FLORIDA POWER AND LIGHT COMPANY
TURKEY POINT UNITS 3 AND 4
EMERGENCY PROCEDURE 20126
MARCH 18, 1982

1.0 Title:

OFF-SITE DOSE CALCULATIONS

2.0 Approval and List of Effective Pages:

2.1 Approval:

Change Dated 3/18/82 Reviewed PNSC March 18, 1982

Approved by [signature] Plt Mgr-Nuclear, April 23, 1982

Approved by [signature] Vice President of Nuclear Energy 5-17 1982

2.2 List of Effective Pages:

Page	Date	Page	Date	Page	Date	Page	Date
1	3/18/82	8	3/8/82	15	3/8/82	22	3/18/82
2	3/8/82	9	3/8/82	16	3/8/82	23	3/8/82
3	3/18/82	10	3/8/82	17	3/8/82	24	3/8/82
4	3/8/82	11	3/18/82	18	3/8/82	25	3/8/82
5	3/18/82	12	3/18/82	19	3/8/82	26	3/8/82
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7	3/18/82	14	3/8/82	21	3/8/82	28	3/8/82

3.0 Scope:

3.1 Purpose:

3.1.1 This procedure provides guidelines for calculating thyroid and whole body dose rates and integrated whole body and thyroid dose for the area surrounding the plant out to ten miles.

3.2 Discussion:

During any emergency involving release of radioactivity to the environment, the Emergency Plan requires that radiation dose rates and integrated doses to offsite areas within ten miles be calculated. This information will be used in making protective action recommendations and will be an input to the State of Florida Bureau of Disaster Preparedness in determining what offsite protective actions should be taken. When the Technical Support Center or the Emergency Operations Facility are operational, the function of dose calculation will be shifted to one of these locations.

3.3 Authority:

This procedure implements the Turkey Point Plant Radiological Emergency Plan.

4.0 Precautions:

None

5.0 Responsibilities:

5.1 The Emergency Coordinator is responsible for directing that thyroid and whole body dose rates and integrated thyroid and whole body doses are calculated following an emergency which involves a release of radioactivity to the environment.

5.2 A Chemistry Department representative may be designated by the Emergency Coordinator to make these calculations in accordance with this procedure.

6.0 References:

6.1 Emergency Procedure 20101, Duties of the Emergency Coordinator

6.2 Turkey Point Plant Radiological Emergency Plan.

6.3 Accident Dose Calculations for Florida Power and Light Company, Turkey Point Nuclear Power Plant, December, 1981, prepared by HMM Associates (HMM Document No. 81-077)

6.4 Appendix A to this procedure - method to calculate meteorological data obtained from Homestead Air Force Base

6.5 Turkey Point Health Physics Manual 11500

6.6 Turkey Point Nuclear Chemistry Procedure NC-56, Operation of the Plant Vent Under Loss of Coolant or Similar Condition

7.0 Records and Notification:

7.1 Records of meteorological conditions used to calculate dose rates, the calculated thyroid and whole body dose rates and the integrated thyroid and whole body doses shall be kept on the attached worksheets.

7.2 As deemed appropriate by the Emergency Coordinator, the off-site authorities shall be notified of:

7.2.1 Meteorological conditions (wind speed, wind direction, stability, and precipitation).

7.2.2 Projected thyroid and whole body dose rates and integrated thyroid and whole body dose at 1, 2, 5 and 10 miles, including sectors affected, and

7.2.3 Whether default values or actual measurements were used for dose estimates.

7.3 FPL is required to provide the Bureau of Disaster Preparedness (BDP) with recommendations for protective actions to be taken by off-site personnel during an emergency condition. Until the EOF is staffed and functional following declaration of the emergency, the EC is responsible for providing the state with these recommendations. Due to the extremely large political and legal ramifications of these recommendations and their very large potential impact on FPL, the format and content guidelines established in Emergency Procedure 20101, Duties of the Emergency Coordinator, shall be adhered to.

7.3.1 Projections of dose to the BDP should be made on a best estimate basis by projecting the duration of the release if possible. If no reasonable duration of release can be projected, a default value of two hours should be used.

8.0 Instructions:

8.1 Upon initiation of an event which has resulted or could result in release of radioactive material, the Containment High Range Radiation Monitors reading should be compared to Table 12 - Action Guidelines for event classification.

8.2 Estimated thyroid and whole body dose rates in areas surrounding the plant shall be calculated as follows:

NOTE: Unless otherwise noted, all data is to be recorded on Table 1, "Dose Projection Worksheet". When available the TSC and/or EOF TRS-80 Model III Computer programmed by HMM Associates in accordance with the bases of Reference 6.3 may be used for dose calculations. The computer output of estimated thyroid and whole body dose rates and projected doses may be used in lieu of manually entering this data in Tables 1 and 2.

8.2.1 Record date and time of emergency on Table 1.

8.2.2 Record period for which dose projection is applicable. |Dose projections will be made starting with time of release|. Each succeeding half hour should be re-calculated with updated data on separate worksheets. Integrated dose shall also be recalculated after changes in release rate and/or meteorological conditions as discussed in Section 8.4.

8.2.3 Record the primary windspeed (Channel A), primary wind direction (Channel B) and primary stability indicator (Channel F) from meteorological recorder onto Table 1. Strip chart traces should be observed for the average fluctuation of these parameters. The value recorded should be the average of these fluctuations over the most recent fifteen minutes.

NOTE: If either primary wind direction or wind speed is inoperative, record backup wind speed (Channel D) and backup wind direction (Channel E) data from South Dade tower onto Table 1. If both backup parameters are not available, call Homestead Air Force Base (257-7545) or use Homestead Air Force Base red phone to obtain data. (Wind speed will be given in knots from Homestead Air Force Base, to convert to mph, multiply by 1.15).

If primary stability indicator (ΔT) is inoperative, record actual value for backup stability indication (sigma theta) on worksheet. Sigma theta value is the standard deviation of wind direction for a 15 minute sample; therefore, it does not require an average over the previous 15 minutes.

If the backup stability indication (sigma theta) or the entire recorder is inoperative, calculate stability class using method described in Appendix A.

If for some reason the meteorological data cannot be obtained, then the following default table shall be used:

	STABILITY CLASS	WIND SPEED
Day	D	5 mph
Night	F	3 mph

If wind speed and wind direction is obtained from Homestead Air Force Base or if wind speed is determined by default value, indicate this by writing "HAFB" or "Default Value" after the entry in Table 1.

8.2.4 Determine stability class (Pasquill Category) from Table 3 and record on Table 1. If stability class is determined by Appendix A or by default value, indicate this by writing "Appendix A" or "Default Value" after entry in Table 1.

8.2.5 If the plant Process Monitor (R-14) alarms (primary monitor), determine effluent gas count rate average for the past fifteen minutes from the recorder and record in Column A of Table 1. If R-14 is off-scale high, use the NMC monitor's present noble gas meter reading as an input to Column A of Table 1. If the NMC is off-scale high, use Nuclear Chemistry Procedure NC-56, Operation of the Plant Vent Under Loss of Coolant Accident or Similar Conditions.

8.2.6 If Area Radiation Monitor No. 19 (Spent Fuel Pit Vent) alarms, determine the instantaneous Unit 3 Spent Fuel Pit vent NMC noble gas reading and record this value in Column A of Table 1.

8.2.7 If process monitor R-15 alarms and a steam generator tube leak is suspected, determine the most recent fifteen minute count rate average and enter Column A of Table 1.

