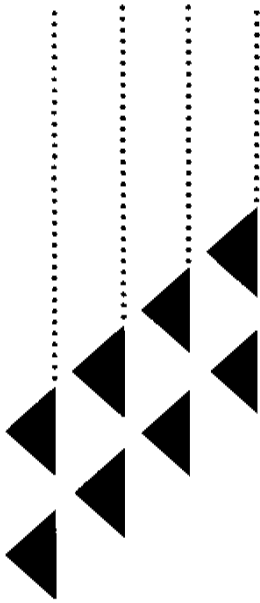




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Occupational Radiation Exposures in Canada – 1994



Occupational Radiation Exposures in Canada – 1994

Environmental Health Directorate
Health Protection Branch

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Abstract

This is the seventeenth in a series of annual reports on Occupational Radiation Exposures in Canada. The information is derived from the National Dose Registry of the Radiation Protection Bureau, Health Canada. As in the past, this report presents the following data by occupation: average yearly whole body doses by region, dose distributions, and variations of the average doses with time.

This document was prepared by Dr. W.N. Sont and Dr. J.P. Ashmore of the Occupational Radiation Hazards Division, Radiation Protection Bureau. Acknowledgments are extended to Mr. B. Davies for his assistance.

Table of Contents

	Page
Abstract	2
Introduction	5
General Comments	5
Overall Dose Statistics	6
Dose Statistics by Occupation	6
References	7
Figures	
1. Variation of Average Whole Body Dose Over 20 Years	9
2. Average Whole Body Dose by Year (Selected Job Categories)	10
3. Yearly Whole Body Doses over 50 mSv	11
Tables	
1. Number of Monitored Workers by Region – Five-Year Summary	12
2. Average Whole Body Dose in mSv (all doses) by Job Category and Region – 1994	13
3. Ninth Decile Dose Summary by Job Category and Region – 1994	15
4. Statistical Data by Job Category	17

Introduction

This report provides statistics on occupational radiation exposures of monitored workers in Canada. The information is based upon the data in the National Dose Registry (NDR) maintained by the Radiation Protection Bureau of Health Canada⁽¹⁾. The Registry is a centralized record-keeping system containing dose information on all monitored workers in Canada. It includes records from the National Dosimetry Services (NDS), as well as data submitted by nuclear power generating stations, Atomic Energy of Canada Ltd. and uranium mines. About 80 percent of the records are from the NDS.

Information for input into the NDR is received in a number of different physical forms. Data from the NDS are fed directly from the dosimeter reading stations into a computer, where they are processed, reported and entered into the NDR files. Most other dose records are submitted to the Registry on magnetic tape or diskettes, though a few organizations submit records on paper. The information is stored in the NDR in three physical forms. Data requiring continual use, such as current and cumulative dose information, are stored on disk, while those requiring less frequent use are stored on magnetic tape. Historical records are stored on microfilm.

The types of statistics presented are similar to those in previous reports⁽²⁻¹⁷⁾. The report consists of statistical data summarized in graphical and tabular form, and a narrative describing the dose record characteristics necessary for the interpretation of the statistics. Separate reports of the detailed analysis of the data are published periodically by the NDR.

The tabulated data are divided into two major parts: (1) overall dose statistics and (2) dose statistics by occupation. The overall statistics allow the comparison of regions and occupations in Canada. More detailed information for each occupation can be found in Table 4.

General Comments

All doses are in International System (SI) units and presented to the nearest hundredth of a millisievert (1 mSv = 100 mrem). Unless indicated otherwise, whole body external doses less than 0.20 mSv are recorded as zero. A dash (-) in the tables indicates that no records exist for a given job category and region, whereas a zero (0) indicates that records are avail-

able but show no positive value in the year. The words “dose” and “exposure” are used interchangeably in this report and doses may include committed dose equivalents as well as dose equivalents.

Doses for reactor workers include external whole body and tritium dose equivalents. The radon daughter exposure estimates for uranium mine workers are expressed in “Working Level Months” (WLM). One WLM is defined as the exposure to the lungs resulting from the inhalation of air containing one working level of radon daughters for 170 hours. The WLM is determined from the concentration of radon daughters in air samples taken from selected locations in the mine and the individual’s occupancy factor at each of the locations.

Doses reported by the NDS are entered into the NDR at the time of processing. The 1994 statistics include doses reported for dosimeters issued for use in 1994 and returned by August 1995. However, doses recorded on dosimeters issued in 1993 which may have been worn in 1994 are not included in these statistics. As the statistics are determined in the same manner each year, the annual dose figures are based on a 12-month period, not necessarily the strict calendar year.

Quarterly doses reported by outside organizations such as nuclear power generating stations and uranium mines are included to the extent that they have been received. The doses are representative of the calendar year only if the fourth quarter records have been received by the first of April of the following year. When statistics are based on partial data, the fact is indicated in the tables.

Job category designations are based on a standard list provided by the Registry and are updated when the Registry is notified. In the case of the NDS, the job category is selected from the standard list by the individual or the organization. Nuclear reactor organizations have their own job classification schemes, which are translated into the Registry’s standardized list prior to submission of the records. The detailed breakdown for uranium mine workers has not yet been fully implemented. As a result, a single annual dose, which includes all monitored workers in the uranium mining industry, is quoted in the tables.

Overall Dose Statistics

The overall dose statistics are presented in Tables 1 to 3 and Figures 1 to 3. Arithmetic averages including both exposed and unexposed workers are used throughout this section.

Table 1 shows the number of monitored workers by region for the past five years. Table 2 shows the distribution of the average whole body dose for the year by job category and provides a breakdown by provinces, territories and the entire country.

Table 3 shows for each job category the ninth decile dose and the number of whole body doses in excess of the ninth decile by region. To ensure that the ninth decile doses are based only on doses of occupationally exposed workers, all annual doses less than 0.5 mSv have been excluded from the computation. A zero in the ninth decile column of the table indicates that all annual doses for that job category are below 0.5 mSv.

The ninth decile of this truncated dose distribution is determined by plotting the percentage of workers with a given whole body dose in mSv as the ordinate, and the whole body dose as the abscissa. Ninety percent of the members of the distribution will have doses less than the ninth decile while the upper 10 percent will have doses greater than or equal to this value.

Figure 1 shows the variation over 20 years of the average annual whole body dose for all workers, while Figure 2 shows the variation for selected job categories. The variation in the number of annual whole body doses greater than or equal to 50 mSv per 1000 workers is shown in Figure 3.

Dose Statistics by Occupation

Table 4 provides a one-page detailed statistical summary for each job category, with an index at the beginning.

Each page consists of two tables, A and B, and a histogram. Table A provides statistical data for the current year as well as the previous year. Arithmetic averages are used throughout this section. The first average includes all monitored workers in the job category. The second excludes those workers with zero dose (less than 0.20 mSv) while the third excludes those with either zero dose or an annual dose greater than or equal to 30 mSv. The number of monitored workers with zero doses and those with annual doses greater than or equal to 30 mSv can be determined from Table B.

The ninth deciles (explained in the previous section) are summarized by occupation and region in Table 3. The number of workers whose doses were below 0.5 mSv and who have been excluded from the determination of the ninth decile can be obtained from Table B.

The relative frequency of exposures greater than 5 mSv is the number of annual doses exceeding 5 mSv divided by the number of workers in that job category. This relative frequency can be used to estimate the probability that a worker in a particular job category will receive an annual whole body dose in excess of 5 mSv.

The percentage contribution of each job category to the total collective dose is provided in the last line of the table. As some contributions to the total collective dose are very small, only those greater than or equal to one percent are shown.

The histogram summarizes average doses for the last 10 years. Since the range of average doses varies considerably from one job category to another, the scale of the ordinate has been chosen to demonstrate best the annual variation in doses. Annual doses in the graph include both zero doses and doses greater than or equal to 30 mSv.

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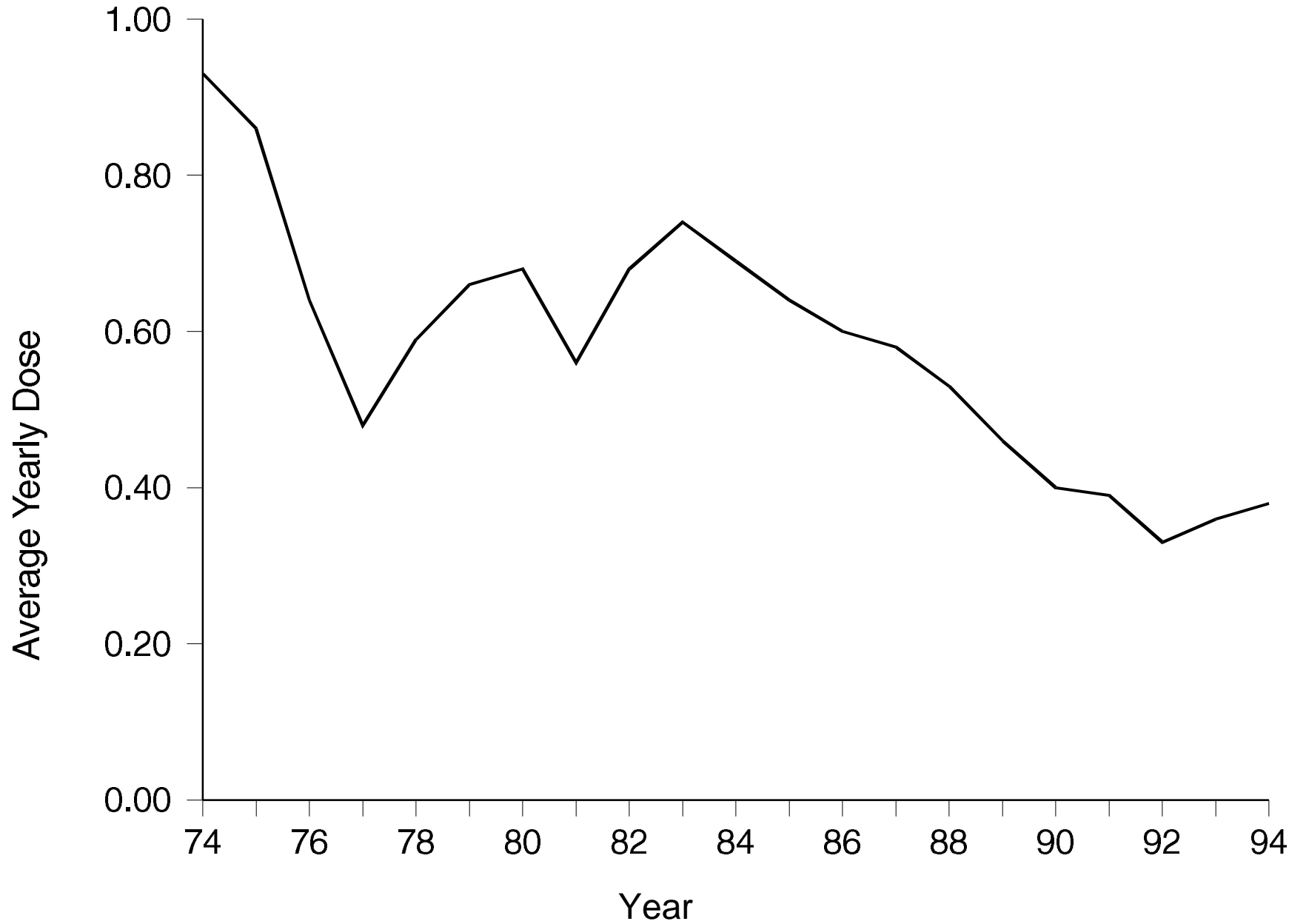


Figure 1. Variation of Average Whole Body Dose Over 20 Years



Figure 2. Average Whole Body Dose by Year (Selected Job Categories)

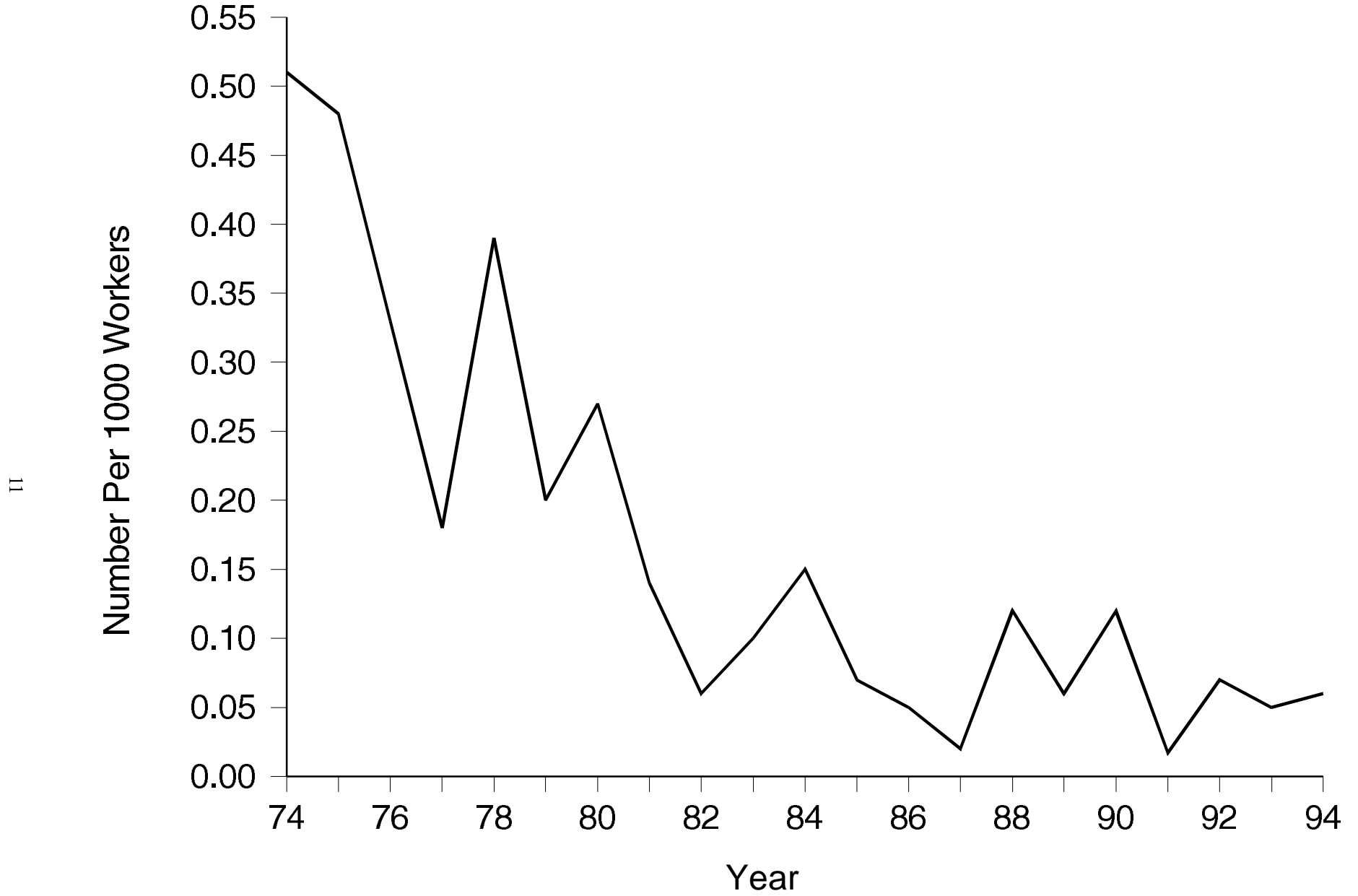


Figure 3. Yearly Whole Body Doses over 50 mSv

Table 1
Number of Monitored Workers by Region – Five-year Summary

Region	Number of Workers				
	1994	1993	1992	1991	1990
Newfoundland	1 607	1 593	1 526	1 566	1 434
Prince Edward Island	322	345	312	343	364
Nova Scotia	3 293	3 456	3 228	3 272	3 304
New Brunswick	2 709	2 825	2 784	2 563	2 375
Quebec	25 307	25 232	23 917	23 317	22 891
Ontario	57 232	59 463	56 023	60 556	61 850
Manitoba	4 930	4 977	4 830	4 853	4 809
Saskatchewan	5 375	5 166	4 891	4 892	4 568
Alberta	10 122	10 029	10 013	10 409	10 386
British Columbia	8 995	9 263	8 779	8 754	8 517
Northwest Territories	275	332	301	282	290
Yukon	125	152	121	111	97
Total	120 292	(**) 122 833	(*) 116 725	120 918	120 885

(*) At the time of analysis, data for Atomic Energy of Canada Limited were unavailable.

