PSNH

William B. Derrickson
Senior Vice President Nuclear Energy

Public Service of New Hampshire
New Hampshire Yankee Division

May 20, 1986

SBN- 1062
T.F. B7.1.8

United States Nuclear Regulatory Commission
Washington, DC 20555

Attention: Mr. H. R. Denton, Director
Nuclear Reactor Regulation

References:
(a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444
(b) PSNH Letter (SBN-944), dated February 18, 1986, "Submittal by Applicants of Radiological Emergency Response Plans, State of New Hampshire and Affected New Hampshire Communities", G. S. Thomas to H. R. Denton
(c) Letter by State of New Hampshire, Attorney General Environmental Protection Bureau, dated April 18, 1986, "New Hampshire Radiological Emergency Response Plan Submission", G. D. Bisbee to J. DeVincentis
(d) PSNH Letter (SBN-1019), dated April 25, 1986, "Radiological Emergency Response Plans, State of New Hampshire and Affected New Hampshire Communities: Additional Information", G. S. Thomas to H. R. Denton

Subject: Radiological Emergency Response Plans, State of New Hampshire and Affected New Hampshire Communities: Additional Information

Dear Sir:

Enclosed please find four copies of the below listed additional/revised information regarding the Radiological Emergency Response Plans for the State of New Hampshire and affected New Hampshire communities. This information has been transmitted under separate cover to the Federal Emergency Management Agency, Region I.

1. Appendix G of the Department of Public Health Services (DPHS) Procedures (a one-page document).

2. Figures 1A, 1B, 2, 3, 4, and Attachments A and C to Appendix U of the DPHS Procedures.

3. Replacement pages of the following material previously transmitted by Reference (d) which may not have been entirely legible.

A045
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- Tables 11-1 through 11-4 (these tables were originally numbered as Tables 35-38 of KLD Progress Report No. 7)
- Appendix B, Attachment 3 of DPHS Procedures
- Appendix B4, Form 3 of DPHS Procedures
- Appendix O (DAAADE 2) of DPHS Procedures (pgs. O-1, O-3, O-4, O-7, O-8, O-9)
- Appendix P (DAAADE6V4) of DPHS Procedures [Attachment 1, Attachment 2, Attachment 4 - (4 of 5 figures)]
- Appendix T, pg. 2
- Special Facility Emergency Response Plan, Rockingham County Nursing Home, pgs. F.4-8, 9

Also, by way of this letter, we are transmitting one copy of each of this information by prepaid delivery service/mail to the interested parties (i.e., to the ASLB Service List) as well as the ASLB Panel.

Very truly yours,

William B. Derrickson

William B. Derrickson

Enclosures

cc: Atomic Safety and Licensing Board Service List (Offsite EP)

STATE OF NEW HAMPSHIRE

Rockingham, ss. May 20, 1986

Then personally appeared before me, the above-named William B. Derrickson, being duly sworn, did state that he is Senior Vice President of Public Service Company of New Hampshire, that he is duly authorized to execute and file the foregoing information in the name and on the behalf of Public Service Company of New Hampshire, and that the statements therein are true to the best of his knowledge and belief.

Beverly E S Holloway

Beverly Holloway, Notary Public
My Commission Expires: March 6, 1990

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May 15, 1986

Mr. John DeVincentis, Director
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Yankee Atomic Electric Company
1671 Worchester Road
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RE: PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, ET ALS.
(SEABROOK STATION, UNITS 1 AND 2) NOS. 50-443-OL AND 50-444-OL:
NEW HAMPSHIRE RADIOLOGICAL EMERGENCY RESPONSE PLAN SUBMISSION

Dear Mr. DeVincentis:

Enclosed you will find copies of the following documents which were sent by the Civil Defense Agency to FEMA under copy of a May 14, 1986 letter from Richard A. Strome to Henry G. Vickers (a copy of which is also enclosed):

1. Appendix G (a one-page document) and Figures 1A, 1B, 2-4 and Attachments A and C to Appendix U of the DPHS Procedures. These materials were inadvertently omitted from the materials that I sent you on April 18, 1986.

2. Higher quality copies of miscellaneous pages sent you on April 18, 1986 to replace ones which may not be entirely legible. Please note that the enclosed copies of Tables 35-38 of the KLD Progress Report No. 7 have been numbered as Tables 11-1 through 11-4.

In accordance with the procedure we have followed since the March 25-26, 1986 pre-hearing conference, these materials should be served on the Board and the parties. Thank you for your consideration.

Yours truly,

George Dana Bisbee
Senior Assistant Attorney General
Environmental Protection Bureau

GDB/syf
Enclosures
cc: Seabrook Service List

CERTIFICATE OF SERVICE

I, George Dana Bisbee, hereby certify that on the 15th day of May, 1986, I made service of the within documents by mailing copies thereof, postage prepaid, to:

Administrative Judge Helen Hoyt
Chairperson
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May 14, 1986

Mr. Henry G. Vickers, Regional Director
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Dear Mr. Vickers:

Enclosed please find copies of those pages that were missing from our earlier supplemental submission. Included are:

Appendix G
Appendix U
Figures 1A
Figures 1B
Figures 2-4
Attachments A and C

Also enclosed are higher quality copies to replace existing pages which might not be entirely legible. Note that the enclosed copies of Tables 35-38 of KLD Progress Report No. 7 have been renumbered to Tables 11-1 through 11-4.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Richard H. Strome
Director

RHS/sjc

Enc.

APPENDIX G

OFF-SITE MONITORING TEAM KIT - INVENTORY

1. 12 Pens
2. 12 Pencils
3. 6 Magic Markers
4. 25 Blank Survey Forms
5. 23 Pads Community Survey Maps
6. 1 Box D-Cell Batteries
7. 1 MA State Map
8. 1 NH State Map
9. 1 Box Spare Fuses
10. 1 Box Examination Gloves
11. 100 Foot of Radiation Rope
12. 2 Rolls of Masking Tape
13. 2 Rolls of Duct Tape
14. 1 Eberline E-140 Portable Count Rate Meter
15. 2 Eberline HP-210L Shielded Probes and Holder
16. 2 BNC Cables (Spares)
17. 2 Boxes of Particulate Filters
18. 1 DC Cable Air Samplers
19. 25 Silver Ziolite Cartridges
20. 3 Spare Air Sampling Heads
21. 25 Sample Zip Lock Bags
22. 25 Glassine Envelopes
23. 1 Box of Smears
24. 10 Sample Logs
25. 1 Eberline RO2-A Ion-chamber
26. 2 Check Sources (CS-137 - CL-36)
27. 1 Stop Watch
28. 1 Tape Measure
29. 1 Tweezers
30. 1 Dosimeter Charger
31. 1 Copy of ER-5.2
32. 1 VHF Portable Radio

ADDITIONAL EQUIPMENT: (available as needed)

1. 3 Full Face Respirators
2. 3 Iodine Canisters
3. 6 Sets of Protective Clothing (Paper)
4. 25 Pairs of Plastic Shoe Covers
5. 3 Pairs of Boots
6. Dosimetry

FIGURE 1A

Protective Action Recommendation Worksheet for General Population

1. Time of calculation (use 24 hour clock) _____ hours

2. Time of release start _____ hours

3. Release duration _____ hours

4. a. Wind speed _____ mph

   b. Wind direction from _____ degrees

5. Distance to reference location _____ miles

6. Affected subareas (use Items 4B and 5 and Figure 2) _____

7. Plume travel time (Item 5/Item 4a) _____ hours

8. Time until exposure (choose a or b)

   a. If release has begun:

      (1) Difference (Item 1 - Item 2) _____ hours

      (2) Time [Item 7 - Item 8a(1)] _____ hours

   b. If release will begin later:

      (1) Difference (Item 2 - Item 1) _____ hours

      (2) Time [Item 7 - Item 8b(1)] _____ hours

9. Evacuation Conditions

   a. Season (circle one)

      (1) Summer: May 15 - Sept 15
      (see Protective Actions for Seasonal Populations)

      (2) Winter: Sept 15 - May 15

   b. Weather (circle one)

      (1) Normal seasonal weather
      (mild, light rain, light snow)

      (2) Adverse
      (Summer: heavy rain/fog - Winter: heavy snow/ice)

10. Evacuation Time _____ hours

(Use Items 6 and 9 and Figure 3, Evacuation Time Estimates to determine evacuation time.)

11. Exposure Time _____ hours

[Item 10 - Item 8a(2) or 8b(2)]

12. Evacuation Exposure Period _____ hours

(smaller of Item 3 or Item 11)

13. Projected Whole Body Dose _____ R

14. Monitoring Team Whole Body Dose Rate _____ R/hr

15. Monitoring Team Whole Body Dose _____ R

16. Most Reliable Whole Body Dose _____ R

(Item 13 or Item 15)

17. Monitoring Team Thyroid Dose Rate _____ R/hr

18. Monitoring Team Thyroid Dose _____ R

(Item 17 x Item 3)

19. Whole Body Evacuation Dose _____ R

(Item 12 x Item 16/Item 3)

20. Thyroid Evacuation Dose _____ R

(Item 12 x Item 16/Item 3)

21. Whole Body Shelter Dose _____ R

(Item 16 x 0.9)

22. Thyroid Shelter Dose (choose a or b)

a. For release duration if less than 1 hour _____ R
(Item 18 x 0.5)

b. For release duration of greater than 1 hour _____ R
(Item 18 x $[1 - \frac{0.5}{\text{Item 3}}]$

23. Whole Body Indicated Action - refer to Figure 4 _____

(indicate no action, shelter, or evacuation)

24. Thyroid indicated action - refer to Figure 4 _____

(indicate no action, shelter, or evacuation)

25. Recommended Protective Action _____

(Record more severe action from Item 23 or Item 24 on Figure 2)

FIGURE 13

Special Facility Protective Action Worksheet

1. Affected Towns _____

Facility	Whole Body Dose	Shelter Factor	3x4 Shelter Dose	Protective Action

Steps

1. Obtain affected towns from Figure 2.
2. Determine facilities in affected towns from Figure 5.
3. Obtain whole body dose from Item 16 Figure 1A.
4. Obtain Shelter factor from Figure 5.
5. Multiply wholebody dose (3) times shelter factor (4).
6. Determine protective action from Figure 4.

FIGURE 2

PROTECTIVE ACTION RECOMMENDATIONS BY TOWN

DISTANCE	WIND DIRECTION (FROM)	TOWNS	SHELTER	EVACUATE
0-2 Miles	All	SEABROOK, NH HAMPTON, NH HAMPTON FALLS	( )	( )
2-5 Miles	ENE,E,ESE,SE	KENSINGTON, NH SOUTH HAMPTON, NH	( )	( )
	SSE,S,SSW,SW	NORTH HAMPTON, NH	( )	( )
5-10 Miles	ENE,E,ESE, SE,SSE	BRENTWOOD, NH EAST KINGSTON, NH EXETER, NH KINGSTON, NH NEWFIELDS, NH NEWTON, NH STRATHAM, NH	( )	( )
	SSE,S,SSW	GREENLAND, NH NEW CASTLE, NH PORTSMOUTH, NH RYE, NH	( )	( )

RE 3

TOTAL EVACUATION CLEAR TIMES (INCLUDING NOTIFICATION) BY WIND DIRECTION

NORMAL WEATHER (1) (2)

WIND FROM (DEGREES)	0-2 Miles			0-2 Miles Plus 2-5 Miles Downwind			0-5 Miles Plus 5-EPZ Boundary Downwind		
		TIME (HOURS)			TIME (HOURS)			TIME (HOURS)	
	SUB-AREAS	WINTER (1)	SUMMER (2)	SUB-AREAS	WINTER (1)	SUMMER (2)	SUB-AREAS	WINTER (1)	SUMMER (2
NW, N 326 to NE, NE 56				A,B	2.92	5.75	A,B,C, D,E	3.25	6.08
NE, E 56 to 101				A,B,C	2.92	5.75	A,B,C, D,E,F	3.25	6.08
SE 101 to 124				A,C	2.58	5.08	A,B,C, D,F	3.25	6.08
E 124 to 146				A,C,D	2.58	5.25	A,B,C, D,F	3.25	6.08
SSE, S 146 to 191				A,C,D	2.58	5.25	A,B,C, D,F,G	3.25	6.08
SW, SW 191 to 236				A,D	2.58	5.25	A,B,C, D,G	3.25	6.08
SW 236 to 258				A,D	2.58	5.25	A,B,C, D	3.08	6.08
, NW 258 to 303				A	2.58	5.75	A,B,C, D	3.08	6.08
W 303 to 326				A,B	2.92	5.75	A,B,C, D	3.08	6.08
ny direction	A	2.58	5.75						

tes: (1) For winter adverse weather conditions (heavy snow) add 2.5 hours.
(2) For summer adverse weather conditions (heavy rain and fog) add 2.0 hours.

FIGURE 4

PROTECTIVE ACTION RECOMMENDATION GUIDANCE CHARTS

WHOLE BODY GUIDANCE CHART

IF	THEN
Projected dose (Item 16) is less than 1 rem	No action
Shelter dose (Item 21) is less than 5 rem	Shelter
Shelter dose (Item 21) is equal to or greater than 5 rem and evacuation dose (Item 19) is equal to or greater than shelter dose	Shelter
Shelter dose (Item 21) is equal to or greater than 5 rem and evacuation dose (Item 19) is less than shelter dose	Evacuate

THYROID GUIDANCE CHART

Dose (Item 18) is less than 5 rem	No action
Shelter dose (Item 22) is less than 25 rem	Shelter
Shelter dose (Item 22) is equal to or greater than 25 rem and evacuation dose (Item 20) is equal to or greater than shelter dose	Shelter
Shelter dose (Item 22) is equal to or greater than 25 rem and evacuation dose (Item 20) is less than shelter dose	Evacuate

Shelter is to be with ventilation control. Ventilation control means turning off air conditioners or fans, closing doors and windows, thus preventing access of outside air. Proceed to a basement if available.

FIGURE 5

SPECIAL FACILITY SHELTERING FACTORS

Facility	Distance from Seabrook Station	Construction Characteristics	Sheltering Factor (SF)	Outside Projected Whole Body Dose To Warrant Evacuaton
Brentwood				
Rockingham County Nursing Home				
O Blaisdell Bldg.	12-13 mi	Brick Faced, Concrete Frame & Roof	.3	16 rem
O Fernand Bldg.	12-13 mi	Brick Faced, Concrete Frame & Roof	.3	16 rem
O Mitchell Bldg.	12-13 mi	Brick Faced, Concrete Frame & Wood Roof	.4	12 rem
O Underhill Bldg.	12-13 mi	Brick Faced, Wood Frame & Roof	.5	10 rem
Rockingham County Jail	12-13 mi		.1	50 rem
Exeter				
Exeter Hospital				
East Wing	6-7 mi	Brick Faced, Concrete Fram	.3	16 rem
West Wing	6-7 mi	Brick Faced, Poured Concrete - 12"	.1	50 rem
Exeter Health Care	6-7 mi	Brick Faced, Wood Frame	.5	10 rem
Eventide of Exeter	6-7 mi	Brick Faced, Steel Frame	.4	12 rem
Goodwins of Exeter	6-7 mi	Brick Faced, Wood Frame	.5	10 rem
Portsmouth				
Portsmouth Hospital				
O Administration Bldg.	11-12 mi	Brick Faced, Steel Frame, Masonry Walls Wood Roof	.3	16 rem
O Seybolt Bldg.	11-12 mi	Brick Faced, Steel Frame, Masonry Walls Wood Roof	.3	16 rem
O Main Bldg.	11-12 mi	Brick Faced, concrete Frame & Roof	.2	25 rem
Edgewood Manor	11-12 mi	Brick Faced, wood Frame	.5	10 rem
Wentworth Home	11-12 mi	Brick Faced, Wood Frame	.5	10 rem
Clipper Home	11-12 mi	Brick Faced, Partial Concrete Frame, Partial wood Frame	.4	12 rem
Home for Aged Women	11-12 mi	Brick Faced, Poured Concrete	.1	50 rem

ATTACHMENT A

PLANT SYSTEM CONSIDERATIONS FOR EARLY PROTECTIVE ACTION DECISIONMAKING

When considering early protective actions, particularly for seasonal populations, primary concerns are plant conditions and prognosis rather than projected or measured radiological consequences. Particular attention on the part of the decisionmakers should, therefore, be directed to the following pertinent plant systems and conditions:

A. Reactor Coolant System

1. What is reactor vessel level? Is reactor cooling adequate?

2. What is reactor core exit cooling temperature. Is reactor cooling effective?

3. What is reactor coolant pressure? Are pressures increasing or decreasing beyond normal operational pressures?

4. Confirm whether reactor has been shut down.

B. Turbine Generator System

1. What are Steam Line Monitor readings?

2. Do readings indicate primary system to secondary system leakage with radioactivity?

C. Electric Power Systems

1. Are emergency buses - buses E-5 and E-6 - powered?

2. Are the buses powered by off-site power source or by on-site diesel generator source?

D. Radiation Data management System

1. What are readings on Wide Range Gas Monitors on the Primary Vent Stack that would indicate release rates from containment?

2. What are readings on Main Steamline Monitors that would indicate significant levels of activity in the secondary system?

3. What are In-Containment post-LOCA Monitor readings that would indicate increase of activity inside the containment structure?

E. Engineered Safety Features

1. Status of containment integrity? Is containment isolated?

2. Activation of Emergency Core Cooling System? Is there safety injection?

3. Status of containment air pressure? Is pressure inside containment increasing, decreasing, or steady?

4. If pressure inside containment is a concern, what is status of Containment Spray System? Is it available?

F. Meteorological Measurements System

1. Wind Speed?

2. Wind Direction?

3. Precipitation?

4. Atmospheric Stability Class? Affect that stability class would have on plume dispersion?

NOTE ON ATMOSPHERIC STABILITY CLASS:

The meteorological measurement system will provide atmospheric data leading to classification of atmospheric conditions ranging from relative turbulance to relative stability. Atmospheric Stability Classes are:

A - extremely unstable

B - moderately unstable

C - slightly unstable

D - neutral

E - slightly unstable

F - moderately stable

G - very stable

ATTACHMENT C

Emergency Organization Status and Local Conditions

A. Response Status of the State and Town Emergency Organizations

1. The protective action decision must take into consideration the status of state and town emergency personnel and resources and the timing of the protective action announcements to the public.

2. Of particular importance to precautionary actions for the beach areas is the status of the State Police and local police to implement traffic and access controls.