8.2.8 The CPM values obtained should be adjusted for flow changes in the plant vent if different than normal ventilation flow of 107,500 CFM according to:

Plant Vent Factor = Actual Flow/Normal Flow

The plant vent factor is listed in the Table below:

PLANT VENT FACTOR								
	CONTAINMENT PURGE		AUXILIARY BULDING		SPENT FUEL PIT	RADWASTE BUILDING	LAUNDRY SYSTEM	PLANT VENT FACTOR
CONDITION NUMBER	Supp. 35000 cfm	Exh. 35000 cfm	Supp. 13500 cfm	Exh. 40000 cfm	Exhaust 20000 cfm	7500 cfm	11200 cfm	
1	0	0	0	0	1	2	1	.29
2	0	0	1	1	1	2	1	.75
3	0	0	2	2	1	2	1	.85
4	1	1	1	1	1	2	1	.93
5	1	1	2	2	1	2	1	1.0
6	2	2	1	1	1	2	1	1.12
7	2	2	2	2	1	2	1	1.18

If Loss of Off-Site Power occurs then proceed to Step |8.4|.

8.2.9 Calculate the noble gas release rate (curies/sec.) by multiplying the noble gas reading obtained in Step 8.2.5 or 8.2.6 by the calibration constant in Column B times the vent factor obtained in 8.2.8 in Column C. Record this result in Column D of Table 1.

NOTE: |If stack effluent monitors are inoperable, continue with Step 8.4|.

8.2.10 For the appropriate accident listed below, determine the correct iodine release rate factor and enter in Column E.

Accident Type	Iodine Release Rate Factor
LOCA |with safeguards operating|	0.011
|without safeguards operating	0.063|
Fuel Handling	.001
S/G Tube Rupture	0.004

8.2.11 Determine iodine release rate by multiplying the total noble gas reading in Column D by iodine release rate factor in Column E. Record result in Column F in Table 1.

8.2.12 Sum the noble gas releases, then the iodine releases and record each result in their respective sum total column of Table 1.

8.3 If Nuclear Chemistry Department grab sample results of noble gas and iodine |are available, they should be| substituted for instrument derived results. Assay results can be converted to Ci/sec as shown in Note below. The results should be entered under the sum totals for Columns D and F on Table 1 (circle entries to indicate grab samples).

NOTE: To obtain Ci/sec from grab sample assay results in μCi/cc:

Gross Noble Gas
or Iodine |I-131 equivalent|
Assay Act. x Ventilation Flow x Vol. Conver. x Time Conv. x Act. Conv.=

$$\frac{\mu Ci}{cc} \times \frac{ft^3}{min} \times \frac{28317\ cc}{ft^3} \times \frac{min.}{60\ sec.} \times \frac{Ci}{10^6\ \mu Ci} = Ci/sec$$

8.4 If the effluent monitors are inoperable and a LOCA has occurred, an estimate of the potential release rates for noble gas and iodine can be made using the readings on the Containment High Range Radiation Monitors. Figure 1 compares monitor R/hr vs. Core Fraction Airborne (CF) using elapsed time-lines from Reactor Trip. Reactor Trip Line is t=0. Estimate Dose as follows:

8.4.1 If the highest CHRRM channel indicates less than 10 R/hr, the Off-site Dose Rate is negligible. Do not proceed any further.

8.4.2 On the vertical axis, find the R/hr on Figure 1 for the R/hr observed on the highest CHRRM channel.

8.4.3 Follow the R/hr line to where it intersects the time line representing the hour from Reactor Trip when the CHRRM reading was obtained. Do not interpolate between lines. On the graph reference, use the longer trip time line of the two under consideration. (Example: if 1.5 hours have elapsed since Reactor Trip and CHRRM is observed at t=1.5 hours, the time line t=2 hours is the correct line). RECORD the hours since Reactor Trip and the time line used on Table 1. After 24 hours elapsed time use the 24 hour line.

8.4.4 From the intersection of the R/hr line and the appropriate time line, project a vertical line downward to the horizontal axis. Obtain the value of Core Fraction Airborne (CF) a unitless number. This represents the fraction of core inventory that is estimated to be airborne inside containment. Enter the CF value under the CF column on Table 1 Case III.

8.4.5 From Figure 2, obtain the Noble Gas Reduction Factor (R) by projecting a vertical line up from the elapsed time axis in hours to the point where it intersects the curve. Then project a horizontal line towards the Reduction Factor axis to obtain the value of R. Enter this value under the Column R on Table 1 Case III.

8.4.6 Perform the calculations indicated on the worksheet and enter the Noble Gas and Iodine Release Rate Ci/sec values on the Worksheet where indicated. The calculations are shown below for information.

	Core Fraction Airborne Step |8.4.4|		Reduction Factor Step |8.4.5|		Estimated Ci/sec (for a CF=1.0)
Ci/sec Noble Gas =	CF	X	R	X	10.2
Ci/sec Iodine w/ Safeguards OPERABLE =	CF	X	1.0	X	0.11
Ci/sec Iodine w/ NO Safeguards OPERABLE =	CF	X	1.0	X	0.63

NOTE: For Iodines (R) shall equal 1.0 i.e., no decay credit allowed.

8.4.7 If CHRRM and effluent monitors are inoperable, a default value for release rate should be used. The default values should be selected from Table 4. If a default value is used record this fact by writing "Default Value" after the entry in Table 1.

8.4.8 In Column |G| of Table 1 record for each distance listed (1, 2, 5, and 10 miles) the calculated sum total values of noble gas release rate (Column D) and iodine release rate (Column F).

NOTE: If the program for the TRS-80 Model III computer is available, Steps 8.4.9 through 8.4.13 will be available on computer output and need not be done manually.

8.4.9 A series of thyroid and whole body dose rate tables are provided as Tables 5 to 11. For each combination of stability and wind speed group, the thyroid and whole body dose rate (mrem/hour) for a one Ci/sec release rate is pre-calculated for downwind distances along the plume centerline. Select the proper table based on the stability and wind speed group noted on Table 1. Input the values listed from the appropriate tables for the 1, 2, 5 and 10 mile distances under Column H of Table 1 for the corresponding distances.

8.4.10 For each distance; 1, 2, 5, and 10 miles, determine the whole body dose rate and thyroid dose rate by multiplying the corresponding value from Column G times the value in Column H of Table 1. Record the results in Column I.

8.4.11 Enter in Column J the duration (normally two hours) for this estimated dose rate at 1, 2, 5 and 10 miles.

8.4.12 Enter product of Column I times Column J (dose) into Table 2 in the wind direction row closest in value to the wind direction recorded in Table 1.

8.4.13 In order to account for uncertainty in wind direction measurement and spatial variation in wind direction, the data from step 8.4.12 should also be entered in the two adjacent sectors. All other sector/distance blocks are assumed to have zero dose.

8.5 The Emergency Coordinator or his designee shall monitor release rates and meteorological conditions to determine how frequently to update the dose rate estimates. Dose rate estimates shall be updated if any of the following averages change by the amounts indicated below, over a period not to exceed 30 minutes:

8.5.1 It is determined that releases of radioactivity have been terminated.

8.5.2 Release rates increase by more than 25%.

8.5.3 Wind speed decreases by two classes or more (e.g. 9-18 mph to 2-4 mph).

8.5.4 Atmospheric stability becomes more stable by two classes or more (e.g., stability D to F).

8.5.5 Wind direction changes by more than 22.5° (i.e., plume centerline is more than one sector away from prior location).

NOTE: In any case, the estimates shall be revised at least hourly for the first 8 hours after the accident unless it is determined that releases of radioactivity have been terminated.

8.6 The Emergency Coordinator shall ensure that thyroid and whole body dose rates are calculated and cumulative thyroid and whole body doses are updated as stated in 8.5 using the following method:

8.6.1 Complete the "Dose Projection Worksheet" (Table 1) as described under Sections 8.3 or 8.4, when available, computer output estimates of whole body and thyroid dose rates may be substituted for the manual calculation of these values.

