2.4

MESORAD Dose Assessment of the Chernobyl Reactor Accident

**J. V. Ramsdell
J. M. Hubbe
G. F. Athey
W. E. Davis**

December 1989

**Prepared for the U.S. Department of Energy
under Contract DE-AC06-76RLO 1830**

**Pacific Northwest Laboratory
Operated for the U.S. Department of Energy
by Battelle Memorial Institute**

DISCLAIMER

This program was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor Battelle Memorial Institute, nor any of their employees, makes **any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.** Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or Battelle Memorial Institute. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

PACIFIC NORTHWEST LABORATORY
operated by
BATTELLE MEMORIAL INSTITUTE
for the
UNITED STATES DEPARTMENT OF ENERGY
under Contract DE-AC06-76RLO 1830

Printed in the United States of America
Available from
National Technical Information Service
United States Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22161

NTIS Price Codes
Microfiche A01

Printed Copy

Pages	Price Codes
001-025	A02
026-050	A03
051-075	A04
076-100	A05
101-125	A06
126-150	A07
151-175	A08
176-200	A09
201-225	A10
226-250	A11
251-275	A12
276-300	A13

MESORAD DOSE ASSESSMENT OF THE
CHERNOBYL REACTOR ACCIDENT

J. V. Ramsdell
J. M. Hubbe
G. F. Athey
W. E. Davis

December 1989

Prepared for
the U.S. Department of Energy
under Contract DE-AC06-76RLO 1830

Pacific Northwest Laboratory
Richland, Washington 99352

SUMMARY

Shortly after midnight local time on April 26, 1986, an accident involving Unit 4 of the Chernobylskaya Atomic Energy Station resulted in the release of a large amount of radioactive material to the atmosphere, which continued through May 5, 1986. This report describes the results of an assessment of the doses near the site (within 80 km) made at the Pacific Northwest Laboratory using the MESORAD Dose Assessment model. The MESORAD model was developed for emergency response applications for the U.S. Nuclear Regulatory Commission and the U.S. Department of Energy, Richland Operations Office.

Winds during the release period initially carried the radioactive effluents to the west and northwest. On the third day, the winds shifted to carry the effluent to the northeast, and then on the fourth day of the release they shifted to carry the effluents to the south. As a result, other than narrow bands of relatively high contamination to the west and northwest of the reactor site, the contamination resulting from the accident was well distributed around the site.

The area encompassed by the MESORAD model domain is 10678 mi². By the beginning of May 7, 1986, the MESORAD assessment indicates that approximately 21.4% of the land within the domain had accumulated a whole body dose of 1 rem or more and about 1.5% of the land had accumulated a dose of 5 rem or more. MESORAD further indicates that the residual radiation from ground contamination at this time was 1 mrem/h or more over almost 70% of the domain and was 10 mrem/h or greater over almost 6% of the domain. The maximum doses and dose rates predicted by MESORAD at 00Z on May 7, 1986, are

	Receptor Location (Bearing/Distance in Miles)		
	<u>315/4.7</u>	<u>256/41.2</u>	<u>207/7.5</u>
Total Whole Body (rem)	9.9	5.9	6.3
Whole Body Source (rem)			
Plume External	0.09	0.14	0.11
Ground Shine	7.4	4.90	3.70
Inhalation	2.4	0.77	2.40
Dose Commitment (rem)			
Adult Thyroid	53.0	98.0	35.0
Lung	93.0	26.0	93.0
Residual Dose Rate (mrem/h)	34.0	14.0	39.0

The total whole body dose is the sum of external doses from the passing plume and shine from ground contamination and a 50-year dose commitment from inhaled radionuclides. The thyroid and lung doses are also 50-year dose commitments resulting from inhaled radionuclides.

The May 7 dose rate pattern is similar to a pattern of gamma-exposure rates observed on May 29. The general agreement between the two patterns is an indication that the assumptions made with regard to the Chernobyl source characteristics and meteorological conditions during the releases were reasonable. Where the patterns are different, the differences are entirely within the limits of the uncertainty of MESORAD.

CONTENTS

SUMMARY	iii
INTRODUCTION	1
SOURCE CHARACTERIZATION	3
METEOROLOGICAL CONDITIONS	7
DOSE ASSESSMENT	11
DISCUSSION	21
MESORAD MODEL UNCERTAINTIES	25
REFERENCES	29
APPENDIX A - METEOROLOGICAL DATA	A.1
APPENDIX B - MESORAD DOSE ESTIMATES	B.1

FIGURES

1	Representation of the Initial Release Configuration	4
2	MESORAD Model Domain and Meteorological Observation Locations	8
3	Effect of Mixing Layer Thickness on Determination of Release Height Wind	10
4	Chronological Sequence of Total Whole Body Dose Accumulation	13
5	Dose Pathway Contributions to the Total Whole Body	16
6	Internal Organ 50-year Dose Commitments	18
7	Residual Dose Rate at 0000Z on May 7, 1986	19
8	Gamma-Exposure Rate on May 29, 1986	22
9	Distribution of the Ratio of Observed Plume Centerline Concentrations to Values Predicted with MESOI	27
10	Distribution of the Lateral Error Rate for MESOI Predictions of Plume Centerline Positions	28

TABLES

1	Radionuclide Source Terms Used in the MESORAD Dose Assessment	5
2	Radionuclides in the ORIGIN Core Inventory Not Included in the MESORAD Radionuclide Library	6
3	Meteorological Observation Locations	8
4	Fraction of the MESORAD Domain with Various Accumulated Doses	15
5	Area of the MESORAD Domain Within Various Residual Dose Rate Isopleths	20

INTRODUCTION

Shortly after midnight local time on April 26, 1986, an accident involving Unit 4 of the Chernobylskaya Atomic Energy Station resulted in the release of a large amount of radioactive material to the atmosphere. The events leading to the accident are described in detail in other documents (USSR 1986, IAEA 1986, DOE 1987).

Briefly, power was being reduced on the 3200-MWt reactor, which had been in operation since December 1983, in preparation for a maintenance shutdown. While the reactor was at low power, an experiment was performed that resulted in one or more prompt critical excursions at 1:23 a.m. local time on April 26, 1986 (2323Z on April 25). These excursions led to an explosion, which destroyed the reactor, and fires that resulted in a protracted release of radioactive material to the atmosphere. Starting April 28, helicopters dropped materials on the reactor to control the release of radioactive effluents. By May 5, 1986, the release was essentially complete.

Since the accident, a great deal of scientific attention has been focussed on the consequences of the release. Major areas of interest have included estimation of the health effects of the release based on radiation measurements and modeling of the transport, diffusion, and deposition of the effluents from the accident on continental and global scales. This report describes an assessment of the doses near the site (within 80 km) prepared using the MESORAD dose assessment model (Scherpelz et al. 1986).

The MESORAD model, which was developed for emergency response applications for the U.S. Nuclear Regulatory Commission and the U.S. Department of Energy, Richland Operations Office, combines relatively simple representations of the atmospheric processes of transport, diffusion, and deposition (Ramsdell, Athey and Glantz 1983) with the computation of doses. The Chernobyl accident dose estimates are based on 27 radionuclides, taking decay and daughter product ingrowth and decay into account.

The assessment consists of dose and dose rate estimates at 961 nodes on a Cartesian grid. Chernobylskaya Unit 4 is located at the center of the grid, and the node spacing is approximately 5364 m. The dose estimates generated by the model were: total whole body dose; contributions to the total whole

body dose resulting from exposure to the airborne effluents, from exposure to material deposited on the ground, and from inhalation of the effluents; and doses to the lung and thyroid resulting from inhalation. In addition, whole body dose rates resulting from surface contamination were estimated. These estimates are depicted graphically.

In order, this report describes: 1) the source characteristics assumed for the releases from the Chernobyl accident, 2) the meteorological data and assumption used in the dose assessment, and 3) the results of the assessment. These sections are followed by a discussion of the results of the assessment and a discussion of the uncertainties associated with the MESORAD dose assessment. Appendices contain the meteorological data used in the assessment and results of the assessment in tabular form.

SOURCE CHARACTERIZATION

Source characterization has two components. The first component is the specification of release locations and times, and the second component is the specification of the quantity of material released. None of the detailed reports covering the Chernobyl accident (USSR 1986, IAEA 1986, DOE 1987) provides a complete description of the physical conditions associated with the release. However, it is clear from these reports that the initial explosion carried effluents well above the surface, and that effluents released after the initial explosion had a lower effective release height.

For MESORAD model simulations of the Chernobyl accident, the release was divided into two parts. The first part was 2 h in duration. It included the initial explosive release. During this period, the source was assumed to be a vertical line extending from the reactor to an altitude of 1 km. It was modeled by releasing puffs at altitudes of 200, 500, and 750 m. The vertical distribution of release points during the first period is illustrated in Figure 1. The second part of the release was 238 h in duration. During this period, the source was modeled by releasing puffs at an altitude of 200 m. All puffs were initially spherical with radii of approximately 30 m.

The radionuclide content of each of the puffs was postulated from an estimate of the radionuclide inventory in the core of the Chernobyl Unit 4 reactor at the time of the accident, an assumed release fraction for each radionuclide, and an assumed distribution of the release between the first and second release periods. The core inventory was estimated by an ORIGIN computer code simulation of an RBMK reactor. The ORIGIN inventory estimate is consistent with a Soviet estimate of the core inventory (DOE 1987). The release fraction and the distribution of release between periods assumed for each radionuclide were based on release fractions reported by the Soviets (USSR 1986, Annex 4 Table 4.14).

MESORAD dose computations only use radionuclides and dose factors contained in the MESORAD radionuclide library. Table 1 lists the radionuclides used in the MESORAD dose computations, the assumed core inventory, and the fraction released in columns 1 through 3, respectively. The fourth column contains the fraction of the release that was assumed to take place in the first period.

FIGURE 1. Representation of the Initial Release Configuration

During this period, 50% of the effluent was assumed to be released at 750 m, and 30% was assumed to be released at 500 m. The remaining 20% of the material was assumed to be released at 200 m. Columns 5 through 7 give the total release for each radionuclide at each level during the first period, and column 8 gives the total release for each radionuclide for the second release period.

Not all of the radionuclides listed in the Soviet or ORIGIN core inventories are listed in the MESORAD radionuclide library. The radionuclides in the ORIGIN core inventory that are not in the MESORAD radionuclide library are listed in Table 2. It is likely that a small fraction of these radionuclides, perhaps 3 to 4%, were released during the second release period. Some of these radionuclides are short-lived, and others do not undergo gamma decay. Therefore, neglecting these radionuclides resulted in underestimation of doses, but the amount of underestimation should not be large.

TABLE 1. Radionuclide Source Terms Used in the MESORAD Dose Assessment

Radio-nuclide	Core Inv (Ci)	FRACTR	FRACT1	Total Release (Ci)			
				First Release Period			Second Release Period
				750 m	500 m	200 m	200 m
Kr-85	6.70E+05	1.000	0.2200	7.37E+04	4.42E+04	2.95E+04	5.23E+05
Kr-85M	1.10E+07	1.000	0.2200	1.21E+06	7.26E+05	4.84E+05	8.58E+06
Kr-87	1.40E+07	1.000	0.2200	1.54E+06	9.24E+05	6.16E+05	1.09E+07
Kr-88	2.50E+07	1.000	0.2200	2.75E+06	1.65E+06	1.10E+06	1.95E+07
Sr-89	8.10E+07	0.040	0.0036	1.46E+05	8.75E+04	5.83E+04	2.95E+06
Sr-90	4.60E+06	0.040	0.0032	7.36E+03	4.42E+03	2.94E+03	1.69E+05
Sr-91	6.00E+07	0.040	0.0032	9.60E+04	5.76E+04	3.84E+04	2.21E+06
Y-91	1.04E+08	0.040	0.0032	1.66E+05	9.98E+04	6.66E+04	3.83E+06
Ru-103	1.21E+08	0.029	0.0059	3.57E+05	2.14E+05	1.43E+05	2.80E+06
Ru-106	3.20E+07	0.029	0.0062	9.92E+04	5.95E+04	3.97E+04	7.30E+05
Te-129	1.50E+07	0.150	0.0300	2.25E+05	1.35E+05	9.00E+04	1.80E+06
Te-129M	3.80E+06	0.150	0.0300	5.70E+04	3.42E+04	2.28E+04	4.56E+05
Te-131M	9.90E+06	0.150	0.0300	1.49E+05	8.91E+04	5.94E+04	1.19E+06
Te-132	1.11E+08	0.150	0.0300	1.67E+06	9.99E+05	6.66E+05	1.33E+07
I-131	8.20E+07	0.200	0.1300	5.33E+06	3.20E+06	2.13E+06	5.74E+06
I-132	1.14E+08	0.200	0.1300	7.41E+06	4.45E+06	2.96E+06	7.98E+06
I-133	1.28E+08	0.200	0.1300	8.32E+06	4.99E+06	3.33E+06	8.96E+06
I-134	6.70E+07	0.200	0.1300	4.36E+06	2.61E+06	1.74E+06	4.69E+06
I-135	8.10E+07	0.200	0.1300	5.27E+06	3.16E+06	2.11E+06	5.67E+06
Xe-133	1.68E+08	1.000	0.1100	9.24E+06	5.54E+06	3.70E+06	1.50E+08
Xe-135	4.40E+07	1.000	0.1100	2.42E+06	1.45E+06	9.68E+05	3.92E+07
Cs-134	5.30E+06	0.100	0.0280	7.42E+04	4.45E+04	2.97E+04	3.82E+05
Cs-136	2.60E+06	0.100	0.0280	3.64E+04	2.18E+04	1.46E+04	1.87E+05
Cs-137	6.20E+06	0.130	0.0480	1.49E+05	8.93E+04	5.95E+04	5.08E+05
Ba-140	1.46E+08	0.056	0.0059	4.31E+05	2.58E+05	1.72E+05	7.31E+06
La-140	1.55E+08	0.056	0.0059	4.57E+05	2.74E+05	1.83E+05	7.77E+06
Ce-144	9.30E+07	0.028	0.0049	2.28E+05	1.37E+05	9.11E+04	2.15E+06

FRACTR = Fraction of core inventory released

FRACT1 = Fraction of core inventory released in first 2 h

M = Metastable

TABLE 2. Radionuclides in ORIGIN Core Inventory Not
Included in the MESORAD Radionuclide Library

<u>Radionuclide</u>	<u>Core Inventory (Ci)</u>
Y-90	4.70E+06
Zr-95	1.38E+08
Zr-97	9.80E+07
Nb-95	1.37E+08
Mo-99	1.40E+08
Tc-99	1.28E+08
Ru-105	3.80E+07
Rh-105	6.50E+07
Ce-141	1.38E+08
Ce-143	1.08E+08
Pr-143	1.28E+08
Nd-147	5.50E+08
Pm-147	1.10E+07
Pm-149	3.10E+07

METEOROLOGICAL CONDITIONS

At the time of the accident, the Chernobyl area was under the influence of a weak high pressure system. Winds near ground level were light and variable. Under these conditions winds at the reactor site would be expected to display the effects of local topographic features. At an altitude of about 1500 m (850 mb), the wind was out of the east-southeast at 8 to 10 m/s. High pressure and low winds continued throughout April 26 and 27. On April 28, the upper-level winds shifted to the south in the morning and to the west-southwest in the afternoon. During this period the surface winds remained light and variable. By late afternoon on April 29, the upper-level wind had shifted to the north. On May 1, the surface winds came around to the north, and the speeds at both the surface and upper level increased. The northerly winds persisted for the rest of the release period. Thus, based on the winds in the lower layer of the atmosphere, effluents from the accident initially contaminated the area to the west of reactor. As the wind shifted, the area of contamination spread to the north and finally to the south.

No appreciable precipitation was reported in the Chernobyl area during the entire 10-day release period. Therefore, the surface contamination that occurred was the result of relatively slow processes taking place near the surface. Had precipitation occurred, the surface contamination would have been significantly greater.

Meteorological data required for MESORAD simulations include wind speed and direction at ground level, upper-level wind speed and direction, an indicator of atmospheric stability, and an estimate of the thickness of the atmospheric mixing layer. The meteorological data for use in the MESORAD dose assessment for the Chernobyl releases were available for a location near Chernobyl and for eight rather distant locations. These locations are shown in Figure 2, and coordinates for the observations are given in Table 3. Ground-level wind data (assumed to be measured at 10 m) were available for all locations; upper-level data were available for Kiev and Gomel. Unfortunately, the data for the location near Chernobyl were not available for the entire

FIGURE 2. MESORAD Model Domain and Meteorological Observation Locations

TABLE 3. Meteorological Observation Locations

Location	Appendix A Abbreviation	Latitude	Longitude
Chernobyl	CHNBYL	51°17'N 51°24'N(a)	30°14'E 30°05'E(a)
Kiev	KIEV	50°24'N	30°27'E
Gomel	GOMEL	52°27'N	31°00'E
Minsk	MINSK	53°52'N	27°32'E
Sukhinihi	SUKHIN	54°07'N	35°20'E
Brest	BREST	52°07'N	23°41'E
Lvov	LVOV	49°49'N	23°57'E
Chernovtsy	CHRNAV	48°16'N	25°58'E
Kharkov	KHARKV	49°56'N	36°17'E

(a) Assumed location of the observation.

release period. The temporal resolution of the ground-level data is 3 h and that of the upper-level data is 6 h. The complete set of meteorological data used as input to MESORAD is listed in Appendix A.

The MESORAD model domain is shown in Figure 2. The inner box of the model domain contains the region for which dose estimates were made, and the outer box shows a region in which puffs were tracked without computing doses.

The winds at the release height are used in estimating puff movement. These winds are computed from the surface wind field, which is derived from the available data and the upper-level wind. The surface wind field is defined at grid nodes within the dose computation area using an interpolation scheme in which the observed data are weighted by the inverse of the square of the distance between the node and the measurement location. Thus, although ground-level wind data are available for nine locations, winds at Chernobyl, Kiev, and Gomel dominate the winds for other locations in definition of the surface wind field.

The release height winds are estimated by linear interpolation between the north-south and east-west wind components in the surface wind field and the corresponding components of the upper-level wind. For purposes of estimating the release height wind, the upper-level wind is assumed to be representative of the wind at the top of mixing layer. When the mixing layer is relatively thin, as it is at night, the release height wind direction and speed are near the direction and speed of the upper-level wind. Similarly, when the mixing layer is relatively thick, as it is during the day, the release height wind tends to be close to the surface wind. This relationship is illustrated in Figure 3 for a release height of 200 m.

FIGURE 3. Effect of Mixing Layer Thickness on Determination of Release Height Wind

DOSE ASSESSMENT

MESORAD estimates doses to the whole body and to the thyroid and lung via three pathways. These pathways are

- 1) external radiation from airborne radionuclides
- 2) external radiation from radionuclides deposited on the ground
- 3) internal radiation from inhaled radionuclides.

The doses are estimated from dose rates computed each 15 min at each receptor. All doses and dose rates are based on the assumption that the receptor remains in place from the beginning of the simulation to the end. Doses to receptors that move during the simulation period--people, for example--will be different than those computed by MESORAD.

The external dose from airborne radionuclides is estimated using semi-infinite and finite cloud approximations as appropriate. The finite cloud approximation is used for dose estimates near the source. It considers the spatial distribution of the radionuclides in the plume, the distance between the plume and the receptor, and range of gamma rays in air in the dose estimates. The finite cloud approximation provides good dose estimates at all distances but is too time-consuming to be used at all distances. The semi-infinite approximation is used when the plume becomes widely dispersed. It uses the concentration of radionuclides in air at the receptor location in estimating doses. The semi-infinite cloud approximation provides good dose estimates when radionuclide are widely dispersed.

The external dose from radionuclides deposited on the ground is estimated by assuming that the ground is an infinite flat plane and that the surface contamination (Ci/m^2) everywhere is the same as the contamination at the receptor location. Surface contamination is estimated in MESORAD using both wet and dry deposition models. No appreciable precipitation occurred at Chernobyl between April 26 and May 7; therefore, all surface contamination is assumed to have been the result of dry deposition.

The dry deposition model used in MESORAD assumes that the rate of deposition for each radionuclide is proportional to its concentration near the surface. The constant of proportionality has the units of speed and is called the deposition velocity. For the Chernobyl accident, a deposition velocity

of 0.01 m/s was assumed for all isotopes of iodine, and for all the depositing radionuclides a deposition velocity of 0.001 m/s was assumed. Noble gases were assumed not to deposit. In estimating doses from surface contamination, neither any shielding by obstacles nor weathering of the contamination has been considered. Similarly, the surface contamination dose estimates do not take into account the effects of radiation from material that was deposited near the reactor because it had an appreciable settling velocity.

The dose estimated for the inhalation pathway is a 50-year dose commitment. It includes the immediate dose and a dose projection based on the body's retention of the radionuclides. The inhalation dose commitment at each receptor is directly proportional to the airborne concentration of each radionuclide. Inhalation pathway dose commitment estimates have been made for the whole body and for the adult thyroid and lung.

The chronological sequence in the expansion of the local area affected by radiation from the Chernobyl accident is shown in frames (a) through (h) of Figure 4. The first frame (a) shows the total whole body dose pattern estimated by MESORAD at 0000Z on April 27. This pattern is based on the sum of the doses estimated for the external exposure pathways and the 50-year whole body dose commitment for the inhalation pathway. The relatively narrow band shown indicates the steady nature of the meteorological conditions during the first few hours of the release. Frames (b) through (g) show the expansion of the pattern in 24-h intervals over the next 6 days. The shift in wind directions from easterly to southeasterly and then to southwesterly is clearly evident in frames (a), (b), and (c). On April 29, the winds, although light, shifted to northwesterly resulting in a slow drift of the dose pattern to the south that continued for the next several days. Frames (d) through (g) show this expansion. Frame (h) shows dose estimates for 0000Z on May 7, approximately 1 day after the time that releases from the reactor were assumed to have ended. Although doses would have continued to increase with time as a result of surface contamination, the basic dose pattern shown in frame (h) would have remained unchanged if the MESORAD simulation had continued beyond 0000Z on May 7. The model receptor with the maximum total whole body dose at this time is located 4.7 mi northwest of the reactor. The accumulated dose at this location was 9.9 rem.

FIGURE 4. Chronological Sequence of Total Whole Body Dose Accumulation

FIGURE 4. (contd)

The total area exceeding various doses can be estimated by assuming that each receptor within the MESORAD model domain represents an area of 11.11 mi², which is equal to the square of the separation between receptors. With this assumption, the total area within the model domain is 10678 mi². Table 4 gives the fraction of this area in which doses exceeded 1, 2, and 5 rem as a function of time during the course of the release period. By 0000Z on May 7, approximately 21.4% of the land within the model domain had accumulated a whole body dose of 1 rem or more, and about 1.5% of the land had accumulated a dose of 5 rem or more. On May 7, the fractions of the total area with accumulated doses equaling or exceeding 0.5, 0.2, and 0.1 rem were 0.409, 0.767, and 0.930, respectively. In estimating the areas on which the fractions are based, the dose at the receptor at the source was assumed to be equal to or greater than the highest dose at any other receptor. The estimates of area fractions enclosed within the higher dose isopleths have a greater uncertainty than the fractions associated with the lower dose isopleths because of limited model resolution near the release point.

The contribution of each of the pathways to the total whole body dose estimates for 0000Z on May 7, shown in frame (h) of Figure 4, is shown in Figure 5. The first frame shows the dose resulting from the airborne plume; the second frame shows the dose commitment from inhalation, and the last frame

TABLE 4. Fraction of the MESORAD Domain with Various Accumulated Doses. The area estimates are as of 0000Z on the given date.

Date	Dose (rem)		
	1	2	5
4/27	0.0073		
4/28	0.0146	0.0021	
4/29	0.0166	0.0083	
4/30	0.0281	0.0094	
5/1	0.0562	0.0166	0.0010
5/2	0.0874	0.0260	0.0021
5/3	0.110	0.0343	0.0021
5/4	0.132	0.0479	0.0021
5/5	0.159	0.0614	0.0073
5/6	0.194	0.0822	0.0114
5/7	0.214	0.0937	0.0146

FIGURE 5. Dose Pathway Contributions to the Total Whole Body

shows the dose from surface contamination. Comparing the doses shown in the three frames shows that the most significant contribution to the total whole body dose is from surface contamination. The inhalation dose commitment is significant, but less important than the dose from surface contamination. The external dose resulting from the airborne plume is seen to make an insignificant contribution to the total. Unfortunately, the estimated doses from surface contamination have greater uncertainty than doses estimated for either of the other two pathways.

The receptor with the maximum dose from the airborne plume is located 41.4 mi west-southwest of the reactor. It is likely that much of the dose of 0.14 rem in this region is the result of passage of the initial plume. The location of the highest ground-shine contribution to whole body dose (7.4 rem) is 4.7 mi northwest, at the same location as the highest total whole body dose. The maximum inhalation whole body dose commitment (2.4 rem) occurs at two locations: 4.7 mi northwest and 7.5 mi south-southwest of the reactor.

The 50-year dose commitments to the adult thyroid and lung are shown in Figure 6. The thyroid dose pattern (the upper frame in Figure 6) shows a band of significant exposure to the west-southwest of Chernobyl. This band results from the large early release of iodine. The maximum thyroid dose commitment (98 rem) occurs in this band, about 41.2 mi from the reactor. The dose commitment pattern for the lung, shown in the lower frame, resembles the total whole body dose pattern shown in frame (h) of Figure 4. Maximum lung dose commitments of 93 rem are estimated to have occurred 4.7 mi northwest and 7.5 mi south-southwest of the reactor.

At the end of the MESORAD simulation (0000Z on May 7), no airborne material from the Chernobyl releases remained within the dose computation portion of the model domain. As a result, barring further releases from the reactor, the only pathway that would contribute to additional exposure at the receptors is the surface contamination pathway. The dose rate for this pathway at the end of the simulation is shown in Figure 7. The area and fraction of the model domain within the 1, 2, 5, 10, and 20 mrem/h isopleths are listed in Table 5. The receptor in the MESORAD model domain with the maximum dose rate is located 7.5 mi south-southwest of the reactor. The May 7, 0000Z dose rate

FIGURE 6. Internal Organ 50-year Dose Commitments

FIGURE 7. Residual Dose Rate at 0000Z on May 7, 1986

TABLE 5. Area of the MESORAD Domain Within Various Dose Rate Isopleths

<u>Dose Rate (mrem/h)</u>	<u>Area (mi²)</u>	<u>Model Domain Fraction</u>
>20	78	0.0073
>10	611	0.0572
>5	1630	0.153
>2	4490	0.420
>1	7440	0.697

at this location was 39 mrem/h. The dose rate at the location of maximum accumulated whole body dose (4.7 mi to the northwest of the reactor) was 34 mrem/h. It is likely that there are locations with higher dose rates near the reactor.

MESORAD dose and dose rate predictions for 0000Z on May 7, 1986, are presented in Appendix B.

DISCUSSION

MESORAD is a dose model used in emergency response applications by the U.S. Department of Energy at its Hanford Site in Washington State and in the U.S. Nuclear Regulatory Commission Operations Center in Bethesda, Maryland. The model has been developed on the basis of generally accepted dispersion theory and uses diffusion and deposition parameterizations that are based on extensive sets of experimental data. The diffusion and transport portions of the model have been evaluated using experimental data. However, the full dose-assessment model has never been validated. Further, in typical applications, model simulations are made using a more extensive meteorological data base than is available for the Chernobyl accident. As a result, comparison of the results of the MESORAD simulation with observed data from Chernobyl is of interest.