(**) At the time of analysis, part of the data for Hydro Québec were unavailable.

Table 2
Average Whole Body Dose in mSv (all doses) by Job Category and Region – 1994

Job Category													Region
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Yukon	Canada
Administrative													
Administrator	0.05	—	0.00	0.00	0.21	0.39	0.00	—	0.09	0.07	—	—	0.34
Office Staff	0.01	0.00	0.01	0.02	0.10	0.18	0.03	0.02	0.03	0.01	0.00	0.00	0.13
Safety Officer	0.00	—	0.02	0.13	0.06	0.24	0.01	0.00	1.33	0.00	—	—	0.16
Industrial and Research													
Instructor	0.13	—	0.00	0.15	0.03	0.23	0.45	0.00	0.16	0.04	0.00	—	0.16
Instrument Technician	0.11	—	0.05	0.10	0.11	0.46	0.07	0.11	0.90	0.53	—	—	0.36
Laboratory Technician	0.03	0.17	0.14	0.08	0.90	0.22	0.05	0.06	0.09	0.51	—	—	0.32
Nuclear Fuel Processor	—	—	—	—	0.00	2.93	0.00	—	0.00	0.00	—	—	2.72
Radiographer (Industrial)	2.32	—	1.65	1.98	1.98	2.48	0.55	2.94	6.57	3.02	—	—	3.56
Scientist/Engineer (Field)	0.31	—	0.27	0.22	0.21	0.79	0.06	0.35	0.30	0.27	0.17	—	0.57
Scientist/Engineer (Lab)	0.04	0.50	0.11	0.04	0.06	0.14	0.04	0.09	0.21	0.06	—	—	0.10
Well Logger	0.00	—	0.10	—	0.00	0.87	0.00	0.60	0.84	0.28	0.50	—	0.81
Medical													
Chiropractor	—	—	0.00	0.10	0.03	0.08	0.04	0.01	0.03	0.09	—	—	0.05
Dental Hygienist	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Dentist	0.00	0.00	0.01	0.13	0.00	0.02	0.00	0.00	0.01	0.01	0.02	0.00	0.01
Gynaecologist	0.00	—	0.00	—	0.03	0.06	0.03	—	—	0.35	—	—	0.06
Isotope Technician	2.28	1.97	0.98	1.30	1.76	1.21	0.81	1.58	0.76	0.91	—	0.00	1.28
Laboratory Technician	0.04	0.13	0.05	0.28	0.10	0.07	0.02	0.04	0.06	0.09	—	0.10	0.07
Medical Physicist	0.00	—	0.16	0.00	0.10	0.06	0.00	0.23	0.04	0.05	—	—	0.08
Nurse	0.04	0.01	0.13	0.14	0.06	0.06	0.03	0.04	0.10	0.07	0.00	0.03	0.06

Table 2 (cont'd)
Average Whole Body Dose in mSv (all doses) by Job Category and Region – 1994

Job Category													Region
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Yukon	Canada
Medical (cont'd)													
Physician	0.27	0.05	0.47	0.20	0.13	0.13	0.05	0.61	0.13	0.13	0.04	0.00	0.15
Rad. Tech. (Diagnostic)	0.08	0.10	0.12	0.08	0.10	0.08	0.07	0.06	0.09	0.09	0.02	0.10	0.09
Rad. Tech. (Therapeutic)	3.00	—	0.23	0.22	3.01	0.23	0.23	0.18	0.09	0.30	—	—	0.76
Radiologist (Diagnostic)	0.13	0.00	0.22	0.25	0.11	0.12	0.05	0.08	0.07	0.15	0.00	—	0.12
Radiologist (Therapeutic)	0.00	—	1.92	0.30	1.37	0.13	0.05	0.08	0.11	0.04	—	—	0.49
Veterinarian	0.04	0.10	0.10	0.11	0.03	0.09	0.03	0.04	0.06	0.07	—	0.35	0.06
Ward Aide/Orderly	0.04	0.15	0.03	0.05	0.07	0.08	0.00	0.06	0.02	0.04	0.00	0.00	0.07
Mine Workers													
Uranium Miner (External Gamma Dose)	—	—	—	0.00	0.35	1.52	—	1.11	—	—	—	—	1.27
Reactor Workers (By Function)													
Admin./Security/Janitor	—	—	—	0.10	0.06	0.19	—	—	—	—	—	—	0.17
Chem. and Rad. Control	—	—	—	0.89	1.45	2.19	—	—	—	—	—	—	2.03
Construction	—	—	—	0.01	0.02	3.02	—	—	—	—	—	—	2.78
Control Technician	—	—	—	—	0.34	0.00	—	—	—	—	—	—	0.34
Electrical Maintenance	—	—	—	0.76	0.17	1.51	—	—	—	—	—	—	1.40
Fuel Handling	—	—	—	3.53	1.38	8.22	—	—	—	—	—	—	6.41
General Maintenance	—	—	—	0.74	0.61	0.99	—	—	—	—	—	—	0.93
Health Physics	—	—	—	1.01	0.16	0.14	—	—	—	—	—	—	0.41
Mechanical Maintenance	—	—	—	2.68	1.55	3.47	—	—	—	—	—	—	3.30
Reactor Operations	—	—	—	0.99	0.99	1.87	—	—	—	—	—	—	1.77
Scientific/Professional	—	—	—	0.50	0.13	0.74	—	—	—	—	—	—	0.63
Training	—	—	—	0.20	0.37	0.04	—	—	—	—	—	—	0.22
Visitor	—	—	—	—	0.00	0.17	—	—	—	—	—	—	0.16
Overall	0.18	0.11	0.16	0.48	0.19	0.48	0.05	0.44	0.72	0.22	0.02	0.02	0.38

Table 3
Ninth Decile Dose Summary by Job Category and Region – 1994

Job Category	Number of Annual Doses in Excess of the Ninth Decile (*)												Ninth Decile (mSv)	
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Yukon		
Administrative														
Administrator	0	0	0	0	1	10	0	0	0	0	0	0	0	1.05
Office Staff	0	0	0	0	8	33	2	0	1	0	0	0	0	1.07
Safety Officer	0	0	0	0	0	0	0	0	1	0	0	0	0	5.30
Industrial and Research														
Instructor	0	0	0	0	0	13	0	0	9	3	0	0	0	3.25
Instrument Technician	0	0	0	0	0	1	0	0	0	0	0	0	0	4.30
Laboratory Technician	0	0	0	0	8	6	0	0	3	20	0	0	0	4.09
Nuclear Fuel Processor	0	0	0	0	0	14	0	0	0	0	0	0	0	7.73
Radiographer (Industrial)	0	0	2	2	9	15	0	2	76	7	0	0	0	16.40
Scientist/Engineer (Field)	0	0	0	0	1	29	0	1	0	1	0	0	0	4.20
Scientist/Engineer (Lab)	0	0	0	0	3	15	0	0	5	5	0	0	0	1.44
Well Logger	0	0	0	0	0	1	0	0	39	0	0	0	0	4.40
Medical														
Chiropractor	0	0	0	0	0	3	0	0	0	0	0	0	0	2.60
Dental Hygienist	0	0	0	0	0	1	0	0	0	0	0	0	0	3.45
Dentist	0	0	0	0	0	2	0	0	0	0	0	0	0	11.80
Gynaecologist	0	0	0	0	0	1	0	0	0	1	0	0	0	0.70
Isotope Technician	4	0	1	1	42	29	3	2	2	7	0	0	0	4.30
Laboratory Technician	0	0	0	0	5	5	0	0	0	1	0	0	0	2.78
Medical Physicist	0	0	0	0	0	0	0	1	0	0	0	0	0	1.72
Nurse	0	0	3	2	1	7	0	0	1	1	0	0	0	2.76
Physician	1	0	3	1	2	5	0	2	1	2	0	0	0	3.14

(*) For this table, only doses of at least 0.5 mSv are included in the calculation.

Table 3 (cont'd)
Ninth Decile Dose Summary by Job Category and Region – 1994

Job Category	Number of Annual Doses in Excess of the Ninth Decile (*)												Ninth Decile (mSv)
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Yukon	
Medical (cont'd)													
Rad. Tech. (Diagnostic)	1	0	0	1	14	21	2	4	5	2	0	0	2.60
Rad. Tech. (Therapeutic)	4	0	0	1	7	5	2	0	0	1	0	0	2.80
Radiologist (Diagnostic)	1	0	1	1	1	6	0	0	0	4	0	0	2.50
Radiologist (Therapeutic)	0	0	0	0	1	0	0	0	0	0	0	0	24.04
Veterinarian	0	0	1	0	1	5	0	0	0	0	0	0	2.31
Ward Aide/Orderly	0	0	0	0	5	1	0	0	0	0	0	0	3.34
Mine Workers													
Uranium Miner (External Gamma Dose)	0	0	0	0	0	33	0	36	0	0	0	0	5.51
Reactor Workers (By Function)													
Admin/Security/Janitor	0	0	0	0	0	27	0	0	0	0	0	0	4.03
Chem. and Rad. Control	0	0	0	0	0	18	0	0	0	0	0	0	12.95
Construction	0	0	0	0	0	53	0	0	0	0	0	0	15.98
Control Technician	0	0	0	0	2	0	0	0	0	0	0	0	4.03
Electrical Maintenance	0	0	0	0	0	52	0	0	0	0	0	0	5.89
Fuel Handling	0	0	0	0	0	13	0	0	0	0	0	0	15.87
General Maintenance	0	0	0	5	0	35	0	0	0	0	0	0	5.05
Health Physics	0	0	0	1	0	0	0	0	0	0	0	0	5.22
Mechanical Maintenance	0	0	0	13	0	77	0	0	0	0	0	0	8.57
Reactor Operations	0	0	0	2	2	90	0	0	0	0	0	0	6.92
Scientific/Professional	0	0	0	2	0	20	0	0	0	0	0	0	8.74
Training	0	0	0	0	1	0	0	0	0	0	0	0	5.43
Visitor	0	0	0	0	0	1	0	0	0	0	0	0	2.43

(*) For this table, only doses of at least 0.5 mSv are included in the calculation.

Table 4
Statistical Data by Job Category

	Page
Administrative	
Administrator	18
Office Staff	19
Safety Officer	20
Industrial and Research	
Instructor	21
Instrument Technician	22
Laboratory Technician	23
Nuclear Fuel Processor	24
Radiographer (Industrial)	25
Scientist/Engineer (Field)	26
Scientist/Engineer (Laboratory)	27
Well Logger	28
Medical	
Chiropractor	29
Dental Hygienist	30
Dentist	31
Gynaecologist	32
Isotope Technician	33
Laboratory Technician	34
Medical Physicist	35
Nurse	36
Physician	37
Radiological Technician (Diagnostic)	38
Radiological Technician (Therapeutic)	39
Radiologist (Diagnostic)	40
Radiologist (Therapeutic)	41
Veterinarian	42
Ward Aide/Orderly	43
Mine Workers	
Uranium Miner (External Gamma Dose)	44
Uranium Miner (Radon Daughter Exposure)	45
Reactor Workers (By Function)	
Administrator/Security/Janitor	46
Chemical and Radiation Control	47
Construction	48
Control Technician	49
Electrical Maintenance	50
Fuel Handling	51
General Maintenance	52
Health Physics	53
Mechanical Maintenance	54
Reactor Operations	55
Scientific/Professional	56
Training	57
Visitor	58

Table 4
Administrative – Administrator

Table A			Table B	
Dose Statistics	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.34	0.49	0.00 - 0.19	137
Average Dose (mSv) (Zero doses removed)	0.61	0.71	0.20 - 0.49	61
Average Dose (mSv) (Zero and high doses removed)	0.61	0.71	0.50 - 4.99	101
Ninth Decile Dose (mSv)	1.05	1.25	5.00 - 29.9	0
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	<1	<1	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

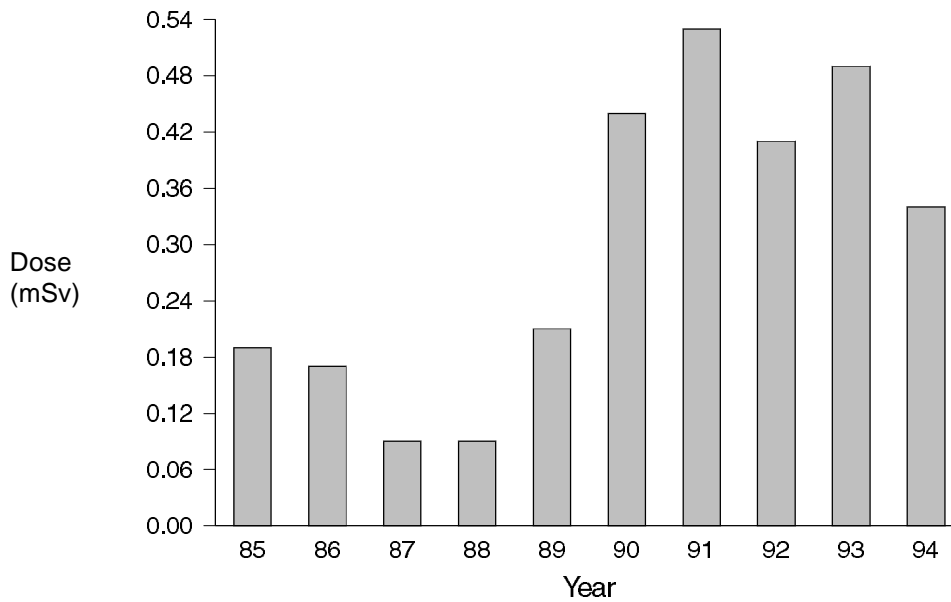


Table 4 (Cont'd)
Administrative – Office Staff

Table A			Table B	
Dose Statistics	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.13	0.18	0.00 - 0.19	3029
Average Dose (mSv) (Zero doses removed)	0.65	0.74	0.20 - 0.49	314
Average Dose (mSv) (Zero and high doses removed)	0.61	0.70	0.50 - 4.99	428
Ninth Decile Dose (mSv)	1.07	1.25	5.00 - 29.9	3
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	11	16	30.0 - 49.9	1
Percentage Contribution to Collective Dose (All doses)	1	2	≥ 50.0	0