8.6.2 Update the "Cumulative Dose Distribution Worksheet" (Table 2) by adding the thyroid and whole body dose determined from 8.6.1 for each applicable sector/distance effected block to the integrated dose from event initiation to the present, when available, computer output estimates of whole body and thyroid integrated doses may be substituted for the manual calculations. Integrated doses for sector/distance blocks with zero estimated dose for the current hour remain unchanged.

NOTE: If a change, as defined in Section 8.5, has occurred in less than an hour, prorate the previous hours calculation and adjust the integrated dose estimate, accordingly.

8.6.3 Projections of doses and dose rates should be made on the basis that the most recently estimated dose rates and their distribution will persist for two hours. Projecting dose rates for periods other than two hours should be made on an ad hoc basis using best available data on release rate estimates and subsequent meteorological conditions.

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TABLE 1
DOSE PROJECTION WORKSHEET
(Sheet 1 of 2)

Date of Emergency: _____

Time of Emergency: _____

Time Period for which Dose Projection is applicable: _____ To _____

METEOROLOGICAL DATA
(Use 15 minute averages)

TEN METER TOWER				SOUTH DADE TOWER			
RECORDER CHANNEL	PEN COLOR	FUNCTION		RECORDER CHANNEL	PEN COLOR	FUNCTION	
A	Red	Primary Wind Speed	_____ mph	D	Red	Back-up Wind Speed	_____ mph
B	Black	Primary Wind Direction	_____ degrees	E	Black	Back-up Wind Direction	_____ degrees
C	Blue	Back-up Stability Sigma Theta (Instantaneous Value only)	_____ degrees	F	Blue	Primary Stability Delta T	_____ °F

Stability Class _____ (Table 3)

50 mete

CASE I - EFFLUENT MONITORS AVAILABLE:

	A	B	C	D	E	F
Release Point	Monitor Reading (cpm)	(Ci/sec/cpm) Calibration Constant	VENTILATION FLOW CORRECTION FACTOR	Noble Gas Release Rate (Ci/sec)	Iodine Release Rate Factor	Iodine Release Rate (Ci/sec)
Plant Vent R-14		2.8×10^{-7}				
Plant Vent NMC		1.7×10^{-5}				
Unit 3 SFP Exh. NMC		4.9×10^{-6}				
Unit 3 Air Ejector(R-15)		3.5×10^{-10}				
Unit 4 Air Ejector(R-15)		3.7×10^{-10}				
			SUM TOTAL			

OFF-SITE DOSE CALCULATIONS

TABLE 1
(Sheet 2 of 2)

DOSE PROJECTION WORKSHEET

CASE II: Actual measurements of release rates available from Nuclear Chemistry Department. Calculations performed as per |8.3| and results entered and circled in the corrected Ci/Sec column for Case I above for applicable release pathway for Noble Gas or Iodine.

CASE III: Effluent Monitors Out of Commission and a LOCA has occurred. Calculate Release Rates from Containment High Range Radiation Monitors:

	From Figure 1 Core Fraction Airborne (CF)	From Figure 2 "R" Factor X	Conversion Factor =	Release Rates (Ci/Sec)
Highest CHRRM Reading (R/hr:			10.2	Noble Gas
Hours since Reactor Trip:		1.0	0.11 with Safeguards	APPLICABLE IODINE
Hour line Based On:		1.0	0.63 w/o Safeguards	

	G		H		*I		*J
Distance (Miles)	Total Release (Ci/sec)		Values from Dose Rate Tables (5-11) [mRem/hr per 1Ci/sec]		Calculated Dose Rates (Multiply G x H) [mrem/hr]		DURATION (hour)
	Noble Gas	Iodine	Whole Body	Thyroid	Whole Body	Thyroid**	
1							
2							
5							
10							

Completed by:_____ Date_____ Time_____

* Refer to Table 12 to determine appropriate emergency classification.

** Adult Thyroid Dose Commitment - the accumulated dose |thyroid| burden to an adult from inhalation of radioiodine for one hour duration.

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TABLE 2

CUMULATIVE DOSE DISTRIBUTION WORKSHEET

Time release assumed to occur: _____

Time through which this distribution applies: _____

Wind Direction (As Read)	Downwind Direction	Sector	Whole Body Dose (mrem) Downwind Distance (miles) 1	2	5	10	*Thyroid Dose (mrem) Downwind Distance (miles) 1	2	5	10
180	N	(A)								
202.5	NNE	(B)								
225	NE	(C)								
247.5	ENE	(D)								
270	E	(E)								
292.5	ESE	(F)								
315	SE	(G)								
337.5	SSE	(H)								
000	S	(J)								
022.5	SSW	(K)								
045	SW	(L)								
067.5	WSW	(M)								
090	W	(N)								
112.5	WNW	(P)								
135	NW	(Q)								
157.5	NNW	(R)								

* Adult Thyroid Dose Commitment - the accumulated dose |thyroid| burden to an adult from inhalation of radioiodine for the calculated duration.

Completed by _____ Date _____ Time _____

TABLE 3

PRIMARY SYSTEM

CLASSIFICATION OF ATMOSPHERIC STABILITY
BY TEMPERATURE CHANGE IN HEIGHT

Stability Classification	Pasquill Categories	Temperature Change with Height (°F)
Extremely unstable	A	$\Delta T < -1.6$
Moderately unstable	B	$-1.6 \leq \Delta T < -1.4$
Slightly unstable	C	$-1.4 \leq \Delta T < -1.3$
Neutral	D	$-1.3 \leq \Delta T < -0.4$
Slightly stable	E	$-0.4 \leq \Delta T < 1.3$
Moderately stable	F	$1.3 \leq \Delta T < 3.4$
Extremely stable	G	$3.4 \leq \Delta T$

BACKUP SYSTEM

CLASSIFICATION OF ATMOSPHERIC STABILITY BY USING
STANDARD DEVIATION OF WIND DIRECTION (SIGMA THETA)

Stability Classification	Pasquill Categories	Sigma Theta Range (Degrees)
Extremely unstable	A	22.5 or more
Moderately unstable	B	17.5 to 22.4
Slightly unstable	C	12.5 to 17.4
Neutral	D	7.5 to 12.4
Slightly stable	E	3.8 to 7.4
Moderately stable	F	2.1 to 3.7
Extremely stable	G	2.0 or less

TABLE 4

DEFAULT VALUES FOR RADIOACTIVITY RELEASE RATES*

Accident Type	Default Value
Loss of Coolant (if effluent and containment high range monitors are not functional)	0-2 hours after reactor trip Noble gases: 10.2 — Iodine: 0.11 2-8 hours after reactor trip Noble gases: 5.4 — Iodine: 0.06 more than 8 hours after reactor trip Noble gases: 1.6 — Iodine: 0.02
Steam Generator Tube Rupture	Use this value until the affected steam generator is isolated Noble gases: 3.7 — Iodine: 0.0022
Fuel Handling	Use this value for 15 minutes only 0.93 x number of damaged fuel bundles — 0.003 x number of damaged fuel bundles

*All values in curies/sec

OFF-SITE DOSE CALCULATIONS

TABLE 5

WHOLE BODY DOSE FOR STABILITY CLASS A - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	1.06E+00	5.66E-01	3.92E-01	3.05E-01	3.05E-01	3.05E-01	3.05E-01	3.05E-01	3.05E-01	3.05E-01	3.05E-01	3.05E-01
2-4	3.53E-01	1.89E-01	1.31E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01
4-9	1.76E-01	9.43E-02	6.54E-02	5.08E-02	5.08E-02	5.08E-02	5.08E-02	5.08E-02	5.08E-02	5.08E-02	5.08E-02	5.08E-02
9-18	8.82E-02	4.72E-02	3.27E-02	2.54E-02	2.54E-02	2.54E-02	2.54E-02	2.54E-02	2.54E-02	2.54E-02	2.54E-02	2.54E-02
18-36	4.41E-02	2.36E-02	1.64E-02	1.27E-02	1.27E-02	1.27E-02	1.27E-02	1.27E-02	1.27E-02	1.27E-02	1.27E-02	1.27E-02

