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Occupational Radiation Exposure at Commercial Nuclear Power Reactors 1980

Annual Report

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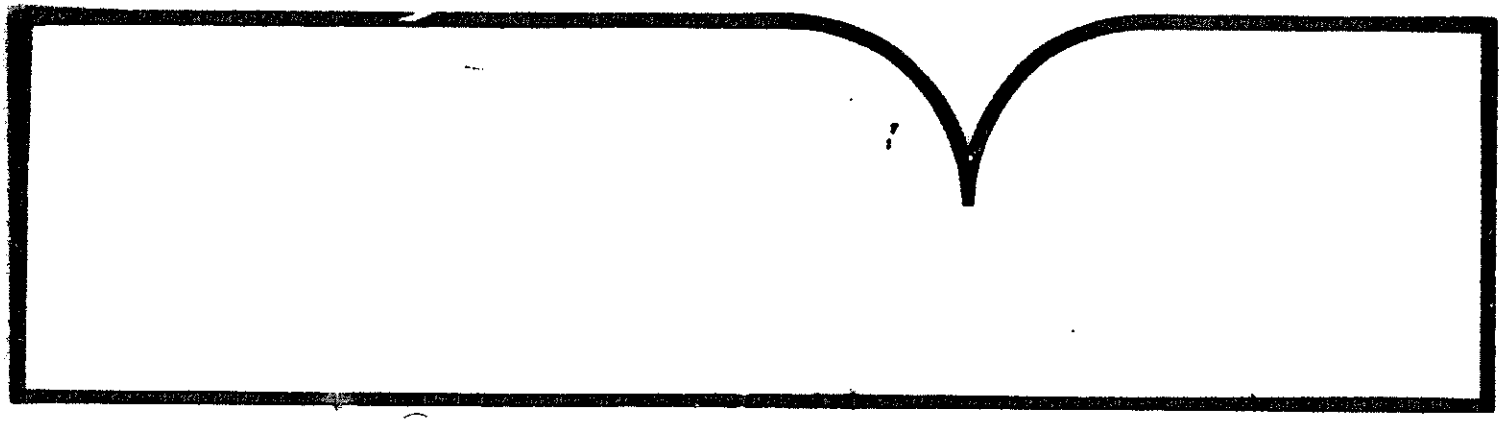

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This report summarizes the occupational radiation exposure information tnat has been reported to the U.S.N.R.C. by commercial nuclear power reactors during the years 1969 through 1980. The bulk of the data presented in the report was obtained from annual radiation exposure reports submitted in accordance with the requirements of 10 CFR 20.407 and Regulatory Guide 1.16. Data on workers terminating their employment at nuclear power facilities was obtained from reports submitted pursuant to 10 CFR 20.408. The annual reports submitted by the 69 nuclear power plants that had completed at least one full year of operation as of December 31, 1980, indicated tnat the number of personnel monitored during 1980 was 133,898 persons and the annual collective dose incurred by these individuals was 53,796 man-rems. The average annual dose for each worker that received a measurable dose was 0.7 rems, and the average collective dose per reactor was 791 man-rems. The termination reports revealed that some 57,800 individuals completed their employment with one or more reactor facilities during 1980. Approximately 3,900 of these workers could be considered transients and they received an average dose of about 1 rem.

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PREVIOUS REPORTS IN SERIES

1. T. D. Murphy, "A Compilation of Occupational Radiation Exposure from Light Water Cooled Nuclear Power Plants, 1969-1973," USAEC Report WASH-1311, May 1974.

2. T. D. Murphy, C. S. Hinson, "Occupational Radiation Exposure at Light Water Cooled Power Reactors, 1969-1974," USNRC Report NUREG-75/032, June 1975.

3. T. D. Murphy, et al, "Occupational Radiation Exposure at Light Water Cooled Power Reactors, 1969-1975," USNRC Report NUREG-0109, August 1976.

4. L. A. Johnson, "Occupational Radiation Exposure at Light Water Cooled Power Reactors, 1969-1976," USNRC Report NUREG-0323, March 1978.

5. L. A. Johnson, "Occupational Radiation Exposure at Light Water Cooled Power Reactors, 1977," USNRC Report NUREG-0482, May 1979.

6. B. G. Brooks, "Occupational Radiation Exposure at Commercial Nuclear Power Reactors, 1978," USNRC Report NUREG-0594, November 1979.

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ABSTRACT

This report presents an updated compilation of occupational radiation exposures at commercial nuclear power reactors for the years 1969 through 1980. It is published annually and is available at all NRC Public Document Rooms, or may be purchased from either of the organizations identified on the inside of the front cover of this report. The bulk of the information contained in this document was derived from reports submitted to the United States Nuclear Regulatory Commission in accordance with requirements of individual plant technical specifications and in accordance with §20.407 of Title 10, Chapter 1, Code of Federal Regulations (10 CFR §20.407).

This report now contains data received from the 68 light water cooled reactors (LWRs) and one high temperature gas cooled reactor that had been declared to be in commercial operation for at least one full year as of December 31, 1979. This represents an increase of two reactors over the number contained in last year's report. Both the total number of personnel monitored at LWRs and the number of workers that received measurable doses during 1980 increased by about 25% to values of 133,878 and 80,331, respectively. The total collective dose at LWRs for 1980 is estimated to be 53,796 man-rems, which is a 35% increase over the 1979 value of 39,759. The result was that the average dose per worker increased slightly to 0.67 rems, while the average collective dose per reactor increased by approximately 33% to a value of 791 man-rems. The collective dose per megawatt-year of generated electricity by each reactor also increased to an average value of 1.8 man-rems per megawatt-year from last year's value of 1.3. A brief prospective on the health implications of these annual occupational doses is also provided for the first time. The staff found that should a worker receive 0.67 rems each year during his entire working career, his risk of dying from cancer would increase by about 2% of the normal risk.

The report also presents a summary and some analyses of the exposure data contained in the "termination reports" that have been submitted to the Commission pursuant to 10 CFR §20.408 by nuclear power licensees. As of December 31, 1980, personal identification and exposure information had been collected and computerized for some 170,000 of these terminating reactor personnel. Analysis of these data indicate that there are now about 1700 quarterly transient* workers each year who incur an average dose of 0.44 rems and some 3,700 yearly transient* workers who incur an average dose of 1.03 rems.

*Transient workers are those workers who begin and end their employment or work assignment at two or more different licensed facilities within one calendar quarter (quarterly transients) or one calendar year (yearly transients).

CONTENTS

TABLES AND FIGURES

OCCUPATIONAL RADIATION EXPOSURE AT COMMERCIAL NUCLEAR POWER REACTORS 1980

1. INTRODUCTION

In 1974, the NRC staff began changing the technical specifications of operating nuclear power reactors to require the submittal of an annual report which indicated the number of individuals exposed and their cumulative annual doses, broken down by type of personnel, work function, and occupation. (The format for reporting is contained in Regulatory Guide 1.16, "Reporting of Operating Information - Appendix A Technical Specifications," and is similar to that shown in Appendix C of this report.) To obtain data for previous years, each reactor licensee was requested to provide similar information for each year since 1969 in which they had a unit in commercial operation. In every instance, an estimate of the total collective dose (man-rems) incurred by all individuals monitored during the year was provided; however, the number of workers who received measurable doses could not always be determined. The information given in Appendix A, therefore, is not complete for all plants for the years 1969 through 1972.

On February 4, 1974, 10 CFR §20.407 was amended to require licensed nuclear power utilities, among other licensees, to submit an annual statistical report indicating the distribution of the whole body doses of all individuals monitored at each facility. These reports (see Appendix B) allow an estimate to be made of the total collective dose, and of the number of workers receiving measurable doses. These values were used throughout this report (except for Tables 8, 9, 10 and Appendix C) for the years 1973 through 1980.

The plant operating data, such as plant capacity and megawatt-years of electricity generated, was obtained or derived from data included in various issues of the "Operating Units Status Report," (Ref. 1), and from the report "U. S. Central Station Nuclear Power Plants, 1976" (Ref. 2).

This report, and each of its predecessors, summarizes information reported during previous years. However, more plant specific data, such as the annual reports submitted by each plant pursuant to 10 CFR §20.407 and Regulatory Guide 1.16, may be found in those documents listed on the front cover of this report. Additional operating data and statistics for each year after 1972 may be found in a series of reports, "Nuclear Power Plant Operating Experience" (Refs. 3, 4, 5, 6, 7 and 8). The next report in this series (NUREG/CR-2378), which contains data for 1980, should be published in December 1981. These documents are available at all NRC public document rooms, or they may be purchased from the National Technical Information Service as shown in the Reference section.

2. SUMMARY OF OCCUPATIONAL MONITORING DATA AND POWER GENERATION

2.1 Definitions of Terms and Sources of Data

2.1.1 Number of Reactors

Tables 1 through 3 provide summaries of the plant data given in Appendix A for boiling water reactors (BWRs), pressurized water reactors (PWRs), and all light water cooled reactors (LWRs), respectively. The number of reactors included each year (those without parentheses) are those reactors that had been in commercial operation for at least one full year as of December 31 of each of the indicated years. The figure shown in parentheses (for the years 1969-1972) is the number of reactors that provided both the number of individuals that received measurable doses (referred to as "workers") while visiting or working at the facility and the summation of the annual whole body doses (called man-rems) of all of these workers. The annual collective doses shown in parentheses and the other information marked with an asterisk are also based on the data submitted by the number of reactors shown in parentheses.

2.1.2 Collective Dose

The collective doses (in man-rems) shown for 1969 through 1972 were obtained by special request made to the licensee or from monthly and semi-annual operating reports that had been previously submitted pursuant to plant technical specifications. When possible, the number of workers receiving measurable doses was obtained in the same manner. Beginning with 1973, the collective dose and the number of workers receiving measurable doses were obtained from the annual reports submitted pursuant to 10 CFR §20.407. From these reports, the annual collective dose was calculated by summing the products obtained by multiplying the number of individuals shown in each of the dose ranges (shown in Table 7 and Appendix B) by the midpoint of each range. Past experience has shown that the actual mean dose of individuals reported in each dose range is less than the midpoint of the range. Thus the collective doses shown in this report may be about 10% too high.

2.1.3 Breakdown of Collective Dose

In Appendix A, the collective dose that was calculated from the §20.407-type annual reports is broken down by work function (operations and maintenance) and by personnel type (contractor, and station and utility combined) for each plant site. The proportion of the collective dose shown for each type is the same as that reported in the plant's annual report required by its technical specifications (see Appendix C). This was done in the following way:

(1) The collective dose incurred by workers in the work function "Reactor Operations and Surveillance" on each plant's annual report submitted pursuant to their technical specifications (the first number in the last columns in Appendix C) was determined. (2) The ratio of this dose to the total collective dose (the last number in the last columns in Appendix C) was calculated and multiplied by the total collective dose that had been estimated using the §20.407-type annual reports. This

TABLE 1

SUMMARY OF ANNUAL INFORMATION REPORTED BY COMMERCIAL BOILING WATER REACTORS

1969 - 1980

Year	Number Of Reactors Included	Annual Collective Doses (Man-rems)	No. of Workers With Measurable Doses	Gross MW-Yrs Electric Generated	Average Dose Per Worker (Rems)	Average Collective Dose Per Reactor (Man-rems)	Average No. Personnel With Measurable Doses Per Reactor	Average Man-rems Per MW-Yr	Average MW-Yrs Generated Per Reactor	Average Rated Capacity (MWe) Net
1969	3 (2)	586 (300)	290*	192	1.03*	195	145*	3.1	64	112
1970	6 (4)	764 (510)	1,321*	912	0.39*	127	330*	0.8	152	267
1971	7 (5)	1,784 (1,069)	1,873*	1,208	0.57*	255	375*	1.4	187	339
1972	10 (7)	2,858 (2,130)	2,258*	3,058	0.94*	286	323*	0.9	306	434
1973	12	4,564	5,340	3,394	0.85	380	445	1.3	283	459
1974	14	7,095	8,769	4,069	0.81	507	626	1.7	290	513
1975	18	12,611	14,607	5,798	0.86	701	812	2.2	321	611
1976	23	12,626	17,659	8,586	0.71	549	776	1.5	373	647
1977	23	19,042	21,388	9,098	0.89	828	930	2.1	396	645
1978	25	15,096	20,278	11,774	0.74	604	811	1.3	471	668
1979	26	18,322	25,245	11,671	0.73	733	1,010	1.6	467	669
1980	26	29,530	34,094	10,868	0.87	1,136	1,311	2.7	418	664

*During the years 1969 through 1972, all plants reported collective doses but a few did not submit the number of personnel that received measurable doses. The number of reactors that did report doses and number of workers is given in parentheses in the second column. The collective doses shown in parentheses in the third column, as well as the asterisked numbers in the remaining columns, are all based on the data submitted by the number of reactors shown in parentheses. This correction, and others, changed some of the values from those appearing in earlier NUREG documents.

TABLE 2
SUMMARY OF ANNUAL INFORMATION REPORTED BY COMMERCIAL PRESSURIZED WATER REACTORS
1969 - 1980

Year	Number Of Reactors Included	Annual Collective Doses (Man-rems)	No. of Workers With Measurable Doses	Gross MW-Yrs Electric Generated	Average Dose Per Worker (Rems)	Average Collective Dose Per Reactor (Man-rems)	Average No. Personnel With Measurable Doses Per Reactor	Average Man-rems Per MW-Yr	Average MW-Yrs Generated Per Reactor	Average Rated Capacity (MWe) Net
1969	4 (3)	661 (363)	454*	1,097	0.80*	165	151*	0.6	274	349
1970	4 (3)	2,738 (1,089)	1,340*	979	0.82*	684	447*	2.8	245	349
1971	6 (4)	1,844 (912)	905*	1,912	1.01*	307	226*	1.0	319	399
1972	8 (5)	3,708 (2,083)	1,885*	2,544	1.11*	464	377*	1.5	318	446
1973	12	9,399	9,440	3,770	1.00	783	787	2.5	314	533
1974	20	6,627	9,697	6,824	0.68	331	485	1.0	341	619
1975	26	8,268	10,884	11,083	0.76	318	419	0.7	461	643
1976	30	13,807	17,588	13,325	0.79	460	586	1.0	444	675
1977	34	13,469	20,878	17,346	0.65	396	614	0.8	510	699
1978	39	16,713	25,720	19,840	0.65	429	659	0.8	509	723
1979	42	21,437	38,828	18,249	0.55	510	924	1.2	434	729
1980	42	24,266	46,237	18,287	0.52	578	1,101	1.3	435	721

*During the years 1969 through 1972, all plants reported collective doses but a few did not submit the number of personnel that received measurable doses. The number of reactors that did report doses and number of workers is given in parentheses in the second column. The collective doses shown in parentheses in column 3, as well as the asterisked numbers in the remaining columns, are all based on the data submitted by the number of reactors shown in parentheses. This correction, and others, changed some of the values from those appearing in earlier NUREG documents.

TABLE 3

SUMMARY OF ANNUAL INFORMATION REPORTED BY COMMERCIAL LIGHT WATER COOLED REACTORS

1969 - 1980

Year	Number Of Reactors Included	Annual Collective Doses (Man-rems)	No. of Workers With Measurable Doses	Gross MW-Yrs Electric Generated	Average Dose Per Worker (Rems)	Average Collective Dose Per Reactor (Man-rems)	Average No. Personnel With Measurable Doses Per Reactor	Average Man-rems Per MW-Yr	Average MW-Yrs Generated Per Reactor	Average Rated Capacity (MWe) Net
1969	7 (5)	1,247 (663)	744*	1,289	0.89*	178	149*	1.0	184	247
1970	10 (7)	3,502 (1,609)	2,661*	1,892	0.60*	350	380*	1.9	189	300
1971	13 (9)	3,628 (1,981)	2,778*	3,220	0.71*	280	309*	1.1	248	367
1972	18 (12)	6,566 (4,213)	4,143*	5,602	1.02*	365	345*	.2	311	408
1973	24	13,963	14,780	7,164	0.94	582	616	1.9	299	496
1974	34	13,722	18,466	10,883	0.74	404	543	1.3	320	575
1975	44	20,879	26,491	17,769	0.82	475	579	1.2	404	630
1976	53	26,433	35,447	21,911	0.75	499	669	1.2	413	663
1977	57	32,511	42,266	26,444	0.77	570	742	1.2	464	677
1978	64	31,809	45,998	31,614	0.69	497	719	1.0	494	702
1979	67	39,759	64,073	29,920	0.62	593	956	1.3	447	705
1980	68	53,796	80,331	29,155	0.67	791	1,181	1.8	429	699

*During the years 1969 through 1972, all plants reported collective doses but a few did not submit the number of personnel that received measurable doses. The number of reactors that did report doses and number of workers is given in parentheses in the second column. The collective doses shown in parentheses in the third column, as well as the asterisked numbers in the remaining columns, are all based on the data submitted by the number of reactors shown in parentheses. This correction, and others, changed some of the values from those appearing in earlier NUREG documents.

product is the number of man-rems shown in the column headed "Operations" in Appendix A. (3) The number of man-rems shown in the column headed "Maintenance and Others" in Appendix A was determined by first summing the collective doses incurred by workers in the five remaining functions, given in Appendix C, and then calculating the fraction that this dose is of the total collective dose. This fraction was multiplied by the total collective dose estimated from the §20.407-type annual reports to yield the number of man-rems shown in this column of Appendix A. (4) A similar procedure was followed in determining the number of man-rems in the type of personnel columns "Contractor" and "Station & Utility" in Appendix A.

2.1.4 Workers With Measurable Whole Body Doses

The number of workers with measurable doses, rather than the total number of individuals monitored, is shown in Tables 1 through 3 and Appendix A. These values were used to calculate the average annual dose per worker and the average number of personnel per reactor. This was done to delete those individuals, many of whom probably did not routinely work in radiation areas (and were monitored for convenience or for identification purposes), who may have received exposures too small to be detected by personnel monitoring devices.

2.1.5 Megawatt-years of Electricity

The number of gross megawatt-years (MW-Yrs) of electric energy generated each year by each facility is shown in Appendix A. This number was obtained by dividing the gross megawatt-hours of electricity annually produced by each facility by 8,784, the number of hours in the year. The gross megawatt-years of generated electricity that are presented in Tables 1 through 3 are the sums of that produced by all of the reactors included each year. This sum is divided by the number of those reactors included each year to yield the average amount of electric energy generated (MW-Yrs) per reactor, which is also shown in Tables 1 through 3.

2.1.6 Collective Dose per Megawatt-year

The number of megawatt-years generated was also used to determine average values of the annual collective dose per megawatt-year generated. This was calculated by dividing the total collective dose by the total gross megawatt-years generated to yield a quotient, having the units "man-rems per MW-Yr," that is used as a measure of the doses incurred by workers at power reactors in relation to the gross electric energy produced. This value was also calculated for each reactor site and is presented in Tables 4 through 6 and Appendix A.

2.1.7 Average Rated Capacity

The average rated capacity, shown in Tables 1 through 3, was found by dividing the sum of the net maximum dependable capacities (Net MWe) of the reactors by the number of reactors included each year. The net maximum dependable capacity is defined to be the gross electrical output as measured at the output terminals of the turbine generator during the

most restrictive seasonal conditions, less the normal station service loads. This is the "capacity" shown for each plant in Appendix C.

2.2 Average Annual Occupational Doses

Some of the data presented in Tables 1 through 3 is graphically displayed in Figure 1 where one can see that the average collective dose and average number of workers per BWR has been higher than that for PWRs for the last six years and that the values of both parameters have, in general, continued to rise at both types of facilities. At BWRs in 1980, the average collective dose, average number of workers, and collective dose per megawatt-year (Tables 1-3) reached the all-time high values of 1,136, 1,311, and 2.7, respectively. Table 1 shows that the average dose per worker also rose from last year's value of 0.73 rems to 0.87 rems. At PWRs, the values of these three parameters increased to values (578 man-rems per reactors, 1,101 workers per reactor, and 1.3 man-rems per megawatt-year) higher than those reported for the previous six years, while the average dose per worker (Table 2) decreased slightly to 0.52 rems.

Also in Figure 1, a plot of the number of workers per 1,000 megawatts electric (rated capacity) installed is shown in order to examine the possibility that these parameters may be dependent on the installed power. One can see that for several years the ratios were relatively constant. However, the increase in the values for the last two years implies that other factors, such as the type of plant, the number of years that the plant has been in operation (Ref. 9), special inspections, repairs, and other activities deemed necessary by regulatory bodies and others affect these parameters as well.

To further assist in the identification of any trends that might exist in the two parameters - the average and the median collective dose per reactor - Figure 2 is presented. It displays the average and median* values of the collective dose per reactor for BWRs and for PWRs for the years 1973 through 1980. The ranges of the values reported each year are shown by the vertical lines with a small bar at each end marking the two extreme values. The rectangles indicate the range of values of the collective dose exhibited by those plants ranked in the twenty-fifth through the seventy-fifth percentiles. One can see that the median values do not fluctuate as much from year to year as do the average values. The median collective dose for PWRs has slowly increased since 1975, and appears to have levelled off in 1980; while for BWRs, it levelled off at a higher value for 1977 through 1979 and increased in 1980. Furthermore, in all but one case the median collective dose is less than the average which indicates that the collective dose for most plants is less than the average collective dose per reactor (the value that is widely quoted).

*The value at which 50% of the reactors reported greater collective doses and the other 50% reported smaller collective doses.

FIGURE 1

COMMERCIAL LIGHT WATER COOLED REACTORS
1969-1980

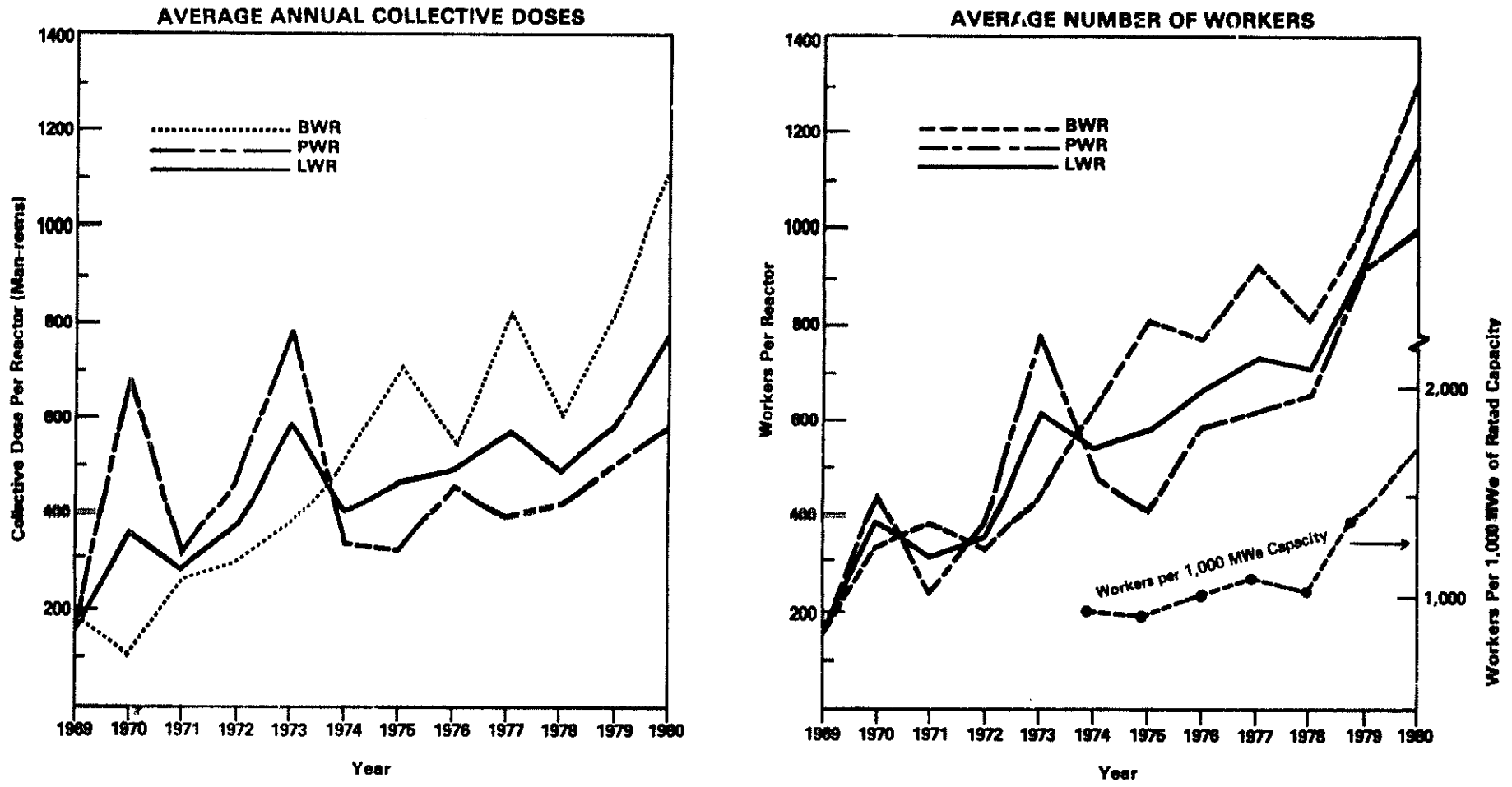
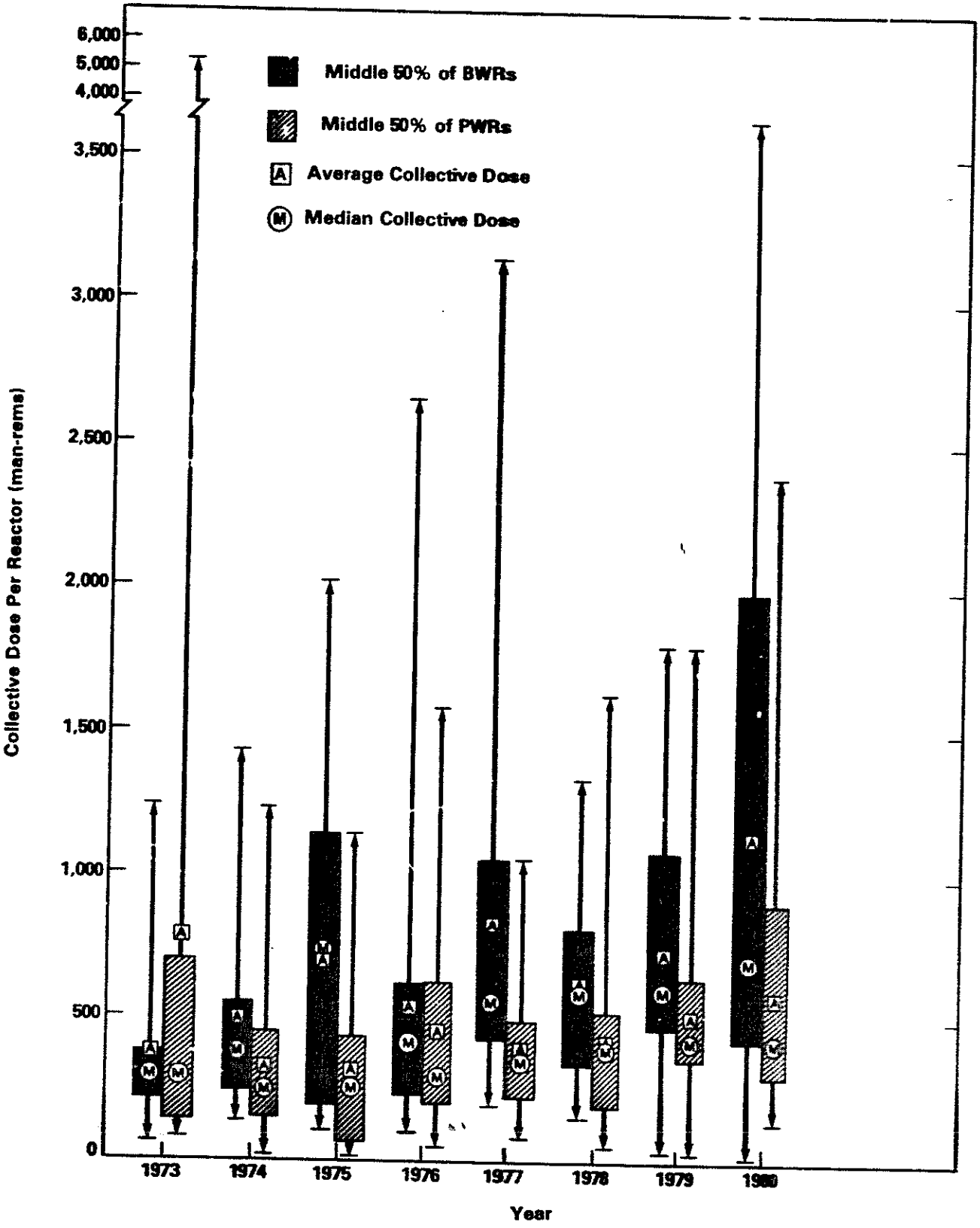


FIGURE 2
AVERAGE, MEDIAN AND EXTREME VALUES OF THE COLLECTIVE DOSE PER REACTOR 1973-1980



2.3 Plant Rankings by Collective Dose Per Reactor

The number of reactors from which data has been collected is still rather small, and the information reported by a few reactors where unusual conditions or problems may have occurred could have a large impact on some of the statistics presented in this report. In an effort to identify those plants, Tables 4 and 5 list the BWRs and PWRs in ascending order of man-rems per reactor for each of the years 1976 through 1980. Two other parameters, dose per worker and collective dose per megawatt-year, are also given for each plant and could have been used in ranking the plants as well. Table 6 ranks the plants that had been in commercial operation for at least five years as of December 31, 1980. At BWRs, the values of the average dose per worker and collective dose per megawatt-year increased somewhat over those that had been calculated for the five years ending in 1979. At PWRs, the average dose decreased slightly while the collective dose per megawatt-year showed a small increase over the same period. The five year averages for the collective dose per reactor and the number of workers per reactor increased by about 20% over the previous five years' values. It should be noted that there are significant differences in nuclear plant designs, even between plants of a given type. Therefore, one should be careful when attempting to draw conclusions from the data.

In general, one can see from the listings in Tables 4 through 6 that the plants having lower values of these three parameters each year are usually the newer plants. Some of the older, smaller plants also appear near the top of the listings since they report small collective doses; however, the ratio of their man-rems to the number of megawatt-years generated will be higher because of their limited power generation capacity. Usually, when a plant reports a large annual collective dose, and a large man-rems to megawatt-year ratio as well, it indicates that extensive maintenance or modifications were undertaken during the year. Also, several plants reported that part of the increase in their collective doses was due to activities, such as seismic hanger inspections and modifications, snubber corrections, masonry wall modifications, and other torus and drywell changes, that were directed by various NRC bulletins or recommended by their nuclear supplier.

