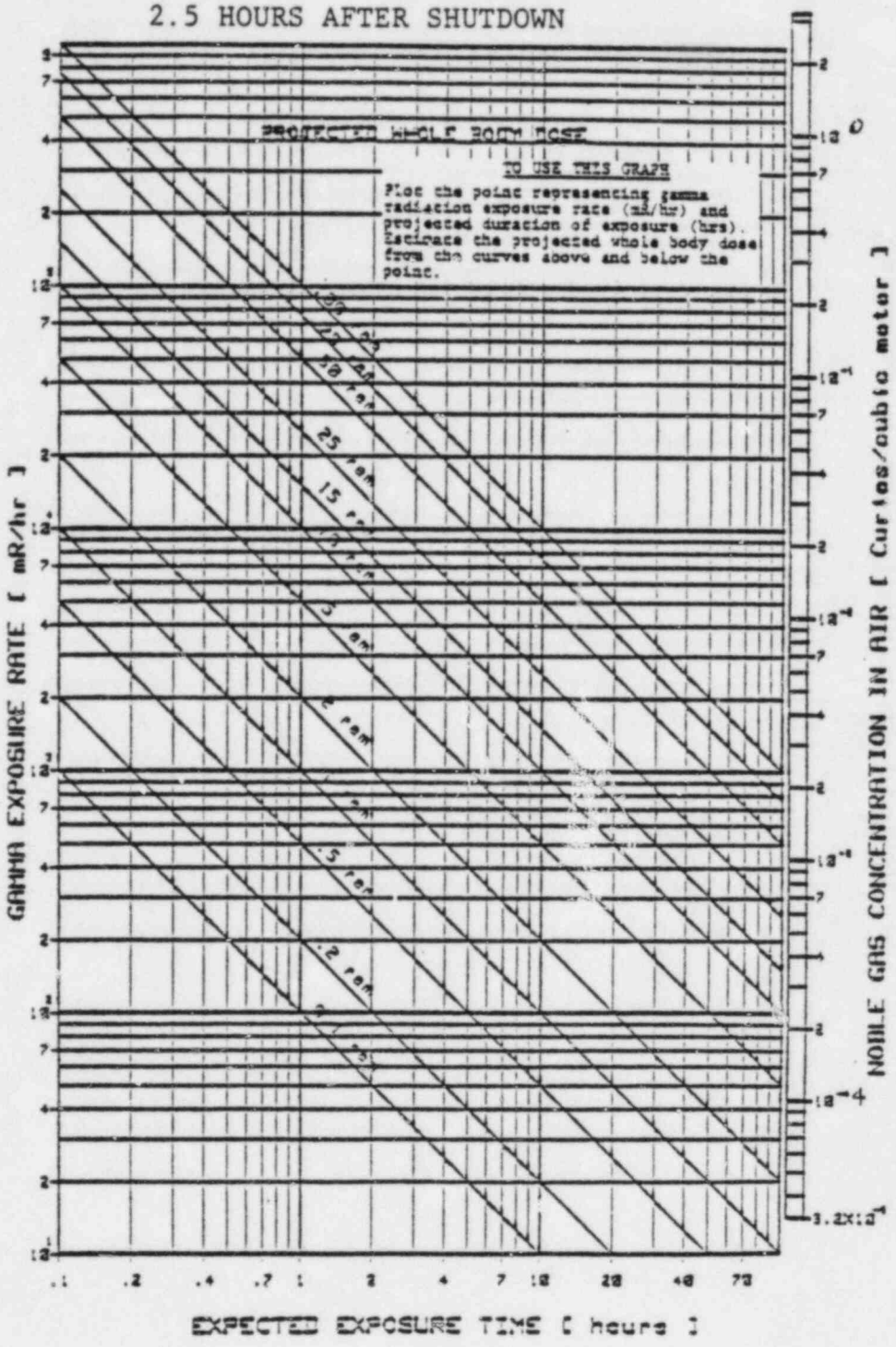


Figure 3

Projected whole body gamma dose as a function of gamma exposure rate and projected duration of exposure

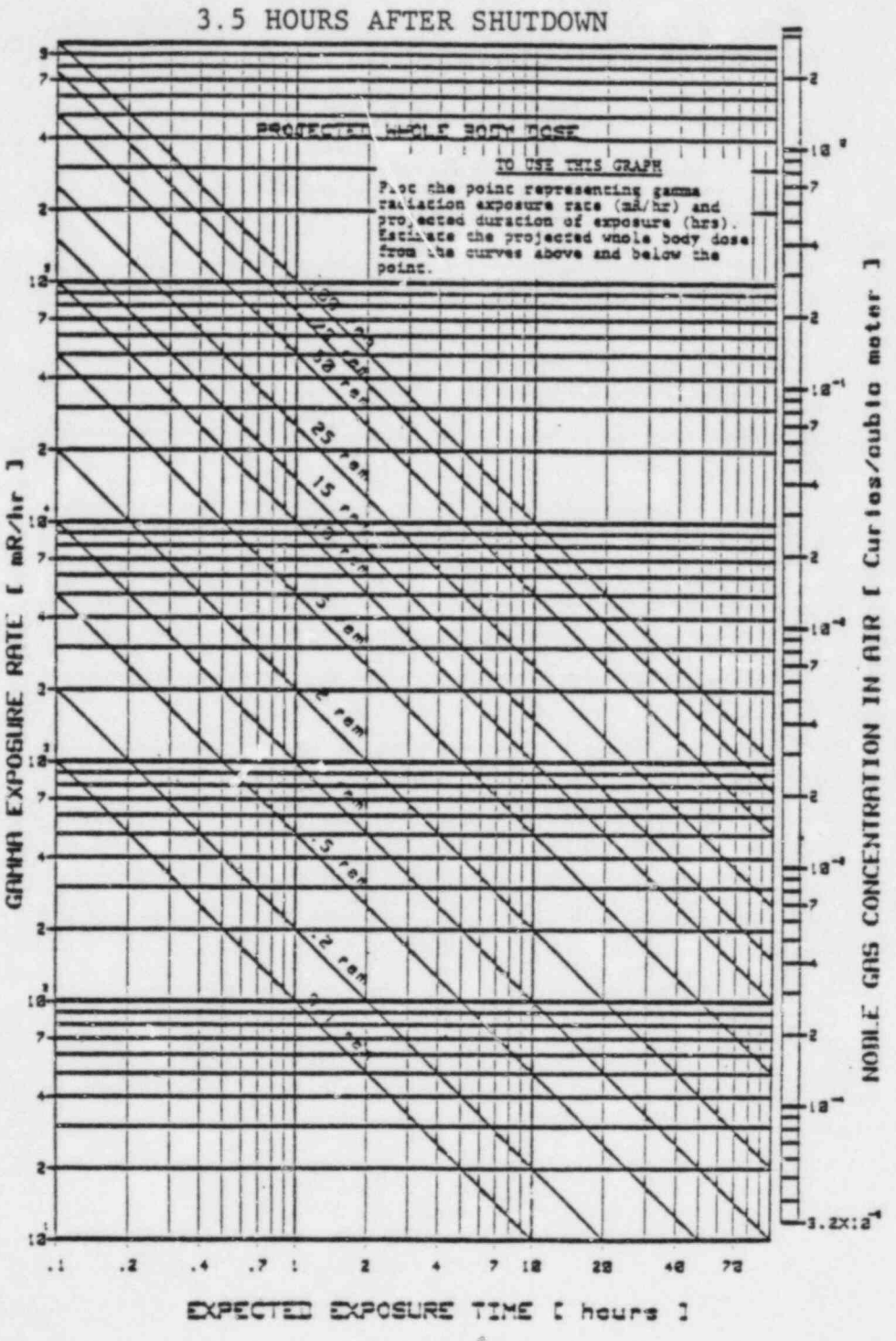


Figure 4

Projected whole body gamma dose as a function of gamma exposure rate and projected duration of exposure