3. Status considerations include:

   a. Availability of personnel

   b. Time required for mobilization

   c. Degree to which mobilization has progressed

   d. Time required for implementation of emergency actions

B. Local Conditions

1. Local conditions within an affected area may constrain protective action decisions and their implementation.

2. Local conditions should be reported to decision makers by local EOC personnel through the IFC at Newington.

3. Pertinent local conditions include:

   a. Conditions of road and evacuation routes considering:

      (1) Seasonal travel impediments

      (2) Status of road repairs

      (3) Surface conditions due to weather

      (4) Natural or man-made impediments

      (5) Affect of traffic signals on traffic flow in direction of evacuation

b. Population density and distribution

c. Evacuation route capabilities

d. Inclement weather conditions that would affect travel (snow, fog, heavy rains, etc.)

e. Local events which may present requirements for special notification, traffic control, transportation assistance

f. Status of schools and other special facilities

TABLE 11-1: NUMBER OF NON-RETURNERS FOR HOUSEHOLDS
WITH 1 CAR AND 1 COMMUTER WHO DRIVES

AMESBURY, MA

HOUSEHOLDS WITH ONE CAR & 1 COMMUTER WHO DRIVES	SIZE OF SUCH HOUSEHOLDS											
	1	2	3	4	5	6	7	8	9	10	UNKNOWN	TOTAL
NO. OF SUCH HOUSEHOLDS:	4	3	2	4	1	0	0	0	0	0	0	14
NO. OF NON RETURNERS :	1	1	0	0	0	0	0	0	0	0	0	2
NO. OF RETURNERS :	1	2	2	4	0	0	0	0	0	0	0	9
NO. OF UNSURE :	2	0	0	0	1	0	0	0	0	0	0	3
NON RETURNERS PCT. :	50.0	33.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	18.2

TAL NO. OF PERSONS REQUIRING TRANSIT : 3
TAL NO. OF PERSONS AT HOME REQUIRING TRANSIT: 2

TABLE 11-2: NUMBER OF NON-RETURNERS FOR HOUSEHOLDS
WITH 2 CARS AND AT LEAST 2 COMMUTERS WHO DRIVE

AMESBURY, MA

HOUSEHOLDS WITH 2 CARS & AT LEAST 2 COMMUTERS	SIZE OF SUCH HOUSEHOLDS											
	1	2	3	4	5	6	7	8	9	10	UNKNOWN	TOTAL
NO. OF SUCH HOUSEHOLDS :	0	15	13	10	4	1	0	0	0	0	0	43
NO. OF NEITHER RETURNED:	0	2	0	0	0	1	0	0	0	0	0	3
NO. OF EITHER RETURNED :	0	13	8	9	3	0	0	0	0	0	0	33
NO. OF UNSURE :	0	0	4	1	1	0	0	0	0	0	0	6
NON RETURNERS PCT. :	0.	13.3	0.	0.	0.	100.0	0.	0.	0.	0.	0.	8.3

TAL NO. OF PERSONS REQUIRING TRANSIT : 9
TAL NO. OF PERSONS AT HOME REQUIRING TRANSIT: 3

TABLE 11-2: NUMBER OF NON-RETURNERS FOR HOUSEHOLDS
WITH 2 CARS AND AT LEAST 2 COMMUTERS WHO DRIVE

AMESBURY, MA

HOUSEHOLDS WITH 2 CARS & AT LEAST 2 COMMUTERS	SIZE OF SUCH HOUSEHOLDS											
	1	2	3	4	5	6	7	8	9	10	UNKNOWN	TOTAL
NO. OF SUCH HOUSEHOLDS :	0	15	13	10	4	1	0	0	0	0	0	43
NO. OF NEITHER RETURNED:	0	2	0	0	0	1	0	0	0	0	0	3
NO. OF EITHER RETURNED :	0	13	8	9	3	0	0	0	0	0	0	33
NO. OF UNSURE :	0	0	4	1	1	0	0	0	0	0	0	6
NON RETURNERS PCT. :	0.	13.3	0.	0.	0.	100.0	0.	0.	0.	0.	0.	8.3

TAL NO. OF PERSONS REQUIRING TRANSIT : 9
TAL NO. OF PERSONS AT HOME REQUIRING TRANSIT: 3

TABLE 11-4: NUMBER OF NON-RETURNERS FOR HOUSEHOLDS
WITH 4 CARS AND AT LEAST 4 COMMUTERS WHO DRIVE

AMESBURY, MA

HOUSEHOLDS WITH 4 CARS AND AT LEAST 4 COMMUTERS	SIZE OF SUCH HOUSEHOLDS											
	1	2	3	4	5	6	7	8	9	10	UNKNOWN	TOTAL
NO. OF SUCH HOUSEHOLDS :	0	0	0	1	0	1	0	1	0	0	0	3
NO. OF NONE RETURNED :	0	0	0	1	0	0	0	0	0	0	0	1
NO. OF AT LEAST 1 RTRND:	0	0	0	0	0	1	0	1	0	0	0	2
NO. OF UNSURE :	0	0	0	0	0	0	0	0	0	0	0	0
NON RETURNERS PCT. :	0.	0.	0.	100.0	0.	0.	0.	0.	0.	0.	0.	33.3

TAL NO. OF PERSONS REQUIRING TRANSIT : 0
TAL NO. OF PERSONS AT HOME REQUIRING TRANSIT: 0

TABLE 11-3: NUMBER OF NON-RETURNERS FROM HOUSEHOLDS
WITH 3 CARS AND AT LEAST 3 COMMUTERS WHO DRIVE

AMESBURY, MA

HOUSEHOLDS WITH 3 CARS AND AT LEAST 3 COMMUTERS	SIZE OF SUCH HOUSEHOLDS											
	1	2	3	4	5	6	7	8	9	10	UNKNOWN	TOTAL
NO. OF SUCH HOUSEHOLDS :	0	0	2	1	0	0	0	0	0	0	0	3
NO. OF NONE RETURNED :	0	0	1	0	0	0	0	0	0	0	0	1
NO. OF AT LEAST 1 RTRND:	0	0	1	1	0	0	0	0	0	0	0	2
NO. OF UNSURE :	0	0	0	0	0	0	0	0	0	0	0	0
NON RETURNERS PCT. :	0.	0.	50.0	0.	0.	0.	0.	0.	0.	0.	0.	33.3

NO. OF PERSONS REQUIRING TRANSIT : 0
NO. OF PERSONS AT HOME REQUIRING TRANSIT: 0

TABLE 11-4: NUMBER OF NON-RETURNERS FOR HOUSEHOLDS
WITH 4 CARS AND AT LEAST 4 COMMUTERS WHO DRIVE

AMESBURY, MA

HOUSEHOLDS WITH 4 CARS AND AT LEAST 4 COMMUTERS	SIZE OF SUCH HOUSEHOLDS											
	1	2	3	4	5	6	7	8	9	10	UNKNOWN	TOTAL
NO. OF SUCH HOUSEHOLDS :	0	0	0	1	0	1	0	1	0	0	0	3
NO. OF NONE RETURNED :	0	0	0	1	0	0	0	0	0	0	0	1
NO. OF AT LEAST 1 RTRND:	0	0	0	0	0	1	0	1	0	0	0	2
NO. OF UNSURE :	0	0	0	0	0	0	0	0	0	0	0	0
NON RETURNERS PCT. :	0.	0.	0.	100.0	0.	0.	0.	0.	0.	0.	0.	33.3

TAL NO. OF PERSONS REQUIRING TRANSIT : 0
TAL NO. OF PERSONS AT HOME REQUIRING TRANSIT: 0

SAFETY INFORMATION

The United States Department of Labor, through the provisions of the Occupational Safety and Health Act of 1970 (OSHA), has established an electromagnetic energy safety standard which applies to the use of this equipment. Proper use of this radio will result in exposure below the OSHA limit.

DO NOT operate the transmitter of a mobile radio when someone outside the vehicle is within two feet (0.6 meter) of the antenna.

DO NOT operate the transmitter of any radio unless all RF connectors are secure and any open connectors are properly terminated.

DO NOT hold the transmit (PTT) switch on when not actually desiring to transmit.

DO NOT allow children to play with any radio equipment containing a transmitter.

DO NOT operate a transmitter near unshielded electrical blasting caps or in an explosive atmosphere unless it is a type especially qualified for such use.

Portable Products Division
8000 W. Sunrise Blvd., Ft. Lauderdale, FL 33322
Printed in U.S.A. 3/31 - IH

MOTOROLA

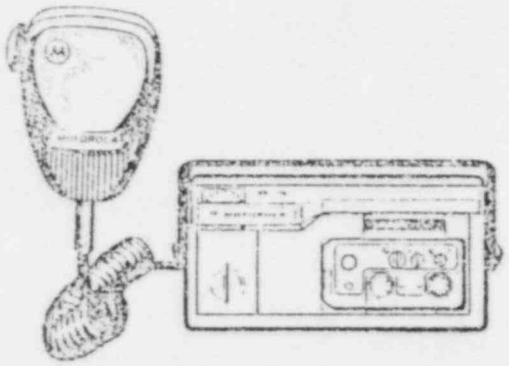
OPERATING INSTRUCTIONS

FOR YOUR

"CONVERTA-COM"
Mobile Radio Console

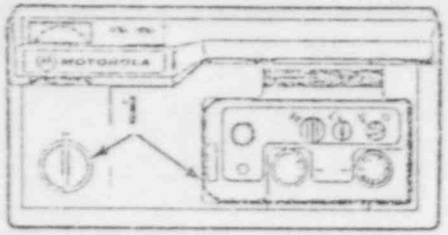
with

MX300 Series "Handie-Talkie" Radios



68P81010C80-C

INSTALL THE RADIO IN THE CONSOLE

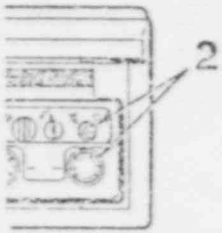


- Remove side connector dust cover from portable radio; save it for future use.
- Place the portable radio in the console pocket so the radio speaker grille faces the bottom of the console.
- Push the radio (not the pocket) until it latches (top of the radio about flush with the top of the console).
- Turn the key clockwise to lock the radio in the pocket.
- The key may be removed from the lock when in its locked or unlocked position.

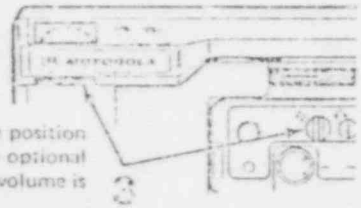
NOTE

A companion MX200 Series "Handie-Talkie" portable radio must be installed in the console for mobile two-way radio operation. The following procedures describe typical operation with a portable radio containing all the standard features, including "Private-Line" squelch. Disregard procedures referring to controls not contained on your radio.

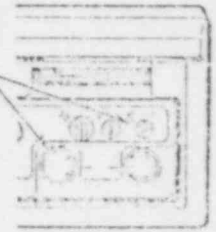
TURN ON, SET VOLUME, SET SQUELCH, AND MONITOR



- Rotate the portable radio volume control one-half turn clockwise to turn on the radio. This also turns on the night light which illuminates the radio controls. The night light is also turned on when the ignition switch is turned on.
- Place the PL switch in its off (o) position.

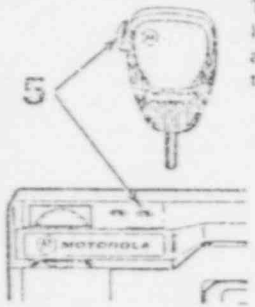


- Rotate the radio squelch control to the maximum counterclockwise position and set the volume control to a comfortable listening level. If the optional 12-watt speaker is used, the radio volume control is disabled and the volume is now controlled by the console volume control.
- When the channel is clear, slowly rotate the squelch control clockwise until the noise stops (squelches).



- Set the frequency selector on the radio to the desired channel and listen for broadcasts.
- Place the PL switch in the on position (□) after monitoring.

TRANSMIT AND RECEIVE WHEN CHANNEL IS CLEAR



To transmit, place the ignition switch in its on position. Hold the push-to-talk switch depressed (on the microphone) and speak normally across the microphone with lips about two inches from the grille.

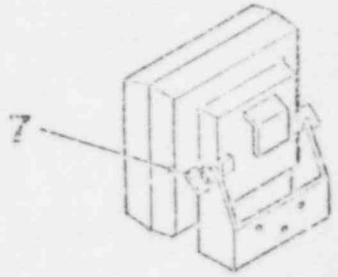
NOTE

The red transmitter indicator lamp glows when the transmitter is on-the-air.

6 When finished talking, release the push-to-talk switch to permit receiving.

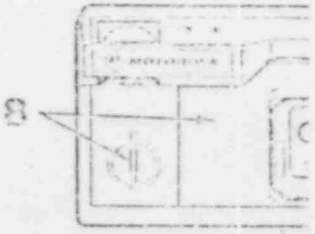
RELOCATE SPEAKER WHILE OUTSIDE THE VEHICLE

- If the console is equipped with either the ½ watt or 12-watt speaker option, loosen -- do not remove -- the two wing screws holding the speaker in the bracket and lift the speaker from the bracket.
- Lower the window slightly in the vehicle and clip the speaker over the top of the window. This permits hearing calls in the area around the vehicle.



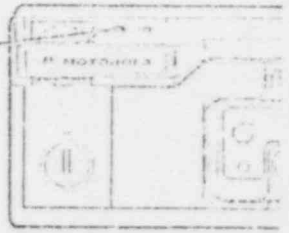
REMOVE RADIO WHEN LEAVING THE VEHICLE

Turn the key counterclockwise to unlock the radio, and while still holding the key push the key lock barrel. The radio and pocket will spring forward for easy removal of the portable radio. Pull the radio out of the console and refer to the portable radio manual for operation. Turn off the ignition switch for minimum current drain. Replace side connector dust cover back on portable radio.



KEEP THE BATTERY CHARGED IN THE RADIO

The battery in the radio is automatically recharged while installed in the console with the ignition switch on. If the radio has a standard-charge battery, the green charge lamp glows all the time the radio is in the console pocket. If the radio has a rapid-charge battery, the green charge lamp glows until the battery is charged.



APPENDIX F4 - FORM 3

PROCEDURE AND DIRECTIONS IN DRIVING YOUR VEHICLE TO THE CAR WASH.

This procedure is for externally contaminated vehicles only.

1. Notify the firefighter responsible for your vehicle that you are ready to go to the vehicle wash.

   Do not use your vehicle without first seeing the firefighter because you could get contaminated.

2. Follow the firefighter's instructions in getting into your vehicle.

3. Once in the vehicle, do not get out (unless an emergency) until the vehicle has been washed.

4. Close all vents. Do not use the vehicle's heater or air conditioner and close all vents and windows and do not open them even if it is uncomfortable.

5. Do not, eat, drink or smoke in the vehicle.

6. For your protection, after the vehicle has been washed, come back to the Reception Center so your vehicle may be remonitored.

7. For you and your loved ones protection, follow the firefighter's instructions!

APPENDIX O

Dose Assessment and Atmospheric Dispersion Estimates

"DAAADE"

Defined Programs[1]

Program	Label
Sigma(Y) - PSC A	A
" - PSC B	B
" - PSC C	D
" - PSC D	F
" - PSC E	G
" - PSC F	H
Sigma(Z) - PSC A	Z
" - PSC B	X
" - PSC C	C
" - PSC D	V
" - PSC E	B
" - PSC F	N
Input ADE parameters	J
General equation	K
Ground level equation	L
Centerline(GL) equation	M
Ground level source eq.	SPC
Dose estimate	=

Undefined Programs[2]

Program	Start line
Y-distance, centerline to isopleth	90
Isopleth concentration for given dose	100

Reserve Programs[3]

Program	Label
mph to mps	A
mi to km	S
ft to m	D
mps to mph	Z
km to mi	X
m to ft	C

(1) must be in DEF mode
(2) must be in DEF or RUN mode
(3) must be in RUN mode

Storage Register Contents

Register	Content	Units
A	an exponent	-
B	an exponent	-
C	Chi	curies/cubic meter
D	dose	rems
E	factor for R.100	-
F	factor for R.100	-
G	factor for R.100	-
H	eff. stack height	meters
I	Chi(isopleth)	curies/cubic meter
J	Sigma(Y)	meters
K	Sigma(Z)	meters
L	an exponent	-
M	an exponent	-
Q	emission rate	curies/sec
R	dose rate	mR /hr
T	time	hrs
U	wind speed	meters/sec
$S	a string variable	-
X	downwind distance	kilometers
Y	crosswind distance	meters
Z	vertical distance	meters

Values of E, F, and G

	G	F
E	1.0129	1.0105
F	.001	-.169 * LNT + .975
G	11.7652	14.335

11/18/85

APPENDIX C

Example Problem

= D		Z = 0 meters	
X = 3 mi		H = 150 ft	
Q = 100 Ci/sec		Problem = radioiodine (P)	
U = 10 mph		T = 1 hr	
Y = 0 meters		D (max. acc.) = 5 rems	

Keystroke sequence	Output	Value
(RUN MODE) X = 3, SHFT S, ENTER U = 10, SHFT A, ENTER H = 150, SHFT D, ENTER	X (km) U (mps) H (m)	4.828041264 4.469473496 45.72
(DEF MODE) SHFT F, downwind distance (X), ENTER SHFT V, downwind distance (X), ENTER	Sigma (Y) (m) Sigma (Z) (m)	277 84
SHFT J, emission rate (100), ENTER, wind speed (U), ENTER, crosswind distance (0), ENTER, vertical distance (0), ENTER, effective stack height (H), ENTER	EQ?	--
f M	Chi (gnd lvl, ctrln) (Ci/m^3)	2.62E-04
SHFT =, P, ENTER, C, ENTER, TIME (1), ENTER	child's thyroid dose (rems)	395
R.100, ENTER, dose (max. acc.) (5), ENTER, time (T), ENTER, factor (-1.69 * LNT + .975), ENTER, factor (1.0105), ENTER, factor (14.335), ENTER ENTER	dose (max. acc.) (rems) Chi (isopleth) (Ci/m^3)	5 3.4E-06
R.90, ENTER, J, ENTER, C, ENTER, I, ENTER ENTER	downwind distance (X) (km) crosswind distance (Y) (m)	4 (truncated) 815
(RUN MODE) Y, SHFT C, /, 5280, ENTER	crosswind distance (mi)	0.5064175217

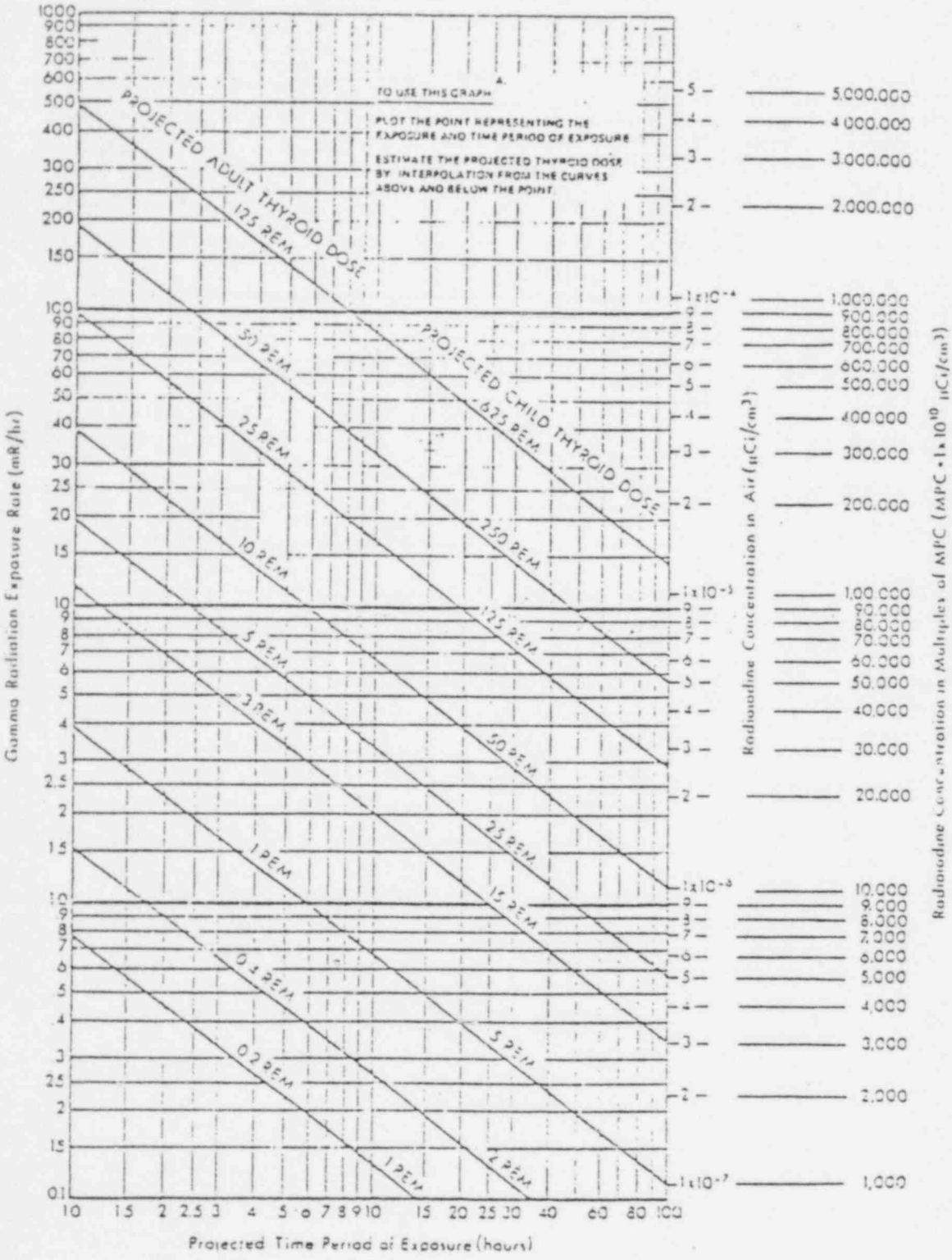
Relation of atmospheric stability class to weather conditions

A - Extremely unstable conditions
B - Moderately unstable conditions
C - Slightly unstable conditions
D - Neutral conditions*
E - Slightly stable conditions
F - Moderately stable conditions

Surface wind speed		Daytime conditions Solar radiation			Nighttime conditions	
MPH	m/sec	Strong	Moderate	Slight	Thin overcast or >4/8 cloudiness*	<3/8 cloudiness
<3	<2	A	A-B	B		
3	2	A-B	B	C	E	F
6.5	4	B	B-C	C	D	E
10	6	C	C-D	D	D	D
	>6	C	D	D	D	D

*Applicable to heavy overcast, day or night

The degree of cloudiness is defined as that fraction of the sky above the local apparent horizon which is covered by clouds.