3. ANNUAL DOSE DISTRIBUTIONS

3.1 Annual Whole Body Dose Distributions

Table 7 summarizes the distribution of the annual whole body doses received by workers at commercial LWRs during each of the years 1969 through 1980. This distribution is the sum of the annual dose distributions reported by each licensed nuclear facility each year. The distribution reported by each facility for 1980 is shown in Appendix B. From Table 7, one can see that prior to 1973 the reports had a different format such that there were only two dose ranges, 0.0 to 1.25 rems and 1.25 to 2.0 rems, for doses less than two rems. This did not allow an estimate of the collective dose, as previously described, to be made for these years. For the years after 1972, the table indicates that the annual collective dose increased nearly every year, as did the number of monitored individuals. The data for 1980 is graphically displayed in

TABLE 4
BOILING WATER REACTORS
LISTED IN ASCENDING ORDER OF MAN-REMS PER REACTOR

Site Name	1976 [1]Man-Rems per Site	Dose per Worker (Rems)	Man-Rems per MW Yr.
Duane Arnold	105	0.30	0.36
La Crosse	110	0.93	5.23
Brown Ferry 1&2	234	0.11	0.69
Hatch	134	0.21	0.27
Fitzpatrick	202	0.34	0.41
Monticello	263	0.81	0.55
Big Rock Point	299	0.59	9.97
Brunswick 2	326	0.26	1.10
Cooper Station	350	0.46	0.81
Vermont Yankee	411	0.50	1.08
Peach Bottom 2&3	840	0.39	0.61
Nine Mile Point	428	1.09	0.89
Dresden 1,2&3	1680	0.99	3.95
Humboldt Bay	683	1.31	29.70
Quad Cities 1&2	1851	1.35	1.74
Oyster Creek	1078	0.68	2.37
Millstone 1	1194	0.87	2.66
Pilgrim 1	2648	2.01	9.23
Averages per Reactor	547	0.71	1.52

Site Name	1977 [1]Man-Rems per Site	Dose per Worker (Rems)	Man-Rems per MW-Yr.
Cooper Station	198	0.63	0.37
La Crosse	225	1.59	20.36
Vermont Yankee	258	0.40	0.61
Duane Arnold	299	0.56	0.84
Big Rock Point	334	0.72	7.59
Millstone Point 1	394	0.37	0.68
Browns Ferry 1&2	883	0.48	0.68
Hatch 1	485	0.36	1.04
Quad Cities 1&2	1031	1.14	1.06
Dresden 1,2&3	1694	0.91	1.49
Monticello	1000	1.16	2.34
Peach Bottom 2&3	2036	0.72	1.64
Fitzpatrick	1080	0.78	2.34
Brunswick 2	1120	0.74	3.86
Nine Mile Point	1383	1.27	3.89
Oyster Creek	1614	0.96	4.18
Humboldt Bay	1905	1.79	–
Pilgrim 1	3142	1.97	9.91
Averages per Reactor	828	0.89	2.1

Site Name	1978 [1]Man-Rems per Site	Dose per Worker (Rems)	Man-Rems per MW-Yr.
Cooper Station	158	0.53	0.27
La Crosse	164	0.90	7.60
Big Rock Point	175	0.61	3.60
Hatch 1	248	0.19	0.48
Nine Mile Point	314	0.56	0.56
Humboldt Bay	335	1.05	–
Vermont Yankee	339	0.36	0.87
Monticello	375	0.55	0.82
Brunswick 1&2	1004	0.69	0.86
Dresden 1, 2&3	1529	0.79	1.23
Browns Ferry 1,2,&3	1792	0.75	0.90
Peach Bottom 2&3	1317	0.59	0.80
Quad Cities 1&2	1618	1.34	1.44
Fitzpatrick	909	1.00	1.83
Duane Arnold	974	0.86	6.63
Millstone 1	1239	0.89	2.23
Oyster Creek	1279	0.91	2.98
Pilgrim	1327	0.80	2.55
Averages per Reactor	604	0.74	1.35

Site Name	1979 [1]Man-Rems per Site	Dose per Worker (Rems)	Man-Rems per MW-Yr.
Humboldt Bay	31	0.23	PRODUCED NO POWER
Monticello	157	0.42	0.30
La Crosse	188	1.22	7.75
Cooper	221	0.52	0.37
Duane Arnold	276	0.36	0.78
Big Rock Point	455	0.73	35.00
Oyster Creek	487	0.88	0.86
Browns Ferry 1,2,3	1,667	0.62	0.70
Hatch	582	0.27	1.45
Dresden 1,2,3	1,800	0.75	1.78
Peach Bottom 2,3	1,388	0.61	0.80
Fitzpatrick	859	1.01	2.46
Pilgrim	1,015	0.41	1.77
Quad Cities 1,2	2,158	1.26	2.01
Vermont Yankee	1,170	0.96	2.95
Brunswick 1,2	2,603	0.90	3.21
Nine Mile Point	1,497	1.13	4.23
Millstone Point 1	1,793	1.01	3.55
Averages per Reactor	733	0.73	1.57

Site Name	1980 [1]Man-Rems per Site	Dose per Worker (Rems)	Man-Rems per MW-Yr.
Humboldt Bay	22	0.15	PRODUCED NO POWER
La Crosse	218	1.76	9.28
Hatch 1,2	449	0.23	0.45
Big Rock Point	354	0.59	7.24
Monticello	531	0.48	1.29
Nine Mile Point	591	0.50	1.11
Browns Ferry 1,2,3	1,828	0.67	0.84
Duane Arnold	871	0.61	1.96
Dresden 1,2,3	2,105	0.77	1.96
Cooper Station	859	1.09	1.92
Peach Bottom 2,3	2,302	0.83	1.88
Vermont Yankee	1,338	0.93	3.74
Oyster Creek	1,733	0.88	7.44
Brunswick 1,2	3,870	1.02	5.83
Fitzpatrick	2,040	0.99	4.60
Millstone Point 1	2,158	0.71	5.32
Quad Cities 1,2	4,838	1.57	5.58
Pilgrim	3,626	1.02	10.06
Averages per Reactor	1,136	0.87	2.72

[1]For those sites with more than one operating reactor, the numbers of man-rems per reactor is obtained by dividing the number of man-rems reported by the site by the number of reactors.

TABLE 5

PRESSURIZED WATER REACTORS
LISTED IN ASCENDING ORDER OF MAN-REMS PER REACTOR

1976				1977				1978				1979				1980			
Site Name	[1]Man-Rems per Site	Dose per Worker (Rems)	Man-Rems per MW-Yr.	Site Name	[1]Man-Rems per Site	Dose per Worker (Rems)	Man-Rems per MW-Yr.	Site Name	[1]Man-Rems per Site	Dose per Worker (Rems)	Man-Rems per MW-Yr.	Site Name	[1]Man-Rems per Site	Dose per Worker (Rems)	Man-Rems per MW-Yr.	Site Name	[1]Man-Rems per Site	Dose per Worker (Rems)	Man-Rems per MW-Yr.
Rancho Seco	58	0.19	0.22	Beaver Valley	87	0.26	0.27	Davis Besse	48	0.11	0.15	Davis Besse	30	0.10	0.08	Davis Besse	164	0.12	0.80
Yankee Rowe	59	0.39	0.42	Palisades	100	0.30	0.16	Farley 1	108	0.20	0.15	Prairie Island 1,2	180	0.30	0.21	Kewaunee	165	0.41	0.38
Calvert Cliffs 1	74	0.15	0.10	Kewaunee	140	0.45	0.33	Prairie Island 1&2	221	0.40	0.24	Fort Calhoun	126	0.28	0.29	Prairie Island 1,2	353	0.36	0.44
Maine Yankee	89	0.36	0.17	Prairie Island 1&2	300	0.42	0.33	Haddam Neck	117	0.84	0.21	Rancho Seco	128	0.44	0.18	Three Mile Island 1,2	394	0.17	
Cook 1	116	0.29	0.14	St. Lucie	152	0.34	0.23	Salem 1	122	0.21	0.22	Kewaunee	127	0.37	0.31	Yankee Rowe	213	0.42	5.86
Millstone Point 2	188	0.27	0.32	Trojan	174	0.29	0.22	Kewaunee	154	0.46	0.33	Yankee Rowe	127	0.29	0.85	North Anna 1	216	0.10	0.32
Point Beach 1&2	370	1.18	0.43	Point Beach 1&2	430	1.03	0.49	Point Beach 1&2	320	0.95	0.33	Beaver Valley	132	0.19	0.60	Cook 1,2	493	0.37	0.32
Prairie Island 1&2	447	0.55	0.62	Millstone Point 2	243	0.38	0.47	Arkansas 1	189	0.26	0.30	San Onofre	139	0.27	0.35	Point Beach 1,2	598	1.07	0.82
Kewaunee	270	0.71	0.67	Maine Yankee	245	0.48	0.40	Beaver Valley	190	0.29	0.63	Maine Yankee	154	0.39	0.29	Indian Point 3	308	0.32	0.84
Zion 1&2	671	0.74	0.50	Arkansas 1	256	0.43	0.42	Calvert Cliffs 1 & 2	500	0.38	0.42	Trojan	257	0.35	0.41	Calvert Cliffs 1,2	877	0.45	0.52
Three Mile Island 1	286	0.35	0.54	Fort Calhoun	297	0.56	1.94	Yankee Rowe	282	0.50	1.94	Point Beach 1,2	844	1.06	0.80	Arkansas 1	342	0.28	0.76
Arkansas 1	289	0.61	0.82	Cook 1	300	0.37	.6	Trojan	312	0.46	1.66	Oconee 1,2,3	1,001	0.48	0.69	Oconee 1,2,3	1,065	0.50	0.62
Fort Calhoun	313	0.61	1.18	Yankee Rowe	356	0.49	.65	Crystal River	321	0.50	1.03	Cook 1,2	718	0.50	0.52	Rancho Seco	412	0.46	0.78
Oconee 1,2&3	1026	0.84	0.66	Indian Point 1*2&3	1071	0.77	0.84	Rancho Seco	323	0.64	0.53	Arkansas	369	0.28	0.93	Trojan	421	0.36	0.58
Haddam Neck	449	0.70	0.93	Three Mile Island 1	360	0.32	0.54	Cook 1	336	0.43	0.45	Calvert Cliffs 1,2	805	0.56	0.58	Palisades	424	0.32	1.47
Turkey Point 3&4	1184	0.72	1.22	Rancho Seco	391	0.76	0.55	St. Lucie	337	0.42	0.56	St. Lucie	438	0.48	0.74	Farley	435	0.33	0.78
Ginna	536	0.84	2.66	Ginna	401	0.78	1.10	San Onofre	401	0.52	1.24	North Anna	449	0.22	0.69	Salem 1	448	0.26	0.86
Palisades	696	0.91	2.01	Oconee 1,2&3	1328	0.83	0.85	Fort Calhoun	410	0.69	1.20	Millstone Point 2	472	0.62	0.91	Zion 1,2	920	0.68	0.85
Robinson 2	715	1.20	1.22	Robinson 2	455	0.72	0.69	Maine Yankee	420	0.66	0.65	Crystal River	495	0.43	1.09	Maine Yankee	462	0.63	0.63
San Onofre	880	0.66	2.98	Zion 1&2	1003	1.28	0.78	Ginna	460	0.68	1.17	Salem	584	0.38	2.34	Indian Point 1,2	971	0.62	1.90
Indian Point 1*&2	1950	1.23	7.14	Turkey Point 3&4	1036	0.79	1.06	Oconee 1, 2&3	1393	0.85	0.73	Three Mile Island 1,2	1,170	0.29	4.40	St. Lucie	532	0.60	0.85
Surry 1&2	3165	1.15	3.41	Calvert Cliffs 1	547	0.24	0.98	Three Mile Island 1	504	0.26	0.73	Ginna	592	0.67	1.67	Beaver Valley	553	0.30	13.89
Averages per Reactor	460	0.79	0.99	Haddam Neck	642	0.72	1.33	Zion 1 & 2	1017	0.92	0.63	Indian Point 3	836	0.78	1.12	Crystal River	626	0.88	1.66
				San Onofre	847	0.86	3.01	Turkey Point 3&4	1032	0.77	1.03	Zion 1,2	1,274	0.87	1.03	Millstone point 2	636	0.71	1.10
				Surry 1&2	2307	1.24	2.02	Indian Point 1*,2 & 3	2006	1.05	1.71	Indian Point 1*,2	1,279	0.95	2.23	Ft. Calhoun	668	0.75	2.76
				Averages per Reactor	396	0.65	0.78	Palisades	784	0.90	1.45	Farley	843	0.52	3.05	Ginna	706	0.66	1.91
								Surry 1&2	1837	0.83	1.52	Turkey Point 3,4	1,680	0.84	2.07	Turkey Point 3,4	1,651	0.92	1.67
								Robinson 2	883	1.02	2.01	Palisades	864	0.53	2.08	Haddam Neck	1,353	0.73	3.17
								Millstone 2	1621	1.14	3.02	Haddam Neck	1,161	0.95	2.35	Robinson 2	1,852	0.92	4.78
								Average per Reactor	428	0.65	0.84	Robinson 2	1,188	0.82	2.46	Surry 1,2	3,836	0.72	6.75
												Surry 1,2	3,584	0.71	10.45	San Onofre 1	2,387	0.78	26.53
												Averages per Reactor	510	0.55	1.17	Averages per Reactor	578	0.62	1.33

*Indian Point 1 was defueled in 1975.

[1]For those sites with more than one operating reactor, the numbers of man-rems per reactor is obtained by dividing the number of man-rems reported by the site by the number of reactors

TABLE 6

LIGHT WATER COOLED REACTORS
LISTED IN ASCENDING ORDER OF MAN-REMS PER REACTOR

FIVE YEAR TOTALS AND AVERAGES
1976 - 1980

BOILING WATER REACTORS

[2]Site Name	[1]Total Man-Rems per Site	Total Workers with Measurable Doses	Average Dose per Worker (Rems)	Total Mega-Watt Years	Average Man-Rems per MW-Yr.
La Crosse	903	718	1.26	104.5	8.6
Big Rock Point	1,607	2,460	0.65	183.5	8.8
Cooper Station	1,785	2,586	0.69	2,586.8	0.7
Duane Arnold	2,324	3,865	0.60	1,499.1	1.6
Monticello	2,326	3,350	0.69	2,295.2	1.0
Dresden 1,2,3	8,807	10,678	0.82	5,589.7	1.6
Humboldt Bay	2,975	2,183	1.36	23.5	126.6
Vermont Yankee	3,516	5,053	0.70	1,972.4	1.8
Peach Bottom 2,3	7,883	12,267	0.64	7,182.1	1.1
Nine Mile Point	4,213	4,546	0.93	2,247.6	1.9
Fitzpatrick	5,090	5,790	0.88	2,305.0	2.2
Quad Cities 1,2	11,296	8,116	1.39	4,987.7	2.3
Oyster Creek	6,171	7,474	0.83	2,047.8	3.0
Millstone Point 1	6,776	8,636	0.78	2,492.9	2.7
Pilgrim	11,758	10,866	1.08	2,058.2	5.7
Grand Totals and Averages	77,430 815/RxYr	88,578 932/RxYr	0.87	37,567.1 396/RxYr	2.1

PRESSURIZED WATER REACTORS

[2]Site Name	[1]Total Man-Rems per Site	Total Workers with Measurable Doses	Average Dose per Worker (Rems)	Total Mega-Watt Years	Average Man-Rems per MW-Yr
Prairie Island 1,2	1,501	3,659	0.41	4,254.9	0.4
Kewaunee	855	1,772	0.48	2,143.3	0.4
Yankee Rowe	1,037	2,385	0.43	606.4	1.7
Point Beach 1,2	2,361	2,237	1.06	4,180.8	0.6
Rancho Seco	1,309	2,497	0.52	2,800.1	0.5
Maine Yankee	1,366	2,518	0.54	3,036.5	0.4
Arkansas 1	1,445	4,353	0.33	2,551.9	0.6
Fort Calhoun	1,814	2,989	0.61	1,642.3	1.1
Oconee 1,2,3	5,803	8,670	0.67	8,448.5	0.7
Zion 1,2	4,785	5,497	0.87	6,756.2	0.7
Ginna	2,787	3,896	0.72	1,726.4	1.6
Palisades	2,838	4,829	0.59	1,987.0	1.4
Millstone Point 2	3,139	4,356	0.72	2,700.3	1.2
Turkey Point 3,4	6,583	8,107	0.81	4,755.5	1.4
Haddam Neck	3,721	4,840	0.77	2,446.8	1.5
San Onofre	4,654	6,663	0.70	1,400.6	3.3
Robinson 2	5,173	5,637	0.92	2,446.8	2.1
Surry 1,2	14,729	17,198	0.86	4,191.5	3.5
Grand Totals and Averages	65,900 527/RxYr	92,103 737/RxYr	0.72	58,075.8 465/RxYr	1.1

[1]For those sites with more than one operating reactor, the number of man-rems is obtained by dividing the number of man-rems by the number of reactors at the site.

[2]Multiple unit sites where all reactors had not completed one full year of commercial operation as of 12-31-76 are not included.

TABLE 7*

SUMMARY DISTRIBUTION OF ANNUAL WHOLE BODY DOSES AT COMMERCIAL LIGHT WATER COOLED REACTORS

1969 - 1980

Year	Number of Individuals with Whole Body Exposures in the Indicated Ranges (Rems)															Total Number Monitored	Annual Collective Doses (Man-rems)
	No Measurable Exposure	Measurable <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0	10.0-11.0	
	0.0-1.25			1.25-2.0													
1969	2,479			128				134	65	25	5	2					2,838	
1970	6,839			146				166	163	88	98	8	1				7,509	
1971	8,586			410				315	137	105	17	11					9,581	
1972	14,095			688				532	199	111	46	21	9	6	6		15,713	
1973	19,043	5,494	1,698	1,214	740	652	2,468	1,584	422	251	125	71	38	16	7		33,823	13,963**
1974	20,472	6,735	2,887	2,056	1,182	906	2,503	1,378	471	226	86	30	6				38,938	13,722**
1975	18,864	8,841	3,674	2,750	1,685	1,339	3,948	1,872	691	423	169	60	24	12		1	44,343	20,879**
1976	25,704	12,821	5,130	4,135	2,520	2,030	4,880	2,354	789	487	188	70	26	11	5	1	60,521	26,433**
1977	24,868	13,970	6,534	5,050	3,258	2,486	6,162	2,837	1,130	[illegible]	141	66	36	21	6		67,134	32,511**
1978	30,143	16,639	6,943	5,504	3,399	2,498	6,405	2,989	1,080	418	67	26	8			(>12) 2	76,121	31,804**
1979	45,087	24,301	9,846	8,159	5,189	3,479	7,934	3,307	1,251	477	86	28	13	2		(11-12) 1	109,160	39,759**
1980	53,547	29,638	11,750	9,820	6,082	4,518	11,474	4,515	1,537	686	192	98	18	3			133,878	53,796**

*Summary of reports submitted in accordance with 10 CFR 20.407 by plants that had been in commercial operation for at least one full year as of December 31 of each of the indicated years.

**[illegible]

Figure 3 by plotting the log of the annual dose against the cumulative percent on a probability axis. If the data were log-normally distributed, as has found to be the case for certain dose ranges (Ref. 10), the data points would form a straight line. However, distributions in which there are annual doses that exceed 2 rems frequently depart from a straight line because of the licensees' efforts to meet various recommendations and limits.

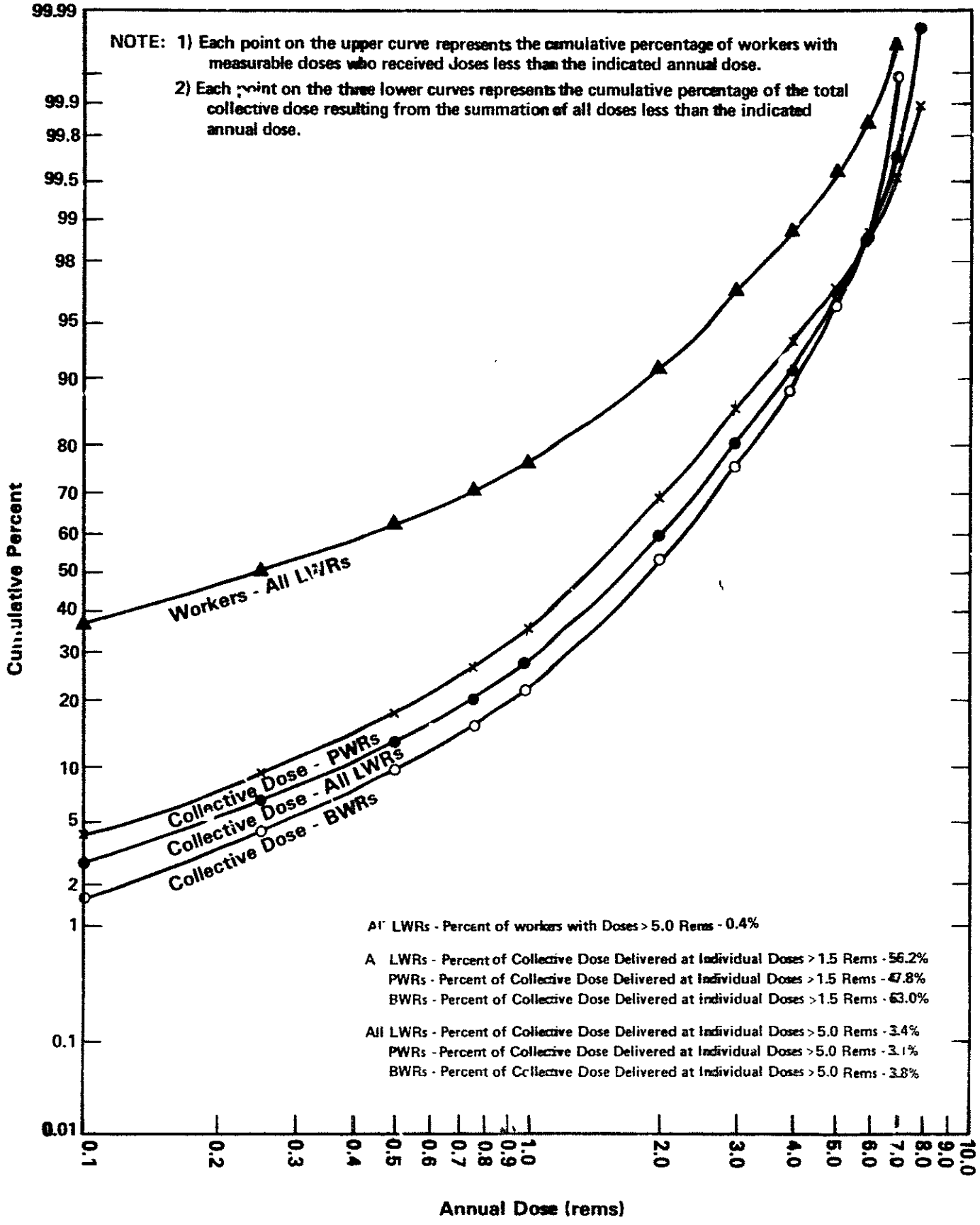
The top curve in Figure 3 shows the cumulative distribution of the number of workers receiving measurable doses that were reported in the dose ranges shown in Table 7 for 1980. From it one can quickly see that about 77% of the workers received annual doses less than one rem, and that about 99.6% of them received doses less than five rems. This is less than the portion of workers (99.8%) that had received such doses for the previous two years. The three lower curves indicate the cumulative distribution of the collective doses incurred by the workers at all LWRs, and at PWRs and BWRs during 1980. One can see that, at LWRs, those workers that received doses of less than one rem (77% of all workers) incurred only 28% of the collective dose, while those workers receiving doses greater than 5 rems (0.4% of all workers) received 3.5% of the collective dose. The position of the curve for PWRs (above that of the curve for BWRs) at doses less than six rems indicates that a larger portion of the collective dose was incurred by workers receiving lower individual doses than at BWRs. For doses greater than six rems, the situation reversed. Also in Figure 3, in the statements at the bottom, is the portion of the collective dose incurred by workers who received doses greater than 1.5 rems. These particular values are shown because the United Nations Scientific Committee on the Effects of Atomic Radiation recommended that this fraction should be one of the parameters used in the analyses and comparison of exposure data (Ref. 11). The Committee also advised that the normal range for this parameter should be from 3% to 60%. One can see that the values of the parameter are near the upper limit of this range with 56.2% at all LWRs, 47.8% at PWRs, and 63.0% at BWRs.

The compilation of the distribution data submitted by each facility into one report, however, introduces an additional source of error. Since individuals are not identified in the annual distribution reports, an individual who was monitored by five different reactor facilities would have been counted once on each facility's report. Therefore, when the data were summed to determine the total number of individuals monitored by all facilities, this person would have been counted as five individuals rather than as one. This could affect the distribution of doses as well as the number of individuals and their average dose, because the individual would have been counted five times in the lower dose ranges rather than one time in a higher range in which his actual accumulated dose (the sum of his doses incurred at each facility) would have placed him. Further discussion of this is provided in Section 4.3.

FIGURE 3

CUMULATIVE PERCENT OF ANNUAL INDIVIDUAL DOSES
AND COLLECTIVE DOSES

1980



3.2 Dose Distributions by Work and Job Function

Tables 8, 9 and 10 summarize the annual data submitted in accordance with plant technical specifications in the format described in Regulatory Guide 1.16. The licensees are requested to record the collective doses received by station employees, utility employees, and contract workers among various prescribed work functions and occupations. The report submitted by each station for 1980 is contained in Appendix C. One should note that in some cases, the licensee data had to be modified slightly in order to fit into the prescribed categories.

Table 8 provides a detailed summary of the distribution of collective dose by work function and personnel types for BWRs, PWRs and all LWRs. It shows that contract workers performing special maintenance at LWRs incur the largest portion of the collective dose. Table 9 presents a more general summary of this data for the last five years, and one can see that workers involved in routine and special maintenance activities continue to incur most of the total cumulative dose. At BWRs (Table 8) workers involved in these activities received 80.8% of the cumulative dose for BWRs, an increase of about 10% from last year's value, while at PWRs these workers received 70.6% of the cumulative dose, an increase of only 3.6% over last year's value. The portions of the collective dose received by workers during inservice inspection and refueling at BWRs are 3.3% and 5.2%, respectively; at PWRs such workers received 8.2% and 7.1%, respectively, of the collective dose. Overall, contractor personnel received 68.4% of the collective dose (about 10% more than last year), and the station and utility employees received the remaining 31.6% at LWRs.

Table 10 presents the distribution of the collective dose at all LWRs among five occupations. As expected, maintenance personnel incurred the majority (75.3%) of the collective dose, with contractor maintenance personnel receiving about twice as much as the station and utility maintenance employees combined. Supervisory personnel received only 2.1% of the dose, while workers in the remaining three occupations - operations, health physics, and engineering - received 6.7%, 8.2%, and 7.7%, respectively, of the collective dose. The total collective dose, 46,224.5 man-rems, shown in Table 10 does not equal that shown in Table 8 because several sites did not provide the distribution of the collective dose by occupation. Also, the collective doses shown in Tables 8 and 10 do not equal those shown in other tables in the report because they are the sum of the doses taken from the type of annual reports shown in Appendix C rather than the collective dose that was calculated from the §20.407-type annual reports.

3.3 Health Implications of Average Annual Doses

If any biological effects are caused by exposures to radiation in the work place, the effects are likely to occur only after many years because the most important effects are cancer induction and genetic damage leading to the transmission of hereditary diseases. A vast amount of scientific information is available from which estimates of these risks can be made. Much of this information has been obtained from epidemiologic studies of human populations at levels of exposures considerably

TABLE 8

ANNUAL COLLECTIVE DOSES
BY WORK FUNCTION AND PERSONNEL TYPE

1980

Work Function	Station Employees		Utility Employees		Contract Workers & Others		Total per Function	
	MAN-REMS	% OF TOTAL	MAN-REMS	% OF TOTAL	MAN-REMS	% OF TOTAL	MAN-REMS	% OF TOTAL
BOILING WATER REACTORS								
REACTOR OPERATIONS & SURVEILLANCE	1615.1	5.8 %	82.1	0.3 %	421.0	1.5 %	2118.2	7.6 %
ROUTINE MAINTENANCE	2487.9	8.9 %	1448.2	5.2 %	7984.7	28.6 %	11920.8	42.8 %
INSERVICE INSPECTION	108.4	0.4 %	142.8	0.5 %	655.8	2.4 %	907.1	3.3 %
SPECIAL MAINTENANCE	745.2	2.7 %	606.4	2.2 %	9262.5	33.2 %	10614.1	38.1 %
WASTE PROCESSING	524.2	1.9 %	12.7	0.0 %	343.7	1.2 %	880.6	3.1 %
REFUELING	557.6	2.0 %	67.0	0.2 %	814.6	3.0 %	1439.2	5.2 %
TOTALS	6038.4	21.7 %	2359.3	8.4 %	19482.3	69.9 %	27880.0	100.0 %
PRESSURIZED WATER REACTORS								
REACTOR OPERATIONS & SURVEILLANCE	1784.0	7.6 %	95.2	0.4 %	822.6	3.5 %	2701.8	11.5 %
ROUTINE MAINTENANCE	1719.1	7.3 %	627.2	2.7 %	4003.6	17.0 %	6349.8	27.0 %
INSERVICE INSPECTION	158.8	0.7 %	126.8	0.5 %	1637.6	7.0 %	1923.1	8.2 %
SPECIAL MAINTENANCE	1019.8	4.3 %	1042.0	4.4 %	8215.6	34.9 %	10277.2	43.8 %
WASTE PROCESSING	333.9	1.4 %	31.0	0.1 %	264.7	1.1 %	629.6	2.6 %
REFUELING	603.3	2.6 %	319.4	1.4 %	731.5	3.1 %	1654.2	7.1 %
TOTALS	5620.6	23.9 %	2241.7	9.5 %	15675.5	66.6 %	23535.7	100.0 %
ALL LIGHT WATER REACTORS								
REACTOR OPERATIONS & SURVEILLANCE	3399.1	6.6 %	177.3	0.3 %	1243.6	2.4 %	4820.0	9.3 %
ROUTINE MAINTENANCE	4207.0	8.2 %	2075.4	4.0 %	11988.2	23.3 %	18270.8	35.5 %
INSERVICE INSPECTION	267.0	0.5 %	269.8	0.5 %	2293.4	4.5 %	2830.2	5.5 %
SPECIAL MAINTENANCE	1764.8	3.4 %	1648.4	3.2 %	17478.1	34.0 %	20891.3	40.6 %
WASTE PROCESSING	858.1	1.7 %	43.7	0.1 %	609.4	1.2 %	1510.2	3.0 %
REFUELING	1160.9	2.3 %	386.4	0.8 %	1546.1	3.0 %	3093.4	6.1 %
TOTALS	11658.9	22.7 %	4601.0	8.9 %	35157.8	68.4 %	51415.7	100.0 %

TABLE 9

PERCENTAGES OF ANNUAL COLLECTIVE DOSE
AT LWRS BY WORK FUNCTION

Work Function	Percent of Dose					
	1975	1976	1977	1978	1979	1980
Reactor Operations and Surveillance	10.8%	10.2%	10.5%	13.3%	12.2%	9.5%
Routine Maintenance	52.6%	31.0%	28.1%	31.5%	29.2%	35.5%
Inservice Inspection	3.0%	6.0%	6.4%	7.7%	9.0%	5.5%
Special Maintenance	19.0%	40.0%	42.5%	35.9%	39.4%	40.6%
Waste Processing	6.9%	5.0%	5.8%	5.0%	3.6%	3.0%
Refueling	7.7%	7.9%	6.7%	6.6%	6.6%	6.1%

TABLE 10

ANNUAL COLLECTIVE DOSES BY OCCUPATION AND PERSONNEL TYPE

1980

Occupation	Station Employees		Utility Employees		Contract Workers & Others		Total per Occupation	
	MAN-REMS	% OF TOTAL	MAN-REMS	% OF TOTAL	MAN-REMS	% OF TOTAL	MAN-REMS	% OF TOTAL
BOILING WATER REACTORS								
MAINTENANCE	2761.8	9.9 %	1962.7	7.0 %	17339.9	62.1 %	22064.4	79.0 %
OPERATIONS	1697.9	6.1 %	16.7	0.1 %	167.9	0.6 %	1882.5	6.8 %
HEALTH PHYSICS	636.1	2.3 %	24.2	0.1 %	1105.5	4.0 %	1765.8	6.4 %
SUPERVISORY	418.8	1.5 %	18.1	0.1 %	78.0	0.3 %	514.9	1.9 %
ENGINEERING	523.8	1.9 %	337.5	1.2 %	791.1	2.8 %	1652.4	5.9 %
TOTALS	6038.4	21.7 %	2359.2	8.5 %	19482.4	69.8 %	27880.0	100.0 %
PRESSURIZED WATER REACTORS								
MAINTENANCE	2422.0	13.2 %	1590.0	8.7 %	8750.8	47.7 %	12762.8	69.6 %
OPERATIONS	983.4	5.4 %	41.7	0.2 %	191.7	1.0 %	1216.8	6.6 %
HEALTH PHYSICS	611.9	3.3 %	77.5	0.4 %	1317.9	7.2 %	2007.3	10.9 %
SUPERVISORY	211.3	1.2 %	20.1	0.1 %	207.5	1.1 %	438.9	2.4 %
ENGINEERING	310.6	1.7 %	175.6	1.0 %	1432.6	7.8 %	1918.7	10.5 %
TOTALS	4539.2	24.8 %	1904.8	10.4 %	11900.5	64.8 %	18344.5 [A]	100.0 %
ALL LIGHT WATER REACTORS								
MAINTENANCE	5183.8	11.2 %	3552.7	7.7 %	26090.7	56.4 %	34827.2	75.3 %
OPERATIONS	2681.3	5.8 %	58.4	0.1 %	359.6	0.8 %	3099.3	6.7 %
HEALTH PHYSICS	248.0	2.7 %	101.7	0.2 %	2423.4	5.3 %	3773.1	8.2 %
SUPERVISORY	630.1	1.4 %	38.2	0.1 %	285.5	0.6 %	953.8	2.1 %
ENGINEERING	834.4	1.8 %	513.0	1.1 %	2223.7	4.8 %	3571.1	7.7 %
TOTALS	10577.6	22.8 %	4264.0	9.2 %	31382.9	67.9 %	46224.5 [A]	100.0 %

[A] The remaining 5,191.2 man-rems of the total doses shown in Table 8 were not categorized by personnel occupation by the Indian Point 1 & 2, Point Beach 1 & 2, and Surry 1 & 2 plants.

higher than those normally experienced in the work place. Complementary to this, information obtained from many animal and cell biology studies have greatly enhanced our knowledge and understanding of the biological effects of ionizing radiation. Although using this information to estimate risks in the work place introduces uncertainties, these uncertainties can be dealt with in such a manner that the risk is not likely to be underestimated. Thus, the discussion below is likely to overstate the health implications rather than understate them.