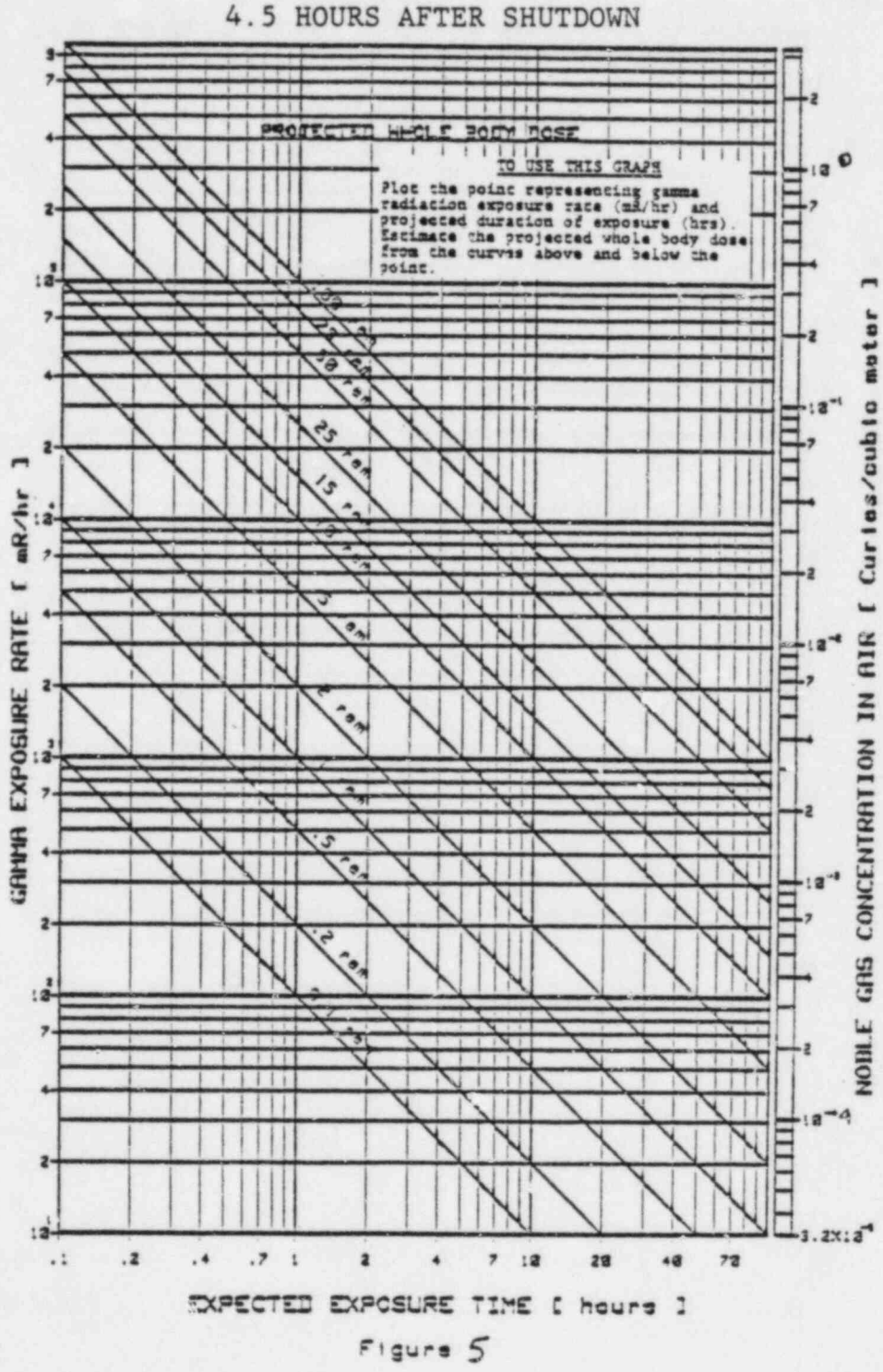


Figure 5

Projected whole body gamma dose as a function of gamma exposure rate and projected duration of exposure

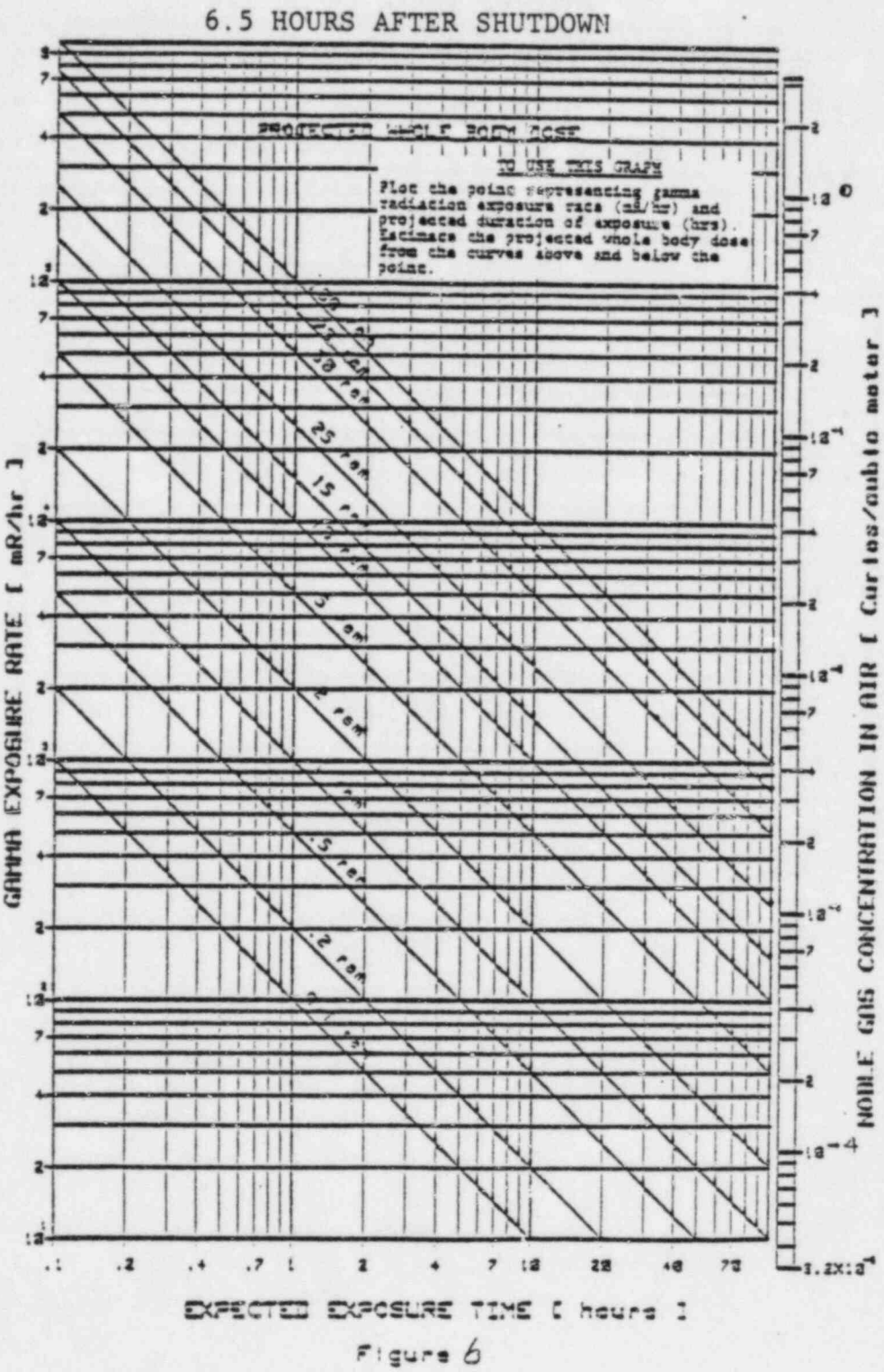


Figure 6

Projected whole body gamma dose as a function of gamma exposure rate and projected duration of exposure