Histogram of Average Annual Doses

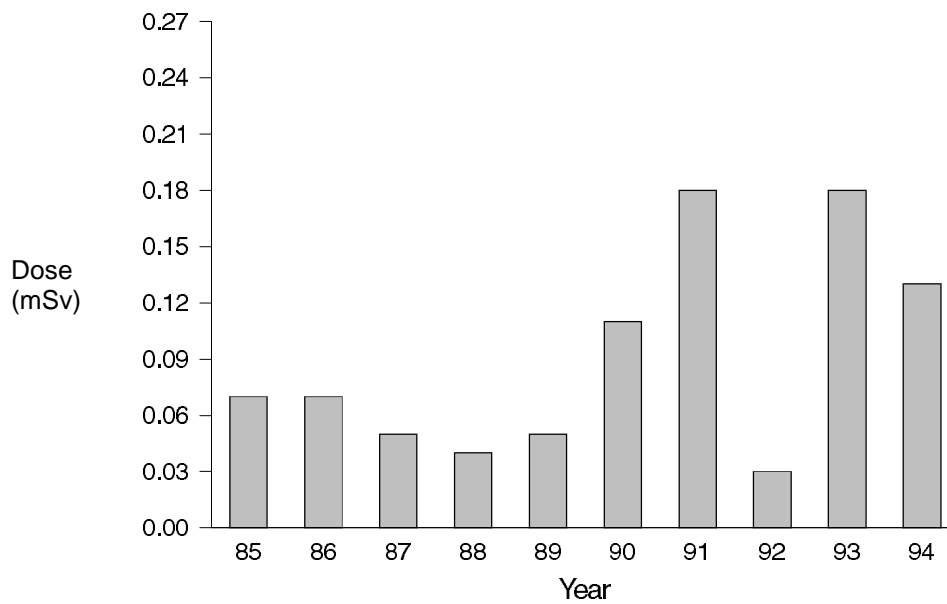


Table 4 (Cont'd)
Administrative – Safety Officer

Table A			Table B	
Dose Statistics	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.16	0.23	0.00 - 0.19	68
Average Dose (mSv) (Zero doses removed)	0.85	0.76	0.20 - 0.49	8
Average Dose (mSv) (Zero and high doses removed)	0.85	0.76	0.50 - 4.99	6
Ninth Decile Dose (mSv)	5.30	3.10	5.00 - 29.9	1
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	120	<1	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

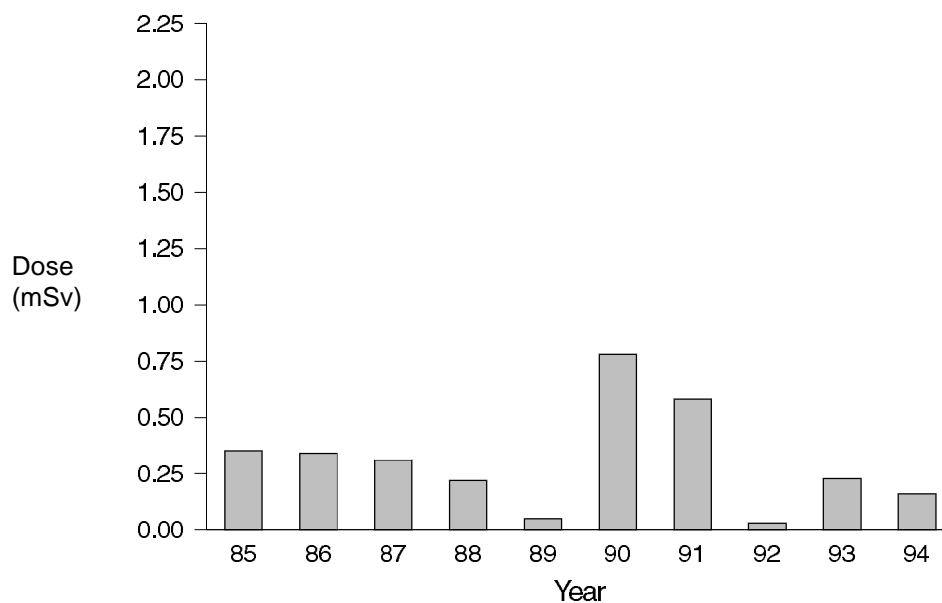


Table 4 (Cont'd)
Industrial and Research – Instructor

Table A			Table B	
Dose Statistics	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.16	0.04	0.00 - 0.19	104
Average Dose (mSv) (Zero doses removed)	0.73	0.28	0.20 - 0.49	15
Average Dose (mSv) (Zero and high doses removed)	0.73	0.28	0.50 - 4.99	14
Ninth Decile Dose (mSv)	3.25	*	5.00 - 29.9	0
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	<1	<1	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

(*) All doses are below 0.5 mSv in this category.

Histogram of Average Annual Doses

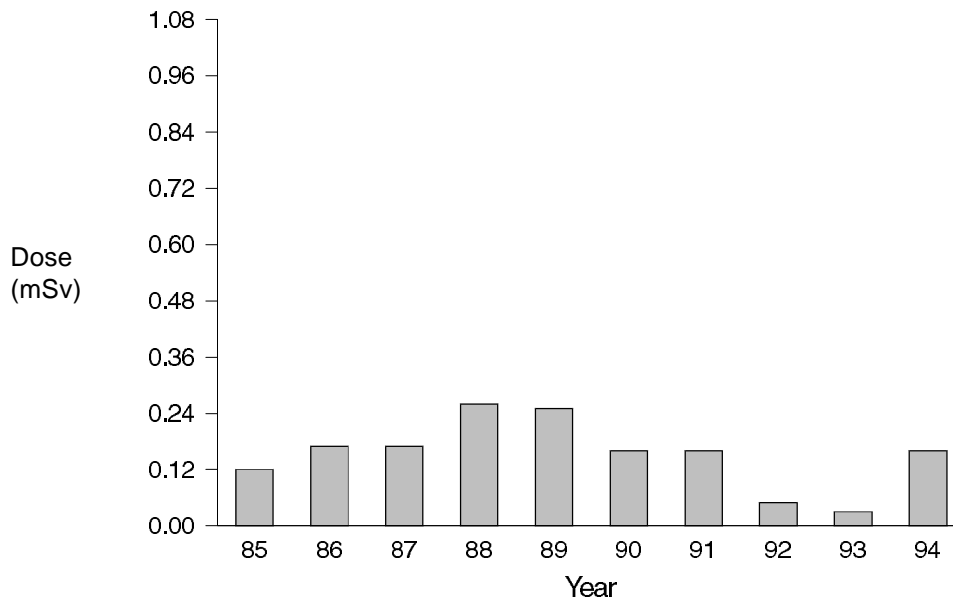


Table 4 (Cont'd)
Industrial and Research – Instrument Technician

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	0.37	0.36	0.00 - 0.19	1034
Average Dose (mSv) (Zero doses removed)	1.18	1.14	0.20 - 0.49	214
Average Dose (mSv) (Zero and high doses removed)	1.18	1.14	0.50 - 4.99	227
Ninth Decile Dose (mSv)	4.30	4.00	5.00 - 29.9	22
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	147	141	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	1	1	≥ 50.0	0

Histogram of Average Annual Doses

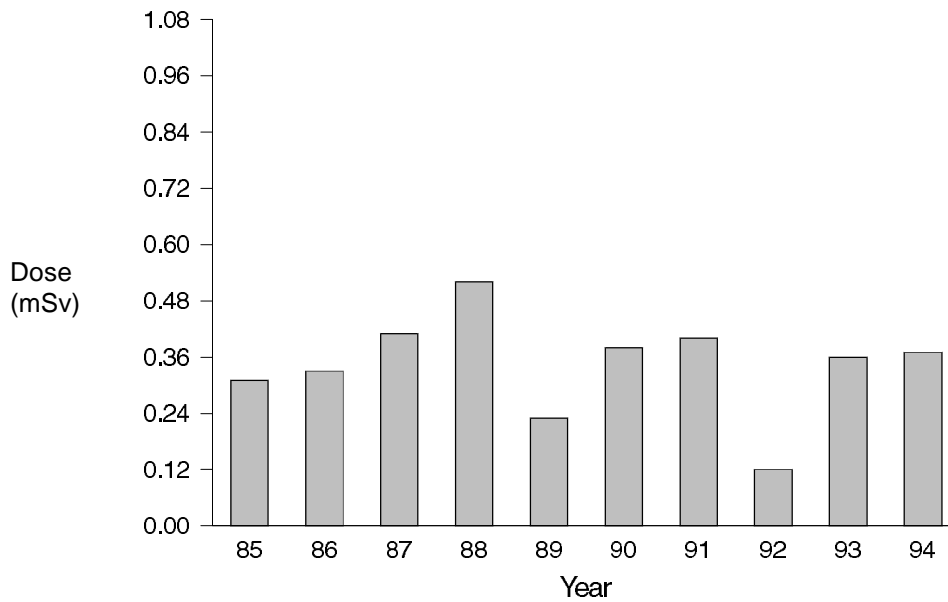


Table 4 (Cont'd)
Industrial and Research – Laboratory Technician

Table A			Table B	
Dose Statistics	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.32	0.20	0.00 - 0.19	3242
Average Dose (mSv) (Zero doses removed)	1.48	0.92	0.20 - 0.49	523
Average Dose (mSv) (Zero and high doses removed)	0.87	0.88	0.50 - 4.99	347
Ninth Decile Dose (mSv)	2.78	4.02	5.00 - 29.9	22
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	56	75	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	3	2	≥ 50.0	1

Histogram of Average Annual Doses

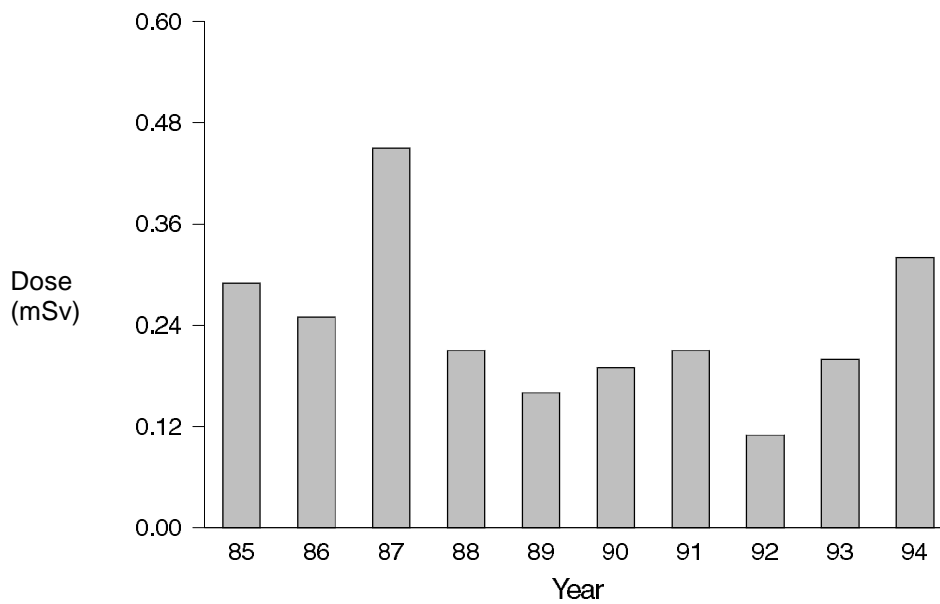


Table 4 (Cont'd)
Industrial and Research – Nuclear Fuel Processor

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	2.72	2.10	0.00 - 0.19	25
Average Dose (mSv) (Zero doses removed)	3.15	2.79	0.20 - 0.49	11
Average Dose (mSv) (Zero and high doses removed)	3.15	2.79	0.50 - 4.99	118
Ninth Decile Dose (mSv)	7.73	7.40	5.00 - 29.9	28
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	1538	1524	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	1	<1	≥ 50.0	0

Histogram of Average Annual Doses

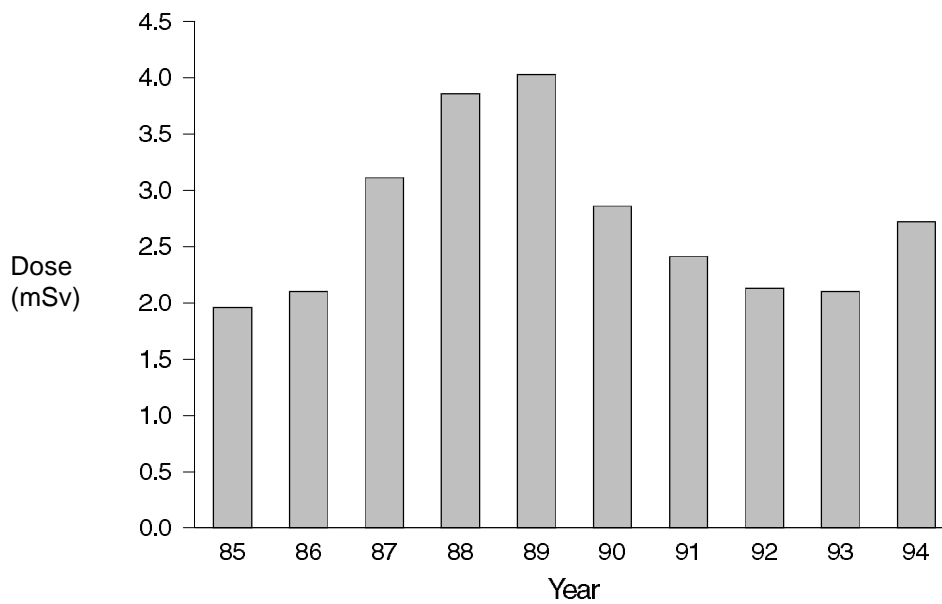


Table 4 (Cont'd)
Industrial and Research – Radiographer (Industrial)

Table A			Table B	
Dose Statistics	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	3.74	3.45	0.00 - 0.19	928
Average Dose (mSv) (Zero doses removed)	6.40	5.75	0.20 - 0.49	226
Average Dose (mSv) (Zero and high doses removed)	5.38	4.97	0.50 - 4.99	583
Ninth Decile Dose (mSv)	16.40	16.14	5.00 - 29.9	465
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	2204	2142	30.0 - 49.9	22
Percentage Contribution to Collective Dose (All doses)	18	17	≥ 50.0	4