PROJECTED THYROID DOSE AS A FUNCTION OF GAMMA RADIATION EXPOSURE RATE AND PROJECTED TIME PERIOD OF EXPOSURE

A USE OF THIS FIGURE ASSUMES THAT THE RADIOIODINE:NOBLE GAS ACTIVITY RATIO (R3) IS 1. IF IT IS KNOWN THAT THIS RATIO HAS A LOWER VALUE, THE CORRECTION FACTOR GIVEN IN FIGURE 5.1 SHOULD BE USED.

```
"DATA DG"
    1/29/82

 1:"A":INPUT "X
   =";X:J=EXP (
   .8666*LN X+5
   .3336):GOTO
   19
 2:"S":INPUT "X
   =";X:J=EXP (
   .8805*LN X+5
   .0268):GOTO
   19
 3:"D":INPUT "X
   =";X:J=EXP (
   .8978*LN X+4
   .6341):GOTO
   19
 4:"F":INPUT "X
   =";X:J=EXP (
   .9027*LN X+4
   .2036):GOTO
   19
 5:"G":INPUT "X
   =";X:J=EXP (
   .9046*LN X+3
   .9071):GOTO
   19
 6:"H":INPUT "X
   =";X:J=EXP (
   .9181*LN X+3
   .4712):GOTO
   19
 7:"Z":INPUT "X
   =";X:IF X<=.
   5LET K=EXP (
   1.2335*LN X+
   5.4242):GOTO
   20
 8:K=EXP (2.103
   5*LN X+6.115
   4):GOTO 20
 9:"X":INPUT "X
   =";X:IF X<=.
   7LET K=EXP (
   .9759*LN X+4
   .6126):GOTO
   20
10:K=EXP (1.094
   1*LN X+4.695
   ):GOTO 20
11:"C":INPUT "X
   =";X:IF X<=.
   8LET K=EXP (
   .9145*LN X+4
   .1087):GOTO
   20
12:K=EXP (.9112
   *LN X+4.1203
   ):GOTO 20
13:"V":INPUT "X
   =";X:IF X<=1
   LET K=EXP (.
   8264*LN X+3.
   474):GOTO 20
14:K=EXP (.5833
   *LN X+3.5186
   ):GOTO 20
15:"B":INPUT "X
   =";X:IF X<=.
   9LET K=EXP (
   .7861*LN X+3
   .095):GOTO 2
   0
16:K=EXP (.4704
   *LN X+3.2106
   ):GOTO 20
17:"N":INPUT "X
   =";X:IF X<=.
   8LET K=EXP (
   .7993*LN X+2
   .6776):GOTO
   20
18:K=EXP (.4248
   *LN X+2.7449
   ):GOTO 20
19:PRINT USING
   "#######";"S(
   Y)=",J:STOP
20:PRINT USING
   "#######";"S(
   Z)=",K:STOP
21:"J":INPUT "Q
   =";Q,"U=";U,
   "Y=";Y,"Z=";
   Z,"H=";H
22:A=EXP (-.5*(
   Y/J)^2:B=EXP
   (-.5*(Z-H)/K
   *(Z-H)/K):L=
   EXP (-.5*(Z+
   H)/K*(Z+H)/K
   )
23:M=EXP (-.5*(
   H/K)^2):GOTO
   29
24:"K":C=Q/(2*Π
   *J*K*U)*A*(B
   +L):GOTO 28
25:"L":C=Q/(Π*J
   *K*U)*A+M:
   GOTO 28
26:"M":C=Q/(Π*J
   *K*U)*M:GOTO
   28
27:" ":C=Q/(Π*J
   *K*U):GOTO 2
   8
28:PRINT USING
   "##.##^^";"CH
   =",C:STOP
29:PRINT "EQ?":
   STOP
41:"=":INPUT "G
   OR P?";W$
42:IF W$="G"
   GOTO 44
43:GOTO 50
44:INPUT "CH(G)
   =";C,"TIME="
   ;T
45:R=EXP (1.012
   9*LN C+11.76
   52):D=R*T/10
   00:D=INT (D+
   .5)
46:PRINT USING
   "###";"WB=",
   D
47:END
50:INPUT "CH(P)
   =";C,"TIME="
   ;T
51:R=EXP (1.010
   5*LN C+14.33
   5):D=R*T*(-.
   169*LN T+.97
   5):D=INT (D+
   .5)
52:PRINT USING
   "####";"CT="
   ,D
53:END
90:INPUT "S(Y)=
   ";J,"CHI/C="
   ;C,"CHI/I=";
   I
91:Y=J*√(LN (I/
   C)/-.5):Y=
   INT (Y+.5)
92:PRINT USING
   "#######";"X=
   ",X:PRINT "Y
   =",Y
93:END
100:INPUT "D=";D
   ,"T=";T,"F="
   ;F,"E=";E,"G
   =";G
101:I=EXP ((LN (
   D/T/F)-G)/E)
102:PRINT USING
   "####";"D=",
   D:PRINT
   USING "##.#^
   ^";"I=",I
103:END
```

"LOCATOR"
1/2/82

```
 10:"L":CLEAR :
    INPUT "A=";A
    ,"E=";E,"N="
    ;N
 20:O=E-31800:F=N
    -39210:Z=A-7
    6
 30:D=ATN ABS (F
    /O)
 35:S=√(F*F+O*O)
 40:D=90-D
 50:IF O>=0GOTO
    70
 60:IF O<0GOTO 9
    0
 70:IF F>=0LET D
    =D:GOTO 110
 80:IF F<0LET D=
    180-D:GOTO 1
    10
 90:IF F<0LET D=
    180+D:GOTO 1
    10
100:IF F>=0LET D
    =360-D:GOTO
    110
110:INPUT "WD=";
    W
120:IF D>WLET G=
    D-W:GOTO 138
130:G=W-D:GOTO 1
    38
138:IF G>=45
    PRINT "NO EF
    FECT":END
140:X=S*COS G/E3
    :Y=S*SIN G
142:X=INT (X*10+
    .5)/10:Y=INT
    (Y+.5)
144:PRINT USING
    "####.#";"X=
    ",X
146:PRINT USING
    "########";"Y
    =",Y
148:PRINT USING
    "#####";"Z="
    ,Z
150:CHAIN "DAAAD
    E"
```

DAAADE6V4

ATTACHMENT 1

METPAC — PLUME TRACKING AND DOSE ASSESSMENT PROGRAM 1/ 8/86 14: 1

GROUND RELEASE PLUME PROJECTION FROM 12: 0

STRAIGHT LINE PLUME PROJECTION INFORMATION

DIST (MI)	ANG (DEG)	ARRIVAL TIME (HR:MN)	GAMMA D.R. (mR/HR)	INF THY DR (R/HR)	ADU THY DR (R/HR)	GAMMA X/Q (SEC/M**3)	DEPLETED X/Q (SEC/M**3)	DEPOSITION (1/M**2)
.60	270.	12: 2	1.97E 4	0.00E -1	0.00E -1	3.74E -6	5.89E -6	2.37E -7
1.00	270.	12: 4	1.05E 4	0.00E -1	0.00E -1	2.00E -6	2.35E -6	9.46E -8
2.00	270.	12: 8	3.83E 3	0.00E -1	0.00E -1	7.29E -7	6.46E -7	2.60E -8
3.00	270.	12:12	1.99E 3	0.00E -1	0.00E -1	3.78E -7	3.00E -7	1.21E -8
4.00	270.	12:16	1.22E 3	0.00E -1	0.00E -1	2.33E -7	1.74E -7	7.00E -9
5.00	270.	12:20	8.30E 2	0.00E -1	0.00E -1	1.58E -7	1.14E -7	4.57E -9
6.00	270.	12:24	6.04E 2	0.00E -1	0.00E -1	1.15E -7	8.04E -8	3.23E -9
7.00	270.	12:28	4.62E 2	0.00E -1	0.00E -1	8.79E -8	6.02E -8	2.42E -9
8.00	270.	12:32	3.69E 2	0.00E -1	0.00E -1	7.04E -8	4.73E -8	1.90E -9
9.00	270.	12:36	3.08E 2	0.00E -1	0.00E -1	5.86E -8	3.88E -8	1.56E -9
10.00	270.	12:40	2.66E 2	0.00E -1	0.00E -1	5.06E -8	3.31E -8	1.33E -9

PROTECTIVE ACTION RECOMMENDATIONS

DIST (MI)	ANG (DEG)	2 HR EVAC GAMMA DOSE (mR)	2 HR SHEL GAMMA DOSE (mR)	2 HR EVAC INF THY DO (R)	2 HR SHEL INF THY DO (R)	PAG
.60	270.	3.93E 4	3.54E 4	0.00E -1	0.00E -1	SHEL
1.00	270.	2.10E 4	1.89E 4	0.00E -1	0.00E -1	SHEL
2.00	270.	7.65E 3	6.89E 3	0.00E -1	0.00E -1	SHEL
3.00	270.	3.97E 3	3.58E 3	0.00E -1	0.00E -1	SHEL
4.00	270.	2.44E 3	2.20E 3	0.00E -1	0.00E -1	SHEL
5.00	270.	1.66E 3	1.49E 3	0.00E -1	0.00E -1	SHEL
6.00	270.	1.21E 3	1.09E 3	0.00E -1	0.00E -1	SHEL
7.00	270.	9.24E 2	8.31E 2	0.00E -1	0.00E -1	
8.00	270.	7.39E 2	6.65E 2	0.00E -1	0.00E -1	
9.00	270.	6.16E 2	5.54E 2	0.00E -1	0.00E -1	
10.00	270.	5.32E 2	4.78E 2	0.00E -1	0.00E -1	

DIST (MI)	ANG (DEG)	4 HR EVAC GAMMA DOSE (mR)	4 HR SHEL GAMMA DOSE (mR)	4 HR EVAC INF THY DO (R)	4 HR SHEL INF THY DO (R)	PAG
.60	270.	5.50E 4	7.08E 4	0.00E -1	0.00E -1	EVAC
1.00	270.	2.90E 4	3.77E 4	0.00E -1	0.00E -1	EVAC
2.00	270.	1.03E 4	1.38E 4	0.00E -1	0.00E -1	EVAC
3.00	270.	5.90E 3	7.15E 3	0.00E -1	0.00E -1	EVAC
4.00	270.	3.55E 3	4.40E 3	0.00E -1	0.00E -1	SHEL
5.00	270.	2.36E 3	2.99E 3	0.00E -1	0.00E -1	SHEL
6.00	270.	1.87E 3	2.17E 3	0.00E -1	0.00E -1	SHEL
7.00	270.	1.40E 3	1.66E 3	0.00E -1	0.00E -1	SHEL
8.00	270.	1.10E 3	1.33E 3	0.00E -1	0.00E -1	SHEL
9.00	270.	8.93E 2	1.11E 3	0.00E -1	0.00E -1	SHEL
10.00	270.	7.53E 2	9.57E 2	0.00E -1	0.00E -1	SHEL

* EVACUATE -
* EVACUATE -
* EVACUATE -

EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON
EVACUATE - SALISBURY, AMESBURY
EVACUATE - SOUTH HAMPTON, KENSINGTON

* SHELTER - SEABROOK, HAMPTON FALLS, HAMPTON
* SHELTER - SALISBURY, AMESBURY
* SHELTER - SOUTH HAMPTON, KENSINGTON
* SHELTER -
* SHELTER - NORTH HAMPTON
* SHELTER - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC
* SHELTER - STRATHAM, NEWFIELD, EXETER, BRENTWOOD
* SHELTER - KINGSTON, E. KINGSTON, NEWTON

SHELTER - NORTH HAMPTON
SHELTER - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC
SHELTER - STRATHAM, NEWFIELD, EXETER, BRENTWOOD
SHELTER - KINGSTON, E. KINGSTON, NEWTON
SHELTER -
SHELTER -
SHELTER -
SHELTER -

DIST (MI)	ANG (DEG)	6 HR EVAC GAMMA DOSE (mR)	6 HR SHEL GAMMA DOSE (mR)	6 HR EVAC INF THY DO (R)	6 HR SHEL INF THY DO (R)	PAG
.60	270.	5.50E 4	1.06E 5	0.00E -1	0.00E -1	EVAC
1.00	270.	2.90E 4	5.66E 4	0.00E -1	0.00E -1	EVAC
2.00	270.	1.03E 4	2.07E 4	0.00E -1	0.00E -1	EVAC
3.00	270.	5.90E 3	1.07E 4	0.00E -1	0.00E -1	EVAC
4.00	270.	3.55E 3	6.60E 3	0.00E -1	0.00E -1	EVAC
5.00	270.	2.36E 3	4.48E 3	0.00E -1	0.00E -1	SHEL
6.00	270.	1.87E 3	3.26E 3	0.00E -1	0.00E -1	SHEL
7.00	270.	1.40E 3	2.49E 3	0.00E -1	0.00E -1	SHEL
8.00	270.	1.10E 3	1.99E 3	0.00E -1	0.00E -1	SHEL
9.00	270.	8.93E 2	1.66E 3	0.00E -1	0.00E -1	SHEL
10.00	270.	7.53E 2	1.44E 3	0.00E -1	0.00E -1	SHEL

DIST (MI)	ANG (DEG)	8 HR EVAC GAMMA DOSE (mR)	8 HR SHEL GAMMA DOSE (mR)	8 HR EVAC INF THY DO (R)	8 HR SHEL INF THY DO (R)	PAG
.60	270.	5.50E 4	1.42E 5	0.00E -1	0.00E -1	EVAC
1.00	270.	2.90E 4	7.54E 4	0.00E -1	0.00E -1	EVAC
2.00	270.	1.03E 4	2.76E 4	0.00E -1	0.00E -1	EVAC
3.00	270.	5.90E 3	1.43E 4	0.00E -1	0.00E -1	EVAC
4.00	270.	3.55E 3	8.79E 3	0.00E -1	0.00E -1	EVAC
5.00	270.	2.36E 3	5.98E 3	0.00E -1	0.00E -1	EVAC
6.00	270.	1.87E 3	4.35E 3	0.00E -1	0.00E -1	SHEL
7.00	270.	1.40E 3	3.32E 3	0.00E -1	0.00E -1	SHEL
8.00	270.	1.10E 3	2.66E 3	0.00E -1	0.00E -1	SHEL
9.00	270.	8.93E 2	2.22E 3	0.00E -1	0.00E -1	SHEL
10.00	270.	7.53E 2	1.91E 3	0.00E -1	0.00E -1	SHEL

* EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON
* EVACUATE - SALISBURY, AMESBURY
* EVACUATE - SOUTH HAMPTON, KENSINGTON
* SHELTER - NORTH HAMPTON
* SHELTER - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC
* SHELTER - STRATHAM, NEWFIELD, EXETER, BRENTWOOD
* SHELTER - KINGSTON, E. KINGSTON, NEWTON

EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON
EVACUATE - SALISBURY, AMESBURY
EVACUATE - SOUTH HAMPTON, KENSINGTON
SHELTER - NORTH HAMPTON
SHELTER - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC
SHELTER - STRATHAM, NEWFIELD, EXETER, BRENTWOOD
SHELTER - KINGSTON, E. KINGSTON, NEWTON

11110.4101

1 HOUR(S)

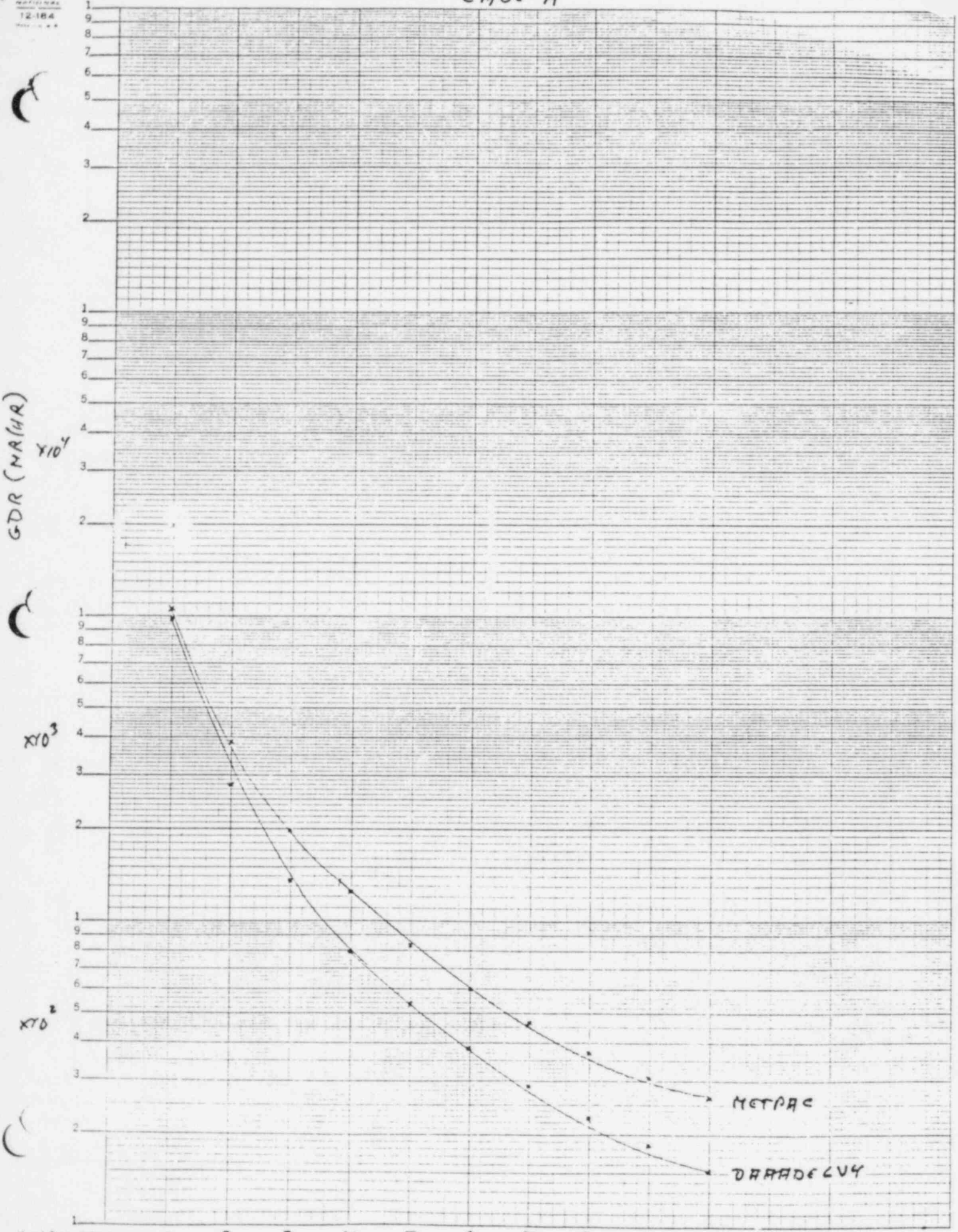
M	DR MI MR/HR	DOSE REM	PAR	MID ETA MI
1	5.04E 03	5.6	EVAC	0.3 16.03
2	2.75E 03	2.7	EVAC	0.5 16.07
3	1.34E 03	1.3	SHEL	0.8 16.12
4	7.95E 02	0.7	NONE	1.0 16.15
5	5.36E 02	0.5	NONE	1.3 16.19
6	3.81E 02	0.3	NONE	1.5 16.24
7	2.88E 02	0.2	NONE	1.7 16.27
8	2.26E 02	0.2	NONE	2.0 16.31
9	1.82E 02	0.1	NONE	2.2 16.36
10	1.50E 02	0.1	NONE	2.4 16.39

2 HOUR(S)

M	DR MI MR/HR	DOSE REM	PAR	MID ETA MI
1	5.04E 03	15.0	EVAC	0.3 16.03
2	2.75E 03	5.5	EVAC	0.5 16.07
3	1.34E 03	2.6	SHEL	0.8 16.12
4	7.95E 02	1.5	SHEL	1.0 16.15
5	5.36E 02	1.0	SHEL	1.3 16.19
6	3.81E 02	0.7	NONE	1.5 16.24
7	2.88E 02	0.5	NONE	1.7 16.27
8	2.26E 02	0.4	NONE	2.0 16.31
9	1.82E 02	0.3	NONE	2.2 16.36
10	1.50E 02	0.3	NONE	2.4 16.39

		%
0.937	1	— 6.3
0.773	2	— 27.2
0.673	3	— 32.7
0.652	4	— 34.8
0.639	5	— 36.1
0.631	6	— 36.9
0.623	7	— 37.7
0.612	8	— 38.8
0.591	9	— 40.9
0.564	10	— 43.6