12.5 HOURS AFTER SHUTDOWN

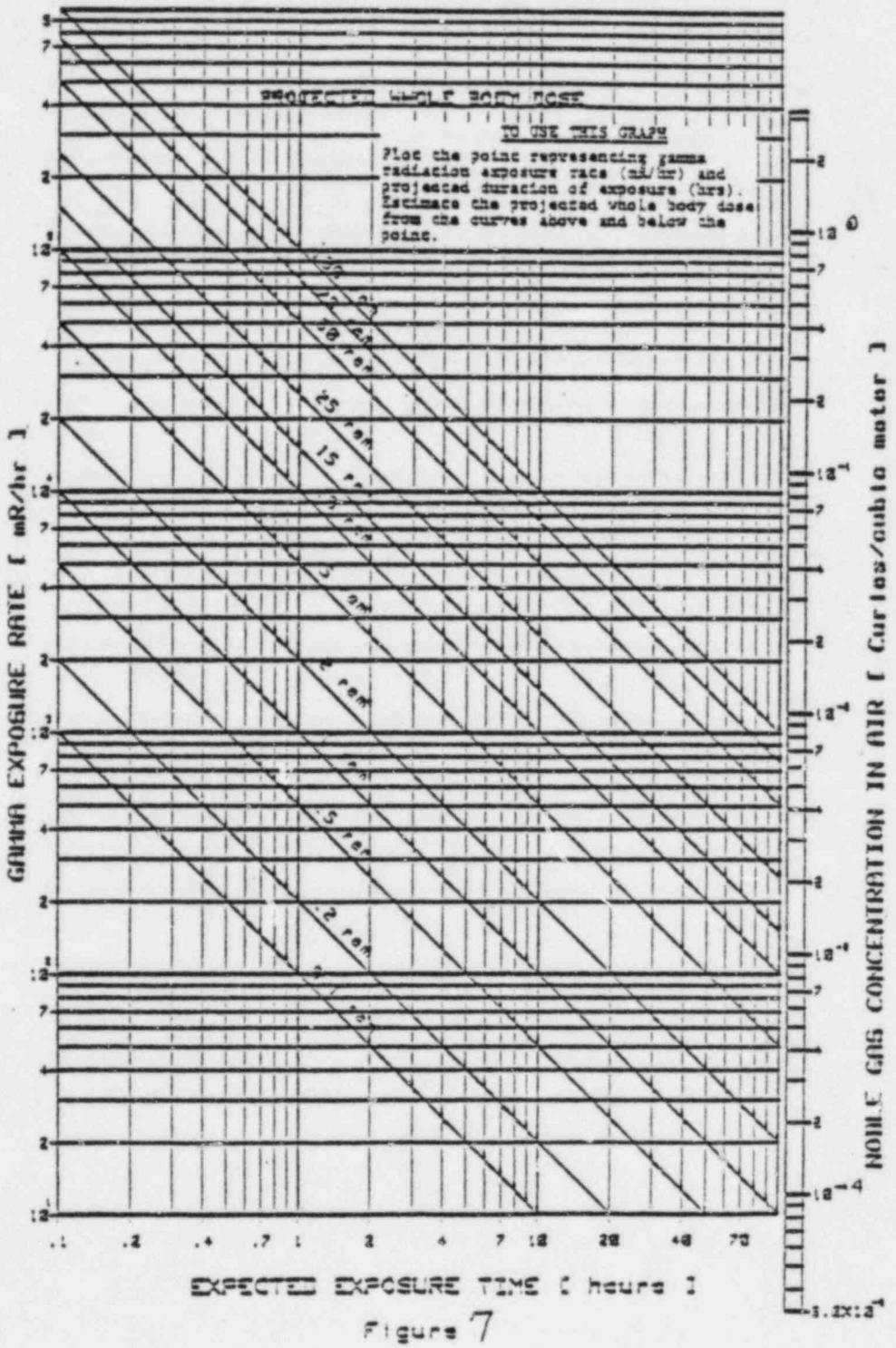


Figure 7

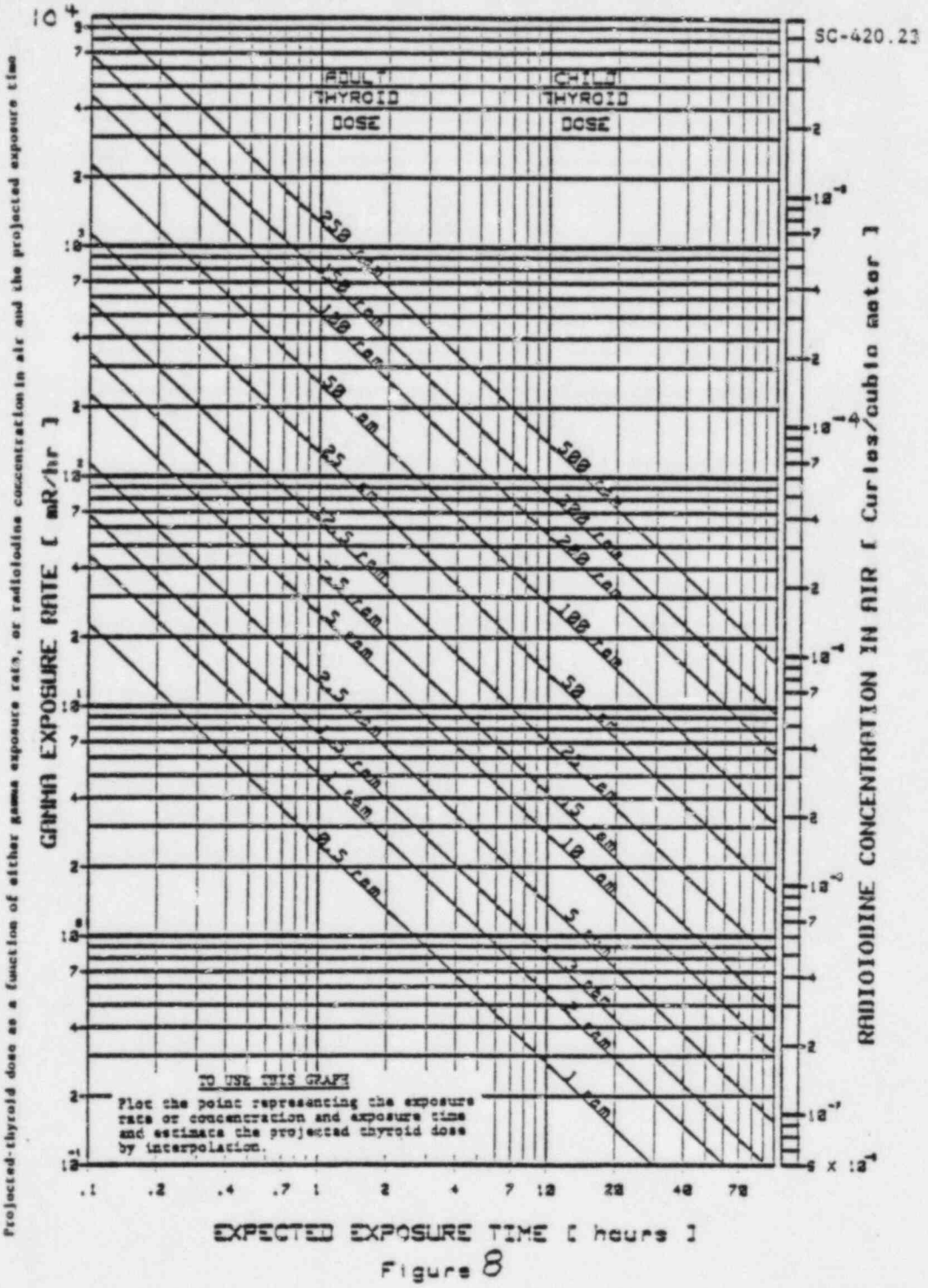

SC-420.23
Projected-thyroid dose as a function of either gamma exposure rate, or radioiodine concentration in air and the projected exposure time
GAMMA EXPOSURE RATE [mR/hr]
RADIOIODINE CONCENTRATION IN AIR [Curies/cubic meter]
ADULT THYROID DOSE
CHILD THYROID DOSE
250 rem
150 rem
100 rem
50 rem
25 rem
12.5 rem
7.5 rem
5 rem
2.5 rem
1.5 rem
1 rem
0.5 rem
500 rem
300 rem
200 rem
100 rem
50 rem
30 rem
20 rem
15 rem
10 rem
5 rem
3 rem
2 rem
1 rem
TO USE THIS GRAPH
Plot the point representing the exposure rate or concentration and exposure time and estimate the projected thyroid dose by interpolation.
.1 .2 .4 .7 1 2 4 7 12 28 48 78
EXPECTED EXPOSURE TIME [hours]

Figure 8

KEY FACILITIES LOCATED ABOUT GINNA SITE

Company and Product	Distance from Site	Direction from Site
Duffy-Mott Co., Inc. Williamson Baby Foods	8-1/2 miles	Southeast
The Waterman Food Products Co. Food Processing	3-4 miles	South
Ontario Kraut Corp. 7 Railroad Ave. Food Processing	3-4 miles	South SW
Victor Preserving Co. Food Processing	3-4 miles	South
Ontario Cold Storage Food Processing	3-4 miles	South SW
Waterman Fruit Products Co. Food Processing	3-4 miles	South SW
Ontario Food Products Food Processing	3-4 miles	South SW
Lyndan Products Co. Food Processing	3-4 miles	South SW
Ontario Water District	1.1 mile	East
Williamson Water District	5 1/4 miles	East
Ontario Fire Department	4 miles	Southeast
Ontario Center Fire Department	3.5 miles	South
Union Hill Fire Department	5 miles	Southwest
Ontario Town Hall	4 miles	South

HOUSES IN AND ABOUT GINNA SITE

House on Lake Road directly south of plant	Beebee	1,500 ft.	South
House on S.W. corner of Lake Road and Ontario Ctr. Rd.	Loomis	2,000 ft.	South SE
House on North side of Lake Rd. S.E. of Science Center access Road	Taillee	2,500 ft.	Southeast
House on private road north of above house		2,000 ft.	Southwest

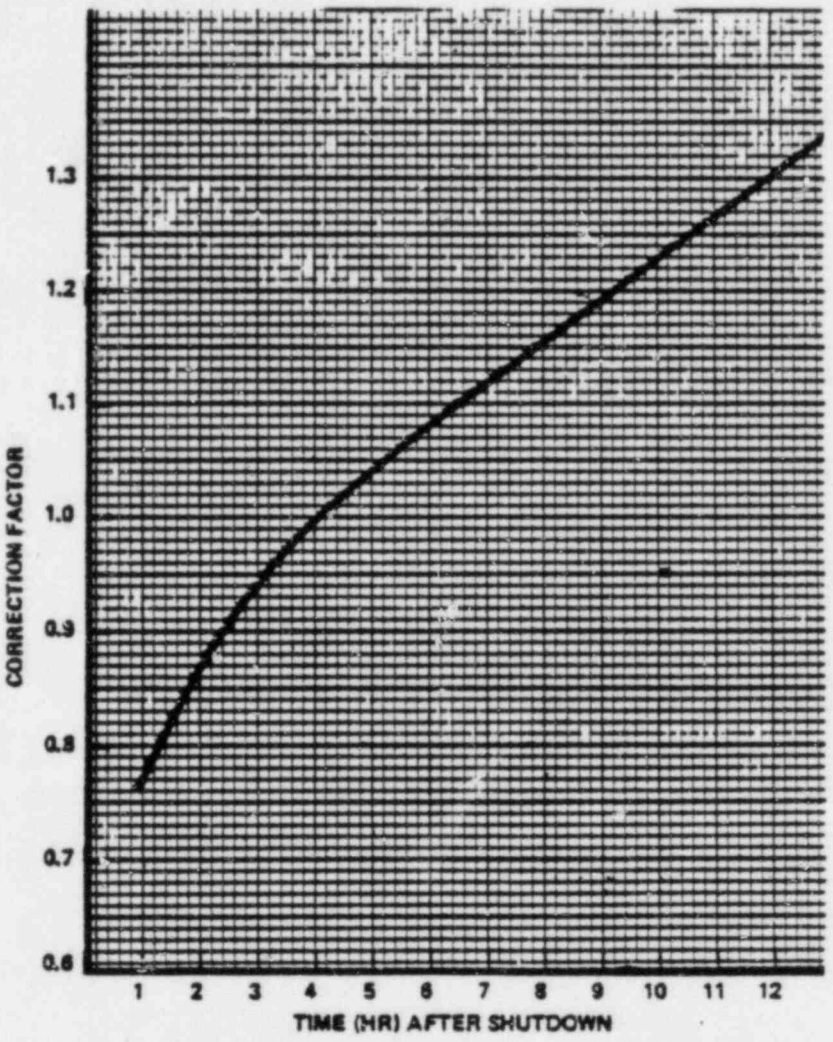


FIGURE 9 CORRECTION FACTORS FOR THYROID INHALATION DOSE AS A FUNCTION OF TIME AFTER REACTOR SHUTDOWN THAT RADIOIODINE CONCENTRATION IS MEASURED.

GINNA STATION
UNIT #1
COMPLETED
DATE :-
TIME :-

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. SC-323 REV. NO. 4

EMERGENCY OFF-SITE RADIATION SURVEY TEAMS

TECHNICAL REVIEW

PORC REVIEW DATE 6-8-83

QC REVIEW

PLANT SUPERINTENDENT

JUN 14 1983
EFFECTIVE DATE

QA ✓ NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 27 PAGES

SC-323

EMERGENCY OFF-SITE RADIATION SURVEY TEAMS

1.0 **PURPOSE:**

1.1 The prime objective of the Emergency Off-Site Radiation Survey Teams is to rapidly survey areas downwind of the plant site in order to determine the extent and magnitude of any uncontrolled release of radioactive materials following an incident. It should be stressed that the initial off-site survey is of great importance. Decisions regarding the extent and types of protective actions required will be based upon data reported by the survey teams.

2.0 **REFERENCES:**

2.1 SC-1, Radiation Emergency Plan

2.2 SC-421, Determination of Iodine or Particulate

2.3 SC-232 Voluntary Acceptance of Emergency Exposure

3.0 **INSTRUCTIONS:**

3.1 Obtain appropriate Off-Site Survey Team footlocker as directed by Tag Board assignment. If seal is broken, use equipment list inside footlocker to inventory equipment. Request the assistance of the Survey Center Manager in obtaining replacement equipment if necessary.