Histogram of Average Annual Doses

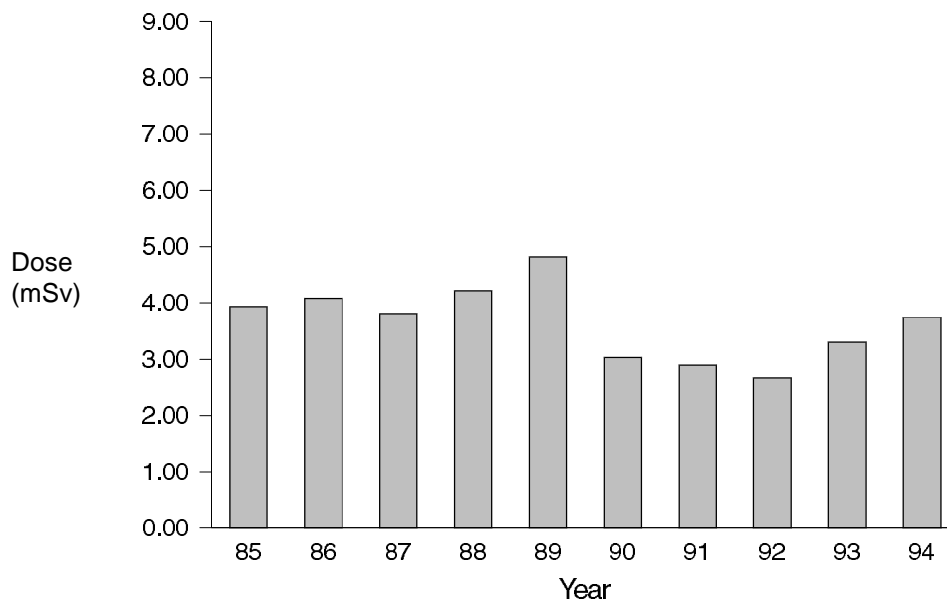


Table 4 (Cont'd)
Industrial and Research – Scientist/Engineer (Field)

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	0.57	1.28	0.00 - 0.19	584
Average Dose (mSv) (Zero doses removed)	1.20	2.68	0.20 - 0.49	200
Average Dose (mSv) (Zero and high doses removed)	1.20	1.35	0.50 - 4.99	294
Ninth Decile Dose (mSv)	4.20	3.94	5.00 - 29.9	25
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	227	244	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	1	3	≥ 50.0	0

Histogram of Average Annual Doses

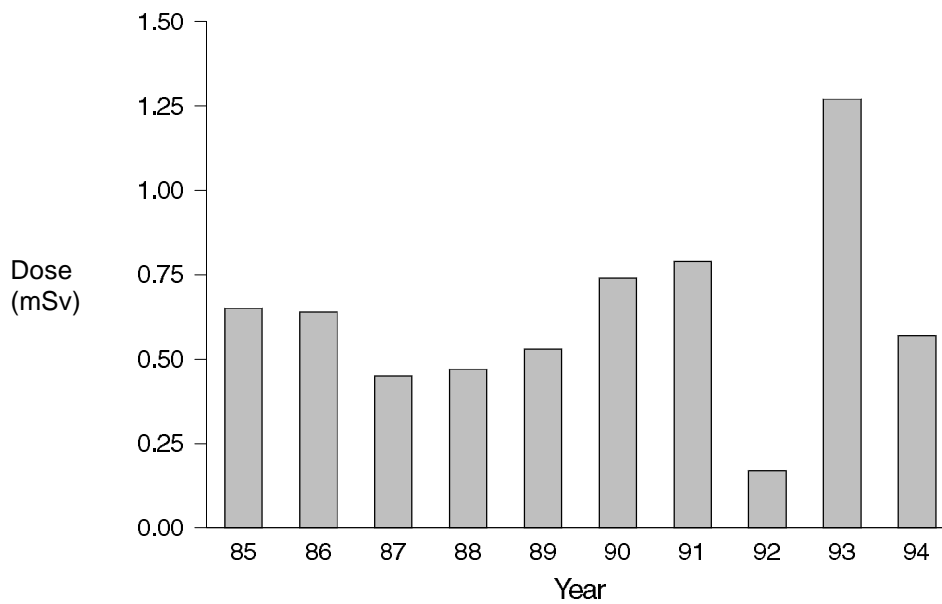


Table 4 (Cont'd)
Industrial and Research – Scientist/Engineer (Laboratory)

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.10	0.12	0.00 - 0.19	3555
Average Dose (mSv) (Zero doses removed)	0.59	0.62	0.20 - 0.49	450
Average Dose (mSv) (Zero and high doses removed)	0.55	0.62	0.50 - 4.99	279
Ninth Decile Dose (mSv)	1.44	1.76	5.00 - 29.9	4
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	12	14	30.0 - 49.9	1
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

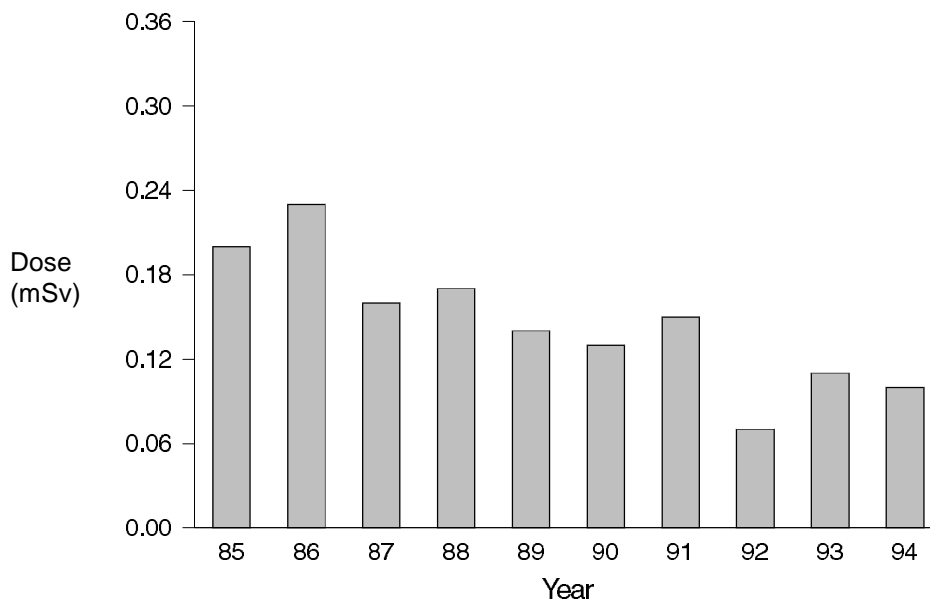


Table 4 (Cont'd)
Industrial and Research – Well Logger

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.82	0.79	0.00 - 0.19	503
Average Dose (mSv) (Zero doses removed)	1.60	1.42	0.20 - 0.49	135
Average Dose (mSv) (Zero and high doses removed)	1.60	1.42	0.50 - 4.99	357
Ninth Decile Dose (mSv)	4.40	4.02	5.00 - 29.9	32
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	312	240	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	2	1	≥ 50.0	0

Histogram of Average Annual Doses

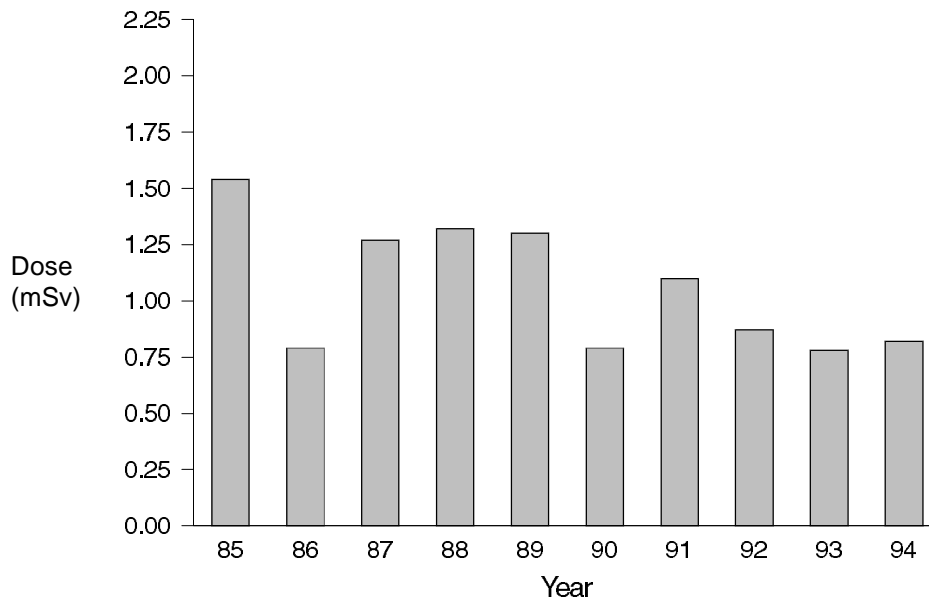


Table 4 (Cont'd)
Medical – Chiropractor

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	0.05	0.05	0.00 - 0.19	820
Average Dose (mSv) (Zero doses removed)	0.54	0.49	0.20 - 0.49	62
Average Dose (mSv) (Zero and high doses removed)	0.54	0.49	0.50 - 4.99	22
Ninth Decile Dose (mSv)	2.60	2.21	5.00 - 29.9	1
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	11	<1	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

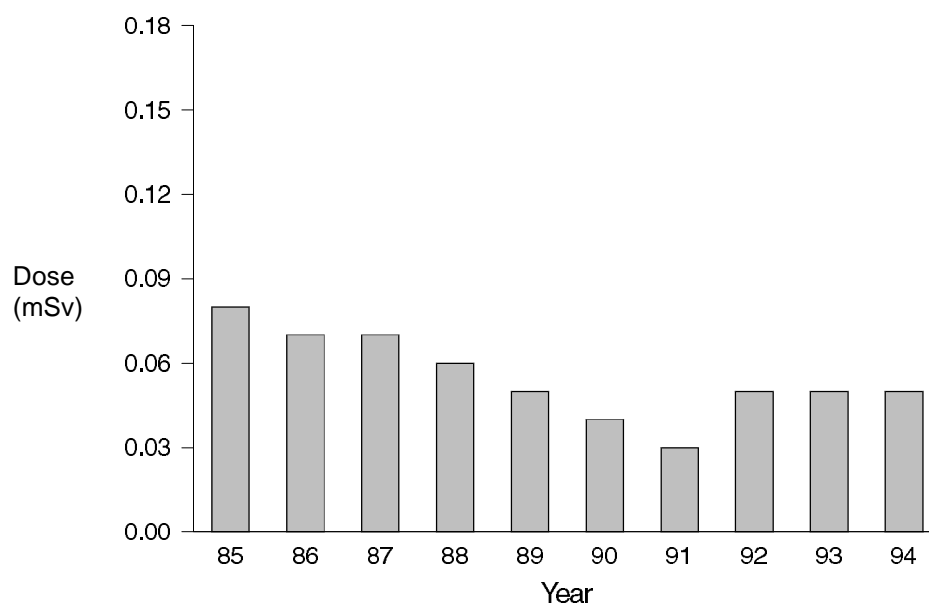


Table 4 (Cont'd)
Medical – Dental Hygienist

Table A			Table B	
Dose Statistics	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.00	0.01	0.00 - 0.19	6226
Average Dose (mSv) (Zero doses removed)	0.52	0.58	0.20 - 0.49	44
Average Dose (mSv) (Zero and high doses removed)	0.52	0.58	0.50 - 4.99	15
Ninth Decile Dose (mSv)	3.45	5.40	5.00 - 29.9	1
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	2	2	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

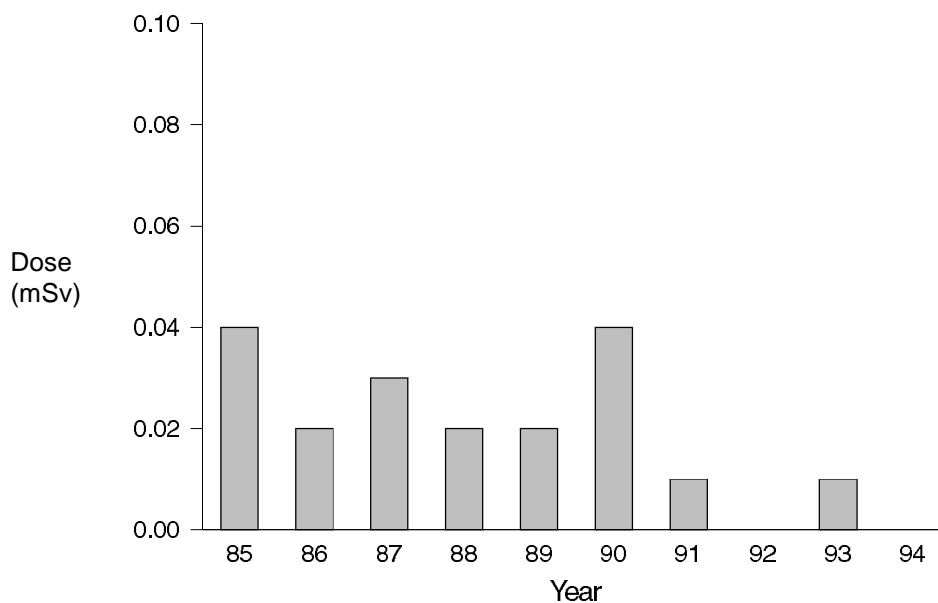


Table 4 (Cont'd)
Medical – Dentist

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	0.01	0.01	0.00 - 0.19	5585
Average Dose (mSv) (Zero doses removed)	0.83	0.47	0.20 - 0.49	60
Average Dose (mSv) (Zero and high doses removed)	0.83	0.47	0.50 - 4.99	17
Ninth Decile Dose (mSv)	11.80	4.35	5.00 - 29.9	3
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	5	2	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

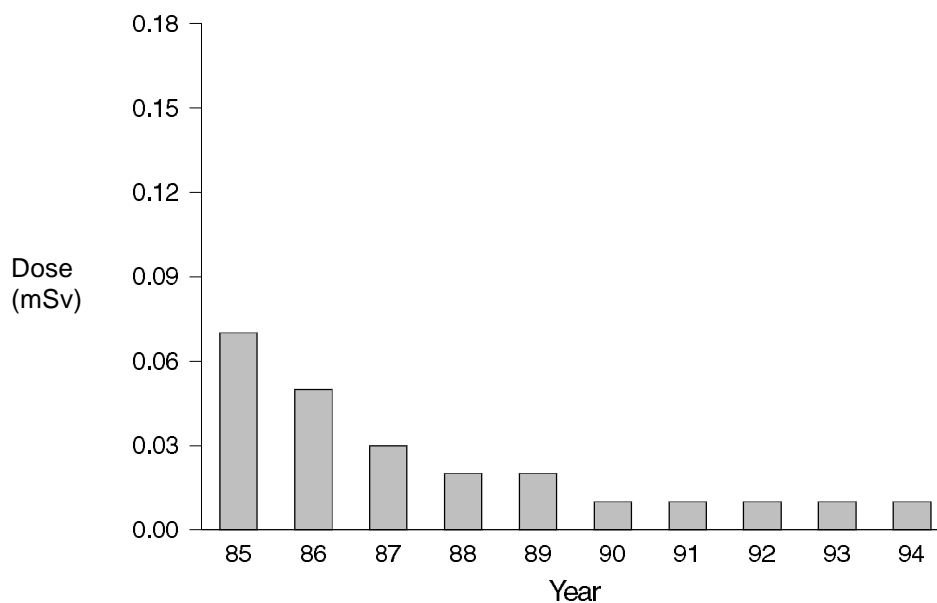


Table 4 (Cont'd)
Medical – Gynaecologist

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	0.06	0.04	0.00 - 0.19	27
Average Dose (mSv) (Zero doses removed)	0.45	0.35	0.20 - 0.49	2
Average Dose (mSv) (Zero and high doses removed)	0.45	0.35	0.50 - 4.99	2
Ninth Decile Dose (mSv)	0.70	0.80	5.00 - 29.9	0
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	<1	<1	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