THYROID DOSE FOR STABILITY CLASS A - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	3.00E+03	1.60E+03	1.11E+03	8.63E+02	8.63E+02	8.63E+02	8.63E+02	8.63E+02	8.63E+02	8.63E+02	8.63E+02	8.63E+02
2-4	9.99E+02	5.34E+02	3.71E+02	2.88E+02	2.88E+02	2.88E+02	2.88E+02	2.88E+02	2.88E+02	2.88E+02	2.88E+02	2.88E+02
4-9	4.99E+02	2.67E+02	1.85E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02
9-18	2.50E+02	1.34E+02	9.26E+01	7.19E+01	7.19E+01	7.19E+01	7.19E+01	7.19E+01	7.19E+01	7.19E+01	7.19E+01	7.19E+01
18-36	1.25E+02	6.68E+01	4.63E+01	3.60E+01	3.60E+01	3.60E+01	3.60E+01	3.60E+01	3.60E+01	3.60E+01	3.60E+01	3.60E+01

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TABLE 6

WHOLE BODY DOSE FOR STABILITY CLASS B - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	7.58E+00	1.91E+00	9.43E-01	7.27E-01	6.95E-01	6.51E-01	5.51E-01	5.51E-01	6.51E-01	5.51E-01	5.51E-01	5.51E-01
2-4	2.53E+00	6.38E-01	2.84E-01	1.60E-01	1.10E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01	1.02E-01
4-9	1.26E+00	3.19E-01	1.42E-01	0.00E-02	5.48E-02	5.08E-02	5.08E-02	5.08E-02	5.08E-02	5.08E-02	5.08E-02	5.08E-02
9-18	6.32E-01	1.60E-01	7.11E-02	4.00E-02	2.74E-02	2.54E-02	2.54E-02	2.54E-02	2.54E-02	2.54E-02	2.54E-02	2.54E-02
18-36	3.16E-01	7.98E-02	3.55E-02	2.00E-02	1.37E-02	1.27E-02	1.27E-02	1.27E-02	1.27E-02	1.27E-02	1.27E-02	1.27E-02

THYROID DOSE FOR STABILITY CLASS B - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	2.15E+04	5.42E+03	2.67E+03	2.06E+03	1.69E+03	1.56E+03	1.56E+03	1.56E+03	1.56E+03	1.56E+03	1.56E+03	1.56E+03
2-4	7.16E+03	1.81E+03	8.05E+02	4.53E+02	3.11E+02	2.88E+02	2.88E+02	2.88E+02	2.88E+02	2.88E+02	2.88E+02	2.88E+02
4-9	3.58E+03	9.04E+02	4.03E+02	2.27E+02	1.55E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02	1.44E+02
9-18	1.79E+03	4.52E+02	2.01E+02	1.13E+02	7.77E+01	7.19E+01	7.19E+01	7.19E+01	7.19E+01	7.19E+01	7.19E+01	7.19E+01
18-36	8.94E+02	2.26E+02	1.01E+02	5.67E+01	3.88E+01	3.60E+01	3.60E+01	3.60E+01	3.60E+01	3.60E+01	3.60E+01	3.60E+01

EMERGENCY PROCEDURE 20126, PAGE 17
OFF-SITE DOSE CALCULATIONS

TABLE 7

WHOLE BODY DOSE FOR STABILITY CLASS C - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES 1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	1.93E+01	5.57E+00	2.67E+00	1.68E+00	1.53E+00	1.30E+00	1.13E+00	1.08E+00	1.08E+00	1.08E+00	1.08E+00	1.08E+00
2-4	6.44E+00	1.86E+00	8.92E-01	5.30E-01	3.53E-01	2.54E-01	2.01E-01	1.91E-01	1.91E-01	1.91E-01	1.91E-01	1.91E-01
4-9	3.22E+00	9.28E-01	4.46E-01	2.65E-01	1.77E-01	1.27E-01	9.60E-02	8.10E-02	7.28E-02	6.61E-02	6.60E-02	6.60E-02
9-18	1.61E+00	4.64E-01	2.23E-01	1.32E-01	8.84E-02	6.35E-02	4.80E-02	4.05E-02	3.64E-02	3.31E-02	3.03E-02	2.80E-02
18-36	8.05E-01	2.32E-01	1.11E-01	6.62E-02	4.42E-02	3.17E-02	2.40E-02	2.03E-02	1.82E-02	1.66E-02	1.52E-02	1.40E-02

THYROID DOSE FOR STABILITY CLASS C - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES 1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	5.47E+04	1.58E+04	7.57E+03	5.31E+03	4.34E+03	3.68E+03	3.20E+03	3.05E+03	3.05E+03	3.05E+03	3.05E+03	3.05E+03
2-4	1.82E+04	5.25E+03	2.52E+03	1.50E+03	1.00E+03	7.19E+02	5.68E+02	5.41E+02	5.41E+02	5.41E+02	5.41E+02	5.41E+02
4-9	9.12E+03	2.63E+03	1.26E+03	7.50E+02	5.00E+02	3.60E+02	2.72E+02	2.29E+02	2.06E+02	1.87E+02	1.87E+02	1.87E+02
9-18	4.56E+03	1.31E+03	6.31E+02	3.75E+02	2.50E+02	1.80E+02	1.36E+02	1.15E+02	1.03E+02	9.36E+01	8.59E+01	7.93E+01
18-36	2.28E+03	6.57E+02	3.16E+02	1.87E+02	1.25E+02	8.99E+01	6.80E+01	5.74E+01	5.15E+01	4.68E+01	4.29E+01	3.97E+01

EMERGENCY PROCEDURE 20126, PAGE 18
OFF-SITE DOSE CALCULATIONS

TABLE 8

WHOLE BODY DOSE FOR STABILITY CLASS D - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES 1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	3.92E+01	1.60E+01	9.34E+00	6.33E+00	4.66E+00	3.62E+00	2.92E+00	2.43E+00	2.06E+00	1.78E+00	1.57E+00	1.50E+00
2-4	1.31E+01	5.35E+00	3.11E+00	2.11E+00	1.55E+00	1.21E+00	9.75E-01	8.09E-01	6.87E-01	5.93E-01	5.23E-01	4.98E-01
4-9	7.74E+00	2.97E+00	1.68E+00	1.12E+00	8.17E-01	6.31E-01	5.07E-01	4.19E-01	3.54E-01	3.05E-01	2.68E-01	2.56E-01
9-18	4.74E+00	1.69E+00	9.23E-01	6.03E-01	4.34E-01	3.32E-01	2.65E-01	2.18E-01	1.84E-01	1.58E-01	1.39E-01	1.32E-01
18-36	2.37E+00	8.43E-01	4.61E-01	3.02E-01	2.17E-01	1.66E-01	1.33E-01	1.09E-01	9.19E-02	7.89E-02	6.93E-02	6.60E-02

THYROID DOSE FOR STABILITY CLASS D - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES 1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	1.11E+05	4.54E+04	2.65E+04	1.79E+04	1.32E+04	1.03E+04	8.28E+03	6.88E+03	5.83E+03	5.03E+03	4.44E+03	4.23E+03
2-4	3.70E+04	1.51E+04	8.82E+03	5.97E+03	4.43E+03	3.42E+03	2.76E+03	2.29E+03	1.94E+03	1.68E+03	1.48E+03	1.41E+03
4-9	2.19E+04	8.41E+03	4.77E+03	3.18E+03	2.31E+03	1.79E+03	1.43E+03	1.19E+03	1.00E+03	8.63E+02	7.60E+02	7.25E+02
9-18	1.34E+04	4.77E+03	2.61E+03	1.71E+03	1.23E+03	9.42E+02	7.51E+02	6.18E+02	5.21E+02	4.47E+02	3.92E+02	3.74E+02
18-36	6.71E+03	2.39E+03	1.31E+03	8.54E+02	6.15E+02	4.71E+02	3.76E+02	3.09E+02	2.60E+02	2.23E+02	1.96E+02	1.87E+02