3.2 Obtain the following equipment which is not stored in footlocker.

3.2.1 Personal film badge and TLD.

3.2.2 One full-face mask with voice emitter and charcoal filter for each team member.

3.2.3 One 0-500 mr dosimeter and one 0-5 R dosimeter for each team member. Sign-in on dosimeter log sheet.

3.2.4 Pack of 12 environmental TLD's from lead storage container.

3.2.5 Porta-Mobil II radio and magnetic mount car antenna.

3.2.6 RADECO H-809C Portable High Volume Air Sampler with filter holder.

3.2.7 RM-14 Radiation Monitor with HP-190 Probe.

3.2.8 Auto-Digimaster or RC-2 dose rate meter.

3.3 Complete the following items prior to departing on the assigned survey route.

3.3.1 Check operation of radio system, portable air sampler, radiation count rate monitor, and dose rate meter using equipment check-out procedures in Appendix I.

3.3.2 Obtain transportation and check vehicle for contamination by taking swipe survey or end window survey on the horizontal surfaces with an HP-190 probe and count rate meter. If survey indicates surface contamination of more than 250 CPM above background contact the Survey Center Manager for decontamination instructions.

3.3.3 Load survey equipment into vehicle, fill in Survey Team Status Board, and inform Survey Center Manager of your departure. Obtain wind direction and speed data.

3.3.4 Log time, date, and survey team members on survey map.

3.3.5 Establish radio communications with Technical Support Center Radio Operator and advise of teams departure.

3.4 Perform radiation surveys using the appropriate instructions of Appendix II while following the Primary Survey Route instructions contained in Appendix III.

3.4.1 Do not enter areas where radiation levels are greater than 2 R per hour unless directed by a Health Phyicist.

3.4.2 The dose limitation of the survey team is limited to 1 REM unless the Health Phyicist or Emergency Coordinator authorizes a higher limit.

3.4.3 A one time dose limit of 75 REM may be used to save the life of an individual on a voluntary basis.

3.4.4 A one time dose limit of 25 REM may be used to insure equipment is operational or secured in order to prevent a greater possible hazard to the general public.

3.4.5 At each assigned survey point the team should report the following information to the Radio Operator:

-Location
-Completed Actions
-Results of Surveys
-Departure for next Survey Point

3.4.6 If radio contact cannot be made, report using a telephone. Call collect on one of these numbers.

GINNA	E.C.F.
315-524-4446	
315-524-4984	716-262-5798
315-524-4973	716-262-5799
716-546-7845	
716-546-4015	

3.4.7 Upon completion of Primary Survey Route inform radio operator at the Tech Support Center. The Dose Assessment Manager will assign an Alternate Survey Route or direct you to return to the Survey Center.

3.5 Full face masks with charcoal filters will be worn as directed by the Dose Assessment Manager. Potential internal contamination will be determined by a Whole Body Count after the survey.

3.6 Upon returning to the Survey Center perform a survey of team personnel for contamination. If any contamination greater than 100 CPM above background is found, contact the Survey Center Manager for decontamination instructions.

3.6.1 Conduct a survey of the vehicle for contamination. If any contamination greater than 250 CPM above background is found contact the Survey Center Manager for decontamination instructions.

3.6.2 Give all filter cartridges, particulate filters, survey maps, and data records to Survey Center Manager.

3.6.3 Dispose of contaminated and potentially contaminated waste in an approved manner.

3.6.4 Restock, inventory, and seal Survey Team Equipment Footlocker, stow in an approved manner.

3.6.5 Return radio system, portable air sampler, radiation count rate meter, and dose rate meter to the Survey Team Room and place on charge as appropriate.

3.6.6 Return 0-500 mr and 0-5 R dosimeters and sign-out on dosimeter log sheet.

3.6.7 Fill out Survey Team Status Board and inform Survey Center Manager of teams return.

APPENDIX I

EMERGENCY OFF-SITE RADIATION SURVEY TEAM

EQUIPMENT CHECKOUT AND OPERATION

RADIO SYSTEM

The radio system consists of a hand-held radio and magnetic mount car antenna. To checkout and operate the system, complete the following steps.

Turn ON Radio

1. Remove charger jack from lower side of the radio.

2. Turn the OFF-VOLUME control about half way to the right.

3. Turn the SQUELCH (SQ) control to the right as far as possible. A hissing sound will be heard from the speaker.

4. Adjust the VOLUME control until the hissing sound is easily heard but not annoyingly loud.

5. Turn the SQUELCH control slowly to the left until the hissing noise just fades out. This adjustment is very important, as it eliminates annoying noise when no one is calling you. It also determined how sensitive your radio will be to incoming calls.

6. In multi-frequency units, select the proper frequency. You are now ready to receive messages from other radios in your system.

7. If radio is to be used with car antenna see mounting instructions.

Mount Antenna on Car

1. Ensure the vehicles metal roof is free of ice and snow.

2. Hold the magnetic mount antenna in the palm of your hand with the antenna wire pointed towards the rear or the vehicle and the base of the mount at an angle of about 45 degrees to the vehicle roof.

3. Position the front edge of the mount in the approximate center of vehicle roof.

4. Lower the mount onto the vehicle roof. It will be held in place by the magnetic force.

* * * * * * * * * * * * * * * * CAUTION * * * * * * * * * * * * * * * *

DO NOT ATTEMPT TO MOVE THE ANTENNA BY SLIDING IT. YOU WILL SCRATCH THE SURFACE OF THE VEHICLE. ALWAYS REMOVE THE MOUNT BY LIFTING FROM THE REAR!

* * * * * * * * * * * * * * * * CAUTION * * * * * * * * * * * * * * * *

5. Route the antenna lead wire into the vehicle between the door

jamb. With any amount of weather striping the lead should not be damaged.

6. Affix the lead wire near the head liner with a piece of tape.

   Insert the antenna connection plug into the side of the radio and tighten the locking screw in place. Do not remove the short antenna.

PROCEDURE

1. The general procedure for communicating on the radio should be as follows:

   a) Station called
   b) Red/Green/Orange Team
   c) Message
   d) "Over"

   During a drill or exercise all fictitious data will be preceded with the words "This is a drill...."

   Examples:

   "Tech Support Center, This is the Red team, at location number 1, Over"

   "Tech Support Center, This is the Green team, this is a drill, Results of the general area survey at location 36 are 6,500 counts per minute above background, Over"

2. To transmit, depress the push-to-talk switch on the microphone. Speak in a normal voice across the microphone.

3. To receive, release the push-to-talk switch.

4. There may be time that the TSC or ECF will be receiving communications from a team that you cannot hear. If this happens the Radio Operator will tell you to wait or standby. After he has completed his traffic he will ask you to transmit your information. Remember this is one big party line; everyone can't talk at once.

5. When you have been directed to secure your Survey Team, turn the radio off, disconnect the antenna plug from the radio and remove the magnetic mount antenna from the vehicle by lifting up at the rear or the mount.

6. Connect the radio to the charger located in the Survey Team Room at the Survey Center, and place the magnetic mount antenna on the bench.

RADECO H 809C HIGH VOLUME AIR SAMPLER

EQUIPMENT CHECK

1. Ensure power switch on air sampler is off.
2. Ensure battery charger is not plugged in and on the 12 volt position. Black and red clips of battery charger are not touching.
3. Connect air sampler power cables to the battery charger, RED clip to positive and BLACK clip to negative.
4. Plug in battery charger.
5. Turn power switch on air sampler on.
6. Check flow meter on air sampler. Flow meter should be off scale high with no filters in place.
7. Turn power switch on air sampler off.
8. Unplug battery charger and disconnect air sampler power cables.
9. Separate clips of battery charger and clamp onto cabinet.

EQUIPMENT OPERATION FROM VEHICLE

1. Ensure power switch on air sampler is off.
2. Connect BLACK power clip to vehicle ground (engine block, chassis, etc.) and RED power clip to positive post of vehicle battery.
3. Ensure the filter assembly contains a GY-130 silver zeolite cartridge and a particulate filter.
4. Turn air sampler on and record the sample date, time, location, and air flow rate (normal is 1.5 CFM) on a sample envelope.
5. Run sampler for approximately 10 minutes.
6. Record air flow rate of air sampler in SCFM and time sampler turned off.
7. Turn air sampler off.

RM-14 RADIATION SURVEY METER

EQUIPMENT CHECK:

1. Disconnect power cord from back of meter taking care not to turn test switch on.

2. Ensure that an HP-190 probe is connected to the detector jack.

3. Turn range switch to battery. Meter should read in the "BATT-OK" area.

4. Perform instrument source check. Obtain source from safe and verify meter reading corresponds to attached card then log meter reading onto source check log.

5. Turn range switch off.

EQUIPMENT OPERATION:

1. Turn range switch to X1.

2. Place response switch in the "SLOW" position.

3. Adjust the volume control so that the audio indication (a click) can be heard.

4. The range switch should be adjusted such that the highest reading gives a mid-scale deflection.

5. All readings must be multiplied by the range switch setting (X1, X10, X100).

6. 2,200 CPM is approximately 1 mrem/hour. Maximum scale is 50,000 cpm or 23 mr per hour.

7. Upon completion of the survey turn the unit off and return to the Survey Team Room. Unit should be recharged before the next use.

AUTO DIGI-MASTER DOSE METER

EQUIPMENT CHECK:

1. Turn unit on to be sure that the digital display lights.

2. Perform instrument source check. Obtain source from safe and verify that meter reading corresponds to attached card then log meter reading into source check log.

EQUIPMENT OPERATION:

1. Allow unit to complete one cycle (display will blink) before reading when turning unit on or when radiation level changes significantly.

2. Unit will automatically change from one range to the next. The reading is always direct.

3. The Digi-Master may be used to detect the presence of Beta but cannot be used for dose measurement of Beta. Also, Beta detection is only effective when the unit is operating in the mrem/hour range.

   a. Take a reading with the Beta window closed and record.

   b. Take a reading with the Beta window opened and record.

   c. If the reading with the Beta window open is greater than the reading with the Beta window closed there is Beta radiation present.

   d. If a Beta dose rate is needed a survey with an RO-2 or equivalent instrument must be made.

4. Upon completion of the survey, turn off and return to the Survey Team Room. Unit should be recharged before the next use.