The Chernobyl data that are most comparable with MESORAD simulation results are the gamma radiation levels shown in Figure 5.4 of the Soviet report (USSR 1986). This figure, which is also Figure 5.2 of the U.S. Department of Energy report on the Chernobyl accident (DOE 1987), is reproduced in Figure 8. The dose rates from which the pattern was drawn were observed on May 29, approximately 3 weeks following the end of the MESORAD simulation. In Figure 8, the release point is just west of the town of Pripyat. It should be noted that some of the isopleths in Figure 8 are mislabelled.

Before Figures 7 and 8 can be compared, it is necessary to correct the dose rates given in Figure 7 for decay, and convert the units of mrem/h in Figure 7 to mR/h shown in Figure 8. If we assume that the residual dose rates shown in Figure 7 are primarily due to ^{131}I and ^{137}Cs , decay from 0000Z on May 7 to 1200Z on May 29 would decrease dose rates by about 50%. The actual decrease in dose rates is a function of the isotopic mix at each location and varies from about 40 to 60% within the MESORAD domain. A gamma exposure rate of 1 mR/h is approximately equal to a dose rate 0.9 mrem/h. Thus, for qualitative comparisons, the 2 mrem/h dose-rate isopleth in Figure 7 is approximately equivalent to the 1 mR/h gamma-exposure-rate isopleth in Figure 8.

FIGURE 8. Gamma-Exposure Rate (mR/h) on May 29, 1986

The agreement of the dose rate patterns in these figures indicates that most of the assumptions entering into the MESORAD computation were reasonable. However, in two areas the patterns were sufficiently different to warrant further discussion. These regions are the area directly west of the Chernobyl reactor and the area east of the Dnieper River.

It is likely that the band of relatively high dose rates west of the reactor site was caused by fallout of particles from the initial release of material. If this is a correct assumption, the position of the band indicates that the wind direction controlling the initial transport of material was

about 272°. To obtain this initial transport direction, the upper-level wind direction used in the MESORAD simulation for the first 6 h of the release was changed to 090° from 110°, which was reported for the 850-mb level at Kiev. This was the only change that was made in the reported meteorological data, although several values appeared questionable.

The differences in magnitude of the dose rates in the high dose-rate band to the west of Chernobyl may be the result of processes not modeled by MESORAD. MESORAD does not treat the transport, diffusion, and deposition of large particles. These particles have large gravitational settling rates that bring them to the ground much sooner than is accounted for by normal diffusion.

The observed dose-rate pattern in Figure 8 does not indicate that any material was deposited east of the Dnieper River east of Chernobyl, although the MESORAD dose-rate pattern predicts measurable dose rates in this area. Possible causes of this difference include inadequate representation of the wind field and incorrect estimation of the release rate during westerly winds.

The portion of the release responsible for the predicted deposition east of the Dnieper River occurred between 1700Z on April 28 and 0100Z on April 29 with approximately 3 h between the time of release and the time of arrival east of the Dnieper River. During this period the winds reported for the Chernobyl airport were light and variable or calm, and the transport of material in the model was driven almost entirely by the upper-level wind (850 mb) reported for Kiev. There are insufficient wind data to resolve either spatial or temporal variations in wind fields during light winds or to estimate the effect that the upper-level winds may have on transport and diffusion of material released near ground level. Under these conditions, gross errors in the wind fields used by MESORAD to transport the radionuclides cannot be ruled out.

1. To obtain this initial transport direction, the upper-level wind
used in the HECAD model for the first 2 h of the release was
to 100° from 110°, which was reported for the 850-mb level at Kiev.
The only change that was made in the reported meteorological data
several values appeared questionable.

2. Differences in structure of the dose rates in the high dose-rate
the east of Chernobyl may be the result of processes not modeled by
HECAD does not treat the transport, diffusion, and deposition of
these particles have large gravitational settling rates
to them to the ground much sooner than is accounted for by normal

3. Observed dose-rate pattern in Figure 8 does not indicate that any
was deposited east of the Dniester River east of Chernobyl, although
HECAD dose-rate pattern predicts measurable dose rates in this area.
4. Causes of this difference include inadequate representation of the
and incorrect estimation of the release rate during westerly winds.

5. Portion of the release responsible for the predicted deposition east
of the Dniester River occurred between 1700Z on April 28 and 0100Z on April 29.
approximately 3 h between the time of release and the time of arrival
the Dniester River. During this period the winds reported for the
transport were light and variable, and the transport of material

6. Model was driven almost entirely by the upper-level wind (850 mb)
for Kiev. There are insufficient wind data to resolve either spatial
or temporal variations in wind fields during light winds or to estimate the
at the upper-level winds may have on transport and diffusion of
released near ground level. Under these conditions, gross errors in
the results used by HECAD to transport the radionuclides cannot be ruled

MESORAD MODEL UNCERTAINTIES

In general, uncertainties and inaccuracies in models used to estimate doses resulting from releases of radionuclides to the atmosphere are associated with 1) simplified descriptions of atmospheric processes, 2) the random nature of the atmospheric processes involved in dispersion, 3) limited information about the state of the atmosphere during and following the period in which material is released, and 4) limited information on the effluent source. Simplified descriptions of atmospheric processes are required if model computations are to be completed in a timely manner. Sources of numerical uncertainty related to time steps and spacing of receptor nodes used in MESORAD are discussed by Ramsdell, Athey, and Glantz (1983) and Scherpelz et al. (1986). The only source of numerical uncertainty of consequence in the Chernobyl dose assessment is related to the spatial resolution of doses near the reactor. Here the spacing between nodes on the receptor grid is large compared to the size of the plume, and plumes (puffs) may pass between the nodes without being seen by any receptor. Therefore, the model results may not indicate actual dose or dose rate maxima near the reactor.

The uncertainties associated with computation of doses from the concentration distribution in the atmosphere and the surface contamination are small compared with uncertainties in estimating the source term and in the concentration and surface contamination distributions. However, because of the random nature of the processes that disperse material in the atmosphere, it is unrealistic to expect any model to predict the exact location of or concentration in a plume. Rather, models should be expected to predict average concentrations, and perhaps to provide estimates of the probable variation of concentrations about the average.

The MESOI dispersion model has been tested to distances of about 40 km from a source using experimental data on atmospheric dispersion collected at the U.S. Department of Energy's Hanford Site in Washington State and the Savannah River Plant in Georgia. Given the detailed meteorological data available at these locations and well-defined source information, MESOI tends to slightly overpredict concentrations in the center of plumes. The median ratio of predicted to observed concentrations for the tests is about 1.4, and

the distribution of concentration ratios is approximately log-normal (Ramsdell, Glantz, and Andrews 1984). The uncertainty of plume positions (standard deviation of the difference in crosswind location of the predicted and observed plume centerlines) during the same tests increased at a median rate of about 2 km/h and had an approximately square-root normal distribution. The distributions of observed-to-predicted centerline concentration ratios and position errors for tests are shown in Figures 9 and 10. The same degree of uncertainty can be assumed to exist in MESORAD dose assessments in near optimum conditions with known release rates.

Model performance can be expected to degrade with reduced information on release characteristics and the state of the atmosphere. To compute doses resulting from the Chernobyl accident, it has been necessary to estimate the specific radionuclides released during the accident, the rates at which various radionuclides were released from the reactor, the duration of the releases, the temporal variation of releases, and the vertical distribution of the releases. Various reports of the accident provide insight into these matters, but they do not provide sufficient detail to permit the source to be considered to be well defined. Errors in any of the assumed source characteristics could change the location and shape of the dose pattern and the magnitudes of the doses.

Errors in the temporal and spatial characteristics of the wind field also lead directly to errors in location and shape of the dose patterns and errors in dose magnitudes. The meteorological data available for dose assessment for the Chernobyl accident are not nearly as comprehensive as the data used in the MESOI tests. Specifically, the meteorological data available for dose assessment for Chernobyl are deficient in that the maximum time resolution is 3 h. The time resolution for the data used in the MESOI model tests was 15 min. The data are also deficient in that they do not support adequate spatial resolution in the wind field. After April 29, data from Chernobyl were no longer available; movement of the effluent from the reactor was estimated using an average of the data from Kiev and Gomel. Under light wind conditions, there is no reason to believe that the winds at Kiev, or at Gomel, or an average of winds at those locations represent the winds at Chernobyl.

FIGURE 9. Distribution of the Ratio of Observed Plume Centerline Concentrations to Values Predicted with MESOI

FIGURE 10. Distribution of the Lateral Error Rate for MESOI Predictions of Plume Centerline Positions

Neither the release characteristics nor the meteorological data are known well enough to assume that the doses and dose rates predicted by MESORAD are any more accurate than order of magnitude estimates. The differences between the May 29 gamma-exposure-rate pattern and the dose rate pattern predicted for May 7 are entirely within the limits of the uncertainty of MESORAD.

The general agreement between the two patterns is an indication that the assumptions made with regard to the Chernobyl source characteristics and meteorological conditions during the releases were reasonable.

REFERENCES

DOE. 1987. Health and Environmental Consequences of the Chernobyl Nuclear Power Plant Accident. Report to the U.S. Department of Energy Office of Health and Environmental Research from the Interlaboratory Task Group on Health and Environmental Aspects of the Soviet Nuclear Accident, Washington, D.C.

IAEA. 1986. Summary Report on the Post-Accident Review Meeting on the Chernobyl Accident. International Atomic Energy Agency, International Nuclear Safety Advisory Group (INSAG), Vienna, Austria.

Ramsdell, J. V., G. F. Athey and C. S. Glantz. 1983. MESOI Version 2.0: An Interactive Mesoscale Lagrangian Puff Dispersion Model With Deposition and Decay. NUREG/CR-3344, U.S. Nuclear Regulatory Commission, Washington, D.C.

Ramsdell, J. V., C. S. Glantz and G. L. Andrews. 1984. "Comparison of MESOI Atmospheric Dispersion Estimates With Data and Estimates From Other Models." In Proceedings of the DOE/AMS Air Pollution Model Evaluation Workshop, Kiawah Island, South Carolina, October 23-26, 1984, DP-1701-1, Savannah River Laboratory, Aiken, South Carolina.

Scherpelz, R. I., T. J. Bander, G. F. Athey and J. V. Ramsdell. 1986. The MESORAD Dose Assessment Model. NUREG/CR-4000, U.S. Nuclear Regulatory Commission, Washington, D.C.

USSR. 1986. The Accident at Chernobyl Nuclear Power Plant and Its Consequences. Information compiled by the USSR State Committee on the Utilization of Atomic Energy for the IAEA Expert's Meeting, August 25-29, 1986, Vienna, Austria (IAEA Translation).

APPENDIX A

METEOROLOGICAL DATA

APPENDIX A

METEOROLOGICAL DATA

This appendix summarizes the meteorological input to MESORAD in tabular form. The first column contains the date and time for the meteorological data. The date and time are given as YYMMDDHH where

YY is the last 2 digits of the year

MM is the month

DD is the day of the month

HH is the hour of the day.

All times are given as Greenwich Meridian Time (Z). Although the Chernobyl accident occurred April 25, 1986, at 2323Z, for MESORAD simulation purposes it was assumed to occur at 2330Z. The data for 0000Z on April 26, 1986, were assumed to represent the meteorological conditions at the time of the accident. This time is given in the table as 86042600. The conditions given for each time were assumed to persist for a period of 3 h, that is, until the next observation.

The second column in the table gives the atmospheric stability class. The atmospheric stability class determines the rate at which diffusion takes place. A low value (e.g., 3) corresponds to relatively rapid diffusion, which is expected during the day, while a high value (e.g., 6) corresponds to slow diffusion, which is expected at night. The values in the column were assigned on the basis of normal expectations for open country.

The third column in the table gives the thickness of the atmospheric mixing layer to the closest 100 m. The mixing layer thickness undergoes a normal diurnal variation with a minimum at night and a maximum in the afternoon. The values in the table were estimated from afternoon upper-air data for Kiev by assuming a sinusoidal variation between sunrise and sunset and a minimum value of 300 m. A mixing-layer thickness of 800 m was assumed for the night of the accident to keep the release within the mixing layer.

The fourth column gives the upper-level wind direction and speed as DDDFF where DDD is the wind direction and FF is the wind speed. The direction is

given to the closest degree, although it is probably only accurate to the closest 10 degrees. The wind speed is given to the closest meter per second. The wind data for reported for the 850-mb level at Kiev (about 1500 m above ground) were used as the basis for the upper-level wind input to MESORAD after 0900Z on April 26. Before that time the upper-level winds were estimated to be about 090 degrees on the basis of the surface contamination pattern reported as Figure 5.4 in the Soviet report (USSR 1986). The 850-mb wind reported for Kiev at 0000Z on April 26 was 110 degrees. The asterisks indicate interpolation of a wind direction or speed in addition to the interpolation required to estimate winds at the intermediate times.

The data in columns two, three, and four represent conditions that are assumed to be uniform throughout the model domain. Unlike the conditions represented by the data in these columns, the ground-level wind field varies spatially, as well as temporally. The last nine columns in the table contain the available ground-level wind direction and speed (assumed to be measured at 10 m) used to derive the surface wind field. These data are given in the same format used for the upper-level wind. Again, an asterisk indicates that a wind direction and/or speed is an estimated value rather than a measured value.

MESORAD Meteorological Data Input

DTG	ST	MT	UN	CHNBYL	KIEV	GOMEL	MINSK	SUKHIN	BREST	LUOV	CHNOV	KHARKV
86042800	8	800	09010	02001	33001*	05003	09001	05002	13002	13007	11003	00000
86042803	8	800	09010	11001	06000	07003	06002	09003	13002	13006	11003	09004
86042806	4	1400	09010	32002	05005	06002	04002	09004	12002	14007	09004	10006
86042809	3	1000	09000	07002	05005	08004	03004	11007	11004	15010	10006*	13006
86042812	4	1400	07000	07003*	10005	10005	10005	11006	10004	14009	11008	12007
86042815	4	800	08500	07003	09001*	09005	10003	11006	12004	14008	14006	09005
86042818	5	300	10007	14005	00000	07002	11003	14002	14003	14006	11003	03004
86042821	4	300	11007	00000	00000	08002	07002	09002	14002	04007	00000	02002
86042700	8	300	11500	00000	00002*	05002	06002	07003	14002	14005	00000	09004
86042703	8	400	11005	09001	00000	30002	06002	07001	07002	13005	20003	13006
86042706	4	500	10504	07001	23002	03002	03002	11004	09003	13007	11002	13006
86042709	3	000	11507	23001	13003*	00003	00003	14005	15004	05007	11006	14005
86042712	4	500	12500	20002	09004	21004	07004	14007	14005	15005	11007	15004
86042715	4	400	13000	23007	14001*	14005	08003	14004	14004	13007	11005	14006
86042718	5	300	14000*	17003*	14002*	00000	08002	14003	14003	14004	10005	00000
86042721	5	300	14000*	11002	14002	12001	09003	09003	11001	12005	11004	00000
86042800	8	300	15003	11001	11002	00000	05002	09004	10002	14004	09003	00000
86042803	8	1000	10503	15001	00000	00000	10001	14003	05001	14004	00000	14002
86042806	4	1000	22003	12001*	14001*	00000	05001	11003	08001	12005	11006	21004
86042809	3	2000	23003	09001	10003*	21002	14002	11003	23001	14005*	09004	21005
86042812	4	1000	24504	20002	21003*	21003	29002	11002	27002	10006	07002	20004
86042815	4	1000	24506	11002	13002*	22004	20002	00000	32002	11004	11005	21006
86042818	5	300	24500	14001	00000	21004	27001	14004	30002	07005	10001	10003
86042821	5	300	24500	00000	10003	14002	20002	14003	07001	00003	11002	10003
86042900	8	300	25005	00000	21002*	22003	20002	23002	07001	07003	11003	10003*
86042903	8	800	26005	00000	23004	21002	20001	20002	05001	00000	07002	10003
86042906	4	1400	27004	23001*	23004	23002	34001	20002	07002	00000	09002	10002
86042909	3	1000	27004	24001*	27003*	00000	27002	25002	09002	10004	07004	21004*
86042912	4	1400	27503	33001*	32004	33003	35002	20001	11004	00005	09003	24006
86042915	4	800	34002	32001*	30002*	33002	30001	27002	07003	00004	11005	20004
86042918	5	300	04001	00000	20002*	20002	21001	23002	05001	09005	11002	24003
86042921	5	300	03502	00000	26001*	20001	33001	25001	02001	09004	11002	00000
86043000	8	300	02503	99999	27001*	23001	30001	00000	30001	09004	00000	32004
86043003	8	1000	02003	99999	33002*	00000	31001	25002	00000	09005	00000	30003
86043006	4	1000	01503	99999	02003	22001	33001	27003	07001	09005	11002	31002
86043009	3	2100	03503	99999	02005	30005	33003	32005	07001	00005	11002	34005
86043012	4	1000	06004	99999	02003*	33003	29003	02005	05002	00005	14004	03005
86043015	4	1000	08003	99999	30003*	32003	30003	05004	30004	00007	07000	03005
86043018	5	300	00002	99999	23002	00000	33003	05001	30002	07004	07005	30004
86043021	5	300	03502	99999	27002	30002	30002	02004	35003	00000	05003	00000
86050100	8	300	01003	99999	27002	31003	30003	07003	34002	00000	14005	00000
86050103	8	400	35004	00000	29003	31002	30003	07002	34002	00000	25004	01003
86050106	4	500	33505	99999	33002*	20002	30003	00004	30003	03000	20005	00004
86050109	3	600	32005	99999	02002*	20004	32004	10003	34003	03007	20005	09004
86050112	4	500	30505	99999	02005	20005	30006	14002	33004	09007	31005*	05003
86050115	4	400	32506	99999	34007	27000	30005	14004	32005	02007	32005	00000
86050118	5	300	34508	99999	30006	30007	33003	14004	34004	30006	32005	17003
86050121	5	300	34510	99999	30006	30005	33005	25004	30003	01003	32005	00000
86050200	8	300	34012	99999	30006	32005	33003	05002	34002	01004	32005	23002
86050203	6	500	34014	99999	30007	31000	33009	05004	34002	02002	32005	30004
86050206	4	800	33517	99999	30008	31007	32004	02004	35002	04003	32004	30005
86050209	3	1000	33514	99999	30009	31007	35004	02006	30004	34005	32006	31007
86050212	4	800	33012	99999	30009	32008	35005	02005	30004	30006	32006	20006
86050215	4	500	34014	99999	30009	33000	01004	02005	35004	01005	32006	20004
86050218	3	300	35010	99999	30009	24000	03003	30004	30002	01006	32008	30003
86050221	5	300	30015	99999	02011	35007	02003	30006	35002	01003	34006	32005
86050300	8	300	01013	99999	02010	33007	32002	30006	35001	03005	32006	34007
86050303	8	800	01014	99999	02010	34006	30002	30004	01001	03003	32007	30001
86050306	4	1500	01505	99999	30008	30007	32002	05010	00002	00000	32008	02015
86050309	3	1700	01014	99999	30010	33008	02004	05011	04004	03006	34006	01013
86050312	4	1500	00512	99999	02010	30007	34005	12112	04004	03005	34008	01013
86050315	4	800	00414	99999	05010	35007	30005	05012	02003	03005	30006	01015

MESORAD Meteorological Data Input (contd)

DTG	ST	MT	UN	CHNBYL	KIEV	GOMEL	MINSK	SUKHIN	BREST	LUOV	CHRNVO	KHARKV
88050318	5	300	01018	99999	05007	30005	30003	02006	05002	05005	30005	01010
88050321	5	300	01016	99999	02005	30004	30002	02007	05001	05006	30003	30012
88050400	6	300	01513	99999	02005	30003	30003	30006	07001	07004	34002	30013
88050403	6	900	01504	99999	02005	02003	04002	02007	05002	00000	34003	30013
88050406	4	1000	02016	99999	02008	02006	03002	02008	04002	05005	32005	30010
88050409	3	1000	03014	99999	30010	30008	03006	02008	07004	00006	32008	30011*
88050412	4	1000	03513	99999	05010	30008*	03006	02009	05004	05005	34007	30012
88050415	4	900	03013	99999	05010	30008	04005	02009	05004	04006	27006	02013
88050418	5	300	03012	99999	02007	30007	05003	05004	09003	00006	20004	04008
88050421	5	300	03010	99999	05008	01007	30001	02005	06002	10007	10002	00000
88050500	6	300	03507	99999	02004	01004	02002	30005	07001	09005	00000	01007
88050503	6	900	02509	99999	02004	34003	02002	30006	07002	09002	27002	30007
88050506	4	1000	01011	99999	05005	30002	01002	02006	09003*	13003	34002*	30007
88050509	3	1000	01511	99999	02007	33005	01003	02000	11003	12006	05002	30008
88050512	4	1000	02010	99999	05008	31006	03004	30007	04006	12006	09004	30009
88050515	4	900	00510	99999	02006	34007	33004	02007	05004	13005	00003*	01010
88050518	5	300	35011	99999	02004	35007	01003	05005	07001	10003	07003	30006
88050521	5	300	01311	99999	09007	05004	01003	30003	07002	10005	00000	33004
88050600	6	300	03510	99999	11004	05002	00004	30005	05001	10003	00000	33004
88050603	6	000	03300	99999	11005	05001	00003	34003	07001	00000	29003	33004
88050606	4	1000	03005	99999	09004	25003	07001	02006	13002	09003	32005	32005
88050609	3	1100	01505	99999	02006	02000	04004	02007	00004	00000	32005	32006
88050612	4	1000	30005	99999	07004	02005	07001	02007	05005	05007	05006	30010
88050615	4	000	01007	99999	05005	30004	04003	30007	09005	00007*	00005*	33007*
88050618	5	300	02008	99999	03003*	01002	00002	30003	10002	10007	07004	30003
88050621	5	300	02007	99999	30001*	31002	00000	30003	29002	12005	09002	20004

APPENDIX B

MESORAD DOSE ESTIMATES

APPENDIX B

MESORAD DOSE ESTIMATES

The following pages contain MESORAD dose estimates based on the atmospheric transport, diffusion, and deposition of effluents released from the Chernobyl reactor accident. The dose estimates are cumulative to 0000Z on May 7, 1986, and the dose rate estimate is based on material deposited through 0000Z on May 7.

MESORAD dose estimates are made on 31x31 node Cartesian grids. The nodal estimates of

- 1) total whole body dose
- 2) external dose from the plume (puffs)
- 3) external dose from ground shine
- 4) 50-year whole body dose commitment from inhalation
- 5) 50-year thyroid dose commitment from inhalation
- 6) 50-year lung dose commitment from inhalation
- 7) external dose rate from ground shine

are presented in this appendix. Presentation of each grid requires four pages. The first page is the northwest quadrant of the grid; the second page is the southwest quadrant; the third page is the northeast quadrant, and the fourth page is the southeast quadrant. The x and y coordinates are listed for each column and row of nodes. Coordinate 1,1 is located in the southwest corner of the grid. Within the tables, three numbers are given for each position. The top number is the dose or dose rate in units listed at the top of the page. The middle number is the bearing of the node from the center of the grid (node 16,16), and the bottom number is the distance from the center. It should be noted that the columns containing data for x coordinate 16 in the northwest and southwest quadrants are repeated in the northeast and southeast quadrants, respectively.

Observations in northern Europe indicated that isotopes of iodine deposited more readily than other isotopes. To replicate this finding, two simulations were performed. The first simulation estimated the doses resulting from the

iodine releases, and the second estimated the doses from the remaining radionuclides. The dose estimates from the two simulations were combined by a post-processor program to give dose estimates based on all radionuclides. The combined dose estimates are presented here.