Cancer induction as a result of radiation exposure has been examined by many organizations having scientific and medical expertise in the subject. One of these, the National Academy of Sciences (NAS), completed a comprehensive review of the biological effects of ionizing radiation in 1980 and published its findings (Ref. 12). Based on this report, a large working population receiving one million man-rems might suffer an estimated 100 to 200 additional cancers over the remaining years of their lives. This risk estimate can be applied to the 53,796 man-rems shown in Table 7 and the 80,331 workers who received measurable exposures. The result is that for the total work force exposed at commercial LWRs in 1980, the number of additional cancer deaths would be less than ten. This addition is made to the 12,000 deaths or so that would occur in this approximately 80,000 workers normally without exposure to this amount of radiation. Perhaps more meaningful to the individual workers are the health implications to the worker receiving the average dose of 0.67 rems and the maximum dose of 9 rems or so during 1980. The estimated risk of dying of cancer during the remainder of life is one chance in 10,000 for the average dose and one chance in 1,000 for the highest dose. Should a worker receive 0.67 rems per year continuously during his entire working career his risk of dying from cancer will increase by about 2% of the normal risk. These risks can be compared to the American Cancer Society's estimates of one chance in four of having cancer and one chance in seven of dying of cancer.

The potential genetic effects from a worker population receiving about 50,000 man-rems is very small compared to genetic damages that normally occur spontaneously in this population. Based again on the 1980 NAS report, from zero to four serious genetic diseases could be induced in first generation children of the 80,000 exposed* workers and from three to 60 in all future generations. This number is compared to the approximately 100,000 serious genetic defects that occur normally in one million live births.

3.4 High Temperature Gas Cooled Reactor (HTGR)

The only HTGR operating in the United States is the Fort St. Vrain plant near Denver, Colorado. It is owned by the Public Service Company of Colorado who was licensed to operate the plant on December 21, 1973. The 330 MWe (net) rated plant achieved initial criticality on January 31, 1974, and began generating electricity in December 1976. However, the plant did not declare commercial operability until July 1, 1979 and it is still restricted to a 70% power level, except for testing.

*Assuming that each of them will have one child in the future.

As shown in the Table 11, annual whole body doses incurred by workers at the plant have been minimal. No one has exceeded an annual dose of 0.25 rems, and the average dose per worker remains at about 0.05 rems. For the seven years ending on December 31, 1980. the total collective dose for workers at the site was 18.6 man-rems, and a total of 207.5 megawatt-years of electricity had been generated. This yields a seven-year average of about 0.1 man-rems per megawatt-year. The average value of this parameter for LWRs is eighteen times as much (Table 3).

TABLE 11
ANNUAL DOSES AT FORT ST. VRAIN
1974 - 1980

No. of Individuals with Annual Doses in Ranges (Rems)				Total No. of Individuals Monitored	Annual Collective Dose (Man-Rems)	Gross MW-Yrs Generated	Average Measurable Dose Per Worker (Rems)
Year	No Measurable Dose	Measurable <0.10	0.10-0.25				
1974	1597	63	1	1,661	3.3	0.0	0.05
1975	1263	0	0	1,263	0.0	0.0	0.00
1976	1362	25	0	1,387	1.3	2.8	0.05
1977	946	55	1	1,002	2.9	29.8	0.05
1978	896	34	0	930	1.7	75.7	0.05
1979	1149	170	2	1,271	8.8	16.0	0 05
1980	902	57	1	960	3.0	83.2	0.05

4. TERMINATION DATA SUBMITTED PURSUANT TO 10 CFR §20.408

4.1 Termination Reports, 1969-1980

In 1969 the NRC (then the Atomic Energy Commission) began requiring operating nuclear power facilities and three other types of licensees* to submit personnel identification and exposure information upon the termination of each monitored person's employment or work assignment in the licensee's facility. The appropriate information on each report is manually coded and entered into the Commission's computerized Radiation Exposure Information and Reporting System at Oak Ridge, Tennessee. The data are retrievable through numerous ways - social security number, name, facility, etc. - which allows statistical analysis of the data, as well as the tracing of individual dose histories. During the years that this information has been collected, some 630,000 termination records have been received for approximately 170,000 individuals who have been reported as having terminated their employment at nuclear power plants. The figures given for the number of reports and the number of individuals are different because numerous individuals have been terminated more than once over the years and because some individuals may have had external doses reported for more than one part of the body, as well as estimates of internal depositions of radioactive material, each of which is counted as one record. Table 12 provides a breakdown of this information for

*Industrial radiographers; fuel processors, fabricators, and reprocessors; and manufacturers and distributors of specified quantities of byproduct material.

individuals terminating during each of the eleven years and shows that the number of such records continues to increase each year. This indicates a growing industry need for workers even though the number of operating reactors is increasing very slowly.

TABLE 12

TERMINATION REPORTS FOR REACTOR PERSONNAL

1969 - 1980

Year	Number of Termination Records	Number of Terminating Individuals
1969	790	730
1970	2,130	1,910
1971	2,350	2,200
1972	4,500	3,890
1973	11,530	9,070
1974	16,950	11,600
1975	38,380	22,630
1976	63,590	35,290
1977	80,400	36,550
1978	84,540	37,100
1979	111,030	47,080
*1980	130,910	57,710

4.2 Transient Workers per Calendar Quarter

One use that is being made of the information contained in the termination reports is the examination of the doses being received by short-term workers. Since nearly half of the termination reports indicated periods of exposure that were less than 90 days, it is possible that several thousand individuals could have been employed by two or more licensees during the same calendar quarter. Thus, by defining a "transient" worker to be a radiation worker who began and terminated employment at two or more different licensed facilities within one calendar quarter, one could examine the doses of those workers most likely to approach the quarterly limits without their present employer's knowledge since they move so rapidly among facilities.

Table 13 displays some of the information gathered from these termination reports that were submitted by the licensed nuclear power facilities. The number of these workers has increased more than twentyfold during the five years 1972 through 1976, but now appears to be levelling off at about 1500. This reflects the rate of growth of the nuclear power industry and its need for short-term workers. One can see from the top part of the table that the average individual dose (which is close to being a quarterly dose for most of these workers) has shown a decreasing trend during this time and fell to its lowest value of 0.44 rems in 1980.

*All of the termination data for individuals terminating during 1980 has not yet been entered into the REIR System.

TABLE 13

TRANSIENT WORKERS PER CALENDAR QUARTER AT NUCLEAR POWER FACILITIES

1972 - 1980*

Year	No. of Commercial Reactors	No. of Workers Terminated by Two or More Licensees	Collective Dose (Man-rems)	Average Dose (Rems)
1972	18	57	57	1.00
1973	24	146	123	0.84
1974	34	285	157	0.56
1975	44	684	493	0.72
1976	53	1,257	889	0.71
1977	57	1,435	851	0.59
1978	64	1,500	680	0.45
1979	67	1,754	802	0.46
1980	69	1,706	743	0.44

Year	No. of Workers Terminated by Two Licensees	Collective Dose (Man-rems)	Average Dose (Rems)	No. of Workers Terminated by Three Licensees	Collective Dose (Man-rems)	Average Dose (Rems)	No. of Workers Terminated by Four Licensees	Collective Dose (Man-rems)	Average Dose (Rems)
1972	54	52	0.96	2	3	1.50	1	2	2.00
1973	133	108	0.81	11	13	1.18	2	2	1.00
1974	255	132	0.52	28	24	0.86	2	1	0.50
1975	609	427	0.70	70	62	0.89	5	4	0.80
1976	1,095	720	0.66	145	146	1.01	17	23	1.35
1977	1,271	718	0.56	147	115	0.78	17	18	1.06
1978	1,303	590	0.45	165	75	0.45	32	15	0.47
1979	1,527	647	0.43	178	130	0.73	49	25	0.51
1980*	1,642	622	0.43	201	95	0.47	43	26	0.60

* Data for 1980 may not be 100% complete.

The lower half of the table breaks down the information shown in the first part and presents the doses of the workers employed by two, three and four or more different reactor licensees. One can see that the majority of these workers were reported by two different licensees during a quarter, while the smaller number of those terminated by three or more licensees generally showed higher average doses. Examinations of these records have revealed that some individuals have worked for as many as five different NRC licensees during one calendar quarter. However, only one instance was found in 1980 in which a worker slightly exceeded his quarterly limit of three rems as a result of his working at two different licensed facilities within one calendar quarter. This was because the dose that he had received while employed by the first utility was revised upward later in the year. This resulted in his receiving a quarterly dose of 3.1 rems. That is not to say that no other workers' doses have exceeded the quarterly limit because the records of those who were employed by a second licensee for a period spanning the end of a calendar quarter could not be examined in this manner, and the records of those employed by other than the four categories of NRC licensees are not submitted to the NRC.

4.3 Transient Workers per Calendar Year

Since the number of transient workers per calendar quarter comprise only a small percentage of the total number of individuals terminating each year, it was decided to change the criteria such that the records of more workers would be examined. This was done by selecting the records of all individuals who began and terminated two or more periods of employment with at least two different reactor facilities within one calendar year and by summing each worker's whole body doses. An examination of this data would allow one to determine the number and average dose for these "annual transients." Table 14 presents the number and doses of these "annual transients" that was found among the individuals terminating during each of the four years 1977 through 1980. In 1980 the number of these workers increased by about 600 workers over the 3,200 that was found in previous years. The average dose, however, remained at about one rem. The lower portion of the table shows the number and doses of workers that were terminated by two, three and four or more different reactor licensees during each year. One can see that the average dose of workers employed by two licensees increased to 0.89 rems, while the average dose of workers employed by four or more licensees has continued to decline to a value of 1.69 rems.

In order to determine the impact that the inclusion of these individuals in each of two or more licensee's annual reports had on the statistics obtained from the compilation of the annual reports into one annual summary (Table 7) for all nuclear power facilities, which was a problem mentioned in Section 3.1, Tables 15a and 15b are presented. Table 15a shows the actual distribution of these transient workers' doses as determined from the above-described termination reports and compares it with the distribution of the whole body doses as they would have appeared in a compilation of the annual statistical reports submitted by each of the nuclear power facilities. During the three years 1977-1979 there were about 3,200 workers each year, but because they worked at two or more nuclear power facilities during each year, they were counted as being some 8,000 workers. Some individuals were reported by as many as nine different facilities. In 1980, there were 3,748

TABLE 14

TRANSIENT WORKERS PER CALENDAR YEAR
AT NUCLEAR POWER FACILITIES

1977 - 1980

Year	No. of Commercial Reactors	No. of Workers Terminated by Two or More Licensees	Collective Dose (Man-rems)	Average Dose (Rems)
1977	57	3,161	3,776	1.29
1978	64	3,171	3,192	1.01
1979	67	3,190 *	3,014 *	0.94
1980	69	3,748 *	3,877 *	1.03

Year	No. of Workers Terminated by Two Licensees	Collective Dose (Man-rems)	Average Dose (Rems)	No. of Workers Terminated by Three Licensees	Collective Dose (Man-rems)	Average Dose (Rems)	No. of Workers Terminated by Four or More Licensees	Collective Dose (Man-rems)	Average Dose (Rems)
1977	2,166	1,987	0.92	572	842	1.47	423	947	2.24
1978	2,107	1,477	0.70	608	779	1.28	456	936	2.05
1979	2,286 *	1,690 *	0.74	565 *	666 *	1.18	339 *	658 *	1.94
1980	2,671 *	2,373 *	0.89	618 *	730 *	1.18	459 *	774 *	1.69

*This data may be incomplete because all of the termination data for the years 1979 and 1980 may not have been computerized when this table was compiled.

TABLE 15a

ACTUAL AND COMPILED DOSE DISTRIBUTIONS OF
TRANSIENT WORKERS PER CALENDAR YEAR AT LWRS

Type of Distribution and Year	Number of Individuals with Whole Body Doses in the Ranges (Rems)																				
	Less than Measurable	Measurable <0.10	0.10 0.25	0.25 0.50	0.50 0.75	0.75 1.00	1.00 2.00	2.00 3.00	3.00 4.00	4.00 5.00	5.00 6.00	6.00 7.00	7.00 8.00	8.00 9.00	9.00 10.00	10.00 11.00	11.00 12.00	>12.0	Total Workers	Total Man-Rems	Avg. Dose (Rems)	Avg. Meas. Dose (Rems)
Actual Distribution of Transients – 1977	228	782	300	236	184	151	500	381	213	100	50	23	11	2					3,161	[b]3,776	1.19	1.29
Compiled Distribution of Transients – 1977	1,694	2,357	804	768	552	417	1,015	382	55	8	6								7,636	[b]3,776	0.48	0.60
Actual Distribution of Transients – 1978	302	869	316	286	166	144	462	293	159	106	46	15	2		1				3,167	[b]3,193	1.01	1.11
Compiled Distribution of Transients – 1978	2,026	2,402	916	780	495	377	859	246	51	11	2								8,164	[b]3,193	0.39	0.52
Actual Distribution of Transients– 1979	312	713	317	300	229	212	541	339	150	46	24	6	1						3,190	[b]3,014	0.94	1.06
Compiled Distribution of Transients – 1979	1,832	2,171	1,020	846	678	375	814	225	35	2	1								7,999	[b]3,014	0.38	0.49
Actual Distribution of Transients – 1980	435	829	387	301	234	184	603	402	223	109	22	11	4	3	1				3,748	[b]3,877	1.04	1.17
Compiled Distribution of Transients – 1980	2,344	2,516	1,045	891	606	457	1,096	324	41	15	1	3	1						9,340	[b]3,877	0.42	0.55

TABLE 15b

EFFECTS OF TRANSIENT WORKERS ON ANNUAL STATISTICAL COMPILATIONS

[a] Compiled Statistical Distribution – 1977	27,671	15,623	6,760	5,179	3,300	2,500	6,174	2,836	1,130	569	141	66	36	21	6				71,904	32,731	0.46	0.74
[c] Adjusted Statistical Distribution – 1977	26,305	13,948	6,246	4,647	2,932	2,234	5,661	2,857	1,288	661	186	89	47	23	6				67,130	32,643	0.49	0.80
[a] Compiled Statistical Distribution – 1978	30,278	17,785	7,002	5,537	3,410	2,507	6,415	2,989	1,079	418	67	26	8					2	77,523	31,910	0.41	0.68
[c] Adjusted Statistical Distribution – 1978	28,555	16,252	6,402	5,043	3,081	2,274	6,018	3,036	1,189	513	113	39	10		1			2	72,526	31,823	0.44	0.72
[a] Compiled Statistical Distribution – 1979	46,236	24,421	9,848	8,159	5,189	3,479	7,934	3,307	1,251	477	86	28	13	2			1		110,431	39,765	0.36	0.62
[c] Adjusted Statistical Distribution – 1979	44,716	22,963	9,145	7,613	4,740	3,316	7,661	3,421	1,366	521	109	34	14	2			1		106,022	39,591	0.38	0.65
[a] Compiled Statistical Distribution – 1980	64,449	29,605	11,751	9,820	6,082	4,518	11,474	4,516	1,537	686	192	98	18	3					134,836	53,799	0.40	0.67
[c] Adjusted Statistical Distribution – 1980	62,540	28,008	11,093	9,230	5,710	4,246	10,981	4,593	1,719	780	213	106	21	6	1				129,246	53,645	0.42	0.70

[a] Based on data submitted by all reactors, although all of them may not have been in commercial operation for a full year.

[b] Collective dose found by summing the actual doses reported for these workers on their termination reports.

[c] Distribution found by subtracting the actual from the compiled distribution shown in Table 15a and then subtracting this difference from the compiled statistical distribution shown in Table 15b.

of these transients who were counted as 9,340 individuals. They incurred a collective dose of 3,877 man-rems which resulted in an average measurable dose of 1.17 rems.

Table 15b illustrates the impact that the multiple reporting of these transient workers had on the staff's compilations of the annual statistical reports for the last four years. Since each nuclear power facility reports the distribution of the doses received by workers while monitored by that particular facility during the year, one would expect that a compilation of these reports would result in individuals being counted several times in dose ranges lower than the range in which their total accumulated dose (the sum of the personnel monitoring results incurred at each facility during the year) would actually place them. Thus, while the total collective dose would remain about the same, the total number of workers and the average dose could be affected by this multiple reporting. This was found to be true.

In each of the four years shown, there were about 3,500 too many workers indicated as having received measurable doses, and too few of these workers were shown in the higher dose ranges. For example, in 1977 the compiled annual reports indicated that 270 individuals received doses greater than five rems, while the adjusted distribution indicated that there were at least 451 such workers. This resulted in an average measurable dose of 0.81 rems rather than the 0.74 rems obtained from the compiled reports. Although the number of these transient workers remained about the same during 1978 and 1979, the number of them with doses exceeding five rems decreased considerably during these two years. In 1979 the compiled annual reports indicated 130 workers with doses exceeding five rems, while the adjusted compilation indicated some 160 such workers. In 1980, however, the number of these workers increased such that 347 workers with doses greater than five rems were found in the adjusted compilation. But since the number of these transient workers receiving measurable doses is only about 5% of the total number receiving measurable doses during the year, their impact on most of the statistics derived from compilations of the annual summary reports is not very great.

5. PERSONNEL OVEREXPOSURES

Table 16 presents the number and types of personnel overexposures that have been reported by power reactors pursuant to 10 CFR §20.403 and §20.405 since 1971. In 1980, the number of overexposed individuals increased over last year's figure, but none of the whole body doses exceeded five rems. Most of the individuals overexposed in 1980 were involved in steam generator testing and repair work at Southern California Edison's San Onofre plant during the second and third quarters. The licensee failed to properly monitor the area of the body (the top of the head) most likely to receive the highest dose. Recalculation of the dose to account for this resulted in some 42 individuals possibly receiving doses between 3.2 and 4.4 rems during the second quarter and 24 individuals receiving doses between 3.2 and 4.9 rems during the third quarter.

TABLE 16

PERSONNEL OVEREXPOSURES AT POWER REACTORS

1971 - 1980

Year	Number of Workers Overexposed to External Radiation	Sum of Whole Body Doses (Man-rems)	Maximum Whole Body Dose (Rems)	Number of Workers Exposed to Excessive Concentrations of Radioactive Material	Maximum Exposure
1971	2	4.5	3.1	21	6.1 rem (thyroid)
1972	16	49.7	5.1	2	2000 MPC-hrs
1973	19	61.2	4.0	0	–
1974	43	155.9	6.1	12	433 MPC-hrs
1975	14	44.2	3.8	7	13.5 rem (lung)
1976	20	74.3	10.1	1	248 MPC-hrs
1977	27	52.9	3.6	0	–
1978	9	71.1	27.3	0	–
1979	21	43.4	10.1	0	–
1980	73	266.2	4.9	0	–

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* Report is available for purchase from the National Technical Information Service, Springfield, Virginia 22161, and/or the NRC/GPO Sales Program, Division of Technical Information and Document Control, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

APPENDIX A*

Personnel, Dose and Power Generation Summary

1969 - 1980

*A discussion of the methods used to collect and calculate the information contained in this appendix is given in Section 2.1.

Appendix A
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
ARKANSAS 1	1975	588.0	76.5	147	21					0.14	0.0
Docket 50-313; DPR-51	1976	464.6	56.6	476	289	27	262	100	189	0.61	0.6
1st commercial operation 12/74	1977	610.3	76.8	601	256	28	228	111	145	0.43	0.4
Type - PWR	1978	627.2	77.5	722	189	32	157	109	80	0.26	0.3
Capacity - 836 MWe	1979	397.0	55.3	1321	369	54	315	252	117	0.28	0.9
	1980	452.8	63.7	1233	342	81	261	213	129	0.28	0.8
BEAVER VALLEY 1	1977	355.6	57.0	331	87	8	79	58	29	0.26	0.2
Docket 50-334; DPR-66	1978	304.2	40.8	646	190	11	179	152	38	0.29	0.6
1st commercial operation 10/76	1979	221.0	40.0	704	132	22	110	67	65	0.19	0.6
Type - PWR	1980	39.8	6.8	1817	553	76	477	477	76	0.30	13.9
Capacity - 811 MWe											
BIG ROCK POINT	1969	48.1		165	136					0.82	2.8
Docket 50-155, DPR-6	1970	43.5		290	194					0.67	4.5
1st commercial operation 3/63	1971	44.4		260	184					0.71	4.1
Type - BWR	1972	43.5		195	181					0.93	4.2
Capacity - 64 MWe	1973	50.9		241	285			119	166	1.18	5.6
	1974	40.7	70.3	281	276	54	222	42	234	0.98	6.8
	1975	35.1	59.8	300	180	58	122	20	160	0.60	5.1
	1976	29.5	50.1	488	289	82	207	105	184	0.59	9.8
	1977	43.6	73.4	465	334	94	240	60	274	0.72	7.7
	1978	48.5	77.9	285	175	93	82	9	166	0.61	3.6
	1979	13.0	23.5	623	455	89	366	102	353	0.73	35.0
	1980	48.9	79.0	599	354	16	338	91	263	0.59	7.2
BROWNS FERRY 1, 2, 3	1975	161.7	17.8	2380	325					0.14	2.0
Docket 50-259, 50-260, 50-296;	1976	337.6	26.9	2207	234					0.11	0.7
DPR-33, -52, -68	1977	1327.5	73.0	1858	863	60	803	249	614	0.46	0.6
1st commercial operation 8/74,	1978	1992.1	73.5	2376	1792	4	1788	259	1533	0.75	0.9
3/75, 3/77	1979	2393.0	79.1	2689	1667	0	1667	289	1378	0.62	0.7
Type - BWR	1980	2182.1	73.6	2712	1825	4	1821	49	1776	0.67	0.8
Capacity - 1065, 1065, 1065 MWe											

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
BRUNSWICK 2, 1	1976	297.2	56.0	1265	326	15	311	222	104	0.26	1.1
Docket 50-324, 50-325; DPR-62, -71	1977	291.1	55.7	1512	1119	48	1071	782	337	0.74	3.8
1st commercial operation 11/75, 3/77	1978	1173.1	83.7	1458	1004	99	905	695	309	0.69	0.8
Type - BWR	1979	810.0	60.1	2891	2602	97	2505	2074	528	0.90	3.2
Capacity - 790, 790 MWe	1980	687.2	52.2	3788	3870	111	3759	3098	772	1.02	5.6
CALVERT CLIFFS 1, 2	1976	753.4	95.2	507	74	28	46	8	66	0.15	0.1
Docket 50-317, 50-318; DPR-53, -69	1977	583.0	72.1	2265	547	36	511	224	323	0.24	0.9
1st commercial operation 5/75, 4/77	1978	1188.5	75.8	1391	500	13	487	143	357	0.36	0.4
Type - PWR	1979	1161.0	74.0	1428	805	33	772	423	382	0.56	0.7
Capacity - 810, 825 MWe	1980	1309.9	84.1	1496	677	15	662	402	275	0.45	0.5
COOK 1, 2	1976	807.4	83.1	395	116	13	103	71	45	0.29	0.1
Docket 50-315; DPR-58, -74	1977	573.0	76.1	802	299	21	278	138	161	0.37	0.5
1st commercial operation 8/75,7/78	1978	744.8	73.6	778	336	49	287	139	197	0.43	0.4
Type - PWR	1979	1373.0	65.3	1445	718	45	673	454	264	0.50	0.5
Capacity - 1044 MWe, 1032 MWe	1980	1552.4	74.1	1345	493	46	447	323	170	0.37	0.3
COOPER STATION	1975	456.4	83.6	579	117	30	87	19	98	0.20	0.2
Docket 50-298; DPR-46	1976	433.3	75.5	763	350	39	311	210	140	0.46	0.8
1st commercial operation 7/74	1977	538.2	86.2	315	197	50	147	66	131	0.63	0.4
Type - BWR	1978	576.0	91.0	297	158	40	118	58	100	0.53	0.3
Capacity - 764 MWe	1979	591.0	87.6	426	221	50	171	89	132	0.52	0.4
	1980	448.3	71.2	785	859	70	789	644	215	1.09	1.9
CRYSTAL RIVER 3	1978	311.5	41.4	643	321	8	313	244	77	0.50	1.0
Docket 50-302; DPR-72	1979	453.0	58.9	1150	495	29	466	346	149	0.43	1.1
1st commercial operation 3/77	1980	402.1	53.2	1053	625	24	601	382	243	0.59	1.6
Type - PWR											
Capacity - 797 MWe											

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
DAVIS-BESSE 1 Docket 50-346; NPF-3 1st commercial operation 11/7 Type - PWR Capacity - 892 MWe	1978	326.4	48.7	421	48	13	35	14	34	0.11	0.1
	1979	381.0	67.0	304	30	8	22	5	25	0.10	0.1
	1980	256.4	36.2	1283	154	4	150	121	33	0.12	0.6
DRESDEN 1,* 2, 3 Docket 50-010, 50-237, 50-249; DPR-2, -19, -25 1st commercial operation 7/60, 7/70, 11/71 Type - BWR Capacity - 197, 772, 773 MWe	1969	99.7			286						2.9
	1970	163.1			143						0.9
	1971	394.5			715						1.8
	1972	1243.7			728						0.6
	1973	1112.2		1341	939	143	796	344	595	0.70	0.8
	1974	842.5	54.9	1594	1662			57	1605	1.04	2.0
	1975	708.1	54.6	2310	3423	271	3152	2252	1171	1.48	4.8
	1976	1127.2	80.8	1746	1680	228	1452	749	931	0.96	1.5
	1977	1132.9	77.0	1862	1693	316	1377	693	1000	0.91	1.5
	1978	1242.2	79.5	1946	1529	204	1325	619	910	0.79	1.2
	1979	1013.0	74.7	2407	1800	191	1609	641	1159	0.75	1.8
	1980	1074.4	55.0	2717	2105	236	1869	1093	1012	0.77	2.0
DUANE ARNOLD Docket 50-331; DPR-49 1st commercial operation 2/75 Type - BWR Capacity - 515 MWe	1976	305.2	78.0	350	105	14	91	62	43	0.30	0.3
	1977	383.6	78.9	538	299	36	263	220	79	0.56	0.8
	1978	149.2	33.2	1112	974	59	915	932	42	0.88	6.5
	1979	352.0	78.0	757	275	35	240	219	56	0.36	0.8
	1980	339.1	73.3	1108	671	32	639	570	101	0.61	2.0
FARLEY 1 Docket 50-348; NPF-2 1st commercial operation 12/77 Type - PWR Capacity - 814 MWe	1978	713.8	86.5	527	108	39	69	34	74	0.20	0.1
	1979	211.0	28.6	1227	643	108	535	460	183	0.52	3.0
	1980	557.3	69.3	1330	435	106	329	185	250	0.33	0.8

*Dresden 1 is shutdown, but it is still included in the count of commercial reactors shown elsewhere in the report.

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
FITZPATRICK	1976	489.0	71.6	600	202					0.34	0.4
Docket 50-333; DPR-59	1977	460.5	68.4	1380	1080	14	1066	937	143	0.78	2.3
1st commercial operation 7/75	1978	497.0	72.1	904	909	166	743	597	312	1.00	1.8
Type - BWR	1979	349.0	50.8	850	859	169	690	538	321	1.01	2.5
Capacity - 802 MWe	1980	509.5	70.3	2056	2040	118	1922	1808	232	0.99	4.0
FORT CALHOUN	1974	294.0	83.5	327	71			24	47	0.22	0.2
Docket 50-285; DPR-40	1975	252.3	67.4	469	294			92	202	0.63	1.2
1st commercial operation 9/73	1976	265.9	69.5	516	313	28	285	38	275	0.61	1.2
Type - PWR	1977	351.8	79.4	535	297	33	264	72	225	0.56	0.8
Capacity - 465 MWe	1978	342.3	75.1	596	410	59	351	151	259	0.69	1.2
	1979	440.0	95.7	451	126	19	107	47	79	0.28	0.3
	1980	242.3	60.4	891	668	38	630	426	242	0.75	2.8
GINNA	1971	327.8		340	430	69	361	108	322	1.26	1.3
Docket 50-244; DPR-18	1972	293.6		677	1032	71	961	278	754	1.52	3.5
1st commercial operation 7/70	1973	409.5		319	224	55	169	84	140	0.70	0.5
Type - PWR	1974	253.7	62.4	884	1225					1.39	4.8
Capacity - 470 MWe	1975	365.2	76.7	685	538					0.78	1.5
	1976	248.8	58.2	758	636	29	607	210	426	0.84	2.5
	1977	365.6	85.5	530	401	15	386	120	281	0.76	1.1
	1978	386.5	80.6	657	450	20	430	98	352	0.68	1.2
	1979	355.0	72.8	878	592	68	524	207	385	0.67	1.7
	1980	370.5	76.0	1073	708	64	644	302	406	0.66	1.9
HADDAM NECK (CONN. YANKEE)	1969	438.5		138	106			27	79	0.77	0.2
Docket 50-213; DPR-61	1970	424.7		734	689			463	226	0.94	1.6
1st commercial operation 1/68	1971	502.2		289	342			166	176	1.18	0.7
Type - PWR	1972	515.6		355	325			181	144	0.91	0.6
Capacity - 550 MWe	1973	293.1		951	697			544	153	0.73	2.4
	1974	521.4	91.2	550	201					0.36	0.4
	1975	494.3	89.9	795	703	20	683			0.88	1.4
	1976	482.9	82.5	644	449	5	444	253	196	0.70	0.9
	1977	480.7	83.9	894	641	59	582	440	201	0.72	1.3
	1978	563.4	98.6	216	117	25	92	18	99	0.54	0.2
	1979	493.0	87.5	1226	1161	73	1088	783	378	0.95	2.4
	1980	426.8	75.0	1860	1353	175	1178	1076	277	0.73	3.2

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
HATCH 1,2[a] Docket 50-321; DPR-57; NPF-05 1st commercial operation 12/75;9/79 Type - BWR Capacity - 764, 767 MWe	1976	496.3	83.8	630	134	79	55	4	130	0.21	0.3
	1977	446.8	66.3	1303	465	96	369	220	245	0.36	1.0
	1978	513.0	72.8	1304	248	88	160	52	196	0.19	0.5
	1979	401.0	54.6	2131	582	85	497	382	200	0.27	1.5
	1980	1008.7	70.9	1930	449	143	306	163	286	0.23	0.4
HUMBOLDT BAY[b] Docket 50-133; DPR-7 1st commercial operation 8/63 Type - BWR Capacity - 63 MWe	1969	44.6		125	164	69	95	12	152	1.31	3.7
	1970	49.3		115	209	130	79	37	172	1.82	4.2
	1971	39.6		140	292	114	178	65	227	2.09	7.4
	1972	43.1		127	253	81	172	57	196	1.99	5.9
	1973	50.1		210	266	60	206			1.27	5.3
	1974	43.4	83.8	296	318	103	215			1.07	7.3
	1975	45.3	83.9	265	339	131	208	112	227	1.28	7.5
	1976	23.5	46.4	523	683	37	646	50	633	1.31	29.1
	1977	0	0	1063	1904	24	1880	973	931	1.79	-
	1978	0	0	320	335	13	322	145	190	1.05	-
	1979	0	0	135	31	11	20	2	29	0.23	-
	1980	0	0	142	22	10	12	3	19	0.15	-
INDIAN POINT 1*, 2, 3** Docket 50-3, 50-247, 50-286; DPR-5, -26, -64 1st commercial operation 10/62, 8/73, 8/76 Type - PWR Capacity - 0, 859, 911 MWe	1969	206.2			298						1.4
	1970	43.3			1639						37.8
	1971	154.0			768						b.0
	1972	142.3			967						6.8
	1973	0		2998	5262	709	4553	2847	2415	1.75	-
	1974	556.1	59.4	1019	910					0.89	1.6
	1975	584.4	74.8	891	705	166	539	47	658	0.79	1.2
	1976	273.9	34.8	1590	1950	154	1796	172	1778	1.23	7.1
	1977	1278.3	75.3	1391	1070	189	881	383	687	0.77	0.8
	1978	1172.3	67.8	1909	2006	260	1746	759	1247	1.05	1.7

[a]Hatch 2 was counted for the first time in 1980.