OFF-SITE DOSE CALCULATIONS

TABLE 9

WHOLE BODY DOSE FOR STABILITY CLASS E - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	5.99E+01	2.80E+01	1.70E+01	1.28E+01	9.83E+00	7.93E+00	6.60E+00	5.62E+00	4.88E+00	4.29E+00	3.83E+00	3.44E+00
2-4	2.00E+01	9.34E+00	5.92E+00	4.25E+00	3.28E+00	2.64E+00	2.20E+00	1.87E+00	1.63E+00	1.43E+00	1.28E+00	1.15E+00
4-9	1.34E+01	5.70E+00	3.45E+00	2.41E+00	1.82E+00	1.45E+00	1.19E+00	1.01E+00	8.68E-01	7.60E-01	6.74E-01	6.04E-01
9-18	9.25E+00	3.52E+00	2.02E+00	1.37E+00	1.01E+00	7.93E-01	6.46E-01	5.41E-01	4.64E-01	4.04E-01	3.56E-01	3.15E-01
18-36	4.62E+00	1.76E+00	1.01E+00	6.83E-01	5.06E-01	3.96E-01	3.23E-01	2.71E-01	2.32E-01	2.02E-01	1.78E-01	1.58E-01

THYROID DOSE FOR STABILITY CLASS E - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	1.70E+05	7.94E+04	5.03E+04	3.61E+04	2.78E+04	2.24E+04	1.87E+04	1.59E+04	1.38E+04	1.22E+04	1.08E+04	9.75E+03
2-4	5.65E+04	2.65E+04	1.68E+04	1.20E+04	9.28E+03	7.48E+03	6.23E+03	5.31E+03	4.61E+03	4.05E+03	3.61E+03	3.25E+03
4-9	3.81E+04	1.62E+04	9.76E+03	6.82E+03	5.15E+03	4.10E+03	3.38E+03	2.85E+03	2.46E+03	2.15E+03	1.91E+03	1.71E+03
9-18	2.62E+04	9.98E+03	5.72E+03	3.87E+03	2.86E+03	2.25E+03	1.83E+03	1.53E+03	1.31E+03	1.14E+03	1.01E+03	9.01E+02
18-36	1.31E+04	4.99E+03	2.86E+03	1.93E+03	1.43E+03	1.12E+03	9.15E+02	7.67E+02	6.56E+02	5.72E+02	5.05E+02	4.50E+02

OFF-SITE DOSE CALCULATIONS

TABLE 10

WHOLE BODY DOSE FOR STABILITY CLASS F - (MREM/HR). BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES 1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	1.06E+02	5.40E+01	3.62E+01	2.71E+01	2.15E+01	1.77E+01	1.51E+01	1.30E+01	1.15E+01	1.02E+01	9.22E+00	8.38E+00
2-4	3.52E+01	1.80E+01	1.21E+01	9.03E+00	7.17E+00	5.92E+00	5.02E+00	4.35E+00	3.83E+00	3.41E+00	3.07E+00	2.79E+00
4-9	2.62E+01	1.19E+01	7.54E+00	5.42E+00	4.19E+00	3.39E+00	2.84E+00	2.43E+00	2.12E+00	1.87E+00	1.68E+00	1.51E+00
9-18	1.83E+01	7.65E+00	4.57E+00	3.17E+00	2.39E+00	1.91E+00	1.57E+00	1.33E+00	1.15E+00	1.01E+00	9.03E-01	8.09E-01
18-36	9.13E+00	3.82E+00	2.28E+00	1.59E+00	1.20E+00	9.63E-01	7.87E-01	6.67E-01	5.76E-01	5.06E-01	4.50E-01	4.05E-01

THYROID DOSE FOR STABILITY CLASS F - (MREM/HR). BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES 1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	2.99E+05	1.53E+05	1.03E+05	7.67E+04	6.09E+04	5.03E+04	4.27E+04	3.70E+04	3.25E+04	2.90E+04	2.61E+04	2.37E+04
2-4	9.96E+04	5.10E+04	3.42E+04	2.56E+04	2.03E+04	1.68E+04	1.42E+04	1.23E+04	1.08E+04	9.67E+03	8.71E+03	7.91E+03
4-9	7.42E+04	3.38E+04	2.13E+04	1.53E+04	1.19E+04	9.61E+03	8.04E+03	6.88E+03	6.00E+03	5.30E+03	4.75E+03	4.29E+03
9-18	5.17E+04	2.17E+04	1.29E+04	8.98E+03	6.78E+03	5.40E+03	4.46E+03	3.78E+03	3.26E+03	2.87E+03	2.55E+03	2.29E+03
18-36	2.59E+04	1.08E+04	6.47E+03	4.49E+03	3.39E+03	2.70E+03	2.23E+03	1.89E+03	1.63E+03	1.43E+03	1.28E+03	1.15E+03

EMERGENCY PROCEDURE 20126, PAGE 21
OFF-SITE DOSE CALCULATIONS

TABLE 11

WHOLE BODY DOSE FOR STABILITY CLASS G - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	1.66E+02	9.42E+01	6.76E+01	5.31E+01	4.37E+01	3.72E+01	3.24E+01	2.87E+01	2.57E+01	2.33E+01	2.13E+01	1.96E+01
2-4	5.53E+01	3.14E+01	2.25E+01	1.77E+01	1.46E+01	1.24E+01	1.08E+01	9.55E+00	8.56E+00	7.76E+00	7.09E+00	6.52E+00
4-9	4.70E+01	2.38E+01	1.68E+01	1.18E+01	9.38E+00	7.76E+00	6.60E+00	5.74E+00	5.07E+00	4.53E+00	4.10E+00	3.74E+00
9-18	3.26E+01	1.57E+01	9.97E+00	7.18E+00	5.55E+00	4.50E+00	3.78E+00	3.24E+00	2.83E+00	2.51E+00	2.25E+00	2.04E+00
18-36	1.63E+01	7.87E+00	4.98E+00	3.59E+00	2.78E+00	2.25E+00	1.89E+00	1.62E+00	1.42E+00	1.26E+00	1.13E+00	1.02E+00

THYROID DOSE FOR STABILITY CLASS G - (MREM/HR), BASED ON A 1.0 CI/SEC EMISSION RATE

WIND SPEED (MPH)	DOWNWIND DISTANCE - MILES											
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
0-2	4.70E+05	2.67E+05	1.91E+05	1.50E+05	1.24E+05	1.05E+05	9.17E+04	8.12E+04	7.27E+04	6.59E+04	6.02E+04	5.54E+04
2-4	1.57E+05	8.89E+04	6.38E+04	5.01E+04	4.13E+04	3.51E+04	3.06E+04	2.71E+04	2.42E+04	2.20E+04	2.01E+04	1.85E+04
4-9	1.35E+05	6.74E+04	4.48E+04	3.34E+04	2.66E+04	2.20E+04	1.87E+04	1.63E+04	1.44E+04	1.28E+04	1.16E+04	1.06E+04
9-18	9.22E+04	4.46E+04	2.82E+04	2.03E+04	1.57E+04	1.28E+04	1.07E+04	9.18E+03	8.02E+03	7.12E+03	6.39E+03	5.79E+03
18-36	4.61E+04	2.23E+04	1.41E+04	1.02E+04	7.86E+03	6.38E+03	5.35E+03	4.59E+03	4.01E+03	3.56E+03	3.19E+03	2.89E+03

TABLE 12

ACTION GUIDELINES

For the Containment High Range Radiation Monitor (CHRRM)