CASE A



Semi-Logarithmic
1 Cycles x 10 to the inch

METPAC -- PLUME TRACKING AND DOSE ASSESSMENT PROGRAM 1/ 8/86 14:41

GROUND RELEASE PLUME PROJECTION FROM 8:15

STRAIGHT LINE PLUME PROJECTION INFORMATION

DIST (MI)	ANG (DEG)	ARRIVAL TIME (HR:MN)	GAMMA D.R. (mR/HR)	INF THY DR (R/HR)	ADU THY DR (R/HR)	GAMMA X/Q (SEC/M**3)	DEPLETED X/Q (SEC/M**3)	DEPOSITION (1/M**2)
.60	270.	8:24	1.23E -1	0.00E -1	0.00E -1	1.68E -5	3.03E -5	1.63E -7
1.00	270.	8:30	8.56E -2	0.00E -1	0.00E -1	1.17E -5	1.70E -5	9.14E -8
2.00	270.	8:45	4.63E -2	0.00E -1	0.00E -1	6.32E -6	6.96E -6	3.74E -8
3.00	270.	9: 0	3.04E -2	0.00E -1	0.00E -1	4.15E -6	3.94E -6	2.11E -8
4.00	270.	9:15	2.20E -2	0.00E -1	0.00E -1	3.01E -6	2.58E -6	1.39E -8
5.00	270.	9:30	1.70E -2	0.00E -1	0.00E -1	2.31E -6	1.85E -6	9.92E -9
6.00	270.	9:45	1.36E -2	0.00E -1	0.00E -1	1.85E -6	1.40E -6	7.50E -9
7.00	270.	10: 0	1.12E -2	0.00E -1	0.00E -1	1.53E -6	1.10E -6	5.90E -9
8.00	270.	10:15	9.44E -3	0.00E -1	0.00E -1	1.29E -6	8.92E -7	4.78E -9
9.00	270.	10:30	8.11E -3	0.00E -1	0.00E -1	1.11E -6	7.39E -7	3.97E -9
10.00	270.	10:45	7.07E -3	0.00E -1	0.00E -1	9.64E -7	6.24E -7	3.35E -9

PROTECTIVE ACTION RECOMMENDATIONS

DIST (MI)	ANG (DEG)	2 HR EVAC GAMMA DOSE (mR)	2 HR SHEL GAMMA DOSE (mR)	2 HR EVAC INF THY DO (R)	2 HR SHEL INF THY DO (R)	PAG
.60	270.	2.47E -1	2.22E -1	0.00E -1	0.00E -1	
1.00	270.	1.71E -1	1.54E -1	0.00E -1	0.00E -1	
2.00	270.	9.27E -2	8.34E -2	0.00E -1	0.00E -1	
3.00	270.	6.09E -2	5.48E -2	0.00E -1	0.00E -1	
4.00	270.	4.41E -2	3.97E -2	0.00E -1	0.00E -1	
5.00	270.	3.25E -2	3.05E -2	0.00E -1	0.00E -1	
6.00	270.	2.71E -2	2.44E -2	0.00E -1	0.00E -1	
7.00	270.	1.96E -2	2.01E -2	0.00E -1	0.00E -1	
8.00	270.	1.42E -2	1.78E -2	0.00E -1	0.00E -1	
9.00	270.	1.01E -2	1.46E -2	0.00E -1	0.00E -1	
10.00	270.	7.07E -3	1.27E -2	0.00E -1	0.00E -1	

DIST (MI)	ANG (DEG)	4 HR EVAC GAMMA DOSE (mR)	4 HR SHEL GAMMA DOSE (mR)	4 HR EVAC INF THY DO (R)	4 HR SHEL INF THY DO (R)	PAG
.60	270.	3.30E -1	4.44E -1	0.00E -1	0.00E -1	
1.00	270.	2.21E -1	3.08E -1	0.00E -1	0.00E -1	
2.00	270.	1.08E -1	1.67E -1	0.00E -1	0.00E -1	
3.00	270.	7.37E -2	1.10E -1	0.00E -1	0.00E -1	
4.00	270.	4.78E -2	7.94E -2	0.00E -1	0.00E -1	
5.00	270.	3.25E -2	6.10E -2	0.00E -1	0.00E -1	
6.00	270.	2.71E -2	4.89E -2	0.00E -1	0.00E -1	
7.00	270.	1.96E -2	4.03E -2	0.00E -1	0.00E -1	
8.00	270.	1.42E -2	3.40E -2	0.00E -1	0.00E -1	
9.00	270.	1.01E -2	2.92E -2	0.00E -1	0.00E -1	
10.00	270.	7.07E -3	2.54E -2	0.00E -1	0.00E -1	

DIST (MI)	ANG (DEG)	6 HR EVAC GAMMA DOSE (mR)	6 HR SHEL GAMMA DOSE (mR)	6 HR EVAC INF THY DO (R)	6 HR SHEL INF THY DO (R)	PAG
.60	270.	3.30E -1	6.66E -1	0.00E -1	0.00E -1	
1.00	270.	2.21E -1	4.42E -1	0.00E -1	0.00E -1	
2.00	270.	1.08E -1	2.50E -1	0.00E -1	0.00E -1	
3.00	270.	7.37E -2	1.64E -1	0.00E -1	0.00E -1	
4.00	270.	4.78E -2	1.19E -1	0.00E -1	0.00E -1	
5.00	270.	3.25E -2	9.15E -2	0.00E -1	0.00E -1	
6.00	270.	2.71E -2	7.33E -2	0.00E -1	0.00E -1	
7.00	270.	1.96E -2	6.04E -2	0.00E -1	0.00E -1	
8.00	270.	1.42E -2	5.10E -2	0.00E -1	0.00E -1	
9.00	270.	1.01E -2	4.38E -2	0.00E -1	0.00E -1	
10.00	270.	7.07E -3	3.82E -2	0.00E -1	0.00E -1	

DIST (MI)	ANG (DEG)	8 HR EVAC GAMMA DOSE (mR)	8 HR SHEL GAMMA DOSE (mR)	8 HR EVAC INF THY DO (R)	8 HR SHEL INF THY DO (R)	PAG
.60	270.	3.30E -1	8.87E -1	0.00E -1	0.00E -1	
1.00	270.	2.21E -1	6.17E -1	0.00E -1	0.00E -1	
2.00	270.	1.08E -1	3.34E -1	0.00E -1	0.00E -1	
3.00	270.	7.37E -2	2.19E -1	0.00E -1	0.00E -1	
4.00	270.	4.78E -2	1.59E -1	0.00E -1	0.00E -1	
5.00	270.	3.25E -2	1.22E -1	0.00E -1	0.00E -1	
6.00	270.	2.71E -2	9.77E -2	0.00E -1	0.00E -1	
7.00	270.	1.96E -2	8.06E -2	0.00E -1	0.00E -1	
8.00	270.	1.42E -2	6.80E -2	0.00E -1	0.00E -1	
9.00	270.	1.01E -2	5.84E -2	0.00E -1	0.00E -1	
10.00	270.	7.07E -3	5.09E -2	0.00E -1	0.00E -1	

(B)

11110.6300

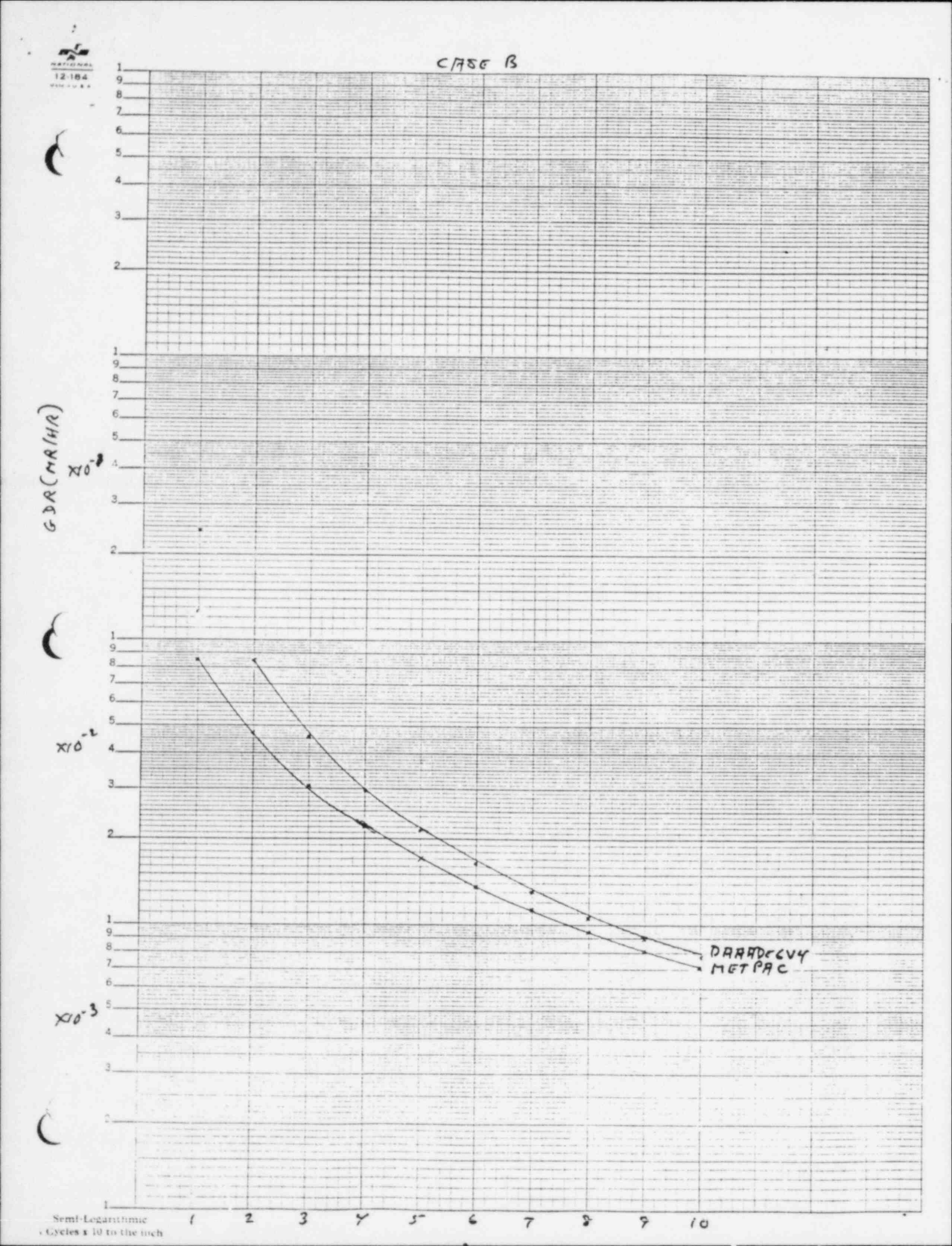
1 HOUR(S)

X (MI)	DR (MR/HR)	DOSE (MEM)	PAR	MID ETA (MI)	
1	2.44E-01	0.0	NONE	0.2	
2	8.35E-02	0.0	NONE	0.4	0.30
3	4.55E-02	0.0	NONE	0.5	0.45
4	2.96E-02	0.0	NONE	0.7	0.60
5	2.13E-02	0.0	NONE	0.9	0.15
6	1.63E-02	0.0	NONE	1.1	0.30
7	1.30E-02	0.0	NONE	1.2	0.45
8	1.06E-02	0.0	NONE	1.4	10.00
9	9.08E-03	0.0	NONE	1.5	10.15
10	7.72E-03	0.0	NONE	1.7	10.30
					10.45

2 HOUR(S)

X (MI)	DR (MR/HR)	DOSE (MEM)	PAR	MID ETA (MI)	
1	2.44E-01	0.0	NONE	0.2	
2	8.35E-02	0.0	NONE	0.4	0.75
3	4.55E-02	0.0	NONE	0.5	0.45
4	2.96E-02	0.0	NONE	0.7	5.00
5	2.13E-02	0.0	NONE	0.9	5.15
6	1.63E-02	0.0	NONE	1.1	5.30
7	1.30E-02	0.0	NONE	1.2	5.45
8	1.06E-02	0.0	NONE	1.4	10.00
9	9.08E-03	0.0	NONE	1.5	10.15
10	7.72E-03	0.0	NONE	1.7	10.30
					10.45

		%
2.850	1	+ 155.0
1.812	2	+ 31.2
1.497	3	+ 49.7
1.345	4	+ 34.5
1.253	5	+ 25.3
1.189	6	+ 19.9
1.161	7	+ 16.1
1.123	8	+ 12.3
1.110	9	+ 11.0
1.092	10	+ 9.2


CASE B
GDR (MR/HR)
X10-1
X10-2
X10-3
1 2 3 4 5 6 7 8 9 10
DAMAGE CV4
METPAC
Semi-Logarithmic
Cycles x 10 to the inch

METPAC -- PLUME TRACKING AND DOSE ASSESSMENT PROGRAM 1/ 8/86 14:44

ELEVATED RELEASE PLUME PROJECTION FROM 23:30

STRAIGHT LINE PLUME PROJECTION INFORMATION

DIST (MI)	ANG (DEG)	ARRIVAL TIME (HR:MN)	GAMMA D.R. (mR/HR)	INF THY DR (R/HR)	ADU THY DR (R/HR)	GAMMA X/Q (SEC/M**3)	DEPLETED X/Q (SEC/M**3)	DEPOSITION (1/M**2)
.60	270.	23:37	1.36E 4	0.00E -1	0.00E -1	2.82E -5	8.44E -5	1.51E -7
1.00	270.	23:42	1.03E 4	0.00E -1	0.00E -1	2.13E -5	5.09E -5	9.10E -8
2.00	270.	23:54	7.34E 3	0.00E -1	0.00E -1	1.52E -5	2.80E -5	5.00E -8
3.00	270.	0: 6	6.18E 3	0.00E -1	0.00E -1	1.28E -5	2.07E -5	3.69E -8
4.00	270.	0:18	5.36E 3	0.00E -1	0.00E -1	1.11E -5	1.61E -5	2.88E -8
5.00	270.	24:30	4.74E 3	0.00E -1	0.00E -1	9.79E -6	1.31E -5	2.34E -8
6.00	270.	24:42	4.25E 3	0.00E -1	0.00E -1	8.79E -6	1.09E -5	1.94E -8
7.00	270.	24:54	3.86E 3	0.00E -1	0.00E -1	7.98E -6	9.23E -6	1.65E -8
8.00	270.	1: 6	3.54E 3	0.00E -1	0.00E -1	7.31E -6	7.95E -6	1.42E -8
9.00	270.	1:18	3.27E 3	0.00E -1	0.00E -1	6.75E -6	6.94E -6	1.24E -8
10.00	270.	25:30	3.03E 3	0.00E -1	0.00E -1	6.27E -6	6.12E -6	1.09E -8

PROTECTIVE ACTION RECOMMENDATIONS

DIST (MI)	ANG (DEG)	2 HR EVAC GAMMA DOSE (mR)	2 HR SHEL GAMMA DOSE (mR)	2 HR EVAC INF THY DO (R)	2 HR SHEL INF THY DO (R)	PAG
.60	270.	2.73E 4	2.46E 4	0.00E -1	0.00E -1	SHEL
1.00	270.	2.07E 4	1.86E 4	0.00E -1	0.00E -1	SHEL
2.00	270.	1.47E 4	1.32E 4	0.00E -1	0.00E -1	SHEL
3.00	270.	1.24E 4	1.11E 4	0.00E -1	0.00E -1	SHEL
4.00	270.	1.07E 4	9.64E 3	0.00E -1	0.00E -1	SHEL
5.00	270.	9.48E 3	8.53E 3	0.00E -1	0.00E -1	SHEL
6.00	270.	8.51E 3	7.66E 3	0.00E -1	0.00E -1	SHEL
7.00	270.	7.47E 3	6.95E 3	0.00E -1	0.00E -1	SHEL
8.00	270.	6.13E 3	6.37E 3	0.00E -1	0.00E -1	EVAC
9.00	270.	5.01E 3	5.88E 3	0.00E -1	0.00E -1	EVAC
10.00	270.	4.04E 3	5.46E 3	0.00E -1	0.00E -1	EVAC

DIST (MI)	ANG (DEG)	4 HR EVAC GAMMA DOSE (mR)	4 HR SHEL GAMMA DOSE (mR)	4 HR EVAC INF THY DO (R)	4 HR SHEL INF THY DO (R)	PAG
.60	270.	3.48E 4	4.91E 4	0.00E -1	0.00E -1	EVAC
1.00	270.	2.54E 4	3.72E 4	0.00E -1	0.00E -1	EVAC
2.00	270.	1.66E 4	2.64E 4	0.00E -1	0.00E -1	EVAC
3.00	270.	1.48E 4	2.22E 4	0.00E -1	0.00E -1	EVAC
4.00	270.	1.18E 4	1.93E 4	0.00E -1	0.00E -1	EVAC
5.00	270.	9.49E 3	1.71E 4	0.00E -1	0.00E -1	EVAC
6.00	270.	9.08E 3	1.53E 4	0.00E -1	0.00E -1	EVAC
7.00	270.	7.47E 3	1.39E 4	0.00E -1	0.00E -1	EVAC
8.00	270.	6.13E 3	1.27E 4	0.00E -1	0.00E -1	EVAC
9.00	270.	5.01E 3	1.18E 4	0.00E -1	6.00E -1	EVAC
10.00	270.	4.04E 3	1.09E 4	0.00E -1	0.00E -1	EVAC

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*                                                                              *
* EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON                                   *
* EVACUATE - SALISBURY, AMESBURY                                                *
* EVACUATE - SOUTH HAMPTON, KENSINGTON                                          *
* EVACUATE - NORTH HAMPTON                                                      *
* EVACUATE - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC                         *
* EVACUATE - STRATHAM, NEWFIELD, EXETER, BRENTWOOD                              *
* EVACUATE - KINGSTON, E. KINGSTON, NEWTON                                      *
*                                                                              *
* SHELTER  - GREENLAND, RYE                                                     *
*                                                                              *
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*                                                                              *
* EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON                                   *
* EVACUATE - SALISBURY, AMESBURY                                                *
* EVACUATE - SOUTH HAMPTON, KENSINGTON                                          *
* EVACUATE - NORTH HAMPTON                                                      *
* EVACUATE - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC                         *
* EVACUATE - STRATHAM, NEWFIELD, EXETER, BRENTWOOD                              *
* EVACUATE - KINGSTON, E. KINGSTON, NEWTON                                      *
*                                                                              *
* SHELTER  - GREENLAND, RYE                                                     *
*                                                                              *
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DIST (MI)	ANG (DEG)	6 HR EVAC GAMMA DOSE (mR)	6 HR SHEL GAMMA DOSE (mR)	6 HR EVAC INF THY DO (R)	6 HR SHEL INF THY DO (R)	PAG
.60	270.	3.48E 4	7.37E 4	0.00E -1	0.00E -1	EVAC
1.00	270.	2.54E 4	5.58E 4	0.00E -1	0.00E -1	EVAC
2.00	270.	1.66E 4	3.96E 4	0.00E -1	0.00E -1	EVAC
3.00	270.	1.48E 4	3.34E 4	0.00E -1	0.00E -1	EVAC
4.00	270.	1.18E 4	2.89E 4	0.00E -1	0.00E -1	EVAC
5.00	270.	9.49E 3	2.56E 4	0.00E -1	0.00E -1	EVAC
6.00	270.	9.08E 3	2.30E 4	0.00E -1	0.00E -1	EVAC
7.00	270.	7.47E 3	2.09E 4	0.00E -1	0.00E -1	EVAC
8.00	270.	6.13E 3	1.91E 4	0.00E -1	0.00E -1	EVAC
9.00	270.	5.01E 3	1.76E 4	0.00E -1	0.00E -1	EVAC
10.00	270.	4.04E 3	1.64E 4	0.00E -1	0.00E -1	EVAC

DIST (MI)	ANG (DEG)	8 HR EVAC GAMMA DOSE (mR)	8 HR SHEL GAMMA DOSE (mR)	8 HR EVAC INF THY DO (R)	8 HR SHEL INF THY DO (R)	PAG
.60	270.	3.48E 4	9.83E 4	0.00E -1	0.00E -1	EVAC
1.00	270.	2.54E 4	7.44E 4	0.00E -1	0.00E -1	EVAC
2.00	270.	1.66E 4	5.29E 4	0.00E -1	0.00E -1	EVAC
3.00	270.	1.48E 4	4.45E 4	0.00E -1	0.00E -1	EVAC
4.00	270.	1.18E 4	3.86E 4	0.00E -1	0.00E -1	EVAC
5.00	270.	9.49E 3	3.41E 4	0.00E -1	0.00E -1	EVAC
6.00	270.	9.08E 3	3.06E 4	0.00E -1	0.00E -1	EVAC
7.00	270.	7.47E 3	2.78E 4	0.00E -1	0.00E -1	EVAC
8.00	270.	6.13E 3	2.55E 4	0.00E -1	0.00E -1	EVAC
9.00	270.	5.01E 3	2.35E 4	0.00E -1	0.00E -1	EVAC
10.00	270.	4.04E 3	2.18E 4	0.00E -1	0.00E -1	EVAL