RC-2 DOSE RATE METER

EQUIPMENT CHECK

1. Turn the function selector switch to the "BATT 1" and "BATT 2" positions. Meter should indicate above the battery cut-off line.

2. Perform instrument source check. Obtain source from safe and verify that meter reading corresponds to attached card then log meter reading onto source check log.

EQUIPMENT OPERATION

1. Zero the meter by turning the function selector switch to "ZERO" and turning the "ZERO ADJ" knob as necessary. The zero adjust may be made in a radiation field by placing the function selector switch at "ZERO ADJ".

2. To measure the radiation field position the function selector switch to the lowest range which provides a mid-scale deflection of the meter.

3. With the Beta shield closed the meter will read the whole body Gamma dose rate.

4. To obtain a Beta dose rate measurement perform the following:

   CAUTION: The face of the beta window is very thin. Whenever the Beta shield is open, guard the shield against damage by puncture or contamination by dust or dirt.

   Take an area measurement with the Beta shield closed.

   b. Open the sliding Beta shield on the bottom of the case and take an area measurement.

   c. Subtract the closed shield reading from the open shield reading and multiply by the Beta correction factor marked on the instrument.

   d. This number is the Beta dose rate for that area.

5. When the survey is completed turn the function selector switch to OFF.

APPENDIX II

RADIATION SURVEY INSTRUCTIONS

GENERAL AREA RADIATION SURVEY

1. A general radiation area survey should be conducted while moving between defined survey points, and at the specific survey points.

2. The survey should be conducted using an RM-14 Radiation Monitor with an HP-190 probe.

3. When conducting a moving survey, the HP-190 probe should be installed in the mounting bracket and positioned outside a vehicle window. The detection window of the HP-190 probe should be horizontal position and pointed to the rear of the vehicle to protected the detector from the elements and wind.

4. Vehicle speed should not exceed 15 mph during a mobile survey.

5. If the RM-14 reading changes more than 1,000 CPM stop and conduct a survey for Beta using the Auto Digi-Master or RO-2.

6. Report the results of the mobile survey to the Radio Operator at the next survey point, or after completion of the Beta survey.

SURVEY TO DETERMINE PRESENCE OF BETA RADIATION

1. If the General Area Radiation Survey shows a change of 1000 CPM on the RM-14, or if the "plume" is suspected to be in your area, a survey to detect the presence of Beta radiation should be conducted.

2. Using an Auto Digi-Master, or RC-2 dose rate meter conduct the following surveys.

   a. With the detector window aimed up:

      Beta shield open _____

      Beta shield closed _____

      Difference #1 = (open reading - closed reading)

   b. With the detector window aimed down:

      Beta shield open _____

      Beta shield closed _____

      Difference #2 = (open reading - closed reading)

3. If either difference #1 or difference #2 from Step 2 is positive this is an indication that Beta radiation is present.

   a. If both difference #1 and #2 are positive, this is an indication that you are in the plume.

   b. If only difference #1 is positive, this is an indication that the plume is overhead.

4. Repeat the results of the survey to the Radio Operator and await further instructions from the Dose Assessment Manager.

INSTALLATION OF TLD

1. Specific locations for TLD's will be listed on the survey route instructions of will be given by the Dose Assessment Manager.

2. Hammer a nail into a utility pole at the specified location. The nail should be positioned on the pole at head height and on the side closest to the site.

3. Affix a TLD to the nail using tape. Ensure the TLD window is oriented towards the site.

4. Record the location (either survey point number or road intersections), utility pole number, date time, and TLD number on the back of the survey map.

HIGH VOLUME AIR SAMPLE

1. Draw approximately 15 cubic feet of air through a GY-130 silver zeolite cartridge and particulate filter using a RADECO H 809C High volume air sampler. This will take approximately 10 minutes.

2. Record the sample date, time, and location (either survey point number or road intersections) on two sample envelopes and on the back of the survey map.

3. Determine the background radiation level using the RM-14 Radiation Monitor and HP-190 probe. Record the reading on each envelope, and on the survey map. If background reading is greater than 200 CPM move to lower background prior to taking readings.

4. Using onion skins remove the GY-130 silver zeolite cartridge from the sample holder and read the activity level with the RM-14 Radiation Monitor and HP-190 probe by holding the probe window on the inlet side of the cartridge filter. DO NOT TOUCH THE PROBE WINDOW WITH THE CARTRIDGE. Record the reading on one envelope and place the cartridge in the envelope. Record the reading on the back of the survey map.

   NOTE: If cartridge is reading off scale move probe approximately 1" from cartridge. Report and log data as being taken at 1".

5. Read the activity level of the particulate filter using the RM-14 Radiation Monitor and HP-190 probe. DO NOT TOUCH THE PROBE WINDOW WITH THE PARTICULATE FILTER. Record the reading on the other envelope and place the particulate filter in the envelope. Record the reading on the back of the survey map.

6. Remove the onion skins and discard in a plastic bag. Treat as contaminated material.

7. Report the following information to the Radio Operator:

   a. Sample location
   b. Time sample was taken
   c. Volume of air sample in CF (See page 16 for calculations)
   d. Background count rate in cpm
   e. GY-130 silver zeolite cartridge count rate in cpm
   f. Particulate filter count rate in cpm

NOTE: Field calculations of the airborne activity level may be performed as follows:

Sampler volume in cubic feet equals the flow rate of the sampler in SCFM times minutes the sampler.

Iodine-131 (GY-130 cartridge)

$$\frac{(\text{CPM Sample} - \text{CPM Background})(3.0 \times \text{E-9})}{(\text{Volume of Sample in Cubic Feet})} = \_\_\_\_\_ \text{ uCi/cc Iodine-131}$$

Particulate

$$\frac{(\text{CPM Sample} - \text{CPM Background})(8.38 \times \text{E-10})}{(\text{Volume of Sample in Cubic Feet})} = \_\_\_\_\_ \text{ uCi/cc Particulate}$$

CHANGING FILTERS AT FIXED ENVIRONMENTAL STATIONS

1. Record the following information on the sample envelope left from the previous filter change:

   a. Date
   b. Time
   c. System Vacuum (inches)
   d. Gasmeter reading (cubic feet)
   e. Total hour meter (record in column marked "CFF")

2. Turn pump off

3. Using onion skins remove the filter holder at the quick disconnect joint.

4. Unscrew the outside retaining ring and remove the particulate filter from the holder and place in the sample envelope.

5. If a charcoal cartridge was in use transfer the information on the particulate filter envelope to a new envelope and place the charcoal cartridge in the envelope.

6. Place a new GY-130 silver zeolite cartridge in the sample head.

7. Place a new particulate filter in the holder, replace the retaining ring and reconnect holder to the pump at the quick disconnect joint.

8. Remove onion skins and place in a plastic bag. Treat as contaminated.

9. Turn the pump on.

10. Record the following information to two new envelopes. Mark one envelope "GY-130 silver zeolite".

    a. Station number
    b. Date
    c. Time
    d. System vacuum (inches)
    e. Gasmeter reading (cubic feet)
    f. Total hour meter (record in the "CN" column)

11. Place the new envelopes inside the monitor cabinet.

12. Bring the envelopes containing the cartridge/filter removed to the Survey Center at the completion of your assigned route or when directed by the Dose Assessment Manager.

APPENDIX III

OFF SITE RADIATION SURVEY TEAM INSTRUCTION

RED TEAM

PRIMARY SURVEY ROUTE INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From the Training Center driveway travel east on Lake Road to Knickerbocker Road (1.1 miles). Place a TLD near the intersection of Lake Road and Knickerbocker Road (#1).

2. Go south on Knickerbocker Road to Brick Church Road (1.0 miles). Place a TLD near the intersection of Knickerbocker Road and Brick Church Road (#2).

3. Continue south on Knickerbocker Road to Kenyon Road (1.3 miles). Place a TLD near the intersection of Knickerbocker Road and Kenyon Road (#9).

4. Go west on Kenyon Road to Slocum Road (1.9 miles).

5. Go north on Slocum Road to Brick Church Road (1.3 miles). Place a TLD near the intersection of Slocum Road and Brick Church Road (#4).

6. Continue north on Slocum Road to Lake Road (1.0 miles).

7. Report to Radio Operator for further instructions.

RED TEAM

SECONDARY SURVEY ROUTE (WEST OR NORTHWEST WINDS) INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From the intersection of Lake and Slocum Road.
2. Go east on Lake Road to Ontario Center Road (1.0 mile)
3. Go south on Ontario Center Road to Route 104 (3.1 miles)
4. Continue south on Ontario Center Road/Route 350 to Route 441/Walworth Road (6.3 miles).
5. Go east on Route 441/Walworth Road to main intersection in Village of Walworth (Walworth-Ontario Road, 1.0 miles). Place a TLD near the intersection (#26).
6. Report to the Radio Operator for further instructions.

RED TEAM

SECONDARY SURVEY ROUTE (EAST OR NORTHEAST WINDS) INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From the intersection of Lake and Slocum Road.

2. Go south on Slocum Road to State Route 104 (3.1 miles).

3. Go east on State Route 104 to State Route 350/Ontario Center Road (1.0 miles).

4. Go south on State Route 350 to Plank Road (3.2 miles).

5. Go west on Plank Road to County Line Road (4.1 miles). Place a TLD near the intersection of Plank Road and County Line Road (#46).

6. Continue west on Plank Road to Salt Road (1.5 miles). Place a TLD near the intersections of Plank Road and Salt Road (#39).

7. Go north on Salt Road to Schlegel Road (4.1 miles). Place a TLD near the intersection of Salt Road and Schlegel Road (#42).

8. Continue north on Salt Road to Lake Road and report to Radio Operator for further instructions.

GREEN TEAM

PRIMARY SURVEY ROUTE INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. Travel west on Lake Road to Lakeside Road (1.7 miles). Place a TLD near the intersection of Lake Road and Lakeside Road (#17).

2. Go south on Lakeside Road to Boston Road (1.0 miles). Take a high volume air sample near the intersection of Lakeside Road and Boston Road (#16).

3. Continue south on Lakeside Road to State Route 104 (2.0 miles).

4. Go east on State Route 104 to Ontario Center Road (1.6 miles).

5. Go north on Ontario Center Road to Brick Church Road (2.1 miles). Place a TLD near the intersection of Ontario Center Road and Brick Church Road (#3).