1 coordinate of the grid points																
Y	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
31	1.3E-01	2.2E-01	4.4E-01	6.2E-01	4.7E-01	2.7E-01	2.4E-01	2.6E-01	2.8E-01	3.0E-01	2.7E-01	2.3E-01	1.4E-01	1.0E-01	8.7E-02	8.5E-02
	315	316	319	321	322	326	329	331	334	338	341	345	348	352	356	0
	70.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0
30	7.8E-02	1.4E-01	2.7E-01	5.7E-01	7.0E-01	4.2E-01	2.5E-01	2.5E-01	2.6E-01	3.1E-01	3.3E-01	2.8E-01	2.0E-01	1.4E-01	1.0E-01	9.4E-02
	313	315	317	319	321	324	327	330	333	336	340	344	347	351	355	0
	68.4	66.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.3	49.6	48.5	47.7	47.1	46.8	46.7
29	9.3E-02	1.0E-01	1.5E-01	3.4E-01	7.1E-01	7.2E-01	3.9E-01	2.7E-01	2.7E-01	3.0E-01	3.6E-01	3.5E-01	2.8E-01	1.9E-01	1.3E-01	1.1E-01
	310	312	315	317	319	322	325	328	331	335	339	342	347	351	355	0
	66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.9	43.5	43.3
28	9.8E-02	1.0E-01	1.1E-01	1.7E-01	4.3E-01	8.0E-01	7.2E-01	4.0E-01	2.8E-01	3.0E-01	3.6E-01	3.9E-01	3.6E-01	2.6E-01	1.7E-01	1.3E-01
	308	310	312	315	317	320	323	326	329	333	337	341	345	350	355	0
	64.0	61.3	59.0	56.6	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.0
27	1.1E-01	1.1E-01	1.1E-01	1.3E-01	2.1E-01	5.3E-01	8.4E-01	7.3E-01	4.0E-01	3.1E-01	3.7E-01	4.2E-01	4.3E-01	3.5E-01	2.4E-01	1.5E-01
	306	308	310	312	315	317	320	323	327	331	335	340	344	349	354	0
	62.0	59.3	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7
26	1.2E-01	1.2E-01	1.2E-01	1.2E-01	1.5E-01	2.7E-01	6.2E-01	8.5E-01	8.2E-01	3.8E-01	3.7E-01	4.3E-01	4.6E-01	4.6E-01	3.4E-01	2.0E-01
	303	305	307	309	312	315	318	321	325	329	333	338	343	348	354	0
	60.1	57.3	54.7	52.1	49.6	47.1	44.9	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.3
25	1.4E-01	1.3E-01	1.4E-01	1.5E-01	1.6E-01	1.8E-01	3.5E-01	7.5E-01	7.9E-01	9.1E-01	4.1E-01	4.3E-01	4.8E-01	5.4E-01	4.8E-01	2.5E-01
	300	302	304	306	309	311	315	318	322	326	330	336	341	347	353	0
	58.3	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.3	32.8	31.6	30.7	30.2	30.0
24	1.6E-01	1.6E-01	1.6E-01	1.6E-01	1.7E-01	1.8E-01	2.1E-01	4.0E-01	8.5E-01	8.7E-01	1.1E+00	5.0E-01	5.0E-01	6.1E-01	6.4E-01	3.9E-01
	298	299	301	303	306	308	311	315	318	323	327	333	339	345	352	0
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7
23	3.5E-01	2.5E-01	2.0E-01	1.8E-01	1.8E-01	1.9E-01	2.1E-01	2.3E-01	5.4E-01	1.0E+00	1.1E+00	1.3E+00	5.4E-01	7.0E-01	8.6E-01	6.2E-01
	295	296	298	300	302	304	307	311	315	319	324	330	336	344	351	0
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3
22	8.6E-01	7.2E-01	5.1E-01	3.2E-01	2.3E-01	2.1E-01	2.2E-01	2.3E-01	2.8E-01	7.0E-01	1.1E+00	1.4E+00	1.1E+00	7.4E-01	1.0E+00	9.5E-01
	291	293	294	296	298	300	303	306	310	315	320	326	333	341	350	0
	53.9	50.9	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0
21	9.3E-01	1.1E+00	1.2E+00	1.0E+00	6.9E-01	3.7E-01	2.6E-01	2.5E-01	2.9E-01	3.5E-01	9.2E-01	1.4E+00	1.6E+00	9.0E-01	1.0E+00	1.3E+00
	288	289	291	292	294	296	299	302	305	309	315	321	329	338	349	0
	52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7
20	4.7E-01	6.5E-01	9.7E-01	1.1E+00	1.3E+00	1.5E+00	1.0E+00	4.9E-01	3.4E-01	2.7E-01	4.7E-01	1.3E+00	2.1E+00	2.4E+00	1.2E+00	1.6E+00
	284	285	287	289	291	293	296	299	303	308	315	323	333	345	355	0
	51.7	48.5	45.0	42.2	39.0	35.9	32.9	29.9	26.9	24.0	21.7	19.7	18.7	17.9	17.7	17.3
19	2.5E-01	3.2E-01	4.1E-01	5.8E-01	7.7E-01	1.0E+00	1.3E+00	1.6E+00	1.5E+00	7.2E-01	5.9E-01	7.5E-01	2.1E+00	3.3E+00	2.3E+00	2.8E+00
	281	282	282	284	285	286	288	290	293	296	300	306	315	326	341	0
	51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.0
18	2.2E-01	2.4E-01	2.5E-01	2.9E-01	3.9E-01	5.4E-01	8.0E-01	1.1E+00	1.3E+00	1.9E+00	2.6E+00	1.3E+00	1.5E+00	4.2E+00	4.1E+00	4.7E+00
	277	278	279	279	281	282	284	285	288	291	296	303	315	335	353	0
	50.4	47.1	43.8	40.6	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.9	12.0	9.4	7.5	6.7
17	2.2E-01	2.3E-01	2.4E-01	2.7E-01	2.9E-01	3.4E-01	3.7E-01	5.2E-01	8.1E-01	1.3E+00	1.9E+00	2.3E+00	3.8E+00	3.2E+00	9.9E+00	5.3E+00
	273	274	274	275	275	275	276	277	278	279	281	284	288	296	315	0
	50.1	46.8	43.5	40.1	36.8	33.5	30.2	26.9	23.6	20.3	17.0	13.7	10.5	7.5	4.7	3.3
16	2.2E-01	2.3E-01	2.4E-01	2.7E-01	3.0E-01	4.3E-01	8.2E-01	7.4E-01	8.2E-01	9.3E-01	1.1E+00	1.5E+00	2.0E+00	2.9E+00	4.2E+00	2.8E+00
	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	0
	50.0	46.7	43.3	40.0	36.7	33.3	30.0	26.7	23.3	20.0	16.7	13.3	10.0	6.7	3.3	0.0

Total Whole Body Dose (rem) Estimated for 0000Z May 7, 1986, for the Northwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

x coordinate of the grid points																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
13 2.1E-01	2.4E-01	3.0E-01	1.9E+00	3.3E+00	5.9E+00	4.8E+00	2.2E+00	2.3E+00	2.3E+00	2.7E+00	4.7E+00	5.0E+00	2.9E+00	1.4E+00	6.7E+00	
256	265	265	265	264	264	267	262	261	260	259	255	251	247	225	180	
50.1	46.8	43.5	40.1	36.8	33.5	30.2	26.9	23.6	20.3	17.0	13.7	10.3	7.5	4.7	3.3	
14 2.4E-01	2.7E-01	1.1E+00	4.9E+00	5.5E+00	5.3E+00	2.1E+00	1.2E+00	1.5E+00	1.8E+00	2.3E+00	1.9E+00	2.3E+00	2.7E+00	6.3E+00	6.2E+00	
262	261	261	260	259	258	257	255	254	251	248	243	236	225	206	180	
50.4	47.1	43.8	40.6	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.9	12.0	9.4	7.5	6.7	
13 4.9E-01	8.3E-01	3.3E+00	5.9E+00	5.5E+00	3.8E+00	1.1E+00	9.2E-01	9.4E-01	1.0E+00	1.2E+00	1.6E+00	2.0E+00	3.9E+00	3.6E+00	3.1E+00	
253	257	257	255	254	253	251	249	246	243	239	233	225	213	198	180	
51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.9	
12 1.4E+00	2.1E+00	2.0E+00	2.1E+00	1.0E+00	5.7E-01	5.2E-01	5.3E-01	6.0E-01	7.5E-01	9.3E-01	1.3E+00	2.0E+00	3.3E+00	2.3E+00	2.7E+00	
255	254	252	251	250	248	246	243	240	236	231	225	216	206	194	180	
51.7	48.5	45.3	42.2	39.0	35.9	32.8	29.8	26.9	24.0	21.3	18.9	16.7	14.9	13.7	13.3	
11 8.0E-01	6.4E-01	4.6E-01	3.7E-01	3.5E-01	3.6E-01	3.9E-01	4.3E-01	5.2E-01	6.8E-01	8.5E-01	1.2E+00	2.2E+00	2.3E+00	2.5E+00	2.3E+00	
251	250	248	247	245	243	240	237	234	230	225	219	210	201	191	180	
52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7	
10 2.7E-01	2.7E-01	2.7E-01	2.8E-01	2.9E-01	3.1E-01	3.4E-01	3.9E-01	4.7E-01	5.9E-01	7.7E-01	1.4E+00	1.5E+00	1.7E+00	2.0E+00	1.9E+00	
248	246	245	243	241	239	236	233	229	225	219	213	206	198	189	180	
53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.0	26.0	24.0	22.4	21.1	20.3	20.9	
9 2.3E-01	2.4E-01	2.4E-01	2.5E-01	2.6E-01	2.8E-01	3.2E-01	3.7E-01	4.4E-01	5.4E-01	6.7E-01	1.2E+00	1.1E+00	1.4E+00	1.5E+00	1.5E+00	
244	243	241	239	237	235	232	228	225	220	215	209	203	195	189	180	
55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3	
8 2.1E-01	2.2E-01	2.3E-01	2.4E-01	2.5E-01	2.8E-01	3.1E-01	3.5E-01	4.1E-01	5.4E-01	6.9E-01	9.0E-01	9.3E-01	1.2E+00	1.1E+00	1.3E+00	
241	240	238	236	233	231	228	225	221	216	212	206	200	194	187	180	
56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7	
7 2.0E-01	2.1E-01	2.2E-01	2.3E-01	2.5E-01	2.8E-01	3.0E-01	3.4E-01	4.0E-01	5.8E-01	6.9E-01	6.3E-01	7.9E-01	1.1E+00	9.3E-01	1.0E+00	
239	237	235	233	230	228	225	221	217	213	209	203	198	192	186	180	
58.3	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.3	32.8	31.6	30.7	30.2	30.9	
6 1.9E-01	2.0E-01	2.2E-01	2.3E-01	2.5E-01	2.7E-01	3.0E-01	3.3E-01	3.7E-01	4.6E-01	4.9E-01	5.7E-01	7.0E-01	9.6E-01	7.9E-01	8.9E-01	
236	234	232	230	227	225	221	218	214	210	206	201	196	191	185	180	
60.1	57.3	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.3	
5 1.9E-01	2.0E-01	2.2E-01	2.3E-01	2.5E-01	2.7E-01	3.0E-01	3.3E-01	3.7E-01	4.1E-01	4.6E-01	5.2E-01	6.4E-01	8.4E-01	6.9E-01	7.8E-01	
233	231	229	227	225	222	219	216	212	208	204	199	195	190	185	180	
62.0	59.3	56.8	54.3	51.9	49.5	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7	
4 1.9E-01	2.0E-01	2.2E-01	2.3E-01	2.5E-01	2.7E-01	2.9E-01	3.2E-01	3.6E-01	4.0E-01	4.4E-01	4.9E-01	6.2E-01	7.2E-01	6.3E-01	7.0E-01	
231	229	227	225	222	219	216	213	210	206	202	198	194	189	184	180	
64.0	61.5	59.0	56.6	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.9	
3 1.9E-01	2.0E-01	2.2E-01	2.3E-01	2.5E-01	2.7E-01	2.9E-01	3.2E-01	3.5E-01	3.8E-01	4.2E-01	4.5E-01	4.9E-01	6.2E-01	5.3E-01	6.4E-01	
229	227	225	222	220	217	214	211	208	204	201	197	192	188	184	180	
66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.8	43.5	43.3	
2 1.9E-01	2.0E-01	2.2E-01	2.3E-01	2.5E-01	2.7E-01	2.9E-01	3.2E-01	3.4E-01	3.7E-01	3.9E-01	4.2E-01	5.6E-01	5.4E-01	5.3E-01	5.9E-01	
226	225	222	220	218	215	212	209	206	203	199	195	192	188	184	180	
68.4	66.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.8	49.6	48.5	47.7	47.1	46.8	46.7	
1 1.8E-01	2.0E-01	2.1E-01	2.3E-01	2.4E-01	2.7E-01	2.9E-01	3.1E-01	3.3E-01	3.5E-01	3.7E-01	4.0E-01	4.9E-01	4.7E-01	4.7E-01	5.2E-01	
225	223	220	218	216	213	210	208	205	201	199	194	191	187	183	180	
70.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.9	

Total Whole Body Dose (rem) Estimated for 0000Z May 7, 1986, for the Southwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

	15	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
01 2.5E-01	8.5E-02	3.4E-02	2.5E-02	8.7E-02	8.9E-02	9.7E-02	9.3E-02	9.0E-02	9.5E-02	1.1E-01	1.1E-01	1.1E-01	1.1E-01	1.1E-01	1.1E-01	1.1E-01
0	3	7	11	14	18	21	25	28	30	33	36	38	40	42	45	45
50.0	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.0	68.4	70.7	70.7
30 9.4E-02	9.2E-02	9.2E-02	9.4E-02	9.7E-02	9.8E-02	9.9E-02	1.0E-01	1.1E-01	1.2E-01	1.2E-01	1.3E-01	1.2E-01	1.1E-01	9.9E-02	9.7E-02	9.7E-02
0	4	8	12	15	19	23	26	29	32	35	38	40	42	45	48	48
46.7	46.8	47.1	47.7	48.5	49.6	50.9	52.2	53.7	55.5	57.3	59.3	61.5	63.7	66.0	68.4	68.4
29 1.1E-01	1.0E-01	1.0E-01	1.1E-01	1.1E-01	1.1E-01	1.1E-01	1.2E-01	1.3E-01	1.3E-01	1.3E-01	1.2E-01	1.1E-01	9.1E-02	7.9E-02	6.8E-02	6.8E-02
0	4	8	12	17	21	24	28	31	34	37	40	42	45	47	49	49
43.3	43.5	43.8	44.5	45.3	46.4	47.7	49.2	50.9	52.7	54.7	56.8	59.0	61.3	63.7	66.2	66.2
28 1.1E-01	1.2E-01	1.2E-01	1.2E-01	1.2E-01	1.3E-01	1.3E-01	1.4E-01	1.3E-01	1.3E-01	1.2E-01	1.0E-01	8.5E-02	7.2E-02	6.1E-02	5.3E-02	5.3E-02
0	4	9	14	19	22	26	30	33	36	39	42	45	47	49	51	51
40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.6	59.0	61.5	64.0	64.0
27 1.1E-01	1.3E-01	1.3E-01	1.4E-01	1.5E-01	1.5E-01	1.5E-01	1.4E-01	1.2E-01	1.1E-01	9.4E-02	8.1E-02	7.0E-02	6.1E-02	5.4E-02	4.9E-02	4.9E-02
0	5	10	15	19	24	28	32	36	39	42	45	47	49	51	53	53
36.7	36.8	37.3	38.0	39.0	40.3	41.8	43.5	45.3	47.4	49.6	51.9	54.3	56.8	59.3	62.0	62.0
26 1.1E-01	1.6E-01	1.6E-01	1.7E-01	1.7E-01	1.6E-01	1.4E-01	1.2E-01	1.1E-01	9.3E-02	8.2E-02	7.3E-02	6.5E-02	6.0E-02	5.5E-02	5.1E-02	5.1E-02
0	5	11	16	21	26	30	34	38	41	45	47	50	52	54	56	56
33.3	33.5	34.0	34.9	35.9	37.3	38.9	40.7	42.7	44.8	47.1	49.6	52.1	54.7	57.3	60.1	60.1
25 1.8E-01	2.0E-01	1.9E-01	1.9E-01	1.7E-01	1.5E-01	1.3E-01	1.2E-01	1.1E-01	9.9E-02	8.7E-02	7.7E-02	6.9E-02	6.4E-02	5.9E-02	5.5E-02	5.5E-02
0	6	12	18	23	29	33	37	41	45	48	50	53	55	57	59	59
30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4	50.0	52.7	55.5	58.3	58.3
24 3.9E-01	2.4E-01	2.1E-01	1.9E-01	1.7E-01	1.6E-01	1.6E-01	1.6E-01	1.6E-01	1.5E-01	1.3E-01	9.8E-02	8.0E-02	7.1E-02	6.5E-02	6.0E-02	6.0E-02
0	7	14	20	26	32	36	41	45	48	51	53	56	58	60	61	61
26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7	56.7
23 6.1E-01	3.0E-01	2.5E-01	2.3E-01	2.2E-01	2.3E-01	2.5E-01	3.0E-01	3.5E-01	3.3E-01	2.5E-01	1.6E-01	1.0E-01	8.1E-02	7.2E-02	6.6E-02	6.6E-02
0	8	15	23	29	35	40	45	48	52	55	57	59	61	63	64	64
23.3	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.2	55.2
22 9.1E-01	4.5E-01	3.6E-01	3.5E-01	3.6E-01	4.0E-01	5.0E-01	6.4E-01	7.5E-01	6.9E-01	4.8E-01	2.6E-01	1.4E-01	9.5E-02	8.0E-02	7.2E-02	7.2E-02
0	9	18	26	33	39	45	49	53	56	59	61	63	65	66	68	68
20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8	44.7	47.7	50.8	53.9	53.9
21 1.1E+00	7.1E-01	6.1E-01	6.3E-01	6.3E-01	7.8E-01	9.4E-01	1.1E+00	1.2E+00	1.1E+00	7.1E-01	3.6E-01	1.6E-01	1.1E-01	9.0E-02	8.0E-02	8.0E-02
0	11	21	30	38	45	50	54	57	60	63	65	67	68	70	71	71
16.7	17.0	18.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.6	52.7	52.7
20 1.6E+00	1.1E+00	1.1E+00	1.2E+00	1.2E+00	1.5E+00	1.4E+00	1.7E+00	1.5E+00	1.2E+00	7.7E-01	3.9E-01	2.0E-01	1.2E-01	1.0E-01	8.8E-02	8.8E-02
0	14	26	36	45	51	56	60	63	66	69	70	71	72	74	75	75
33.3	33.7	34.9	36.7	39.0	41.3	44.0	46.9	49.3	52.0	54.9	57.9	60.9	63.9	66.9	69.9	69.9
19 2.6E+00	2.7E+00	2.2E+00	1.6E+00	1.5E+00	1.9E+00	2.3E+00	1.6E+00	1.3E+00	1.0E+00	6.5E-01	3.3E-01	2.0E-01	1.3E-01	1.1E-01	9.6E-02	9.6E-02
0	18	33	45	53	59	63	66	69	71	73	74	75	77	77	79	79
0.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.8	38.0	41.2	44.5	47.7	51.0	51.0
18 4.7E+00	5.2E+00	2.7E+00	2.4E+00	3.0E+00	2.2E+00	1.6E+00	1.3E+00	1.1E+00	7.8E-01	5.1E-01	3.0E-01	2.0E-01	1.5E-01	1.2E-01	1.1E-01	1.1E-01
0	26	45	56	63	68	71	74	75	77	78	79	80	81	81	82	82
6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.9	47.1	50.4	50.4
17 5.3E+00	2.9E+00	4.5E+00	2.6E+00	2.2E+00	1.5E+00	1.4E+00	1.1E+00	8.6E-01	6.1E-01	4.1E-01	2.8E-01	2.0E-01	1.6E-01	1.3E-01	1.2E-01	1.2E-01
0	45	63	71	75	78	80	81	82	83	84	84	85	85	85	86	86
3.3	4.7	7.5	10.5	13.7	17.0	20.3	23.6	26.9	30.2	33.5	36.8	40.1	43.5	46.8	50.1	50.1
16 2.3E+00	3.7E+00	3.0E+00	2.7E+00	2.3E+00	1.6E+00	1.4E+00	1.0E+00	7.2E-01	5.1E-01	3.6E-01	2.7E-01	2.1E-01	1.7E-01	1.5E-01	1.3E-01	1.3E-01
0	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
0.3	3.3	6.7	10.0	13.3	16.7	20.0	23.3	26.7	30.0	33.3	36.7	40.0	43.3	46.7	50.0	50.0

X coordinate of the grid points																
Y	15	17	19	20	21	22	23	24	25	26	27	28	29	30	31	
15	6.7E+00	6.6E+00	3.5E+00	2.7E+00	2.2E+00	1.7E+00	1.2E+00	6.9E-01	6.4E-01	4.7E-01	3.5E-01	2.5E-01	2.2E-01	1.9E-01	1.6E-01	1.4E-01
	180	135	116	109	104	101	99	99	97	96	95	95	94	94	94	93
	3.3	4.7	7.5	10.5	13.7	17.0	20.3	23.6	26.9	30.2	33.5	36.8	40.1	43.5	46.8	50.1
14	6.2E+00	4.2E+00	4.0E+00	3.1E+00	2.0E+00	1.6E+00	1.1E+00	9.3E-01	6.1E-01	4.6E-01	3.6E-01	2.9E-01	2.4E-01	2.0E-01	1.7E-01	1.5E-01
	180	153	135	123	116	111	108	105	104	102	101	100	99	99	98	97
	6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.8	47.1	50.4
13	3.1E+00	3.9E+00	2.7E+00	2.5E+00	1.8E+00	1.4E+00	1.1E+00	7.9E-01	6.0E-01	4.7E-01	3.8E-01	3.1E-01	2.6E-01	2.2E-01	1.8E-01	1.6E-01
	180	161	146	135	128	120	116	113	110	108	106	105	104	102	102	101
	10.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.8	38.0	41.2	44.5	47.7	51.0
12	2.7E+00	3.5E+00	2.4E+00	1.9E+00	1.6E+00	1.3E+00	9.8E-01	7.6E-01	6.0E-01	4.8E-01	3.9E-01	3.3E-01	2.7E-01	2.3E-01	2.0E-01	1.7E-01
	180	165	153	143	135	128	123	119	116	113	111	109	108	107	105	104
	13.3	13.7	14.9	16.7	18.9	21.3	24.0	26.9	29.8	32.8	35.9	39.0	42.2	45.3	48.5	51.7
11	2.3E+00	2.9E+00	2.4E+00	1.6E+00	1.4E+00	1.1E+00	9.1E-01	7.3E-01	5.9E-01	4.9E-01	4.1E-01	3.4E-01	2.9E-01	2.4E-01	2.1E-01	1.8E-01
	180	168	158	149	141	135	129	125	122	119	116	114	112	111	109	108
	16.7	17.0	18.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.6	52.7
10	1.9E+00	2.3E+00	2.3E+00	1.4E+00	1.2E+00	1.0E+00	8.4E-01	7.0E-01	5.8E-01	4.9E-01	4.1E-01	3.5E-01	3.0E-01	2.5E-01	2.1E-01	1.8E-01
	180	170	161	153	146	140	135	130	126	123	120	118	116	114	113	111
	20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8	44.7	47.7	50.8	53.9
9	1.5E+00	1.8E+00	1.7E+00	1.3E+00	1.0E+00	9.0E-01	7.7E-01	6.6E-01	5.7E-01	4.9E-01	4.2E-01	3.5E-01	3.0E-01	2.6E-01	2.2E-01	1.9E-01
	180	171	164	156	150	144	139	135	131	127	124	122	120	118	116	115
	22.3	22.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.1
8	1.3E+00	1.4E+00	1.3E+00	1.4E+00	9.1E-01	8.1E-01	7.1E-01	6.3E-01	5.5E-01	4.8E-01	4.1E-01	3.6E-01	3.1E-01	2.6E-01	2.2E-01	1.9E-01
	180	172	165	159	153	147	143	138	135	131	128	126	123	121	119	118
	26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7
7	1.0E+00	1.2E+00	1.0E+00	1.2E+00	8.1E-01	7.3E-01	6.6E-01	6.0E-01	5.3E-01	4.7E-01	4.1E-01	3.6E-01	3.1E-01	2.7E-01	2.3E-01	2.0E-01
	180	173	167	161	156	150	146	142	138	135	131	129	126	124	122	120
	30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4	50.0	52.7	55.5	58.3
6	8.9E-01	9.6E-01	9.0E-01	8.4E-01	7.6E-01	6.7E-01	6.2E-01	5.6E-01	5.1E-01	4.5E-01	4.0E-01	3.5E-01	3.1E-01	2.7E-01	2.3E-01	2.0E-01
	180	174	168	163	158	153	149	145	141	138	135	132	129	127	125	123
	33.3	33.5	34.0	34.8	35.9	37.2	38.9	40.7	42.7	44.8	47.1	49.6	52.1	54.7	57.3	60.1
5	7.6E-01	7.9E-01	7.9E-01	6.9E-01	6.7E-01	5.8E-01	5.4E-01	4.9E-01	4.4E-01	3.9E-01	3.5E-01	3.1E-01	2.7E-01	2.3E-01	2.0E-01	
	180	174	167	164	160	155	151	147	143	140	137	135	132	130	128	126
	36.7	36.8	37.3	38.0	39.0	40.3	41.8	43.5	45.3	47.4	49.6	51.9	54.3	56.8	59.3	62.0
4	7.0E-01	6.9E-01	7.3E-01	6.2E-01	6.0E-01	5.3E-01	5.5E-01	5.1E-01	4.7E-01	4.3E-01	3.8E-01	3.4E-01	3.0E-01	2.6E-01	2.3E-01	2.0E-01
	180	175	170	165	161	157	153	149	146	143	140	137	135	132	130	128
	40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.6	59.0	61.5	64.0
3	6.4E-01	6.2E-01	6.7E-01	5.8E-01	5.6E-01	5.4E-01	5.2E-01	4.9E-01	4.5E-01	4.1E-01	3.7E-01	3.3E-01	2.9E-01	2.6E-01	2.3E-01	2.0E-01
	180	175	171	167	162	158	155	151	148	145	142	139	137	135	132	130
	43.3	43.5	43.8	44.5	45.3	46.4	47.7	49.2	50.9	52.7	54.7	56.8	59.0	61.3	63.7	66.2
2	5.9E-01	5.8E-01	6.2E-01	5.3E-01	5.3E-01	5.1E-01	4.9E-01	4.6E-01	4.3E-01	3.9E-01	3.6E-01	3.2E-01	2.9E-01	2.5E-01	2.2E-01	1.9E-01
	180	175	171	167	164	160	156	153	150	147	144	141	139	137	135	133
	46.7	46.8	47.1	47.7	48.5	49.6	50.9	52.2	53.7	55.5	57.3	59.3	61.5	63.7	66.0	68.4
1	5.2E-01	5.3E-01	5.5E-01	5.1E-01	4.9E-01	4.8E-01	4.6E-01	4.4E-01	4.1E-01	3.7E-01	3.4E-01	3.1E-01	2.7E-01	2.4E-01	2.1E-01	1.9E-01
	180	176	172	168	165	161	158	154	151	149	146	143	141	139	136	135
	50.0	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.2	68.4	70.7

Total Whole Body Dose (rem) Estimated for 0000Z May 7, 1986, for the Southeast Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

x coordinate of the grid points																
Y	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
31	5.3E-03	8.9E-03	1.7E-02	2.3E-02	1.5E-02	1.3E-02	9.2E-03	9.9E-03	1.0E-02	1.1E-02	1.0E-02	7.9E-03	5.3E-03	4.3E-03	3.9E-03	3.8E-03
	315	316	319	321	323	326	329	331	334	338	341	345	348	352	356	0
	70.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0
30	4.3E-03	5.6E-03	1.0E-02	2.1E-02	2.5E-02	1.4E-02	9.6E-03	9.6E-03	1.0E-02	1.1E-02	1.2E-02	1.0E-02	7.5E-03	5.6E-03	4.5E-03	4.2E-03
	313	315	317	319	321	324	327	330	333	336	340	344	347	351	355	0
	63.4	65.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.8	49.6	48.5	47.7	47.1	46.8	46.7
29	4.1E-03	4.5E-03	6.0E-03	1.3E-02	2.6E-02	2.6E-02	1.5E-02	1.0E-02	1.0E-02	1.1E-02	1.3E-02	1.2E-02	1.0E-02	7.4E-03	5.4E-03	4.7E-03
	319	312	315	317	319	322	325	328	331	335	338	342	347	351	355	0
	66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.8	43.5	43.3
28	4.3E-03	4.4E-03	4.8E-03	6.9E-03	1.6E-02	2.9E-02	2.3E-02	1.5E-02	1.0E-02	1.1E-02	1.3E-02	1.4E-02	1.3E-02	9.6E-03	6.7E-03	5.4E-03
	308	310	312	315	317	320	323	326	329	333	337	341	345	350	355	0
	64.0	61.5	59.0	56.8	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.0
27	4.7E-03	4.7E-03	4.9E-03	5.5E-03	8.1E-03	1.9E-02	2.9E-02	2.6E-02	1.4E-02	1.1E-02	1.3E-02	1.5E-02	1.5E-02	1.3E-02	8.9E-03	6.3E-03
	306	308	310	312	315	317	320	323	327	331	335	340	344	349	354	0
	62.0	59.3	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7
26	5.2E-03	5.2E-03	5.3E-03	5.7E-03	6.2E-03	1.0E-02	2.1E-02	2.9E-02	2.9E-02	1.3E-02	1.3E-02	1.5E-02	1.6E-02	1.6E-02	1.2E-02	7.8E-03
	305	305	307	309	312	315	318	321	325	329	333	338	343	348	354	0
	60.1	57.3	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.3
25	5.7E-03	5.8E-03	5.9E-03	6.2E-03	6.6E-03	7.3E-03	1.2E-02	2.4E-02	2.6E-02	3.2E-02	1.4E-02	1.5E-02	1.6E-02	1.9E-02	1.7E-02	1.0E-02
	300	302	304	306	309	311	315	318	322	326	330	336	341	347	353	0
	58.3	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.3	32.8	31.6	30.7	30.2	30.0
24	7.3E-03	6.7E-03	6.6E-03	6.9E-03	7.2E-03	7.5E-03	8.2E-03	1.4E-02	2.6E-02	2.8E-02	3.7E-02	1.7E-02	1.7E-02	2.1E-02	2.2E-02	1.4E-02
	299	299	301	303	306	308	311	315	318	323	327	333	339	345	352	0
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7
23	1.4E-02	1.0E-02	8.2E-03	7.6E-03	7.7E-03	8.0E-03	8.4E-03	9.1E-03	1.7E-02	3.0E-02	3.4E-02	4.2E-02	1.8E-02	2.3E-02	2.9E-02	2.2E-02
	295	296	298	300	302	304	307	311	315	319	324	330	336	344	351	0
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3
22	3.1E-02	2.5E-02	1.8E-02	1.2E-02	9.2E-03	8.6E-03	8.8E-03	9.3E-03	1.0E-02	2.1E-02	3.2E-02	4.4E-02	3.5E-02	2.4E-02	3.3E-02	3.1E-02
	291	293	294	296	298	300	303	306	310	315	320	326	333	341	350	0
	53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0
21	3.1E-02	3.6E-02	3.7E-02	3.3E-02	2.2E-02	1.3E-02	1.0E-02	1.0E-02	1.1E-02	1.2E-02	2.6E-02	3.7E-02	4.9E-02	2.8E-02	3.3E-02	3.9E-02
	288	289	291	292	294	296	299	302	305	309	315	321	329	338	348	0
	52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7
20	1.7E-02	2.2E-02	2.9E-02	3.4E-02	3.9E-02	3.9E-02	3.0E-02	1.6E-02	1.3E-02	1.4E-02	1.6E-02	3.4E-02	5.4E-02	5.2E-02	3.6E-02	4.7E-02
	284	285	287	288	289	291	293	296	299	303	308	315	323	332	345	0
	51.7	48.5	45.3	42.2	39.0	35.9	32.8	29.8	26.9	24.0	21.3	18.9	16.7	14.9	13.7	13.3
19	1.0E-02	1.2E-02	1.5E-02	2.0E-02	2.6E-02	3.2E-02	3.8E-02	4.3E-02	4.1E-02	2.2E-02	2.0E-02	2.4E-02	4.2E-02	7.6E-02	5.0E-02	6.0E-02
	281	282	282	284	285	286	288	290	293	296	300	306	315	326	341	0
	51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.0
18	8.4E-03	9.3E-03	9.9E-03	1.1E-02	1.4E-02	1.9E-02	2.6E-02	3.4E-02	3.7E-02	4.8E-02	6.1E-02	3.5E-02	4.4E-02	9.3E-02	7.5E-02	9.6E-02
	277	278	278	279	280	281	282	284	285	288	291	296	303	315	333	0
	50.4	47.1	43.8	40.6	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.9	12.0	9.4	7.5	6.7
17	5.8E-03	9.3E-03	9.8E-03	1.1E-02	1.1E-02	1.3E-02	1.4E-02	1.8E-02	2.6E-02	3.9E-02	5.0E-02	4.7E-02	5.8E-02	7.7E-02	8.9E-02	9.2E-02
	273	274	274	274	275	275	276	277	278	279	281	284	288	296	315	0
	50.1	46.8	43.5	40.1	36.8	33.5	30.2	26.9	23.6	20.3	17.0	13.7	10.5	7.5	4.7	3.3
16	5.0E-03	9.4E-03	9.9E-03	1.1E-02	1.1E-02	1.4E-02	2.2E-02	2.2E-02	2.5E-02	2.7E-02	3.1E-02	4.3E-02	4.9E-02	6.2E-02	7.6E-02	8.5E-02
	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	0
	50.0	46.7	43.3	40.0	36.7	33.3	30.0	26.7	23.3	20.0	16.7	13.3	10.0	6.7	3.3	0.0