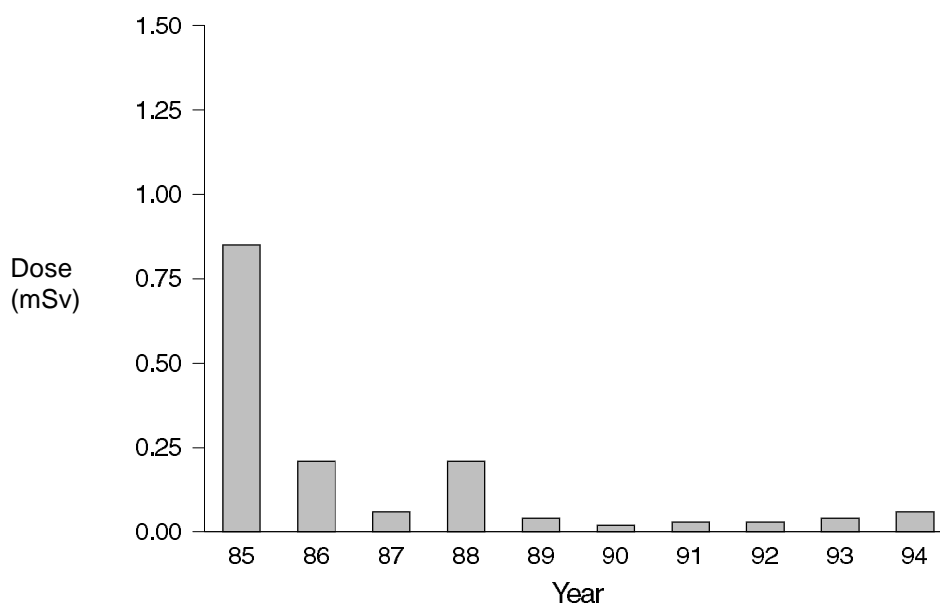


Table 4 (Cont'd)
Medical – Isotope Technician

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	1.29	1.42	0.00 - 0.19	431
Average Dose (mSv) (Zero doses removed)	1.85	2.00	0.20 - 0.49	145
Average Dose (mSv) (Zero and high doses removed)	1.85	2.00	0.50 - 4.99	801
Ninth Decile Dose (mSv)	4.30	4.40	5.00 - 29.9	48
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	337	429	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	4	4	≥ 50.0	0

Histogram of Average Annual Doses

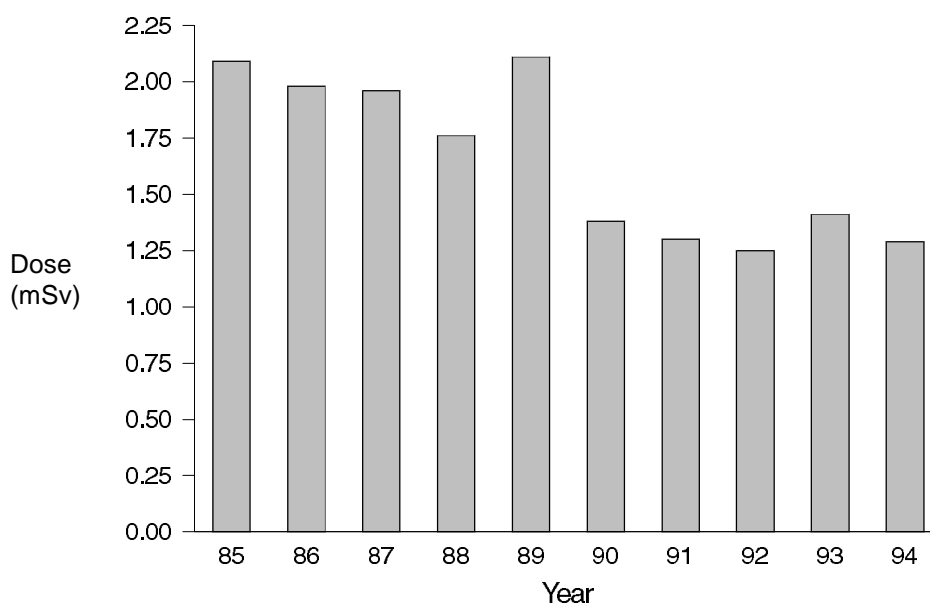


Table 4 (Cont'd)
Medical – Laboratory Technician

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.07	0.10	0.00 - 0.19	3122
Average Dose (mSv) (Zero doses removed)	0.55	0.65	0.20 - 0.49	346
Average Dose (mSv) (Zero and high doses removed)	0.55	0.65	0.50 - 4.99	105
Ninth Decile Dose (mSv)	2.78	4.21	5.00 - 29.9	6
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	17	32	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

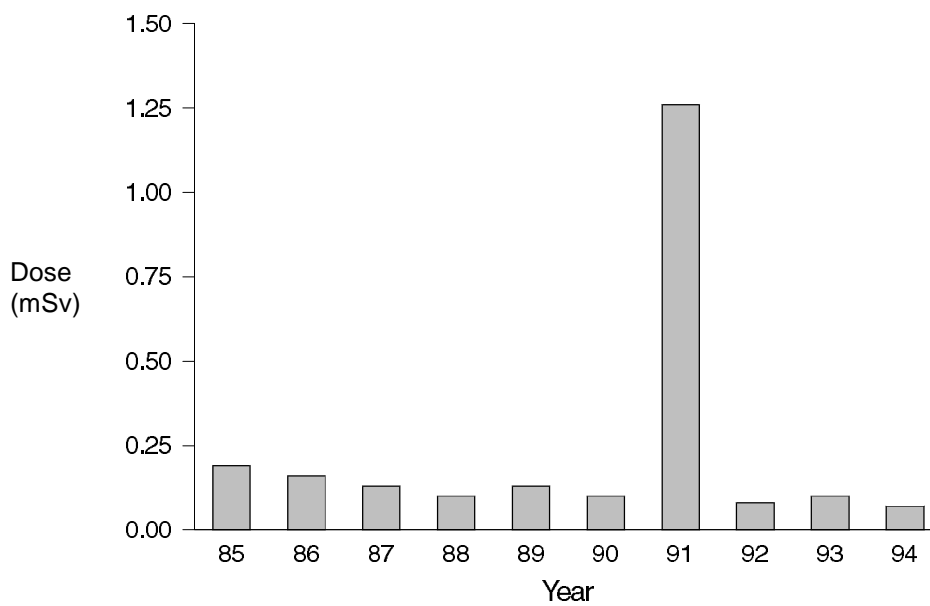


Table 4 (Cont'd)
Medical – Medical Physicist

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	0.08	0.10	0.00 - 0.19	219
Average Dose (mSv) (Zero doses removed)	0.56	0.48	0.20 - 0.49	21
Average Dose (mSv) (Zero and high doses removed)	0.56	0.48	0.50 - 4.99	15
Ninth Decile Dose (mSv)	1.72	1.98	5.00 - 29.9	0
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	<1	<1	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

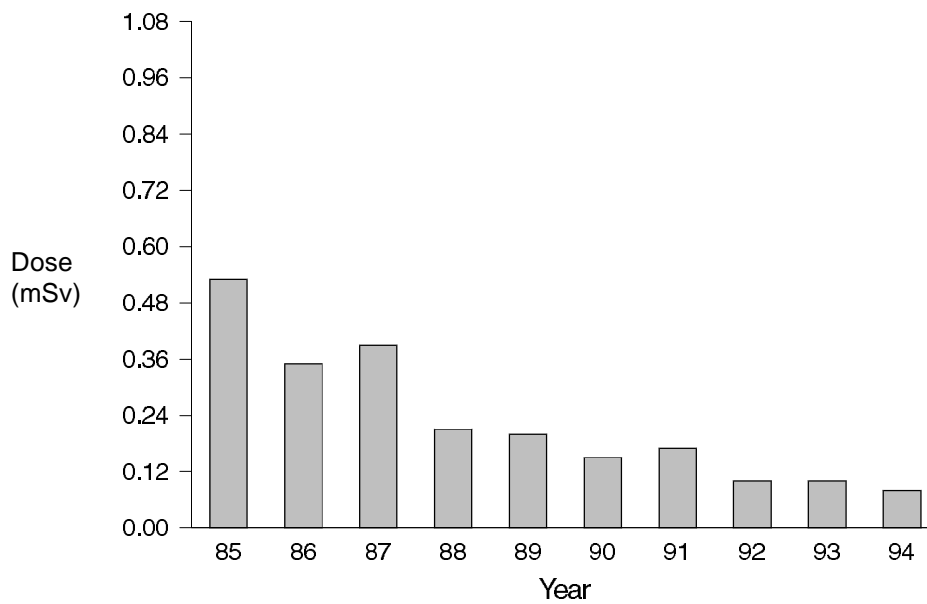


Table 4 (Cont'd)
Medical – Nurse

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.06	0.06	0.00 - 0.19	4459
Average Dose (mSv) (Zero doses removed)	0.52	0.45	0.20 - 0.49	432
Average Dose (mSv) (Zero and high doses removed)	0.52	0.45	0.50 - 4.99	150
Ninth Decile Dose (mSv)	2.76	1.90	5.00 - 29.9	6
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	12	7	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

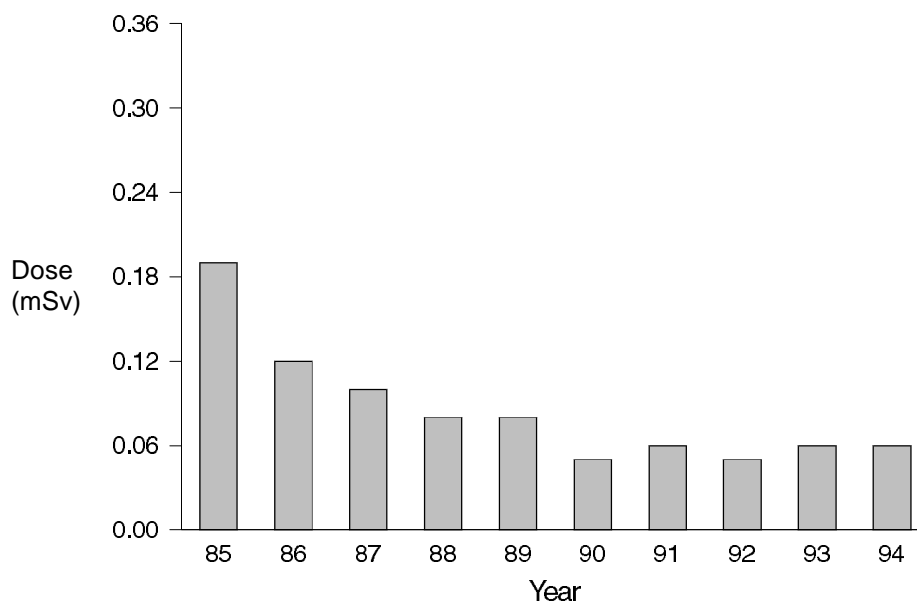


Table 4 (Cont'd)
Medical – Physician

Table A			Table B	
Dose Statistics	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.15	0.21	0.00 - 0.19	1665
Average Dose (mSv) (Zero doses removed)	0.73	0.89	0.20 - 0.49	275
Average Dose (mSv) (Zero and high doses removed)	0.73	0.80	0.50 - 4.99	169
Ninth Decile Dose (mSv)	3.14	3.40	5.00 - 29.9	6
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	28	68	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

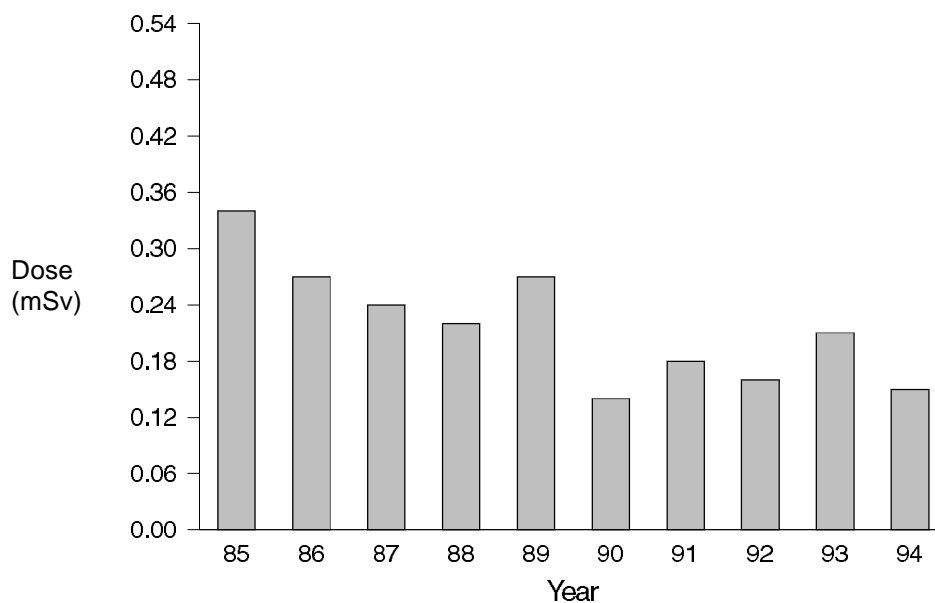


Table 4 (Cont'd)
Medical – Radiological Technician (Diagnostic)

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	0.09	0.11	0.00 - 0.19	9518
Average Dose (mSv) (Zero doses removed)	0.52	0.53	0.20 - 0.49	1392
Average Dose (mSv) (Zero and high doses removed)	0.51	0.53	0.50 - 4.99	471
Ninth Decile Dose (mSv)	2.60	2.80	5.00 - 29.9	11
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	11	13	30.0 - 49.9	1
Percentage Contribution to Collective Dose (All doses)	2	3	≥ 50.0	0

Histogram of Average Annual Doses

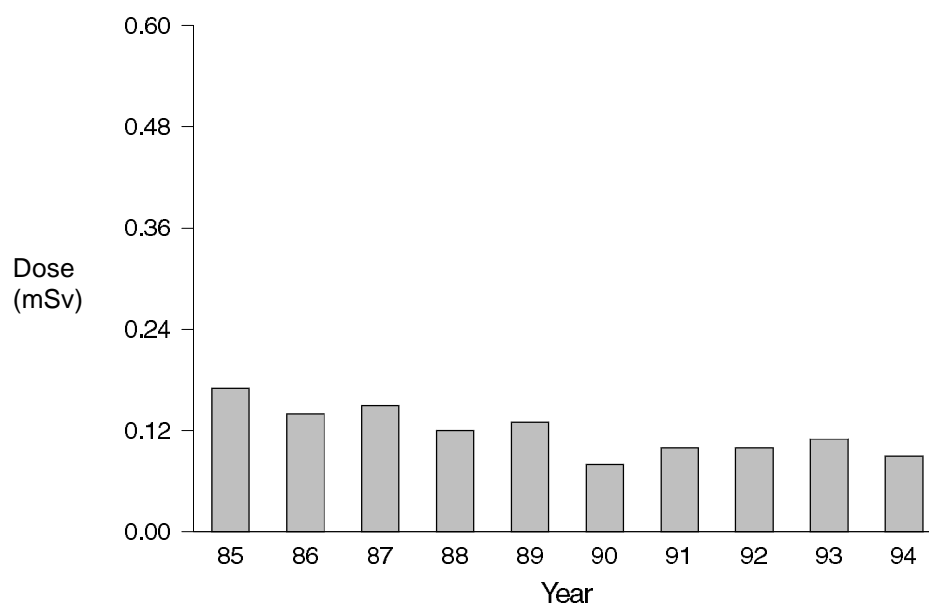


Table 4 (Cont'd)
Medical – Radiological Technician (Therapeutic)