6. Continue north to Lake Road.

7. Report to Radio Operator for further instructions.

GREEN TEAM

SECONDARY SURVEY ROUTE (WEST OR NORTHWEST WINDS) INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From Lake Road and Ontario Center Road, go east to Pultneyville (7.0 miles). Place a TLD in the Pultneyville area (#28) near white settler monument at the Lake.

2. Go south from Pultneyville on State Route 21 to Pound Road (3.4 miles). Place a TLD along State Route 21 south of Pound Road (#48).

3. Continue south on State Route 21 to Farnsworth Road (4.6 miles). Place a TLD near the intersection of State Route 21 and Farnsworth Road (#47).

4. Continue south on State Route 21 and into the Village of Marion (3.0 miles).

5. Return to Main Street in the Village of Williamson on State Route 21 (5.3 miles).

6. Report to Radio Operator for further instructions.

GREEN TEAM

SECONDARY SURVEY ROUTE (EAST OR NORTHEAST WINDS) INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From Lake Road and Ontario Center Road, go west to State Route 250. Place a TLD near intersection of Lake Road and State Route 250 (#45) (6.0 miles).

2. Continue west on Lake Road to Whiting Road (1.8 miles).

3. Go south on Whiting Road to Klem Road (1.8 miles).

4. Go west on Klem Road to Five Mile Line Road (0.4 miles).

5. Go south on Five Mile Line Road to Plank Road (3.4 miles). Place a TLD near the intersection of Five Mile Line Road and Plank Road (#51).

6. Continue south on Five Mile Line Road to Penfield Four Corners (intersection with Penfield Road, State Route 441) (3.6 miles). Place a TLD near back of Baptist Church parking lot, 500' east of intersection on north side of Penfield Road (#41).

7. Report to Radio Operator for further instructions.

ORANGE TEAM

PRIMARY SURVEY ROUTE INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. Travel east on Lake Road to Fisher Road (2.7 miles).

2. Go south on Fisher Road to Shepherd Road (0.7 miles). Take an air sample near the intersection of Fisher Road and Shepherd Road (#19).

3. Place a TLD near the intersection of Fisher Road and Shepherd Road (#19).

4. Continue south on Fisher Road to Trimble Road (1.1 miles). Place a TLD near the intersection of Fisher Road and Trimble Road (#20).

5. Continue south on Fisher Road to Kenyon Road (0.7 miles). Go west on Kenyon Road to Furnace Road (1.1 miles). Place a TLD near the intersection of Kenyon Road and Furnace Road (#49).

6. Go north on Furnace Road to Lake Road (2.7 miles).

7. Report to Radio Operator for further instructions.

ORANGE TEAM

SECONDARY SURVEY ROUTE (WEST OR NORTHWEST WINDS) INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From Lake Road and Furnace Road, go south to Ridge Road (4.2 miles).

2. Go south on Walworth-Ontario Road to Trummonds Road (2.3 miles).

3. Go east on Trummonds Road to Arbor Road (1.1 miles). Place a TLD near the intersection of Trummonds Road and Arbor Road (#22).

4. Go north on Arbor Road to Ridge Road (2.3 miles).

5. Go east on Ridge Road to Eddy Ridge Road (2.2 miles). Place a TLD near the intersection of Ridge Road and Eddy Ridge Road.

6. Continue east on Ridge Road to Tuckahoe Road (Ø.3 miles).

7. Go north on Tuckahoe Road to Salmon Creek Road (2.5 miles). Place a TLD near the intersection of Tuckahoe Road and Salmon Creek Road.

8. Continue north on Salmon Creek Road to Lake Road and report to Radio Operator for further instructions.

ORANGE TEAM

SECONDARY SURVEY ROUTE (EAST OR NORTHEAST WINDS) INSTRUCTIONS

NOTE: Numbers given in parentheses are predesignated survey points. Mileages given are approximate.

1. From Lake Road and Furnace Road, go west on Lake Road to Roder Parkway (access road to Ontario on the Lake) (5.1 miles). Go north on Roder Parkway to intersection with Ontario Drive and place a TLD near intersection (#18) (0.5 miles).

2. Return to Lake Road, continue west to County Line Road (2.4 miles).

3. Go south on County Line Road to Berg/Schlegel Road (2.0 miles). Place a TLD near the intersection of County Line Road and Berg /Schlegel Road (#36).

4. Continue south on County Line Road to State Route 104 (1.2 miles). Turn right onto State Route 104 and go to Salt Road (1.2 miles). Turn left onto Salt Road to Plank Road (2.1 miles).

5. Go west on Plank Road to State Route 250 (2.8 miles).

6. Continue west on Plank Road to RG&E Eastern Monroe Service Center, 1270 Plank Road. Report results of surveys to Radio Operator.

7. Return to Route 250 and go north on Route 250 to State Road (1.2 miles). Place a TLD at the intersection of State Road and Route 250 (#38).

8. Continue north on Route 250 to Main Street in the Village of Webster (2.3 miles).

9. Go east on Main Street to Phillips Road (0.6 miles).

10. Go north on Phillips Road to substation #74 driveway which is 20' north of access road to State Route 104.

11. Report to Radio Operator for further instructions.

GINNA STATION
UNIT #1
COMPLETED
DATE :-
TIME :-

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. SC-240 REV. NO. 1

PROTECTIVE ACTION RECOMMENDATIONS

TECHNICAL REVIEW

PORC REVIEW DATE 6-1-83

QC REVIEW

PLANT SUPERINTENDENT

JUN 7 1983
EFFECTIVE DATE

QA ✓ NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 4 PAGES

SC-240

PROTECTIVE ACTION RECOMMENDATIONS

1.0. **PURPOSE:**

1.1 Provide for the Shift Supervisor a method to estimate post accident dose to the population around the Ginna Plant using Control Room indications.

1.2 Provide guidance for recommending protective actions to the State of New York, Wayne County and Monroe County during the first hour of an accident.

2.0 **REFERENCES:**

2.1 SC-1 Radiation Emergency Plan

2.2 NYS Radiological Emergency Preparedness Plan

2.3 EPA-520 Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (Feb. 1980)

2.4 SC-420 Estimating of Offsite Dose

3.0 **INSTRUCTIONS:**

3.1 Using Attachment II Estimated Dose Levels, determine the plant condition that best describes the emergency situation and record:

Whole Body Dose_____Rem

Thyroid Inhalation Dose_____Rem

If the plant condition is not reflected on Attachment II obtain the Plant Vent Gas reading using the SPING.

a. Key On

b. Push Data Button

c. Push 0, 2, 0, 7 Buttons

d. Push Enter Button

e. Record Reading_____uCi/cc

f. Multiply Reading by X 18 *
_____Rem Whole Body for 2 Hr exposure

If SPING is out of service use the Plant Vent Gas Monitor R-14 reading and refer to S-14.2 to determine release in uCi/cc

Multiply Reading by X 18 *

_____ Rem Whole Body for 2 hour exposure.

* Multiplier from SC-420 Estimating Offsite Doses.

3.2 Select the highest estimated Whole Body Dose
_____Rem Whole Body

3.3 Determine protective action using Rem Whole Body from step 3.2 (Attachment I for information only)

3.3.1 Less than 1 Rem - No protective action

3.3.2 > 1 Rem but < 5 Rem - Shelter population within 10 miles downwind.

3.3.3 > 5 Rem - Evacuate population within 10 miles downwind.

3.4 Select the estimated Thyroid Inhalation Dose
_____Rem Thyroid

3.5 Determine protective action using Rem Thyroid from step 3.4 (Attachment I for information only)

3.5.1 Less than 5 Rem - Not protective action

3.5.2 > 5R but < 25 Rem - Shelter population within 10 miles downwind

3.5.3 > 25 Rem - Evacuate population within 10 miles downwind

3.6 Record highest protective action on Initial Notification Status form SC-701 step 8.

ATTACHMENT I

Projected Doses (Rem) to the Population	Recommended Actions (a)	Comments
Whole Body < 1 Thyroid < 5	No planned protective actions. (b) State may issue an advisory to seek shelter and await further instructions. Monitor environmental radiation levels.	Previously recommended protective actions may be reconsidered or terminated.
Whole Body 1 to < 5 Thyroid 5 to < 25	See shelter as a minimum. Consider evacuation. Evacuate unless constraints make it impractical. Monitor environmental radiation levels. Control access.	If constraints exist, special consideration should be given for evacuation of children and pregnant women.
Whole Body 5 and above Thyroid 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 existing conditions into consideration.

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

ATTACHMENT II

ESTIMATED DOSE LEVELS

	TWO HOUR DOSE OFFSITE (AT 1500' RADIUS FROM REACTOR)			ESTIMATED QUANTITIES RELEASED
	WHOLE BODY (REM)	THYROID INHALATION (REM)	NOBLE GASES	I-131
No Spray Pumps, and 2 Fans** on after proper safety injection core cooling		89		2 Ci/day
1 Spray Pump + 1 Fan on** after proper safety injection core cooling		29		.7 Ci/day
2 Spray Pumps on after** proper safety injection core cooling		20		.5 Ci/day
"Design Basis Loss Of* Coolant Accident with Iodine removal by Spray & Filter" and no breach of containment.	0.6	15.5	35 Ci/day	.35/day
Gas Decay Tank Rupture (Puff)*	0.3	< 10	150 Ci	
Control Rod Ejection*	0.19	5.0		
Steam Line Rupture Outside* C.V. - with tube leak - no tube leak	negl -	1.8 -	5 Ci	.004 Ci
Refueling Incident with* Charcoal System On	0.17	1.7	1.96×10^4	2.7 Ci
Steam Line Rupture in C.V.*	0.1	1.2	.005 Ci	.001mCi
Steam Gen. Tube Rupture*	0.003	0.15	5 Ci	.5mCi

*NRC Safety Evaluation (for siting) values reduced by factor of 10.
**Operation of 1 Accumulator and 1 RHR Pump and 2 SI pumps: FSAR

GINNA STATION
UNIT #1
COMPLETED
DATE :-
TIME :-

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. SC-233 REV. NO. 2

SEARCH AND RESCUE OPERATION

TECHNICAL REVIEW

PORC REVIEW DATE 5-18-83

QC REVIEW

PLANT SUPERINTENDENT

MAY 24 1983
EFFECTIVE DATE

QA ✓ NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 3 PAGES

SC-233

SEARCH AND RESCUE OPERATION

1.0 **PURPOSE:**

1.1 Provide a method for a search and rescue operation.

2.0 **REFERENCES:**

2.1 SC-213 Accountability of Personnel

2.2 SC-230 Immediate Entry Procedure

2.3 A-7 Procedure for handling illness or injury at Ginna Station

3.0 **INSTRUCTIONS:**

3.1 The Security Manager at the direction of the Emergency Coordinator will institute a search and rescue operation based upon accountability.