External Dose (rem) from the Plume Estimated for 0000Z May 7, 1986, for the Northwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

t coordinate of the grid points																
Y	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
15	9.3E-03	9.8E-02	1.1E-02	4.4E-02	8.1E-02	1.2E-01	9.3E-02	5.2E-02	5.2E-02	4.1E-02	5.6E-02	5.3E-02	1.0E-01	7.3E-02	8.4E-02	9.0E-02
	266	265	265	265	264	264	263	262	261	260	259	255	251	243	225	190
	50.1	46.8	47.5	40.1	36.9	33.5	30.2	26.9	23.3	20.3	17.0	13.7	10.5	7.5	4.7	0.7
14	1.0E-02	1.1E-02	3.0E-02	1.1E-01	1.2E-01	1.3E-01	5.5E-02	4.1E-02	4.9E-02	5.5E-02	6.0E-02	5.0E-02	6.8E-02	7.7E-02	1.1E-01	9.0E-02
	262	261	261	260	259	258	257	255	254	251	248	243	236	225	206	190
	50.4	47.1	47.9	40.6	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.9	12.0	9.4	7.5	6.7
13	1.7E-02	2.5E-02	9.4E-02	1.4E-01	1.3E-01	9.2E-02	3.7E-02	3.2E-02	3.2E-02	3.4E-02	4.0E-02	5.1E-02	6.4E-02	1.2E-01	1.1E-01	8.7E-02
	258	257	257	255	254	253	251	249	246	243	239	233	225	213	198	180
	51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.3
12	4.0E-02	5.9E-02	7.8E-02	5.7E-02	1.1E-02	2.1E-02	2.0E-02	2.0E-02	2.2E-02	2.7E-02	3.3E-02	4.2E-02	6.7E-02	1.1E-01	8.5E-02	9.3E-02
	255	254	252	251	250	248	246	243	240	236	231	225	216	206	194	190
	51.7	48.5	45.2	42.2	39.0	35.9	32.8	29.9	26.9	24.0	21.3	18.9	16.7	14.9	13.7	12.3
11	2.5E-02	2.1E-02	1.7E-02	1.5E-02	1.5E-02	1.5E-02	1.5E-02	1.7E-02	2.0E-02	2.4E-02	2.9E-02	2.9E-02	7.5E-02	7.6E-02	8.0E-02	7.2E-02
	251	250	248	247	245	243	240	237	234	230	225	219	210	201	191	180
	52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7
10	1.2E-02	1.2E-02	1.2E-02	1.2E-02	1.2E-02	1.3E-02	1.4E-02	1.6E-02	1.8E-02	2.2E-02	2.7E-02	5.1E-02	5.0E-02	5.7E-02	6.5E-02	6.1E-02
	246	246	245	243	241	239	236	233	229	225	219	213	206	198	189	180
	53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0
9	1.0E-02	1.0E-02	1.1E-02	1.1E-02	1.2E-02	1.2E-02	1.3E-02	1.5E-02	1.7E-02	2.1E-02	3.2E-02	4.5E-02	3.7E-02	4.7E-02	5.1E-02	5.2E-02
	244	243	241	239	237	235	232	229	225	220	215	209	203	195	188	180
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3
8	9.5E-03	9.8E-03	1.0E-02	1.1E-02	1.1E-02	1.2E-02	1.3E-02	1.5E-02	1.7E-02	2.1E-02	3.5E-02	3.0E-02	3.2E-02	4.3E-02	4.0E-02	4.4E-02
	241	240	238	236	233	231	228	225	221	216	212	206	200	194	187	180
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7
7	9.0E-03	9.4E-03	9.9E-03	1.1E-02	1.1E-02	1.2E-02	1.3E-02	1.4E-02	1.6E-02	2.3E-02	2.3E-02	2.4E-02	2.9E-02	3.9E-02	3.3E-02	3.7E-02
	239	237	235	233	230	228	225	221	217	213	209	203	198	192	186	180
	58.3	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.3	32.8	31.6	30.7	30.2	30.0
6	9.8E-03	9.3E-03	9.7E-03	1.1E-02	1.1E-02	1.2E-02	1.3E-02	1.4E-02	1.6E-02	1.9E-02	2.0E-02	2.2E-02	2.7E-02	3.5E-02	2.9E-02	3.2E-02
	236	234	232	230	227	225	221	218	214	210	206	201	196	191	185	180
	60.1	57.3	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.3
5	9.8E-03	9.3E-03	9.7E-03	1.1E-02	1.1E-02	1.2E-02	1.3E-02	1.4E-02	1.6E-02	1.7E-02	1.9E-02	2.1E-02	2.5E-02	3.1E-02	2.6E-02	2.9E-02
	233	231	229	227	225	222	219	216	212	208	204	199	195	190	185	180
	62.0	59.3	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7
4	9.8E-03	9.3E-03	9.7E-03	1.1E-02	1.1E-02	1.2E-02	1.3E-02	1.4E-02	1.5E-02	1.7E-02	1.8E-02	2.0E-02	2.4E-02	2.7E-02	1.4E-02	2.5E-02
	231	229	227	225	222	219	216	213	210	206	202	198	194	189	184	180
	64.0	61.5	59.0	56.6	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.3
3	9.7E-03	9.3E-03	9.9E-03	1.1E-02	1.1E-02	1.2E-02	1.3E-02	1.4E-02	1.5E-02	1.6E-02	1.7E-02	1.8E-02	2.3E-02	2.4E-02	2.3E-02	2.4E-02
	229	227	225	222	220	217	214	211	208	204	201	197	192	188	184	180
	66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.8	43.5	43.3
2	9.7E-03	9.2E-03	9.8E-03	1.0E-02	1.1E-02	1.2E-02	1.3E-02	1.4E-02	1.5E-02	1.6E-02	1.7E-02	1.7E-02	2.2E-02	2.1E-02	2.1E-02	2.3E-02
	226	225	222	220	218	215	212	209	206	203	199	195	192	188	184	180
	68.4	66.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.9	49.6	48.5	47.7	47.1	46.8	46.7
1	9.6E-03	9.1E-03	9.7E-03	1.0E-02	1.1E-02	1.2E-02	1.3E-02	1.4E-02	1.5E-02	1.5E-02	1.6E-02	1.7E-02	2.0E-02	1.9E-02	1.9E-02	2.1E-02
	225	223	220	218	216	213	210	208	205	201	198	194	191	187	183	180
	70.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0

External Dose (rem) from the Plume Estimated for 0000Z May 7, 1986, for the Southwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
21	3.8E-03	3.9E-03	3.8E-03	3.9E-03	3.9E-03	4.0E-03	3.9E-03	3.9E-03	3.9E-03	4.1E-03	4.0E-03	4.0E-03	4.0E-03	4.0E-03	4.7E-03	4.5E-03
	0	2	7	11	14	18	21	25	28	30	33	36	38	40	43	45
	50.0	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.2	68.4	70.7
30	4.2E-03	4.1E-03	4.1E-03	4.2E-03	4.3E-03	4.2E-03	4.4E-03	4.5E-03	4.7E-03	5.0E-03	5.2E-03	5.2E-03	5.0E-03	4.7E-03	4.2E-03	3.7E-03
	0	4	8	12	15	19	23	26	29	32	35	38	40	42	45	48
	46.7	46.3	47.1	47.7	48.5	49.6	50.8	52.2	53.7	55.5	57.3	59.2	61.5	63.7	66.0	68.4
29	4.7E-03	4.6E-03	4.7E-03	4.7E-03	4.7E-03	4.8E-03	5.0E-03	5.2E-03	5.5E-03	5.6E-03	5.5E-03	5.1E-03	4.6E-03	4.0E-03	3.4E-03	3.0E-03
	0	4	8	12	17	21	24	28	31	34	37	40	42	45	47	49
	47.3	47.5	47.8	48.5	49.3	48.4	47.7	49.2	50.9	52.7	54.7	56.8	59.0	61.3	63.7	66.2
28	5.4E-03	5.2E-03	5.2E-03	5.2E-03	5.4E-03	5.6E-03	5.8E-03	5.9E-03	5.8E-03	5.5E-03	5.0E-03	4.4E-03	3.8E-03	3.2E-03	2.3E-03	2.5E-03
	0	4	9	14	18	22	26	30	33	36	39	42	45	47	49	51
	40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.6	59.0	61.5	64.0
27	6.3E-03	5.8E-03	5.9E-03	6.1E-03	6.3E-03	6.4E-03	6.2E-03	5.8E-03	5.3E-03	4.8E-03	4.2E-03	3.7E-03	3.2E-03	2.8E-03	2.6E-03	2.3E-03
	0	5	10	15	19	24	28	32	36	39	42	45	47	49	51	53
	26.7	26.8	27.3	28.0	29.0	30.3	31.8	33.5	35.3	37.4	39.6	41.9	44.3	46.8	49.3	52.0
26	7.8E-03	6.8E-03	7.0E-03	7.2E-03	7.1E-03	6.7E-03	6.0E-03	5.4E-03	4.7E-03	4.2E-03	3.7E-03	3.4E-03	3.1E-03	2.8E-03	2.6E-03	2.4E-03
	0	5	11	16	21	26	30	34	38	41	45	47	50	52	54	56
	33.3	33.5	34.0	34.8	35.9	37.3	38.9	40.7	42.7	44.8	47.1	49.6	52.1	54.7	57.3	60.1
25	1.0E-02	8.2E-03	8.1E-03	7.8E-03	7.2E-03	6.4E-03	5.7E-03	5.2E-03	4.7E-03	4.3E-03	3.9E-03	3.5E-03	3.2E-03	3.0E-03	2.8E-03	2.6E-03
	0	6	12	18	23	29	33	37	41	45	48	50	52	55	57	59
	30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4	50.0	52.7	55.5	58.3
24	1.4E-02	9.5E-03	8.6E-03	7.9E-03	7.2E-03	6.7E-03	6.4E-03	6.3E-03	6.3E-03	5.9E-03	5.1E-03	4.2E-03	3.6E-03	3.3E-03	3.0E-03	2.8E-03
	0	7	14	20	26	32	36	41	45	48	51	53	56	58	60	61
	26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7
23	1.2E-02	1.2E-02	9.6E-03	9.0E-03	8.6E-03	8.6E-03	9.3E-03	1.1E-02	1.2E-02	1.1E-02	8.5E-03	5.9E-03	4.4E-03	3.7E-03	3.3E-03	3.1E-03
	0	8	15	23	29	35	40	45	48	52	55	57	59	61	63	64
	23.3	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.2
22	1.1E-02	1.6E-02	1.3E-02	1.3E-02	1.3E-02	1.4E-02	1.6E-02	2.0E-02	2.3E-02	2.1E-02	1.5E-02	9.0E-03	5.3E-03	4.2E-03	3.7E-03	3.4E-03
	0	9	18	26	33	39	45	49	53	56	59	61	63	65	66	68
	29.0	29.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8	44.7	47.7	50.8	53.9
21	1.9E-02	2.4E-02	2.0E-02	2.1E-02	2.2E-02	2.4E-02	2.9E-02	3.4E-02	3.7E-02	3.2E-02	2.2E-02	1.2E-02	6.7E-03	4.7E-03	4.0E-03	3.6E-03
	0	11	21	30	38	45	50	54	57	60	63	65	67	68	70	71
	16.7	17.0	18.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.6	52.7
20	4.7E-03	3.6E-02	3.5E-02	3.6E-02	3.7E-02	2.9E-02	4.2E-02	4.9E-02	4.5E-02	3.6E-02	2.4E-02	1.3E-02	7.4E-03	5.2E-03	4.4E-03	4.0E-03
	0	14	26	36	45	51	56	60	63	66	68	70	71	72	74	75
	13.3	13.7	14.9	16.7	18.9	21.3	24.0	26.9	29.8	32.8	35.9	39.0	42.2	45.3	48.5	51.7
19	6.0E-02	7.5E-02	6.4E-02	5.5E-02	5.3E-02	5.5E-02	6.3E-02	4.8E-02	4.0E-02	3.1E-02	2.1E-02	1.2E-02	7.6E-03	5.7E-03	4.8E-03	4.3E-03
	0	18	33	45	53	59	63	66	69	71	73	74	75	77	77	78
	10.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.8	38.0	41.2	44.5	47.7	51.0
18	9.6E-02	1.0E-01	7.8E-02	7.1E-02	6.9E-02	6.1E-02	4.8E-02	4.1E-02	3.3E-02	2.5E-02	1.7E-02	1.1E-02	7.7E-03	6.1E-03	5.2E-03	4.7E-03
	0	26	45	56	63	68	71	74	75	77	78	79	80	81	81	82
	6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.8	47.1	50.4
17	9.2E-02	8.5E-02	6.6E-02	7.7E-02	6.9E-02	5.6E-02	4.6E-02	3.6E-02	2.8E-02	2.1E-02	1.5E-02	1.0E-02	8.0E-03	6.6E-03	5.7E-03	5.1E-03
	0	45	63	71	75	78	80	81	82	83	84	84	85	85	85	86
	3.3	4.7	7.5	10.5	13.7	17.0	20.3	23.6	26.9	30.2	33.5	36.8	40.1	43.5	46.8	50.1
16	3.5E-02	9.1E-02	9.0E-02	8.3E-02	7.1E-02	5.6E-02	4.3E-02	3.2E-02	2.4E-02	1.8E-02	1.2E-02	1.0E-02	8.4E-03	7.2E-03	6.2E-03	5.3E-03
	0	30	90	90	90	90	90	90	90	90	90	90	90	90	90	90
	0.0	3.3	6.7	10.0	13.3	16.7	20.0	23.3	26.7	30.0	33.3	36.7	40.0	43.3	46.7	50.0

X coordinate of the grid points																
Y	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
15	9.0E-02	9.4E-02	9.2E-02	8.3E-02	6.9E-02	5.4E-02	4.0E-02	3.0E-02	2.2E-02	1.7E-02	1.2E-02	1.1E-02	9.0E-03	7.7E-03	6.7E-03	5.9E-03
	120	135	115	108	104	101	99	98	97	96	95	95	94	94	94	93
	5.3	4.7	7.5	10.5	13.7	17.0	20.3	23.6	26.9	30.2	33.5	36.8	40.1	43.5	46.8	50.1
14	9.0E-02	9.8E-02	1.0E-01	9.1E-02	6.4E-02	5.0E-02	3.6E-02	2.8E-02	2.2E-02	1.7E-02	1.4E-02	1.1E-02	9.7E-03	8.3E-03	7.2E-03	6.3E-03
	180	153	135	123	116	111	108	105	104	102	101	100	99	98	98	97
	6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.9	47.1	50.4
13	8.7E-02	8.9E-02	8.2E-02	7.6E-02	5.8E-02	4.6E-02	3.5E-02	2.7E-02	2.2E-02	1.7E-02	1.4E-02	1.2E-02	1.0E-02	8.9E-03	7.7E-03	6.7E-03
	186	161	146	135	126	120	116	113	110	108	106	105	104	102	102	101
	10.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.8	38.0	41.2	44.5	47.7	51.0
12	9.3E-02	1.0E-01	7.4E-02	6.1E-02	5.1E-02	4.2E-02	3.3E-02	2.7E-02	2.2E-02	1.8E-02	1.5E-02	1.3E-02	1.1E-02	9.4E-03	8.1E-03	7.1E-03
	180	165	153	143	135	128	123	119	116	113	111	109	108	107	105	104
	15.3	13.7	14.9	16.7	18.9	21.3	24.0	26.9	29.8	32.8	35.9	39.0	42.2	45.0	48.5	51.7
11	7.2E-02	8.4E-02	7.2E-02	5.3E-02	4.5E-02	3.8E-02	3.1E-02	2.6E-02	2.2E-02	1.8E-02	1.6E-02	1.3E-02	1.1E-02	9.8E-03	8.5E-03	7.4E-03
	180	168	158	149	141	135	129	125	122	119	116	114	112	111	109	108
	16.7	17.0	18.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.6	52.7
10	6.1E-02	7.0E-02	6.9E-02	4.7E-02	4.0E-02	3.5E-02	3.0E-02	2.5E-02	2.2E-02	1.9E-02	1.6E-02	1.4E-02	1.2E-02	1.0E-02	8.9E-03	7.9E-03
	190	170	161	153	146	140	135	130	126	123	120	118	116	114	113	111
	20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8	44.7	47.7	50.8	53.9
9	5.2E-02	5.8E-02	5.4E-02	4.4E-02	3.8E-02	3.2E-02	2.8E-02	2.4E-02	2.1E-02	1.8E-02	1.6E-02	1.4E-02	1.2E-02	1.1E-02	9.1E-03	8.0E-03
	180	171	164	156	150	144	139	135	131	127	124	122	120	119	116	115
	23.3	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.2
8	4.4E-02	4.8E-02	4.3E-02	4.5E-02	3.2E-02	2.9E-02	2.6E-02	2.3E-02	2.1E-02	1.8E-02	1.6E-02	1.4E-02	1.2E-02	1.1E-02	9.4E-03	8.2E-03
	190	172	165	159	153	147	143	138	135	131	128	126	123	121	119	118
	26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7
7	3.7E-02	4.1E-02	3.6E-02	3.9E-02	2.9E-02	2.7E-02	2.5E-02	2.2E-02	2.0E-02	1.8E-02	1.6E-02	1.4E-02	1.2E-02	1.1E-02	9.5E-03	8.3E-03
	180	173	167	161	156	150	146	142	138	135	131	129	126	124	122	120
	30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4	50.0	52.7	55.5	58.3
6	3.2E-02	3.5E-02	3.2E-02	3.0E-02	2.8E-02	2.5E-02	2.3E-02	2.2E-02	2.0E-02	1.8E-02	1.6E-02	1.4E-02	1.2E-02	1.1E-02	9.3E-03	8.4E-03
	190	174	168	163	158	153	149	145	141	138	135	132	129	127	125	122
	33.3	33.5	34.0	34.8	35.9	37.3	38.9	40.7	42.7	44.8	47.1	49.6	52.1	54.7	57.3	60.1
5	2.7E-02	2.9E-02	2.7E-02	2.6E-02	2.6E-02	2.4E-02	2.2E-02	2.1E-02	1.9E-02	1.7E-02	1.6E-02	1.4E-02	1.2E-02	1.1E-02	9.6E-03	8.5E-03
	180	174	169	164	160	155	151	147	143	140	137	135	132	130	128	126
	36.7	36.8	37.3	38.0	39.0	40.3	41.8	43.5	45.3	47.4	49.6	51.9	54.3	56.8	59.3	62.0
4	2.6E-02	2.6E-02	2.7E-02	2.4E-02	2.3E-02	2.2E-02	2.1E-02	2.0E-02	1.9E-02	1.7E-02	1.6E-02	1.4E-02	1.2E-02	1.1E-02	9.6E-03	8.4E-03
	190	175	170	165	161	157	153	149	146	143	140	137	135	133	130	128
	40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.6	59.0	61.5	64.0
3	2.4E-02	2.4E-02	2.5E-02	2.3E-02	2.2E-02	2.1E-02	2.0E-02	1.9E-02	1.8E-02	1.6E-02	1.5E-02	1.3E-02	1.2E-02	1.1E-02	9.5E-03	8.3E-03
	180	175	171	167	162	158	153	151	148	145	142	139	137	135	132	130
	43.5	43.3	43.8	44.5	45.3	46.4	47.7	49.2	50.9	52.7	54.7	56.8	59.0	61.3	63.7	66.2
2	2.3E-02	2.3E-02	2.4E-02	2.1E-02	2.1E-02	2.0E-02	1.9E-02	1.8E-02	1.7E-02	1.6E-02	1.4E-02	1.3E-02	1.2E-02	1.0E-02	9.3E-03	8.2E-03
	180	175	171	167	164	160	156	153	150	147	144	141	139	137	135	133
	46.7	46.8	47.1	47.7	48.5	49.6	50.8	52.2	53.7	55.5	57.3	59.3	61.5	63.7	66.0	68.4
1	2.1E-02	2.1E-02	2.2E-02	2.0E-02	2.0E-02	1.9E-02	1.8E-02	1.7E-02	1.6E-02	1.5E-02	1.4E-02	1.3E-02	1.1E-02	1.0E-02	9.3E-03	8.0E-03
	180	176	172	168	165	161	158	154	151	149	146	143	141	139	136	135
	50.0	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.2	68.4	70.7

External Dose (rem) from the Plume Estimated for 0000Z May 7, 1986, for the Southeast Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

1 coordinate of the grid points

1	1	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
1	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	1
2	14	13	12	11	10	9	8	7	6	5	4	3	2	1	1	2
3	13	12	11	10	9	8	7	6	5	4	3	2	1	1	1	3
4	12	11	10	9	8	7	6	5	4	3	2	1	1	1	1	4
5	11	10	9	8	7	6	5	4	3	2	1	1	1	1	1	5
6	10	9	8	7	6	5	4	3	2	1	1	1	1	1	1	6
7	9	8	7	6	5	4	3	2	1	1	1	1	1	1	1	7
8	8	7	6	5	4	3	2	1	1	1	1	1	1	1	1	8
9	7	6	5	4	3	2	1	1	1	1	1	1	1	1	1	9
10	6	5	4	3	2	1	1	1	1	1	1	1	1	1	1	10
11	5	4	3	2	1	1	1	1	1	1	1	1	1	1	1	11
12	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	12
13	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	13
14	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	16
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	22
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23
24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	28
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	29
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	30
31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	31
32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	32
33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	33
34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	34
35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	35
36	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	36
37	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	37
38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	38
39	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	39
40	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	40
41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	41
42	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	42
43	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	43
44	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	44
45	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	45
46	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	46
47	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	47
48	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	48
49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	49
50	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	50
51	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	51
52	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	52
53	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	53
54	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	54
55	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	55
56	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	56
57	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	57
58	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	58
59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	59
60	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	60
61	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	61
62	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	62
63	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	63
64	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	64
65	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	65
66	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	66
67	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	67
68	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	68
69	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	69
70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	70
71	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	71
72	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	72
73	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	73
74	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	74
75	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	75
76	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	76
77	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	77
78	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	78
79	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	79
80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	80
81	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	81
82	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	82
83	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	83
84	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	84
85	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	85
86	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	86
87	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	87
88	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	88
89	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	89
90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	90
91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	91
92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	92
93	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	93
94	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	94
95	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	95
96	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	96
97	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	97
98	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	98
99	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	99
100	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100

External Dose (rem) from Ground Contamination Estimated for 0000Z May 7, 1986, for the Northwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