CHRRM	≥ 1.3 E 5R/hr	General Emergency
CHRRM	≥ 1.3 E 4R/hr	Site Area Emergency
CHRRM	≤ 10 R/hr	Negligible

For Noble Gas Release Rates (i.e., Ci/sec from the Site):

Gas. Rel. Rate	< 0.067 Ci/sec	Within Technical Specification - No Action
Gas. Rel. Rate	≥ 0.067 but less than 0.67 Ci/sec	Unusual Event - Tech. Spec. possibly exceeded See ETS-B and take steps to reduce rate
Gas. Rel. Rate	≥ 0.67 Ci/sec	ALERT CLASSIFICATION

For Dose Rate Results:

CASE	INSTANTANEOUS	OR DURATION FOR 2 MINUTES OF:	OR DURATION FOR 1/2 HOUR OF:	SITUATION
If Whole Body at 1 mile is:	N/A	≥ 500 mRem/hr	≥ 50 mRem/hr	Site Area Emergency
If Whole Body at 1 mile is:	>1000 mRem/hr	N/A	N/A	General Emergency
If |Thyroid| at 1 mile is:	N/A	≥ 2500 mRem/hr	≥ 250 mRem/hr	Site Area Emergency

For Cumulative Thyroid Integrated Dose:

If Thyroid Integrated Dose at 1 Mile Using Actual Met Data	> 5000 mRem	then	General Emergency

APPENDIX A
BACKUP METEOROLOGY WORKSHEET

In the event data is unavailable from the meteorological strip chart recorder, use the following procedure:

A. GATHER DATA

1. Date:_____ Time:_____
2. Phone Homestead AFB Weather 9-257-7545 (alternately, use red hot line to Homestead AFB, ask to be connected to weather station).
3. Copy current weather:

Time of observation: _____) Eastern) Standard) Daylight) Time

Wind Direction: _____ Degrees

Wind Speed: _____ Knots

Sky Condition: Clear or Scattered _____

Broken _____

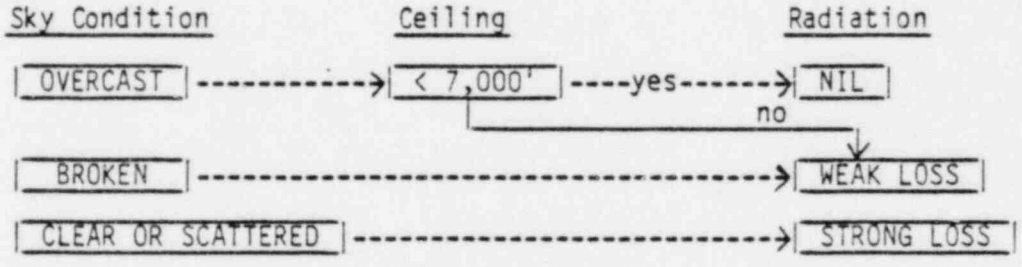
Overcast _____

If broken or overcast copy ceiling height: _____ Ft.

4. If daytime (1 hour after sunrise to 1 hour before sunset) go to Section C (next page). NOTE: See Table I for sunrise/sunset times.

C. NIGHTIME CALCULATIONS

1. Determine Solar Radiation Characteristics:



2. Choose Stability Category (D through G)

Solar Radiation	Wind Speed (knots) 0,1	2,3	4,5	6	7	8,9	10	11	>11
Nil	D	D	D	D	D	D	D	D	D
Weak Loss	F	F	E	E	D	D	D	D	D
Strong Loss	G	G	F	F	E	E	E	D	D

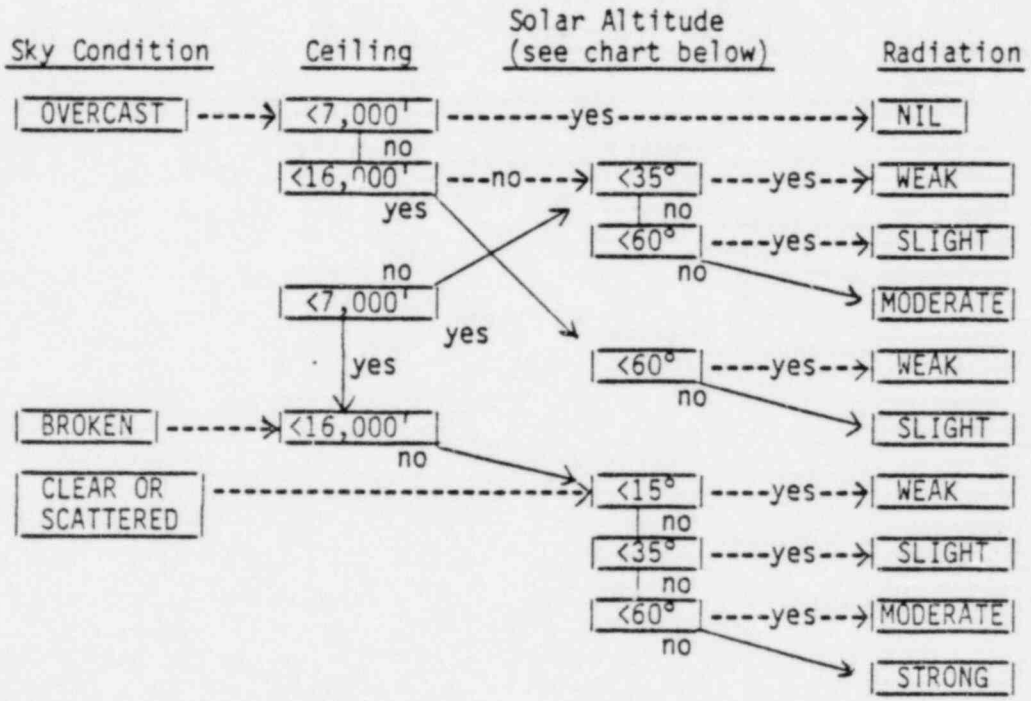
3. Go to Section D

APPENDIX A (cont'd)
BACKUP METEOROLOGY WORKSHEET
TURKEY POINT PLANT

C. DAYTIME CALCULATIONS:

1. Determine solar altitude (angle of sun above horizon) using Figure 1. A ←

2. Determine Solar Radiation Characteristics:



3. Choose Stability Category (A through D)

Solar Radiation	Wind Speed (Knots) 0,1	2,3	4,5	6	7	8,9	10	11	>11
Strong	A	A	A	B	B	B	C	C	C
Moderate	A	B	B	B	B	C	C	C	D
Slight	B	B	C	C	C	C	D	D	D
Weak	C	C	D	D	D	D	D	D	D
Nil	D	D	D	D	D	D	D	D	D