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*                                                                              *
* EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON                                   *
* EVACUATE - SALISBURY, AMESBURY                                                *
* EVACUATE - SOUTH HAMPTON, KENSINGTON                                          *
* EVACUATE - NORTH HAMPTON                                                      *
* EVACUATE - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC                         *
* EVACUATE - STRATHAM, NEWFIELD, EXETER, BRENTWOOD                              *
* EVACUATE - KINGSTON, E. KINGSTON, NEWTON                                      *
*                                                                              *
* SHELTER  - GREENLAND, RYE                                                     *
*                                                                              *
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*                                                                              *
* EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON                                   *
* EVACUATE - SALISBURY, AMESBURY                                                *
* EVACUATE - SOUTH HAMPTON, KENSINGTON                                          *
* EVACUATE - NORTH HAMPTON                                                      *
* EVACUATE - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC                         *
* EVACUATE - STRATHAM, NEWFIELD, EXETER, BRENTWOOD                              *
* EVACUATE - KINGSTON, E. KINGSTON, NEWTON                                      *
*                                                                              *
* SHELTER  - GREENLAND, RYE                                                     *
*                                                                              *
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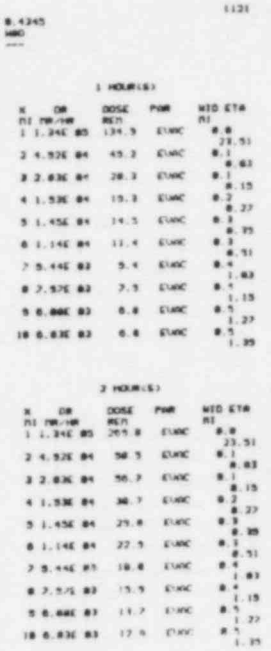

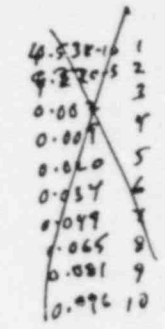

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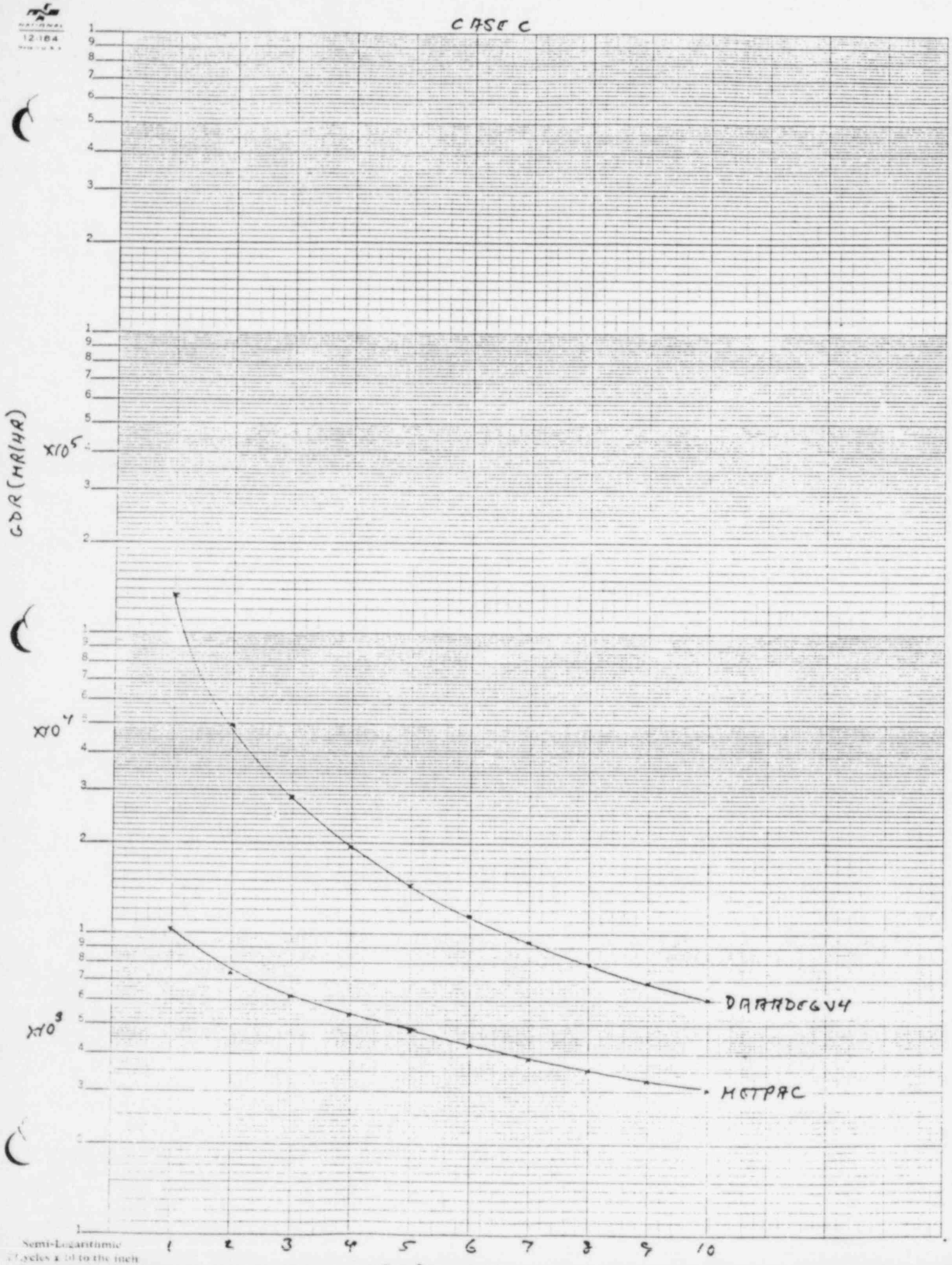

CASE C
GDR (MR/HR)
X10^5
X10^4
X10^3
DARADEGV4
HOTPAC
1 2 3 4 5 6 7 8 9 10
Semi-Logarithmic
Cycles x 10 to the inch

METPAC -- PLUME TRACKING AND DOSE ASSESSMENT PROGRAM 1/ 8/86 14:48

GROUND RELEASE PLUME PROJECTION FROM 12:30

STRAIGHT LINE PLUME PROJECTION INFORMATION

DIST (MI)	ANG (DEG)	ARRIVAL TIME (HR:MN)	GAMMA D.R. (mR/HR)	INF THY DR (R/HR)	ADU THY DR (R/HR)	GAMMA X/Q (SEC/M**3)	DEPLETED X/Q (SEC/M**3)	DEPOSITION (1/M**2)
.60	270.	12:39	1.11E 6	0.00E -1	0.00E -1	1.68E -5	2.19E -5	7.38E -7
1.00	270.	12:45	7.70E 5	0.00E -1	0.00E -1	1.17E -5	9.93E -6	4.19E -7
2.00	270.	13: 0	4.17E 5	0.00E -1	0.00E -1	6.32E -6	2.36E -6	1.40E -7
3.00	270.	13:15	2.74E 5	0.00E -1	0.00E -1	4.15E -6	7.79E -7	5.69E -8
4.00	270.	13:30	1.98E 5	0.00E -1	0.00E -1	3.01E -6	2.98E -7	2.53E -8
5.00	270.	13:45	1.52E 5	0.00E -1	0.00E -1	2.31E -6	1.24E -7	1.18E -8
6.00	270.	14: 0	1.22E 5	0.00E -1	0.00E -1	1.85E -6	5.48E -8	5.74E -9
7.00	270.	14:15	1.01E 5	0.00E -1	0.00E -1	1.53E -6	2.51E -8	2.85E -9
8.00	270.	14:30	8.49E 4	0.00E -1	0.00E -1	1.29E -6	1.19E -8	1.44E -9
9.00	270.	14:45	7.29E 4	0.00E -1	0.00E -1	1.11E -6	5.73E -9	7.43E -10
10.00	270.	15: 0	6.35E 4	0.00E -1	0.00E -1	9.64E -7	2.82E -9	3.86E -10

PROTECTIVE ACTION RECOMMENDATIONS

DIST (MI)	ANG (DEG)	2 HR EVAC GAMMA DOSE (mR)	2 HR SHEL GAMMA DOSE (mR)	2 HR EVAC INF THY DO (R)	2 HR SHEL INF THY DO (R)	PAG
.60	270.	2.22E 6	1.99E 6	0.00E -1	0.00E -1	SHEL
1.00	270.	1.54E 6	1.39E 6	0.00E -1	0.00E -1	SHEL
2.00	270.	8.33E 5	7.50E 5	0.00E -1	0.00E -1	SHEL
3.00	270.	5.47E 5	4.93E 5	0.00E -1	0.00E -1	SHEL
4.00	270.	3.96E 5	3.57E 5	0.00E -1	0.00E -1	SHEL
5.00	270.	2.93E 5	2.74E 5	0.00E -1	0.00E -1	SHEL
6.00	270.	2.44E 5	2.20E 5	0.00E -1	0.00E -1	SHEL
7.00	270.	1.76E 5	1.81E 5	0.00E -1	0.00E -1	EVAC
8.00	270.	1.27E 5	1.53E 5	0.00E -1	0.00E -1	EVAC
9.00	270.	9.11E 4	1.31E 5	0.00E -1	0.00E -1	EVAC
10.00	270.	6.35E 4	1.14E 5	0.00E -1	0.00E -1	EVAC

* EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON
* EVACUATE - SALISBURY, AMESBURY
* EVACUATE - SOUTH HAMPTON, KENSINGTON
* EVACUATE - NORTH HAMPTON
* EVACUATE - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC
* EVACUATE - STRATHAM, NEWFIELD, EXETER, BRENTWOOD
* EVACUATE - KINGSTON, E. KINGSTON, NEWTON
*
* SHELTER - GREENLAND, RYE

DIST (MI)	ANG (DEG)	4 HR EVAC GAMMA DOSE (mR)	4 HR SHEL GAMMA DOSE (mR)	4 HR EVAC INF THY DO (R)	4 HR SHEL INF THY DO (R)	PAG
.60	270.	2.97E 6	3.99E 6	0.00E -1	0.00E -1	EVAC
1.00	270.	1.99E 6	2.77E 6	0.00E -1	0.00E -1	EVAC
2.00	270.	9.70E 5	1.50E 6	0.00E -1	0.00E -1	EVAC
3.00	270.	6.62E 5	9.85E 5	0.00E -1	0.00E -1	EVAC
4.00	270.	4.30E 5	7.14E 5	0.00E -1	0.00E -1	EVAC
5.00	270.	2.93E 5	5.49E 5	0.00E -1	0.00E -1	EVAC
6.00	270.	2.44E 5	4.39E 5	0.00E -1	0.00E -1	EVAC
7.00	270.	1.76E 5	3.62E 5	0.00E -1	0.00E -1	EVAC
8.00	270.	1.27E 5	3.06E 5	0.00E -1	0.00E -1	EVAC
9.00	270.	9.11E 4	2.63E 5	0.00E -1	0.00E -1	EVAC
10.00	270.	6.35E 4	2.29E 5	0.00E -1	0.00E -1	EVAC

EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON
EVACUATE - SALISBURY, AMESBURY
EVACUATE - SOUTH HAMPTON, KENSINGTON
EVACUATE - NORTH HAMPTON
EVACUATE - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC
EVACUATE - STRATHAM, NEWFIELD, EXETER, BRENTWOOD
EVACUATE - KINGSTON, E. KINGSTON, NEWTON

SHELTER - GREENLAND, RYE

DIST (MI)	ANG (DEG)	6 HR EVAC GAMMA DOSE (mR)	6 HR SHEL GAMMA DOSE (mR)	6 HR EVAC INF THY DO (R)	6 HR SHEL INF THY DO (R)	PAG
.60	270.	2.97E 6	5.98E 6	0.00E -1	0.00E -1	EVAC
1.00	270.	1.99E 6	4.16E 6	0.00E -1	0.00E -1	EVAC
2.00	270.	9.70E 5	2.25E 6	0.00E -1	0.00E -1	EVAC
3.00	270.	6.62E 5	1.48E 6	0.00E -1	0.00E -1	EVAC
4.00	270.	4.30E 5	1.07E 6	0.00E -1	0.00E -1	EVAC
5.00	270.	2.93E 5	8.23E 5	0.00E -1	0.00E -1	EVAC
6.00	270.	2.44E 5	6.59E 5	0.00E -1	0.00E -1	EVAC
7.00	270.	1.76E 5	5.43E 5	0.00E -1	0.00E -1	EVAC
8.00	270.	1.27E 5	4.58E 5	0.00E -1	0.00E -1	EVAC
9.00	270.	9.11E 4	3.94E 5	0.00E -1	0.00E -1	EVAC
10.00	270.	6.35E 4	3.43E 5	0.00E -1	0.00E -1	EVAC

* EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON
* EVACUATE - SALISBURY, AMESBURY
* EVACUATE - SOUTH HAMPTON, KENSINGTON
* EVACUATE - NORTH HAMPTON
* EVACUATE - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC
* EVACUATE - STRATHAM, NEWFIELD, EXETER, BRENTWOOD
* EVACUATE - KINGSTON, E. KINGSTON, NEWTON
*
* SHELTER - GREENLAND, RYE

DIST (MI)	ANG (DEG)	8 HR EVAC GAMMA DOSE (mR)	8 HR SHEL GAMMA DOSE (mR)	8 HR EVAC INF THY DO (R)	8 HR SHEL INF THY DO (R)	PAG
.60	270.	2.97E 6	7.98E 6	0.00E -1	0.00E -1	EVAC
1.00	270.	1.99E 6	5.54E 6	0.00E -1	0.00E -1	EVAC
2.00	270.	9.70E 5	3.00E 6	0.00E -1	0.00E -1	EVAC
3.00	270.	6.62E 5	1.97E 6	0.00E -1	0.00E -1	EVAC
4.00	270.	4.30E 5	1.43E 6	0.00E -1	0.00E -1	EVAC
5.00	270.	2.93E 5	1.10E 6	0.00E -1	0.00E -1	EVAC
6.00	270.	2.44E 5	8.78E 5	0.00E -1	0.00E -1	EVAC
7.00	270.	1.76E 5	7.25E 5	0.00E -1	0.00E -1	EVAC
8.00	270.	1.27E 5	6.11E 5	0.00E -1	0.00E -1	EVAC
9.00	270.	9.11E 4	5.25E 5	0.00E -1	0.00E -1	EVAC
10.00	270.	6.35E 4	4.57E 5	0.00E -1	0.00E -1	EVAC

EVACUATE - SEABROOK, HAMPTON FALLS, HAMPTON
EVACUATE - SALISBURY, AMESBURY
EVACUATE - SOUTH HAMPTON, KENSINGTON
EVACUATE - NORTH HAMPTON
EVACUATE - NEWBURY, NEWBURYPORT, W. NEWBURY, MERRIMAC
EVACUATE - STRATHAM, NEWFIELD, EXETER, BRENTWOOD
EVACUATE - KINGSTON, E. KINGSTON, NEWTON

SHELTER - GREENLAND, RYE

D

11110.1030

1 HOUR(S)

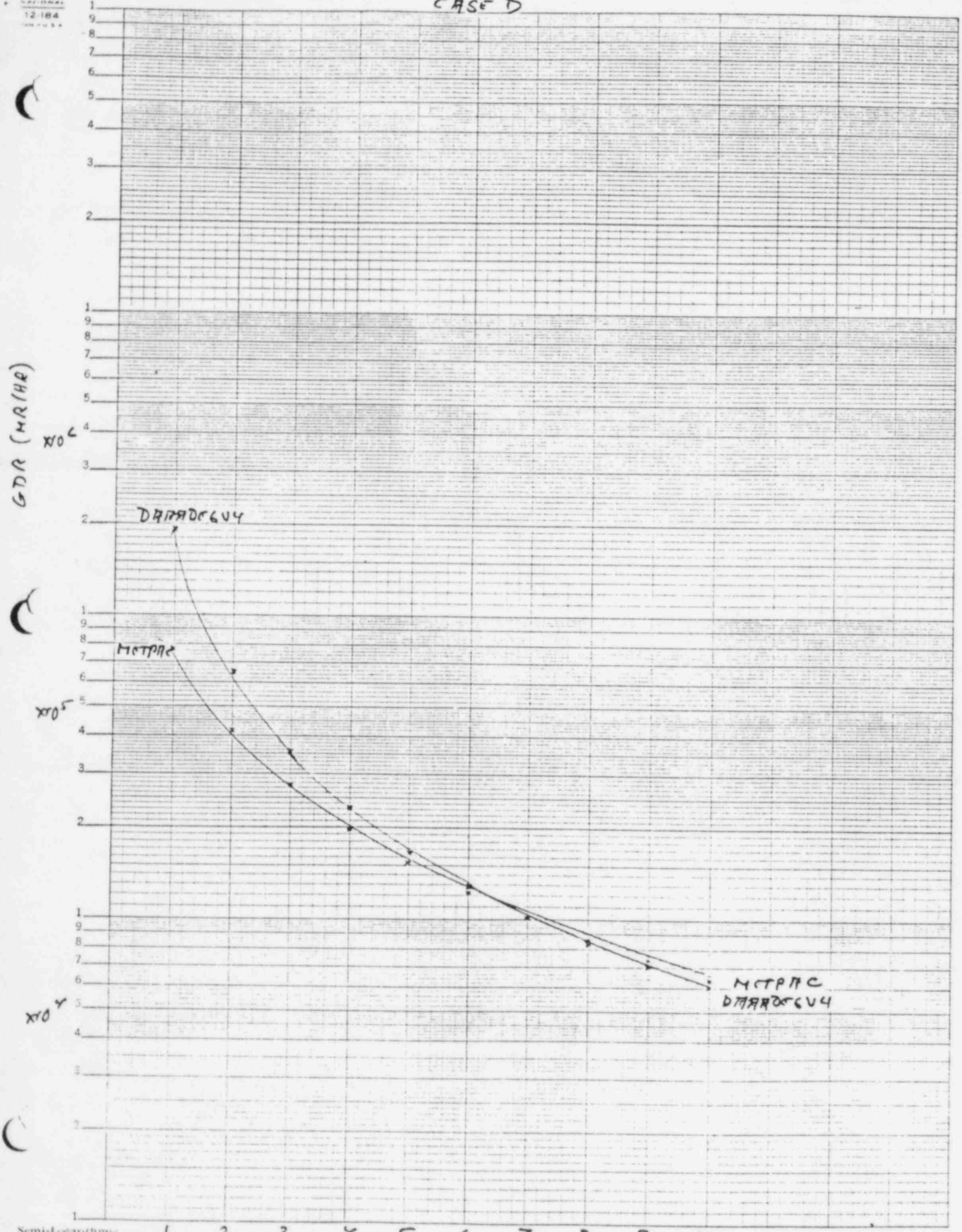
X MI	DR MR/HR	DOSE MEM	PAR	WID MI	ETA
1	1.58E 06	1385.3	EVAC	0.2	12.45
2	6.54E 05	654.2	EVAC	0.4	13.00
3	3.55E 05	355.2	EVAC	0.5	13.15
4	2.31E 05	231.4	EVAC	0.7	13.30
5	1.66E 05	166.3	EVAC	0.9	13.45
6	1.27E 05	127.1	EVAC	1.1	14.00
7	1.01E 05	101.1	EVAC	1.2	14.15
8	8.33E 04	83.3	EVAC	1.4	14.30
9	7.01E 04	70.1	EVAC	1.5	14.45
10	6.01E 04	60.1	EVAC	1.7	15.00

2 HOUR(S)

X MI	DR MR/HR	DOSE MEM	PAR	WID MI	ETA
1	1.58E 06	3410.8	EVAC	0.2	12.45
2	6.54E 05	1390.4	EVAC	0.4	13.00
3	3.55E 05	718.4	EVAC	0.5	13.15
4	2.31E 05	482.8	EVAC	0.7	13.30
5	1.66E 05	332.6	EVAC	0.9	13.45
6	1.27E 05	254.2	EVAC	1.1	14.00
7	1.01E 05	202.2	EVAC	1.2	14.15
8	8.33E 04	166.7	EVAC	1.4	14.30
9	7.01E 04	140.3	EVAC	1.5	14.45
10	6.01E 04	120.3	EVAC	1.7	15.00

		%
2.468	1	+ 146.8
1.568	2	+ 56.8
1.296	3	+ 29.6
1.167	4	+ 16.7
1.072	5	+ 7.2
1.041	6	+ 4.1
1.000	7	± 0.0
0.981	8	− 1.9
0.962	9	− 3.8
0.942	10	− 5.7

CASE D



Semi-Logarithmic
Cycles x 10 to the inch

E

METPAC -- PLUME ...ING AND DOSE ASSESSMENT PROGRAM

10/16/85 10: 3

DATE AND TIME OF SHUTDOWN — MO/DA/YR 3/25/85, HR:MN 9: 0

DATE AND TIME OF START OF RELEASE — 3/25/85 9: 5

DATE AND TIME OF START OF ANALYSIS — 3/25/85 9: 5
DATE AND TIME OF END OF ANALYSIS — 3/25/85 9:15

PLUME POSITION AT 9:15
RELEASE CONTINUING

METEOROLOGY: (FROM 3/25/85 , 9: 0 TO 3/25/85 , 9:15)