X coordinate of the grid points																
Y	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
15	9.7E-02	1.1E-01	1.6E-01	1.6E+00	3.3E+00	5.2E+00	4.0E+00	1.8E+00	1.3E+00	1.9E+00	2.0E+00	3.7E+00	3.5E+00	1.9E+00	2.1E+00	4.2E+00
	266	265	265	265	264	264	263	262	261	260	258	255	251	243	235	199
	50.1	46.8	43.5	40.1	36.8	33.5	30.2	26.9	23.6	20.3	17.0	13.7	10.5	7.5	4.7	3.3
14	1.1E-01	1.3E-01	8.7E-01	4.2E+00	4.7E+00	5.0E+00	1.6E+00	7.3E-01	1.0E+00	1.2E+00	1.3E+00	1.2E+00	1.4E+00	1.9E+00	3.7E+00	4.1E+00
	262	261	261	260	259	258	257	255	254	251	248	243	236	225	206	180
	50.4	47.1	43.8	40.5	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.9	12.0	9.4	7.5	6.7
13	3.1E-01	5.9E-01	2.7E+00	4.9E+00	4.7E+00	3.1E+00	7.4E-01	5.5E-01	5.6E-01	5.8E-01	6.9E-01	9.2E-01	1.2E+00	2.3E+00	2.1E+00	1.8E+00
	258	257	257	255	254	253	251	249	246	243	239	233	225	213	198	180
	51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.0
12	1.1E+00	1.7E+00	2.4E+00	1.7E+00	7.1E-01	3.3E-01	2.7E-01	2.8E-01	3.1E-01	4.0E-01	5.3E-01	7.1E-01	1.1E+00	1.8E+00	1.6E+00	1.6E+00
	255	254	252	251	250	248	246	243	240	236	231	225	216	206	194	180
	51.7	48.5	45.3	42.2	39.0	35.9	32.8	29.8	26.9	24.0	21.3	18.9	16.7	14.9	13.7	13.0
11	5.6E-01	4.2E-01	2.6E-01	1.8E-01	1.7E-01	1.7E-01	1.8E-01	2.0E-01	2.5E-01	3.3E-01	4.5E-01	6.7E-01	1.2E+00	1.2E+00	1.4E+00	1.3E+00
	251	250	248	247	245	243	240	237	234	230	225	219	210	201	191	180
	52.7	49.4	46.4	43.3	40.3	37.3	34.3	31.4	28.4	25.0	22.6	20.3	19.4	18.0	17.0	16.7
10	1.4E-01	1.2E-01	1.2E-01	1.2E-01	1.3E-01	1.4E-01	1.4E-01	1.7E-01	2.2E-01	2.8E-01	3.9E-01	7.3E-01	7.7E-01	9.0E-01	1.1E+00	1.1E+00
	248	246	245	243	241	239	236	233	229	225	219	213	206	198	189	180
	53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0
9	9.2E-02	9.3E-02	9.3E-02	9.6E-02	1.0E-01	1.1E-01	1.3E-01	1.5E-01	1.9E-01	2.5E-01	4.2E-01	6.0E-01	5.4E-01	7.1E-01	8.0E-01	9.3E-01
	244	243	241	239	237	235	232	228	225	220	215	209	203	195	188	180
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.0	23.5	23.0
8	7.7E-02	7.9E-02	8.1E-02	8.5E-02	9.3E-02	1.0E-01	1.2E-01	1.4E-01	1.8E-01	2.4E-01	4.2E-01	3.9E-01	4.4E-01	6.1E-01	5.7E-01	6.6E-01
	241	240	238	236	233	231	228	225	221	216	212	206	200	194	187	180
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7
7	6.8E-02	7.1E-02	7.6E-02	8.2E-02	9.1E-02	1.0E-01	1.2E-01	1.4E-01	1.7E-01	2.5E-01	2.7E-01	3.0E-01	3.7E-01	5.3E-01	4.7E-01	5.3E-01
	239	237	235	233	230	228	225	221	217	213	209	203	198	192	186	180
	58.3	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.5	32.8	31.6	30.7	29.2	29.0
6	6.4E-02	6.9E-02	7.4E-02	8.1E-02	9.0E-02	1.0E-01	1.1E-01	1.3E-01	1.6E-01	1.9E-01	2.1E-01	2.5E-01	3.2E-01	4.7E-01	3.2E-01	4.4E-01
	236	234	232	230	227	225	221	218	214	210	206	201	196	191	185	180
	60.1	57.3	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.0
5	6.3E-02	6.9E-02	7.4E-02	8.1E-02	9.0E-02	1.0E-01	1.1E-01	1.3E-01	1.5E-01	1.7E-01	1.9E-01	2.2E-01	2.9E-01	4.0E-01	3.1E-01	3.5E-01
	233	231	229	227	225	222	219	216	212	208	204	199	195	190	185	180
	62.0	59.3	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7
4	6.2E-02	6.8E-02	7.4E-02	8.1E-02	9.0E-02	1.0E-01	1.1E-01	1.2E-01	1.4E-01	1.6E-01	1.8E-01	2.0E-01	2.3E-01	3.4E-01	2.5E-01	3.0E-01
	231	229	227	225	222	219	216	213	210	206	202	198	194	189	184	180
	64.0	61.5	59.0	56.6	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.0
3	6.2E-02	6.7E-02	7.3E-02	8.0E-02	8.8E-02	9.7E-02	1.1E-01	1.2E-01	1.3E-01	1.5E-01	1.7E-01	1.8E-01	2.7E-01	2.9E-01	2.6E-01	3.0E-01
	229	227	225	222	220	217	214	211	208	204	201	197	192	188	184	180
	66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.9	43.5	43.3
2	6.1E-02	6.6E-02	7.3E-02	7.9E-02	8.7E-02	9.5E-02	1.1E-01	1.2E-01	1.3E-01	1.4E-01	1.6E-01	1.7E-01	2.5E-01	2.4E-01	2.3E-01	2.7E-01
	226	225	222	220	218	215	212	209	206	203	199	195	192	189	184	180
	68.4	66.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.9	49.6	48.5	47.7	47.1	46.8	46.7
1	6.0E-02	6.5E-02	7.1E-02	7.8E-02	8.5E-02	9.4E-02	1.0E-01	1.1E-01	1.2E-01	1.4E-01	1.5E-01	1.6E-01	2.1E-01	2.0E-01	2.0E-01	2.3E-01
	225	223	220	218	216	213	210	208	205	201	198	194	191	187	183	180
	70.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0

External Dose (rem) from Ground Contamination Estimated for 0000Z May 7, 1986, for the Southwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

		X coordinate of the grid points															
Y	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
31	1.1E-02	3.1E-02	3.1E-02	3.2E-02	3.3E-02	3.4E-02	3.5E-02	3.6E-02	3.6E-02	3.9E-02	4.3E-02	4.4E-02	4.9E-02	4.9E-02	4.8E-02	4.6E-02	
	0	3	7	11	14	18	21	25	29	30	33	36	38	40	43	45	
	50.9	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.2	68.4	70.7	
30	1.5E-02	3.4E-02	3.4E-02	3.6E-02	3.7E-02	3.8E-02	3.9E-02	4.1E-02	4.4E-02	4.9E-02	5.2E-02	5.3E-02	5.1E-02	4.7E-02	4.1E-02	3.6E-02	
	0	4	9	12	15	19	23	26	29	32	35	39	40	42	45	46	
	46.7	46.8	47.1	47.7	48.5	49.6	50.8	52.2	53.7	55.5	57.3	59.3	61.5	63.7	66.0	68.4	
29	4.0E-02	3.8E-02	3.9E-02	4.0E-02	4.1E-02	4.3E-02	4.6E-02	5.0E-02	5.4E-02	5.6E-02	5.5E-02	5.0E-02	4.4E-02	3.7E-02	3.0E-02	2.5E-02	
	0	4	8	12	17	21	24	28	31	34	37	40	42	45	47	49	
	43.3	43.5	43.8	44.5	45.3	46.4	47.7	49.2	50.9	52.7	54.7	56.8	59.0	61.3	63.7	66.2	
28	5.0E-02	4.5E-02	4.5E-02	4.6E-02	4.9E-02	5.2E-02	5.5E-02	5.7E-02	5.6E-02	5.3E-02	4.7E-02	4.0E-02	3.2E-02	2.6E-02	2.1E-02	1.8E-02	
	0	4	9	14	18	22	26	30	33	36	39	42	45	47	49	51	
	40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.6	59.0	61.5	64.0	
27	6.3E-02	5.1E-02	5.3E-02	5.7E-02	6.1E-02	6.2E-02	6.0E-02	5.5E-02	4.9E-02	4.2E-02	3.5E-02	2.9E-02	2.4E-02	2.0E-02	1.7E-02	1.5E-02	
	0	5	10	15	19	24	28	32	36	39	42	45	47	49	51	53	
	36.7	36.8	37.3	38.0	39.0	40.3	41.8	43.5	45.3	47.4	49.6	51.9	54.3	56.8	59.3	62.0	
26	3.9E-02	6.4E-02	6.8E-02	7.1E-02	7.0E-02	6.4E-02	5.6E-02	4.8E-02	4.0E-02	3.4E-02	2.9E-02	2.4E-02	2.1E-02	1.9E-02	1.7E-02	1.5E-02	
	0	5	11	16	21	26	30	34	38	41	45	47	50	52	54	56	
	33.3	33.5	34.0	34.3	35.9	37.3	38.9	40.7	42.7	44.8	47.1	49.6	52.1	54.7	57.3	60.1	
25	1.4E-01	8.4E-02	8.3E-02	7.9E-02	7.0E-02	6.1E-02	5.3E-02	4.7E-02	4.2E-02	3.7E-02	3.1E-02	2.6E-02	2.2E-02	2.0E-02	1.8E-02	1.7E-02	
	0	6	12	18	23	29	33	37	41	45	48	50	53	55	57	59	
	30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4	50.0	52.7	55.5	58.3	
24	1.0E-01	1.0E-01	9.2E-02	8.3E-02	7.4E-02	6.8E-02	6.7E-02	7.1E-02	7.5E-02	7.0E-02	5.4E-02	3.8E-02	2.8E-02	2.3E-02	2.1E-02	1.9E-02	
	0	7	14	20	26	32	36	41	45	49	51	53	56	58	60	61	
	26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7	
23	1.4E-01	1.4E-01	1.1E-01	1.1E-01	1.0E-01	1.1E-01	1.3E-01	1.6E-01	1.9E-01	1.8E-01	1.3E-01	7.3E-02	4.0E-02	2.8E-02	2.3E-02	2.1E-02	
	0	8	15	23	29	35	40	45	48	52	55	57	59	61	63	64	
	23.3	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.2	
22	5.5E-01	2.3E-01	1.8E-01	1.8E-01	1.7E-01	2.2E-01	2.9E-01	3.8E-01	4.5E-01	4.2E-01	2.9E-01	1.4E-01	6.2E-02	3.5E-02	2.7E-02	2.4E-02	
	0	9	19	26	33	39	45	49	53	56	59	61	63	65	66	68	
	20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8	44.7	47.7	50.8	53.9	
21	1.7E-01	3.9E-01	3.3E-01	3.5E-01	3.9E-01	4.6E-01	5.7E-01	7.1E-01	7.7E-01	6.7E-01	4.3E-01	2.0E-01	8.4E-02	4.5E-02	3.1E-02	2.7E-02	
	0	11	21	30	38	45	50	54	57	60	63	65	67	68	70	71	
	16.7	17.0	18.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.6	52.7	
20	1.1E+00	6.8E-01	6.3E-01	7.0E-01	7.4E-01	8.0E-01	8.8E-01	1.1E+00	9.5E-01	7.4E-01	4.8E-01	2.2E-01	9.4E-02	4.9E-02	2.6E-02	3.0E-02	
	0	14	26	36	45	51	56	60	63	66	68	70	71	72	74	75	
	13.3	13.7	14.9	16.7	18.9	21.3	24.0	26.9	29.8	32.8	35.9	39.0	42.2	45.3	48.5	51.7	
19	1.9E+00	1.8E+00	1.4E+00	1.1E+00	1.1E+00	1.2E+00	1.5E+00	1.0E+00	8.1E-01	5.2E-01	3.8E-01	1.9E-01	9.2E-02	5.4E-02	4.0E-02	3.4E-02	
	0	18	32	45	53	59	63	66	69	71	73	74	75	77	77	78	
	10.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.8	38.0	41.2	44.5	47.7	51.0	
18	1.2E+00	3.6E+00	1.7E+00	1.5E+00	2.0E+00	1.4E+00	9.4E-01	7.3E-01	6.3E-01	4.6E-01	2.3E-01	1.5E-01	8.7E-02	5.8E-02	4.5E-02	3.9E-02	
	0	26	45	56	63	68	71	74	75	77	78	79	80	81	81	82	
	6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.8	47.1	50.4	
17	3.8E+00	1.8E+00	3.0E+00	1.6E+00	1.3E+00	1.1E+00	8.5E-01	6.8E-01	4.9E-01	3.4E-01	2.1E-01	1.3E-01	8.5E-02	6.3E-02	5.1E-02	4.2E-02	
	0	43	63	71	75	78	80	81	82	83	84	84	85	85	85	86	
	3.3	4.7	7.5	10.5	13.7	17.0	20.3	23.6	26.9	30.2	33.5	36.8	40.1	43.5	46.8	50.1	
16	1.7E+00	2.4E+00	1.8E+00	1.6E+00	1.4E+00	1.1E+00	7.8E-01	5.6E-01	3.9E-01	2.7E-01	1.6E-01	1.2E-01	8.9E-02	7.0E-02	5.7E-02	4.7E-02	
	0	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	
	3.0	3.3	6.7	10.0	13.3	16.7	20.0	23.3	26.7	30.0	33.3	36.7	40.0	43.3	46.7	50.0	

External Dose (rem) from Ground Contamination Estimated for 0000Z May 7, 1986, for the Northeast Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

X coordinate of the grid points												
	15	17	18	19	20	21	22	23	24	25	26	27
12	4.8E+00	4.5E+00	1.8E+00	1.6E+00	1.7E+00	9.9E-01	7.1E-01	4.9E-01	3.4E-01	2.4E-01	1.7E-01	1.2E-01
	130	135	113	109	104	101	99	98	97	96	95	95
	20.3	4.7	7.5	10.5	13.7	17.0	20.3	23.6	26.9	30.2	33.5	36.8
11	4.1E+00	2.7E+00	2.5E+00	1.9E+00	1.2E+00	8.9E-01	6.3E-01	4.4E-01	3.1E-01	2.3E-01	1.7E-01	1.3E-01
	180	153	135	123	116	111	108	105	104	102	101	100
	5.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3
13	1.8E+00	2.5E+00	1.6E+00	1.5E+00	1.0E+00	7.8E-01	5.7E-01	4.1E-01	3.0E-01	2.3E-01	1.8E-01	1.4E-01
	180	161	146	135	126	120	116	113	110	108	106	105
	10.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.8	38.0
12	1.6E+00	2.1E+00	1.4E+00	1.1E+00	8.9E-01	6.9E-01	5.2E-01	3.9E-01	3.0E-01	2.3E-01	1.8E-01	1.5E-01
	190	165	153	143	135	128	123	119	116	113	111	109
	13.3	13.7	14.9	16.7	18.9	21.3	24.0	26.9	29.9	32.9	35.9	39.0
11	1.3E+00	1.7E+00	1.4E+00	9.1E-01	7.5E-01	6.0E-01	4.7E-01	3.7E-01	2.9E-01	2.3E-01	1.9E-01	1.5E-01
	180	168	158	149	141	135	129	125	122	119	116	114
	16.7	17.0	18.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3
10	1.1E+00	1.3E+00	1.4E+00	7.8E-01	6.4E-01	5.3E-01	4.3E-01	3.5E-01	2.8E-01	2.3E-01	1.9E-01	1.6E-01
	180	170	161	153	146	140	133	130	126	123	120	118
	20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8
9	8.3E-01	1.0E+00	9.6E-01	7.2E-01	5.4E-01	4.6E-01	3.9E-01	3.2E-01	2.7E-01	2.3E-01	1.9E-01	1.6E-01
	190	171	164	156	150	144	139	135	131	127	124	122
	23.3	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5
8	6.6E-01	7.7E-01	7.0E-01	7.6E-01	4.6E-01	4.0E-01	3.5E-01	3.0E-01	2.6E-01	2.2E-01	1.9E-01	1.6E-01
	180	172	165	159	153	147	143	138	135	131	128	126
	26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3
7	5.3E-01	6.0E-01	5.4E-01	6.4E-01	4.0E-01	3.6E-01	3.2E-01	2.8E-01	2.5E-01	2.1E-01	1.8E-01	1.6E-01
	180	173	167	161	156	150	146	142	138	135	131	129
	30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4
6	4.4E-01	4.7E-01	4.5E-01	4.2E-01	3.7E-01	3.2E-01	2.9E-01	2.6E-01	2.3E-01	2.1E-01	1.8E-01	1.5E-01
	180	174	168	163	158	153	149	145	141	138	135	132
	33.3	33.5	34.0	34.8	35.9	37.3	38.9	40.7	42.7	44.8	47.1	49.6
5	3.6E-01	3.8E-01	3.9E-01	3.2E-01	3.3E-01	2.9E-01	2.7E-01	2.4E-01	2.2E-01	2.0E-01	1.7E-01	1.5E-01
	180	174	169	164	160	155	151	147	143	140	137	135
	36.7	36.8	37.3	38.0	39.0	40.3	41.8	43.5	45.3	47.4	49.6	51.9
4	3.2E-01	3.2E-01	3.5E-01	2.9E-01	2.8E-01	2.6E-01	2.5E-01	2.3E-01	2.1E-01	1.9E-01	1.7E-01	1.5E-01
	180	175	170	165	161	157	153	149	146	143	140	137
	40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3
3	3.0E-01	2.9E-01	3.2E-01	2.6E-01	2.5E-01	2.4E-01	2.3E-01	2.2E-01	2.0E-01	1.8E-01	1.6E-01	1.4E-01
	180	175	171	167	162	158	155	151	148	145	142	139
	43.3	43.5	43.8	44.5	45.3	46.4	47.7	49.2	50.9	52.7	54.7	56.8
2	2.7E-01	2.6E-01	2.9E-01	2.4E-01	2.3E-01	2.3E-01	2.2E-01	2.0E-01	1.9E-01	1.7E-01	1.5E-01	1.4E-01
	180	175	171	167	164	160	156	153	150	147	144	141
	46.7	46.8	47.1	47.7	48.5	49.6	50.9	52.2	53.7	55.5	57.3	59.3
1	2.5E-01	2.3E-01	2.5E-01	2.2E-01	2.2E-01	2.1E-01	2.0E-01	1.9E-01	1.8E-01	1.6E-01	1.4E-01	1.3E-01
	180	176	172	168	163	161	158	154	151	149	146	143
	50.0	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0

External Dose (rem) from Ground Contamination Estimated for 0000Z May 7, 1986, for the Southeast Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

X coordinate of the grid points																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	6.3E-02	1.0E-01	1.9E-01	2.6E-01	2.9E-01	1.2E-01	1.1E-01	1.1E-01	1.2E-01	1.2E-01	1.2E-01	9.2E-02	6.7E-02	5.4E-02	5.0E-02	5.0E-02
	315	316	319	321	323	326	319	321	324	328	341	345	349	352	356	0
	71.7	68.4	64.2	64.1	62.7	61.1	59.0	58.7	55.2	52.9	51.7	51.6	51.6	51.4	50.1	50.0
2	5.2E-02	6.7E-02	1.2E-01	2.4E-01	2.9E-01	1.3E-01	1.1E-01	1.1E-01	1.2E-01	1.3E-01	1.4E-01	1.2E-01	8.9E-02	6.9E-02	5.5E-02	5.5E-02
	313	315	317	319	321	324	327	330	333	336	340	344	347	351	355	0
	68.4	66.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.3	49.6	48.5	47.7	47.1	46.9	46.7
3	5.1E-02	5.5E-02	7.2E-02	1.5E-01	2.9E-01	2.9E-01	1.7E-01	1.2E-01	1.2E-01	1.3E-01	1.5E-01	1.4E-01	1.2E-01	3.9E-02	6.8E-02	6.1E-02
	310	312	315	317	319	322	325	328	331	335	338	342	347	351	355	0
	66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.8	43.5	43.3
4	5.4E-02	5.5E-02	6.0E-02	8.2E-02	1.3E-01	3.1E-01	2.9E-01	1.7E-01	1.2E-01	1.3E-01	1.5E-01	1.6E-01	1.5E-01	1.1E-01	8.3E-02	7.0E-02
	308	310	312	315	317	320	323	326	329	333	337	341	345	350	355	0
	64.0	61.5	59.0	56.8	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.0
5	5.8E-02	5.9E-02	6.2E-02	6.7E-02	9.6E-02	2.1E-01	3.2E-01	2.9E-01	1.6E-01	1.3E-01	1.5E-01	1.7E-01	1.7E-01	1.5E-01	1.1E-01	8.0E-02
	306	308	310	312	315	317	320	323	327	331	335	340	344	349	354	0
	62.0	59.5	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7
6	6.4E-02	6.5E-02	6.6E-02	7.1E-02	7.7E-02	1.2E-01	2.4E-01	3.2E-01	3.2E-01	1.5E-01	1.5E-01	1.7E-01	1.9E-01	1.9E-01	1.5E-01	9.8E-02
	303	305	307	309	312	315	318	321	325	329	333	338	343	348	354	0
	60.1	57.5	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.3
7	7.2E-02	7.2E-02	7.3E-02	7.7E-02	8.1E-02	8.9E-02	1.4E-01	2.7E-01	2.9E-01	3.5E-01	1.7E-01	1.7E-01	1.9E-01	2.2E-01	2.0E-01	1.3E-01
	300	302	304	306	309	311	315	318	322	326	330	335	341	347	353	0
	58.3	55.5	52.7	50.0	47.4	44.9	42.4	40.1	38.0	36.1	34.3	32.8	31.6	30.7	30.2	30.0
8	6.7E-02	8.2E-02	8.2E-02	8.5E-02	8.8E-02	9.2E-02	1.0E-01	1.6E-01	2.9E-01	2.1E-01	2.1E-01	4.1E-01	1.9E-01	2.6E-01	2.5E-01	1.7E-01
	298	299	301	303	306	308	311	315	318	323	327	333	339	345	352	0
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7
9	1.5E-01	1.2E-01	9.8E-02	9.3E-02	9.5E-02	9.8E-02	1.0E-01	1.1E-01	1.9E-01	3.3E-01	3.7E-01	4.6E-01	2.1E-01	2.7E-01	3.3E-01	2.6E-01
	295	296	298	300	302	304	307	311	315	319	324	330	336	344	351	0
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3
10	1.0E-01	2.6E-01	1.9E-01	1.4E-01	1.1E-01	1.1E-01	1.1E-01	1.1E-01	1.3E-01	2.3E-01	3.6E-01	4.8E-01	4.1E-01	2.8E-01	3.8E-01	3.7E-01
	291	293	294	296	298	300	303	306	310	315	320	326	333	341	350	0
	53.9	50.8	47.7	44.7	41.9	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0
11	1.1E-01	3.6E-01	3.7E-01	3.3E-01	2.4E-01	1.5E-01	1.2E-01	1.2E-01	1.3E-01	1.5E-01	2.9E-01	4.2E-01	5.7E-01	3.3E-01	3.8E-01	4.5E-01
	288	289	291	292	294	296	299	302	305	309	315	321	329	338	349	0
	52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7
12	1.5E-01	2.3E-01	3.0E-01	3.5E-01	3.7E-01	3.9E-01	3.1E-01	1.9E-01	1.5E-01	1.7E-01	2.0E-01	3.8E-01	6.3E-01	8.3E-01	4.3E-01	5.4E-01
	284	285	287	288	289	291	293	296	299	303	308	315	323	333	345	0
	51.7	48.5	45.3	42.2	39.0	35.9	32.8	29.8	26.9	24.0	21.3	18.9	16.7	14.9	13.7	13.3
13	1.2E-01	1.3E-01	1.7E-01	2.2E-01	2.7E-01	3.3E-01	3.9E-01	4.4E-01	4.2E-01	2.6E-01	2.4E-01	2.9E-01	6.2E-01	9.9E-01	7.5E-01	9.4E-01
	281	282	282	284	285	286	288	290	293	296	300	306	315	326	341	0
	51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.3
14	1.1E-01	1.1E-01	1.2E-01	1.3E-01	1.6E-01	2.1E-01	2.8E-01	3.6E-01	4.0E-01	5.1E-01	6.5E-01	4.3E-01	5.2E-01	1.2E+00	1.3E+00	1.3E+00
	277	278	278	279	280	281	282	284	285	288	291	296	303	315	333	0
	50.4	47.1	43.8	40.6	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.9	12.0	9.4	7.5	6.7
15	1.1E-01	1.1E-01	1.2E-01	1.3E-01	1.4E-01	1.5E-01	1.6E-01	2.1E-01	2.9E-01	4.3E-01	5.7E-01	6.6E-01	9.4E-01	1.0E+00	2.4E+00	1.5E+00
	273	274	274	274	275	275	276	277	278	279	281	284	288	296	315	0
	50.1	46.8	43.5	40.1	36.9	33.5	30.2	26.9	23.6	20.3	17.0	13.7	10.5	7.5	4.7	3.3
16	1.1E-01	1.2E-01	1.2E-01	1.3E-01	1.4E-01	1.6E-01	2.0E-01	2.2E-01	2.8E-01	3.3E-01	4.0E-01	5.3E-01	6.9E-01	9.2E-01	1.2E+00	1.0E+00
	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	0
	50.0	46.7	43.3	40.0	36.7	33.3	30.0	26.7	23.3	20.0	16.7	13.3	10.0	6.7	3.3	0.0

Whole Body Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986,
for the Northwest Quadrant. Bearings are in Degrees and Distances are
in Miles from Chernobyl.

X coordinate of the grid points																
Y	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
15	1.1E-01	1.2E-01	1.3E-01	2.6E-01	4.3E-01	5.4E-01	4.8E-01	3.6E-01	4.1E-01	4.7E-01	6.2E-01	9.6E-01	1.3E+00	9.6E-01	1.2E+00	2.0E+00
	266	265	265	265	264	264	263	262	261	260	258	255	251	243	225	180
	50.1	48.8	43.5	40.1	36.8	33.5	30.2	26.9	23.6	20.3	17.0	13.7	10.5	7.5	4.7	3.3
14	1.2E-01	1.3E-01	2.1E-01	5.6E-01	6.7E-01	6.6E-01	4.1E-01	4.0E-01	4.8E-01	5.6E-01	6.3E-01	6.7E-01	8.1E-01	1.0E+00	2.4E+00	2.3E+00
	262	261	261	260	259	258	257	255	254	251	248	243	236	225	206	180
	50.4	47.1	43.8	40.6	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.9	12.0	9.4	7.5	6.7
13	1.5E-01	2.1E-01	4.9E-01	7.7E-01	7.4E-01	5.7E-01	3.4E-01	3.3E-01	3.5E-01	3.9E-01	4.7E-01	6.0E-01	7.6E-01	1.5E+00	1.4E+00	1.2E+00
	258	257	257	255	254	253	251	249	246	243	239	233	225	213	198	180
	51.0	47.7	44.3	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.0
12	2.9E-01	3.8E-01	4.8E-01	3.8E-01	2.6E-01	2.2E-01	2.3E-01	2.4E-01	2.7E-01	3.5E-01	4.1E-01	5.2E-01	6.3E-01	1.4E+00	1.1E+00	1.1E+00
	255	254	252	251	250	248	246	243	240	236	231	225	216	206	194	180
	51.7	48.5	45.3	42.2	39.0	35.9	32.8	29.8	26.9	24.0	21.3	18.9	16.7	14.9	13.7	13.3
11	2.1E-01	1.9E-01	1.8E-01	1.7E-01	1.7E-01	1.8E-01	1.9E-01	2.1E-01	2.5E-01	3.0E-01	3.7E-01	5.0E-01	9.6E-01	1.0E+00	1.0E+00	9.1E-01
	251	250	248	247	245	243	240	237	234	230	225	218	210	201	191	180
	52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7
10	1.4E-01	1.4E-01	1.5E-01	1.5E-01	1.6E-01	1.7E-01	1.8E-01	2.0E-01	2.4E-01	2.8E-01	3.5E-01	6.3E-01	6.4E-01	7.2E-01	8.2E-01	7.9E-01
	248	246	245	243	241	239	236	233	229	223	219	213	206	198	189	180
	53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0
9	1.3E-01	1.3E-01	1.4E-01	1.4E-01	1.5E-01	1.6E-01	1.8E-01	2.0E-01	2.3E-01	2.7E-01	4.2E-01	5.9E-01	4.8E-01	6.0E-01	6.5E-01	6.5E-01
	244	243	241	239	237	235	232	228	225	220	215	209	203	195	188	180
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3
8	1.2E-01	1.3E-01	1.3E-01	1.4E-01	1.5E-01	1.6E-01	1.8E-01	1.9E-01	2.2E-01	2.8E-01	4.6E-01	3.8E-01	4.1E-01	5.5E-01	5.1E-01	5.6E-01
	241	240	238	236	233	231	228	225	221	216	212	206	200	194	187	180
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7
7	1.2E-01	1.3E-01	1.3E-01	1.4E-01	1.5E-01	1.6E-01	1.7E-01	1.9E-01	2.2E-01	3.0E-01	3.1E-01	3.2E-01	3.7E-01	3.0E-01	4.3E-01	4.7E-01
	239	237	235	233	230	228	225	221	217	213	209	203	198	192	186	180
	58.3	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.3	32.9	31.6	30.7	30.2	30.0
6	1.2E-01	1.3E-01	1.3E-01	1.4E-01	1.5E-01	1.6E-01	1.7E-01	1.9E-01	2.1E-01	2.5E-01	2.6E-01	2.9E-01	3.5E-01	4.6E-01	3.9E-01	4.2E-01
	236	234	232	230	227	225	221	218	214	210	206	201	196	191	185	180
	60.1	57.3	54.7	52.1	49.5	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.3
5	1.2E-01	1.3E-01	1.3E-01	1.4E-01	1.5E-01	1.6E-01	1.7E-01	1.9E-01	2.1E-01	2.3E-01	2.5E-01	2.7E-01	3.2E-01	4.0E-01	3.4E-01	3.7E-01
	233	231	229	227	225	222	219	216	212	208	204	199	195	190	185	180
	62.0	59.3	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.9	40.3	39.0	38.0	37.3	36.9	36.7
4	1.2E-01	1.3E-01	1.3E-01	1.4E-01	1.5E-01	1.6E-01	1.7E-01	1.9E-01	2.0E-01	2.2E-01	2.4E-01	2.6E-01	3.2E-01	3.6E-01	3.1E-01	3.4E-01
	231	229	227	225	222	219	216	213	210	206	202	198	194	189	184	180
	64.0	61.5	59.0	56.6	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.0
3	1.2E-01	1.3E-01	1.3E-01	1.4E-01	1.5E-01	1.6E-01	1.7E-01	1.9E-01	2.0E-01	2.2E-01	2.3E-01	2.4E-01	3.1E-01	3.2E-01	3.0E-01	3.2E-01
	229	227	225	222	220	217	214	211	208	204	201	197	192	188	184	180
	66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.8	43.5	43.3
2	1.2E-01	1.2E-01	1.3E-01	1.4E-01	1.5E-01	1.6E-01	1.7E-01	1.9E-01	2.0E-01	2.1E-01	2.2E-01	2.3E-01	2.9E-01	2.8E-01	2.7E-01	3.0E-01
	226	225	222	220	218	215	212	209	206	203	199	195	192	188	184	180
	68.4	66.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.8	49.6	48.5	47.7	47.1	46.8	46.7
1	1.2E-01	1.2E-01	1.3E-01	1.4E-01	1.5E-01	1.6E-01	1.7E-01	1.8E-01	2.0E-01	2.0E-01	2.1E-01	2.2E-01	2.6E-01	2.5E-01	2.5E-01	2.7E-01
	225	223	220	218	216	213	210	208	205	201	198	194	191	187	183	180
	70.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0