[b]Humboldt Bay is shutdown indefinitely. It is still included in the count of commercial reactors.

*Indian Point 1 was defueled in 1975. It had a capacity of 265 MWe. It is still included in the count of commercial reactors.

**Indian Point 3 was purchased by a different utility and now reports separately.

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
INDIAN POINT 1,* 2 Docket 50-3, 50-247, DPR-5, -26 1st commercial operation 10/62, 8/73 Type - PWR Capacity - 0,856 MWe	1979 1980	574.0 510.8	35.7 32.3	1349 1577	1279 971	209 181	1070 790	612 398	667 573	0.95 0.62	2.2 1.9
INDIAN POINT 3** Docket 50-286; DPR-64 1st commercial operation 8/76 Type - PWR Capacity - 965 MWe	1979 1980	568.0 367.3	66.5 53.2	808 977	636 308	63 47	573 261	482 210	154 98	0.79 0.32	1.1 0.8
KEWAUNEE Docket 50-305; DPR-43 1st commercial operation 6/74 Type - PWR Capacity - 522 MWe	1975 1976 1977 1978 1979 1980	401.9 405.9 425.0 466.6 412.0 433.8	88.2 78.9 79.9 89.5 79.0 82.1	104 381 312 335 343 401	28 270 139 154 127 165	1 16 8 11 6 7	27 254 131 143 121 158	12 193 76 89 79 103	16 77 63 65 48 62	0.27 0.71 0.44 0.46 0.37 0.41	0.1 0.7 0.3 0.3 0.3 0.4
LACROSSE Docket 50-409; DPR-45 1st commercial operation 11/69 Type - BWR Capacity - 48 MWe	1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980	15.3 33.1 29.2 24.4 37.9 32.0 21.2 11.3 21.6 24.0 26.4	81.0 69.6 47.6 33.7 62.0 71.8 68.5	218 151 157 115 165 118 141 182 153 124	111 158 172 221 139 234 111 224 164 186 218	89 40 60 69 65 63	50 71 164 95 121 155	40 6 6 8 6 21 11	71 133 105 216 158 165 207	0.72 1.14 1.41 1.21 1.42 0.94 1.59 0.90 1.22 1.76	7.2 4.8 5.9 9.1 3.7 7.3 5.2 19.8 7.6 7.7 8.3

*INDIAN POINT 1 was defueled in 1975. It had a capacity of 265 MWe.

**INDIAN POINT 3 was purchased by a different utility and now reports separately.

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
MAINE YANKEE	1973	408.7		782	117			59	58	0.15	0.3
Docket 50-309; DPR-36	1974	432.6	68.7	619	420	64	356	188	232	0.68	1.0
1st commercial operation 12/72	1975	542.9	79.9	440	319	15	304	181	138	0.72	0.6
Type - PWR	1976	712.2	35.0	244	85	27	58	26	59	0.35	0.1
Capacity - 810 MWe	1977	617.6	82.2	508	245	46	199	112	133	0.48	0.4
	1978	642.7	84.1	638	420	54	366	262	158	0.66	0.6
	1979	537.0	68.4	393	154	70	84	26	128	0.39	0.3
	1980	527.0	72.2	735	462	117	345	277	185	0.63	0.9
MILLSTONE POINT 1	1972	377.6		612	596	50	546	340	256	0.97	1.6
Docket 50-245; DPR-21	1973	225.1		1184	663	125	538	422	241	0.56	2.9
1st commercial operation 3/71	1974	430.3	79.1	2477	1430					0.58	3.3
Type - BWR	1975	465.4	75.6	2587	2022					0.78	4.3
Capacity - 654 MWe	1976	449.8	76.1	1377	1194	54	1140	955	239	0.87	2.6
	1977	575.7	89.6	1075	392	118	274	159	233	0.36	0.7
	1978	556.6	87.6	1391	1239	140	1099	907	332	0.89	2.2
	1979	505.0	77.3	1769	1793	198	1595	1326	467	1.01	3.6
	1980	405.8	69.0	3024	2158	100	2058	1864	294	0.71	5.3
MILLSTONE POINT 2	1976	545.7	78.7	620	168	26	142	73	95	0.27	0.3
Docket 50-336; DPR-65	1977	518.7	65.7	667	242	38	204	153	89	0.36	0.5
1st commercial operation 12/75	1978	536.6	67.3	1420	1621	72	1549	1534	87	1.14	3.0
Type - PWR	1979	520.0	62.8	757	472	81	391	305	167	0.62	0.9
Capacity - 864 MWe	1980	579.3	69.2	892	636	76	560	514	122	0.71	1.1
MONTICELLO	1972	424.4		99	61	40	21	1	60	0.62	0.1
Docket 50-263; DPR-22	1973	389.5		401	176	48	128	67	109	0.44	0.4
1st commercial operation 6/71	1974	349.3	74.9	842	349			91	258	0.41	1.0
Type - BWR	1975	344.8	72.2	1353	1353					1.00	3.9
Capacity - 536 MWe	1976	476.4	91.5	328	263	59	204	51	212	0.81	0.5
	1977	425.6	79.9	860	1000	135	865	661	339	1.16	2.3
	1978	459.4	87.2	679	375	62	313	165	210	0.55	0.8
	1979	522.0	97.6	372	157	62	95	51	106	0.42	0.3
	1980	411.8	78.2	1114	531	82	449	248	283	0.48	1.3

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	tation & Utility		
NINE MILE POINT 1	1970	227.0		821	44	12	32	17	27	0.05	0.2
Docket 50-220; DPR-63	1971	346.5		1006	195	43	152	63	132	0.19	0.6
1st commercial operation 12/69	1972	381.8		735	285	59	226	28	257	0.39	0.7
Type - BWR	1973	411.0		550	567	139	428	118	449	1.03	1.4
Capacity - 610 MWe	1974	385.9	70.5	740	824	42	782	279	545	1.11	2.1
	1975	359.0	72.1	649	681	68	613	203	478	1.05	1.9
	1976	484.6	88.2	392	428	52	376	229	199	1.09	0.9
	1977	347.4	59.2	1093	1383	41	1342	883	500	1.26	4.0
	1978	527.7	95.1	561	314	59	255	26	288	0.56	0.6
	1979	354.0	66.1	1326	1497	106	1391	940	557	1.13	4.2
	1980	533.9	92.3	1174	591	75	516	251	340	0.50	1.1
NORTH ANNA 1	1979	507.0	61.7	2025	449	78	371	190	259	0.22	0.9
Docket 50-338; NPI-04	1980	681.8	86.5	2086	218	128	90	85	133	0.10	0.3
1st commercial operation 6/78											
Type - PWR											
Capacity - 878 MWe											
OCONEE 1, 2, 3	1974	650.6	60.1	844	517	18	499	144	373	0.61	0.8
Docket 50-269, 50-270, 50-287;	1975	1838.3	75.5	829	497	72	425	90	407	0.60	0.3
DPR-38, -47, -55	1976	1561.4	63.0	1215	1026	65	961	219	807	0.84	0.6
1st commercial operation 7/73	1977	1566.4	65.9	1595	1328	244	1084	294	1034	0.83	0.8
9/74, 12/74	1978	1909.0	75.8	1636	1393	179	1214	340	1053	0.85	0.7
Type - PWR	1979	1708.0	67.7	2100	1001	123	878	181	820	0.48	0.6
Capacity - 860, 860, 860 MWe	1980	1703.7	70.1	2124	1055	117	938	162	893	0.50	0.6
OYSTER CREEK	1970	413.6		95	63	21	42	11	52	0.66	0.1
Docket 50-219; DPR-16	1971	448.9		249	240	50	190	92	148	0.96	0.5
1st commercial operation 12/69	1972	515.0		339	582	150	432	167	415	1.72	1.1
Type - BWR	1973	424.6		782	1236	195	1041	683	553	1.58	2.9
Capacity - 620 MWe	1974	434.5	70.4	935	984	166	818	162	822	1.05	2.3
	1975	373.6	73.3	1210	1140	169	971	271	869	0.94	3.0
	1976	456.5	79.3	1582	1078	70	1008	587	491	0.68	2.4
	1977	385.7	70.1	1673	1614	76	1538	1048	566	0.96	4.2
	1978	431.8	74.3	1411	1279	134	1145	696	583	0.91	3.0
	1979	541.0	85.9	842	467	95	372	135	332	0.55	0.9
	1980	232.9	41.4	1966	1733	97	1636	1182	551	0.88	7.4

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
PALISADES	1972	216.8			78						0.4
Docket 50-255; DPR-20	1973	286.8		975	1133	16	1117	661	472	1.16	3.9
1st commercial operation 12/71	1974	10.7	5.5	774	627					0.81	58.6
Type - PWR	1975	302.0	64.5	495	306					0.62	1.0
Capacity - 635 MWe	1976	346.9	55.2	742	696	23	673	109	587	0.94	2.0
	1977	616.6	91.4	332	100	13	87	23	77	0.30	0.2
	1978	320.2	49.7	849	764	52	712	173	591	0.90	2.4
	1979	415.0	59.9	1599	854	99	755	360	494	0.53	2.1
	1980	288.3	42.9	1307	424	191	233	312	112	0.32	1.5
PEACH BOTTOM 2, 3	1975	1234.3	80.9	971	228					0.23	0.2
Docket 50-277, 50-278; DPR-44, -56	1976	1379.2	73.0	2136	840	180	660	434	406	0.39	0.6
1st commercial operation 7/74, 12/74	1977	1052.4	58.7	2827	2036	223	1813	1374	662	0.72	1.9
Type - BWR	1978	1636.3	84.0	2244	1317	162	1155	709	608	0.59	0.8
Capacity - 1051, 1035 MWe	1979	1740.0	84.5	2276	1388	245	1143	717	671	0.61	0.8
	1980	1374.2	66.3	2774	2302	311	1991	1596	706	0.83	1.7
PILGRIM 1	1973	484.0		230	126	49	77			0.55	0.3
Docket 50-293; DPR-35	1974	234.1	39.2	454	415					0.91	1.8
1st commercial operation 12/72	1975	308.1	71.3	473	798	142	656	412	386	1.69	2.6
Type - BWR	1976	287.8	60.7	1317	2648	66	2582	2270	378	2.01	9.2
Capacity - 669 MWe	1977	316.6	61.4	1875	3142	146	2996	2176	966	1.68	9.9
	1978	519.5	83.1	1667	1327	157	1170	895	432	0.80	2.5
	1979	574.0	89.4	2458	1015	131	884	516	499	0.41	1.8
	1980	360.3	56.2	3549	3626	207	3419	3076	550	1.02	10.1

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
POINT BEACH 1, 2	1971	393.4			164						0.4
Docket 50-266, 50-301; DPR-24, -27	1972	378.3			580						1.5
1st commercial operation 12/70, 10/72	1973	693.7		501	588	72	516			1.17	0.8
Type - PWR	1974	760.2	81.3	400	295	70	225	81	214	0.74	0.4
Capacity - 495, 495 MWe	1975	801.2	82.9	339	459					1.35	0.6
	1976	857.3	86.7	313	370	58	312	107	263	1.18	0.4
	1977	873.9	87.3	417	429	63	366	212	217	1.03	0.5
	1978	914.4	90.9	336	320	71	249	111	209	0.95	0.3
	1979	808.0	80.8	610	644	65	579	449	195	1.06	0.8
	1980	727.2	82.5	561	598	60	538	420	178	1.07	0.8
PRAIRIE ISLAND 1, 2	1974	181.9	43.9	150	18			5	13	0.12	0.1
Docket 50-282, 50-306; DPR-42, -60	1975	836.0	83.3	477	123					0.26	0.1
1st commercial operation 12/73, 12/74	1976	725.2	76.6	818	447	68	379	235	212	0.55	0.6
Type - PWR	1977	922.9	87.2	718	300	73	227	60	240	0.42	0.3
Capacity - 503, 500 MWe	1978	941.1	92.2	546	221	43	178	48	173	0.40	0.2
	1979	865.0	86.0	594	180	29	151	49	131	0.30	0.2
	1980	800.7	79.9	983	353	40	313	141	212	0.36	0.4
QUAD CITIES 1, 2	1974	958.1	72.3	678	482			36	446	0.71	0.5
Docket 50-254, 50-265; DPR-29, -30	1975	833.6	68.4	1083	1618	114	1504	692	926	1.49	1.9
1st commercial operation 2/73, 3/73	1976	951.2	73.1	1225	1651	269	1382	648	1003	1.35	1.7
Type - BWR	1977	970.1	84.0	907	1031	108	923	373	658	1.14	1.1
Capacity - 769, 769 MWe	1978	1124.5	88.6	1207	1618	156	1462	722	896	1.34	1.4
	1979	1075.0	84.6	1688	2158	215	1943	1250	908	1.28	2.0
	1980	866.9	64.4	3089	4838	291	4547	3657	1181	1.57	5.6
RANCHO SECO	1976	268.1	30.4	297	58	6	52	17	41	0.19	0.2
Docket 50-312; DPR-54	1977	706.4	77.1	515	390	61	329	248	142	0.76	0.5
1st commercial operation 4/75	1978	607.7	80.5	508	323	76	247	176	147	0.64	0.5
Type - PWR	1979	687.0	91.1	287	126	27	99	64	62	0.44	0.2
Capacity - 873 MWe	1980	530.9	60.4	890	412	110	302	281	131	0.46	0.8

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
ROBINSON 2											
Docket 50-261; DPR-23	1972	580.0		245	215	42	173	137	78	0.88	0.4
1st commercial operation 3/71	1973	455.1		831	695					0.84	1.5
Type - PWR	1974	578.1	83.3	853	672	185	487			0.79	1.2
Capacity - 665 MWe	1975	501 8	72.7	849	1142					1.34	2.3
	1976	585.5	84.7	597	715	30	685	457	758	1.20	1.2
	1977	511.5	85.2	634	455	52	403	223	232	0.72	0.9
	1978	480.5	72.0	943	963	63	900	529	434	1.02	2.0
	1979	482.0	70.8	1454	1188	60	1128	794	394	0.82	2.5
	1980	387.3	62.2	2009	1852	79	1773	1379	473	0.92	4.8
SALEM 1											
Docket 50-272; DPR-70	1978	546.4	55.6	574	122	28	94	32	90	0.21	0.2
1st commercial operation 6/77	1979	250.0	25.5	1488	584	100	484	359	225	0.39	2.3
Type - PWR	1980	680.6	69.2	1704	449	55	394	281	168	0.26	0.7
Capacity - 1079 MWe											
SAN ONOFRE 1											
Docket 50-206; DPR-13	1969	314.1		123	42	10	32	5	37	0.34	0.1
1st commercial operation 1/68	1970	365.9		251	155	13	142	59	96	0.62	0.4
Type - PWR	1971	362.1		121	50	12	38	3	47	0.41	0.1
Capacity - 436 MWe	1972	338.6		326	256	29	227	117	139	0.78	0.8
	1973	273.7		570	353	40	313	168	185	0.62	1.3
	1974	377.8	86.1	219	71					0.32	0.2
	1975	389.0	87.4	424	292					0.69	0.7
	1976	297.9	70.2	1330	880	147	733	629	251	0.66	2.9
	1977	281.2	63.7	985	847	77	770	451	396	0.86	3.0
	1978	323.2	80.2	764	401	25	376	234	167	0.52	1.2
	1979	401.0	90.2	521	139	23	116	65	74	0.27	0.3
	1980	97.3	22.3	3063	2387	219	2168	2018	369	0.78	24.5
ST. LUCIE 1											
Docket 50-335; DPR-67	1977	649.1	84.7	445	152	26	126	92	60	0.34	0.2
1st commercial operation 12/76	1978	606.4	76.5	797	337	15	322	140	197	0.42	0.6
Type - PWR	1979	592.0	74.0	907	438	25	413	209	229	0.48	0.7
Capacity - 777 MWe	1980	627.9	77.5	1074	532	82	450	195	337	0.50	0.8

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
SURRY 1, 2	1973	420.6		936	152					0.16	0.4
Docket 50-280, 50-281; DPR-32, -37	1974	717.4	49.8	1715	884	72	812			0.51	1.2
1st commerical operation 12/72, 5/73	1975	1079.0	70.8	1948	1649	27	1622	1065	584	0.85	1.5
Type - PWR	1976	930.7	60.4	2753	3165	444	2721	1873	1292	1.15	3.4
Capacity - 775, 775 MWe	1977	1139.0	72.2	1860	2307	348	1959	1380	927	1.24	2.0
	1978	1210.6	77.2	2203	1837	726	1111	1029	808	0.83	1.5
	1979	343.0	42.3	5065	3584	173	3411	2975	609	0.71	10.4
	1980	568.2	40.3	5317	3836	353	3483	3117	719	0.72	6.6
THREE MILE ISLAND 1,2	1975	675.9	82.2	131	73			18	55	0.56	0.1
Docket 50-289; DPR-50, -73	1976	530.0	65.4	819	286	23	263	69	217	0.35	0.5
1st commercial operation-9/74,	1977	664.5	80.9	1122	359	15	344	128	231	0.32	0.5
Type - PWR 12/78	1978	690.0	85.1	1929	504	23	481	235	269	0.26	0.7
Capacity - 776 MWe	1979	266.0	21.9	3975	1170	166	1004	762	408	0.29	4.4
	1980	0.0	0.0	2328	394	29	365	234	160	0.17	-
TROJAN	1977	792.0	92.6	591	174	30	144	105	69	0.29	0.2
Docket 50-344; NPF-1	1978	205.5	20.6	711	319	81	238	124	195	0.45	1.5
1st commercial operation 5/76	1979	631.0	58.1	736	257	74	183	113	144	0.35	0.4
Type - PWR	1980	727.5	72.5	1159	421	77	344	305	116	0.36	0.6
Capacity - 1080 MWe											
TURKEY POINT 3, 4	1973	401.9		444	78					0.18	0.2
Docket 50-250, 50-251; DPR-31, -41	1974	953.6		794	454	88	366	202	252	0.57	0.5
1st commercial operation 12/72, 9/73	1975	1003.7	74.9	1176	876	270	606	559	317	0.74	0.9
Type - PWR	1976	974.2	71.2	1647	1184	89	1095	868	316	0.72	1.2
Capacity - 657, 657 MWe	1977	979.5	72.1	1319	1036	94	942	522	514	0.78	1.1
	1978	1000.2	78.8	1336	1032	90	942	546	486	0.77	1.0
	1979	811.0	62.4	2002	1680	299	1381	997	683	0.84	2.1
	1980	990.6	73.6	1803	1651	232	1419	1218	433	0.92	1.7

*Three Mile Island 1 and 2 are shutdown. They are still included in the count of commercial reactors.

Appendix A (Continued)
Personnel, Dose and Power Generation Summary

Reporting Organization	Year	Mega-watt-Year (MW-Yr)	Unit Availa-bility Factor	Total Personnel With Measur-able Doses	Total Man-rems	Man-rems per Work Function		Man-rems per Personnel Type		Average Dose per Worker (Rems)	Man-rems per MW-Yr
						Opera-tions	Maint. & Others	Contrac-tor	Station & Utility		
VERMONT YANKEE Docket 50-271; DPR-28 1st commercial operation 11/72 Type - BWR Capacity - 504 MWe	1973	222.1		244	85					0.35	0.4
	1974	303.5		357	216	24	192	103	113	0.60	0.7
	1975	429.0	87.8	282	153	70	83	63	90	0.54	0.4
	1976	389.6	77.1	815	411	36	375	246	165	0.50	1.0
	1977	423.5	85.1	641	258	83	175	90	168	0.40	0.6
	1978	387.5	75.9	934	339	78	261	158	181	0.36	0.9
	1979	414.0	82.1	1220	1170	546	624	642	528	0.96	2.8
	1980	357.8	71.5	1443	1338	141	1197	926	412	0.93	3.7
YANKEE ROWE Docket 50-29; DPR-3 1st commercial operation 7/61 Type - PWR Capacity - 175 MWe	1969	138.3		193	215	83	132	78	133	1.11	1.5
	1970	146.1		355	255	90	165	158	97	0.72	1.7
	1971	173.5		155	90	46	44	19	71	0.58	0.5
	1972	78.7		282	255	63	192	146	109	0.90	3.2
	1973	127.1		133	99			47	52	0.74	0.8
	1974	111.3		243	205			99	106	0.84	1.8
	1975	145.1	82.4	249	116	52	64	66	50	0.47	0.8
	1976	152.2	89.8	152	59	17	42	4	55	0.39	0.4
	1977	124.6	73.9	725	356	28	328	174	182	0.49	2.9
	1978	145.0	81.0	565	282	26	256	95	187	0.50	1.9
	1979	149.0	81.6	441	127	16	111	52	75	0.29	0.9
	1980	35.6	22.0	502	213	6	207	90	123	0.42	6.0
ZION 1, 2 Docket 50-295, 50-304; DPR-39, -48 1st commercial operation 12/73, 9/74 Type - PWR Capacity - 1040, 1040 MWe	1974	425.3	71.1	306	56					0.18	0.1
	1975	1181.5	74.9	436	127	17	110	13	43	0.29	0.1
	1976	1134.9	61.9	774	571	64	507	49	78	0.74	0.5
	1977	1358.6	75.0	784	1003	43	960	257	314	1.28	0.7
	1978	1613.5	80.2	1104	1017	150	867	561	442	0.92	0.6
	1979	1238.0	67.6	1472	1274	168	1106	418	599	0.87	1.0
	1980	1411.2	74.1	1363	920	97	823	747	527	0.67	0.7
								560	360		

APPENDIX B

Annual Whole Body Doses at Licensed Nuclear Power Facilities 1980

Appendix B

ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES-1980

Plant Name, Type	Number of Individuals with Whole Body Doses in the Following Ranges (Rems)															Total Number Monitored	Number with Measurable Exposure	*Total Man-Rem
	No Measurable Exposure	Measurable <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0			
Arkansas 1, PWR	298	688	201	139	71	48	81	5								1,531	1,233	342
Beaver Valley, PWR	660	875	348	251	141	72	122	8								2,477	1,817	553
Big Rock Point, BWR	49	324	54	44	36	27	54	38	12	7	3					648	599	354
Browns Ferry 1, 2, 3, BWRs	9,112	674	401	450	305	246	468	143	25							11,824	2,712	1,825
Brunswick 1, 2, BWRs	1,611	1,084	471	418	287	229	573	329	274	124						5,399	3,788	3,870
Calvert Cliffs 1, 2, PWRs	648	477	296	266	155	124	156	15	7							2,144	1,496	677
Cook 1, 2, PWRs	584	510	269	257	124	73	98	13	1							1,929	1,345	493
Cooper Station, BWR	869	225	74	47	49	47	160	136	46	1						1,654	785	859
Crystal River, PWR	672	321	157	187	98	74	161	51	3	0	1					1,725	1,053	625

*This item was not reported by the facility; it was calculated by the NRC staff using the method described in this document.

Appendix B

ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES- 1980

Plant Name, Type	Number of Individuals with Wholes Body Doses in the Following Ranges (Rems)															Total Number Monitored	Number with Measureable Exposure	*Total Man-Rems
	No Measureable Exposure	Measureable <0.10	0.10-0.25	0.26-0.50	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0			
Davis-Besse 1, PWR	1,150	922	261	63	21	6	8	1	0	0	1					2,433	1,283	154
Dresden 1, 2, 3, BWRs	678	920	417	316	205	123	338	312	52	25	8	1				3.395	2,717	2,105
Duane Arnold, BWR	822	339	172	184	119	73	158	45	15	2	1					1,930	1,108	671
Farley 1, PWR	824	635	241	191	92	64	93	13	1							2,154	1,330	435
Fitzpatrick, BWR	527	612	260	199	175	116	321	185	127	49	9	3				2,583	2,056	2,040
Fort Calhoun, PWR	164	354	88	86	63	55	136	76	27	6						1,055	891	668
Ginna, PWR	184	388	133	117	92	65	201	65	11	1						1,257	1,073	708
Haddam Neck, PWR	255	469	282	226	192	178	395	89	26	3						2,115	1,860	1,353
Hatch 1, 2**, BWRs	1,286	1,039	396	258	98	73	61	4	0	1						3,216	1,930	449

*This item was not reported by the facility; it was calculated by the NRC staff using the method described in this document.
**Hatch 2 was counted for the first time in 1980.

Appendix B

ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES- 1980

Plant Name, Type	Number of Individuals with Wholes Body Doses in the Following Ranges (Rems)															Total Number Monitored	Number with Measurable Exposure	* Total Man-Rems
	No Measurable Exposure	Measurable <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0			
Humboldt Bay, BWR	53	99	17	20	1	3	2									195	142	22
Indian Point 1, 2, PWRs	380	487	269	237	142	106	227	95	12	2						1,957	1,577	971
Indian Point 3, PWR	440	421	228	147	82	48	38	7	3	3						1,417	977	308
Kewaunee, PWR	133	160	63	59	36	38	44	1								534	401	165
LaCrosse, BWR	68	32	10	7	3	5	23	15	12	7	5	5				192	124	218
Maine Yankee, PWR	218	268	112	87	52	42	144	28	12							963	736	462
Millstone 1, BWR	715	758	407	447	336	249	645	157	20	5						3,739	3,024	2,158
Millstone 2, PWR	210	223	120	132	99	74	192	46	6	1						1,103	892	636
Monticello, BWR	790	374	244	152	113	75	125	20	11							1,904	1,114	531

*This item was not reported by the facility; it was calculated by the NRC staff using the method described in this document.

Appendix B

ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES - 1980

Plant Name, Type	Number of Individuals with Whole Body Doses in the Following Ranges (Rems)															Total Number Monitored	Number with Measurable Exposure	* Total Man-Rems
	No Measurable Exposure	Measurable <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0			
Nine Mile Point, BWR	290	521	199	127	54	57	149	59	8							1,464	1,174	591
North Anna 1, PWR	443	1,782	160	69	41	17	12	3	1	0	1					2,529	2,086	218
Oconee 1, 2, 3, PWRs	843	815	362	289	190	113	265	88	2							2,967	2,124	1,055
Oyster Creek, BWR	272	463	303	230	135	120	476	173	62	4						2,238	1,966	1,733
Palisades, PWR	78	776	156	124	76	50	97	23	5							1,385	1,307	424
Peach Bottom 2, 3, BWRs	1,831	638	283	459	322	202	582	232	39	14	2	1				4,605	2,774	2,302
Pilgrim, BWR	0	720	453	500	269	216	786	398	139	68						3,549	3,549	3,626
Point Beach 1, 2, PWRs	158	97	40	60	60	49	175	65	10	4	1					719	561	598
Prairie Island 1, 2, PWRs	418	452	176	157	58	30	97	13								1,401	983	353

*This item was not reported by the facility; it was calculated by the NRC staff using the method described in this document.

Appendix B

ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES - 1980

Plant Name, Type	Number of Individuals with Wholes Body Doses in the Following Ranges (Rems)															Total Number Monitored	Number with Measurable Exposure	*Total Man-Rems
	No Measurable Exposure	Measurable <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0			
Quad Cities 1, 2, BWRs	569	584	292	214	183	158	753	394	195	164	100	50	2			3,658	3,089	4,838
Rancho Seco, PWR	243	368	136	99	78	75	117	17								1,133	890	412
Robinson 2, PWR	751	633	218	201	135	142	373	181	81	45						2,760	2,009	1,852
Salem 1, PWR	1,014	929	354	174	89	55	87	15	1							2,718	1,704	449
San Onofre, PWR	712	1,149	376	312	196	194	532	175	56	29	14	13	14	3		3,775	3,063	2,387
St. Lucie 1, PWR	687	356	207	177	114	67	102	50	1							1,761	1,074	532
Surry 1,2, PWRs	8,900	2,351	576	470	320	243	860	239	120	67	44	25	2			14,217	5,317	3,836
Three Mile Island 1,2, PWRs	8,433	1,356	539	304	62	35	31	1								10,761	2,328	394
Trojan, PWR	576	472	228	178	100	82	91	8								1,735	1,159	421

*This item was not reported by the facility; it was calculated by the NRC staff using the method described in this document.

Appendix B

ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES - 1980

Plant Name, Type	Number of Individuals with Wholes Body Doses in the Following Ranges (Rems)															Total Number Monitored	Number with Measurable Exposure	* Total Man-Rems
	No Measurable Exposure	Measurable <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0			
Turkey Point 3, 4, PWRs	1,353	328	268	282	172	112	407	168	52	13	1					3,156	1,803	1,651
Vermont Yankee, BWR	599	359	218	211	113	71	210	192	36	32	1					2,042	1,443	1,338
Yankee Rowe, PWR	1,462	273	58	57	32	18	38	18	6	2						1,964	502	213
Zion 1, 2, PWRs	515	548	157	139	96	79	210	107	20	7						1,878	1,363	920
Fort St. Vrain, HTGR	902	57	1													960	58	3

*This item was not reported by the facility; it was calculated by the NRC staff using the method described in this document.
**Fort St. Vrain was counted for the first time in 1980.