TOWER LEVEL	WIND SPEED (MPH)	WIND SPEED (M/S)	WIND DIR (FROM) DEG	WIND DIR (FROM) SECTOR	DELTA TEMPERATURE DEG F/50M	DELTA TEMPERATURE DEG C/10M	STAB	SIGMA THETA DEG	SIGMA THETA STAB	PRECIPITATION INCHES/HR
GROUND	2.0	.89	220.	SW	-.5	-.9	D	.0		.00
ELEVATED	5.0	2.23	220.	SW	-.6	-.7	D	.0		.00

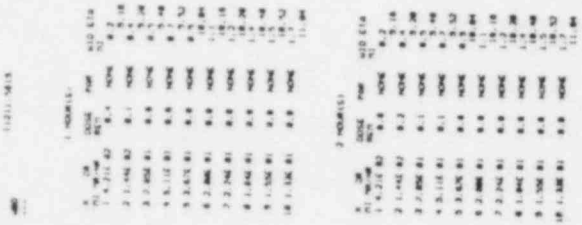
RADIOLOGICAL: (FROM 3/25/85 , 9: 0 TO 3/25/85 , 9:15)

LOCA = 1

PVS MONITOR 1.300E 0 uCi/SEC FLOW RATE 1.300E 2 m3/SEC

PLUME POINT INFORMATION: (AT 9:15) ELEVATED RELEASE POINT PLUME NUMBER 1

PLUME NO	DISTANCE MILES	ANGLE DEG	ELEVATED WIDTH MILES	GAMMA DOSE (mR/HR)	PLUME WIDTH MILES	INF THY DR (R/HR)	ADU THY DR (R/HR)	GAMMA I/Q (SEC/M**3)	DEP. I/Q (SEC/M**3)	DEPOSITION (1/M**2)	GAM REL RATE (uCI/SEC)
1000 M RADIUS				(EAL LIMIT -- SITE AREA)							
0	.60	40.	.55	5.58E 1	.28	0.00E -1	0.00E -1	5.35E -6	3.58E -8	2.40E -10	1.714E 8
2	.83	40.	.59	6.07E 1	.37	0.00E -1	0.00E -1				
3	.06	40.	.53	5.50E 1	.04	0.00E -1	0.00E -1	5.83E -6	3.46E -7	2.32E -9	1.714E 8
								5.09E -6	0.00E -1	0.00E -1	1.714E 8



METPAC -- PLUME TRACKING AND DOSE ASSESSMENT PROGRAM

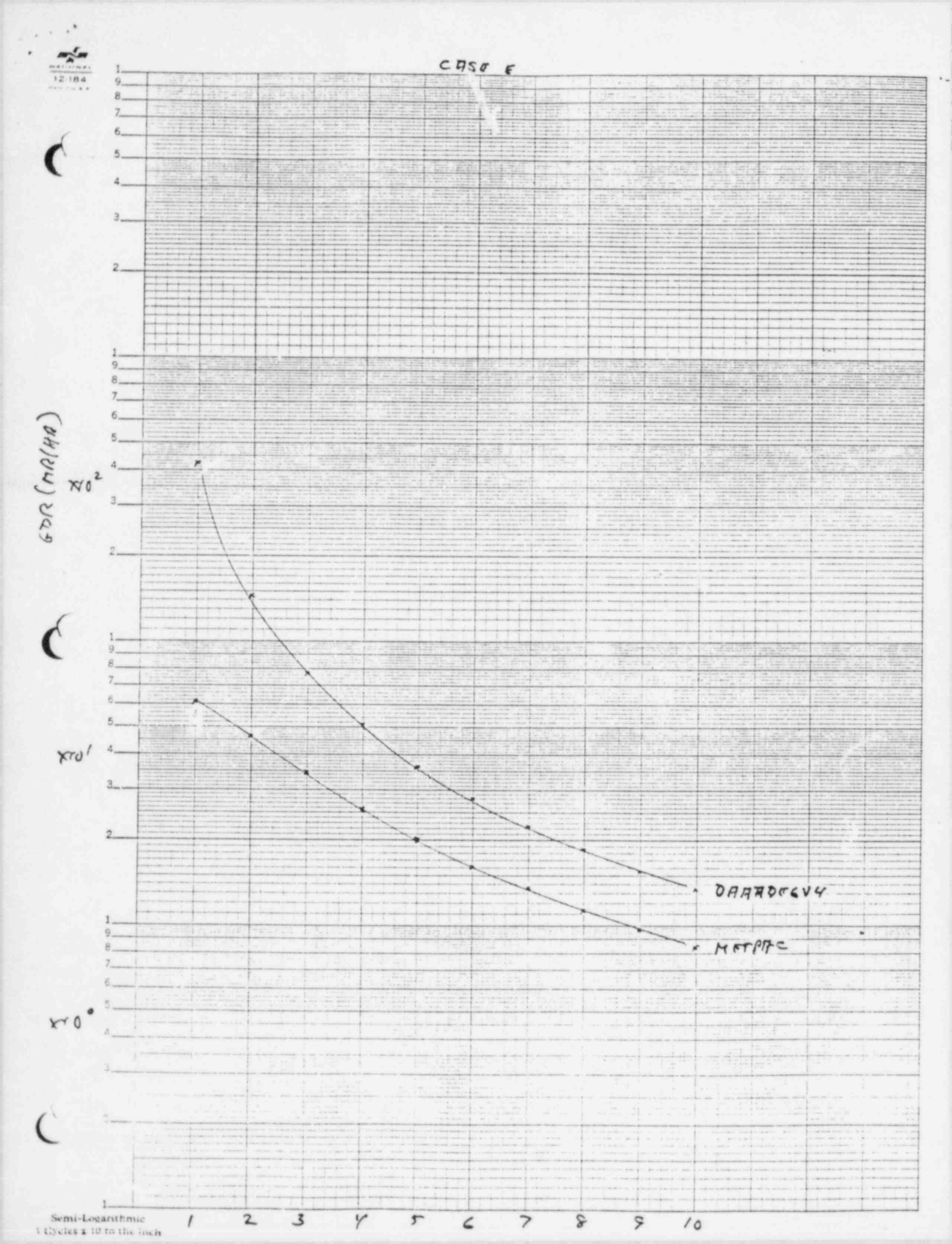
10/1... 10: 3

DIST (MI)	ANG (DEG)	1 HR EVAC GAMMA DOSE (mR)	1 HR SHEL GAMMA DOSE (mR)	1 HR EVAC INF THY DO (R)	1 HR SHEL INF THY DO (R)	PAG	2 HR EVAC GAMMA DOSE (mR)	2 HR SHEL GAMMA DOSE (mR)	2 HR EVAC INF THY DO (R)	2 HR SHEL INF THY DO (R)	PAG
.60	40.	55.8	50.2	.000	.000	SHEL	112.	100.	.000	.000	SHEL
1.00	40.	61.7	55.1	.000	.000	SHEL	123.	110.	.000	.000	SHEL
2.00	40.	46.8	42.1	.000	.000	SHEL	93.6	84.2	.000	.000	SHEL
3.00	40.	34.8	31.3	.000	.000	SHEL	69.5	62.6	.000	.000	SHEL
4.00	40.	25.7	23.2	.000	.000	SHEL	50.1	46.3	.000	.000	SHEL
5.00	40.	20.0	18.0	.000	.000	SHEL	39.9	35.9	.000	.000	SHEL
6.00	40.	16.1	14.5	.000	.000	SHEL	32.2	29.0	.000	.000	SHEL
7.00	40.	13.2	12.0	.000	.000	SHEL	26.6	23.9	.000	.000	SHEL
8.00	40.	11.2	10.1	.000	.000	SHEL	22.4	20.1	.000	.000	SHEL
9.00	40.	9.62	8.66	.000	.000	SHEL	20.4	20.1	.000	.000	SHEL
10.00	40.	8.38	7.55	.000	.000	SHEL	15.5	17.3	.000	.000	SHEL
							11.9	15.1	.000	.000	EVAC

DIST (MI)	ANG (DEG)	3 HR EVAC GAMMA DOSE (mR)	3 HR SHEL GAMMA DOSE (mR)	3 HR EVAC INF THY DO (R)	3 HR SHEL INF THY DO (R)	PAG	4 HR EVAC GAMMA DOSE (mR)	4 HR SHEL GAMMA DOSE (mR)	4 HR EVAC INF THY DO (R)	4 HR SHEL INF THY DO (R)	PAG
.60	40.	147.	151.	.000	.000	EVAC	147.	201.	.000	.000	EVAC
1.00	40.	156.	165.	.000	.000	EVAC	156.	221.	.000	.000	EVAC
2.00	40.	110.	126.	.000	.000	EVAC	110.	169.	.000	.000	EVAC
3.00	40.	74.6	93.9	.000	.000	EVAC	74.6	125.	.000	.000	EVAC
4.00	40.	50.1	69.5	.000	.000	EVAC	50.1	92.7	.000	.000	EVAC
5.00	40.	48.2	52.9	.000	.000	EVAC	48.2	71.9	.000	.000	EVAC
6.00	40.	35.7	43.5	.000	.000	EVAC	35.7	58.0	.000	.000	EVAC
7.00	40.	26.8	35.9	.000	.000	EVAC	26.8	47.8	.000	.000	EVAC
8.00	40.	20.4	30.3	.000	.000	EVAC	20.4	40.3	.000	.000	EVAC
9.00	40.	15.5	26.0	.000	.000	EVAC	15.5	34.6	.000	.000	EVAC
10.00	40.	11.9	22.6	.000	.000	EVAC	11.9	30.2	.000	.000	EVAC

DIST (MI)	ANG (DEG)	5 HR EVAC GAMMA DOSE (mR)	5 HR SHEL GAMMA DOSE (mR)	5 HR EVAC INF THY DO (R)	5 HR SHEL INF THY DO (R)	PAG	6 HR EVAC GAMMA DOSE (mR)	6 HR SHEL GAMMA DOSE (mR)	6 HR EVAC INF THY DO (R)	6 HR SHEL INF THY DO (R)	PAG
.60	40.	147.	251.	.000	.000	EVAC	147.	301.	.000	.000	EVAC
1.00	40.	156.	276.	.000	.000	EVAC	156.	331.	.000	.000	EVAC
2.00	40.	110.	211.	.000	.000	EVAC	110.	253.	.000	.000	EVAC
3.00	40.	74.6	156.	.000	.000	EVAC	74.6	188.	.000	.000	EVAC
4.00	40.	50.1	116.	.000	.000	EVAC	50.1	139.	.000	.000	EVAC
5.00	40.	48.2	89.8	.000	.000	EVAC	48.2	108.	.000	.000	EVAC
6.00	40.	35.7	72.5	.000	.000	EVAC	35.7	86.9	.000	.000	EVAC
7.00	40.	26.8	59.8	.000	.000	EVAC	26.8	71.8	.000	.000	EVAC
8.00	40.	20.4	50.4	.000	.000	EVAC	20.4	60.5	.000	.000	EVAC
9.00	40.	15.5	43.3	.000	.000	EVAC	15.5	51.9	.000	.000	EVAC
10.00	40.	11.9	37.7	.000	.000	EVAC	11.9	45.3	.000	.000	EVAC

DIST (MI)	ANG (DEG)	7 HR EVAC GAMMA DOSE (mR)	7 HR SHEL GAMMA DOSE (mR)	7 HR EVAC INF THY DO (R)	7 HR SHEL INF THY DO (R)	PAG	8 HR EVAC GAMMA DOSE (mR)	8 HR SHEL GAMMA DOSE (mR)	8 HR EVAC INF THY DO (R)	8 HR SHEL INF THY DO (R)	PAG
.60	40.	147.	351.	.000	.000	EVAC	147.	402.	.000	.000	EVAC
1.00	40.	156.	386.	.000	.000	EVAC	156.	441.	.000	.000	EVAC
2.00	40.	110.	295.	.000	.000	EVAC	110.	337.	.000	.000	EVAC
3.00	40.	74.6	219.	.000	.000	EVAC	74.6	250.	.000	.000	EVAC
4.00	40.	50.1	162.	.000	.000	EVAC	50.1	185.	.000	.000	EVAC
5.00	40.	48.2	126.	.000	.000	EVAC	48.2	144.	.000	.000	EVAC
6.00	40.	35.7	101.	.000	.000	EVAC	35.7	116.	.000	.000	EVAC
7.00	40.	26.8	83.7	.000	.000	EVAC	26.8	95.7	.000	.000	EVAC
8.00	40.	20.4	70.4	.000	.000	EVAC	20.4	80.7	.000	.000	EVAC
9.00	40.	15.5	60.6	.000	.000	EVAC	15.5	69.2	.000	.000	EVAC
10.00	40.	11.9	52.8	.000	.000	EVAC	11.9	60.4	.000	.000	EVAC


CASE E
GDR (MR/HR)
X10²
X10¹
X10°
1 2 3 4 5 6 7 8 9 10
Semi-Logarithmic
5 Cycles x 10 to the inch

DAAADE6V4

ATTACHMENT 2

```
0000E6U4

TIME
                                  11418.3236

MEM
                                         589

100:"R":CLEAR :LF 0:USING :LPRINT
    TIME
105:COLOR 0:INPUT "LOWER DELTA T(DEG
    F) ";LD:INPUT "UPPER DELTA T(DE
    G F) ";UD
120:INPUT "LOWER WIND SPEED(MPH) ";L
    S:INPUT "UPPER WIND SPEED(MPH) "
    ;US
130:INPUT "PPT RATE(IN/HR) ";PP:
    INPUT "PPT DURATION(MIN) ";DP
140:INPUT "CONTAINMENT PRESS(PSIG) "
    ;CP:INPUT "STEAM LINE PRESS(PSIG
    ) ";SP
150:INPUT "CONTAINMENT DR(R/HR) ";CR
    :INPUT "STEAM LINE DR(MR/HR) ";M
    S
160:INPUT "URGN EM RATE(UCI/SEC) ";E
    R
170:INPUT "URGN EM CONC(UCI/CC) ";EC
180:INPUT "TIME AFTER SHUTDOWN(HRS)
    ";T
190:INPUT "LOCA TYPE(1 OR 2) ";LT$
200:INPUT "CONT. AT NEG PRESS(Y/N) "
    ;CP$
210:INPUT "RLS PTHWY(S,C,P) ";PP$
220:INPUT "S/L PATH(N,A,S) ";CN$
225:INPUT "RLS TIME(HH.MM)(24HR)) ";R
    T:INPUT "RLS TYPE(G OR P) ";RT$
226:IF RT$="G"LPRINT "WBD":LPRINT "-
    ---":GOTO 230
227:LPRINT "CTD":LPRINT "---"
230:IF RP$="S"OR RP$="C"LET L=LD:LET
    U=LS:GOTO 260
240:IF RP$="P"AND (12.8/(US*.447))<1
    .32LET L=LD:LET U=US:GOTO 260
250:IF RP$="P"AND (12.8/(US*.447))>=
    1.32LET L=UD:LET U=US:GOTO 230
260:IF L<=-1.12LET SC$="A":GOTO 480
270:IF L>=-1.11AND L<=-1LET SC$="B"
    GOTO 480
280:IF L>=-.95AND L<=-.85LET SC$="C"
    :GOTO 480
290:IF L>=-.88AND L<=-.3LET SC$="D"
    GOTO 480
300:IF L>=-.25AND L<=.88LET SC$="E"
    GOTO 480
310:IF L>=.85AND L<=2.24LET SC$="F"
    GOTO 480
320:IF L>=2.35LET SC$="G":GOTO 480
330:IF L<=-1.74LET SC$="A":GOTO 480
340:IF L>=-1.72AND L<=-1.55LET SC$="
    B":GOTO 480
350:IF L>=-1.54AND L<=-1.32LET SC$="
    C":GOTO 480
360:IF L>=-1.26AND L<=-.46LET SC$="D
    ":GOTO 480
370:IF L>=-.45AND L<=1.36LET SC$="E"
    :GOTO 480
380:IF L>=1.37AND L<=2.64LET SC$="F"
    :GOTO 480
390:IF L>=2.65LET SC$="G"
400:IF RP$="S"AND CN$="A"LET FR=1.21
    7E8
410:IF RP$="S"AND CN$="S"AND SP>=118
    5AND SP<1203LET FR=2.543E6
420:IF RP$="S"AND CN$="S"AND SP>=120
    3AND PS<1228LET FR=5.882E6
430:IF RP$="S"AND CN$="S"AND SP>=122
    8AND PS<1235LET FR=3.685E6
440:IF RP$="S"AND CN$="S"AND SP>=123
    8AND PS<1255LET FR=1.814E7
450:IF RP$="S"AND CN$="S"AND SP>=125
    5LET FR=1.266E7
460:IF RP$="C"LET FR=8869*P^.52
470:IF RP$="P"LET FR=ER/EC
480:IF RP$="S"PRINT "USE SL J, LOCA
    ";LT$;", Ta";T:INPUT "Ja ";J:
    GOTO 510
490:IF RP$="C"PRINT "USE CT J, Ta";T
    :INPUT "Ja ";J:GOTO 510
500:IF RP$="P"PRINT "USE STK J, LOCA
    ";LT$;", Ta";T:INPUT "Ja ";J
510:IF SC$="A"OR SC$="B"OR SC$="C"OR
    SC$="D"LET PR=EXP (-LN U+6.58776
    )
520:IF SC$="E"AND U>15LET PR=EXP (-
    LN U+6.58776)
530:IF SC$="E"AND U<=15LET PR=EXP (-
    .325489*LN U+5.1258)
540:IF SC$="F"AND U>18LET PR=EXP (-
    LN U+6.58776)
550:IF SC$="F"AND U<=18LET PR=EXP (-
    .338559*LN U+5.81864)
560:IF SC$="G"AND U>15LET PR=EXP (-
    LN U+6.58776)
570:IF SC$="G"AND U<=15LET PR=EXP (-
    .333239*LN U+4.94164)
580:IF RP$="S"OR RP$="C"OR (RP$="P"
    AND (12.8/(US*.447))<1.32)LET EH
    =0
585:IF RT$="G"LET EH=0:GOTO 680
590:IF RP$="P"AND (12.8/(US*.447))>=
    1.32LET EH=56.4*PR*.3048
600:IF RP$="S"LET Q=RS*FR*J:GOTO 645
610:IF RP$="C"LET Q=CR*FR*J:GOTO 645
620:IF RP$="P"AND EC<=1E-3LET Q=EC*4
    .325E3*FR*J:GOTO 645
630:IF RP$="P"AND EC>1E-2AND EC<=1EJ
    LET Q=EC*2.84*E4*FR*J:GOTO 645
640:IF RP$="P"AND EC>1E2LET Q=EC*1.1
    9E2*FR*J
645:FOR I=1TO 8:COLOR 8
647:CSIZE 1:LF 2:USING "##":LPRINT
    TAB 12;I;" HOUR(S)":LF 1
648:LPRINT TAB 2;"X";TAB 7;"DR";TAB
    14;"DOSE";TAB 21;"PAR";TAB 28;"W
    ID";TAB 32;"ETA"
649:LPRINT TAB 2;"MI";TAB 5;"MR/HR";
    TAB 14;"REM";TAB 28;"MI"
650:FOR N=1TO 10
660:X=N*1605
665:COLOR 8
670:IF SC$="A"GOTO 740
680:IF SC$="B"GOTO 750
690:IF SC$="C"GOTO 840
700:IF SC$="D"GOTO 850
710:IF SC$="E"GOTO 940
720:IF SC$="F"GOTO 950
730:IF SC$="G"GOTO 1040
740:SY=.3658*X^-.5831
750:IF X<=100LET S2=.152*X^.536:GOTO
    760
760:IF X>100AND X<=1000LET S2=.00066
    *X^1.541+5.27:GOTO 760
770:IF X>1000LET S2=.000249*X^2.854-5
    .6
780:GOTO 1080
790:SY=.2751*X^.5831
800:IF X<=100LET S2=.156*X^.522:GOTO
    830
810:IF X>100AND X<=1000LET S2=.838*X
    ^1.149+3.3:GOTO 830
820:IF X>1000LET S2=.855*X^1.050+2
830:GOTO 1080
840:SY=.2885*X^.5821
850:IF X<=100LET S2=.116*X^.585:GOTO
    880
860:IF X>100AND X<=1000LET S2=.113*X
    ^.911:GOTO 880
870:IF X>1000LET S2=.113*X^.911
880:GOTO 1080
890:SY=.1471*X^.5831
900:IF X<=100LET S2=.875*X^.881:GOTO
    930
910:IF X>100AND X<=1000LET S2=.222*X
    ^.725-1.7:GOTO 930
920:IF X>1000LET S2=1.26*X^.516-12
930:GOTO 1080
940:SY=.1046*X^.5821
950:IF X<=100LET S2=.863*X^.871:GOTO
    980
960:IF X>100AND X<=1000LET S2=.211*X
    ^.670-1.3:GOTO 980
970:IF X>1000LET S2=6.72*X^.385-24
980:GOTO 1080
990:SY=.0722*X^.5821
 1000:IF X<=100LET S2=.853*X^.814:
    GOTO 1030
 1010:IF X>100AND X<=1000LET S2=.896
    *X^.74-.35:GOTO 1030
 1020:IF X>1000LET S2=10.85*X^.19-48
    .6
 1030:GOTO 1080
 1040:SY=.0481*X^.5821
 1050:IF X<=100LET S2=.822*X^.814:
    GOTO 1080
 1060:IF X>100AND X<=1000LET S2=.852
    *X^.74-.21:GOTO 1080
 1070:IF X>1000LET S2=10.82*X^.19-29
    .2
 1080:SY=SY*((LN .81/(-.5))^.5)/1605
 1085:IF RP$="S"OR RP$="C"LET ET=DYS
    (DEG RT+N/LS)
 1086:IF RP$="P"LET ET=DYS (DEG RT+N
    /US)
 1087:IF ET>24LET ET=ET-24
 1088:CH=Q/(3.5*SY*S2*(US*.447))*EXP (-
    .5*(EH/S2)^2)
 1095:IF RT$="G"GOTO 1220
 1100:IF CH=0AND (SC$="A"OR SC$="B"
    OR SC$="C")LET D1=-.089*LN (
    X/1000)+.71225
 1110:IF CH=0AND SC$="D"LET D1=-.851
    *LN (X/1000)+.75684
 1120:IF CH=0AND (SC$="E"OR SC$="F"
    OR SC$="G")LET D1=-.10454*LN (
    X/1000)+.7826
 1130:IF CH>56.4AND (SC$="A"OR SC$=
    "B"OR SC$="C")LET D1=-.882479
    *LN (X/1000)+.51887
 1140:IF CH>56.4AND SC$="D"LET D1=-
    .85756*LN (X/1000)+.52843
 1150:IF CH>56.4AND (SC$="E"OR SC$=
    "F"OR SC$="G")LET D1=-.875849
    *LN (X/1000)+.56225
 1160:IF RP<=.82LET D2=1
 1170:IF RP>.82AND RP<=.86LET D2=-.1
    7883*LN DP+1.13375
 1180:IF RP>.86AND RP<=.1LET D2=-.22
    536*LN DP+1.18854
 1190:IF RP>.1AND RP<=.25LET D2=-.22
    175*LN DP+1.62858
 1200:IF RP>.25LET D2=-.18554*LN DP+
    .22142
 1210:IF D2<0LET D2=0
 1215:CH=CH*D1*D2:GOTO 1360
 1220:IF LT$="1"GOTO 1240
 1230:IF LT$="2"GOTO 1280
 1240:IF T>=.1AND T<=2LET D=EXP (-.0
    7318*LN T-2.98644):GOTO 1310
 1250:IF T>2AND T<=10LET D=EXP (-.21
    734*LN T-2.81818):GOTO 1310
 1260:IF T>10AND T<=200LET D=EXP (-.
    0432*LN T-3.2383):GOTO 1310
 1270:IF T>=.1AND T<=.5LET D=EXP (-.
    15287*LN T-.98585):GOTO 1310
 1280:IF T>.5AND T<=2LET D=EXP (-.27
    775*LN T-1.00856):GOTO 1310
 1290:IF T>20AND T<=70LET D=EXP (-.55
    85*LN T-.77323):GOTO 1310
 1300:IF T>700AND T<=5000LET D=EXP (-.
    06565LN T-3.87877)
 1310:GD=CH*D:WB=GD*I/1000:USING "##
    #":LPRINT N;:USING "###.##":
    LPRINT GD;
 1320:IF WB<1LET P$="NONE"
 1330:IF WB>=10AND WB<5LET P$="SHEL
    ":COLOR 2
 1340:IF WB>=5LET P$="EVAC":COLOR 3
 1350:USING "#####.#";LPRINT WB;
    ;P$;EY:USING "###.##";LPRINT
    ETA:GOTO 1410
 1360:RC=CH*2.58E2:DC=RC*I/1000
 1365:USING "###";LPRINT N;:USING "#
    #.##";LPRINT RC;
 1370:IF DC<5LET P$="NONE"
 1380:IF DC>=5AND DC<25LET P$="SHEL
    ":COLOR 2
 1390:IF DC>=25LET P$="EVAC":COLOR
    3
 1400:USING "#####.#";LPRINT DC;
    ;P$
 1410:NEXT N
 1420:NEXT I
 1430:END
```