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	0.79	0.40	0.00 - 0.19	601
Average Dose (mSv) (Zero doses removed)	1.98	0.86	0.20 - 0.49	214
Average Dose (mSv) (Zero and high doses removed)	0.84	0.86	0.50 - 4.99	175
Ninth Decile Dose (mSv)	2.80	2.94	5.00 - 29.9	7
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	80	107	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	2	<1	≥ 50.0	1

Histogram of Average Annual Doses

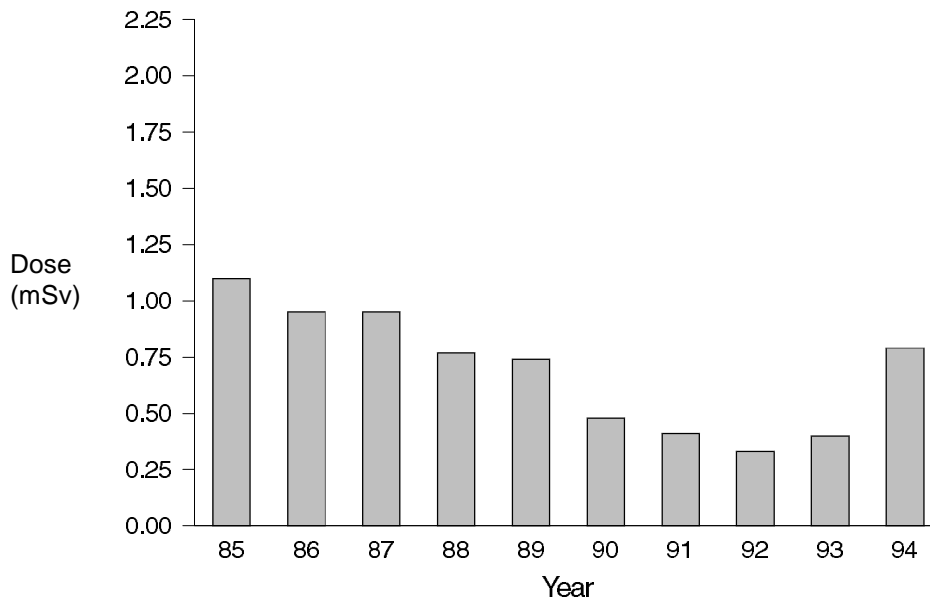


Table 4 (Cont'd)
Medical – Radiologist (Diagnostic)

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.12	0.19	0.00 - 0.19	1469
Average Dose (mSv) (Zero doses removed)	0.64	0.78	0.20 - 0.49	218
Average Dose (mSv) (Zero and high doses removed)	0.64	0.63	0.50 - 4.99	133
Ninth Decile Dose (mSv)	2.50	2.52	5.00 - 29.9	2
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	11	35	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

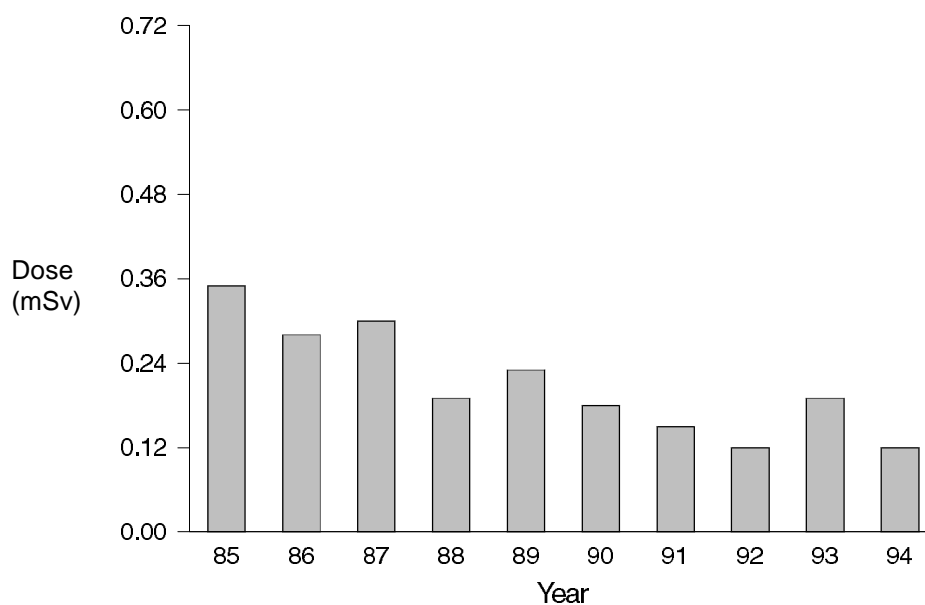


Table 4 (Cont'd)
Medical – Radiologist (Therapeutic)

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	0.50	0.17	0.00 - 0.19	131
Average Dose (mSv) (Zero doses removed)	1.94	0.60	0.20 - 0.49	30
Average Dose (mSv) (Zero and high doses removed)	0.95	0.60	0.50 - 4.99	14
Ninth Decile Dose (mSv)	24.04	2.94	5.00 - 29.9	1
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	113	<1	30.0 - 49.9	1
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

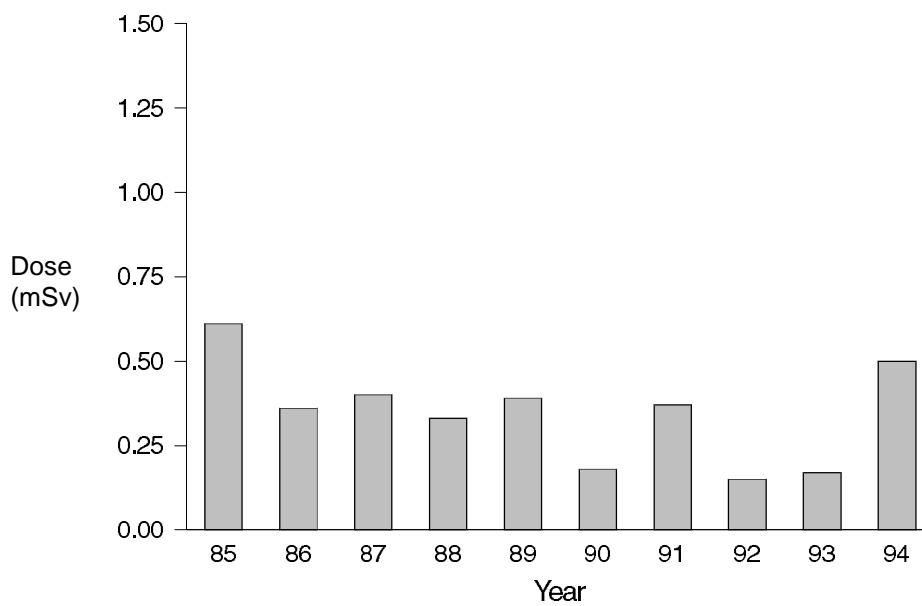


Table 4 (Cont'd)
Medical – Veterinarian

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.06	0.06	0.00 - 0.19	2091
Average Dose (mSv) (Zero doses removed)	0.45	0.45	0.20 - 0.49	269
Average Dose (mSv) (Zero and high doses removed)	0.45	0.45	0.50 - 4.99	76
Ninth Decile Dose (mSv)	2.31	1.84	5.00 - 29.9	2
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	8	<1	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

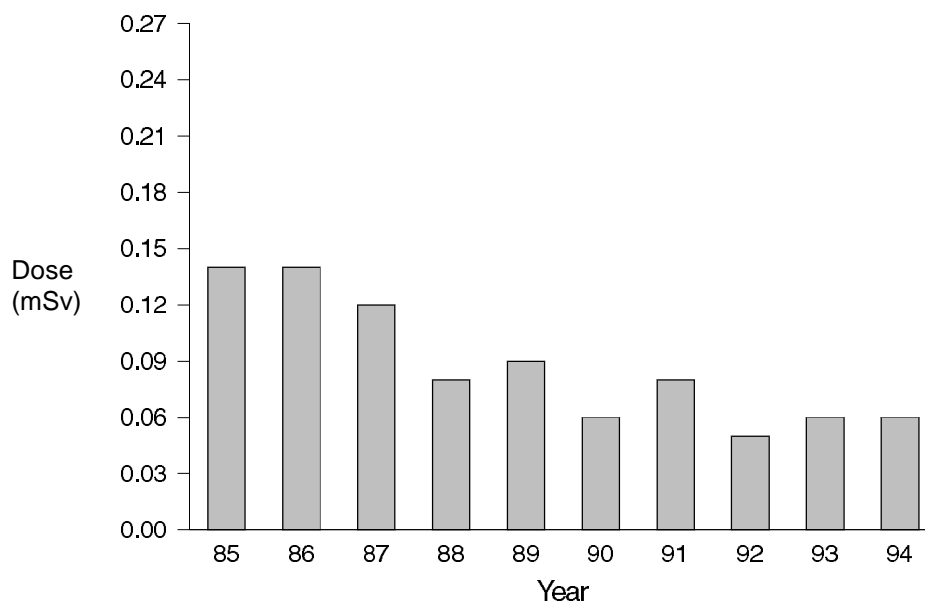


Table 4 (Cont'd)
Medical – Ward Aide/Orderly

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.07	0.08	0.00 - 0.19	1658
Average Dose (mSv) (Zero doses removed)	0.63	0.69	0.20 - 0.49	134
Average Dose (mSv) (Zero and high doses removed)	0.63	0.69	0.50 - 4.99	59
Ninth Decile Dose (mSv)	3.34	4.05	5.00 - 29.9	2
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	11	25	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

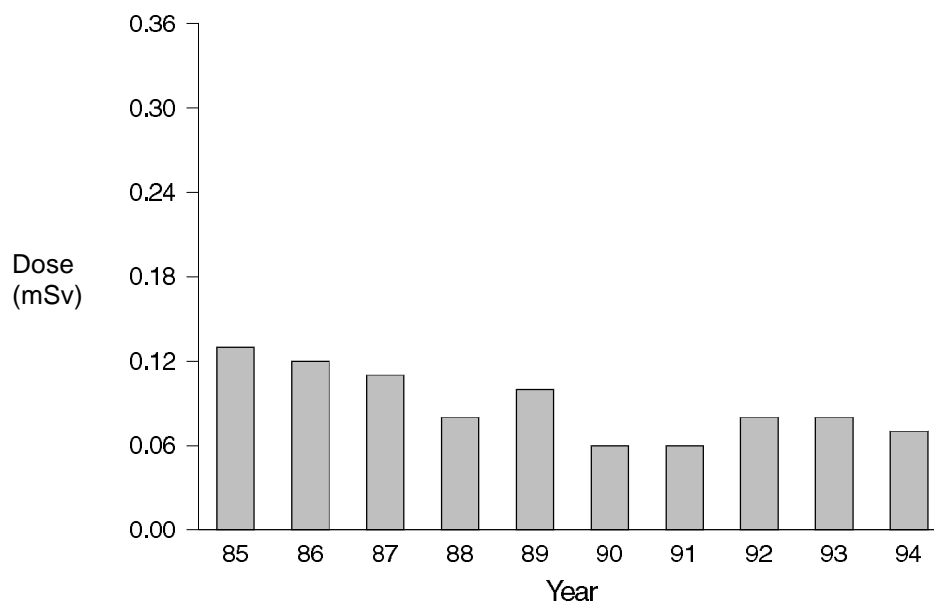


Table 4 (Cont'd)
Mine Workers – Uranium Miner (External Gamma Dose)

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	1.27	1.63	0.00 - 0.19	589
Average Dose (mSv) (Zero doses removed)	2.11	2.42	0.20 - 0.49	202
Average Dose (mSv) (Zero and high doses removed)	2.11	2.42	0.50 - 4.99	602
Ninth Decile Dose (mSv)	5.51	6.50	5.00 - 29.9	96
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	645	939	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	4	6	≥ 50.0	0

Histogram of Average Annual Doses

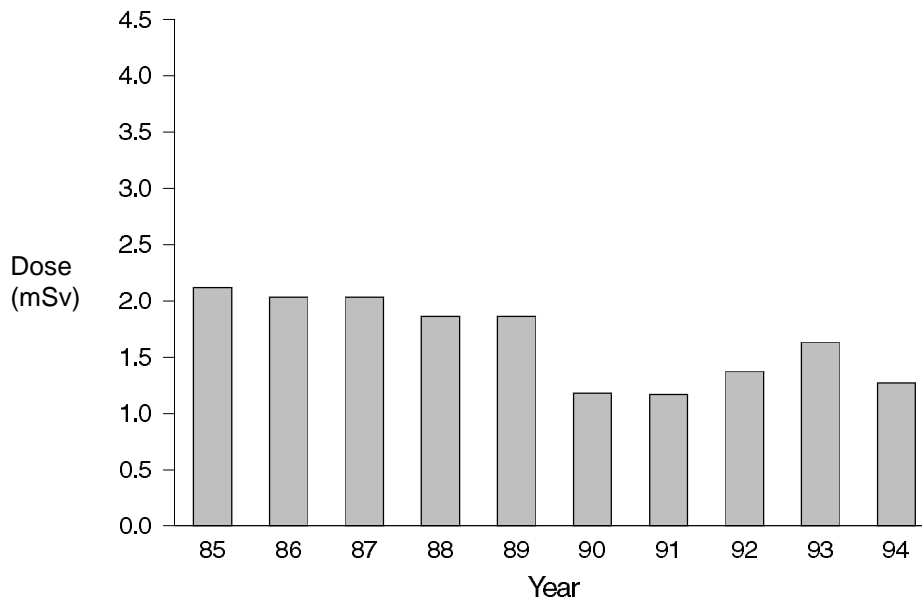


Table 4 (Cont'd)
Mine Workers – Uranium Miner (Radon Daughter Exposure)

Dose Statistics	Table A		Dose Range (WLM)	Table B # Persons (1994)
	1994	1993		
Average Dose (WLM) (All doses)	0.36	0.39	0.00 - 0.19	1051
Average Dose (WLM) (Zero doses removed)	0.78	0.84	0.20 - 0.99	473
Average Dose (WLM) (Zero and high doses removed)	0.78	0.84	1.00 - 1.99	181
			2.00 - 2.99	32
			3.00 - 3.99	0
			≥4.00	0