APPENDIX C

Number of Personnel and Man-rems
by Work and Job Function
1980

Note: A 'T' preceding a plant name indicates that the licensee's input was recategorized by NRC staff.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: ARKANSAS 1 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	16	1	7		6.766	0.777	3.252	
OPERATING PERSONNEL	28	0	0		17.017	0.0	0.0	
HEALTH PHYSICS PERSONNEL	15	0	51		6.953	0.0	24.736	
SUPERVISORY PERSONNEL	12	0	0		2.987	0.0	0.0	
ENGINEERING PERSONNEL	1	0	0		0.112	0.0	0.0	
TOTAL	72	1	58	131	33.835	0.777	27.988	62.600
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	68	0	81		20.445	0.0	25.984	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	4		0.0	0.0	0.745	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	68	0	85	153	20.445	0.0	26.729	47.174
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	1	8		0.0	1.943	2.070	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	2		0.0	0.0	0.509	
TOTAL	0	1	10	11	0.0	1.943	2.579	4.522
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	56	1	219		30.877	0.108	99.270	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	0	13		0.247	0.0	2.436	
SUPERVISORY PERSONNEL	3	0	0		0.885	0.0	0.0	
ENGINEERING PERSONNEL	0	0	10		0.0	0.0	3.872	
TOTAL	60	1	242	303	32.009	0.108	105.578	137.695
WASTE PROCESSING								
MAINTENANCE PERSONNEL	36	0	2		8.767	0.0	0.492	
OPERATING PERSONNEL	4	0	0		1.268	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	1		0.0	0.0	0.169	
SUPERVISORY PERSONNEL	2	0	0		0.236	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	42	0	3	45	10.271	0.0	0.661	10.932
REFUELING								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	0	0	0.0	0.0	0.0	0.0
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	176	3	317	496	66.855	2.828	131.068	200.751
OPERATING PERSONNEL	32	0	0	32	18.285	0.0	0.0	18.285
HEALTH PHYSICS PERSONNEL	16	0	69	85	7.200	0.0	28.086	35.286
SUPERVISORY PERSONNEL	17	0	0	17	4.108	0.0	0.0	4.108
ENGINEERING PERSONNEL	1	0	12	13	0.112	0.0	4.381	4.493
GRAND TOTAL	242	3	398	643	96.560	2.828	163.535	262.923

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: BEAVER VALLEY 1 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	27	4	30		5.685	0.790	7.300	
OPERATING PERSONNEL	31	0	0		6.930	0.0	0.0	
HEALTH PHYSICS PERSONNEL	2	1	71		1.365	0.105	35.290	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	4	3	27		0.655	0.685	9.215	
TOTAL	64	8	128	200	14.635	1.580	51.805	68.020
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	68	7	225		28.120	1.370	102.345	
OPERATING PERSONNEL	6	0	0		0.815	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	1	19		0.740	0.180	4.010	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	1	4	25		0.165	0.875	10.120	
TOTAL	76	12	269	357	29.840	2.425	116.475	148.740
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	13		0.0	0.0	4.820	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	2		0.0	0.0	0.285	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	15	15	0.0	0.0	5.105	5.105
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	6	0	354		0.970	0.0	204.910	
OPERATING PERSONNEL	1	0	0		0.130	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	18		0.0	0.0	3.050	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	1	24		0.0	0.135	18.365	
TOTAL	7	1	396	404	1.100	0.135	226.325	227.560
WASTE PROCESSING								
MAINTENANCE PERSONNEL	9	0	6		2.290	0.0	1.230	
OPERATING PERSONNEL	3	0	0		1.555	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	5		0.0	0.0	0.935	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	12	0	11	23	3.845	0.0	2.165	6.010
REFUELING								
MAINTENANCE PERSONNEL	29	0	28		14.465	0.0	23.485	
OPERATING PERSONNEL	1	0	0		0.195	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	6		0.0	0.0	0.950	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	1	4		0.0	0.240	1.600	
TOTAL	30	1	38	69	14.660	0.240	26.035	40.935
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	139	11	656	806	51.530	2.160	344.090	397.780
OPERATING PERSONNEL	42	0	0	42	9.625	0.0	0.0	9.625
HEALTH PHYSICS PERSONNEL	3	2	121	126	2.105	0.285	44.520	46.910
SUPERVISORY PERSONNEL	0	0	0	0	0.0	0.0	0.0	0.0
ENGINEERING PERSONNEL	5	9	80	94	0.820	1.935	39.300	42.055
GRAND TOTAL	189	22	857	1068	64.080	4.380	427.910	496.370

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: BIG ROCK POINT (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	23	29	17		6.566	3.757	0.892	
OPERATING PERSONNEL	32	6	145		30.996	1.118	12.673	
HEALTH PHYSICS PERSONNEL	9	4	7		12.648	0.127	2.807	
SUPERVISORY PERSONNEL	24	0	0		9.765	0.0	0.0	
ENGINEERING PERSONNEL	23	49	0		11.653	1.577	0.0	
TOTAL	111	88	169	368	71.628	6.579	16.372	94.579
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	28	91	28		32.430	22.379	4.937	
OPERATING PERSONNEL	2	0	57		0.070	0.0	4.112	
HEALTH PHYSICS PERSONNEL	9	2	6		6.587	0.030	1.227	
SUPERVISORY PERSONNEL	4	0	0		1.110	0.0	0.0	
ENGINEERING PERSONNEL	5	3	0		0.303	1.690	0.0	
TOTAL	48	96	91	235	40.500	24.099	10.276	74.875
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	8	36	17		1.144	34.966	12.956	
OPERATING PERSONNEL	1	0	8		0.102	0.0	13.871	
HEALTH PHYSICS PERSONNEL	7	0	7		3.304	0.0	5.564	
SUPERVISORY PERSONNEL	6	0	0		0.206	0.0	0.0	
ENGINEERING PERSONNEL	7	6	0		1.057	1.961	0.0	
TOTAL	29	42	32	103	5.813	36.927	32.391	75.131
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	19	42	38		8.193	39.852	31.054	
OPERATING PERSONNEL	2	0	7		0.373	0.0	1.548	
HEALTH PHYSICS PERSONNEL	9	1	6		7.411	0.0	1.899	
SUPERVISORY PERSONNEL	6	0	0		2.187	0.0	0.0	
ENGINEERING PERSONNEL	6	5	0		1.525	0.371	0.0	
TOTAL	42	48	51	141	19.689	40.223	34.501	94.413
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	12	8	1		8.819	0.721	0.300	
OPERATING PERSONNEL	20	0	1		3.060	0.0	0.038	
HEALTH PHYSICS PERSONNEL	8	0	1		2.717	0.0	0.005	
SUPERVISORY PERSONNEL	4	0	0		0.381	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.015	0.0	0.0	
TOTAL	44	8	3	55	14.992	0.721	0.343	16.056
*REFUELING								
MAINTENANCE PERSONNEL	6	2	0		2.718	0.036	0.0	
OPERATING PERSONNEL	23	0	5		7.248	0.0	0.469	
HEALTH PHYSICS PERSONNEL	5	0	0		0.593	0.0	0.0	
SUPERVISORY PERSONNEL	9	0	0		1.502	0.0	0.0	
ENGINEERING PERSONNEL	2	0	0		0.012	0.0	0.0	
TOTAL	45	2	5	52	12.073	0.036	0.469	12.578
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	96 (28)	208 (103)	101 (64)	405 (195)	59.870	101.711	50.139	211.720
OPERATING PERSONNEL	80 (32)	6 (6)	223 (176)	309 (214)	41.849	1.118	32.711	75.678
HEALTH PHYSICS PERSONNEL	47 (9)	7 (4)	27 (7)	81 (20)	33.260	0.157	11.502	44.919
SUPERVISORY PERSONNEL	53 (24)	0 (0)	0 (0)	53 (24)	15.151	0.0	0.0	15.151
ENGINEERING PERSONNEL	43 (23)	63 (60)	0 (0)	106 (73)	14.565	5.599	0.0	20.164
GRAND TOTAL	319 (116)	284 (163)	351 (247)	954 (626)	164.695	108.585	94.352	367.632

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: BROWNS FERRY 1,2,3 (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	4	0	0		0.5	0.0	0.0	
OPERATING PERSONNEL	15	0	0		2.3	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	19	0	0	19	2.8	0.0	0.0	2.8
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	421	923	21		215.4	676.0	13.7	
OPERATING PERSONNEL	212	0	0		121.4	0.0	0.0	
HEALTH PHYSICS PERSONNEL	31	5	35		12.2	0.9	18.6	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	41	166	9		40.7	106.2	1.5	
TOTAL	705	1094	65	1864	389.7	783.1	33.8	1206.6
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	4	1		0.0	1.2	0.2	
TOTAL	0	4	1	5	0.0	1.2	0.2	1.4
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	63	0		0.0	16.2	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	2	2	0		0.2	0.4	0.0	
TOTAL	2	65	0	67	0.2	16.6	0.0	16.8
WASTE PROCESSING								
MAINTENANCE PERSONNEL	12	0	0		2.5	0.0	0.0	
OPERATING PERSONNEL	5	0	0		2.3	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	17	0	0	17	4.8	0.0	0.0	4.8
REFUELING								
MAINTENANCE PERSONNEL	0	64	0		0.0	18.7	0.0	
OPERATING PERSONNEL	34	0	0		11.9	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	2	4	2		0.3	1.6	0.3	
TOTAL	36	68	2	106	12.2	20.3	0.3	32.8
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	437	1050	21	1508	218.4	710.9	13.7	943.0
OPERATING PERSONNEL	266	0	0	266	137.9	0.0	0.0	137.9
HEALTH PHYSICS PERSONNEL	31	5	35	71	12.2	0.9	18.6	31.7
SUPERVISORY PERSONNEL	0	0	0	0	0.0	0.0	0.0	0.0
ENGINEERING PERSONNEL	45	176	12	233	41.2	109.4	2.0	152.6
GRAND TOTAL	779	1231	68	2078	409.7	821.2	34.3	1265.2

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: BRUNSWICK 1,2 (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	3	0	0		6.541	0.371	0.005	
OPERATING PERSONNEL	30	2	73		49.025	0.517	33.520	
HEALTH PHYSICS PERSONNEL	9	2	0		10.366	2.321	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.034	0.0	
ENGINEERING PERSONNEL	1	0	2		1.451	0.012	1.164	
TOTAL	43	4	75	122	67.383	3.255	34.689	105.327
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	24	2	96		50.470	2.337	137.617	
OPERATING PERSONNEL	0	0	0		0.730	0.0	0.0	
HEALTH PHYSICS PERSONNEL	8	3	10		9.732	2.649	10.102	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	5	0	3		3.862	0.101	1.758	
TOTAL	37	4	109	151	64.794	5.087	149.477	219.358
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	2	1	10		2.133	0.661	10.102	
SUPERVISORY PERSONNEL	0	1	0		0.0	0.198	0.0	
ENGINEERING PERSONNEL	5	4	4		4.377	2.562	2.687	
TOTAL	7	6	14	27	6.510	3.421	12.789	22.720
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	87	12	1241		184.969	15.124	1905.905	
OPERATING PERSONNEL	1	0	0		1.094	0.0	0.0	
HEALTH PHYSICS PERSONNEL	15	6	46		16.854	5.167	45.560	
SUPERVISORY PERSONNEL	0	2	3		0.0	0.395	0.507	
ENGINEERING PERSONNEL	23	34	244		18.725	16.317	233.288	
TOTAL	126	54	1533	1714	221.642	37.003	2185.260	2443.905
WASTE PROCESSING								
MAINTENANCE PERSONNEL	24	2	62		51.169	2.882	84.580	
OPERATING PERSONNEL	35	2	0		58.025	0.773	0.0	
HEALTH PHYSICS PERSONNEL	10	3	20		10.879	3.026	20.260	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	1	0	3		0.551	0.012	1.758	
TOTAL	70	7	85	162	120.624	6.693	106.598	233.915
REFUELING								
MAINTENANCE PERSONNEL	39	5	278		81.008	5.203	404.304	
OPERATING PERSONNEL	44	4	0		72.311	1.288	0.0	
HEALTH PHYSICS PERSONNEL	6	3	15		6.424	2.132	15.173	
SUPERVISORY PERSONNEL	0	1	0		0.0	0.395	0.055	
ENGINEERING PERSONNEL	22	15	26		17.587	7.858	25.110	
TOTAL	111	28	319	458	177.330	16.876	444.642	638.848
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	177	21	1677	1875	374.157	25.917	2532.411	2932.485
OPERATING PERSONNEL	110	8	73	191	181.185	2.578	33.520	217.283
HEALTH PHYSICS PERSONNEL	50	18	101	169	56.388	15.956	101.197	173.541
SUPERVISORY PERSONNEL	0	4	3	7	0.0	1.022	0.562	1.584
ENGINEERING PERSONNEL	57	53	282	392	46.553	26.862	265.765	339.180
GRAND TOTAL	324	104	2136	2634	658.283	72.335	2933.455	3664.073

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: CALVERT CLIFFS 1,2 (PWR)

1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	3	1	1		0.599	0.106	0.126	
OPERATING PERSONNEL	23	0	0		11.997	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	2	0	0		0.276	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	28	1	1	30	12.872	0.106	0.126	13.104
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	44	1	149		11.774	0.120	43.903	
OPERATING PERSONNEL	14	1	20		7.951	0.100	3.865	
HEALTH PHYSICS PERSONNEL	14	1	78		7.144	0.146	35.641	
SUPERVISORY PERSONNEL	4	0	2		1.480	0.0	0.271	
ENGINEERING PERSONNEL	0	0	5		0.0	0.0	1.064	
TOTAL	76	3	254	333	28.349	0.366	84.744	113.459
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	10	35	17		3.486	15.145	4.939	
OPERATING PERSONNEL	6	0	0		0.787	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	2		0.0	0.0	0.245	
SUPERVISORY PERSONNEL	2	0	2		0.301	0.0	0.669	
ENGINEERING PERSONNEL	6	0	7		1.609	0.0	1.657	
TOTAL	24	35	28	87	6.183	15.145	7.510	28.838
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	83	99	479		57.499	35.175	222.925	
OPERATING PERSONNEL	34	12	30		8.252	4.639	8.851	
HEALTH PHYSICS PERSONNEL	2	0	6		0.507	0.0	1.594	
SUPERVISORY PERSONNEL	12	0	11		4.309	0.0	4.035	
ENGINEERING PERSONNEL	5	1	19		1.077	0.136	5.612	
TOTAL	136	112	545	793	71.644	39.950	243.017	354.611
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	0		0.230	0.0	0.0	
OPERATING PERSONNEL	5	0	0		1.864	0.0	0.0	
HEALTH PHYSICS PERSONNEL	2	25	39		0.247	5.633	16.518	
SUPERVISORY PERSONNEL	1	0	0		0.101	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	10	25	39	74	2.442	5.633	16.518	24.593
*REFUELING								
MAINTENANCE PERSONNEL	43	50	3		22.233	24.424	0.335	
OPERATING PERSONNEL	10	6	1		3.010	3.613	0.123	
HEALTH PHYSICS PERSONNEL	4	0	9		1.371	0.0	2.877	
SUPERVISORY PERSONNEL	10	0	2		8.096	0.0	0.483	
ENGINEERING PERSONNEL	2	0	17		0.371	0.0	3.376	
TOTAL	69	56	32	157	35.081	28.037	7.194	70.312
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	185 (103)	186 (157)	649 (536)	1020 (796)	95.821	74.970	272.228	443.019
OPERATING PERSONNEL	92 (70)	19 (15)	51 (47)	162 (132)	33.861	8.352	12.839	55.052
HEALTH PHYSICS PERSONNEL	22 (15)	26 (25)	134 (123)	182 (163)	9.269	5.779	56.875	71.923
SUPERVISORY PERSONNEL	31 (22)	0 (0)	17 (15)	48 (37)	14.563	0.0	5.458	20.021
ENGINEERING PERSONNEL	13 (13)	1 (3)	48 (39)	62 (55)	3.057	0.136	11.709	14.902
GRAND TOTAL	343 (223)	232 (200)	899 (700)	1474 (1,183)	156.571	89.237	359.109	604.917

*Workers may be counted in more than one category. Numbers in parentheses is the total number of individuals who received more than 100 mrems during the year but not necessarily more than 100 mrems in any one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: D.C. COOK 1,2 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	60	0	33		3.460	0.0	2.241	
OPERATING PERSONNEL	63	0	0		27.557	0.0	0.0	
HEALTH PHYSICS PERSONNEL	13	0	11		3.060	0.0	4.040	
SUPERVISORY PERSONNEL	11	0	4		1.020	0.0	0.100	
ENGINEERING PERSONNEL	5	3	1		0.620	0.080	0.050	
TOTAL	152	3	49	204	35.717	0.080	6.431	42.228
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	96	0	119		54.130	0.0	12.796	
OPERATING PERSONNEL	1	0	0		0.060	0.0	0.0	
HEALTH PHYSICS PERSONNEL	13	0	20		2.140	0.0	3.360	
SUPERVISORY PERSONNEL	11	0	11		1.540	0.0	0.818	
ENGINEERING PERSONNEL	6	4	1		0.320	0.640	0.020	
TOTAL	127	4	151	282	58.190	0.640	16.994	75.824
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	46	0	94		5.250	0.0	13.292	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	9	0	10		0.810	0.0	2.770	
SUPERVISORY PERSONNEL	5	0	6		0.290	0.0	1.590	
ENGINEERING PERSONNEL	6	3	7		0.790	0.930	2.070	
TOTAL	66	3	117	186	7.140	0.930	19.722	27.792
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	80	0	421		21.380	0.0	162.742	
OPERATING PERSONNEL	1	0	0		0.020	0.0	0.0	
HEALTH PHYSICS PERSONNEL	9	0	22		1.300	0.0	8.330	
SUPERVISORY PERSONNEL	8	0	43		0.540	0.0	15.180	
ENGINEERING PERSONNEL	5	12	2		0.710	3.120	0.120	
TOTAL	103	12	488	603	23.950	3.120	186.372	213.442
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	52	0	95		7.430	0.0	37.877	
OPERATING PERSONNEL	25	0	0		3.130	0.0	0.0	
HEALTH PHYSICS PERSONNEL	13	0	6		6.200	0.0	1.040	
SUPERVISORY PERSONNEL	7	0	5		1.710	0.0	3.030	
ENGINEERING PERSONNEL	2	1	0		2.170	0.120	0.0	
TOTAL	99	1	106	206	20.640	0.120	41.947	62.707
*REFUELING								
MAINTENANCE PERSONNEL	31	0	50		3.670	0.0	20.345	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	0	11		0.070	0.0	1.205	
SUPERVISORY PERSONNEL	4	0	6		1.020	0.0	1.750	
ENGINEERING PERSONNEL	1	2	1		0.150	0.140	0.030	
TOTAL	37	2	68	107	4.910	0.140	23.330	28.380
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	365 (103)	0	812 (495)	1177 (598)	95.320	0.0	249.293	344.613
OPERATING PERSONNEL	90 (63)	0	0 (0)	90 (63)	30.767	0.0	0.0	30.767
HEALTH PHYSICS PERSONNEL	58 (14)	0	80 (26)	138 (39)	13.580	0.0	20.745	34.325
SUPERVISORY PERSONNEL	46 (14)	0	75 (46)	121 (60)	6.120	0.0	22.468	28.588
ENGINEERING PERSONNEL	25 (8)	25 (13)	12 (8)	62 (29)	4.760	5.030	2.290	12.080
GRAND TOTAL	584 (202)	25 (13)	979 (573)	1588 (788)	150.547	5.030	294.796	450.373

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: COOPER STATION (BWR)

1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	2	0	0		0.826	0.0	0.0	
OPERATING PERSONNEL	41	0	0		35.764	0.0	0.0	
HEALTH PHYSICS PERSONNEL	11	0	2		10.595	0.0	0.349	
SUPERVISORY PERSONNEL	8	1	1		6.844	0.576	0.153	
ENGINEERING PERSONNEL	13	0	3		11.612	0.0	0.614	
TOTAL	75	1	6	82	65.641	0.576	1.116	67.333
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	52	0	127		91.549	0.0	109.161	
OPERATING PERSONNEL	2	0	0		0.241	0.0	0.0	
HEALTH PHYSICS PERSONNEL	11	0	3		1.959	0.0	1.324	
SUPERVISORY PERSONNEL	4	0	1		1.810	0.0	0.134	
ENGINEERING PERSONNEL	4	0	0		1.433	0.0	0.0	
TOTAL	73	0	131	204	96.992	0.0	110.619	207.611
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	17		0.0	0.0	20.361	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	11	0	3		0.586	0.0	0.160	
SUPERVISORY PERSONNEL	0	0	1		0.0	0.0	0.886	
ENGINEERING PERSONNEL	6	0	0		5.000	0.0	0.0	
TOTAL	17	0	21	38	5.586	0.0	21.407	26.993
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	13	0	316		3.057	0.0	469.697	
OPERATING PERSONNEL	6	0	0		1.425	0.0	0.0	
HEALTH PHYSICS PERSONNEL	5	0	9		1.614	0.0	6.766	
SUPERVISORY PERSONNEL	5	0	0		1.516	0.0	0.0	
ENGINEERING PERSONNEL	2	12	4		0.285	13.682	4.012	
TOTAL	31	12	329	372	7.897	13.682	480.475	502.054
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0		0.031	0.0	0.0	
OPERATING PERSONNEL	15	0	0		4.182	0.0	0.0	
HEALTH PHYSICS PERSONNEL	8	0	0		1.499	0.0	0.0	
SUPERVISORY PERSONNEL	1	0	0		0.010	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	25	0	0	25	5.722	0.0	0.0	5.722
*REFUELING								
MAINTENANCE PERSONNEL	0	0	2		0.0	0.0	0.806	
OPERATING PERSONNEL	31	0	0		8.462	0.0	0.0	
HEALTH PHYSICS PERSONNEL	8	0	3		0.081	0.0	0.154	
SUPERVISORY PERSONNEL	3	0	0		0.299	0.0	0.0	
ENGINEERING PERSONNEL	5	0	0		0.644	0.0	0.0	
TOTAL	47	0	5	52	9.486	0.0	0.960	10.446
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	68 (57)	0	462 (356)	530 (413)	95.463	0.0	600.025	695.488
OPERATING PERSONNEL	95 (42)	0	0	95 (42)	50.074	0.0	0.0	50.074
HEALTH PHYSICS PERSONNEL	54 (11)	0	20 (9)	74 (20)	16.334	0.0	8.753	25.087
SUPERVISORY PERSONNEL	21 (9)	1 (1)	3 (3)	25 (13)	10.479	0.576	1.173	12.228
ENGINEERING PERSONNEL	30 (13)	12 (12)	7 (7)	49 (32)	18.974	13.682	4.626	37.282
GRAND TOTAL	268 (132)	13 (13)	492 (375)	773 (520)	191.324	14.258	614.577	820.159

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: CRYSTAL RIVER 3 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	4	0	0		0.11	0.09	0.16	
OPERATING PERSONNEL	31	4	0		12.34	0.97	0.0	
HEALTH PHYSICS PERSONNEL	22	0	0		9.30	0.0	0.01	
SUPERVISORY PERSONNEL	2	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	59	4	0	63	21.75	1.06	0.17	22.98
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	86	106	295		84.31	88.08	187.24	
OPERATING PERSONNEL	11	1	0		3.20	0.48	0.06	
HEALTH PHYSICS PERSONNEL	8	0	56		1.08	0.13	32.46	
SUPERVISORY PERSONNEL	12	2	26		6.72	1.18	24.86	
ENGINEERING PERSONNEL	1	0	34		0.25	0.49	27.77	
TOTAL	118	109	411	638	95.56	90.36	272.39	458.31
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	3	3		0.01	0.89	0.80	
OPERATING PERSONNEL	0	0	0		0.07	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.05	
SUPERVISORY PERSONNEL	0	0	3		0.05	0.0	0.53	
ENGINEERING PERSONNEL	7	0	4		1.90	0.0	0.91	
TOTAL	7	3	10	20	2.03	0.89	2.29	5.21
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	22	26	67		5.77	8.46	67.27	
OPERATING PERSONNEL	1	0	0		0.20	0.03	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	13		0.08	0.0	3.09	
ENGINEERING PERSONNEL	1	0	29		0.0	0.0	13.79	
TOTAL	24	26	109	159	6.05	8.49	84.15	98.69
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	6	1	13		1.74	0.40	4.57	
OPERATING PERSONNEL	2	0	1		0.61	0.01	0.91	
HEALTH PHYSICS PERSONNEL	11	0	1		3.07	0.0	0.62	
SUPERVISORY PERSONNEL	3	0	1		0.22	0.0	0.19	
ENGINEERING PERSONNEL	2	0	0		0.10	0.0	0.01	
TOTAL	24	1	16	41	5.74	0.41	6.30	12.45
*REFUELING								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.01	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	0	0	0.01	0.0	0.0	0.01
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	118	136	378	632	91.94	97.92	260.04	449.90
OPERATING PERSONNEL	45	5	1	51	16.43	1.49	0.97	18.89
HEALTH PHYSICS PERSONNEL	41	0	57	98	13.45	0.13	33.14	46.72
SUPERVISORY PERSONNEL	17	2	43	62	7.07	1.18	28.67	36.92
ENGINEERING PERSONNEL	11	0	67	78	2.25	0.49	42.48	45.22
GRAND TOTAL	232	143	546	921	131.14	101.21	365.30	597.65

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: DAVIS-BESSE 1 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	6	0	8		0.070	0.0	0.225	
OPERATING PERSONNEL	79	0	0		5.750	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	12	0	7		0.660	0.0	0.595	
ENGINEERING PERSONNEL	1	0	8		0.015	0.0	0.275	
TOTAL	98	0	23	121	6.495	0.0	1.095	7.590
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	92	38	195		11.635	2.005	32.875	
OPERATING PERSONNEL	4	0	0		0.165	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	102	38	63		6.000	1.800	7.230	
ENGINEERING PERSONNEL	20	4	24		0.500	0.070	1.305	
TOTAL	218	80	282	580	18.300	3.875	41.410	63.585
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	6	0	10		0.135	0.0	0.180	
OPERATING PERSONNEL	1	0	0		0.010	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	16	1	26		0.285	0.015	0.565	
ENGINEERING PERSONNEL	5	0	0		0.145	0.0	0.0	
TOTAL	28	1	36	65	0.575	0.015	0.745	1.335
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	74	29	2209		7.420	2.755	161.580	
OPERATING PERSONNEL	8	0	0		0.650	0.0	0.0	
HEALTH PHYSICS PERSONNEL	22	0	21		9.975	0.0	4.200	
SUPERVISORY PERSONNEL	27	0	49		1.925	0.0	4.620	
ENGINEERING PERSONNEL	24	0	39		1.515	0.0	3.435	
TOTAL	155	29	2318	2502	21.485	2.755	173.835	198.075
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	6	2	9		0.325	0.035	0.145	
OPERATING PERSONNEL	1	0	0		0.050	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	5	0	9		0.085	0.0	0.175	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	12	2	18	32	0.460	0.035	0.320	0.815
*REFUELING								
MAINTENANCE PERSONNEL	6	0	8		0.070	0.0	0.225	
OPERATING PERSONNEL	79	0	0		5.750	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	12	0	7		0.660	0.0	0.595	
ENGINEERING PERSONNEL	1	0	8		0.015	0.0	0.275	
TOTAL	98	0	23	121	6.495	0.0	1.095	7.590
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	190	69	2439	2698	19.655	4.795	195.230	219.680
OPERATING PERSONNEL	172	0	0	172	12.375	0.0	0.0	12.375
HEALTH PHYSICS PERSONNEL	22	0	21	43	9.975	0.0	4.200	14.175
SUPERVISORY PERSONNEL	174	39	161	374	9.615	1.815	13.780	25.210
ENGINEERING PERSONNEL	51	4	79	134	2.190	0.070	5.290	7.550
GRAND TOTAL	609	112	2700	3421	53.810	6.680	218.500	278.990

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: DRESDEN 1,2,3 (BWR) 1980

* WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	15	0	0		19.8	0.0	0.0	
OPERATING PERSONNEL	103	0	0		119.6	0.0	0.0	
HEALTH PHYSICS PERSONNEL	2	0	0		2.7	0.0	0.0	
SUPERVISORY PERSONNEL	60	0	0		13.0	0.0	0.0	
ENGINEERING PERSONNEL	52	0	0		72.3	0.0	0.0	
TOTAL	232	0	0	232	227.4	0.0	0.0	227.4
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	263	0	2093		366.4	0.0	1053.4	
OPERATING PERSONNEL	7	0	0		11.6	0.0	0.0	
HEALTH PHYSICS PERSONNEL	38	0	0		54.3	0.0	0.0	
SUPERVISORY PERSONNEL	61	0	0		83.2	0.0	0.0	
ENGINEERING PERSONNEL	59	0	0		21.3	0.0	0.0	
TOTAL	428	0	2093	2521	536.8	0.0	1053.4	1590.2
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	0		0.5	0.0	0.0	
OPERATING PERSONNEL	2	0	0		3.5	0.0	0.0	
HEALTH PHYSICS PERSONNEL	3	0	0		4.5	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	11	0	0		4.0	0.0	0.0	
TOTAL	17	0	0	17	12.5	0.0	0.0	12.5
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	173	0		0.0	68.2	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	227	0		0.0	13.2	0.0	
TOTAL	0	400	0	400	0.0	81.4	0.0	81.4
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0		1.8	0.0	0.0	
OPERATING PERSONNEL	22	0	0		38.4	0.0	0.0	
HEALTH PHYSICS PERSONNEL	15	0	0		21.4	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	3	0	0		1.1	0.0	0.0	
TOTAL	41	0	0	41	62.7	0.0	0.0	62.7
REFUELING								
MAINTENANCE PERSONNEL	2	0	0		2.7	0.0	0.0	
OPERATING PERSONNEL	17	0	0		35.4	0.0	0.0	
HEALTH PHYSICS PERSONNEL	4	0	0		6.2	0.0	0.0	
SUPERVISORY PERSONNEL	3	0	0		7.7	0.0	0.0	
ENGINEERING PERSONNEL	5	0	0		1.8	0.0	0.0	
TOTAL	31	0	0	31	53.8	0.0	0.0	53.8
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	282	173	2093	2548	391.2	68.2	1053.4	1512.8
OPERATING PERSONNEL	151	0	0	151	208.5	0.0	0.0	208.5
HEALTH PHYSICS PERSONNEL	62	0	0	62	89.1	0.0	0.0	89.1
SUPERVISORY PERSONNEL	124	0	0	124	103.9	0.0	0.0	103.9
ENGINEERING PERSONNEL	130	227	0	357	100.5	13.2	0.0	113.7
GRAND TOTAL	749	400	2093	3242	893.2	81.4	1053.4	2028.0

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: DUANE ARNOLD (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	25	0	66		4.148	0.0	2.804	
OPERATING PERSONNEL	31	0	1		11.620	0.0	0.032	
HEALTH PHYSICS PERSONNEL	8	0	26		6.275	0.0	4.484	
SUPERVISORY PERSONNEL	7	0	3		1.084	0.0	0.240	
ENGINEERING PERSONNEL	7	2	14		0.442	0.158	0.835	
TOTAL	78	2	110	190	23.569	0.158	8.395	32.122
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	31	0	328		12.605	0.0	82.682	
OPERATING PERSONNEL	19	0	0		1.056	0.0	0.0	
HEALTH PHYSICS PERSONNEL	2	0	10		0.030	0.0	0.315	
SUPERVISORY PERSONNEL	4	0	9		0.346	0.0	1.461	
ENGINEERING PERSONNEL	6	1	28		0.430	0.093	1.056	
TOTAL	62	1	375	438	14.467	0.093	85.514	100.074
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	28	0	166		1.264	0.0	36.217	
OPERATING PERSONNEL	10	0	0		0.598	0.0	0.0	
HEALTH PHYSICS PERSONNEL	7	0	2		1.928	0.0	0.012	
SUPERVISORY PERSONNEL	6	0	10		0.337	0.0	0.584	
ENGINEERING PERSONNEL	7	4	56		0.781	0.890	29.635	
TOTAL	58	4	234	296	4.908	0.890	66.442	72.246
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	32	0	461		11.238	0.0	298.380	
OPERATING PERSONNEL	25	0	1		9.938	0.0	0.685	
HEALTH PHYSICS PERSONNEL	5	0	65		0.292	0.0	73.770	
SUPERVISORY PERSONNEL	6	0	19		0.840	0.0	8.328	
ENGINEERING PERSONNEL	6	4	59		1.481	1.295	10.194	
TOTAL	74	4	605	683	23.789	1.295	391.357	416.441
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	19		0.0	0.0	1.070	
OPERATING PERSONNEL	9	0	2		14.006	0.0	0.118	
HEALTH PHYSICS PERSONNEL	5	0	2		2.704	0.0	2.055	
SUPERVISORY PERSONNEL	1	0	0		0.010	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	15	0	23	38	16.720	0.0	3.243	19.963
*REFUELING								
MAINTENANCE PERSONNEL	13	0	21		1.440	0.0	8.521	
OPERATING PERSONNEL	25	0	0		11.031	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	2		0.0	0.0	0.010	
SUPERVISORY PERSONNEL	6	0	4		1.275	0.0	0.100	
ENGINEERING PERSONNEL	3	2	10		0.360	0.035	0.774	
TOTAL	47	2	37	86	14.106	0.035	9.405	23.546
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	129 (32)	0	1061 (498)	1190 (530)	30.695	0.0	429.674	460.369
OPERATING PERSONNEL	119 (37)	0	4 (2)	123 (39)	48.249	0.0	0.835	49.084
HEALTH PHYSICS PERSONNEL	27 (8)	0	107 (71)	134 (79)	11.229	0.0	80.646	91.875
SUPERVISORY PERSONNEL	30 (9)	0	45 (19)	75 (28)	3.892	0.0	10.713	14.605
ENGINEERING PERSONNEL	29 (7)	13 (4)	167 (68)	209 (79)	3.494	2.471	42.494	48.459
GRAND TOTAL	334 (93)	13 (4)	1384 (658)	1731 (755)	97.559	2.471	564.362	664.392