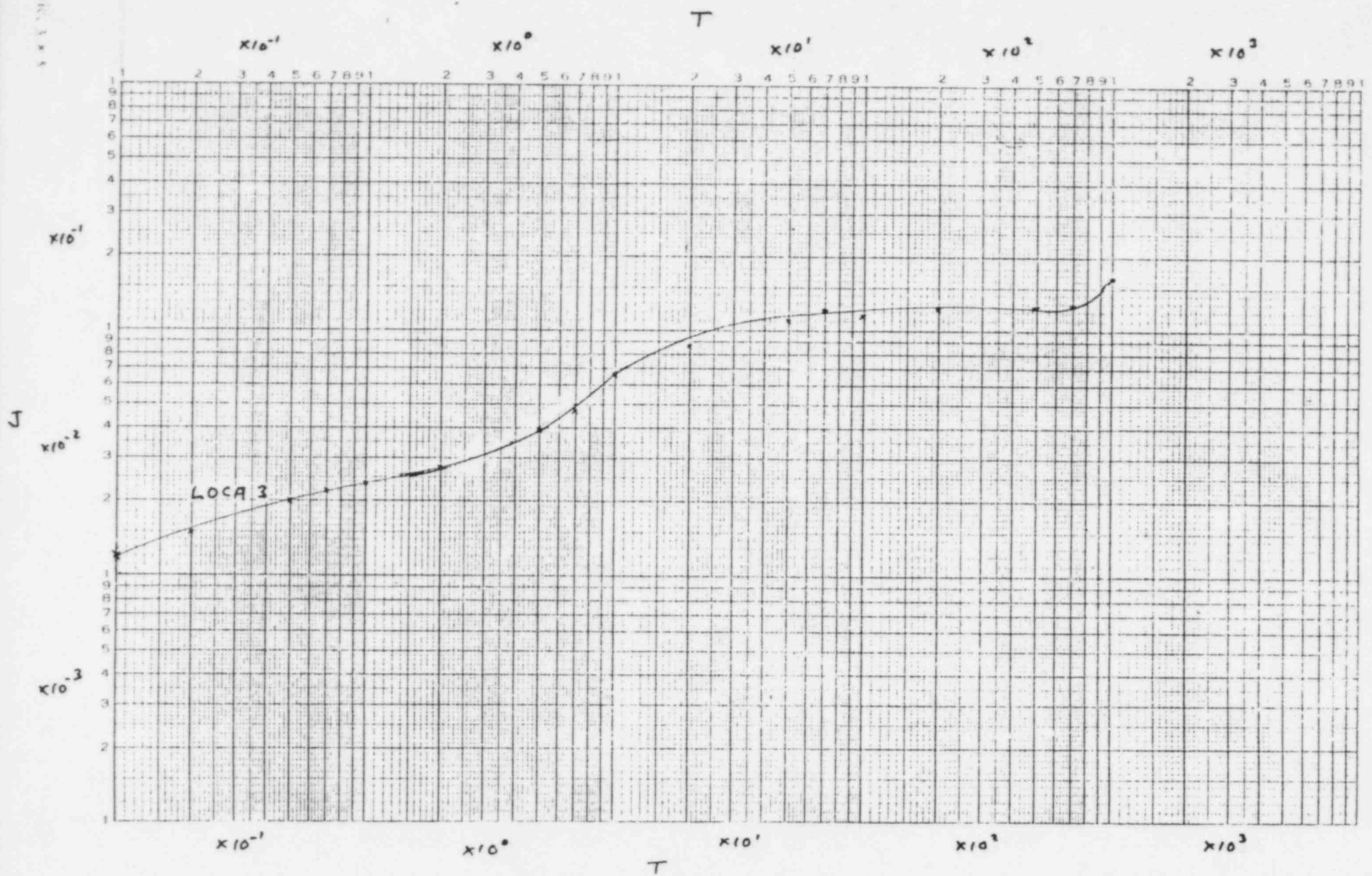
```
1120:IF EH=0AND (
     SC$="E"OR SC
     $="F"OR SC$=
     "G")LET D1=-
     .10454*LN (X
     /1000)+.7826
1130:IF EH>=56.4
     AND (SC$="A"
     OR SC$="B"OR
     SC$="C")LET
     D1=-.08247*
     LN (X/1000)+
     .91007
1140:IF EH>=56.4
     AND SC$="D"
     LET D1=-.097
     96*LN (X/100
     0)+.93843
1150:IF EH>=56.4
     AND (SC$="E"
     OR SC$="F"OR
     SC$="G")LET
     D1=-.07584*
     LN (X/ 000)+
     .96329
1160:IF RP<=.02
     LET D2=1
1170:IF RP>.02AND
     RP<=.06LET D
     2=-.17003*LN
     DP+1.13375
1180:IF RP>.06AND
     RP<=.1LET D2
     =-.22536*LN
     DP+1.10094
1190:IF RP>.1AND
     RP<=.25LET D
     2=-.23175*LN
     DP+1.02898
1200:IF RP>.25LET
     D2=-.19554*
     LN DP+.77143
1210:IF D2<0LET D
     2=0
1215:CH=CH*D1*D2:
     GOTO 1360
1220:IF LT$="1"
     GOTO 1240
1230:IF LT$="3"
     GOTO 1280
1240:IF T>=.1AND
     T<=2LET D=
     EXP (-.07318
     *LN T-2.9064
     4):GOTO 1310
1250:IF T>2AND T<
     =20LET D=EXP
     (-.21994*LN
     T-2.61818):
     GOTO 1310
1260:IF T>10AND T
     <=200LET D=
     EXP (-.0432*
     LN T-3.2383)
     :GOTO 1310
1270:IF T>=.1AND
     T<=.5LET D=
     EXP (-.15287
     *LN T-.98905
     ):GOTO 1310
1280:IF T>.5AND T
     <=2LET D=EXP
     (-.27775*LN
     T-1.08096):
     GOTO 1310
1290:IF T>2AND T<
     =70LET D=EXP
     (-.5989*LN T
     -.77323):
     GOTO 1310
1300:IF T>70AND T
     <=500LET D=
     EXP (-.06565
     LN T-3.07077
     )
1310:GD=CH*D:WB=G
     D*I/1000:
     USING "###":
     LPRINT N;:
     USING "##.##
     ^":LPRINT GD
     ;
1320:IF WB<1LET P
     A$="NONE"
1330:IF WB>=1AND
     WB<5LET PA$=
     "SHEL":COLOR
     2
1340:IF WB>=5LET
     PA$="EVAC":
     COLOR 3
1350:USING "#####
     .#":LPRINT W
     B;"    ";PA$;
     EY:USING "##
     #.##":LPRINT
     ETA:GOTO 141
     0
1360:RC=CH*3.58E2
     :DC=RC*I/100
     0
1365:USING "###":
     LPRINT N;:
     USING "##.##
     ^":LPRINT RC
     ;
1370:IF DC<5LET P
     A$="NONE"
1380:IF DC>=5AND
     DC<25LET PA$
     ="SHEL":
     COLOR 2
1390:IF DC>=25LET
     PA$="EVAC":
     COLOR 3
1400:USING "#####
     .#":LPRINT D
     C;"    ";PA$
1410:NEXT N
1420:NEXT I
1430:END
```

```
U>19LET PR=EXP
(-LN U+6.90776
)
570:IF SC$="G"AND
U<=19LET PR=
EXP (-.33333*
LN U+4.94164)
580:IF RP$="S"OR R
P$="C"OR (RP$=
"P"AND (12.8/(
US*.447))<1.32
)LET EH=0
585:IF RT$="G"LET
EH=0:GOTO 600
590:IF RP$="P"AND
(12.8/(US*.447
)))=1.32LET EH
=56.4+PR*.3048
600:IF RP$="S"LET
Q=RS*FR*J:GOTO
645
610:IF RP$="C"LET
Q=CR*FR*J:GOTO
645
620:IF RP$="P"AND
EC<=1E-2LET Q=
EC*4.329E7*FR*
J:GOTO 645
630:IF RP$="P"AND
EC>1E-2AND EC<
=1E2LET Q=EC*2
.841E4*FR*J:
GOTO 645
640:IF RP$="P"AND
EC>1E2LET Q=EC
*1.19E2*FR*J
645:FOR I=1TO 8:
COLOR 0
647:CSIZE 1:LF 3:
USING "##":
LPRINT TAB 12;
I;" HOUR(S)":
LF 1
648:LPRINT TAB 2;"
X";TAB 7;"DR";
TAB 14;"DOSE";
TAB 21;"PAR";
TAB 28;"WID";
TAB 32;"ETA"
649:LPRINT TAB 2;"
MI";TAB 5;"MR/
HR";TAB 14;"RE
M";TAB 28;"MI"
650:FOR N=1TO 10
660:X=N*1609
665:COLOR 0
670:IF SC$="A"GOTO
740
680:IF SC$="B"GOTO
790
690:IF SC$="C"GOTO
840
700:IF SC$="D"GOTO
890
710:IF SC$="E"GOTO
940
720:IF SC$="F"GOTO
990
730:IF SC$="G"GOTO
1040
740:SY=.3658*X^.90
31
750:IF X<=100LET S
Z=.192*X^.936:
GOTO 780
760:IF X>100AND X<
=1000LET SZ=.0
0066*X^1.941+9
.27:GOTO 780
770:IF X>1000LET S
Z=.00024*X^2.0
94-9.6
780:GOTO 1080
790:SY=.2751*X^.90
31
800:IF X<=100LET S
Z=.156*X^.922:
GOTO 830
810:IF X>100AND X<
=1000LET SZ=.0
38*X^1.149+3.3
:GOTO 830
820:IF X>1000LET S
Z=.055*X^1.098
+2
830:GOTO 1080
840:SY=.2089*X^.90
31
850:IF X<=100LET S
Z=.116*X^.905:
GOTO 880
860:IF X>100AND X<
=1000LET SZ=.1
13*X^.911:GOTO
880
870:IF X>1000LET S
Z=.113*X^.911
880:GOTO 1080
890:SY=.1471*X^.90
31
900:IF X<=100LET S
Z=.079*X^.881:
GOTO 930
910:IF X>100AND X<
=1000LET SZ=.2
22*X^.725-1.7:
GOTO 930
920:IF X>1000LET S
Z=1.26*X^.516-
13
930:GOTO 1080
940:SY=.1246*X^.92
3:
950:IF X<=100LET S
Z=.063*X^.87:
GOTO 980
960:IF X>100AND X<
=1000LET SZ=.2
11*X^.678-1.3:
970:IF X>1000LET S
Z=6.73*X^.305-
34
980:GOTO 1080
990:SY=.0722*X^.90
31
1000:IF X<=100LET
SZ=.053*X^.8
14:GOTO 1030
1010:IF X>100AND
X<=1000LET S
Z=.086*X^.74
-.35:GOTO 10
30
1020:IF X>1000LET
SZ=18.05*X^.
18-48.6
1030:GOTO 1080
1040:SY=.0481*X^.
9031
1050:IF X<=100LET
SZ=.032*X^.8
14:GOTO 1080
1060:IF X>100AND
X<=1000LET S
Z=.052*X^.74
-.21:GOTO 10
80
1070:IF X>1000LET
SZ=10.83*X^.
18-29.2
1080:EY=SY*((LN .
01/(-.5))^.5
)/1609
1085:IF RP$="S"OR
RP$="C'LET E
T=DMS (DEG R
T+N/LS)
1086:IF RP$="P"
LET ET=DMS (
DEG RT+N/US)
1087:IF ET>24LET
ET=ET-24
1090:CH=Q/(Π*SY*S
Z*(U*.447))*
EXP (-.5*(EH
/SZ)^2)
1095:IF RT$="G"
GOTO 1220
1100:IF EH=0AND (
SC$="A"OR SC
$="B"OR SC$=
"C")LET D1=-
.08017*LN (X
/1000)+.7123
9
1110:IF EH=2AND S
C$="D"LET D1
=-.091*LN (X
/1000)+.7568
4
```

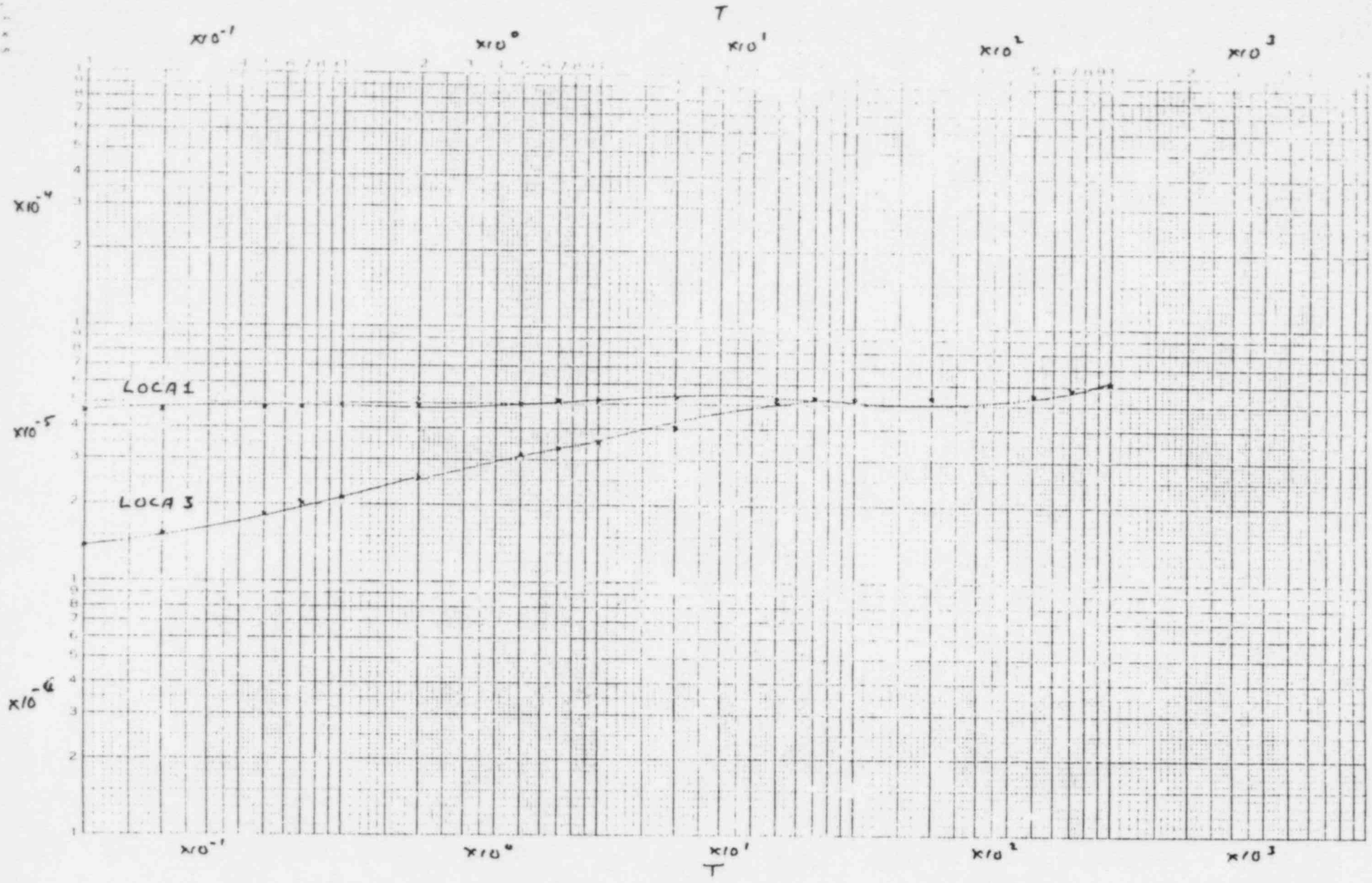
```
DAAADE6U4


100:"A":CLEAR :LF
    8:USING :
    LPRINT TIME
105:COLOR 0:INPUT
    "LOWER DELTA T
    (DEG F) ";LD:
    INPUT "UPPER D
    ELTA T(DEG F)
    ";UD
120:INPUT "LOWER W
    IND SPEED(MPH)
     ";LS:INPUT "U
    PPER WIND SPEE
    D(MPH) ";US
130:INPUT "PPT RAT
    E(IN/HR) ";RP:
    INPUT "PPT DUR
    ATION(MIN) ";D
    P
140:INPUT "CONTAIN
    MENT PRESS(PSI
    G) ";CP:INPUT
    "STEAM LINE PR
    ESS(PSIG) ";SP
150:INPUT "CONTAIN
    MENT DR(R/HR)
    ";CR:INPUT "ST
    EAM LINE DR(MR
    /HR) ";RS
160:INPUT "WRGM EM
     RATE(UCI/SEC)
     ";ER
170:INPUT "WRGM EM
     CONC(UCI/CC)
    ";EC
180:INPUT "TIME AF
    TER SHUTDOWN(H
    RS) ";T
190:INPUT "LOCA TY
    PE(1 OR 3) ";L
    T$
200:INPUT "CONT. A
    T NEG PRESS(Y/
    N) ";CP$
210:INPUT "RLS PTH
    WY(S,C,P) ";RP
    $
220:INPUT "S/L PAT
    H(N,A,S) ";CN$
225:INPUT "RLS TIM
    E(HH.MM(24HR))
     ";RT:INPUT "R
    LS TYPE(G OR P
    ) ";RT$
226:IF RT$="G"
    LPRINT "WBD":
    LPRINT "---":
    GOTO 230
227:LPRINT "CTD":
    LPRINT "---"
230:IF RP$="S"OR R
    P$="C"LET L=LD
    :LET U=LS:GOTO
    260
240:IF RP$="P"AND
    (12.8/(US*.447
    ))<1.32LET L=L
    D:LET U=US:
    GOTO 260
250:IF RP$="P"AND
    (12.8/(US*.447
    ))>=1.32LET L=
    UD:LET U=US:
    GOTO 330
260:IF L<=-1.12LET
    SC$="A":GOTO 4
    00
270:IF L>=-1.11AND
    L<=-1LET SC$="
    B":GOTO 400
280:IF L>=-.99AND
    L<=-.89LET SC$
    ="C":GOTO 400
290:IF L>=-.88AND
    L<=-.3LET SC$=
    "D":GOTO 400
300:IF L>=-.29AND
    L<=.88LET SC$=
    "E":GOTO 400
310:IF L>=.89AND L
    <=2.34LET SC$=
    "F":GOTO 400
320:IF L>=2.35LET
    SC$="G":GOTO 4
    00
330:IF L<=-1.74LET
    SC$="A":GOTO 4
    00
340:IF L>=-1.73AND
    L<=-1.55LET SC
    $="B":GOTO 400
350:IF L>=-1.54AND
    L<=-1.37LET SC
    $="C":GOTO 400
360:IF L>=-1.36AND
    L<=-.46LET SC$
    ="D":GOTO 400
370:IF L>=-.45AND
    L<=1.36LET SC$
    ="E":GOTO 400
380:IF L>=1.37AND
    L<=3.64LET SC$
    ="F":GOTO 400
390:IF L>=3.65LET
    SC$="G"
400:IF RP$="S"AND
    CN$="A"LET FR=
    1.217E6
410:IF RP$="S"AND
    CN$="S"AND SP>
    =1185AND SP<12
    03LET FR=2.543
    E6
420:IF RP$="S"AND
    CN$="S"AND SP>
    =1203AND PS<12
    20LET FR=5.082
    E6
430:IF RP$="S"AND
    CN$="S"AND SP>
    =1220AND PS<12
    38LET FR=7.609
    E6
440:IF RP$="S"AND
    CN$="S"AND SP>
    =1238AND PS<12
    55LET FR=1.014
    E7
450:IF RP$="S"AND
    CN$="S"AND SP>
    =1255LET FR=1.
    266E7
460:IF RP$="C"LET
    FR=886*CP/52
470:IF RP$="P"LET
    FR=ER/EC
480:IF RP$="S"
    PRINT "USE SL
    J, LOCA ";LT$;
    ", T=";T:INPUT
    "J= ";J:GOTO 5
    10
490:IF RP$="C"
    PRINT "USE CT
    J, T=";T:INPUT
    "J= ";J:GOTO 5
    10
500:IF RP$="P"
    PRINT "USE STK
     J, LOCA ";LT$
    ;", T=";T:
    INPUT "J= ";J
510:IF SC$="A"OR S
    C$="B"OR SC$="
    C"OR SC$="D"
    LET PR=EXP (-
    LN U+6.90776)
520:IF SC$="E"AND
    U>15LET PR=EXP
    (-LN U+6.90776
    )
530:IF SC$="E"AND
    U<=15LET PR=
    EXP (-.32548*
    LN U+5.1299)
540:IF SC$="F"AND
    U>18LET PR=EXP
    (-LN U+6.90776
    )
550:IF SC$="F"AND
    U<=18LET PR=
    EXP (-.33099*
```