Histogram of Average Annual Doses

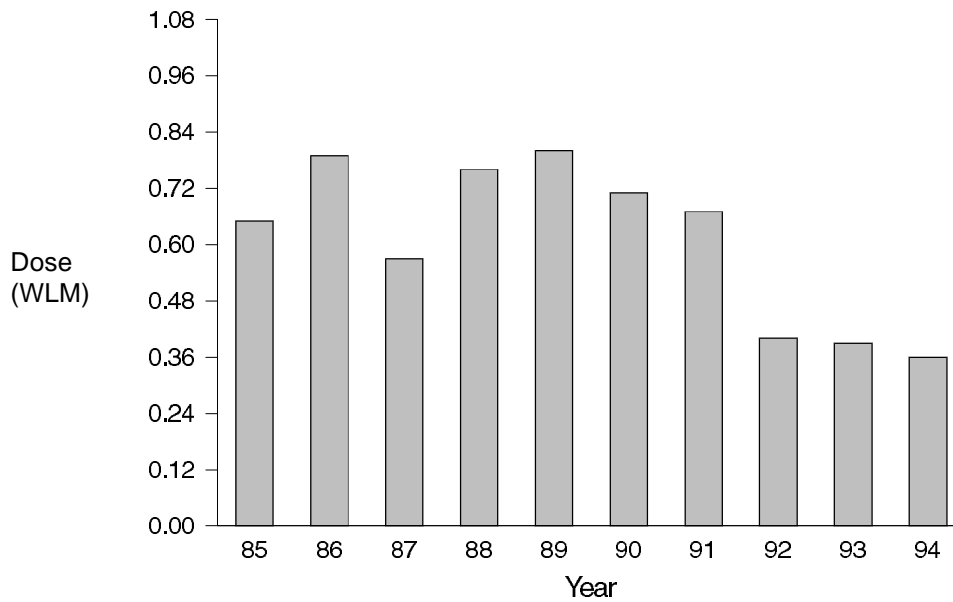


Table 4 (Cont'd)
Reactor Workers – Administrator/Security/Janitor

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.17	0.12	0.00 - 0.19	3422
Average Dose (mSv) (Zero doses removed)	1.50	1.37	0.20 - 0.49	141
Average Dose (mSv) (Zero and high doses removed)	1.50	1.37	0.50 - 4.99	256
Ninth Decile Dose (mSv)	4.03	4.58	5.00 - 29.9	21
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	55	38	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	1	<1	≥ 50.0	0

Histogram of Average Annual Doses

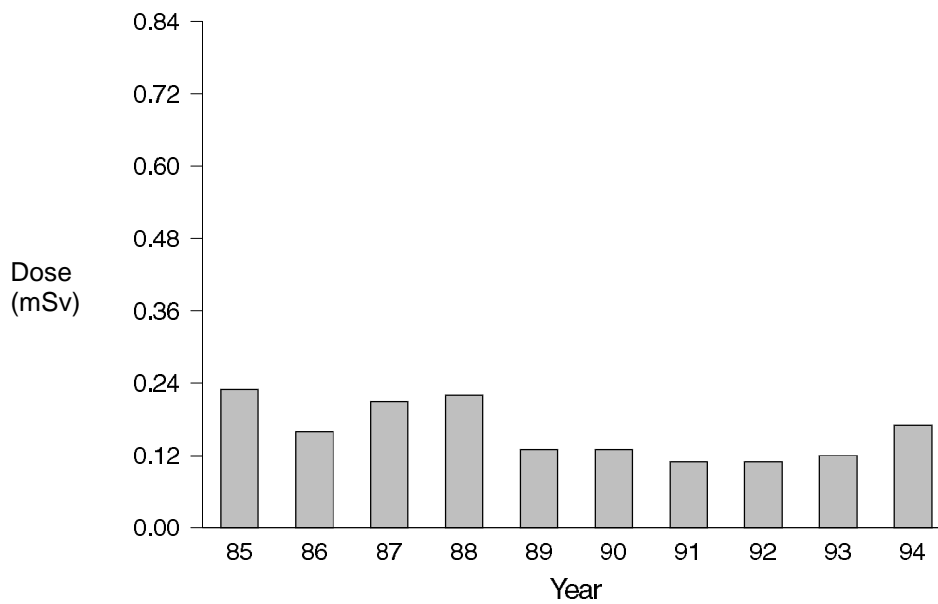


Table 4 (Cont'd)
Reactor Workers – Chemical and Radiation Control

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	2.03	1.85	0.00 - 0.19	174
Average Dose (mSv) (Zero doses removed)	3.57	3.39	0.20 - 0.49	40
Average Dose (mSv) (Zero and high doses removed)	3.57	3.39	0.50 - 4.99	140
Ninth Decile Dose (mSv)	12.95	10.72	5.00 - 29.9	47
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	1172	1199	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	2	2	≥ 50.0	0

Histogram of Average Annual Doses

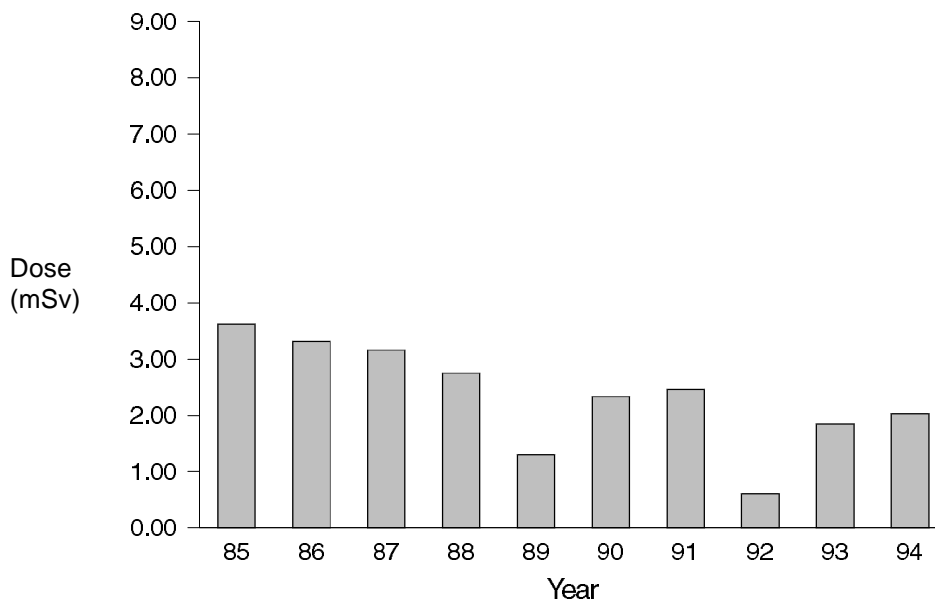


Table 4 (Cont'd)
Reactor Workers – Construction

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	2.78	0.98	0.00 - 0.19	762
Average Dose (mSv) (Zero doses removed)	6.27	3.48	0.20 - 0.49	67
Average Dose (mSv) (Zero and high doses removed)	6.27	3.48	0.50 - 4.99	257
Ninth Decile Dose (mSv)	15.98	11.29	5.00 - 29.9	280
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	2050	659	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	8	6	≥ 50.0	0

Histogram of Average Annual Doses

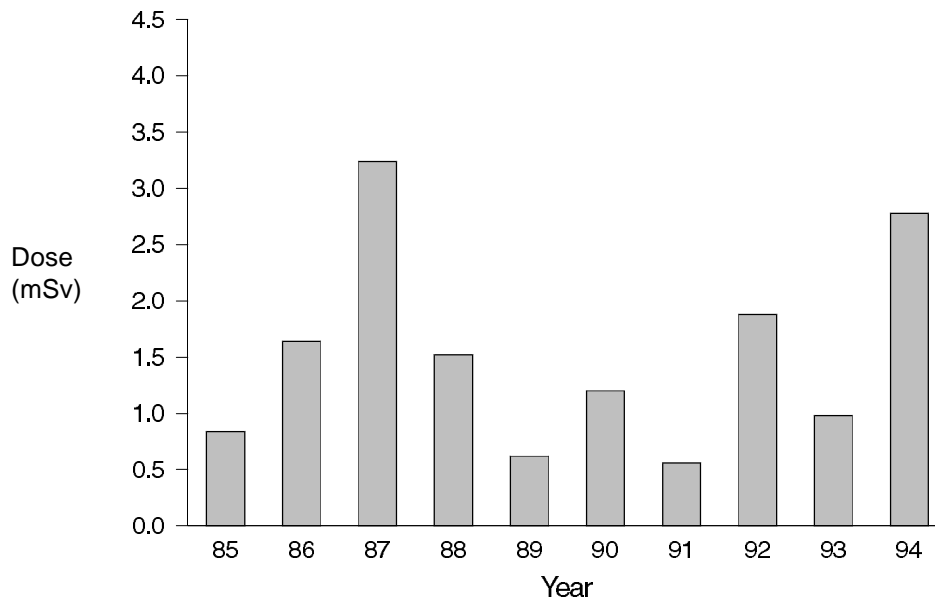


Table 4 (Cont'd)
Reactor Workers – Control Technician

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.34	0.23	0.00 - 0.19	84
Average Dose (mSv) (Zero doses removed)	1.19	1.39	0.20 - 0.49	10
Average Dose (mSv) (Zero and high doses removed)	1.19	1.39	0.50 - 4.99	21
Ninth Decile Dose (mSv)	4.03	11.23	5.00 - 29.9	1
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	86	74	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

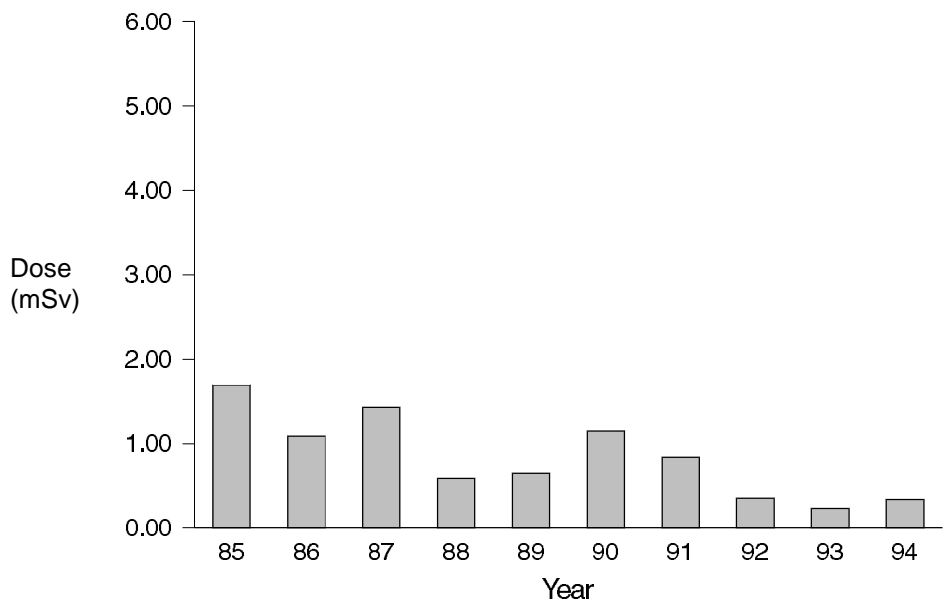


Table 4 (Cont'd)
Reactor Workers – Electrical Maintenance

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	1.40	1.37	0.00 - 0.19	405
Average Dose (mSv) (Zero doses removed)	2.29	2.26	0.20 - 0.49	109
Average Dose (mSv) (Zero and high doses removed)	2.29	2.26	0.50 - 4.99	437
Ninth Decile Dose (mSv)	5.89	4.86	5.00 - 29.9	84
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	812	443	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	3	4	≥ 50.0	0

Histogram of Average Annual Doses

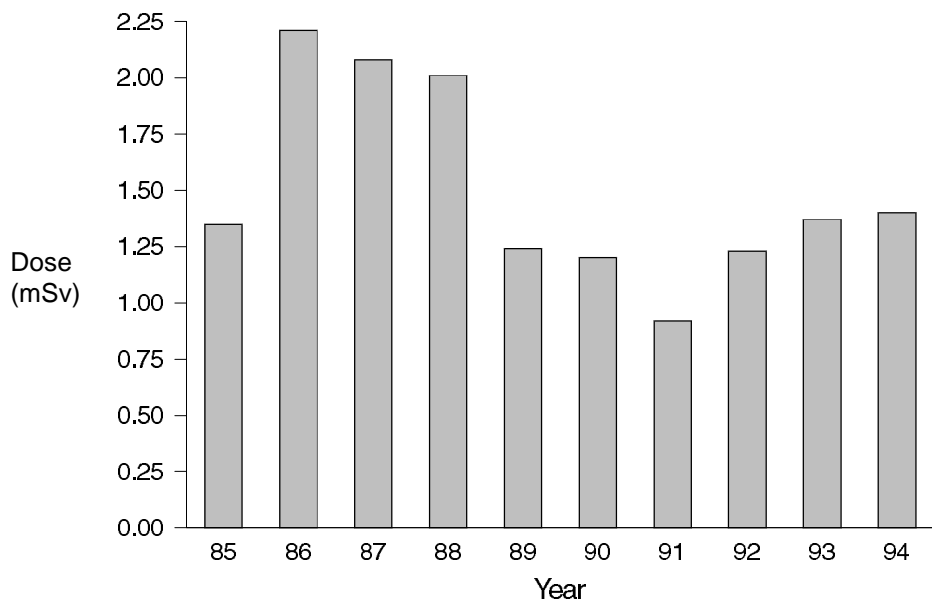


Table 4 (Cont'd)
Reactor Workers – Fuel Handling

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	6.41	2.87	0.00 - 0.19	18
Average Dose (mSv) (Zero doses removed)	7.25	3.88	0.20 - 0.49	5
Average Dose (mSv) (Zero and high doses removed)	7.25	3.88	0.50 - 4.99	53
Ninth Decile Dose (mSv)	15.87	11.01	5.00 - 29.9	80
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	5128	2319	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	2	<1	≥ 50.0	0

Histogram of Average Annual Doses

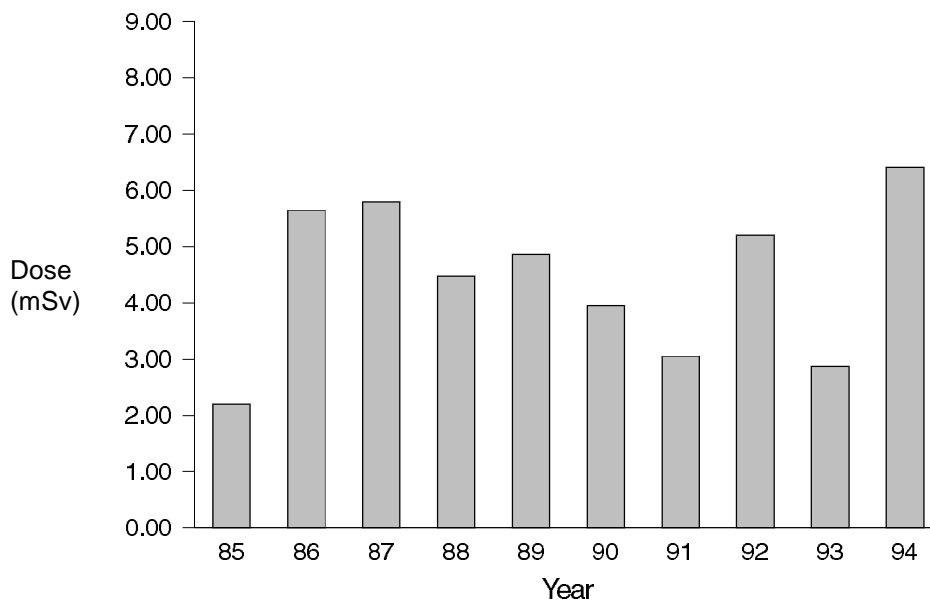


Table 4 (Cont'd)
Reactor Workers – General Maintenance

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.93	0.80	0.00 - 0.19	606
Average Dose (mSv) (Zero doses removed)	2.03	1.99	0.20 - 0.49	103
Average Dose (mSv) (Zero and high doses removed)	2.03	1.99	0.50 - 4.99	359
Ninth Decile Dose (mSv)	5.05	5.83	5.00 - 29.9	42
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	378	427	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	2	2	≥ 50.0	0