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: FARLEY (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	89	0	0		5.542	0.0	0.0	
OPERATING PERSONNEL	92	0	0		30.299	0.0	0.0	
HEALTH PHYSICS PERSONNEL	31	0	55		11.820	0.0	28.309	
SUPERVISORY PERSONNEL	39	1	0		13.748	0.097	0.0	
ENGINEERING PERSONNEL	6	0	43		0.396	0.0	1.182	
TOTAL	257	1	98	356	61.805	0.097	29.491	91.393
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	148	0	0		17.994	0.0	0.0	
OPERATING PERSONNEL	64	0	0		23.209	0.0	0.0	
HEALTH PHYSICS PERSONNEL	11	0	7		1.405	0.0	0.360	
SUPERVISORY PERSONNEL	16	1	0		1.263	0.010	0.0	
ENGINEERING PERSONNEL	2	0	81		0.077	0.0	3.832	
TOTAL	241	1	88	330	43.948	0.010	4.192	48.150
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	11	0	0		0.210	0.0	0.0	
OPERATING PERSONNEL	4	0	0		0.120	0.0	0.0	
HEALTH PHYSICS PERSONNEL	2	0	3		0.022	0.0	0.033	
SUPERVISORY PERSONNEL	1	0	0		0.007	0.0	0.0	
ENGINEERING PERSONNEL	1	0	65		0.012	0.0	18.937	
TOTAL	19	0	68	87	0.371	0.0	18.970	19.341
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	154	0	1		72.943	0.0	0.108	
OPERATING PERSONNEL	53	0	0		9.099	0.0	0.0	
HEALTH PHYSICS PERSONNEL	19	0	43		4.247	0.0	8.810	
SUPERVISORY PERSONNEL	22	0	1		5.297	0.0	1.136	
ENGINEERING PERSONNEL	6	0	260		0.857	0.0	91.099	
TOTAL	254	0	305	559	92.443	0.0	101.153	193.596
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	9	0	0		0.491	0.0	0.0	
OPERATING PERSONNEL	17	0	0		1.697	0.0	0.0	
HEALTH PHYSICS PERSONNEL	10	0	9		1.521	0.0	4.103	
SUPERVISORY PERSONNEL	4	0	0		1.196	0.0	0.0	
ENGINEERING PERSONNEL	0	0	1		0.0	0.0	0.006	
TOTAL	40	0	10	50	4.905	0.0	4.109	9.014
*REFUELING								
MAINTENANCE PERSONNEL	63	0	0		9.683	0.0	0.0	
OPERATING PERSONNEL	22	0	0		1.308	0.0	0.0	
HEALTH PHYSICS PERSONNEL	3	0	9		0.136	0.0	0.172	
SUPERVISORY PERSONNEL	13	0	0		1.779	0.0	0.0	
ENGINEERING PERSONNEL	0	0	11		0.0	0.0	2.234	
TOTAL	101	0	20	121	12.906	0.0	2.406	15.312
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	474	0	1	475	106.863	0.0	0.108	106.971
OPERATING PERSONNEL	252	0	0	252	65.732	0.0	0.0	65.732
HEALTH PHYSICS PERSONNEL	76	0	126	202	19.151	0.0	41.787	60.938
SUPERVISORY PERSONNEL	95	2	1	98	23.290	0.107	1.136	24.533
ENGINEERING PERSONNEL	15	0	461	476	1.342	0.0	117.290	118.632
GRAND TOTAL	912	2	589	1503	216.378	0.107	160.321	376.806

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: FITZPATRICK (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	71	0	55		6	0	8	
OPERATING PERSONNEL	87	0	55		23	0	5	
HEALTH PHYSICS PERSONNEL	18	0	54		9	0	68	
SUPERVISORY PERSONNEL	0	0	0		3	0	0	
ENGINEERING PERSONNEL	43	0	38		0	0	2	
TOTAL	219	0	202	421	41	0	83	124
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	80	0	616		136	0	668	
OPERATING PERSONNEL	61	0	12		9	0	1	
HEALTH PHYSICS PERSONNEL	10	0	18		1	0	1	
SUPERVISORY PERSONNEL	0	0	0		0	0	0	
ENGINEERING PERSONNEL	33	0	83		10	0	24	
TOTAL	184	0	729	913	156	0	694	850
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	33	0	307		3	0	48	
OPERATING PERSONNEL	41	0	2		3	0	0	
HEALTH PHYSICS PERSONNEL	1	0	7		0	0	0	
SUPERVISORY PERSONNEL	0	0	0		0	0	0	
ENGINEERING PERSONNEL	21	0	88		0	0	2	
TOTAL	96	0	404	500	6	0	50	56
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	44	0	1034		8	0	955	
OPERATING PERSONNEL	30	0	9		2	0	1	
HEALTH PHYSICS PERSONNEL	3	0	8		0	0	1	
SUPERVISORY PERSONNEL	0	0	0		0	0	0	
ENGINEERING PERSONNEL	12	0	62		0	0	9	
TOTAL	89	0	1113	1202	10	0	966	976
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	77	0	375		15	0	87	
OPERATING PERSONNEL	41	0	4		13	0	6	
HEALTH PHYSICS PERSONNEL	6	0	9		0	0	1	
SUPERVISORY PERSONNEL	0	0	0		0	0	0	
ENGINEERING PERSONNEL	11	0	18		2	0	5	
TOTAL	135	0	406	541	30	0	99	129
*REFUELING								
MAINTENANCE PERSONNEL	0	0	0		0	0	0	
OPERATING PERSONNEL	0	0	0		0	0	0	
HEALTH PHYSICS PERSONNEL	0	0	0		0	0	0	
SUPERVISORY PERSONNEL	0	0	0		0	0	0	
ENGINEERING PERSONNEL	0	0	0		0	0	0	
TOTAL	0	0	0	0	0	0	0	0
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	305	0	2387	2692	168	0	1766	1934
OPERATING PERSONNEL	260	0	82	342	50	0	13	63
HEALTH PHYSICS PERSONNEL	38	0	96	134	10	0	71	81
SUPERVISORY PERSONNEL	0	0	0	0	3	0	0	3
ENGINEERING PERSONNEL	120	0	289	409	12	0	42	54
GRAND TOTAL	723	0	2854	3577	243	0	1892	2135

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: FORT CALHOUN (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	5	2	15		1.619	0.812	5.829	
OPERATING PERSONNEL	20	0	0		8.584	0.098	0.0	
HEALTH PHYSICS PERSONNEL	10	1	16		3.516	0.236	9.266	
SUPERVISORY PERSONNEL	3	0	0		1.001	0.123	0.0	
ENGINEERING PERSONNEL	9	5	1		4.021	3.059	1.084	
TOTAL	47	8	32	87	18.741	4.328	16.179	39.248
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	32	25	35		13.593	8.557	13.577	
OPERATING PERSONNEL	0	0	0		0.147	0.020	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.015	0.0	0.125	
SUPERVISORY PERSONNEL	0	0	0		0.025	0.0	0.0	
ENGINEERING PERSONNEL	1	0	0		0.228	0.351	0.0	
TOTAL	33	25	35	93	14.008	8.928	13.702	36.638
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	4	161		0.560	1.445	158.181	
OPERATING PERSONNEL	0	0	0		0.250	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.111	0.0	0.265	
SUPERVISORY PERSONNEL	0	1	0		0.057	0.197	0.0	
ENGINEERING PERSONNEL	3	13	1		1.589	8.951	0.163	
TOTAL	5	18	162	185	2.567	10.593	158.609	171.769
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	37	31	169		30.292	15.446	119.866	
OPERATING PERSONNEL	4	0	0		1.033	0.008	0.0	
HEALTH PHYSICS PERSONNEL	9	0	5		5.671	0.098	2.209	
SUPERVISORY PERSONNEL	1	0	0		0.985	0.022	0.0	
ENGINEERING PERSONNEL	7	10	1		6.905	5.388	1.416	
TOTAL	58	41	175	274	44.886	20.962	123.491	189.339
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	12	14	12		8.720	4.646	5.116	
OPERATING PERSONNEL	4	0	0		1.225	0.0	0.0	
HEALTH PHYSICS PERSONNEL	6	0	2		3.373	0.062	0.618	
SUPERVISORY PERSONNEL	0	0	0		0.086	0.0	0.0	
ENGINEERING PERSONNEL	1	3	0		0.252	0.506	0.005	
TOTAL	23	17	14	54	13.656	5.214	5.739	24.609
*REFUELING								
MAINTENANCE PERSONNEL	37	43	137		40.223	38.789	110.530	
OPERATING PERSONNEL	29	2	0		5.528	0.349	0.0	
HEALTH PHYSICS PERSONNEL	7	0	16		4.036	0.005	9.417	
SUPERVISORY PERSONNEL	9	1	0		2.432	0.217	0.0	
ENGINEERING PERSONNEL	11	13	0		9.646	4.306	0.010	
TOTAL	93	59	153	305	61.865	43.666	119.957	225.488
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	125	119	529	773	95.007	69.695	413.099	577.801
OPERATING PERSONNEL	57	2	0	59	16.767	0.475	0.0	17.242
HEALTH PHYSICS PERSONNEL	32	1	39	72	16.722	0.401	21.900	39.023
SUPERVISORY PERSONNEL	13	2	0	15	4.586	0.559	0.0	5.145
ENGINEERING PERSONNEL	32	44	3	79	22.641	22.561	2.678	47.880
GRAND TOTAL	259 (112)	168 (102)	571 (340)	998 (554)	155.723	93.691	437.677	687.091

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: GINNA 1 (PWR) 1980

* WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SUPV.								
MAINTENANCE PERSONNEL	47	246	0		7.27	7.01	0.0	
OPERATING PERSONNEL	43	0	0		15.76	0.0	0.0	
HEALTH PHYSICS PERSONNEL	21	0	27		5.87	0.0	4.17	
SUPERVISORY PERSONNEL	116	0	0		5.99	0.0	0.0	
ENGINEERING PERSONNEL	0	18	370		0.0	2.72	15.53	
TOTAL	227	264	397	888	34.89	9.73	19.70	64.32
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	51	265	0		18.35	150.78	0.0	
OPERATING PERSONNEL	20	0	0		1.03	0.0	0.0	
HEALTH PHYSICS PERSONNEL	17	0	27		3.98	0.0	5.40	
SUPERVISORY PERSONNEL	48	0	0		0.79	0.0	0.0	
ENGINEERING PERSONNEL	0	12	395		0.0	1.94	63.13	
TOTAL	136	277	422	835	24.15	152.72	68.53	245.40
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	33	146	0		1.45	48.80	0.0	
OPERATING PERSONNEL	4	0	0		0.15	0.0	0.0	
HEALTH PHYSICS PERSONNEL	6	0	22		0.69	0.0	2.24	
SUPERVISORY PERSONNEL	7	0	0		0.50	0.0	0.0	
ENGINEERING PERSONNEL	0	5	171		0.0	0.72	26.75	
TOTAL	50	151	193	394	2.79	49.52	28.99	81.30
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	50	236	0		20.15	76.73	0.0	
OPERATING PERSONNEL	10	0	0		1.22	0.0	0.0	
HEALTH PHYSICS PERSONNEL	12	0	27		4.23	0.0	8.77	
SUPERVISORY PERSONNEL	25	0	0		0.99	0.0	0.0	
ENGINEERING PERSONNEL	0	14	421		0.0	1.97	142.14	
TOTAL	97	250	448	795	26.59	78.70	150.91	256.20
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	26	46	0		2.60	5.44	0.0	
OPERATING PERSONNEL	12	0	0		0.49	0.0	0.0	
HEALTH PHYSICS PERSONNEL	12	0	18		0.37	0.0	0.51	
SUPERVISORY PERSONNEL	24	0	0		0.12	0.0	0.3	
ENGINEERING PERSONNEL	0	1	89		0.0	0.01	5.71	
TOTAL	74	47	107	228	3.58	5.45	6.22	15.25
*REFUELING								
MAINTENANCE PERSONNEL	29	60	0		2.99	11.43	0.0	
OPERATING PERSONNEL	6	0	0		2.85	0.0	0.0	
HEALTH PHYSICS PERSONNEL	6	0	16		0.34	0.0	1.88	
SUPERVISORY PERSONNEL	38	0	0		2.38	0.0	0.0	
ENGINEERING PERSONNEL	0	2	78		0.0	1.60	28.42	
TOTAL	79	62	94	235	8.16	13.03	30.30	51.49
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	236 (51)	999 (330)	0	1235 (381)	52.41	300.19	0.0	352.60
OPERATING PERSONNEL	95 (43)	0	0	95 (43)	21.50	0.0	0.0	21.50
HEALTH PHYSICS PERSONNEL	74 (21)	0	137 (27)	211 (48)	15.48	0.0	22.97	38.45
SUPERVISORY PERSONNEL	258 (122)	0	0	258 (122)	10.77	0.0	0.0	10.77
ENGINEERING PERSONNEL	0	52 (22)	1524 (576)	1576 (598)	0.0	8.96	281.68	290.64
GRAND TOTAL	663 (237)	1051 (362)	1661 (603)	3375 (1,102)	100.16	309.15	304.65	713.96

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: HADDAM NECK (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	5	3	5		4.01	0.50	3.58	
OPERATING PERSONNEL	40	0	54		32.86	0.15	17.60	
HEALTH PHYSICS PERSONNEL	21	6	105		11.91	3.53	75.67	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.02	
ENGINEERING PERSONNEL	1	1	0		0.55	0.79	0.22	
TOTAL	67	10	164	241	49.33	4.97	97.09	151.39
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	29	78	160		43.41	37.93	83.31	
OPERATING PERSONNEL	23	1	17		8.58	0.49	7.65	
HEALTH PHYSICS PERSONNEL	18	5	207		8.01	3.01	120.65	
SUPERVISORY PERSONNEL	0	0	1		0.0	0.03	0.84	
ENGINEERING PERSONNEL	2	2	32		4.15	0.90	20.38	
TOTAL	72	86	417	575	64.15	42.36	232.83	339.34
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	11	26	75		3.27	8.91	41.78	
OPERATING PERSONNEL	3	1	7		1.87	0.63	2.12	
HEALTH PHYSICS PERSONNEL	0	0	4		0.12	0.03	1.51	
SUPERVISORY PERSONNEL	0	0	1		0.0	0.0	0.46	
ENGINEERING PERSONNEL	2	4	38		1.53	1.41	29.69	
TOTAL	16	31	125	172	6.79	10.98	75.56	93.33
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	21	32	512		10.67	11.75	340.73	
OPERATING PERSONNEL	3	3	9		1.30	1.50	4.49	
HEALTH PHYSICS PERSONNEL	4	2	48		1.22	0.67	16.44	
SUPERVISORY PERSONNEL	0	1	8		0.0	0.28	3.33	
ENGINEERING PERSONNEL	3	14	34		0.99	4.50	16.79	
TOTAL	31	52	611	694	14.18	18.70	381.78	414.66
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	4	0	1		0.88	0.18	0.92	
OPERATING PERSONNEL	2	0	0		0.73	0.0	0.08	
HEALTH PHYSICS PERSONNEL	3	0	63		10.33	0.0	30.28	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.03	0.0	0.0	
TOTAL	9	0	66	75	11.97	0.18	31.28	43.43
*REFUELING								
MAINTENANCE PERSONNEL	11	7	70		5.18	2.53	64.76	
OPERATING PERSONNEL	11	1	8		5.13	0.16	2.62	
HEALTH PHYSICS PERSONNEL	0	0	23		0.02	0.02	6.46	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	5	2	35		1.87	0.70	36.76	
TOTAL	27	10	136	173	12.20	3.41	110.60	126.21
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	81	146	825	1052	67.42	61.80	535.08	664.30
OPERATING PERSONNEL	82	6	95	183	50.47	2.93	34.56	87.96
HEALTH PHYSICS PERSONNEL	46	13	450	509	31.61	7.26	251.01	289.88
SUPERVISORY PERSONNEL	0	1	10	11	0.0	0.31	4.65	4.96
ENGINEERING PERSONNEL	13	23	139	175	9.12	8.30	103.84	121.26
GRAND TOTAL	222	189	1519	1930	158.62	80.60	929.14	1168.36

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: E. I. HATCH 1, 2 (BWR) 1980

* WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	14	0	3		5	0	0	
OPERATING PERSONNEL	139	3	0		95	1	0	
HEALTH PHYSICS PERSONNEL	44	2	41		30	1	20	
SUPERVISORY PERSONNEL	35	15	2		8	4	1	
ENGINEERING PERSONNEL	30	3	6		7	1	2	
TOTAL	262	23	52	337	145	7	23	175
* ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	188	7	56		88	2	13	
OPERATING PERSONNEL	60	0	0		28	0	0	
HEALTH PHYSICS PERSONNEL	9	0	2		6	0	0	
SUPERVISORY PERSONNEL	6	1	0		1	0	0	
ENGINEERING PERSONNEL	24	2	10		4	0	4	
TOTAL	287	10	68	365	127	2	17	146
* IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	6		0	0	1	
OPERATING PERSONNEL	0	0	0		0	0	0	
HEALTH PHYSICS PERSONNEL	0	0	0		0	0	0	
SUPERVISORY PERSONNEL	0	0	0		0	0	0	
ENGINEERING PERSONNEL	1	1	2		0	0	0	
TOTAL	1	1	8	10	0	0	1	1
* SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	102	22	424		47	5	124	
OPERATING PERSONNEL	25	0	0		5	0	0	
HEALTH PHYSICS PERSONNEL	0	0	41		0	0	11	
SUPERVISORY PERSONNEL	0	2	8		0	0	2	
ENGINEERING PERSONNEL	10	8	66		3	2	21	
TOTAL	137	32	539	708	55	7	158	220
* WASTE PROCESSING								
MAINTENANCE PERSONNEL	8	0	1		2	0	0	
OPERATING PERSONNEL	21	0	0		4	0	0	
HEALTH PHYSICS PERSONNEL	0	0	0		0	0	0	
SUPERVISORY PERSONNEL	0	0	0		0	0	0	
ENGINEERING PERSONNEL	0	0	0		0	0	0	
TOTAL	29	0	1	30	6	0	0	6
* REFUELING								
MAINTENANCE PERSONNEL	0	0	0		0	0	0	
OPERATING PERSONNEL	1	0	0		0	0	0	
HEALTH PHYSICS PERSONNEL	0	0	0		0	0	0	
SUPERVISORY PERSONNEL	0	0	0		0	0	0	
ENGINEERING PERSONNEL	0	1	0		0	0	0	
TOTAL	1	1	0	2	0	0	0	0
* TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	312 (204)	29 (26)	490 (451)	831 (681)	142	7	138	287
OPERATING PERSONNEL	246 (182)	3 (3)	0	249 (185)	132	1	0	133
HEALTH PHYSICS PERSONNEL	53 (48)	2 (2)	84 (75)	139 (125)	36	1	31	68
SUPERVISORY PERSONNEL	41 (42)	18 (18)	10 (10)	69 (70)	9	4	3	16
ENGINEERING PERSONNEL	65 (56)	15 (13)	84 (80)	164 (149)	14	3	27	44
GRAND TOTAL	717 (532)	67 (62)	668 (616)	1452 (1210)	333	16	199	548

* Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: HUMBOLDT BAY (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	14	0	0		4.4	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	0	0		1.0	0.0	0.0	
SUPERVISORY PERSONNEL	2	0	0		0.5	0.0	0.0	
ENGINEERING PERSONNEL	2	0	0		0.7	0.0	0.0	
TOTAL	19	0	0	19	6.6	0.0	0.0	6.6
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	4	0	0		0.9	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	4	0	0	4	0.9	0.0	0.0	0.9
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	1		0.0	0.0	0.1	
TOTAL	0	0	1	1	0.0	0.0	0.1	0.1
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	4	0	0		1.2	0.0	0.0	
OPERATING PERSONNEL	4	0	0		1.2	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	0	0		0.6	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	1	0	0		0.7	0.0	0.0	
TOTAL	10	0	0	10	3.7	0.0	0.0	3.7
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	0		0.5	0.0	0.0	
OPERATING PERSONNEL	1	0	3		0.1	0.0	2.0	
HEALTH PHYSICS PERSONNEL	1	0	0		0.5	0.0	0.0	
SUPERVISORY PERSONNEL	1	0	0		0.4	0.0	0.0	
ENGINEERING PERSONNEL	1	0	0		0.2	0.0	0.0	
TOTAL	6	0	3	9	1.7	0.0	2.0	3.7
REFUELING								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	0	0	0.0	0.0	0.0	0.0
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	10	0	0	10	2.6	0.0	0.0	2.6
OPERATING PERSONNEL	19	0	3	22	5.7	0.0	2.0	7.7
HEALTH PHYSICS PERSONNEL	3	0	0	3	2.1	0.0	0.0	2.1
SUPERVISORY PERSONNEL	3	0	0	3	0.9	0.0	0.0	0.9
ENGINEERING PERSONNEL	4	0	1	5	1.6	0.0	0.1	1.7
GRAND TOTAL	39	0	4	43	12.9	0.0	2.1	15.0

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

Plant: INDIAN POINT 1,2 (PWR)

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (<100 mrem)				TOTAL MAN-REMS			
	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN REM
Reactor Operations & Surv								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL	165			165	174.6			174.6
Routine Maintenance								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL	40			40	45.7			45.7
In-Service Inspection								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL				0				0.0
Special Maintenance								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL	4	245	530	779	0.8	256.7	381.0	644.5
Waste Processing								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL	43		1	44	35.4		2.3	37.7
Refueling								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL	0	29	3	40	8.3	28.8	1.0	38.1
Total By Job Function								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
GRAND TOTAL	260	274	534	1068	270.8	283.6	384.3	938.6

No further breakdowns were provided

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: INDIAN POINT 3 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
* REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	4	0	7		1.08	0.0	3.57	
OPERATING PERSONNEL	35	0	3		18.99	0.05	1.00	
HEALTH PHYSICS PERSONNEL	14	0	19		8.26	0.07	10.59	
SUPERVISORY PERSONNEL	10	0	0		4.38	0.02	0.08	
ENGINEERING PERSONNEL	1	0	9		1.03	0.0	3.76	
TOTAL	64	0	38	102	33.74	0.14	19.00	52.88
* ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	42	0	67		12.11	0.01	35.42	
OPERATING PERSONNEL	3	0	2		1.02	0.02	1.03	
HEALTH PHYSICS PERSONNEL	0	0	2		0.12	0.02	1.92	
SUPERVISORY PERSONNEL	4	0	0		9.09	0.02	0.47	
ENGINEERING PERSONNEL	1	0	0		0.41	0.03	0.73	
TOTAL	50	0	71	121	22.75	0.10	39.57	62.42
* IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	10	0	21		3.60	0.0	10.09	
OPERATING PERSONNEL	0	0	2		0.02	0.0	0.39	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.04	0.0	
SUPERVISORY PERSONNEL	2	0	4		0.49	0.0	0.90	
ENGINEERING PERSONNEL	0	0	1		0.01	0.0	0.60	
TOTAL	12	0	28	40	4.12	0.04	11.98	16.14
* SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	65	0	280		32.56	0.01	123.98	
OPERATING PERSONNEL	18	0	3		4.69	0.01	1.34	
HEALTH PHYSICS PERSONNEL	7	0	27		3.20	0.06	15.21	
SUPERVISORY PERSONNEL	12	1	9		4.44	0.23	3.34	
ENGINEERING PERSONNEL	8	0	35		3.60	0.29	11.89	
TOTAL	110	1	354	465	48.49	0.60	155.76	204.85
* WASTE PROCESSING *								
MAINTENANCE PERSONNEL	0	0	11		0.10	0.0	3.75	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.15	
HEALTH PHYSICS PERSONNEL	3	0	1		0.85	0.0	3.30	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.01	0.0	0.0	
TOTAL	3	0	12	15	0.96	0.0	7.20	8.16
* REFUELING								
MAINTENANCE PERSONNEL	0	0	8		0.0	0.0	2.79	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.03	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	8	8	0.0	0.0	2.82	2.82
* TOTAL BY JOB FUNCTION *								
MAINTENANCE PERSONNEL	121	0	394	515	49.45	0.02	179.60	229.07
OPERATING PERSONNEL	56	0	10	66	24.72	0.08	3.91	28.71
HEALTH-PHYSICS PERSONNEL	24	0	49	73	12.43	0.19	31.02	43.64
SUPERVISORY PERSONNEL	28	1	13	42	18.40	0.27	4.82	23.49
ENGINEERING PERSONNEL	10	0	45	55	5.06	0.32	16.98	22.36
GRAND TOTAL	239	1	511	751	110.06	0.88	236.33	347.27

* Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: KEWAUNEE (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	4	1	5		0.189	0.013	0.040	
OPERATING PERSONNEL	25	0	1		3.860	0.0	0.012	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	7	1	0		1.086	0.002	0.0	
ENGINEERING PERSONNEL	4	8	5		0.388	0.705	0.235	
TOTAL	40	10	11	61	5.523	0.720	0.287	6.530
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	31	10	62		5.047	0.698	14.986	
OPERATING PERSONNEL	15	0	9		0.836	0.0	1.459	
HEALTH PHYSICS PERSONNEL	9	0	11		6.175	0.0	3.183	
SUPERVISORY PERSONNEL	5	0	11		0.139	0.0	1.929	
ENGINEERING PERSONNEL	2	0	2		0.065	0.0	0.033	
TOTAL	62	10	95	167	12.262	0.698	21.590	34.550
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	6	1	29		0.615	0.106	6.343	
OPERATING PERSONNEL	3	0	12		0.032	0.0	2.269	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	2	0	12		0.135	0.0	6.531	
ENGINEERING PERSONNEL	2	6	5		0.392	1.200	0.333	
TOTAL	13	7	58	78	1.174	1.306	15.476	17.956
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	31	10	76		11.056	0.506	40.966	
OPERATING PERSONNEL	10	0	1		0.282	0.0	0.030	
HEALTH PHYSICS PERSONNEL	6	0	0		0.524	0.0	0.0	
SUPERVISORY PERSONNEL	3	1	0		0.255	0.113	0.0	
ENGINEERING PERSONNEL	3	5	8		0.109	0.360	4.722	
TOTAL	53	16	85	154	12.226	0.979	45.718	58.923
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	20	7	10		5.251	0.057	0.171	
OPERATING PERSONNEL	27	0	0		8.432	0.0	0.0	
HEALTH PHYSICS PERSONNEL	6	0	0		0.252	0.0	0.0	
SUPERVISORY PERSONNEL	1	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	54	7	10	71	13.935	0.057	0.171	14.163
*REFUELING								
MAINTENANCE PERSONNEL	20	10	11		1.837	3.544	2.882	
OPERATING PERSONNEL	9	0	9		0.063	0.0	4.882	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	3	0	0		0.034	0.0	0.0	
ENGINEERING PERSONNEL	2	3	0		0.167	0.0	0.0	
TOTAL	34	13	20	67	2.101	3.544	7.764	13.409
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	112	39	193	344	23.995	4.924	65.388	94.307
OPERATING PERSONNEL	89	0	32	121	13.505	0.0	8.652	22.157
HEALTH PHYSICS PERSONNEL	21	0	11	32	6.951	0.0	3.183	10.134
SUPERVISORY PERSONNEL	21	2	23	46	1.649	0.115	8.460	10.224
ENGINEERING PERSONNEL	13	22	20	55	1.121	2.265	5.323	8.709
GRAND TOTAL	[illegible]	[illegible]	[illegible]	598	47.221	7.304	91.014	145.531

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: LACROSSE (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	9	0	0		1.964	0.0	0.006	
OPERATING PERSONNEL	21	0	0		41.012	0.0	0.0	
HEALTH PHYSICS PERSONNEL	7	0	0		7.824	0.0	0.0	
SUPERVISORY PERSONNEL	11	0	0		7.255	0.0	0.619	
ENGINEERING PERSONNEL	4	0	0		3.062	0.0	0.037	
TOTAL	52	0	0	52	61.117	0.0	0.662	61.779
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	20	1	2		24.525	0.067	0.591	
OPERATING PERSONNEL	16	0	0		5.377	0.0	0.0	
HEALTH PHYSICS PERSONNEL	6	0	0		2.437	0.0	0.0	
SUPERVISORY PERSONNEL	2	0	0		0.814	0.0	0.207	
ENGINEERING PERSONNEL	1	0	0		0.297	0.0	0.072	
TOTAL	45	1	2	48	33.450	0.067	0.870	34.387
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	8	0	8		5.793	0.0	7.120	
OPERATING PERSONNEL	8	0	0		2.620	0.0	0.0	
HEALTH PHYSICS PERSONNEL	2	0	0		0.426	0.0	0.0	
SUPERVISORY PERSONNEL	7	0	4		9.451	0.0	0.734	
ENGINEERING PERSONNEL	0	0	0		0.015	0.0	0.0	
TOTAL	25	0	12	37	18.305	0.0	7.854	26.159
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	13	2	1		11.506	0.312	0.160	
OPERATING PERSONNEL	3	0	0		1.374	0.0	0.0	
HEALTH PHYSICS PERSONNEL	5	0	0		1.442	0.0	0.0	
SUPERVISORY PERSONNEL	9	0	0		11.256	0.0	0.0	
ENGINEERING PERSONNEL	2	0	0		3.228	0.0	0.097	
TOTAL	32	2	1	35	28.806	0.312	0.257	29.375
WASTE PROCESSING								
MAINTENANCE PERSONNEL	10	0	0		5.497	0.0	0.022	
OPERATING PERSONNEL	9	0	0		1.349	0.0	0.0	
HEALTH PHYSICS PERSONNEL	7	0	0		13.243	0.0	0.0	
SUPERVISORY PERSONNEL	5	0	0		4.623	0.0	0.0	
ENGINEERING PERSONNEL	1	0	0		0.354	0.0	0.032	
TOTAL	28	0	0	28	25.066	0.0	0.054	25.120
REFUELING								
MAINTENANCE PERSONNEL	15	2	0		16.875	1.922	0.0	
OPERATING PERSONNEL	19	0	0		5.792	0.0	0.0	
HEALTH PHYSICS PERSONNEL	7	0	0		4.087	0.0	0.0	
SUPERVISORY PERSONNEL	9	0	0		6.554	0.0	0.074	
ENGINEERING PERSONNEL	4	0	2		1.801	0.0	1.254	
TOTAL	54	2	2	58	35.109	1.922	1.328	38.359
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	75 (21)	5 (2)	11	91 (34)	66.160	2.301	7.899	76.360
OPERATING PERSONNEL	72 (21)	0	0	72 (21)	57.524	0.0	0.0	57.524
HEALTH PHYSICS PERSONNEL	34 (7)	0	0	34 (7)	29.459	0.0	0.0	29.459
SUPERVISORY PERSONNEL	43 (13)	0	4 (6)	47 (19)	39.953	0.0	1.634	41.587
ENGINEERING PERSONNEL	12 (7)	0	2	14 (9)	8.757	0.0	1.492	10.249
GRAND TOTAL	236 (69)	5 (2)	17 (19)	258 (90)	201.853	2.301	11.025	215.179