D. INPUT TO DOSE CALCULATION SYSTEM (TABLE 1)

1. Wind Direction (From Step A.3)_____degrees

2. Wind Speed

1.15 x _____(Knots) = _____mph

3. Atmospheric Stability

(From Step B.2 or C.3) (Circle One): A B C D E F G

TABLE 1

SUNRISE AND SUNSET AT MIAMI, FLORIDA

EASTERN STANDARD TIME

NO. 1068

DAY	JAN.		FEB.		MAR.		APR.		MAY		JUNE		JULY		AUG.		SEPT.		OCT.		NOV.		DEC.	
	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.	Rise A.M.	Set P.M.
1	7 08	5 41	7 05	6 04	6 44	6 22	6 12	6 37	5 44	6 52	5 29	7 08	5 33	7 16	5 47	7 07	6 01	6 40	6 13	6 08	6 29	5 39	6 50	5 29
2	7 08	5 42	7 04	6 05	6 43	6 23	6 11	6 38	5 43	6 52	5 29	7 08	5 33	7 16	5 47	7 06	6 01	6 39	6 13	6 07	6 30	5 39	6 51	5 29
3	7 08	5 43	7 04	6 06	6 42	6 23	6 10	6 38	5 43	6 53	5 29	7 09	5 33	7 16	5 48	7 06	6 02	6 38	6 14	6 06	6 30	5 38	6 52	5 29
4	7 08	5 43	7 03	6 07	6 41	6 24	6 09	6 39	5 42	6 53	5 29	7 09	5 34	7 16	5 48	7 05	6 02	6 37	6 14	6 04	[illegible]	5 37	6 52	5 29
5	7 08	5 44	7 03	6 07	6 40	6 25	6 08	6 39	5 41	6 54	5 29	7 10	5 34	7 16	5 49	7 04	6 02	6 36	6 15	6 03	6 32	5 37	6 53	5 30
6	7 09	5 45	7 02	6 08	6 39	6 25	6 07	6 40	5 41	6 54	5 29	7 10	5 35	7 16	5 49	7 04	6 03	6 35	6 15	6 02	6 32	5 36	6 53	5 30
7	7 09	5 45	7 02	6 09	6 39	6 26	6 06	6 40	5 40	6 55	5 29	7 10	5 35	7 16	5 50	7 03	6 03	6 34	6 15	6 01	6 33	5 36	6 54	5 30
8	7 09	5 46	7 01	6 09	6 38	6 26	6 05	6 41	5 39	6 55	5 29	7 11	5 35	7 16	5 50	7 02	6 04	6 33	6 16	6 00	6 34	5 35	6 55	5 30
9	7 09	5 47	7 00	6 10	6 36	6 27	6 04	6 41	5 39	6 56	5 29	7 11	5 36	7 16	5 51	7 01	6 04	6 32	6 16	5 59	6 34	5 35	6 56	5 30
10	7 09	5 48	7 00	6 11	6 35	6 27	6 03	6 41	5 38	6 57	5 29	7 12	5 36	7 16	5 51	7 01	6 04	6 31	6 17	5 58	6 35	5 34	6 56	5 31
11	7 09	5 48	6 59	6 11	6 34	6 28	6 02	6 42	5 37	6 57	5 29	7 12	5 37	7 15	5 52	7 00	6 05	6 30	6 17	5 57	6 36	5 34	6 57	5 31
12	7 09	5 49	6 58	6 12	6 33	6 28	6 01	6 42	5 37	6 58	5 29	7 12	5 37	7 15	5 52	6 59	6 05	6 28	6 18	5 56	6 36	5 33	6 58	5 31
13	7 09	5 50	6 58	6 13	6 32	6 29	6 00	6 43	5 36	6 58	5 29	7 13	5 38	7 15	5 53	6 58	6 06	6 27	6 18	5 55	6 37	5 33	6 58	5 31
14	7 09	5 51	6 57	6 13	6 31	6 29	5 59	6 43	5 36	6 59	5 29	7 13	5 38	7 15	5 53	6 57	6 06	6 26	6 19	5 54	6 38	5 32	6 59	5 32
15	7 09	5 51	6 56	6 14	6 30	6 30	5 58	6 44	5 35	6 59	5 29	7 13	5 38	7 14	5 53	6 56	6 06	6 25	6 19	5 53	6 38	5 32	7 00	5 32
16	7 09	5 52	6 55	6 15	6 29	6 30	5 57	6 44	5 35	7 00	5 29	7 14	5 39	7 14	5 54	6 56	6 07	6 24	6 20	5 52	6 39	5 32	7 00	5 32
17	7 09	5 53	6 55	6 15	6 28	6 30	5 56	6 45	5 34	7 00	5 29	7 14	5 39	7 14	5 54	6 55	6 07	6 23	6 20	5 52	6 40	5 31	7 01	5 33
18	7 09	5 54	6 54	6 16	6 27	6 31	5 55	6 45	5 34	7 01	5 29	7 14	5 40	7 14	5 55	6 54	6 09	6 22	6 21	5 51	6 41	5 31	7 01	5 33
19	7 09	5 55	6 53	6 17	6 26	6 31	5 54	6 46	5 33	7 01	5 29	7 14	5 40	7 13	5 55	6 53	6 08	6 21	6 21	5 50	6 41	5 31	7 02	5 34
20	7 09	5 55	6 52	6 17	6 25	6 32	5 53	6 46	5 33	7 02	5 30	7 15	5 41	7 13	5 56	6 52	6 08	6 20	6 22	5 49	6 42	5 30	7 02	5 34
21	7 09	5 56	6 51	6 18	6 24	6 32	5 53	6 47	5 32	7 02	5 30	7 15	5 41	7 12	5 56	6 51	6 09	6 19	6 23	5 48	6 43	5 30	7 03	5 35
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23	7 08	5 58	6 50	6 19	6 22	6 33	5 51	6 48	5 32	7 03	5 30	7 15	5 42	7 12	5 57	6 49	6 10	6 16	6 24	5 46	6 44	5 30	7 04	5 36
24	7 08	5 58	6 49	6 20	6 21	6 34	5 50	6 48	5 31	7 04	5 31	7 15	5 43	7 11	5 57	6 48	6 10	6 15	6 24	5 45	6 45	5 30	7 04	5 36
25	7 07	5 59	6 48	6 20	6 20	6 34	5 49	6 49	5 31	7 04	5 31	7 16	5 43	7 11	5 58	6 47	6 10	6 14	6 25	5 45	6 46	5 30	7 05	5 37
26	7 07	6 00	6 47	6 21	6 19	6 35	5 48	6 49	5 31	7 05	5 31	7 16	5 44	7 10	5 58	6 46	6 11	6 13	6 25	5 44	6 47	5 29	7 05	5 37
27	7 07	6 01	6 46	6 21	6 18	6 35	5 47	6 50	5 30	7 05	5 31	7 16	5 44	7 10	5 59	6 45	6 11	6 12	6 26	5 43	6 47	5 29	7 06	5 38
28	7 06	6 01	6 45	6 22	6 17	6 36	5 47	6 50	5 30	7 06	5 32	7 16	5 45	7 09	5 59	6 44	6 12	6 11	6 27	5 42	6 48	5 29	7 06	5 39
29	7 06	6 02	6 45	6 22	6 16	6 36	5 46	6 51	5 30	7 06	5 32	7 16	5 45	7 09	6 00	6 43	6 12	6 10	6 27	5 42	6 49	5 29	7 06	5 39
30	7 06	6 03			6 14	6 36	5 45	6 51	5 30	7 07	5 32	7 16	5 46	7 08	6 00	6 42	6 12	6 09	6 28	5 41	6 49	5 29	7 07	5 40
31	7 05	6 04			6 13	6 37			5 29	7 07			5 46	7 07	6 00	6 41			6 23	5 40			7 07	5 40

* Add one hour for Daylight Saving Time if and when in use.

E W Woolard

E. W. WOOLARD
Director Nautical Almanac
U. S. Naval Observatory

I certify that the above data are the result of an accurate and true computation by the Nautical Almanac Office, United States Naval Observatory, an agency charged by Federal Statute (9 Stat. L 374, 375) with the duty of making such computations and publishing the results.