3.1.1 Notify Security to scan area for missing individual(s).

3.1.2 Notify Control Room giving the identity of missing individual(s).

3.1.3 Notify the on-site survey teams to visually scan for the missing individual(s).

3.1.4 Have an announcement made over the page phone "individual's name call security or dial phone number.)

3.2 The radio communicator in TSC shall notify in-plant survey teams of search and rescue operation and name of individual(s).

3.2.1 Should an in-plant survey team discover the missing individual(s):

3.2.1.1 Notify the Radio Communicator in TSC and give assistance as required.

3.3 Establishment of a search and rescue team, where practical, should consist of,

3.3.1 A co-worker that knows the missing individual.

3.3.2 An individual familiar with the use of radiation instruments and Health Physic practices.

3.3.3 Additional personnel as determined appropriate through discussion with Health Physics and Chemistry Manager, Maintenance Assessment Manager, and Security Manager.

3.3.4 The team shall consist of a minimum of two persons.

3.4 The search and rescue team sha[illegible]ence the search as follows:

3.4.1 Initial briefing prior to beginning search to include:

3.4.1.1 Radiological concerns during search

3.4.1.2 Protective equipment needed

3.4.1.3 Dosimetry and Dose Rate Meter needed

3.4.1.4 Detailed information and description of individual

3.4.1.5 Last known location of individual

3.4.1.6 Communications during the search

3.4.1.7 Do not enter areas where radiation levels are greater than 2 R/hr unless given permission from the Health Physicist.

3.4.2 If dispatched from the Emergency Survey Center enter site using SC-230.

3.4.3 If dispatched from Operation Support Center use guidance of Health Physicist.

3.4.4 Commence search at last known area and expand to adjacent areas and buildings until individual is found.

3.4.5 Upon locating the individual give assistance as required and notify Security Manager.

3.4.6 The Security Manager will coordinate any additional assistance.

3.4.7 Upon removing the individual to a safe location (ESC, TSC, Hospital, etc.) report to Security Manager all events related to the search and rescue operation.

3.4.7.1 Pertinent information from the search and rescue operation shall be reported to the appropriate managers by the Security Manager and a rescue team. They may include:

3.4.7.1.1 Damage noted

3.4.7.1.2 Spills noted

3.4.7.1.3 Doses received

3.4.7.1.4 Radiation Reading

3.4.7.1.5 Unusual situation

3.4.8 The Security Manager will report the completion of the search and rescue operation to the Emergency Coordinator, and other emergency centers.

GINNA STATION
UNIT #1
COMPLETED
DATE :-
TIME :-

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. SC-204 REV. NO. 1

GENERAL EMERGENCY

TECHNICAL REVIEW

PORC REVIEW DATE 6-1-83

QC REVIEW

PLANT SUPERINTENDENT

JUN 7 1983
EFFECTIVE DATE

QA ✓ NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 2 PAGES

SC-204

GENERAL EMERGENCY

1.0 **PURPOSE:**

1.1 The purpose of this procedure is to implement the Emergency Plan for a General Emergency.

2.0 **REFERENCES:**

2.1 SC-1 Radiation Emergency Plan

2.2 SC-100 Event Classification

3.0 **INSTRUCTIONS:**

3.1 Immediate Actions

3.1.1 Control Room Operator Sound the "Site Evacuation Alarm" if not already sounded.

3.1.2 Use appropriate plant procedures to limit or correct condition.

3.1.3 Announce: "Attention Plant, we have a General Emergency, Emergency Response Personnel Report."

3.1.4 Shift Supervisor report to Control Room and:
- Evaluate Plant Conditions
- Direct the responses of personnel
- Assume the duties of the Emergency Coordinator until relieved.

3.1.5 Notify New York State, Wayne & Monroe Counties, and the NRC Operations Officer using SC-604 within one hour.

3.1.6 During off duty hours, activate the Emergency Response Functions using SC-604 General Emergency Notification.

3.1.7 Assure all responsibilities for your Emergency Job position are complete. Refer to SC-200 Emergency Response Organization/Responsibilities.

Appropriate pages are:

3.1.7.1 Emergency Coordinator SC-200 Page 15

3.1.7.2 Control Room Operators SC-200 Page 19

3.1.7.3 Shift Technical Advisor SC-200 Page 17

3.1.7.4 Control Room Communicator SC-200 Page 18

3.1.7.5 On Shift Health Physic Technician SC-200 Page 35

3.1.7.6 Auxiliary Operators SC-200 Page 20

3.2 SUBSEQUENT ACTIONS

3.2.1 Activate additional emergency response functions as necessary to respond to the event (SC-200 Emergency Response Organization).

3.2.2 Monitor plant conditions for the need to reclassify the event in accordance with SC-100 Event Classification.

3.2.3 Keep New York State, Wayne & Monroe Counties, and the NRC Operations Officer informed of significant changes in plant status.

3.3 CLOSE OUT

3.3.1 When the Plant has been stabilized and is in a safe condition, perform a verbal close with New York State, Wayne & Monroe Counties, and the NRC Operations Officer.

3.3.2 An A-25.1, or other appropriate report, will be made.

3.3.3 A written summary will be submitted to the NRC within 24 hours.

GINNA STATION
UNIT #1
COMPLETED
DATE :-
TIME :-

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

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PROCEDURE NO. SC-203 REV. NO. 1

SITE EMERGENCY

TECHNICAL REVIEW

PORC REVIEW DATE 6/7/83

QC REVIEW

PLANT SUPERINTENDENT

JUN 7 1983
EFFECTIVE DATE

QA ✓ NON-QA _____ CATEGORY 1.C

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 2 PAGES

SC-203

SITE EMERGENCY

1.0 **PURPOSE:**

1.1 The purpose of this procedure is to implement the Emergency Plan for a Site Emergency.

2.0 **REFERENCES:**

2.1 SC-1 Radiation Emergency Plan

2.2 SC-100 Event Classification

3.0 **INSTRUCTIONS:**

3.1 Immediate Actions

3.1.1 Control Room Operator Sound the "Site Evacuation Alarm"

3.1.2 Use appropriate plant procedures to limit or correct condition.

3.1.3 Announce: "Attention Plant, we have a Site Emergency, Emergency Response Personnel Report."

3.1.4 Shift Supervisor report to Control Room and:
- Evaluate Plant Conditions
- Direct the responses of personnel
- Assume the duties of the Emergency Coordinator until relieved.

3.1.5 Notify New York State, Wayne & Monroe Counties, and the NRC Operations Officer using SC-603 within one hour.

3.1.6 During off duty hours, activate the Emergency Response Functions using SC-603 Site Emergency Notification.

3.1.7 Assure all responsibilities for your Emergency Job position are complete. Refer to SC-200 Emergency Response Organization/Responsibilities.

Appropriate pages are:

3.1.7.1 Emergency Coordinator SC-200 Page 15

3.1.7.2 Control Room Operators SC-200 Page 19

3.1.7.3 Shift Technical Advisor SC-200 Page 17

3.1.7.4 Control Room Communicator SC-200 Page 18

3.1.7.5 On Shift Health Physic Technician SC-200 Page 35

3.1.7.6 Auxiliary Operators SC-200 Page 20

3.2 SUBSEQUENT ACTIONS

3.2.1 Activate additional emergency response functions as necessary to respond to the event (SC-200 Emergency Response Organization).

3.2.2 Monitor plant conditions for the need to reclassify the event in accordance with SC-100 Event Classification.

3.2.3 Keep New York State, Wayne & Monroe Counties, and the NRC Operations Officer informed of significant changes in plant status.

3.3 CLOSE OUT

3.3.1 When the Plant has been stabilized and is in a safe condition, perform a verbal close with New York State, Wayne & Monroe Counties, and the NRC Operations Officer.

3.3.2 An A-25.1, or other appropriate report, will be made.

3.3.3 A written summary will be submitted to the NRC within 24 hours.

GINNA STATION
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DATE :-
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

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PROCEDURE NO. SC-202 REV. NO. 1

ALERT

TECHNICAL REVIEW

PORC REVIEW DATE 6183

QC REVIEW

PLANT SUPERINTENDENT

JUN 7 1983
EFFECTIVE DATE

QA a NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 2 PAGES

SC-202

ALERT

1.0 **PURPOSE:**

1.1 The purpose of this procedure is to implement the Emergency Plan for an Alert.

2.0 **REFERENCES:**

2.1 SC-1 Radiation Emergency Plan

2.2 SC-100 Event Classification

3.0 **INSTRUCTIONS:**

3.1 Immediate Actions

3.1.1 Control Room Operator notify the Shift Supervisor.

3.1.2 Use appropriate plant procedures to limit or correct condition.

3.1.3 Announce: "Attention Plant, we have an Alert Condition, Emergency Response Personnel Report."

3.1.4 Shift Supervisor report to Control Room and:
- Evaluate Plant Conditions
- Direct the responses of personnel
- Assume the duties of the Emergency Coordinator until relieved.

3.1.5 Notify New York State, Wayne & Monroe Counties, and the NRC Operations Officer using SC-602 within one hour.

3.1.6 During off duty hours, activate the Emergency Response Functions using SC-602 Site Emergency Notification.

3.1.7 Assure all responsibilities for your Emergency Job position are complete. Refer to SC-200 Emergency Response Organization/Responsibilities.