Histogram of Average Annual Doses

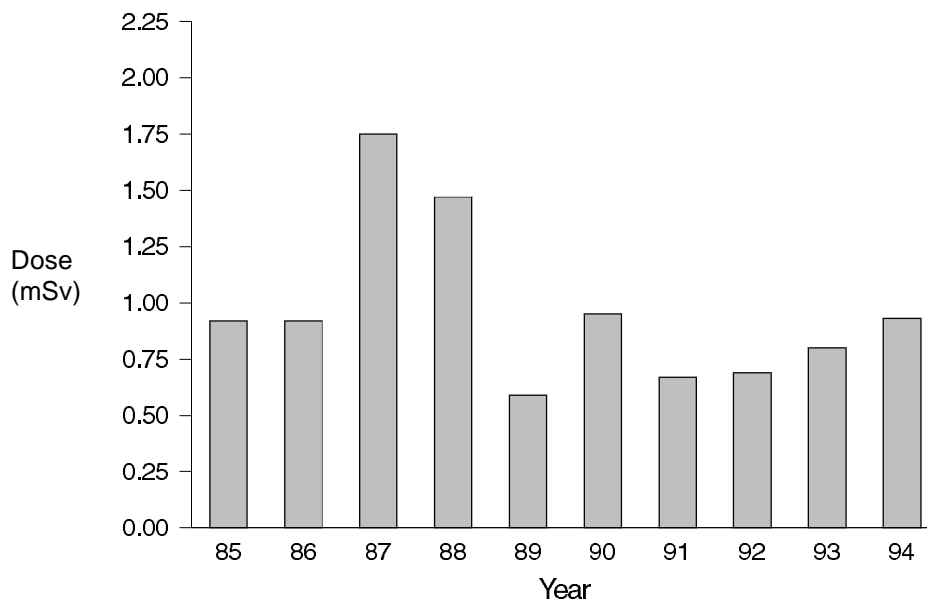


Table 4 (Cont'd)
Reactor Workers – Health Physics

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.41	0.35	0.00 - 0.19	72
Average Dose (mSv) (Zero doses removed)	1.60	1.67	0.20 - 0.49	10
Average Dose (mSv) (Zero and high doses removed)	1.60	1.67	0.50 - 4.99	13
Ninth Decile Dose (mSv)	5.22	7.73	5.00 - 29.9	1
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	104	163	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

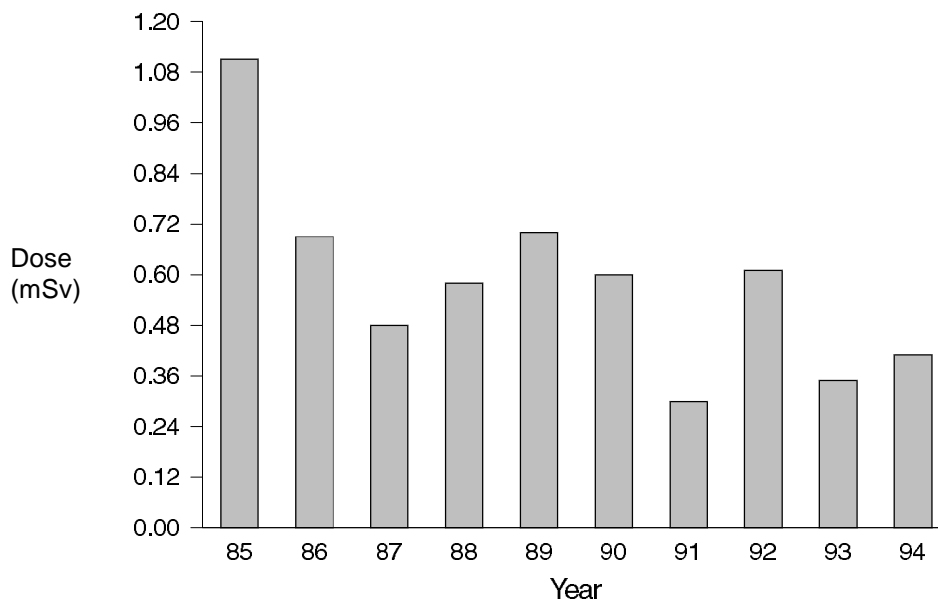


Table 4 (Cont'd)
Reactor Workers – Mechanical Maintenance

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	3.30	2.82	0.00 - 0.19	282
Average Dose (mSv) (Zero doses removed)	4.24	3.97	0.20 - 0.49	80
Average Dose (mSv) (Zero and high doses removed)	4.24	3.97	0.50 - 4.99	502
Ninth Decile Dose (mSv)	8.57	7.70	5.00 - 29.9	400
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	3165	2610	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	9	9	≥ 50.0	0

Histogram of Average Annual Doses

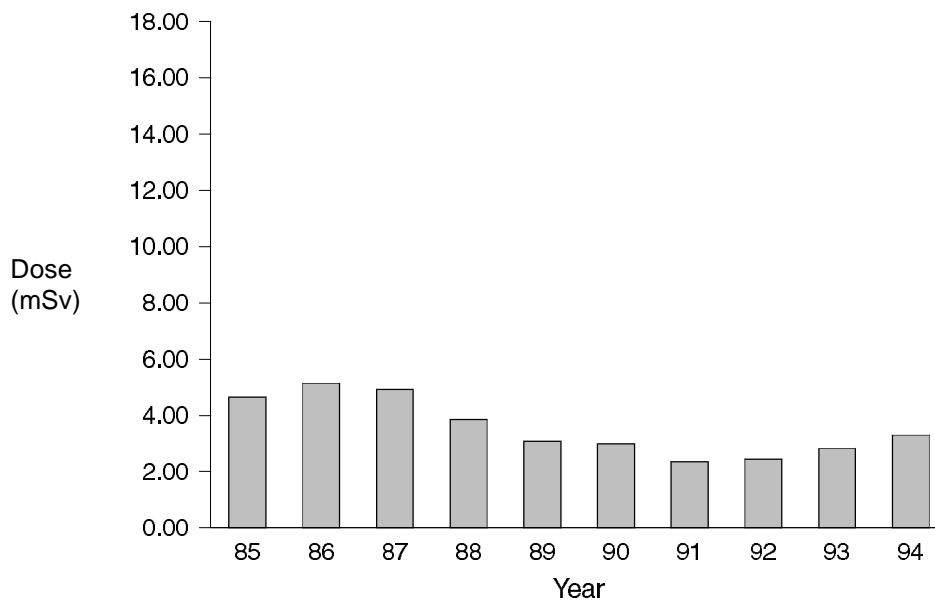


Table 4 (Cont'd)
Reactor Workers – Reactor Operations

Dose Statistics	Table A		Dose Range (mSv)	Table B # Persons (1994)
	1994	1993		
Average Dose (mSv) (All doses)	1.77	1.62	0.00 - 0.19	639
Average Dose (mSv) (Zero doses removed)	2.78	2.52	0.20 - 0.49	174
Average Dose (mSv) (Zero and high doses removed)	2.78	2.52	0.50 - 4.99	713
Ninth Decile Dose (mSv)	6.92	6.50	5.00 - 29.9	218
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	1250	1092	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	7	7	≥ 50.0	0

Histogram of Average Annual Doses

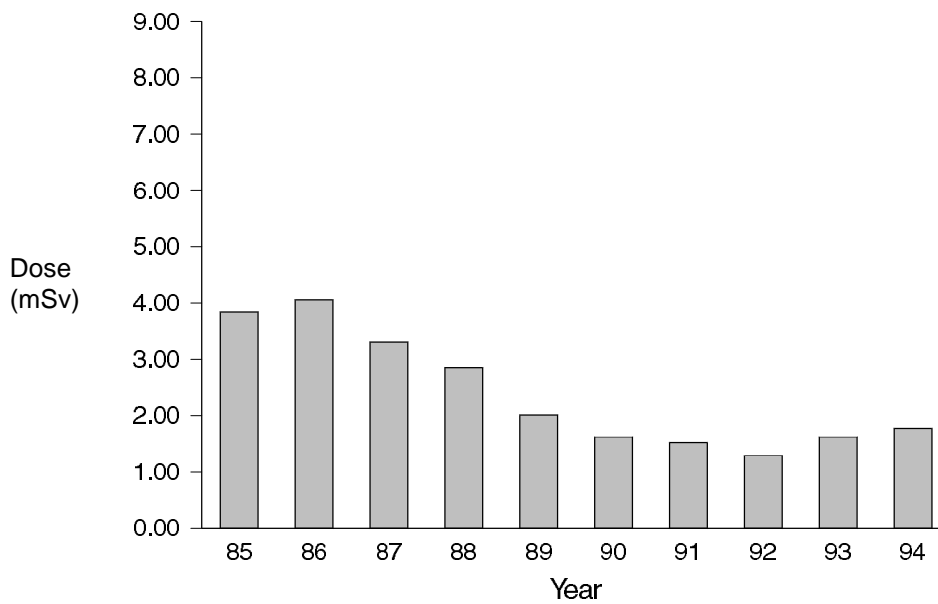
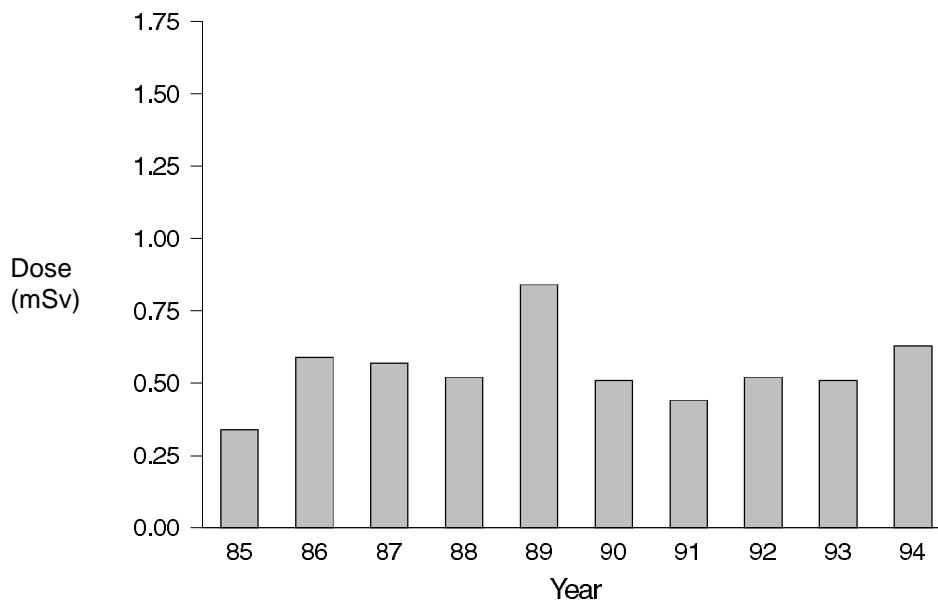


Table 4 (Cont'd)
Reactor Workers – Scientific/Professional

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.63	0.51	0.00 - 0.19	1107
Average Dose (mSv) (Zero doses removed)	3.10	2.67	0.20 - 0.49	62
Average Dose (mSv) (Zero and high doses removed)	3.10	2.67	0.50 - 4.99	150
Ninth Decile Dose (mSv)	8.74	8.01	5.00 - 29.9	69
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	497	353	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	2	2	≥ 50.0	0

Histogram of Average Annual Doses



**Table 4 (Cont'd)
Reactor Workers – Training**

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.22	0.24	0.00 - 0.19	55
Average Dose (mSv) (Zero doses removed)	1.40	1.36	0.20 - 0.49	4
Average Dose (mSv) (Zero and high doses removed)	1.40	1.36	0.50 - 4.99	5
Ninth Decile Dose (mSv)	5.43	8.68	5.00 - 29.9	1
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	154	135	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

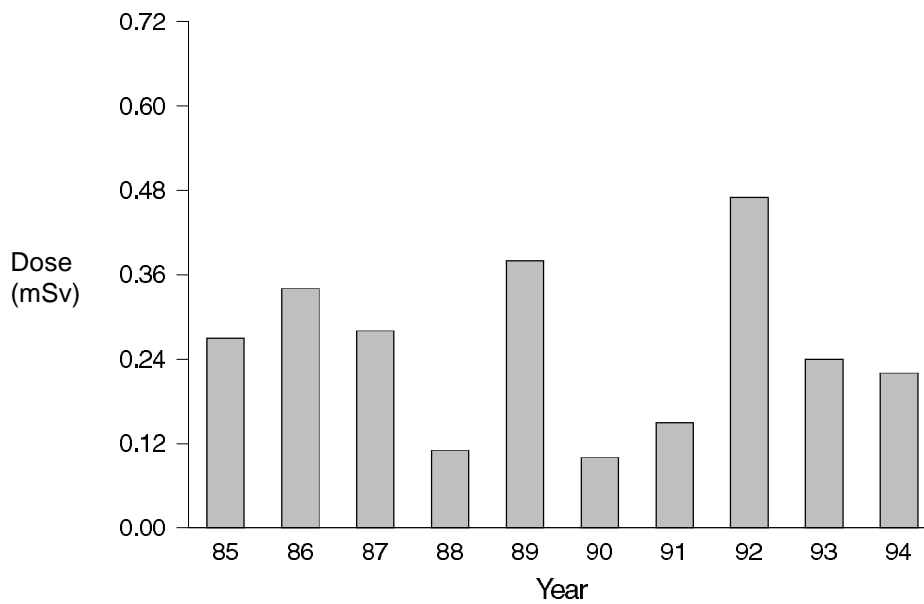


Table 4 (Cont'd)
Reactor Workers – Visitor

Dose Statistics	Table A		Table B	
	1994	1993	Dose Range (mSv)	# Persons (1994)
Average Dose (mSv) (All doses)	0.16	0.05	0.00 - 0.19	44
Average Dose (mSv) (Zero doses removed)	1.60	0.53	0.20 - 0.49	0
Average Dose (mSv) (Zero and high doses removed)	1.60	0.53	0.50 - 4.99	5
Ninth Decile Dose (mSv)	2.43	1.01	5.00 - 29.9	0
Relative Frequency ($\times 10^{-4}$) of Annual Doses ≥ 5 mSv	<1	<1	30.0 - 49.9	0
Percentage Contribution to Collective Dose (All doses)	<1	<1	≥ 50.0	0

Histogram of Average Annual Doses