C. G. Christie

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Superintendent
U. S. Naval Observatory

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OFF-SITE DOSE CALCULATIONS

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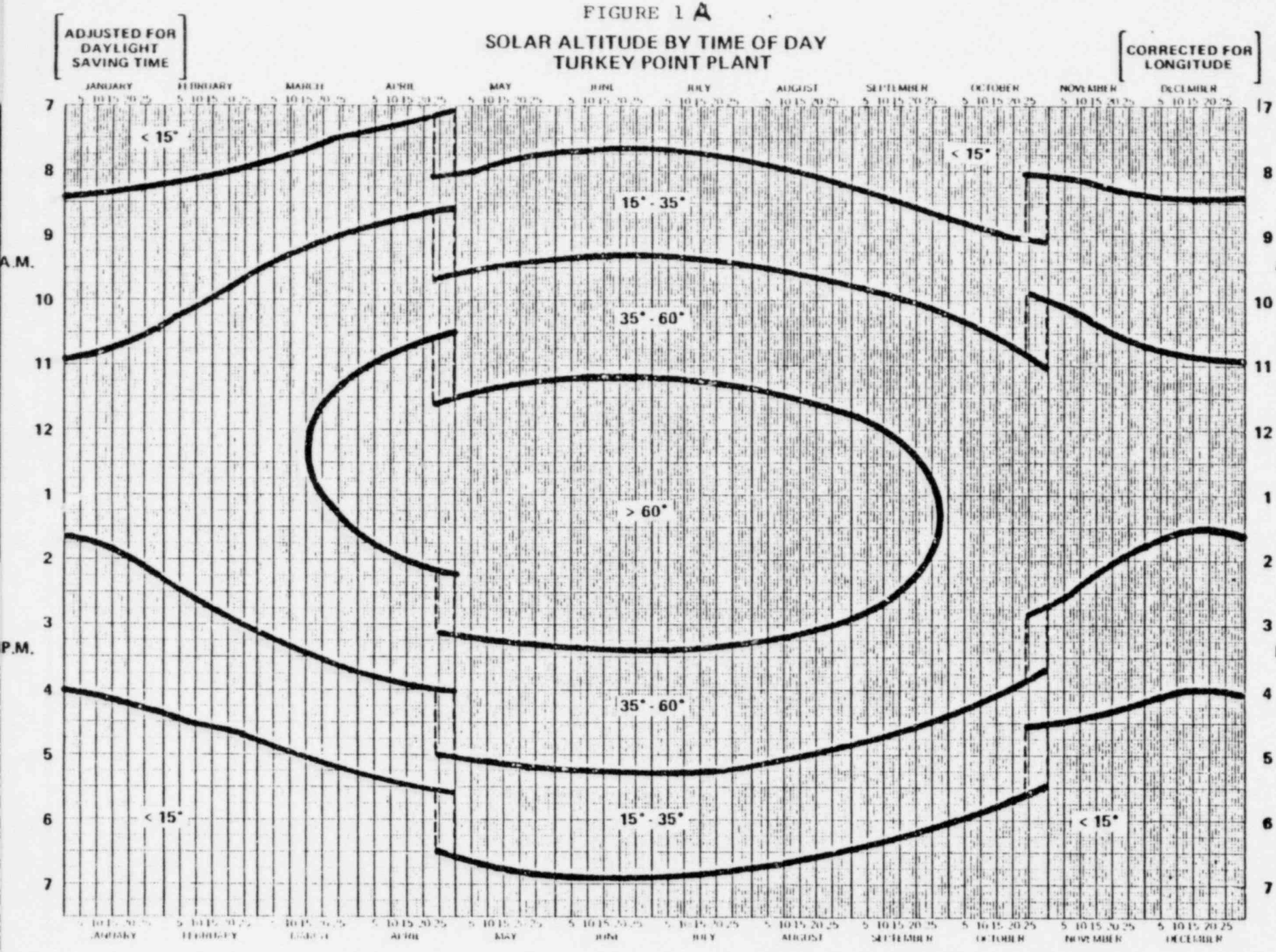
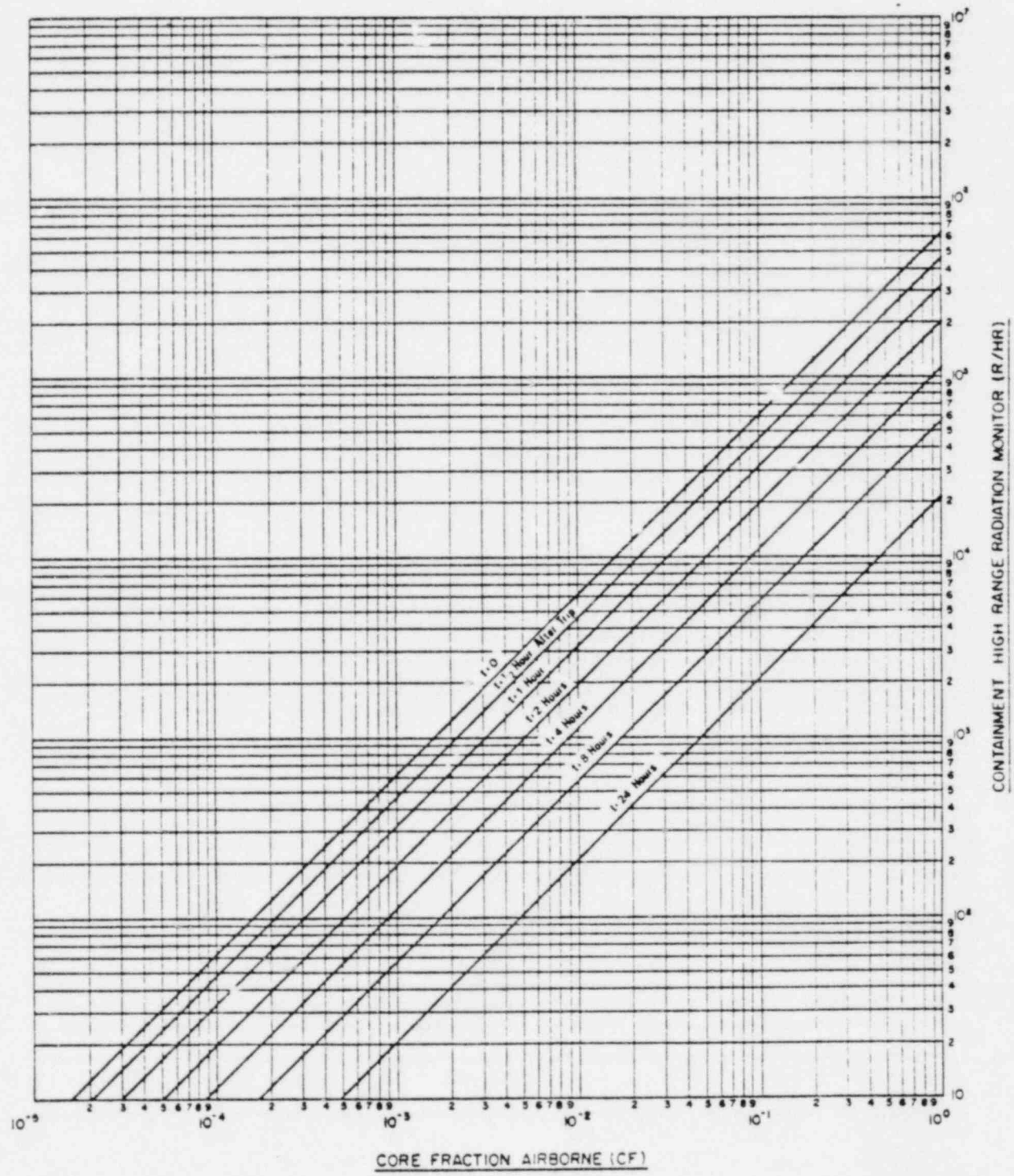
FIGURE 1 A


SOLAR ALTITUDE BY TIME OF DAY
TURKEY POINT PLANT
ADJUSTED FOR DAYLIGHT SAVING TIME
CORRECTED FOR LONGITUDE
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
5 10 15 20 25
7
8
9
A.M.
10
11
12
1
2
3
P.M.
4
5
6
7
< 15°
15° - 35°
35° - 60°
> 60°
< 15°
35° - 60°
15° - 35°
< 15°

EMERGENCY PROCEDURE 20126, PAGE 27
OFF-SITE DOSE CALCULATIONS

FIGURE 1

CORE FRACTION AIRBORNE



EMERGENCY PROCEDURE 20126, PAGE 28
OFF-SITE DOSE CALCULATIONS

NOBLE GAS REDUCTION FACTOR

Figure 2