DAAADE6V4

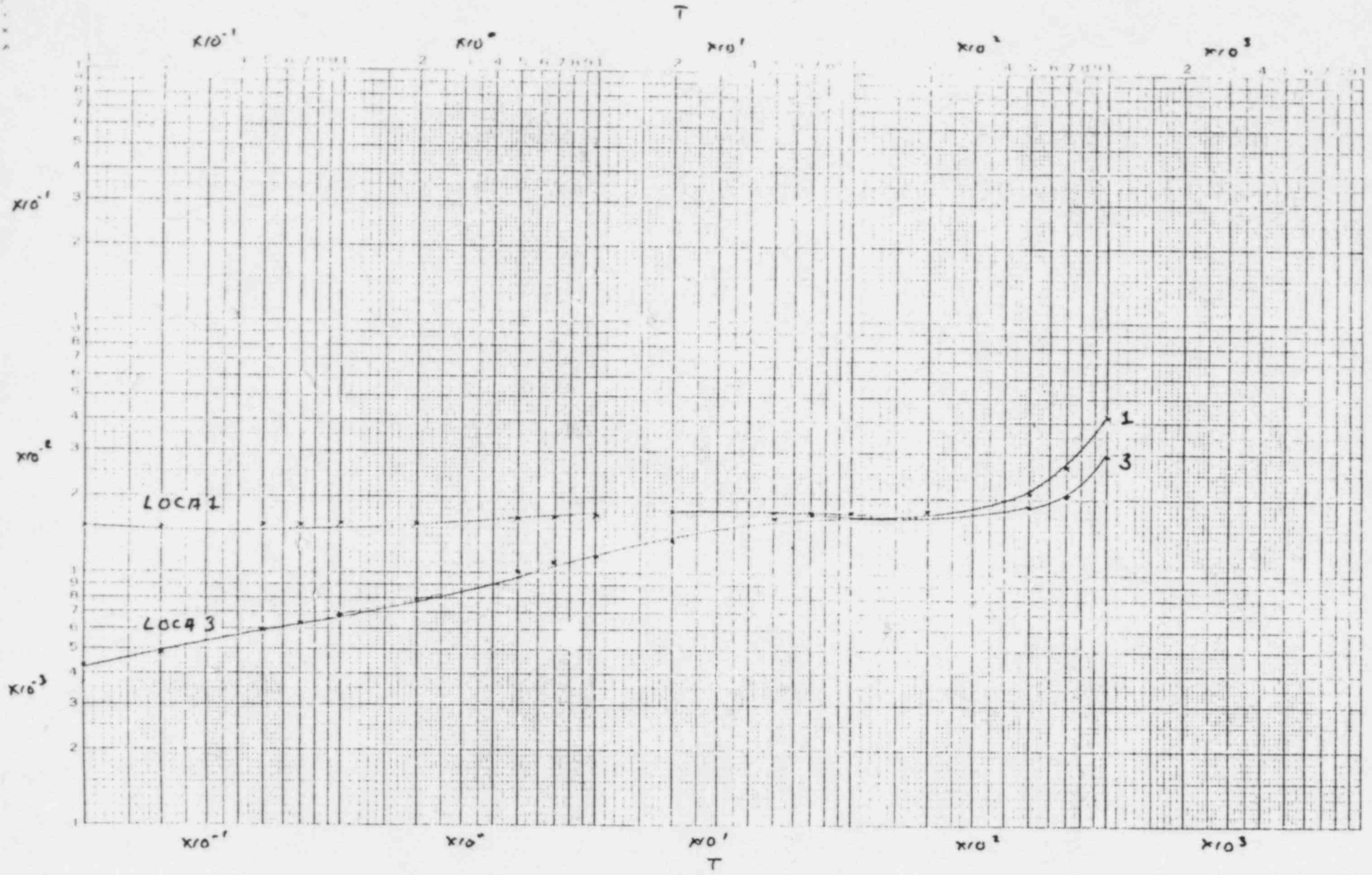
ATTACHMENT 4



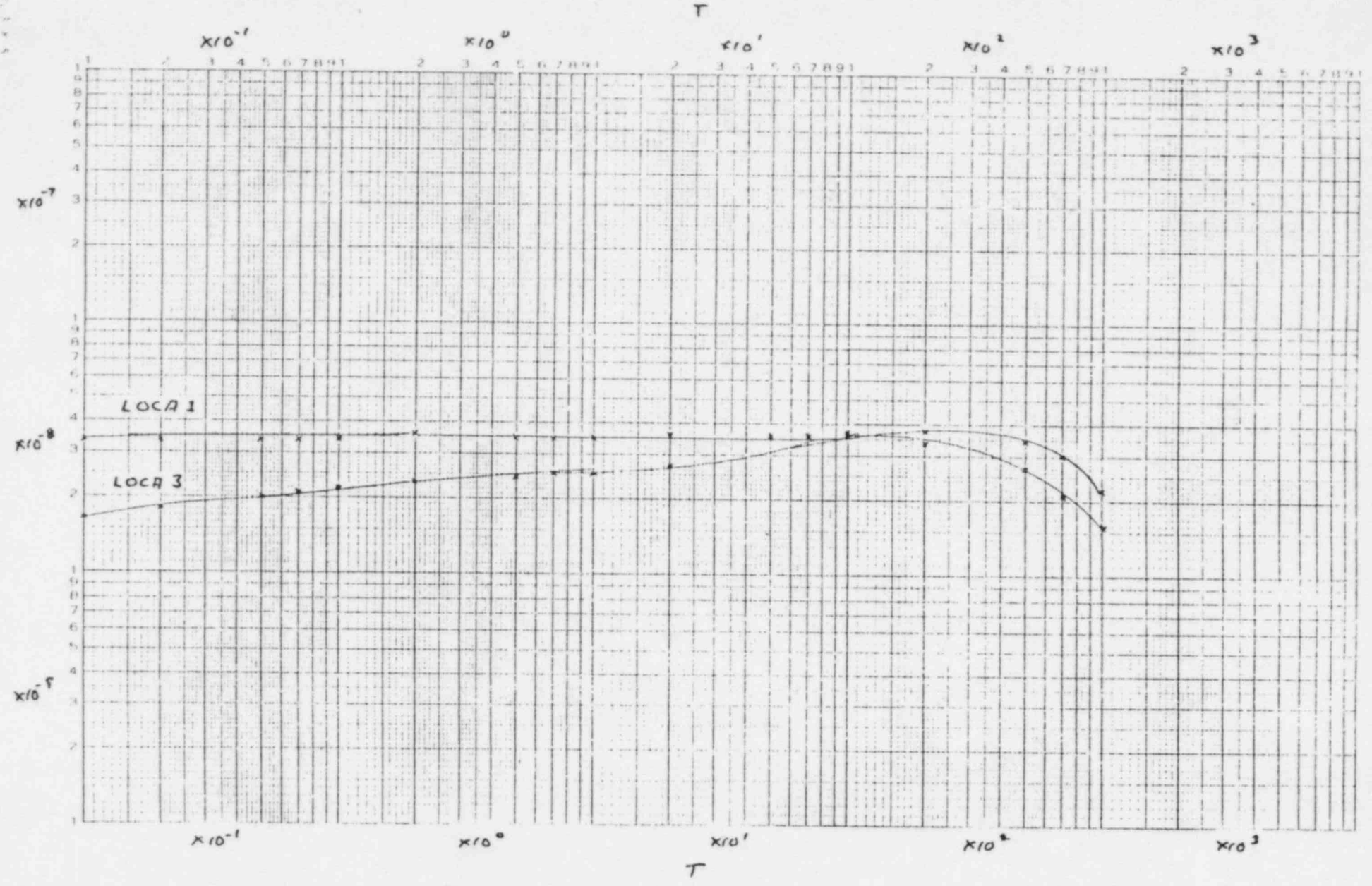
CONTAINMENT J



STACK(MED) J


T
X10⁻¹
X10⁰
X10¹
X10²
X10³
X10⁻¹
X10⁻²
X10⁻³
LOCA 1
LOCA 3
1
3
X10⁻¹
X10⁰
X10¹
X10²
X10³
T

STACK (HIGH) J



STACK (LOW) J

II. Protective actions for the consumption of food shall be in accordance with the following:

A. RESPONSE LEVELS

(1) Response level for preventive PAG Infant as critical segment of population

Response levels for preventive PAG	^{131}I	^{134}Ce	^{137}Ca	^{90}Sr	^{89}Sr
Initial Activity Area Deposition (microcuries/square meter)	0.13	2.0	3.0	0.5	8.0
Forage Concentration (microcuries/kilogram)	0.05	0.8	1.3	0.18	3.0
Peak Milk Activity (microcuries/kilogram)	0.015	0.15	0.24	0.009	0.14
TOTAL INTAKE(microcuries)	0.09	4.0	7.0	0.2	2.6

(2) Response level for emergency PAG The response levels equivalent to the Emergency PAG are presented for both infants and adults to permit use of either level and thus assure a flexible approach to taking action in cahses where expcsure of the most critical portion of the population (infants and pregnant women) can be prevented:

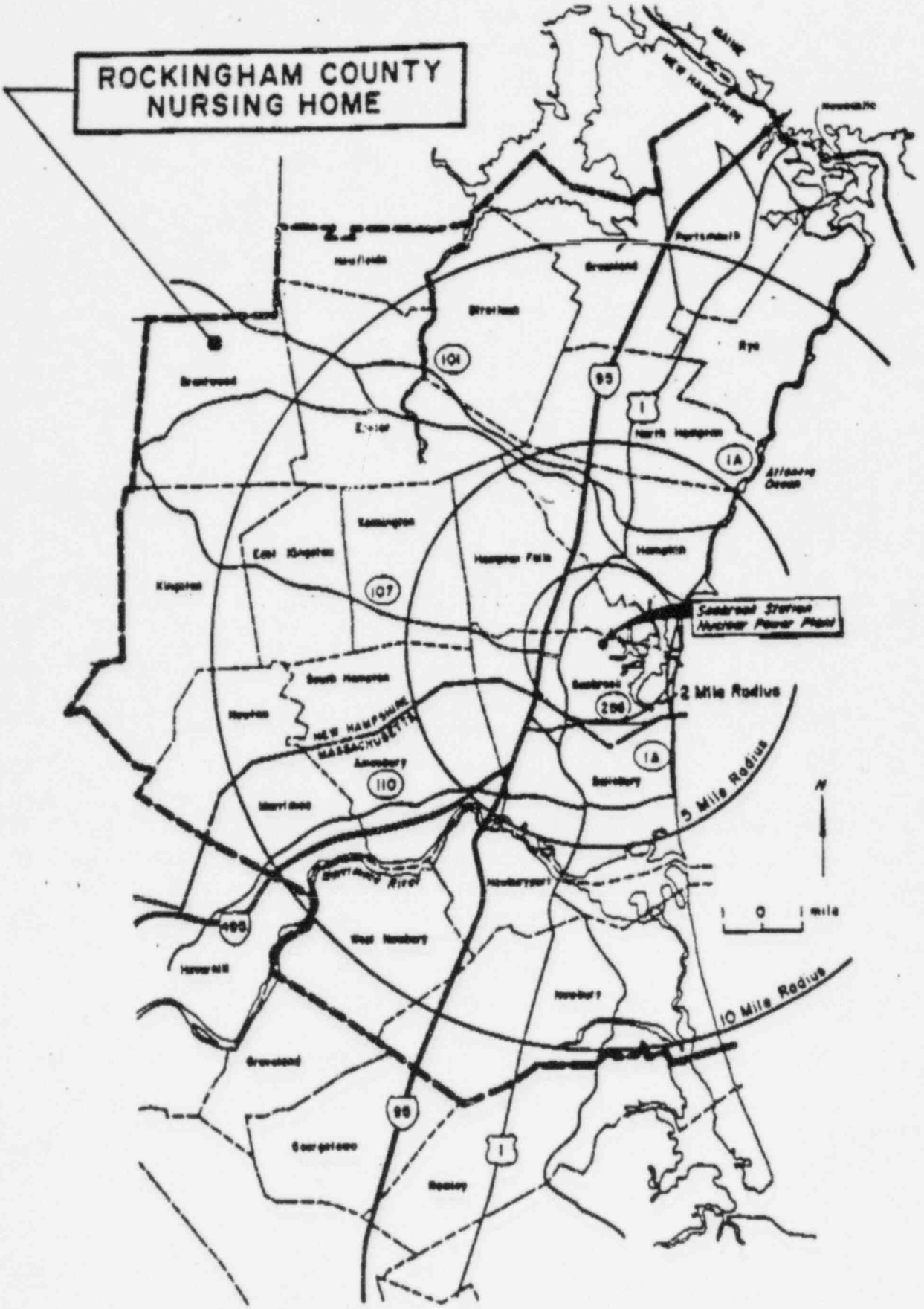
RESPONSE LEVELS for EMER. PAG	131		134		137		90		89	
	Inf	Adlt	Inf	Adlt	Inf	Adlt	Inf	Adlt	Inf	Adlt
Initial Activity Area Deposition (microcuries/square meter	1.3	18	20	40	30	50	5	20	80	1600
Forage Concentration (microcuries/kilogram)	0.5	7	8	17	13	19	1.8	8	30	700
Peak Milk Activity (microcuries/liter)	0.15	2	1.5	3	2.4	4	0.09	0.4	1.4	30
TOTAL INTAKE (microcuries)	0.9	10	40	70	70	80	2	7	26	400

B. IMPLEMENTATION When using the PAG's and associated response levels for response planning or protective actions, the following conditions should be followed:

(1) Specific food items. To obtain the response level (microcurie/kilogram) equivalent to the PAG for other specific foods, it is necessary to weight the contribution of the individual food to the total dietary intake; thus,

$$\text{Response Level} = \frac{\text{Total intake (microcuries)}}{\text{Consumption (kilograms)}}$$

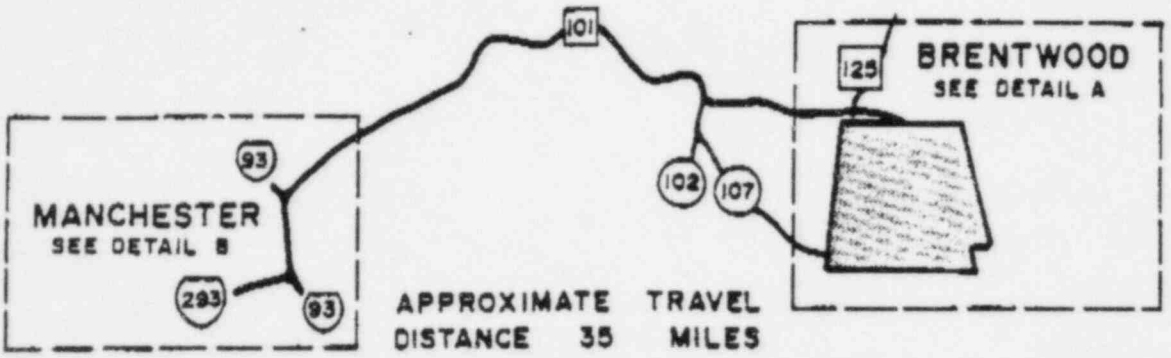
SEABROOK STATION
EMERGENCY PLANNING ZONE



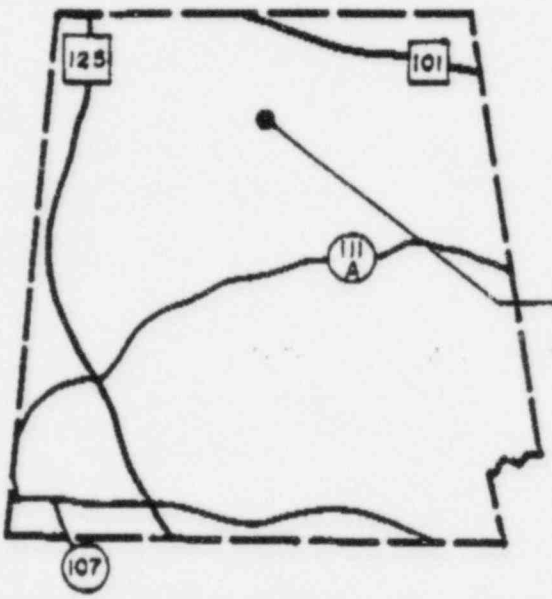
LEGEND

EMERGENCY PLANNING ZONE (EPZ) BOUNDARY

ROCKINGHAM COUNTY NURSING HOME | EVACUATION ROUTE MAP



DETAIL A
TOWN OF BRENTWOOD



ROCKINGHAM COUNTY NURSING HOME

DETAIL B
RECEPTION CENTER LOCATION
MANCHESTER, N.H.