Whole Body Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986, for the Southwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

		X coordinate of the grid points															
		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	5.0E-02	5.0E-02	4.9E-02	5.0E-02	5.0E-02	5.1E-02	5.1E-02	5.0E-02	5.0E-02	5.2E-02	5.5E-02	5.8E-02	6.0E-02	6.0E-02	5.9E-02	5.8E-02	
	0	5	7	11	14	18	21	25	28	30	33	36	38	40	43	45	
	50.0	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.2	68.4	70.7	
20	1.3E-02	5.4E-02	5.4E-02	5.5E-02	5.6E-02	5.6E-02	5.6E-02	5.7E-02	5.9E-02	6.3E-02	6.5E-02	6.5E-02	6.5E-02	5.8E-02	5.3E-02	4.6E-02	
	0	4	8	12	15	19	23	26	29	32	35	38	40	42	45	46	
	46.7	46.8	47.1	47.7	48.3	49.6	50.8	52.2	53.7	55.5	57.3	59.3	61.5	63.7	66.0	68.4	
29	1.1E-02	6.0E-02	6.0E-02	6.1E-02	6.1E-02	6.2E-02	6.4E-02	6.6E-02	6.9E-02	7.0E-02	6.9E-02	6.4E-02	5.3E-02	5.1E-02	4.4E-02	3.8E-02	
	0	4	8	12	17	21	24	28	31	34	37	40	42	45	47	49	
	45.3	45.5	45.8	46.5	47.3	48.4	49.7	49.2	50.9	52.7	54.7	56.8	59.0	61.3	63.7	66.2	
28	1.0E-02	6.7E-02	6.7E-02	6.7E-02	6.9E-02	7.1E-02	7.3E-02	7.4E-02	7.3E-02	6.9E-02	6.3E-02	5.6E-02	4.9E-02	4.2E-02	3.7E-02	3.3E-02	
	0	4	9	14	18	22	26	30	33	36	39	42	45	47	49	51	
	40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.6	59.0	61.5	64.0	
27	7.0E-02	7.4E-02	7.5E-02	7.8E-02	8.1E-02	8.1E-02	7.9E-02	7.4E-02	6.8E-02	6.1E-02	5.4E-02	4.8E-02	4.2E-02	3.8E-02	3.5E-02	3.2E-02	
	0	5	10	15	19	24	29	32	36	39	42	45	47	49	51	53	
	36.7	36.8	37.3	38.0	39.0	40.3	41.8	43.5	45.3	47.4	49.6	51.9	54.3	56.8	59.3	62.0	
26	6.8E-02	8.7E-02	9.0E-02	9.2E-02	9.0E-02	8.5E-02	7.7E-02	6.9E-02	6.2E-02	5.5E-02	5.0E-02	4.5E-02	4.1E-02	3.9E-02	3.6E-02	3.3E-02	
	0	5	11	16	21	26	30	34	38	41	45	47	50	52	54	56	
	33.3	33.5	34.0	34.8	35.9	37.3	38.9	40.7	42.7	44.8	47.1	49.6	52.1	54.7	57.3	60.1	
25	1.3E-01	1.0E-01	1.0E-01	9.7E-02	9.2E-02	8.3E-02	7.5E-02	6.8E-02	6.3E-02	5.7E-02	5.2E-02	4.8E-02	4.4E-02	4.1E-02	3.9E-02	3.6E-02	
	0	6	12	18	23	29	33	37	41	45	48	50	53	55	57	59	
	30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.9	47.4	50.0	52.7	55.5	58.3	
24	1.7E-01	1.2E-01	1.1E-01	1.0E-01	9.4E-02	8.7E-02	8.3E-02	8.2E-02	8.1E-02	7.6E-02	6.6E-02	5.6E-02	4.9E-02	4.5E-02	4.1E-02	3.9E-02	
	0	7	14	20	26	32	36	41	45	48	51	53	56	58	60	61	
	26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7	
23	1.6E-01	1.5E-01	1.2E-01	1.2E-01	1.1E-01	1.1E-01	1.2E-01	1.3E-01	1.4E-01	1.3E-01	1.1E-01	7.6E-02	5.9E-02	5.0E-02	4.5E-02	4.2E-02	
	0	8	15	23	29	35	40	45	48	52	55	57	59	61	63	64	
	23.3	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.2	
22	3.7E-01	2.0E-01	1.6E-01	1.6E-01	1.6E-01	1.7E-01	2.0E-01	2.4E-01	2.7E-01	2.5E-01	1.8E-01	1.1E-01	7.2E-02	5.6E-02	5.0E-02	4.6E-02	
	0	9	18	26	33	39	45	49	53	56	59	61	63	65	66	68	
	20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8	44.7	47.7	50.8	53.9	
21	4.5E-01	3.0E-01	2.5E-01	2.6E-01	2.7E-01	2.9E-01	3.4E-01	4.0E-01	4.3E-01	3.8E-01	2.6E-01	1.5E-01	8.6E-02	6.3E-02	5.4E-02	5.0E-02	
	0	11	21	30	38	45	50	54	57	60	63	65	67	68	70	71	
	16.7	17.0	18.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.5	52.7	
20	5.4E-01	4.3E-01	4.3E-01	4.4E-01	4.5E-01	4.7E-01	5.0E-01	5.7E-01	5.2E-01	4.2E-01	2.8E-01	1.6E-01	9.5E-02	7.0E-02	6.0E-02	5.4E-02	
	0	14	26	36	45	51	56	60	63	66	68	70	71	72	74	75	
	13.3	13.7	14.9	16.7	18.9	21.3	24.0	26.9	29.8	32.8	35.9	39.0	42.2	45.3	48.3	51.7	
19	9.4E-01	8.8E-01	7.6E-01	6.5E-01	6.3E-01	6.5E-01	7.4E-01	8.6E-01	4.7E-01	3.7E-01	2.5E-01	1.5E-01	9.9E-02	7.5E-02	6.5E-02	5.8E-02	
	0	18	33	45	53	59	63	66	69	71	73	74	75	77	77	78	
	10.3	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.9	38.0	41.2	44.5	47.7	51.0	
18	1.7E+00	1.5E+00	9.4E-01	8.6E-01	9.5E-01	7.5E-01	5.7E-01	4.9E-01	4.0E-01	3.0E-01	2.1E-01	1.4E-01	1.0E-01	8.1E-02	7.1E-02	6.3E-02	
	0	26	45	56	63	68	71	74	75	77	78	79	80	81	81	82	
	6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.8	47.1	50.4	
17	1.7E+00	1.0E+00	1.4E+00	9.5E-01	8.2E-01	6.8E-01	5.5E-01	4.4E-01	3.4E-01	2.5E-01	1.8E-01	1.3E-01	1.0E-01	8.8E-02	7.7E-02	6.9E-02	
	0	45	63	71	75	78	80	81	82	83	84	84	85	85	85	86	
	3.3	4.7	7.5	10.5	13.7	17.0	20.3	23.6	26.9	30.2	33.5	36.8	40.1	43.5	46.9	50.1	
16	1.1E+00	1.3E+00	1.1E+00	1.0E+00	8.6E-01	6.9E-01	5.3E-01	4.0E-01	3.0E-01	2.3E-01	1.7E-01	1.3E-01	1.1E-01	9.5E-02	8.3E-02	7.3E-02	
	0	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	
	0.0	3.3	6.7	10.0	13.3	16.7	20.0	23.3	26.7	30.0	33.3	36.7	40.0	43.3	46.7	50.0	

Whole Body Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986, for the Northeast Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

x coordinate of the grid points																
y	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
15	2.0E+00	2.0E+00	1.1E+00	1.0E+00	3.4E-01	6.5E-01	5.0E-01	2.7E-01	2.3E-01	2.2E-01	1.7E-01	1.4E-01	1.2E-01	1.0E-01	9.0E-02	7.9E-02
	160	135	116	108	104	101	98	98	97	96	95	95	94	94	94	93
	3.3	4.7	7.5	10.5	12.7	17.9	20.3	20.5	23.9	30.2	33.5	36.8	40.1	43.5	46.8	50.1
14	2.0E+00	1.4E+00	1.4E+00	1.1E+00	7.9E-01	6.2E-01	4.7E-01	3.8E-01	2.7E-01	2.2E-01	1.9E-01	1.5E-01	1.3E-01	1.1E-01	9.6E-02	8.4E-02
	180	153	135	123	116	111	108	105	104	102	101	100	99	98	98	97
	6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.8	47.1	50.4
13	1.2E+00	1.4E+00	1.0E+00	9.4E-01	7.2E-01	5.7E-01	4.4E-01	3.5E-01	2.9E-01	2.3E-01	1.7E-01	1.6E-01	1.4E-01	1.2E-01	1.0E-01	8.9E-02
	190	161	146	135	126	120	116	113	110	108	106	105	104	102	102	101
	10.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.9	38.0	41.2	44.5	47.7	51.0
12	1.1E+00	1.2E+00	9.2E-01	7.5E-01	6.4E-01	5.2E-01	4.2E-01	3.4E-01	2.8E-01	2.3E-01	2.0E-01	1.7E-01	1.4E-01	1.2E-01	1.1E-01	9.4E-02
	180	165	153	143	135	128	123	119	116	113	111	109	108	107	105	104
	13.3	13.7	14.9	16.7	18.9	21.3	24.0	26.9	29.8	32.8	35.9	39.0	42.2	45.5	48.8	51.7
11	9.1E-01	1.0E+00	9.1E-01	6.7E-01	5.7E-01	4.9E-01	4.0E-01	3.3E-01	2.8E-01	2.4E-01	2.0E-01	1.7E-01	1.5E-01	1.3E-01	1.1E-01	9.9E-02
	180	168	158	149	141	135	129	125	122	119	116	114	112	111	109	108
	16.7	17.0	19.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.6	52.7
10	7.3E-01	8.8E-01	8.7E-01	5.9E-01	5.1E-01	4.4E-01	3.9E-01	3.2E-01	2.8E-01	2.4E-01	2.1E-01	1.8E-01	1.6E-01	1.3E-01	1.2E-01	1.0E-01
	180	179	161	153	146	140	135	130	126	123	120	118	116	114	113	111
	20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8	44.7	47.7	50.8	53.9
9	5.5E-01	7.3E-01	6.3E-01	5.6E-01	4.6E-01	4.1E-01	3.6E-01	3.1E-01	2.7E-01	2.4E-01	2.1E-01	1.9E-01	1.6E-01	1.4E-01	1.2E-01	1.1E-01
	190	171	164	156	150	144	139	135	131	127	124	122	120	119	116	115
	23.3	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.0
8	5.6E-01	6.2E-01	5.5E-01	5.7E-01	4.1E-01	3.7E-01	3.4E-01	3.0E-01	2.7E-01	2.4E-01	2.1E-01	1.9E-01	1.6E-01	1.4E-01	1.2E-01	1.1E-01
	180	172	165	159	153	147	143	138	135	131	128	126	123	121	119	118
	26.7	26.9	27.5	28.5	29.9	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7
7	4.7E-01	5.3E-01	4.7E-01	5.0E-01	3.8E-01	3.5E-01	3.2E-01	2.9E-01	2.6E-01	2.4E-01	2.1E-01	1.9E-01	1.6E-01	1.4E-01	1.3E-01	1.1E-01
	180	173	167	161	156	150	146	142	138	135	131	129	126	124	122	120
	30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4	50.0	52.7	55.5	58.3
6	4.2E-01	4.5E-01	4.2E-01	3.9E-01	3.6E-01	3.3E-01	3.1E-01	2.8E-01	2.6E-01	2.3E-01	2.1E-01	1.9E-01	1.6E-01	1.4E-01	1.3E-01	1.1E-01
	180	174	168	163	159	153	149	145	141	138	135	132	129	127	125	123
	33.3	33.5	34.0	34.8	35.9	37.3	38.9	40.7	42.7	44.8	47.1	49.6	52.1	54.7	57.3	60.1
5	3.7E-01	3.8E-01	3.8E-01	3.4E-01	3.3E-01	3.1E-01	2.9E-01	2.7E-01	2.5E-01	2.3E-01	2.0E-01	1.9E-01	1.6E-01	1.4E-01	1.3E-01	1.1E-01
	180	174	169	164	160	155	151	147	143	140	137	135	132	130	128	126
	36.7	36.8	37.3	38.0	39.0	40.3	41.8	43.5	45.3	47.4	49.6	51.9	54.3	56.8	59.3	62.0
4	3.4E-01	3.4E-01	3.5E-01	3.1E-01	3.0E-01	2.9E-01	2.8E-01	2.6E-01	2.4E-01	2.2E-01	2.0E-01	1.8E-01	1.6E-01	1.4E-01	1.3E-01	1.1E-01
	180	175	170	165	161	157	153	149	146	143	140	137	135	132	130	129
	40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.6	59.0	61.5	64.0
3	3.2E-01	3.1E-01	3.3E-01	3.0E-01	2.9E-01	2.8E-01	2.7E-01	2.5E-01	2.3E-01	2.1E-01	2.0E-01	1.8E-01	1.6E-01	1.4E-01	1.3E-01	1.1E-01
	180	175	171	167	162	158	155	151	148	145	142	139	137	135	132	130
	43.3	43.5	43.8	44.5	45.3	46.4	47.7	49.2	50.9	52.7	54.7	56.9	59.0	61.3	63.7	66.2
2	3.0E-01	3.0E-01	3.1E-01	2.9E-01	2.7E-01	2.7E-01	2.5E-01	2.4E-01	2.2E-01	2.1E-01	1.9E-01	1.7E-01	1.5E-01	1.4E-01	1.2E-01	1.1E-01
	180	175	171	167	164	160	156	153	150	147	144	141	139	137	135	133
	46.7	46.8	47.1	47.7	48.5	49.6	50.8	52.2	53.7	55.5	57.3	59.3	61.5	63.7	66.0	68.4
1	2.7E-01	2.7E-01	2.8E-01	2.7E-01	2.6E-01	2.5E-01	2.4E-01	2.3E-01	2.1E-01	2.0E-01	1.8E-01	1.7E-01	1.5E-01	1.3E-01	1.2E-01	1.1E-01
	180	176	172	168	165	161	158	154	151	149	146	143	141	139	136	135
	50.0	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.2	68.4	70.7

Whole Body Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986, for the Southeast Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

4 coordinate of the grid points																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
31 8.7E+01 1.5E+00 2.9E+00 4.1E+00 3.1E+00 1.6E+00 1.1E+00 1.7E+00 1.9E+00 2.3E+00 1.9E+00 1.4E+00 9.1E+01 3.4E+01 3.5E+01 3.4E+01	315	316	319	321	323	326	329	331	334	338	341	345	348	350	351	0
70.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0	0
30 6.4E+01 8.9E+01 1.3E+00 3.3E+00 4.7E+00 2.8E+00 1.7E+00 1.7E+00 1.8E+00 2.0E+00 2.2E+00 1.7E+00 1.3E+00 9.0E+01 8.7E+01 5.9E+01	313	315	317	319	321	324	327	330	333	336	340	344	347	351	355	0
68.4	66.0	63.7	61.5	59.7	57.3	55.5	53.7	52.2	50.3	49.6	48.6	48.0	47.7	47.1	46.3	46.0
29 6.1E+01 6.7E+01 9.6E+01 2.3E+00 4.5E+00 4.9E+00 2.7E+00 1.8E+00 1.8E+00 2.0E+00 2.4E+00 2.3E+00 1.3E+00 1.3E+00 1.3E+00 8.7E+01	310	312	315	317	319	322	325	328	331	335	338	342	347	351	355	0
66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.8	43.5	43.5	43.5
28 5.4E+01 6.3E+01 7.3E+01 1.1E+00 2.3E+00 3.5E+00 4.9E+00 2.7E+00 1.9E+00 2.0E+00 2.4E+00 2.6E+00 2.4E+00 1.7E+00 1.1E+00 3.0E+01	308	310	312	315	317	320	323	326	329	333	337	341	345	350	355	0
64.0	61.5	59.0	56.6	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.0	0
27 5.9E+01 7.0E+01 7.3E+01 8.4E+01 1.4E+00 3.6E+00 5.8E+00 5.1E+00 2.7E+00 2.0E+00 2.4E+00 2.8E+00 2.8E+00 2.3E+00 1.5E+00 9.5E+01	306	308	310	312	315	317	320	323	327	331	335	340	344	349	354	0
62.0	59.3	56.3	54.3	51.9	49.6	47.4	45.3	43.5	41.9	40.3	39.0	38.0	37.3	36.8	36.8	36.7
26 4.3E+01 7.7E+01 7.9E+01 8.6E+01 9.2E+01 1.8E+00 4.3E+00 5.9E+00 5.8E+00 2.5E+00 2.4E+00 2.8E+00 3.0E+00 3.0E+00 3.0E+00 1.2E+00	303	305	307	309	312	315	318	321	325	329	333	338	343	348	354	0
60.1	57.3	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.9	34.3	34.0	33.5	33.3
25 4.2E+01 8.9E+01 9.0E+01 9.6E+01 1.0E+00 1.2E+00 2.3E+00 5.0E+00 5.4E+00 6.6E+00 7.7E+00 2.8E+00 3.1E+00 3.6E+00 3.1E+00 1.8E+00	300	302	304	306	309	311	315	318	322	326	330	335	341	347	353	0
58.3	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.3	32.6	31.6	30.7	30.2	30.0	0
24 1.2E+00 1.1E+00 1.0E+00 1.1E+00 1.1E+00 1.2E+00 1.4E+00 2.6E+00 5.6E+00 5.9E+00 8.0E+00 3.3E+00 3.2E+00 4.0E+00 4.1E+00 2.5E+00	298	299	301	303	306	308	311	315	318	323	327	333	339	345	352	0
56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.6	26.9	26.7	26.7
23 2.6E+00 1.8E+00 1.3E+00 1.2E+00 1.2E+00 1.3E+00 1.3E+00 1.5E+00 3.5E+00 6.5E+00 7.4E+00 9.5E+00 3.4E+00 4.5E+00 5.6E+00 4.0E+00	295	296	298	300	302	304	307	311	315	319	324	330	336	344	351	0
55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3	23.3
22 6.0E+00 5.0E+00 3.4E+00 2.2E+00 1.5E+00 1.4E+00 1.4E+00 1.5E+00 1.8E+00 4.3E+00 7.1E+00 9.7E+00 8.1E+00 4.6E+00 6.4E+00 6.0E+00	291	293	294	296	298	300	303	306	310	315	320	326	333	341	350	0
53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0	0
21 6.4E+00 7.6E+00 9.0E+00 6.9E+00 4.5E+00 2.4E+00 1.7E+00 1.6E+00 1.9E+00 2.1E+00 5.4E+00 8.2E+00 1.1E+01 5.5E+00 6.3E+00 7.6E+00	288	289	291	292	294	296	299	302	305	309	315	321	328	338	348	0
52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7	16.7
20 3.3E+00 4.7E+00 6.2E+00 7.6E+00 8.9E+00 8.6E+00 6.4E+00 3.1E+00 2.1E+00 2.3E+00 2.9E+00 7.3E+00 1.2E+01 1.7E+01 6.8E+00 9.2E+00	284	285	287	288	289	291	293	296	299	303	308	315	323	333	345	0
51.7	48.5	45.3	42.2	39.3	35.9	32.8	29.8	26.9	24.0	21.3	18.9	16.7	14.9	13.7	13.3	13.3
19 1.7E+00 2.1E+00 2.9E+00 4.1E+00 5.4E+00 7.0E+00 8.5E+00 9.9E+00 9.2E+00 4.3E+00 3.5E+00 4.4E+00 1.2E+01 2.0E+01 1.3E+01 1.5E+01	281	282	282	284	285	286	288	290	293	295	300	306	315	326	341	0
51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.0	10.0
18 1.1E+00 1.5E+00 1.6E+00 1.8E+00 2.5E+00 3.6E+00 5.4E+00 7.3E+00 8.2E+00 1.1E+01 1.5E+01 7.3E+00 8.3E+00 2.4E+01 2.4E+01 2.4E+01	277	278	278	279	280	281	282	284	285	288	291	296	303	315	333	0
50.4	47.1	43.8	40.5	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.7	12.0	9.4	7.5	6.7	6.7
17 1.4E+00 1.5E+00 1.5E+00 1.7E+00 1.8E+00 2.1E+00 2.3E+00 3.2E+00 5.0E+00 8.1E+00 1.1E+01 1.3E+01 2.0E+01 1.9E+01 5.3E+01 2.7E+01	273	274	274	274	275	275	276	277	278	279	281	284	288	296	315	0
50.1	46.8	43.5	40.1	36.8	33.5	30.2	26.9	23.6	20.3	17.0	13.7	10.5	7.5	4.7	3.3	3.3
16 1.4E+00 1.5E+00 1.5E+00 1.7E+00 1.9E+00 3.2E+00 7.9E+00 5.4E+00 5.2E+00 5.5E+00 6.2E+00 8.1E+00 1.1E+01 1.5E+01 2.2E+01 1.5E+01	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	0
50.0	46.7	43.3	40.3	36.7	33.3	30.0	26.7	23.3	20.0	16.7	13.3	10.0	6.7	3.3	0.0	0.0

Thyroid Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986,
for the Northwest Quadrant. Bearings are in Degrees and Distances are
in Miles from Chernobyl.

x coordinate of the grid points																
Y	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
15	1.4E+00	1.5E+00	2.3E+00	2.5E+01	4.9E+01	7.3E+01	5.7E+01	2.0E+01	1.3E+01	1.7E+01	1.7E+01	2.7E+01	2.6E+01	1.4E+01	1.8E+01	3.2E+01
	285	285	285	285	284	284	283	282	281	280	259	255	251	247	225	190
	50.1	46.5	40.5	48.1	35.9	35.5	30.2	28.9	25.8	23.5	23.5	17.5	15.7	13.5	7.5	3.3
14	1.6E+00	1.9E+00	1.5E+01	7.4E+01	8.1E+01	9.2E+01	2.7E+01	9.2E+00	1.3E+01	1.1E+01	1.2E+01	1.1E+01	1.3E+01	1.6E+01	3.5E+01	3.2E+01
	262	261	261	260	259	258	257	255	254	251	248	243	238	225	208	180
	50.4	47.1	43.3	40.4	37.3	34.0	30.7	27.5	24.3	21.1	19.0	14.9	12.0	9.4	7.5	3.7
13	6.2E+00	1.2E+01	5.5E+01	9.8E+01	9.6E+01	5.5E+01	9.9E+00	8.1E+00	5.9E+00	6.0E+00	7.0E+00	8.9E+00	1.1E+01	2.1E+01	2.3E+01	1.4E+01
	253	257	257	255	254	255	251	249	246	243	239	233	225	213	198	190
	51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.0
12	2.4E+01	3.4E+01	5.1E+01	3.3E+01	1.2E+01	4.5E+00	3.4E+00	3.3E+00	7.6E+00	4.3E+00	5.5E+00	7.0E+00	1.1E+01	1.9E+01	1.5E+01	1.4E+01
	255	254	252	251	250	248	246	243	240	236	231	225	216	206	194	180
	51.7	46.5	45.3	42.2	39.0	35.9	32.8	29.9	26.9	24.0	21.5	18.9	16.7	14.9	13.7	13.3
11	1.2E+01	9.5E+00	4.7E+00	2.7E+00	2.3E+00	2.3E+00	2.4E+00	2.6E+00	3.0E+00	3.7E+00	4.7E+00	6.4E+00	1.2E+01	1.3E+01	1.4E+01	1.2E+01
	251	250	248	247	245	243	240	237	234	230	225	218	210	201	191	180
	52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7
10	2.4E+00	1.9E+00	1.8E+00	1.8E+00	1.3E+00	1.9E+00	2.3E+00	2.3E+00	2.7E+00	3.3E+00	4.2E+00	8.2E+00	9.2E+00	9.3E+00	1.1E+01	1.0E+01
	248	246	245	243	241	239	236	235	229	225	219	215	206	198	189	180
	53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0
9	1.5E+00	1.5E+00	1.5E+00	1.5E+00	1.6E+00	1.7E+00	1.9E+00	2.1E+00	2.3E+00	3.1E+00	5.0E+00	7.1E+00	5.9E+00	7.6E+00	8.3E+00	8.4E+00
	244	243	241	239	237	235	232	228	225	220	215	209	203	195	188	180
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	32.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3
8	1.3E+00	1.3E+00	1.4E+00	1.4E+00	1.5E+00	1.5E+00	1.8E+00	2.0E+00	2.4E+00	3.1E+00	5.4E+00	4.3E+00	4.9E+00	6.7E+00	6.3E+00	7.0E+00
	241	240	238	236	233	231	228	225	221	216	212	206	200	194	187	180
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7
7	1.2E+00	1.3E+00	1.3E+00	1.4E+00	1.5E+00	1.6E+00	1.8E+00	2.0E+00	2.3E+00	3.4E+00	3.5E+00	3.6E+00	4.4E+00	6.1E+00	5.2E+00	5.3E+00
	239	237	235	233	230	228	225	221	217	213	209	203	198	192	186	180
	58.3	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.3	32.8	31.6	30.7	30.2	30.0
6	1.2E+00	1.2E+00	1.3E+00	1.4E+00	1.5E+00	1.6E+00	1.9E+00	2.0E+00	2.3E+00	2.7E+00	2.9E+00	3.3E+00	4.0E+00	5.2E+00	4.5E+00	5.0E+00
	236	234	232	230	227	225	221	218	214	210	206	201	196	191	185	180
	60.1	57.3	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.3
5	1.1E+00	1.2E+00	1.3E+00	1.4E+00	1.5E+00	1.6E+00	1.9E+00	1.9E+00	2.2E+00	2.4E+00	2.7E+00	3.0E+00	3.7E+00	4.8E+00	3.9E+00	4.4E+00
	235	234	229	227	225	222	219	216	212	208	204	199	195	190	185	180
	62.0	59.3	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7
4	1.1E+00	1.2E+00	1.3E+00	1.4E+00	1.5E+00	1.6E+00	1.7E+00	1.9E+00	2.1E+00	2.3E+00	2.5E+00	2.8E+00	3.6E+00	4.1E+00	3.6E+00	3.7E+00
	231	229	227	225	222	219	216	213	210	206	202	198	194	189	184	180
	64.0	61.5	59.0	56.5	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.0
3	1.1E+00	1.2E+00	1.3E+00	1.4E+00	1.5E+00	1.6E+00	1.7E+00	1.9E+00	2.1E+00	2.3E+00	2.4E+00	2.6E+00	3.5E+00	3.6E+00	3.3E+00	3.7E+00
	229	227	225	222	220	217	214	211	208	204	201	197	192	188	184	180
	66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.8	43.5	43.3
2	1.1E+00	1.2E+00	1.3E+00	1.4E+00	1.5E+00	1.6E+00	1.7E+00	1.9E+00	2.0E+00	2.2E+00	2.3E+00	2.4E+00	3.3E+00	3.1E+00	3.0E+00	3.4E+00
	226	225	222	220	218	215	212	209	206	203	199	195	192	188	184	180
	68.4	66.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.8	49.6	48.5	47.7	47.1	46.8	46.7
1	1.1E+00	1.2E+00	1.3E+00	1.3E+00	1.4E+00	1.6E+00	1.7E+00	1.9E+00	2.0E+00	2.1E+00	2.2E+00	2.3E+00	2.9E+00	2.7E+00	2.7E+00	3.0E+00
	225	223	220	218	216	213	210	208	205	201	198	194	191	187	183	180
	70.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0

Thyroid Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986,
for the Southwest Quadrant. Bearings are in Degrees and Distances are
in Miles from Chernobyl.