Appropriate pages are:

3.1.7.1 Emergency Coordinator SC-200 Page 15

3.1.7.2 Control Room Operators SC-200 Page 19

3.1.7.3 Shift Technical Advisor SC-200 Page 17

3.1.7.4 Control Room Communicator SC-200 Page 18

3.1.7.5 On Shift Health Physic Technician SC-200 Page 35

3.1.7.6 Auxiliary Operators SC-200 Page 20

3.2 SUBSEQUENT ACTIONS

3.2.1 Activate additional emergency response functions as necessary to respond to the event (SC-200 Emergency Response Organization).

3.2.2 Monitor plant conditions for the need to reclassify the event in accordance with SC-100 Event Classification.

3.2.3 Keep New York State, Wayne & Monroe Counties, and the NRC Operations Officer informed of significant changes in plant status.

3.3 CLOSE OUT

3.3.1 When the Plant has been stabilized and is in a safe condition, perform a verbal close with New York State, Wayne & Monroe Counties, and the NRC Operations Officer.

3.3.2 An A-25.1, or other appropriate report, will be made.

3.3.3 A written summary will be submitted to the NRC within 24 hours.

GINNA STATION
UNIT #1
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DATE :-
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ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

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PROCEDURE NO. EC-201 REV. NO. 1

UNUSUAL EVENT

TECHNICAL REVIEW

PORC REVIEW DATE 6-1-83

CC REVIEW

PLANT SUPERINTENDENT

JUN 7 1983
EFFECTIVE DATE

CA X NON-CA _____ CATEGORY 1.C

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 2 PAGES

SC-201

UNUSUAL EVENT

1.0 **PURPOSE:**

1.1 The purpose of this procedure is to implement the Emergency Plan for an Unusual Event.

2.0 **REFERENCES:**

2.1 SC-1 Radiation Emergency Plan

2.2 SC-100 Event Classification

3.0 **INSTRUCTIONS:**

3.1 Immediate Actions

3.1.1 Control Room Operator notify the Shift Supervisor.

3.1.2 Use appropriate plant procedures to limit or correct condition.

3.1.3 Shift Supervisor report to Control Room and:
- Evaluate Plant Conditions
- Direct the responses of personnel
- Assume the duties of the Emergency Coordinator until relieved.

3.1.4 Notify New York State, Wayne & Monroe Counties, and the NRC Operations Officer using SC-601 within one hour.

3.1.5 Assure all responsibilities for your Emergency Job position are complete. Refer to SC-200 Emergency Response Organization/Responsibilities.

Appropriate pages are:

3.1.5.1 Emergency Coordinator SC-200 Page 15

3.1.5.2 Control Room Operators SC-200 Page 16

3.1.5.3 Shift Technical Advisor SC-200 Page 17

3.1.5.4 Control Room Communicator SC-200 Page 18

3.1.5.5 On Shift Health Physic Technician SC-200 Page 35

3.1.5.6 Auxiliary Operators SC-200 Page 20

3.2 SUBSEQUENT ACTIONS

3.2.1 Notify the Plant Superintendent and the Duty Engineer of the event EC-601.

3.2.2 Activate additional emergency response functions as necessary to respond to the event (EC-200 Emergency Response Organization).

3.2.3 Monitor plant conditions for the need to reclassify the event in accordance with EC-100 Event Classification.

3.2.4 Keep New York State, Wayne & Monroe Counties, and the NRC Operations Officer informed of significant changes in plant status.

3.3 CLOSE OUT

3.3.1 When the Plant has been stabilized and is in a safe condition, perform a verbal close with New York State, Wayne & Monroe Counties, and the NRC Operations Officer.

3.3.2 An A-25.1, or other appropriate report, will be made.

3.3.3 A written summary will be submitted to the NRC within 24 hours.

GINNA STATION
UNIT #1
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DATE :-
TIME :-

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

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PROCEDURE NO. SC-4 REV. NO. 6

HIGH WATER (FLOOD) EMERGENCY PLAN

TECHNICAL REVIEW

PORC REVIEW DATE 6-8-83

QC REVIEW

PLANT SUPERINTENDENT

JUN 14 1983

EFFECTIVE DATE

QA ✓ NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 2 PAGES

SC-4

HIGH WATER (FLOOD) EMERGENCY PLAN

1.0 **PURPOSE:**

1.1 To provide instructions for response to rising lake level or flooding condition from a large pipe break or Deer Creek.

1.2 To provide instructions for appropriate notification to authorities of the above in accordance with pre-established classifications.

2.0 **REFERENCES:**

2.1 Ginna FSAR Section 2.6.4 Floods and Low Water.

2.2 NUREG 0654, Appendix I, Emergency Action Level Guidelines for Nuclear Power Plants.

3.0 **INSTRUCTIONS:**

3.1 In the event that high water conditions exist or are eminent such as: Large pipe break.

Lake level rises to a level of 252' - 0" USC and GS datum mark on discharge canal wall, and a continued rise is observed or expected.

Flooding of Deer Creek

Perform the following:

3.1.1 Evaluate and classify the condition per SC-100 Ginna Station Event Evaluation and Classification and implement applicable emergency response.

3.1.2 Notify Shift Supervisor, Duty Engineer and Plant Superintendent as appropriate.

3.1.3 Secure system or line.

3.1.4 Review damage.

3.1.5 If any of the plant safeguard equipment is in any danger from flooding, the plant shall be placed in a cold shutdown condition.

3.2 If wave action causes water splashing over the discharge canal wall, or a hurricane pushes water over the armor stone, a water level watch shall be posted in the screenhouse to monitor lake level, the screenhouse basement, and the storm sewage drainage. The retention tank level shall also be monitored for proper operation at high lake levels.

3.3 The Shift Supervisor shall notify RG&E Power Controller that a load drop may be forthcoming.

3.4 When water being to accumulate on the screenhouse operating floor or the lake is at a level of 253.5' perform the following:

3.4.1 The Shift Supervisor will order the plant shutdown and placed in cold shutdown condition.

3.5 Flooding of Deer Creek.

NOTE: The topography of the plant site and the grading design provided that ground water from the two streams shall be easily drained to Lake Ontario, with no significant flooding of plant site.

3.6 The Plant Operations Review Committee shall review plant conditions and determine when the plant can be returned to power.

GINNA STATION
UNIT #1
COMPLETED
DATE :-
TIME :-

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 23

PROCEDURE NO. SC-2 REV. NO. 11

ADVERSE WEATHER EMERGENCY PLAN

TECHNICAL REVIEW

PORC REVIEW DATE 6-8-83

QC REVIEW

PLANT SUPERINTENDENT

JUN 14 1983
EFFECTIVE DATE

QA X NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 3 PAGES

SC-2

ADVERSE WEATHER EMERGENCY PLAN

1.0 **PURPOSE:**

1.1 To outline the actions to be taken in the event of high winds > 60 mph, hurricane force winds > 69 mph, winds exceeding building design > 75 mph, a tornado watch or a tornado sighting.

1.2 To provide instructions for appropriate notification to authorities of the above in accordance with pre-established classifications.

2.0 **REFERENCES:**

2.1 NUREG 0654, Appendix I, Emergency Action Level guidelines for Nuclear Power Plants.

3.0 **INSTRUCTIONS:**

3.1 In the event of adverse weather conditions exist or are eminent such as:

Steady high winds exist greater than 60 mph.

Steady hurricane force winds exist greater than 70 mph.

Tornado watch, tornado sighting or tornado experienced.

Ice Storm.

Perform the following:

3.2 Evaluate the classify the condition per SC-100 Ginna Station Event Evaluation and classification, and implement applicable emergency procedure.

3.2.1 Notify all on-duty personnel and the security force.

3.2.2 Communicate the RG&E Power Controller in regard to the weather conditions and request he notify you of any pertinent change in the weather forecast or data.

3.2.3 Be aware that all precautions pertinent to normal or other emergency plant conditions are applicable.

3.2.4 The Shift Supervisor shall direct the Auxiliary Operators to increase their surveillance schedule in the following plant areas: Screenhouse Transformer area, Auxiliary Building and Diesel Generator Rooms.

3.2.5 The Shift Supervisor shall consider his authority to shut the plant down if:

In his opinion the plant cannot be operated safely.

Damage to the plant or its vital equipment is imminent.

Damage has occurred.

3.2.6 The Shift Supervisor shall instruct the security force to report to him any hazard, potential hazard, or other unusual condition observed during the course of their rounds.

3.2.7 Consider increased danger of personal injury to those whose duties require working outside the plant.

3.2.8 A thorough inspection of the plant shall be made before returning to normal operation after the adverse weather condition has cleared.

NOTE: If higher wind velocities are predicted (to approach hurricane winds at 70 mph) consider augmenting personnel in preparation for coping with higher wind forces before travel conditions become overly hazardous.

3.3 Perform the following if steady HURRICANE FORCE WINDS exists, > 70 mph.

3.3.1 One emergency diesel generator shall be started and tied to safeguard Bus 17 or 18.

3.3.2 Increased surveillance of plant shall be commenced.

3.4 In the event the steady wind velocity reaches 75 mph (NY State Building Code design level) or gusts are in excess of 100 mph delay evacuating the plant and calling in additional personnel until extreme wind hazard conditions subside.

3.5 Perform the following during TORNADO WATCH.

3.5.1 If the area weather conditions are such that tornados are possible as determined from the Power Controller, the Shift Supervisor shall post a tornado watch with a radio, on the Turbine Building roof.

3.5.2 If tornados are known to be in the plant area, one emergency diesel generator shall be started and tied to safeguard Bus 17 or 18.

3.5.3 If a tornado is sighted and is headed for the plant, load reduction shall be commenced and the reactor brought to the hot shutdown condition.

3.6 Perform the following during ICE STORMS.

3.6.1 The company Load Dispatcher shall keep the Shift Supervisor informed of the possibility of losing and transmission lines due to severe ice build-up. Load reduction shall be determined through coordination between the Load Dispatcher and the Shift Supervisor, dependent on the consequences of the consequences of the storm and the protection of plant equipment and personnel.

3.7 Hold a meeting of the Plant Operations Review Committee within twenty-four hours of occurrences described in steps 3.3.1, 3.5.2 and 3.5.3 at the station and review the occurrence to determine if any further actions may be required.

3.8 Return equipment to status as directed by the Shift Supervisor.