Y	X coordinate of the grid points															
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
15	3.2E+01	3.3E+01	3.4E+01	3.5E+01	3.6E+01	3.7E+01	3.8E+01	3.9E+01	4.0E+01	4.1E+01	4.2E+01	4.3E+01	4.4E+01	4.5E+01	4.6E+01	4.7E+01
	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205
	2.5	4.7	7.5	10.5	13.7	17.0	20.3	23.6	26.9	30.2	33.5	36.8	40.1	43.5	46.8	50.1
14	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	186	153	135	123	116	111	108	105	102	102	101	100	99	98	98	97
	6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.8	47.1	50.4
13	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	130	161	146	135	126	120	116	113	110	109	106	105	104	102	102	101
	10.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.8	38.0	41.2	44.5	47.7	51.0
12	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	130	165	153	143	135	129	123	119	116	113	111	109	108	107	106	104
	12.0	13.7	14.9	16.7	18.9	21.5	24.0	26.9	29.3	32.8	35.9	39.9	42.2	45.0	48.5	51.7
11	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	130	168	158	149	141	135	129	125	122	119	116	114	112	111	109	106
	16.7	17.0	18.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.6	52.7
10	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	180	170	161	153	146	140	133	126	120	116	113	110	109	108	107	106
	20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	35.1	38.9	41.9	44.7	47.7	50.8	53.9
9	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	180	171	164	156	150	144	139	133	131	127	124	122	120	118	116	115
	23.3	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.2
8	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	180	172	165	159	153	147	143	138	135	131	128	126	123	121	119	118
	26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7
7	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	180	173	167	161	156	150	146	142	138	135	131	129	126	124	122	120
	30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4	50.0	52.7	55.5	58.3
6	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	180	174	168	163	158	153	149	145	141	138	135	132	129	127	125	123
	32.0	32.5	33.0	33.9	35.9	37.3	38.9	40.7	42.7	44.8	47.1	49.6	52.1	54.7	57.3	60.1
5	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	180	174	169	164	160	155	151	147	143	140	137	135	132	130	128	126
	36.7	36.8	37.3	38.0	39.0	40.3	41.9	43.5	45.3	47.4	49.6	51.9	54.3	56.8	59.3	62.0
4	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	180	175	170	165	161	157	153	149	146	143	140	137	135	132	130	128
	40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.6	59.0	61.5	64.0
3	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	130	175	171	167	162	158	155	151	148	145	142	139	137	135	132	130
	43.3	43.5	43.8	44.5	45.3	46.4	47.7	49.2	50.9	52.7	54.7	56.8	59.0	61.3	63.7	66.2
2	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	180	175	171	167	164	160	156	153	150	147	144	141	139	137	135	133
	46.7	46.8	47.1	47.7	48.5	49.6	50.8	52.2	53.7	55.5	57.3	59.3	61.5	63.7	66.0	68.4
1	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01	3.2E+01
	130	176	172	168	165	161	158	154	151	149	146	143	141	139	136	135
	50.0	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.2	68.4	70.7

Thyroid Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986,
for the Southeast Quadrant. Bearings are in Degrees and Distances are
in Miles from Chernobyl.

X coordinate of the grid points																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
31	2.4E+00	3.9E+00	7.1E+00	7.9E+00	7.5E+00	4.5E+00	4.0E+00	4.3E+00	4.5E+00	4.7E+00	4.5E+00	3.5E+00	2.6E+00	2.1E+00	1.9E+00	1.9E+00
	715	316	319	321	323	326	329	331	334	338	341	345	348	352	354	0
	70.7	66.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0
30	2.0E+00	2.6E+00	4.5E+00	9.0E+00	1.1E+01	8.3E+00	4.2E+00	4.2E+00	4.5E+00	4.9E+00	5.2E+00	4.4E+00	2.4E+00	2.7E+00	2.3E+00	2.1E+00
	313	315	317	319	321	324	327	330	333	336	340	344	347	351	355	0
	68.4	66.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.9	49.6	48.5	47.7	47.1	46.8	46.7
29	2.0E+00	2.1E+00	2.3E+00	5.6E+00	1.1E+01	1.1E+01	6.3E+00	4.5E+00	4.4E+00	4.8E+00	5.1E+00	5.4E+00	4.5E+00	3.4E+00	2.6E+00	2.3E+00
	310	312	315	317	319	322	325	328	331	335	338	342	347	351	355	0
	65.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.8	43.5	43.3
28	1.1E+00	2.1E+00	2.3E+00	3.1E+00	8.3E+00	1.2E+01	1.1E+01	6.4E+00	4.6E+00	4.3E+00	5.6E+00	6.1E+00	5.7E+00	4.4E+00	2.2E+00	2.7E+00
	308	310	312	315	317	320	323	326	329	333	337	341	345	350	355	0
	64.0	61.5	59.0	56.5	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.0
27	1.2E+00	2.3E+00	2.4E+00	2.6E+00	3.7E+00	7.9E+00	1.2E+01	1.1E+01	6.3E+00	4.9E+00	5.6E+00	6.5E+00	6.6E+00	5.6E+00	4.1E+00	3.1E+00
	306	308	310	312	315	317	320	323	327	331	335	340	344	349	354	0
	62.0	59.3	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7
26	1.5E+00	2.5E+00	2.6E+00	2.7E+00	3.0E+00	4.5E+00	9.0E+00	1.2E+01	1.2E+01	5.9E+00	5.7E+00	6.8E+00	7.1E+00	7.0E+00	5.6E+00	3.5E+00
	303	305	307	309	312	315	318	321	325	329	333	338	343	348	354	0
	60.1	57.3	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.7	37.3	35.9	34.8	34.0	33.5	33.3
25	1.5E+00	2.5E+00	2.6E+00	3.0E+00	3.1E+00	3.4E+00	5.4E+00	1.0E+01	1.1E+01	1.3E+01	6.3E+00	6.5E+00	7.3E+00	9.3E+00	7.5E+00	5.0E+00
	300	302	304	306	309	311	315	318	322	326	330	336	341	347	353	0
	58.3	55.5	52.7	50.0	47.4	44.9	42.4	40.1	38.0	36.1	34.3	32.8	31.6	30.7	30.2	30.0
24	1.7E+00	3.2E+00	3.2E+00	3.7E+00	3.4E+00	3.5E+00	3.6E+00	6.0E+00	1.1E+01	1.2E+01	1.5E+01	7.4E+00	7.5E+00	9.3E+00	9.7E+00	6.6E+00
	298	299	301	303	306	308	311	315	318	323	327	333	339	345	352	0
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7
23	5.7E+00	4.4E+00	3.8E+00	3.6E+00	3.7E+00	3.8E+00	3.9E+00	4.2E+00	7.4E+00	1.2E+01	1.4E+01	1.8E+01	7.9E+00	1.0E+01	1.3E+01	9.8E+00
	295	296	298	300	302	304	307	311	315	319	324	330	336	344	351	0
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3
22	1.1E+01	9.7E+00	7.2E+00	5.2E+00	4.2E+00	4.1E+00	4.2E+00	4.4E+00	4.9E+00	8.9E+00	1.4E+01	1.8E+01	1.6E+01	1.1E+01	1.5E+01	1.4E+01
	291	293	294	296	298	300	303	306	310	315	320	326	333	341	350	0
	53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0
21	1.2E+01	1.3E+01	1.4E+01	1.2E+01	9.0E+00	5.9E+00	4.7E+00	4.8E+00	5.1E+00	5.9E+00	1.1E+01	1.6E+01	2.2E+01	1.7E+01	1.5E+01	1.7E+01
	288	289	291	292	294	296	299	302	305	309	315	321	329	338	348	0
	52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7
20	9.9E+00	3.9E+00	1.1E+01	1.3E+01	1.5E+01	1.5E+01	1.2E+01	7.1E+00	6.0E+00	6.4E+00	7.5E+00	1.5E+01	2.4E+01	3.1E+01	1.6E+01	2.1E+01
	284	285	287	288	289	291	293	296	299	303	308	315	323	333	345	0
	51.7	48.5	45.3	42.2	39.0	35.9	32.8	29.8	26.9	24.0	21.3	18.9	16.7	14.9	13.7	13.3
19	4.5E+00	5.1E+00	6.3E+00	8.2E+00	1.0E+01	1.2E+01	1.5E+01	1.7E+01	1.6E+01	9.3E+00	9.2E+00	1.1E+01	2.4E+01	3.0E+01	2.9E+01	3.2E+01
	281	282	284	285	286	288	289	290	293	296	300	306	315	326	341	0
	51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.0
18	4.6E+00	4.3E+00	4.6E+00	5.0E+00	6.1E+00	7.9E+00	1.1E+01	1.3E+01	1.5E+01	1.9E+01	2.5E+01	1.6E+01	2.0E+01	4.6E+01	4.6E+01	5.0E+01
	277	278	278	279	280	281	282	284	285	288	291	296	303	315	333	0
	50.4	47.1	43.8	40.6	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.9	12.0	9.4	7.5	6.7
17	4.6E+00	4.3E+00	4.6E+00	4.9E+00	5.2E+00	5.8E+00	6.5E+00	7.9E+00	1.1E+01	1.6E+01	2.2E+01	2.5E+01	3.6E+01	3.9E+01	3.9E+01	5.6E+01
	273	274	274	274	275	275	276	277	278	279	281	284	288	296	315	0
	50.1	46.8	43.5	40.1	36.8	33.5	30.2	26.9	23.6	20.3	17.0	13.7	10.5	7.5	4.7	3.3
16	4.7E+00	4.4E+00	4.7E+00	5.0E+00	5.3E+00	6.1E+00	7.5E+00	8.4E+00	1.1E+01	1.3E+01	1.5E+01	2.0E+01	2.6E+01	3.5E+01	4.7E+01	4.0E+01
	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	0
	50.0	46.7	43.3	40.0	36.7	33.3	30.0	26.7	23.3	20.0	16.7	13.3	10.0	6.7	3.3	0.0

Lung Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986, for the Northwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

Y	X coordinate of the grid points															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
15	4.4E+00	4.6E+00	5.0E+00	5.3E+00	1.4E+01	1.9E+01	1.7E+01	1.3E+01	1.5E+01	1.3E+01	2.7E+01	3.6E+01	4.7E+01	3.7E+01	4.4E+01	7.7E+01
	266	265	265	265	264	264	263	262	261	260	259	255	251	243	225	180
	50.1	46.8	42.5	40.1	35.8	32.5	30.2	28.9	27.6	26.3	17.0	12.7	10.5	7.5	4.7	2.3
14	4.6E+00	5.0E+00	7.6E+00	1.9E+01	2.1E+01	2.3E+01	1.5E+01	1.5E+01	1.8E+01	2.1E+01	2.4E+01	2.6E+01	3.1E+01	3.9E+01	9.7E+01	7.6E+01
	262	261	261	260	259	258	257	255	254	251	246	243	236	225	206	180
	50.4	47.1	47.8	49.6	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.9	12.0	9.4	7.5	5.7
13	6.1E+00	7.9E+00	1.7E+01	2.8E+01	2.5E+01	2.0E+01	1.3E+01	1.3E+01	1.3E+01	1.5E+01	1.8E+01	2.3E+01	2.9E+01	5.8E+01	5.5E+01	4.5E+01
	258	257	257	255	254	253	251	249	246	243	239	233	225	213	198	180
	51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.0
12	1.0E+01	1.4E+01	1.7E+01	1.4E+01	9.7E+00	8.5E+00	3.6E+00	9.2E+00	1.0E+01	1.3E+01	1.5E+01	1.6E+01	2.0E+01	3.2E+01	5.2E+01	4.4E+01
	255	254	252	251	250	248	246	243	240	236	231	225	216	206	194	180
	51.7	43.5	45.3	42.2	39.0	35.9	32.8	29.8	26.9	24.0	21.3	18.9	16.7	14.9	13.7	12.3
11	7.0E+00	7.2E+00	6.7E+00	6.5E+00	6.7E+00	6.9E+00	7.4E+00	8.2E+00	9.6E+00	1.2E+01	1.4E+01	1.9E+01	3.7E+01	3.9E+01	3.9E+01	3.5E+01
	251	250	248	247	245	243	240	237	234	230	225	219	210	201	191	180
	52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7
10	5.3E+00	5.4E+00	5.6E+00	5.8E+00	6.1E+00	6.4E+00	7.0E+00	7.8E+00	9.1E+00	1.1E+01	1.4E+01	2.5E+01	2.5E+01	2.8E+01	3.2E+01	3.6E+01
	248	246	245	243	241	239	236	233	229	225	219	217	206	199	189	180
	53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0
9	4.9E+00	5.1E+00	5.3E+00	5.6E+00	5.9E+00	6.3E+00	6.8E+00	7.5E+00	9.7E+00	1.0E+01	1.6E+01	2.3E+01	1.8E+01	2.3E+01	2.5E+01	2.5E+01
	244	242	241	239	237	235	232	229	225	220	215	209	203	195	188	180
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	22.3
8	4.7E+00	5.0E+00	5.2E+00	5.5E+00	5.8E+00	6.2E+00	6.8E+00	7.5E+00	9.4E+00	1.1E+01	1.8E+01	1.5E+01	1.8E+01	2.1E+01	2.0E+01	2.2E+01
	241	240	238	236	233	231	228	225	221	216	212	206	200	194	187	180
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7
7	4.6E+00	4.9E+00	5.1E+00	5.5E+00	5.8E+00	6.3E+00	6.8E+00	7.4E+00	9.4E+00	1.2E+01	1.2E+01	1.2E+01	1.4E+01	1.9E+01	1.7E+01	1.8E+01
	239	237	235	232	230	228	225	221	217	213	209	203	198	192	186	180
	58.3	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.3	32.8	31.6	30.7	30.2	30.0
6	4.6E+00	4.9E+00	5.2E+00	5.5E+00	5.9E+00	6.3E+00	6.8E+00	7.3E+00	9.3E+00	9.7E+00	1.0E+01	1.1E+01	1.2E+01	1.3E+01	1.5E+01	1.6E+01
	236	234	232	230	227	225	221	218	214	210	206	201	196	191	185	180
	60.1	57.3	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.3
5	4.6E+00	4.9E+00	5.2E+00	5.5E+00	5.9E+00	6.3E+00	6.7E+00	7.2E+00	9.0E+00	9.8E+00	9.6E+00	1.1E+01	1.2E+01	1.6E+01	1.3E+01	1.4E+01
	233	231	229	227	225	222	219	216	212	208	204	199	195	190	185	180
	62.0	59.3	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7
4	4.6E+00	4.9E+00	5.2E+00	5.5E+00	5.9E+00	6.2E+00	6.7E+00	7.3E+00	7.9E+00	8.6E+00	9.3E+00	1.0E+01	1.2E+01	1.4E+01	1.2E+01	1.2E+01
	231	229	227	225	222	219	216	213	210	206	202	198	194	189	184	180
	64.0	61.5	59.0	56.5	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.6	40.1	40.0
3	4.6E+00	4.9E+00	5.2E+00	5.5E+00	5.9E+00	6.2E+00	6.7E+00	7.3E+00	7.9E+00	8.4E+00	9.0E+00	9.4E+00	1.2E+01	1.2E+01	1.1E+01	1.2E+01
	229	227	225	222	220	217	214	211	208	204	201	197	192	188	184	180
	66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.2	44.5	43.5	43.5	43.3
2	4.5E+00	4.8E+00	5.1E+00	5.4E+00	5.8E+00	6.2E+00	6.7E+00	7.2E+00	7.7E+00	8.2E+00	8.6E+00	8.9E+00	1.1E+01	1.1E+01	1.1E+01	1.2E+01
	226	225	222	220	218	215	212	209	206	203	199	195	192	188	184	180
	68.4	66.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.8	49.6	48.5	47.7	47.1	46.8	46.7
1	4.5E+00	4.6E+00	5.1E+00	5.4E+00	5.7E+00	6.3E+00	6.7E+00	7.1E+00	7.6E+00	7.9E+00	8.1E+00	8.6E+00	1.0E+01	9.7E+00	9.3E+00	1.1E+01
	225	223	220	218	216	213	210	208	205	201	198	194	191	187	183	180
	70.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0

Lung Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986, for the Southwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

X coordinate of the grid points															
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00	1.9E+00
0	3	7	11	14	18	21	25	28	30	33	36	38	40	43	45
50.3	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.2	68.4	70.7
2.1E+00	2.1E+00	2.1E+00	2.1E+00	2.1E+00	2.2E+00	2.2E+00	2.2E+00	2.3E+00	2.4E+00	2.5E+00	2.5E+00	2.4E+00	2.2E+00	2.0E+00	1.8E+00
0	4	8	12	15	19	23	26	29	32	35	38	40	42	45	46
46.7	46.9	47.1	47.7	48.5	49.6	50.8	52.2	53.7	55.5	57.3	59.3	61.5	63.7	66.0	68.4
2.3E+00	2.3E+00	2.3E+00	2.3E+00	2.4E+00	2.4E+00	2.5E+00	2.5E+00	2.7E+00	2.7E+00	2.6E+00	2.5E+00	2.5E+00	2.4E+00	1.7E+00	1.5E+00
0	4	8	12	17	21	24	28	31	34	37	40	42	45	47	49
43.3	43.5	43.8	44.5	45.3	46.4	47.7	49.2	50.9	52.7	54.7	56.8	59.0	61.3	63.7	66.1
2.7E+00	2.6E+00	2.5E+00	2.6E+00	2.7E+00	2.7E+00	2.8E+00	2.8E+00	2.8E+00	2.7E+00	2.4E+00	2.2E+00	1.9E+00	1.6E+00	1.4E+00	1.3E+00
0	4	9	14	18	22	26	30	33	36	39	42	45	47	49	51
40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.5	59.0	61.5	64.0
3.1E+00	2.9E+00	2.7E+00	3.0E+00	3.1E+00	3.1E+00	3.0E+00	2.9E+00	2.6E+00	2.4E+00	2.1E+00	1.9E+00	1.6E+00	1.5E+00	1.3E+00	1.2E+00
0	5	10	15	19	24	28	32	36	39	42	45	47	49	51	53
36.7	36.8	37.3	38.0	39.0	40.3	41.6	43.5	45.3	47.4	49.6	51.9	54.3	56.8	59.3	62.0
2.8E+00	3.3E+00	3.5E+00	3.5E+00	3.5E+00	3.3E+00	3.0E+00	2.7E+00	2.4E+00	2.1E+00	1.9E+00	1.7E+00	1.6E+00	1.5E+00	1.4E+00	1.3E+00
0	5	11	16	21	26	30	34	38	41	45	47	50	52	54	56
33.3	33.5	34.0	34.8	35.9	37.3	38.9	40.7	42.7	44.8	47.1	49.6	52.1	54.7	57.3	60.1
5.0E+00	4.3E+00	4.0E+00	3.8E+00	3.5E+00	3.2E+00	2.9E+00	2.6E+00	2.4E+00	2.2E+00	2.0E+00	1.8E+00	1.7E+00	1.5E+00	1.5E+00	1.4E+00
0	6	12	18	23	29	33	37	41	45	48	50	53	55	57	59
30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4	50.0	52.7	55.5	58.3
4.6E+00	4.7E+00	4.3E+00	3.9E+00	3.6E+00	3.4E+00	3.2E+00	3.2E+00	3.1E+00	2.9E+00	2.6E+00	2.2E+00	1.9E+00	1.7E+00	1.6E+00	1.5E+00
0	7	14	20	26	32	36	41	45	48	51	53	56	58	60	61
26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7
3.7E+00	5.7E+00	4.9E+00	4.5E+00	4.3E+00	4.3E+00	4.5E+00	5.0E+00	5.5E+00	5.2E+00	4.1E+00	2.9E+00	2.2E+00	1.9E+00	1.8E+00	1.6E+00
0	8	15	23	29	35	40	45	48	52	55	57	59	61	63	64
23.3	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.2
1.4E+01	7.8E+00	6.3E+00	5.2E+00	4.2E+00	3.6E+00	2.7E+00	9.3E+00	1.0E+01	9.6E+00	7.0E+00	4.3E+00	2.6E+00	1.2E+00	1.9E+00	1.8E+00
0	9	18	26	33	39	45	49	53	56	59	61	63	65	66	68
20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8	44.7	47.7	50.8	53.9
1.7E+01	1.1E+01	9.7E+00	9.9E+00	1.0E+01	1.1E+01	1.3E+01	1.5E+01	1.6E+01	1.4E+01	1.0E+01	5.7E+00	3.2E+00	2.4E+00	2.1E+00	1.9E+00
0	11	21	30	38	45	50	54	57	60	63	65	67	68	70	71
16.7	17.0	18.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.6	52.7
1.1E+01	1.7E+01	1.6E+01	1.7E+01	1.7E+01	1.8E+01	1.9E+01	2.2E+01	2.0E+01	1.6E+01	1.1E+01	6.2E+00	3.7E+00	2.7E+00	2.3E+00	2.1E+00
0	14	26	36	45	51	56	60	63	66	68	70	71	72	74	75
13.3	13.7	14.9	16.7	18.9	21.3	24.0	26.9	29.8	32.8	35.9	39.0	42.2	45.3	48.5	51.7
1.2E+01	3.4E+01	2.9E+01	2.5E+01	2.4E+01	2.5E+01	2.8E+01	2.1E+01	1.8E+01	1.4E+01	9.6E+00	5.8E+00	3.8E+00	2.9E+00	2.5E+00	2.3E+00
0	18	33	45	52	59	63	66	69	71	73	74	75	77	77	78
10.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.8	38.0	41.2	44.5	47.7	51.0
5.0E+01	5.8E+01	5.6E+01	5.3E+01	5.3E+01	5.9E+01	2.9E+01	2.2E+01	1.9E+01	1.5E+01	1.2E+01	8.0E+00	5.4E+00	3.9E+00	3.1E+00	2.7E+00
0	26	45	56	63	68	71	74	75	77	78	79	80	81	81	82
6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.8	47.1	50.4
5.6E+01	4.0E+01	5.4E+01	3.6E+01	3.1E+01	2.6E+01	2.1E+01	1.7E+01	1.3E+01	9.8E+00	7.0E+00	5.2E+00	4.0E+00	3.4E+00	3.0E+00	2.6E+00
0	45	63	71	75	78	80	81	82	83	84	84	85	85	85	86
3.3	4.7	7.5	10.5	13.7	17.0	20.3	23.6	26.9	30.2	33.5	36.8	40.1	43.5	46.8	50.1
4.3E+01	4.9E+01	4.2E+01	3.9E+01	3.3E+01	2.6E+01	2.0E+01	1.5E+01	1.2E+01	8.7E+00	6.6E+00	5.2E+00	4.3E+00	3.7E+00	3.2E+00	2.8E+00
0	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
0.0	3.3	6.7	10.0	13.3	16.7	20.0	23.3	26.7	30.0	33.3	36.7	40.0	43.3	46.7	50.0

Lung Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986, for the Northeast Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

Y coordinate of the grid points																
Y	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
15	7.7E+01	7.8E+01	4.3E+01	3.9E+01	3.2E+01	2.5E+01	1.9E+01	1.4E+01	1.1E+01	8.7E+00	6.2E+00	5.4E+00	4.8E+00	4.3E+00	3.8E+00	3.1E+00
	180	135	116	108	104	101	99	99	97	96	95	95	94	94	94	92
	3.3	4.7	7.5	10.5	15.7	17.0	20.3	23.6	26.9	30.2	33.5	36.8	40.1	43.5	46.8	50.1
14	7.6E+01	5.6E+01	5.3E+01	4.3E+01	3.0E+01	2.4E+01	1.8E+01	1.4E+01	1.1E+01	8.4E+00	5.9E+00	5.2E+00	4.7E+00	4.3E+00	3.7E+00	3.3E+00
	180	153	135	123	116	111	108	105	104	102	101	100	99	98	98	97
	6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.8	47.1	50.4
13	4.5E+01	5.3E+01	3.9E+01	3.6E+01	2.7E+01	2.2E+01	1.7E+01	1.3E+01	1.1E+01	8.7E+00	7.2E+00	6.1E+00	5.3E+00	4.5E+00	4.0E+00	3.5E+00
	180	161	146	125	126	120	116	113	110	108	106	105	104	102	102	101
	10.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.8	38.0	41.2	44.5	47.7	51.0
12	4.0E+01	4.3E+01	3.5E+01	2.9E+01	2.5E+01	2.0E+01	1.6E+01	1.3E+01	1.1E+01	9.0E+00	7.6E+00	6.5E+00	5.6E+00	4.8E+00	4.2E+00	3.6E+00
	180	165	153	143	135	128	123	119	116	113	111	109	108	107	105	104
	13.3	13.7	14.9	16.7	18.9	21.3	24.0	26.9	29.8	32.8	35.9	39.0	42.2	45.3	48.5	51.7
11	3.5E+01	4.0E+01	3.5E+01	2.6E+01	2.2E+01	1.9E+01	1.5E+01	1.3E+01	1.1E+01	9.2E+00	7.8E+00	6.7E+00	5.8E+00	5.0E+00	4.4E+00	3.8E+00
	180	168	158	149	141	135	129	125	122	119	116	114	112	111	109	108
	16.7	17.0	18.0	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.6	52.7
10	3.0E+01	3.4E+01	3.2E+01	2.3E+01	2.0E+01	1.7E+01	1.5E+01	1.3E+01	1.1E+01	9.3E+00	8.0E+00	6.9E+00	6.0E+00	5.2E+00	4.5E+00	4.0E+00
	180	170	161	153	146	140	135	130	126	123	120	118	116	114	113	111
	20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8	44.7	47.7	50.9	53.9
9	2.5E+01	2.8E+01	2.6E+01	2.2E+01	1.8E+01	1.6E+01	1.4E+01	1.2E+01	1.1E+01	9.3E+00	8.1E+00	7.1E+00	6.2E+00	5.4E+00	4.7E+00	4.1E+00
	180	171	164	156	150	144	139	135	131	127	124	122	120	118	116	115
	23.3	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.2
8	2.2E+01	2.4E+01	2.1E+01	2.2E+01	1.6E+01	1.4E+01	1.3E+01	1.2E+01	1.0E+01	9.2E+00	8.1E+00	7.2E+00	6.3E+00	5.5E+00	4.8E+00	4.2E+00
	180	172	165	159	153	147	143	138	135	131	128	126	123	121	119	118
	26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7
7	1.8E+01	2.0E+01	1.8E+01	1.9E+01	1.5E+01	1.3E+01	1.2E+01	1.1E+01	1.0E+01	9.1E+00	8.1E+00	7.2E+00	6.3E+00	5.6E+00	4.9E+00	4.3E+00
	180	173	167	161	154	150	146	142	138	135	131	129	126	124	122	120
	30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4	50.0	52.7	55.5	58.3
6	1.6E+01	1.7E+01	1.6E+01	1.5E+01	1.4E+01	1.3E+01	1.2E+01	1.1E+01	9.9E+00	9.0E+00	8.0E+00	7.2E+00	6.3E+00	5.6E+00	4.9E+00	4.3E+00
	180	174	168	163	158	153	149	145	141	138	135	132	129	127	125	123
	33.3	33.6	34.0	34.8	35.9	37.3	38.9	40.7	42.7	44.8	47.1	49.6	52.1	54.7	57.3	60.1
5	1.4E+01	1.5E+01	1.5E+01	1.3E+01	1.3E+01	1.2E+01	1.1E+01	1.0E+01	9.6E+00	8.8E+00	7.9E+00	7.1E+00	6.2E+00	5.5E+00	4.9E+00	4.4E+00
	180	174	169	164	160	155	151	147	143	140	137	135	132	130	128	126
	36.7	36.8	37.3	38.0	39.0	40.3	41.8	43.5	45.3	47.4	49.6	51.9	54.3	56.8	59.3	62.0
4	1.3E+01	1.3E+01	1.4E+01	1.2E+01	1.2E+01	1.1E+01	1.1E+01	1.0E+01	9.3E+00	8.5E+00	7.8E+00	7.0E+00	6.2E+00	5.6E+00	4.9E+00	4.3E+00
	180	175	170	165	161	157	153	149	146	143	140	137	135	132	130	128
	40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.6	59.0	61.5	64.0
3	1.2E+01	1.2E+01	1.3E+01	1.1E+01	1.1E+01	1.1E+01	1.0E+01	9.7E+00	9.0E+00	8.3E+00	7.6E+00	6.8E+00	6.1E+00	5.5E+00	4.9E+00	4.3E+00
	180	175	171	167	162	158	155	151	148	145	142	139	137	135	132	130
	43.3	43.5	43.8	44.5	45.3	46.4	47.7	49.2	50.9	52.7	54.7	56.8	59.0	61.3	63.7	66.2
2	1.2E+01	1.1E+01	1.2E+01	1.1E+01	1.1E+01	1.0E+01	9.8E+00	9.3E+00	8.7E+00	8.0E+00	7.3E+00	6.5E+00	6.0E+00	5.3E+00	4.8E+00	4.2E+00
	180	175	171	167	164	160	156	153	150	147	144	141	139	137	135	133
	46.7	46.8	47.1	47.7	48.5	49.6	50.9	52.2	53.7	55.5	57.3	59.3	61.5	63.7	66.0	68.4
1	1.1E+01	1.1E+01	1.1E+01	1.0E+01	1.0E+01	9.7E+00	9.3E+00	8.9E+00	8.3E+00	7.7E+00	7.1E+00	6.4E+00	5.8E+00	5.2E+00	4.6E+00	4.1E+00
	180	176	172	168	165	161	158	154	151	149	146	143	141	139	136	135
	50.0	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.2	68.4	70.7

Lung Dose (rem) from Inhalation Estimated for 0000Z May 7, 1986, for the Southeast Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

X coordinate of the grid points																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	4.2E-04	6.7E-04	1.2E-03	1.8E-03	1.3E-03	9.1E-04	7.4E-04	2.0E-04	8.5E-04	9.1E-04	8.9E-04	7.1E-04	5.2E-04	4.0E-04	7.7E-04	3.6E-04
	315	316	319	321	323	325	327	331	334	338	341	345	348	352	356	0
	73.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0
2	7.7E-04	4.7E-04	7.9E-04	1.5E-03	1.9E-03	1.2E-03	7.9E-04	8.0E-04	9.7E-04	9.4E-04	1.3E-03	8.9E-04	6.9E-04	5.2E-04	4.3E-04	4.0E-04
	315	315	317	319	321	324	327	330	333	336	340	344	347	351	355	0
	58.4	66.0	63.7	61.5	59.3	57.3	55.5	52.7	52.2	50.8	49.6	48.3	47.7	47.1	46.8	46.7
3	5.7E-04	4.0E-04	5.1E-04	1.0E-03	1.9E-03	1.7E-03	1.2E-03	8.3E-04	8.6E-04	9.7E-04	1.1E-03	1.1E-03	9.1E-04	6.8E-04	5.1E-04	4.4E-04
	310	312	315	317	319	322	325	328	331	335	338	342	347	351	355	0
	66.2	63.7	61.5	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.8	43.5	43.3
4	3.9E-04	4.1E-04	4.4E-04	6.0E-04	1.3E-03	2.2E-03	2.0E-03	1.2E-03	9.2E-04	9.8E-04	1.1E-03	1.2E-03	1.1E-03	8.9E-04	6.4E-04	5.1E-04
	308	310	312	315	317	320	323	326	329	333	337	341	345	350	355	0
	64.0	61.5	59.0	56.6	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.5	40.1	40.0
5	4.3E-04	4.4E-04	4.6E-04	5.0E-04	7.2E-04	1.6E-03	2.4E-03	2.1E-03	1.2E-03	1.0E-03	1.2E-03	1.3E-03	1.3E-03	1.2E-03	8.3E-04	6.0E-04
	306	308	310	312	315	317	320	323	327	331	335	340	344	349	354	0
	62.0	59.3	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7
6	4.7E-04	4.3E-04	5.0E-04	5.3E-04	5.8E-04	9.1E-04	1.9E-03	2.5E-03	2.3E-03	1.3E-03	1.2E-03	1.4E-03	1.5E-03	1.4E-03	1.1E-03	7.5E-04
	303	305	307	309	312	315	318	321	325	329	333	338	343	348	354	0
	60.1	57.3	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.3
7	5.2E-04	5.3E-04	5.5E-04	5.9E-04	6.1E-04	6.9E-04	1.2E-03	2.3E-03	2.3E-03	2.6E-03	1.4E-03	1.4E-03	1.5E-03	1.7E-03	1.5E-03	9.9E-04
	300	302	304	306	309	311	315	318	322	326	330	335	341	347	353	0
	58.3	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.3	32.8	31.6	30.7	30.2	30.0
8	6.4E-04	6.1E-04	6.1E-04	6.4E-04	6.7E-04	7.1E-04	7.9E-04	1.4E-03	2.7E-03	2.7E-03	3.1E-03	1.7E-03	1.8E-03	1.9E-03	2.0E-03	1.3E-03
	298	299	301	303	306	308	311	315	318	322	327	333	339	345	352	0
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7
9	1.1E-03	8.8E-04	7.4E-04	7.1E-04	7.2E-04	7.6E-04	8.0E-04	8.9E-04	1.8E-03	3.2E-03	3.3E-03	3.7E-03	1.8E-03	2.3E-03	2.7E-03	2.0E-03
	295	296	298	300	302	304	307	311	315	319	324	330	336	344	351	0
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3
10	1.4E-03	2.0E-03	1.5E-03	1.1E-03	8.6E-04	8.2E-04	8.5E-04	9.2E-04	1.1E-03	2.4E-03	3.7E-03	4.4E-03	3.5E-03	2.5E-03	3.2E-03	3.1E-03
	291	293	294	296	298	300	303	306	310	315	320	326	333	341	350	0
	53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.3	20.0
11	1.5E-03	2.9E-03	3.2E-03	2.9E-03	2.1E-03	1.3E-03	9.9E-04	1.0E-03	1.1E-03	1.3E-03	3.1E-03	4.5E-03	5.1E-03	3.1E-03	3.5E-03	4.2E-03
	288	289	291	292	294	296	299	302	305	309	315	321	329	338	348	0
	52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7
12	1.4E-03	1.9E-03	2.5E-03	3.1E-03	3.7E-03	3.8E-03	3.0E-03	1.7E-03	1.3E-03	1.5E-03	1.5E-03	4.5E-03	6.8E-03	7.6E-03	4.2E-03	5.7E-03
	284	285	287	288	289	291	293	296	299	303	308	315	323	332	345	0
	51.7	48.5	45.3	42.2	39.0	35.9	32.8	29.8	26.9	24.0	21.7	18.9	16.7	14.9	13.7	13.3
13	9.4E-04	1.1E-03	1.4E-03	1.8E-03	2.3E-03	3.1E-03	4.0E-03	4.9E-03	4.7E-03	2.5E-03	2.2E-03	2.8E-03	7.2E-03	1.1E-02	7.8E-03	9.8E-03
	281	282	282	284	285	286	288	290	293	296	300	306	315	326	341	0
	51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.5	10.0
14	6E-04	9.2E-04	9.8E-04	1.1E-03	1.4E-03	1.8E-03	2.5E-03	3.4E-03	4.1E-03	6.2E-03	8.4E-03	4.8E-03	5.2E-03	1.4E-02	1.4E-02	1.6E-02
	277	278	278	279	280	281	282	284	285	288	291	296	303	315	335	0
	50.4	47.1	43.8	40.6	37.3	34.0	30.7	27.5	24.3	21.1	18.0	14.9	12.0	9.4	7.5	6.7
15	6.6E-04	9.2E-04	9.8E-04	1.1E-03	1.2E-03	1.3E-03	1.5E-03	1.9E-03	2.8E-03	4.4E-03	6.2E-03	7.6E-03	1.3E-02	1.1E-02	3.4E-02	1.9E-02
	273	274	274	274	275	275	276	277	279	279	281	284	288	296	315	0
	50.1	46.8	43.5	40.1	36.8	33.5	30.2	26.9	23.6	20.3	17.0	13.7	10.5	7.5	4.7	3.3
16	3.3E-04	7.3E-04	9.9E-04	1.1E-03	1.2E-03	1.6E-03	2.9E-03	2.6E-03	2.9E-03	3.4E-03	4.1E-03	5.4E-03	7.3E-03	1.0E-02	1.5E-02	1.0E-02
	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	0
	50.0	46.7	43.3	40.0	36.7	33.3	30.0	26.7	23.3	20.0	16.7	13.3	10.0	6.7	3.3	0.0

Residual Dose (rem/h) from Ground Contamination Estimated for 0000Z May 7, 1986, for the Northwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

		i coordinate of the grid points															
Y		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
15	9.0E-04	9.4E-04	1.1E-03	5.2E-03	1.0E-02	1.5E-02	1.3E-02	5.6E-03	7.8E-03	7.7E-03	3.3E-03	1.5E-02	1.7E-02	1.0E-02	1.0E-02	2.4E-02	
	266	265	265	265	264	264	263	262	261	260	259	255	251	243	225	190	
	50.1	46.8	43.5	40.1	36.8	33.5	30.2	26.9	23.6	20.3	17.0	13.7	10.3	7.5	4.7	2.2	
14	8.6E-04	1.1E-03	3.9E-03	1.2E-02	1.4E-02	1.5E-02	5.8E-03	3.7E-03	4.8E-03	5.3E-03	6.9E-03	6.3E-03	8.2E-03	1.1E-02	3.9E-02	2.7E-02	
	262	261	261	260	259	258	257	255	254	251	248	243	236	225	206	180	
	50.4	47.1	43.8	40.5	37.2	34.0	30.7	27.5	24.2	21.1	18.0	14.9	12.0	9.4	7.5	6.7	
13	1.5E-03	2.3E-03	8.0E-03	1.4E-02	1.4E-02	9.7E-03	3.4E-03	3.0E-03	3.2E-03	3.7E-03	4.5E-03	5.9E-03	7.6E-03	2.1E-02	1.9E-02	1.7E-02	
	258	257	257	255	254	253	251	249	246	243	239	233	225	213	198	180	
	51.0	47.7	44.5	41.2	38.0	34.8	31.6	28.5	25.4	22.4	19.4	16.7	14.1	12.0	10.2	10.0	
12	3.5E-03	5.1E-03	7.2E-03	5.4E-03	2.9E-03	2.9E-03	1.9E-03	2.1E-03	2.4E-03	3.0E-03	3.9E-03	5.1E-03	9.8E-03	1.9E-02	1.4E-02	1.2E-02	
	255	254	252	251	250	248	246	243	240	236	231	225	219	206	194	180	
	51.7	48.5	45.3	42.2	39.0	35.9	32.8	29.8	26.9	24.0	21.3	18.9	16.7	14.7	13.7	13.0	
11	2.2E-03	1.9E-03	1.5E-03	1.4E-03	1.4E-03	1.5E-03	1.6E-03	1.9E-03	2.2E-03	2.8E-03	3.5E-03	5.1E-03	1.3E-02	1.2E-02	1.3E-02	1.0E-02	
	251	250	248	247	245	243	240	237	234	230	225	218	210	201	191	180	
	52.7	49.6	46.4	43.3	40.3	37.3	34.3	31.4	28.7	26.0	23.6	21.3	19.4	18.0	17.0	16.7	
10	1.1E-03	1.1E-03	1.1E-03	1.2E-03	1.3E-03	1.4E-03	1.5E-03	1.7E-03	2.1E-03	2.5E-03	3.3E-03	8.1E-03	7.3E-03	9.2E-03	9.8E-03	9.8E-03	
	248	246	245	243	241	239	236	233	229	225	219	213	206	198	189	180	
	53.9	50.8	47.7	44.7	41.8	38.9	36.1	33.3	30.7	28.3	26.0	24.0	22.4	21.1	20.2	20.0	
9	9.9E-04	1.0E-03	1.1E-03	1.1E-03	1.2E-03	1.3E-03	1.5E-03	1.7E-03	2.0E-03	2.4E-03	4.6E-03	7.1E-03	4.3E-03	5.7E-03	7.5E-03	7.2E-03	
	244	243	241	239	237	235	232	228	225	220	215	209	203	195	188	180	
	55.2	52.2	49.2	46.3	43.5	40.7	38.0	35.4	33.0	30.7	28.7	26.9	25.4	24.3	23.6	23.3	
8	9.5E-04	1.0E-03	1.1E-03	1.1E-03	1.2E-03	1.3E-03	1.5E-03	1.6E-03	1.9E-03	2.6E-03	5.3E-03	3.9E-03	4.0E-03	6.3E-03	5.3E-03	6.0E-03	
	241	240	238	236	235	231	228	225	221	216	212	206	200	194	187	180	
	56.7	53.7	50.9	48.1	45.3	42.7	40.1	37.7	35.4	33.3	31.4	29.8	28.5	27.5	26.9	26.7	
7	9.4E-04	9.9E-04	1.1E-03	1.1E-03	1.2E-03	1.3E-03	1.4E-03	1.5E-03	1.9E-03	3.1E-03	3.0E-03	2.9E-03	3.7E-03	5.8E-03	4.3E-03	5.0E-03	
	239	237	235	233	230	228	225	221	217	213	209	203	198	192	186	180	
	58.0	55.5	52.7	50.0	47.4	44.8	42.4	40.1	38.0	36.1	34.3	32.8	31.6	30.7	30.2	30.0	
6	9.3E-04	9.9E-04	1.1E-03	1.1E-03	1.2E-03	1.3E-03	1.4E-03	1.6E-03	1.9E-03	2.3E-03	2.3E-03	2.7E-03	3.4E-03	5.2E-03	3.7E-03	4.2E-03	
	236	234	232	230	227	225	221	218	214	210	206	201	196	191	185	180	
	60.1	57.3	54.7	52.1	49.6	47.1	44.8	42.7	40.7	38.9	37.3	35.9	34.8	34.0	33.5	33.3	
5	9.3E-04	9.9E-04	1.1E-03	1.1E-03	1.2E-03	1.3E-03	1.4E-03	1.5E-03	1.7E-03	2.0E-03	2.2E-03	2.4E-03	3.1E-03	4.4E-03	3.2E-03	3.6E-03	
	233	231	229	227	225	222	219	216	212	208	204	199	195	190	185	180	
	62.0	59.3	56.8	54.3	51.9	49.6	47.4	45.3	43.5	41.8	40.3	39.0	38.0	37.3	36.8	36.7	
4	9.3E-04	9.9E-04	1.1E-03	1.1E-03	1.2E-03	1.3E-03	1.4E-03	1.6E-03	1.7E-03	1.9E-03	2.1E-03	2.3E-03	3.1E-03	3.7E-03	2.9E-03	3.2E-03	
	231	229	227	225	222	219	216	213	210	206	202	198	194	189	184	180	
	64.0	61.5	59.0	56.6	54.3	52.1	50.0	48.1	46.3	44.7	43.3	42.2	41.2	40.5	40.1	40.0	
3	9.2E-04	9.9E-04	1.1E-03	1.1E-03	1.2E-03	1.3E-03	1.4E-03	1.6E-03	1.7E-03	1.8E-03	2.0E-03	2.1E-03	3.1E-03	3.1E-03	2.7E-03	3.0E-03	
	229	227	225	222	220	217	214	211	208	204	201	197	192	188	184	180	
	66.2	63.7	61.3	59.0	56.8	54.7	52.7	50.9	49.2	47.7	46.4	45.3	44.5	43.9	43.5	43.3	
2	9.1E-04	9.9E-04	1.0E-03	1.1E-03	1.2E-03	1.3E-03	1.4E-03	1.5E-03	1.7E-03	1.8E-03	1.9E-03	2.0E-03	2.9E-03	2.9E-03	2.6E-03	2.8E-03	
	226	225	222	220	218	215	212	209	206	203	199	195	192	188	184	180	
	68.4	66.0	63.7	61.5	59.3	57.3	55.5	53.7	52.2	50.8	49.6	48.5	47.7	47.1	46.8	46.7	
1	9.0E-04	9.6E-04	1.0E-03	1.1E-03	1.2E-03	1.3E-03	1.4E-03	1.5E-03	1.6E-03	1.7E-03	1.7E-03	1.7E-03	2.4E-03	2.2E-03	2.2E-03	2.4E-03	
	225	223	220	218	216	213	210	208	205	201	199	194	191	187	183	180	
	70.7	68.4	66.2	64.0	62.0	60.1	58.3	56.7	55.2	53.9	52.7	51.7	51.0	50.4	50.1	50.0	

Residual Dose (rem/h) from Ground Contamination Estimated for 0000Z May 7, 1986, for the Southwest Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

x coordinate of the grid points																
Y	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
15	3.0E-02	2.9E-02	1.1E-02	9.9E-03	6.2E-03	6.4E-03	4.8E-03	3.5E-03	2.6E-03	2.0E-03	1.5E-03	1.2E-03	1.0E-03	8.7E-04	7.4E-04	6.4E-04
	130	135	116	108	104	101	99	99	97	96	95	95	94	94	94	93
	21.5	4.7	7.5	10.5	10.7	17.0	20.0	23.6	26.9	30.2	33.5	36.8	40.1	43.5	46.8	50.1
14	2.7E-02	1.7E-02	1.7E-02	1.2E-02	7.7E-03	6.0E-03	4.5E-03	3.4E-03	2.6E-03	2.0E-03	1.6E-03	1.3E-03	1.1E-03	9.3E-04	8.0E-04	6.9E-04
	180	155	135	123	116	111	108	105	104	102	101	100	99	98	98	97
	6.7	7.5	9.4	12.0	14.9	18.0	21.1	24.3	27.5	30.7	34.0	37.3	40.6	43.8	47.1	50.4
13	1.3E-02	1.7E-02	1.0E-02	9.9E-03	7.0E-03	5.5E-03	4.3E-03	3.3E-03	2.6E-03	2.1E-03	1.7E-03	1.4E-03	1.2E-03	1.0E-03	8.5E-04	7.3E-04
	190	161	146	135	126	120	116	113	110	108	106	105	104	102	102	101
	10.0	10.5	12.0	14.1	16.7	19.4	22.4	25.4	28.5	31.6	34.8	38.0	41.2	44.5	47.7	51.0
12	1.2E-02	1.6E-02	9.6E-03	7.5E-03	6.3E-03	5.1E-03	4.0E-03	3.2E-03	2.6E-03	2.1E-03	1.8E-03	1.5E-03	1.2E-03	1.1E-03	9.0E-04	7.9E-04
	180	165	153	143	135	128	123	119	116	113	111	109	108	107	105	104
	12.0	12.7	14.9	16.7	18.9	21.3	24.0	26.9	29.8	32.8	35.9	39.0	42.2	45.3	48.5	51.7
11	1.0E-02	1.3E-02	1.0E-02	6.5E-03	5.6E-03	4.6E-03	3.8E-03	3.1E-03	2.6E-03	2.2E-03	1.8E-03	1.5E-03	1.3E-03	1.1E-03	9.3E-04	8.2E-04
	180	168	158	149	141	135	129	125	122	119	116	114	112	111	109	108
	16.7	17.0	18.9	19.4	21.3	23.6	26.0	28.7	31.4	34.3	37.3	40.3	43.3	46.4	49.5	52.7
10	9.8E-03	1.0E-02	1.0E-02	5.8E-03	4.9E-03	4.2E-03	3.6E-03	3.0E-03	2.5E-03	2.2E-03	1.8E-03	1.6E-03	1.3E-03	1.2E-03	9.7E-04	8.5E-04
	180	170	161	153	146	140	135	130	126	123	120	118	116	114	113	111
	20.0	20.3	21.1	22.4	24.0	26.0	28.3	30.7	33.3	36.1	38.9	41.8	44.7	47.7	50.8	53.9
9	7.2E-03	8.5E-03	7.6E-03	5.3E-03	4.3E-03	3.8E-03	3.2E-03	2.9E-03	2.5E-03	2.2E-03	1.9E-03	1.6E-03	1.4E-03	1.2E-03	1.0E-03	8.8E-04
	180	171	164	156	150	144	139	135	131	127	124	122	120	118	116	115
	23.5	23.6	24.3	25.4	26.9	28.7	30.7	33.0	35.4	38.0	40.7	43.5	46.3	49.2	52.2	55.2
8	6.0E-03	7.0E-03	5.8E-03	6.3E-03	3.9E-03	3.5E-03	3.1E-03	2.8E-03	2.4E-03	2.1E-03	1.9E-03	1.6E-03	1.4E-03	1.2E-03	1.0E-03	9.0E-04
	180	172	165	159	153	147	143	138	135	131	128	126	123	121	119	118
	26.7	26.9	27.5	28.5	29.8	31.4	33.3	35.4	37.7	40.1	42.7	45.3	48.1	50.9	53.7	56.7
7	5.0E-03	5.7E-03	4.7E-03	5.4E-03	3.5E-03	3.2E-03	2.9E-03	2.6E-03	2.3E-03	2.1E-03	1.8E-03	1.6E-03	1.4E-03	1.2E-03	1.1E-03	9.2E-04
	180	173	167	161	156	150	146	142	138	135	131	129	126	124	122	120
	30.0	30.2	30.7	31.6	32.8	34.3	36.1	38.0	40.1	42.4	44.8	47.4	50.0	52.7	55.5	58.3
6	4.2E-03	4.7E-03	4.1E-03	3.8E-03	2.4E-03	2.9E-03	2.7E-03	2.5E-03	2.3E-03	2.0E-03	1.9E-03	1.6E-03	1.4E-03	1.2E-03	1.1E-03	9.3E-04
	180	174	168	163	158	153	149	145	141	138	135	132	129	127	125	123
	32.7	33.5	34.0	34.8	35.9	37.3	38.9	40.7	42.7	44.9	47.1	49.6	52.1	54.7	57.5	60.1
5	3.6E-03	3.7E-03	3.7E-03	3.0E-03	3.1E-03	2.9E-03	2.6E-03	2.4E-03	2.2E-03	2.0E-03	1.8E-03	1.6E-03	1.4E-03	1.2E-03	1.1E-03	9.3E-04
	190	174	169	164	160	155	151	147	143	140	137	135	132	130	128	126
	36.7	36.8	37.3	38.0	39.0	40.3	41.8	43.5	45.3	47.4	49.6	51.9	54.3	56.8	59.3	62.0
4	3.3E-03	3.2E-03	3.4E-03	2.9E-03	2.7E-03	2.6E-03	2.4E-03	2.3E-03	2.1E-03	1.9E-03	1.7E-03	1.6E-03	1.4E-03	1.2E-03	1.1E-03	9.3E-04
	180	175	173	165	161	157	153	149	146	143	140	137	135	132	130	128
	40.0	40.1	40.6	41.2	42.2	43.3	44.7	46.3	48.1	50.0	52.1	54.3	56.6	59.0	61.5	64.0
3	3.0E-03	2.9E-03	3.2E-03	2.6E-03	2.5E-03	2.4E-03	2.3E-03	2.2E-03	2.0E-03	1.9E-03	1.7E-03	1.6E-03	1.3E-03	1.2E-03	1.0E-03	9.2E-04
	180	175	171	167	162	158	155	151	148	145	142	139	137	135	132	130
	43.5	43.5	43.8	44.5	45.3	46.4	47.7	49.2	50.9	52.7	54.7	56.8	59.0	61.3	63.7	66.2
2	2.3E-03	2.7E-03	2.9E-03	2.5E-03	2.4E-03	2.3E-03	2.2E-03	2.1E-03	1.9E-03	1.8E-03	1.6E-03	1.5E-03	1.3E-03	1.2E-03	1.0E-03	9.0E-04
	180	175	171	167	164	160	156	153	150	147	144	141	139	137	135	133
	46.7	46.8	47.1	47.7	48.5	49.5	50.8	52.2	53.7	55.5	57.3	59.3	61.5	63.7	66.0	68.4
1	2.4E-03	2.4E-03	2.6E-03	2.3E-03	2.2E-03	2.2E-03	2.1E-03	2.0E-03	1.8E-03	1.7E-03	1.6E-03	1.4E-03	1.3E-03	1.1E-03	9.9E-04	9.7E-04
	180	176	172	168	165	161	158	154	151	149	146	143	141	139	136	135
	50.0	50.1	50.4	51.0	51.7	52.7	53.9	55.2	56.7	58.3	60.1	62.0	64.0	66.2	68.4	70.7

Residual Dose (rem/h) from Ground Contamination Estimated for 0000Z May 7, 1986, for the Southeast Quadrant. Bearings are in Degrees and Distances are in Miles from Chernobyl.

DISTRIBUTION

No. of
Copies

OFFSITE

- 2 DOE/Office of Scientific and
Technical Information

ONSITE

DOE Richland Operations Office

E. C. Norman

- 16 Pacific Northwest Laboratory

W. E. Davis
J. W. Falco
J. M. Hales
P. C. Hays
J. M. Hubbe
E. L. Owczarski
J. V. Ramsdell
R. L. Skaggs
J. A. Stottlemire
R. E. Wildung
Publishing Coordination
Technical Report Files (5)