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: MAINE YANKEE (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	2	2	0		0.770	0.320	0.060	
OPERATING PERSONNEL	47	0	4		52.489	0.0	0.923	
HEALTH PHYSICS PERSONNEL	18	1	31		14.605	0.160	13.339	
SUPERVISORY PERSONNEL	70	8	13		26.568	1.800	3.950	
ENGINEERING PERSONNEL	19	13	37		7.761	4.771	13.432	
TOTAL	156	24	85	265	102.193	7.051	31.704	140.948
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	35	3	157		37.075	0.895	77.769	
OPERATING PERSONNEL	1	0	0		0.329	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	0	1		1.420	0.0	0.205	
SUPERVISORY PERSONNEL	2	2	1		1.010	0.735	0.165	
ENGINEERING PERSONNEL	2	0	1		1.320	0.015	0.145	
TOTAL	41	5	160	206	41.154	1.645	78.284	121.083
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	5	0	28		1.630	0.0	14.000	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	0	0		0.185	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.050	0.020	
ENGINEERING PERSONNEL	2	4	8		0.390	0.855	3.395	
TOTAL	8	4	36	48	2.205	0.905	17.415	20.525
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	7	0	102		1.590	0.0	66.172	
OPERATING PERSONNEL	2	0	0		0.670	0.0	0.030	
HEALTH PHYSICS PERSONNEL	0	0	1		0.100	0.0	0.234	
SUPERVISORY PERSONNEL	0	0	0		0.040	0.140	0.095	
ENGINEERING PERSONNEL	4	5	10		1.003	2.130	4.660	
TOTAL	13	5	113	131	3.403	2.270	71.191	76.864
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	11	0	14		2.905	0.0	4.845	
OPERATING PERSONNEL	25	0	0		10.633	0.0	0.035	
HEALTH PHYSICS PERSONNEL	0	0	0		0.095	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.135	0.0	0.100	
ENGINEERING PERSONNEL	1	0	0		0.170	0.065	0.010	
TOTAL	37	0	14	51	13.938	0.065	4.990	18.993
*REFUELING								
MAINTENANCE PERSONNEL	29	2	164		20.903	0.400	95.811	
OPERATING PERSONNEL	30	0	4		14.822	0.0	0.990	
HEALTH PHYSICS PERSONNEL	5	0	28		1.535	0.0	17.404	
SUPERVISORY PERSONNEL	2	1	0		0.428	1.765	0.290	
ENGINEERING PERSONNEL	9	10	29		4.433	3.572	14.679	
TOTAL	75	13	225	313	42.121	5.737	129.174	177.032
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	89	7	465	561	64.873	1.615	258.657	325.145
OPERATING PERSONNEL	105	0	8	113	78.943	0.0	1.978	80.921
HEALTH PHYSICS PERSONNEL	25	1	61	87	17.940	0.160	31.182	49.282
SUPERVISORY PERSONNEL	74	11	14	99	28.181	4.490	4.620	37.291
ENGINEERING PERSONNEL	37	32	85	154	15.077	11.408	36.321	62.806
GRAND TOTAL	330	51	633	1014	205.014	17.673	332.758	555.445

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: MILLSTONE 1 (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	11	0	4		9.49	0.01	1.16	
OPERATING PERSONNEL	45	0	0		45.18	0.0	0.25	
HEALTH PHYSICS PERSONNEL	16	4	55		15.11	1.46	21.50	
SUPERVISORY PERSONNEL	2	0	0		0.58	0.0	0.0	
ENGINEERING PERSONNEL	2	0	1		0.86	0.09	0.31	
TOTAL	76	4	60	140	71.22	1.56	23.22	96.00
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	16	0	0		4.13	0.03	0.28	
OPERATING PERSONNEL	0	0	0		0.22	0.0	0.01	
HEALTH PHYSICS PERSONNEL	1	0	0		0.27	0.0	0.23	
SUPERVISORY PERSONNEL	0	0	0		0.01	0.0	0.0	
ENGINEERING PERSONNEL	0	0	2		0.08	0.06	0.58	
TOTAL	17	0	2	19	4.71	0.09	1.10	5.90
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	3	3	164		1.11	0.75	92.50	
OPERATING PERSONNEL	0	0	5		0.65	0.08	1.94	
HEALTH PHYSICS PERSONNEL	0	1	26		0.33	0.44	7.83	
SUPERVISORY PERSONNEL	1	0	3		0.39	0.0	1.02	
ENGINEERING PERSONNEL	4	5	49		2.63	2.18	31.10	
TOTAL	8	9	247	264	5.11	3.45	134.39	142.95
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	46	99	1556		44.83	46.13	1274.32	
OPERATING PERSONNEL	31	1	59		9.89	0.30	39.05	
HEALTH PHYSICS PERSONNEL	9	4	155		4.44	2.51	93.28	
SUPERVISORY PERSONNEL	4	0	40		1.50	0.0	18.12	
ENGINEERING PERSONNEL	15	32	163		6.44	11.56	128.30	
TOTAL	105	136	1973	2214	67.10	60.50	1553.07	1680.67
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	1	25		0.40	0.28	12.01	
OPERATING PERSONNEL	47	0	5		23.41	0.0	1.98	
HEALTH PHYSICS PERSONNEL	9	0	4		3.88	0.01	1.80	
SUPERVISORY PERSONNEL	1	0	0		0.27	0.0	0.0	
ENGINEERING PERSONNEL	1	0	3		0.46	0.01	6.11	
TOTAL	58	1	37	96	28.42	0.30	21.90	50.62
*REFUELING								
MAINTENANCE PERSONNEL	21	16	72		12.70	4.94	32.79	
OPERATING PERSONNEL	30	0	1		16.15	0.02	0.42	
HEALTH PHYSICS PERSONNEL	6	1	23		1.64	0.24	8.70	
SUPERVISORY PERSONNEL	0	0	0		0.13	0.0	0.09	
ENGINEERING PERSONNEL	6	4	31		3.02	1.80	15.87	
TOTAL	63	21	127	211	33.64	7.00	57.87	98.51
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	97	119	1821	2037	72.66	52.14	1413.06	1537.86
OPERATING PERSONNEL	153	1	70	224	95.50	0.40	43.65	139.55
HEALTH PHYSICS PERSONNEL	41	10	263	314	25.67	4.66	133.34	163.67
SUPERVISORY PERSONNEL	8	0	43	51	2.88	0.0	19.23	22.11
ENGINEERING PERSONNEL	28	41	249	318	13.49	15.70	182.27	211.46
GRAND TOTAL	327	171	2446	2944	210.20	72.90	1791.55	2074.65

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: MILLSTONE 2 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	5	0	4		2.16	0.04	2.56	
OPERATING PERSONNEL	30	0	3		12.75	0.02	0.96	
HEALTH PHYSICS PERSONNEL	13	4	63		10.43	2.57	31.97	
SUPERVISORY PERSONNEL	0	0	3		0.13	0.0	1.55	
ENGINEERING PERSONNEL	3	5	12		1.56	1.99	4.16	
TOTAL	51	9	85	145	27.03	4.62	41.20	72.85
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	1		1.13	0.0	0.66	
OPERATING PERSONNEL	0	0	0		0.02	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.06	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.01	0.0	
TOTAL	2	0	1	3	1.21	0.01	0.66	1.88
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	15		0.0	0.0	7.71	
OPERATING PERSONNEL	0	0	0		0.08	0.0	0.09	
HEALTH PHYSICS PERSONNEL	0	0	0		0.03	0.01	0.16	
SUPERVISORY PERSONNEL	0	0	1		0.0	0.0	0.13	
ENGINEERING PERSONNEL	0	0	8		0.01	0.07	6.17	
TOTAL	0	0	24	24	0.12	0.08	14.26	14.46
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	46	1	678		49.40	0.91	308.71	
OPERATING PERSONNEL	24	0	16		6.16	0.07	6.82	
HEALTH PHYSICS PERSONNEL	6	1	26		1.71	0.81	9.33	
SUPERVISORY PERSONNEL	1	0	7		0.21	0.0	2.26	
ENGINEERING PERSONNEL	12	13	78		4.67	4.15	44.17	
TOTAL	89	15	825	929	62.15	5.94	373.29	441.38
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	3	1	11		1.08	0.40	3.67	
OPERATING PERSONNEL	10	0	1		2.96	0.0	0.39	
HEALTH PHYSICS PERSONNEL	1	0	1		0.41	0.0	0.74	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.01	
TOTAL	14	1	13	28	4.46	0.40	4.81	9.67
*REFUELING								
MAINTENANCE PERSONNEL	17	1	77		7.44	0.28	48.14	
OPERATING PERSONNEL	5	0	10		2.17	0.0	4.04	
HEALTH PHYSICS PERSONNEL	0	0	9		0.0	0.0	2.70	
SUPERVISORY PERSONNEL	1	0	0		0.17	0.0	0.0	
ENGINEERING PERSONNEL	1	1	11		0.67	0.33	5.30	
TOTAL	24	2	107	133	10.45	0.61	60.18	71.24
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	73	3	806	882	61.21	1.63	371.45	434.29
OPERATING PERSONNEL	69	0	30	99	24.14	0.09	12.30	36.53
HEALTH PHYSICS PERSONNEL	20	5	99	124	12.64	3.39	44.90	60.93
SUPERVISORY PERSONNEL	2	0	11	13	0.51	0.0	3.94	4.45
ENGINEERING PERSONNEL	16	19	109	144	6.92	6.55	61.81	75.28
GRAND TOTAL	180	27	1055	1262	105.42	11.66	494.40	611.48

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: †MONTICELLO (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	48	134	93		13.592	15.921	3.392	
OPERATING PERSONNEL	45	0	1		25.324	0.0	0.116	
HEALTH PHYSICS PERSONNEL	15	0	28		4.361	0.0	5.058	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	22	7	73		2.483	0.263	4.869	
TOTAL	130	141	195	466	45.760	16.184	13.435	75.379
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	44	144	100		13.690	20.525	8.585	
OPERATING PERSONNEL	26	0	0		2.261	0.0	0.0	
HEALTH PHYSICS PERSONNEL	11	0	6		0.713	0.0	0.478	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	14	5	46		1.378	0.283	3.488	
TOTAL	95	149	152	396	18.042	20.808	12.551	51.401
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	22	25		0.0	0.588	21.028	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	3	15		0.0	1.776	13.360	
TOTAL	0	25	40	65	0.0	2.364	34.388	36.752
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	38	157	281		36.902	68.785	94.661	
OPERATING PERSONNEL	44	0	0		16.208	0.0	0.0	
HEALTH PHYSICS PERSONNEL	11	0	23		2.710	0.0	9.781	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	20	9	101		8.492	1.113	51.047	
TOTAL	113	166	405	684	64.312	69.898	155.489	289.699
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	20	18	2		2.165	0.398	0.018	
OPERATING PERSONNEL	8	0	3		0.908	0.0	7.276	
HEALTH PHYSICS PERSONNEL	10	0	4		1.039	0.0	0.428	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	3		0.0	0.0	0.690	
TOTAL	34	18	12	68	4.112	0.398	8.412	12.922
*REFUELING								
MAINTENANCE PERSONNEL	22	63	3		3.731	8.491	0.039	
OPERATING PERSONNEL	34	0	0		5.638	0.0	0.0	
HEALTH PHYSICS PERSONNEL	3	0	8		0.089	0.0	1.835	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	6	2	11		1.227	0.078	1.910	
TOTAL	65	65	22	152	10.685	8.569	1.784	23.038
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	172	538	504	1214	70.080	114.708	127.723	312.511
OPERATING PERSONNEL	157	0	4	161	50.339	0.0	7.392	57.731
HEALTH PHYSICS PERSONNEL	50	0	69	119	8.912	0.0	17.580	26.492
SUPERVISORY PERSONNEL	0	0	0	0	0.0	0.0	0.0	0.0
ENGINEERING PERSONNEL	62	26	249	337	13.580	3.513	5.364	22.457
GRAND TOTAL	441	564	826	1831	142.911	118.221	228.059	489.191

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: †NINE MILE POINT (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	173	40	100		16.834	1.200	5.071	
OPERATING PERSONNEL	35	0	0		9.440	0.0	0.0	
HEALTH PHYSICS PERSONNEL	32	0	3		17.582	0.0	0.229	
SUPERVISORY PERSONNEL	42	1	4		8.589	0.002	0.029	
ENGINEERING PERSONNEL	11	16	15		0.673	0.316	0.249	
TOTAL	293	57	122	472	53.118	1.518	5.578	60.214
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	281	56	92		34.988	8.483	4.518	
OPERATING PERSONNEL	29	0	0		0.998	0.0	0.0	
HEALTH PHYSICS PERSONNEL	33	0	0		0.804	0.0	0.0	
SUPERVISORY PERSONNEL	26	0	6		1.664	0.0	2.138	
ENGINEERING PERSONNEL	16	7	6		0.645	0.485	0.262	
TOTAL	385	63	104	552	39.099	8.968	6.918	54.985
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	39	56	53		10.300	32.689	6.132	
OPERATING PERSONNEL	11	0	0		0.275	0.0	0.0	
HEALTH PHYSICS PERSONNEL	16	0	1		0.491	0.0	0.015	
SUPERVISORY PERSONNEL	18	0	4		0.706	0.0	0.966	
ENGINEERING PERSONNEL	3	18	11		0.085	5.958	2.153	
TOTAL	87	74	69	230	11.857	38.647	9.266	59.770
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	368	96	285		50.891	18.397	164.784	
OPERATING PERSONNEL	17	0	0		0.990	0.0	0.0	
HEALTH PHYSICS PERSONNEL	58	0	3		6.549	0.0	0.100	
SUPERVISORY PERSONNEL	46	1	9		2.632	0.010	0.832	
ENGINEERING PERSONNEL	19	17	15		0.886	1.711	1.144	
TOTAL	508	114	312	934	61.948	20.118	166.860	248.926
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	73	8	58		13.123	0.470	8.690	
OPERATING PERSONNEL	36	0	0		10.200	0.0	0.0	
HEALTH PHYSICS PERSONNEL	20	0	4		1.550	0.0	0.065	
SUPERVISORY PERSONNEL	5	0	1		2.421	0.0	0.008	
ENGINEERING PERSONNEL	1	1	2		0.007	0.002	0.055	
TOTAL	135	9	65	209	27.301	0.472	8.818	36.591
*REFUELING								
MAINTENANCE PERSONNEL	63	1	14		4.931	0.004	2.782	
OPERATING PERSONNEL	26	0	0		2.573	0.0	0.0	
HEALTH PHYSICS PERSONNEL	16	0	1		0.906	0.0	0.010	
SUPERVISORY PERSONNEL	11	0	0		0.172	0.0	0.0	
ENGINEERING PERSONNEL	1	4	1		0.067	0.052	0.010	
TOTAL	117	5	16	138	8.649	0.056	2.802	11.507
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	997	257	602	1856	131.067	61.243	191.977	384.287
OPERATING PERSONNEL	154	0	9	154	24.476	0.0	0.0	24.476
HEALTH PHYSICS PERSONNEL	175	0	12	187	27.882	0.0	0.419	28.301
SUPERVISORY PERSONNEL	148	2	24	174	16.184	0.012	3.973	20.169
ENGINEERING PERSONNEL	51	63	50	164	2.363	8.524	3.873	14.760
GRAND TOTAL	1525	322	688	2535	201.972	69.779	200.242	471.993

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: NORTH ANNA 1 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	220	8	635		23.975	0.375	35.311	
OPERATING PERSONNEL	104	6	9		23.316	0.126	0.041	
HEALTH PHYSICS PERSONNEL	58	1	36		21.579	0.002	8.479	
SUPERVISORY PERSONNEL	15	2	14		0.047	0.011	0.125	
ENGINEERING PERSONNEL	34	58	27		0.955	0.870	0.767	
TOTAL	431	75	721	1227	69.672	1.384	44.723	115.979
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	140	9	251		27.801	0.385	12.129	
OPERATING PERSONNEL	44	12	0		1.397	0.244	0.0	
HEALTH PHYSICS PERSONNEL	28	0	19		2.155	0.0	1.067	
SUPERVISORY PERSONNEL	7	0	3		0.048	0.0	0.030	
ENGINEERING PERSONNEL	8	0	6		0.122	0.0	0.156	
TOTAL	227	21	279	527	31.523	0.629	13.382	45.534
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	1		0.0	0.0	0.030	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	1	1	0.0	0.0	0.030	0.030
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	11	0	205		0.388	0.0	9.068	
OPERATING PERSONNEL	4	4	0		0.045	0.037	0.0	
HEALTH PHYSICS PERSONNEL	4	0	0		0.011	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	3		0.0	0.0	0.614	
TOTAL	19	4	208	231	0.444	0.037	9.682	10.163
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	65	0	91		1.419	0.0	2.327	
OPERATING PERSONNEL	66	0	7		4.372	0.0	5.934	
HEALTH PHYSICS PERSONNEL	25	0	14		10.632	0.0	0.991	
SUPERVISORY PERSONNEL	1	0	2		0.005	0.0	0.010	
ENGINEERING PERSONNEL	2	2	2		0.062	0.012	0.014	
TOTAL	139	2	116	257	16.490	0.012	9.276	25.778
*REFUELING								
MAINTENANCE PERSONNEL	34	0	49		0.085	0.0	0.124	
OPERATING PERSONNEL	46	0	2		0.218	0.0	0.019	
HEALTH PHYSICS PERSONNEL	10	0	0		0.036	0.0	0.0	
SUPERVISORY PERSONNEL	6	0	3		0.010	0.0	0.013	
ENGINEERING PERSONNEL	9	9	0		0.015	0.125	0.0	
TOTAL	105	9	54	168	0.364	0.125	0.156	0.645
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	470	17	1232	1719	53.668	0.760	58.989	113.417
OPERATING PERSONNEL	244	22	18	284	29.348	0.407	5.994	35.749
HEALTH PHYSICS PERSONNEL	125	1	69	195	34.413	0.002	10.537	44.952
SUPERVISORY PERSONNEL	29	2	22	53	0.110	0.011	0.178	0.299
ENGINEERING PERSONNEL	53	69	38	160	1.154	1.007	1.551	3.712
GRAND TOTAL	921	111	1379	2411	118.693	2.187	77.249	198.129

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: OCONEE 1,2,3 (PWR) 1980

* WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	103	67	28		4.560	2.585	3.714	
OPERATING PERSONNEL	112	8	0		46.759	4.025	0.0	
HEALTH PHYSICS PERSONNEL	77	43	42		22.040	3.905	7.290	
SUPERVISORY PERSONNEL	8	0	0		0.450	0.0	0.0	
ENGINEERING PERSONNEL	88	16	10		27.260	1.340	0.495	
TOTAL	388	134	80	602	101.069	11.855	11.499	124.423
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	240	251	87		105.344	76.740	43.229	
OPERATING PERSONNEL	79	6	0		8.115	0.600	0.0	
HEALTH PHYSICS PERSONNEL	76	44	36		15.310	6.385	8.345	
SUPERVISORY PERSONNEL	8	0	0		0.495	0.0	0.0	
ENGINEERING PERSONNEL	64	29	57		13.340	4.170	11.015	
TOTAL	467	330	180	977	142.604	87.895	62.589	293.083
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	23	50	3		1.110	18.200	0.050	
OPERATING PERSONNEL	28	3	0		1.020	0.070	0.0	
HEALTH PHYSICS PERSONNEL	23	23	17		1.335	1.135	1.460	
SUPERVISORY PERSONNEL	2	0	0		0.050	0.0	0.0	
ENGINEERING PERSONNEL	8	13	32		0.800	0.410	11.290	
TOTAL	84	89	52	225	4.315	19.815	12.800	36.930
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	171	312	35		53.235	204.017	2.345	
OPERATING PERSONNEL	66	12	0		3.365	2.145	0.0	
HEALTH PHYSICS PERSONNEL	53	43	34		10.890	8.240	8.945	
SUPERVISORY PERSONNEL	4	0	0		0.505	0.0	0.0	
ENGINEERING PERSONNEL	59	64	98		19.480	19.560	33.040	
TOTAL	353	431	167	951	87.475	233.962	44.330	365.767
WASTE PROCESSING								
MAINTENANCE PERSONNEL	32	5	15		1.810	0.075	3.075	
OPERATING PERSONNEL	59	3	0		6.805	0.170	0.0	
HEALTH PHYSICS PERSONNEL	35	8	6		4.655	0.290	0.780	
SUPERVISORY PERSONNEL	1	0	0		0.015	0.0	0.0	
ENGINEERING PERSONNEL	22	2	0		4.515	0.120	0.0	
TOTAL	149	18	21	188	17.800	0.655	3.855	22.310
REFUELING								
MAINTENANCE PERSONNEL	181	309	55		78.055	109.253	12.210	
OPERATING PERSONNEL	100	9	0		23.325	1.910	0.0	
HEALTH PHYSICS PERSONNEL	52	39	44		5.815	3.655	10.320	
SUPERVISORY PERSONNEL	8	0	0		2.690	0.0	0.0	
ENGINEERING PERSONNEL	79	35	70		11.025	4.295	14.340	
TOTAL	420	392	169	981	120.910	119.113	36.870	276.893
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	750(267)	994(426)	223(127)	1967 (820)	244.114	410.870	64.623	719.607
OPERATING PERSONNEL	444(117)	41(16)	0(0)	485 (133)	89.389	8.920	0.0	98.309
HEALTH PHYSICS PERSONNEL	316(98)	200(53)	179(51)	695 (202)	60.045	23.610	37.140	120.795
SUPERVISORY PERSONNEL	31(11)	0(0)	0(0)	31 (11)	4.205	0.0	0.0	4.205
ENGINEERING PERSONNEL	320(108)	159(77)	267(155)	746 (340)	76.420	29.895	70.180	176.495
GRAND TOTAL	1861(601)	1394(572)	669(333)	3924(1,506)	474.173	473.295	171.943	1119.411

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: OYSTER CREEK 1 (GPU) 1980

* WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATION & SURV.								
MAINTENANCE PERSONNEL	81	24	124		6.925	0.667	8.145	
OPERATING PERSONNEL	85	3	14		65.446	0.011	1.412	
HEALTH PHYSICS PERSONNEL	6	0	36		0.285	0.0	1.915	
SUPERVISORY PERSONNEL	20	3	2		4.281	0.287	0.004	
ENGINEERING PERSONNEL	31	15	39		4.551	0.933	5.676	
TOTAL	223	45	215	483	81.488	1.898	17.152	100.538
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	156	61	630		87.580	51.345	212.279	
OPERATING PERSONNEL	76	6	22		9.442	1.753	2.216	
HEALTH PHYSICS PERSONNEL	24	0	257		33.309	0.0	145.316	
SUPERVISORY PERSONNEL	24	9	2		10.115	1.307	0.001	
ENGINEERING PERSONNEL	41	25	48		11.333	9.687	4.600	
TOTAL	321	101	959	1381	151.779	64.092	364.412	580.283
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	67	37	253		3.667	4.766	89.671	
OPERATING PERSONNEL	42		21		2.541	0.439	8.638	
HEALTH PHYSICS PERSONNEL	6	0	10		0.293	0.0	0.559	
SUPERVISORY PERSONNEL	15	3	1		2.771	0.104	0.0	
ENGINEERING PERSONNEL	27	6	28		4.522	0.354	3.283	
TOTAL	159	48	313	520	13.794	5.663	102.151	121.608
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	123	59	738		73.898	77.172	685.941	
OPERATING PERSONNEL	53	4	26		6.770	3.047	7.079	
HEALTH PHYSICS PERSONNEL	11	0	76		0.530	0.0	11.188	
SUPERVISORY PERSONNEL	15	7	1		2.656	0.989	0.0	
ENGINEERING PERSONNEL	30	16	41		7.178	1.226	7.023	
TOTAL	232	86	882	1200	91.032	82.434	711.231	884.697
WASTE PROCESSING								
MAINTENANCE PERSONNEL	69	12	70		5.450	2.874	9.759	
OPERATING PERSONNEL	22	1	5		0.915	0.230	0.502	
HEALTH PHYSICS PERSONNEL	1	0	26		0.005	0.0	2.078	
SUPERVISORY PERSONNEL	4	0	2		0.202	0.0	0.007	
ENGINEERING PERSONNEL	8	0	8		0.983	0.0	0.829	
TOTAL	104	13	111	228	7.555	3.104	13.175	23.834
REFUELING								
MAINTENANCE PERSONNEL	88	30	130		40.610	3.990	16.823	
OPERATING PERSONNEL	57	4	14		18.529	0.734	2.061	
HEALTH PHYSICS PERSONNEL	4	0	22		0.224	0.0	2.197	
SUPERVISORY PERSONNEL	11	0	0		2.108	0.0	0.0	
ENGINEERING PERSONNEL	15	4	4		3.195	0.055	0.129	
TOTAL	175	38	170	383	64.666	4.779	21.210	90.655
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	584 (157)	223 (64)	1945 (903)	2752 (1,124)	218.130	140.814	1022.618	1381.562
OPERATING PERSONNEL	335 (99)	20 (8)	102 (50)	457 (157)	103.643	6.214	21.908	131.765
HEALTH PHYSICS PERSONNEL	52 (24)	0 (0)	427 (264)	479 (288)	34.646	0.0	163.253	197.899
SUPERVISORY PERSONNEL	89 (24)	22 (12)	8 (4)	119 (40)	22.133	2.687	0.012	24.832
ENGINEERING PERSONNEL	154 (46)	66 (31)	168 (74)	388 (151)	31.762	12.255	21.540	65.557
GRAND TOTAL	1214 (350)	331 (115)	2650 (1,295)	4195 (1,760)	410.314	161.970	1229.331	1801.615

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: PALISADES (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	0	0	0		0.149	0.017	0.341	
OPERATING PERSONNEL	32	0	2		9.904	0.344	0.784	
HEALTH PHYSICS PERSONNEL	27	11	16		11.371	3.566	22.034	
SUPERVISORY PERSONNEL	2	0	0		0.761	0.051	0.082	
ENGINEERING PERSONNEL	6	1	0		2.307	0.364	0.591	
TOTAL	67	12	18	97	24.492	4.342	23.832	52.666
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	54	4	3		53.229	2.944	2.153	
OPERATING PERSONNEL	0	0	0		0.247	0.040	0.001	
HEALTH PHYSICS PERSONNEL	1	0	0		0.286	0.117	0.115	
SUPERVISORY PERSONNEL	12	1	2		7.230	0.309	0.565	
ENGINEERING PERSONNEL	1	0	0		0.699	0.108	0.485	
TOTAL	68	5	5	78	61.691	3.518	3.319	68.528
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.051	0.145	
OPERATING PERSONNEL	0	0	0		0.032	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.010	0.0	0.031	
SUPERVISORY PERSONNEL	0	0	0		0.009	0.086	0.083	
ENGINEERING PERSONNEL	3	0	0		0.957	0.687	0.282	
TOTAL	3	0	0	3	1.008	0.824	0.541	2.373
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	6	2	287		3.058	1.452	203.872	
OPERATING PERSONNEL	0	0	0		0.072	0.040	0.125	
HEALTH PHYSICS PERSONNEL	0	0	4		0.149	0.035	2.125	
SUPERVISORY PERSONNEL	0	0	6		0.234	0.150	3.321	
ENGINEERING PERSONNEL	2	1	36		1.224	0.787	50.348	
TOTAL	8	3	333	344	4.737	2.464	259.791	266.992
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.005	
OPERATING PERSONNEL	0	0	0		0.091	0.0	0 0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.109	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.040	0.045	0.0	
ENGINEERING PERSONNEL	0	0	4		0.040	0.0	2.139	
TOTAL	0	0	4	4	0.280	0.045	2.144	2.469
REFUELING								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.013	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.010	0.014	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	0	0	0.023	0.014	0.0	0.037
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	60	6	290	356	56.436	4.464	206.516	267.416
OPERATING PERSONNEL	32	0	2	34	10.359	0.424	0.910	11.693
HEALTH PHYSICS PERSONNEL	28	11	20	59	11.925	3.718	24.305	39.948
SUPERVISORY PERSONNEL	14	1	8	23	8.284	0.655	4.051	12.990
ENGINEERING PERSONNEL	12	2	40	54	5.227	1.946	53.845	61.018
GRAND TOTAL	146	20	360	526	92.231	11.207	289.627	393.065

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: PEACH BOTTOM 2,3 (BWR) 1980

* WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	1	70	108		0.153	34.289	46.514	
OPERATING PERSONNEL	57	3	15		42.602	1.036	2.118	
HEALTH PHYSICS PERSONNEL	47	0	70		52.629	0.0	55.003	
SUPERVISORY PERSONNEL	0	1	1		0.0	0.114	0.118	
ENGINEERING PERSONNEL	34	9	16		30.867	5.913	15.221	
TOTAL	139	83	210	432	126.251	41.352	118.974	286.577
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	5	525	1005		1.730	426.728	899.556	
OPERATING PERSONNEL	15	2	6		3.739	3.576	1.553	
HEALTH PHYSICS PERSONNEL	26	0	27		14.843	0.0	22.179	
SUPERVISORY PERSONNEL	0	4	0		0.0	0.787	0.0	
ENGINEERING PERSONNEL	4	20	9		1.857	11.934	3.420	
TOTAL	50	551	1047	1648	22.169	443.025	926.708	1391.902
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	2	66		0.0	1.863	80.191	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	3	3		0.0	2.175	0.903	
TOTAL	0	5	69	74	0.0	4.038	81.094	85.132
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	4	243		0.0	0.720	315.024	
OPERATING PERSONNEL	0	1	0		0.0	0.833	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	3	2		0.0	0.478	1.404	
TOTAL	0	8	245	253	0.0	2.031	316.428	318.459
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	4	28		0.108	0.733	8.066	
OPERATING PERSONNEL	6	0	2		5.686	0.0	0.390	
HEALTH PHYSICS PERSONNEL	1	0	7		0.122	0.0	3.915	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	1	0	0		0.114	0.0	0.0	
TOTAL	9	4	37	50	6.030	0.733	12.851	19.614
REFUELING								
MAINTENANCE PERSONNEL	0	8	31		0.0	2.043	11.069	
OPERATING PERSONNEL	4	0	3		0.888	0.0	1.369	
HEALTH PHYSICS PERSONNEL	6	0	7		2.481	0.0	3.685	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	1	0	4		0.110	0.0	0.719	
TOTAL	11	8	45	64	3.479	2.043	16.842	22.364
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	7 (5)	613 (560)	1481 (1,247)	2101 (1,812)	1.991	466.376	1360.900	1829.267
OPERATING PERSONNEL	82 (65)	6 (4)	26 (24)	114 (93)	52.915	5.445	5.430	63.790
HEALTH PHYSICS PERSONNEL	80 (50)	0 (0)	111 (80)	191 (130)	70.075	0.0	84.782	154.857
SUPERVISORY PERSONNEL	0 (0)	5 (6)	1 (1)	6 (6)	0.0	0.901	0.118	1.019
ENGINEERING PERSONNEL	40 (34)	31 (28)	34 (27)	105 (89)	32.948	20.500	21.667	75.115
GRAND TOTAL	209 (164)	659 (597)	1653 (1,379)	2521 (2,130)	157.929	493.222	1472.897	2124.048

* Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: PILGRIM (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	24	1	66		6.61	0.30	23.37	
OPERATING PERSONNEL	45	0	0		91.91	0.0	0.0	
HEALTH PHYSICS PERSONNEL	26	0	16		40.77	0.0	5.10	
SUPERVISORY PERSONNEL	3	3	3		1.91	0.90	2.18	
ENGINEERING PERSONNEL	3	1	20		1.89	0.10	6.60	
TOTAL	101	5	105	211	143.09	1.30	37.25	181.64
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	68	3	1059		85.03	0.67	673.41	
OPERATING PERSONNEL	23	0	0		10.32	0.0	0.0	
HEALTH PHYSICS PERSONNEL	15	0	43		9.16	0.0	30.55	
SUPERVISORY PERSONNEL	37	11	9		19.12	2.77	5.04	
ENGINEERING PERSONNEL	4	0	69		1.44	0.13	28.54	
TOTAL	147	14	1180	1341	125.07	3.57	737.54	866.18
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	78		0.30	0.0	75.04	
OPERATING PERSONNEL	0	0	0		0.17	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.13	
SUPERVISORY PERSONNEL	1	1	0		0.18	0.11	0.0	
ENGINEERING PERSONNEL	0	0	0		0.02	0.0	0.38	
TOTAL	1	1	78	80	0.67	0.11	75.55	76.33
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	60	6	1415		46.87	1.91	1155.85	
OPERATING PERSONNEL	19	0	7		10.23	0.0	6.61	
HEALTH PHYSICS PERSONNEL	12	1	76		4.68	1.51	308.74	
SUPERVISORY PERSONNEL	37	13	19		19.08	4.85	8.12	
ENGINEERING PERSONNEL	4	164	85		1.20	84.07	53.75	
TOTAL	132	184	1602	1918	82.06	92.34	1533.07	1707.47
WASTE PROCESSING								
MAINTENANCE PERSONNEL	24	0	148		9.21	0.05	62.61	
OPERATING PERSONNEL	11	0	0		9.19	0.0	0.0	
HEALTH PHYSICS PERSONNEL	7	0	8		2.37	0.0	2.76	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.01	
ENGINEERING PERSONNEL	7	0	2		2.39	0.05	1.03	
TOTAL	49	0	158	207	23.16	0.10	66.46	89.72
REFUELING								
MAINTENANCE PERSONNEL	11	0	254		3.16	0.13	234.20	
OPERATING PERSONNEL	9	0	0		2.37	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.25	
SUPERVISORY PERSONNEL	12	0	2		4.46	0.06	1.64	
ENGINEERING PERSONNEL	0	0	16		0.05	0.0	8.59	
TOTAL	32	0	272	304	10.04	0.19	244.68	254.91
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	187 (82)	10	3020(1,799)	3217(1,891)	151.18	3.06	2224.48	2378.72
OPERATING PERSONNEL	107 (24)	0	7(7)	114(31)	124.19	0.0	6.61	130.80
HEALTH PHYSICS PERSONNEL	60 (16)	1	143(82)	204(99)	56.98	1.51	347.53	406.02
SUPERVISORY PERSONNEL	90 (55)	28(18)	33(23)	151(96)	44.75	8.69	16.99	70.43
ENGINEERING PERSONNEL	18 (6)	165(104)	192(124)	375(284)	6.99	84.35	98.94	190.28
GRAND TOTAL	462 (183)	204(193)	3395(2,035)	4061(2,411)	384.09	97.61	2694.55	3176.25

* Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

Plant: POINT BEACH 1,2 (PWR)

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 mrem)				TOTAL MAN-REMS			
	*STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	*STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REM
Reactor Operations & Surv								
Maintenance Personnel					0.0			
Operating Personnel					45.703			
Health Physics Personnel					13.621			
Supervisory Personnel					0.0			
Engineering Personnel					0.0			
TOTAL					59.324		0.0	59.324
Routine Maintenance								
Maintenance Personnel					17.756			
Operating Personnel					0.0			
Health Physics Personnel					0.0			
Supervisory Personnel					0.0			
Engineering Personnel					0.0			
TOTAL					17.756		0.0	17.756
In-Service Inspection								
Maintenance Personnel					20.776			
Operating Personnel					8.904			
Health Physics Personnel					0.0			
Supervisory Personnel					3.558			
Engineering Personnel					2.250			
TOTAL					35.488		298.746	334.242
Special Maintenance								
Maintenance Personnel					19.004			
Operating Personnel					5.934			
Health Physics Personnel					0.0			
Supervisory Personnel					0.0			
Engineering Personnel					0.0			
TOTAL					24.938		114.229	139.167
Waste Processing								
Maintenance Personnel					0.0			
Operating Personnel					5.045			
Health Physics Personnel					4.127			
Supervisory Personnel					0.0			
Engineering Personnel					0.0			
TOTAL					9.172		0.0	9.172
Refueling								
Maintenance Personnel					25.763			
Operating Personnel					1.708			
Health Physics Personnel					0.569			
Supervisory Personnel					0.0			
Engineering Personnel					0.250			
TOTAL					28.290		0.0	28.290
Total By Job Function								
Maintenance Personnel	86				83.299			
Operating Personnel	58				67.294			
Health Physics Personnel	17				18.317			
Supervisory Personnel	5				3.558			
Engineering Personnel	1				2.500			
GRAND TOTAL	169		307	476	174.908		412.975	587.961

*Station and Utility personnel and doses are combined under Station Employees. No further breakdown provided

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: PRAIRIE ISLAND (PWR) 1980

* WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	80	58	45		10.450	1.735	2.476	
OPERATING PERSONNEL	42	0	0		9.963	0.0	0.089	
HEALTH PHYSICS PERSONNEL	23	0	25		8.283	0.0	1.393	
SUPERVISORY PERSONNEL	3	3	0		0.833	0.166	0.006	
ENGINEERING PERSONNEL	15	5	8		0.736	0.133	0.940	
TOTAL	163	64	78	305	30.265	2.034	4.904	37.203
* ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	46	7	0		1.016	0.168	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	2	0	0		0.052	0.0	0.0	
SUPERVISORY PERSONNEL	1	0	0		0.009	0.0	0.0	
ENGINEERING PERSONNEL	2	0	0		0.039	0.0	0.0	
TOTAL	51	7	0	58	1.116	0.168	0.0	1.284
* IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	33	26	27		4.719	2.269	16.138	
OPERATING PERSONNEL	1	0	0		0.026	0.0	0.0	
HEALTH PHYSICS PERSONNEL	5	0	9		0.640	0.0	0.948	
SUPERVISORY PERSONNEL	0	0	1		0.0	0.007	0.457	
ENGINEERING PERSONNEL	6	2	29		0.216	0.260	16.534	
TOTAL	45	28	66	139	5.601	2.536	34.077	42.214
* SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	80	139	36		31.498	84.373	55.372	
OPERATING PERSONNEL	39	0	0		4.410	0.0	0.021	
HEALTH PHYSICS PERSONNEL	21	0	30		5.138	0.0	10.530	
SUPERVISORY PERSONNEL	3	1	6		0.542	0.311	1.331	
ENGINEERING PERSONNEL	18	4	56		3.539	1.113	25.237	
TOTAL	161	144	128	433	45.127	85.797	92.491	223.415
* WASTE PROCESSING								
MAINTENANCE PERSONNEL	36	14	1		3.177	0.271	0.027	
OPERATING PERSONNEL	2	0	0		0.062	0.0	0.043	
HEALTH PHYSICS PERSONNEL	11	0	2		1.442	0.0	0.086	
SUPERVISORY PERSONNEL	0	0	0		0.030	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	49	14	3	66	4.711	0.271	0.156	5.138
* REFUELING								
MAINTENANCE PERSONNEL	46	61	1		10.130	7.433	0.022	
OPERATING PERSONNEL	33	0	0		1.436	0.0	0.0	
HEALTH PHYSICS PERSONNEL	4	0	2		0.173	0.0	0.093	
SUPERVISORY PERSONNEL	4	0	0		0.190	0.0	0.0	
ENGINEERING PERSONNEL	10	1	0		0.403	0.147	0.039	
TOTAL	97	62	3	162	12.332	7.580	0.154	20.066
* TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	321	305	110	736	60.990	96.249	74.035	231.274
OPERATING PERSONNEL	117	0	0	117	15.897	0.0	0.153	16.050
HEALTH PHYSICS PERSONNEL	66	0	68	134	15.728	0.0	13.050	28.778
SUPERVISORY PERSONNEL	11	4	7	22	1.604	0.484	1.794	3.882
ENGINEERING PERSONNEL	51	10	93	154	4.933	1.653	42.750	49.336
GRAND TOTAL	564	319	278	1163	99.152	98.386	131.782	329.320

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: QUAD CITIES 1,2 (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	9	0	0		30.3	0.0	0.0	
OPERATING PERSONNEL	82	0	0		101.1	0.0	0.0	
HEALTH PHYSICS PERSONNEL	8	0	0		21.9	0.0	0.0	
SUPERVISORY PERSONNEL	38	0	0		35.6	0.0	0.0	
ENGINEERING PERSONNEL	51	0	0		94.3	0.0	0.0	
TOTAL	188	0	0	188	283.2	0.0	0.0	283.2
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	87	0	3136		391.6	0.0	3560.6	
OPERATING PERSONNEL	1	0	0		3.3	0.0	0.0	
HEALTH PHYSICS PERSONNEL	4	0	0		9.6	0.0	0.0	
SUPERVISORY PERSONNEL	42	0	0		105.0	0.0	0.0	
ENGINEERING PERSONNEL	23	0	0		30.4	0.0	0.0	
TOTAL	157	0	3136	3293	539.9	0.0	3560.6	4100.5
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	0		1.8	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	3	0	0		8.7	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	4	0	0		4.7	0.0	0.0	
TOTAL	8	0	0	8	15.2	0.0	0.0	15.2
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	90	0		0.0	50.4	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	143	0		0.0	18.5	0.0	
TOTAL	0	233	0	233	0.0	68.9	0.0	68.9
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0		4.9	0.0	0.0	
OPERATING PERSONNEL	30	0	0		107.4	0.0	0.0	
HEALTH PHYSICS PERSONNEL	10	0	0		25.4	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	1	0	0		1.0	0.0	0.0	
TOTAL	42	0	0	42	138.7	0.0	0.0	138.7
*REFUELING								
MAINTENANCE PERSONNEL	5	0	0		15.2	0.0	0.0	
OPERATING PERSONNEL	16	0	0		50.2	0.0	0.0	
HEALTH PHYSICS PERSONNEL	8	0	0		21.9	0.0	0.0	
SUPERVISORY PERSONNEL	5	0	0		5.5	0.0	0.0	
ENGINEERING PERSONNEL	8	0	0		11.0	0.0	0.0	
TOTAL	42	0	0	42	103.8	0.0	0.0	103.8
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	103	90	3136	3329	443.8	50.4	3560.6	4054.8
OPERATING PERSONNEL	129	0	0	129	262.0	0.0	0.0	262.0
HEALTH PHYSICS PERSONNEL	33	0	0	33	87.5	0.0	0.0	87.5
SUPERVISORY PERSONNEL	85	0	0	85	146.1	0.0	0.0	146.1
ENGINEERING PERSONNEL	87	143	0	230	141.4	18.5	0.0	159.9
GRAND TOTAL	437	233	3136	3806	1080.8	68.9	3560.6	4710.3

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: RANCHO SECO (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	54	5	150		3.99	0.08	22.86	
OPERATING PERSONNEL	58	1	60		18.94	0.02	1.52	
HEALTH PHYSICS PERSONNEL	23	1	64		4.91	0.01	18.51	
SUPERVISORY PERSONNEL	20	0	3		2.93	0.0	0.86	
ENGINEERING PERSONNEL	30	10	99		1.67	0.16	1.75	
TOTAL	185	17	376	578	32.44	0.27	45.50	78.21
** ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	69	6	163		18.31	1.35	25.30	
OPERATING PERSONNEL	34	0	13		3.22	0.0	1.40	
HEALTH PHYSICS PERSONNEL	23	1	48		4.35	0.02	5.77	
SUPERVISORY PERSONNEL	6	1	0		2.37	0.0	0.0	
ENGINEERING PERSONNEL	21	2	70		2.47	0.02	1.53	
TOTAL	153	10	294	457	30.72	1.39	34.00	66.11
** IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL								
OPERATING PERSONNEL								
HEALTH PHYSICS PERSONNEL								
SUPERVISORY PERSONNEL								
ENGINEERING PERSONNEL								
TOTAL								
* SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	55	7	229		1.01	0.31	49.11	
OPERATING PERSONNEL	17	1	14		1.55	0.01	0.80	
HEALTH PHYSICS PERSONNEL	20	0	43		2.38	0.0	4.12	
SUPERVISORY PERSONNEL	9	0	5		0.57	0.0	0.05	
ENGINEERING PERSONNEL	18	2	175		0.81	0.03	10.03	
TOTAL	119	10	466	595	6.32	0.35	64.11	70.78
* WASTE PROCESSING								
MAINTENANCE PERSONNEL	39	1	129		3.20	0.02	27.15	
OPERATING PERSONNEL	34	0	2		2.79	0.0	0.62	
HEALTH PHYSICS PERSONNEL	21	0	35		2.37	0.0	2.02	
SUPERVISORY PERSONNEL	9	0	1		7.02	0.0	8.43	
ENGINEERING PERSONNEL	3	1	21		0.04	0.01	0.62	
TOTAL	106	2	188	296	15.42	0.03	38.84	54.29
* REFUELING								
MAINTENANCE PERSONNEL	35	4	65		1.98	0.50	8.67	
OPERATING PERSONNEL	15	0	3		1.90	0.0	0.08	
HEALTH PHYSICS PERSONNEL	6	0	22		0.07	0.0	1.02	
SUPERVISORY PERSONNEL	8	0	1		0.73	0.0	0.0	
ENGINEERING PERSONNEL	12	1	38		0.91	0.03	7.25	
TOTAL	76	5	129	210	5.59	0.53	17.02	23.14
* TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	252	23	736	1011	28.49	2.26	133.09	163.84
OPERATING PERSONNEL	158	2	92	252	28.40	0.03	4.42	32.85
HEALTH PHYSICS PERSONNEL	93	2	212	307	14.08	0.03	31.44	45.55
SUPERVISORY PERSONNEL	52	1	10	63	13.62	0.0	9.34	22.96
ENGINEERING PERSONNEL	84	16	403	503	3.90	0.29	21.18	27.33
GRAND TOTAL	639	44	1453	2136	90.49	2.57	199.47	292.53

* Workers may be counted in more than one category.

** Routine Maintenance includes Inservice Inspection.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: ROBINSON 2 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	0	0	1		0.238	0.0	0.097	
OPERATING PERSONNEL	29	1	36		48.586	1.548	8.070	
HEALTH PHYSICS PERSONNEL	5	1	0		7.834	1.662	0.184	
SUPERVISORY PERSONNEL	1	0	0		0.142	0.0	0.0	
ENGINEERING PERSONNEL	5	1	0		5.732	0.605	0.0	
TOTAL	40	3	37	80	62.532	3.815	8.351	74.698
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	21	2	32		41.204	3.528	48.820	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	5	1	1		7.142	0.806	0.637	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	2	0	0		2.618	0.058	0.0	
TOTAL	28	3	33	64	50.964	4.392	49.457	104.813
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	0	11		4.887	0.243	15.470	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	0	0		0.621	0.268	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	5	0	71		8.546	0.055	66.341	
TOTAL	8	0	82	93	14.054	0.566	81.811	96.431
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	63	32	674		102.498	36.802	934.160	
OPERATING PERSONNEL	5	0	0		8.659	0.365	0.0	
HEALTH PHYSICS PERSONNEL	18	6	38		25.875	7.324	27.715	
SUPERVISORY PERSONNEL	2	3	2		0.795	1.488	1.842	
ENGINEERING PERSONNEL	18	31	133		22.866	23.958	122.040	
TOTAL	90	72	847	1015	160.693	69.937	1085.757	1316.387
WASTE PROCESSING								
MAINTENANCE PERSONNEL	7	1	12		15.449	1.306	18.770	
OPERATING PERSONNEL	13	0	0		20.608	0.626	0.0	
HEALTH PHYSICS PERSONNEL	2	0	0		2.849	0.520	0.093	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	1	0	0		1.535	0.043	0.0	
TOTAL	23	1	12	36	40.441	2.495	18.863	61.799
REFUELING								
MAINTENANCE PERSONNEL	8	8	41		16.862	8.573	56.271	
OPERATING PERSONNEL	4	0	0		7.185	0.344	0.0	
HEALTH PHYSICS PERSONNEL	1	0	14		1.488	0.646	10.396	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	2	3	1		2.216	2.340	1.381	
TOTAL	15	11	56	82	27.751	11.903	68.048	107.702
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	91	43	771	905	181.138	50.452	1073.588	1305.178
OPERATING PERSONNEL	51	1	36	88	85.038	2.883	8.070	95.991
HEALTH PHYSICS PERSONNEL	32	8	53	93	45.809	11.226	39.025	96.060
SUPERVISORY PERSONNEL	3	3	2	8	0.937	1.488	1.842	4.267
ENGINEERING PERSONNEL	33	35	208	276	43.513	27.059	189.762	260.334
GRAND TOTAL	210	90	1070	1370	356.435	93.108	1312.287	1761.830

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: †SALEM 1 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	12	0	10		6.545	0.150	5.987	
OPERATING PERSONNEL	27	0	2		9.098	0.040	1.580	
HEALTH PHYSICS PERSONNEL	1	0	60		1.055	0.020	21.967	
SUPERVISORY PERSONNEL	2	1	0		1.550	0.030	0.300	
ENGINEERING PERSONNEL	0	0	1		0.285	0.230	0.145	
TOTAL	42	1	73	116	18.533	0.470	29.979	48.982
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	3	0	0		3.071	0.020	2.263	
OPERATING PERSONNEL	0	0	0		0.251	0.0	0.020	
HEALTH PHYSICS PERSONNEL	2	0	0		0.850	0.0	0.467	
SUPERVISORY PERSONNEL	2	0	0		0.305	0.0	0.020	
ENGINEERING PERSONNEL	0	0	2		0.0	0.0	0.475	
TOTAL	7	0	2	9	4.477	0.020	3.245	7.742
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	5	1	26		3.140	0.095	11.470	
OPERATING PERSONNEL	0	0	3		0.020	0.0	1.795	
HEALTH PHYSICS PERSONNEL	6	1	3		2.380	0.060	0.590	
SUPERVISORY PERSONNEL	1	0	0		0.400	0.035	0.310	
ENGINEERING PERSONNEL	0	0	0		0.135	0.115	0.020	
TOTAL	12	2	32	46	6.075	0.305	14.185	20.565
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	143	0	390		59.854	0.225	148.996	
OPERATING PERSONNEL	2	0	2		2.572	0.010	0.515	
HEALTH PHYSICS PERSONNEL	2	0	23		0.810	0.010	8.746	
SUPERVISORY PERSONNEL	7	0	5		2.710	0.090	1.500	
ENGINEERING PERSONNEL	0	1	7		0.580	0.400	3.315	
TOTAL	154	1	427	582	66.526	0.735	163.072	230.333
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	7	0	47		2.705	0.0	14.335	
OPERATING PERSONNEL	0	0	1		0.020	0.0	0.340	
HEALTH PHYSICS PERSONNEL	0	0	7		0.480	0.0	1.900	
SUPERVISORY PERSONNEL	0	0	0		0.090	0.0	0.020	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	7	0	55	62	3.295	0.0	16.595	19.890
*REFUELING								
MAINTENANCE PERSONNEL	101	0	44		44.945	0.100	15.300	
OPERATING PERSONNEL	1	0	1		0.455	0.010	0.050	
HEALTH PHYSICS PERSONNEL	1	0	19		0.390	0.0	5.820	
SUPERVISORY PERSONNEL	7	1	0		2.100	0.140	0.045	
ENGINEERING PERSONNEL	0	0	0		0.030	0.055	0.320	
TOTAL	110	1	64	175	47.920	0.305	21.535	69.760
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	271	1	517	789	120.260	0.590	198.351	319.201
OPERATING PERSONNEL	30	0	9	39	12.416	0.060	4.300	16.776
HEALTH PHYSICS PERSONNEL	12	1	112	125	5.965	0.090	39.490	45.545
SUPERVISORY PERSONNEL	19	2	5	26	7.155	0.295	2.195	9.645
ENGINEERING PERSONNEL	0	1	10	11	1.030	0.800	4.275	6.105
GRAND TOTAL	332	5	653	990	146.826	1.835	248.611	397.272

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: SAN ONOFRE (PWR) 1980

* WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	20	10	114		6.49	2.40	37.94	
OPERATING PERSONNEL	30	0	57		24.86	0.0	24.90	
HEALTH PHYSICS PERSONNEL	14	2	75		9.89	0.53	23.42	
SUPERVISORY PERSONNEL	12	6	21		5.39	2.09	7.39	
ENGINEERING PERSONNEL	23	29	96		13.41	5.81	41.42	
TOTAL	99	47	363	509	60.04	10.83	135.07	205.94
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	54	114	1008		91.73	97.31	1377.71	
OPERATING PERSONNEL	22	1	80		8.85	0.14	35.47	
HEALTH PHYSICS PERSONNEL	14	4	121		50.98	7.02	132.18	
SUPERVISORY PERSONNEL	9	8	55		5.58	2.08	38.14	
ENGINEERING PERSONNEL	16	13	178		8.04	3.52	164.11	
TOTAL	115	140	1442	1697	165.18	110.07	1747.61	2022.86
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	5		0.0	0.0	0.95	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	1		0.0	0.0	0.11	
ENGINEERING PERSONNEL	0	1	7		0.0	0.15	1.49	
TOTAL	0	1	13	14	0.0	0.15	2.55	2.70
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	0	0	0.0	0.0	0.0	0.0
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	4		0.0	0.0	0.50	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	0	2		0.17	0.0	0.93	
SUPERVISORY PERSONNEL	0	0	1		0.0	0.0	0.21	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	1	0	7	8	0.17	0.0	1.64	1.81
REFUELING								
MAINTENANCE PERSONNEL	0	0	22		0.0	0.0	5.90	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	3		0.0	0.0	1.51	
ENGINEERING PERSONNEL	0	0	3		0.0	0.0	0.59	
TOTAL	0	0	28	28	0.0	0.0	8.00	8.00
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	74 (56)	124 (119)	1153 (1,030)	1351 (1,205)	98.22	99.71	1423.00	1620.93
OPERATING PERSONNEL	52 (48)	1 (1)	137 (107)	190 (156)	33.71	0.14	60.37	94.22
HEALTH PHYSICS PERSONNEL	29 (14)	6 (5)	198 (138)	233 (157)	61.04	7.55	156.53	225.12
SUPERVISORY PERSONNEL	21 (15)	14 (13)	81 (72)	116 (100)	10.97	4.17	47.36	62.50
ENGINEERING PERSONNEL	39 (26)	43 (38)	284 (232)	366 (296)	21.45	9.48	207.61	238.54
GRAND TOTAL	215 (159)	188 (176)	1853 (1,579)	2256 (1,914)	225.39	121.05	1894.87	2241.31

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: ST. LUCIE 1 (PWR) 1980

WORK & JOB FUNCTION*	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	16	0	0		38.2	0.0	0.0	
HEALTH PHYSICS PERSONNEL	8	0	10		19.1	0.0	17.6	
SUPERVISORY PERSONNEL	3	0	0		0.8	0.0	0.0	
ENGINEERING PERSONNEL	0	0	4		0.0	0.0	1.0	
TOTAL	27	0	14	41	58.1	0.0	18.6	76.7
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	101	32	318		31.8	10.1	72.3	
OPERATING PERSONNEL	26	0	0		8.2	0.0	0.0	
HEALTH PHYSICS PERSONNEL	15	0	60		5.4	0.0	18.9	
SUPERVISORY PERSONNEL	7	1	0		2.2	0.3	0.0	
ENGINEERING PERSONNEL	4	0	0		0.6	0.0	0.0	
TOTAL	153	33	378	564	48.2	10.4	91.2	149.8
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	20		0.0	0.0	6.8	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	8	0	22		2.7	0.0	7.6	
SUPERVISORY PERSONNEL	4	2	4		1.8	0.9	1.6	
ENGINEERING PERSONNEL	3	1	1		1.0	0.3	0.5	
TOTAL	15	3	47	65	5.5	1.2	16.5	23.2
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	56	29	34		39.8	20.6	18.6	
OPERATING PERSONNEL	12	0	0		5.2	0.0	0.0	
HEALTH PHYSICS PERSONNEL	15	0	32		6.5	0.0	13.9	
SUPERVISORY PERSONNEL	4	5	4		1.9	2.2	1.6	
ENGINEERING PERSONNEL	1	3	1		0.6	1.3	0.5	
TOTAL	88	37	71	196	54.0	24.1	34.5	112.6
WASTE PROCESSING								
MAINTENANCE PERSONNEL	36	5	0		9.1	1.5	0.0	
OPERATING PERSONNEL	12	0	0		3.1	0.0	0.0	
HEALTH PHYSICS PERSONNEL	6	0	10		1.6	0.0	2.5	
SUPERVISORY PERSONNEL	1	0	0		2.5	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	55	5	10	70	16.3	1.5	2.5	20.3
REFUELING								
MAINTENANCE PERSONNEL	71	27	15		64.1	24.4	13.5	
OPERATING PERSONNEL	31	0	0		3.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	15	0	48		1.4	0.0	4.6	
SUPERVISORY PERSONNEL	4	1	0		0.4	0.1	0.0	
ENGINEERING PERSONNEL	5	3	0		0.5	0.3	0.0	
TOTAL	126	31	63	220	69.4	24.8	18.1	112.3
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	264 (107)	93 (88)	387 (374)	744 (569)	144.8	56.6	111.2	312.6
OPERATING PERSONNEL	97 (42)	0 (0)	0 (0)	97 (42)	57.7	0.0	0.0	57.7
HEALTH PHYSICS PERSONNEL	67 (15)	0 (0)	182 (60)	249 (75)	36.7	0.0	65.1	101.8
SUPERVISORY PERSONNEL	23 (8)	9 (6)	8 (6)	40 (18)	9.6	3.5	3.2	16.3
ENGINEERING PERSONNEL	13 (5)	2 (2)	6 (6)	21 (14)	2.7	1.9	1.9	6.5
GRAND TOTAL	464 (177)	104 (96)	583 (446)	1156 (718)	251.5	62.0	181.4	494.9

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

Plant: SURRY 1,2 (PWR)

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 mrem)				TOTAL MAN-REMS			
	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REM
Reactor Operations & Surv.								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL	276	17	0	293	330.380	6.723	0.0	337.103
Routine Maintenance								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL	172	13	0	185	278.026	27.945	0.0	306.971
In-Service Inspection								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL								
Special Maintenance								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL	7	28	2442	2477	7.499	18.567	2976.704	3002.770
Waste Processing								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL	5	0	2	7	13.845	0.0	0.685	14.530
Refueling								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
TOTAL	12	1	1	14	3.723	0.134	0.399	4.256
Total By Job Function								
Maintenance Personnel								
Operating Personnel								
Health Physics Personnel								
Supervisory Personnel								
Engineering Personnel								
GRAND TOTAL	472	59	2445	2976	636.473	53.369	2977.788	3664.630

Reactor Operations includes Inservice Inspection. No further breakdown provided.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: THREE MILE ISL. 1,2 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	197	54	291		2.233	0.298	2.591	
OPERATING PERSONNEL	214	50	148		9.951	0.608	0.737	
HEALTH PHYSICS PERSONNEL	87	16	192		11.286	0.298	5.074	
SUPERVISORY PERSONNEL	53	13	27		0.842	0.012	0.678	
ENGINEERING PERSONNEL	29	60	91		0.838	0.999	1.387	
TOTAL	580	193	749	1522	25.150	2.215	10.467	37.832
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	215	63	278		10.064	1.671	3.658	
OPERATING PERSONNEL	207	47	139		3.426	0.355	1.480	
HEALTH PHYSICS PERSONNEL	73	13	132		4.609	0.168	3.081	
SUPERVISORY PERSONNEL	53	13	30		0.736	0.061	0.170	
ENGINEERING PERSONNEL	28	62	97		0.195	0.456	0.529	
TOTAL	576	198	676	1450	19.030	2.711	8.918	30.659
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	193	64	285		1.288	0.401		
OPERATING PERSONNEL	194	62	183		2.982	0.323		
HEALTH PHYSICS PERSONNEL	59	7	121		2.757	0.144		
SUPERVISORY PERSONNEL	58	14	23		0.373	0.052	0.232	
ENGINEERING PERSONNEL	34	65	105		0.331	0.380	0.595	
TOTAL	538	212	717	1467	7.731	1.300	9.273	18.304
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	238	139	624		16.972	35.266	160.982	
OPERATING PERSONNEL	232	113	237		12.697	12.991	23.206	
HEALTH PHYSICS PERSONNEL	77	36	255		17.918	11.989	53.005	
SUPERVISORY PERSONNEL	71	21	59		2.040	0.165	15.720	
ENGINEERING PERSONNEL	33	87	172		1.168	9.797	7.350	
TOTAL	651	396	1347	2394	50.795	70.208	260.263	381.266
WASTE PROCESSING								
MAINTENANCE PERSONNEL	138	77	155		7.989	5.585	7.915	
OPERATING PERSONNEL	139	30	61		3.332	0.931	2.248	
HEALTH PHYSICS PERSONNEL	58	23	139		1.271	1.019	8.693	
SUPERVISORY PERSONNEL	23	5	27		0.733	0.082	0.724	
ENGINEERING PERSONNEL	10	26	36		0.702	0.429	0.510	
TOTAL	368	161	418	947	14.027	8.046	20.090	42.163
*REFUELING								
MAINTENANCE PERSONNEL	3	0	5		0.003	0.0	0.003	
OPERATING PERSONNEL	1	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	4	0	5	9	0.003	0.0	0.003	0.006
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	984 (260)	397 (149)	1638 (644)	3019 (1063)	38.549	43.221	178.589	260.359
OPERATING PERSONNEL	987 (261)	302 (164)	768 (412)	2057 (737)	32.388	15.208	29.816	77.412
HEALTH PHYSICS PERSONNEL	354 (78)	95 (44)	839 (280)	1288 (402)	37.841	13.618	72.714	124.173
SUPERVISORY PERSONNEL	208 (81)	66 (28)	166 (66)	490 (175)	4.724	0.372	17.524	22.620
ENGINEERING PERSONNEL	134 (42)	300 (138)	501 (248)	935 (428)	3.234	12.061	10.371	25.666
GRAND TOTAL	2717 (722)	1160 (623)	3912 (1560)	7789 (2705)	116.736	84.480	309.014	510.230

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: TROJAN (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
* REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.01	0.04	
OPERATING PERSONNEL	21	0	0		5.97	0.[illegible]	0.01	
HEALTH PHYSICS PERSONNEL	24	0	78		15.45	0.[illegible]3	38.19	
SUPERVISORY PERSONNEL	3	0	6		0.90	0.14	5.55	
ENGINEERING PERSONNEL	9	15	19		4.89	3.69	6.66	
TOTAL	57	15	103	175	27.21	3.90	50.45	81.56
** ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	24	29	32		13.	15.40	10.27	
OPERATING PERSONNEL	0	0	0		0.	0.11	0.0	
HEALTH PHYSICS PERSONNEL	0	0	10		0.[illegible]	0.04	3.29	
SUPERVISORY PERSONNEL	0	0	1		0.10	0.0	0.30	
ENGINEERING PERSONNEL	1	1	20		0.30	0.65	9.55	
TOTAL	25	30	63	118	13.99	16.20	23.41	53.60
** IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL								
OPERATING PERSONNEL								
HEALTH PHYSICS PERSONNEL								
SUPERVISORY PERSONNEL								
ENGINEERING PERSONNEL								
TOTAL								
* SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	32	61	324		13.14	22.98	185.72	
OPERATING PERSONNEL	0	0	0		0.01	0.04	0.03	
HEALTH PHYSICS PERSONNEL	1	0	25		0.14	0.03	7.65	
SUPERVISORY PERSONNEL	0	0	29		0.01	0.10	13.32	
ENGINEERING PERSONNEL	1	0	21		1.19	0.02	9.61	
TOTAL	34	61	399	494	14.49	23.17	216.33	253.99
* WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	0	0	0.0	0.0	0.0	0.0
* REFUELING								
MAINTENANCE PERSONNEL	5	9	50		5.91	15.41	21.88	
OPERATING PERSONNEL	0	0	0		0.04	0.01	0.01	
HEALTH PHYSICS PERSONNEL	2	0	17		1.05	0.01	8.70	
SUPERVISORY PERSONNEL	3	0	2		1.43	0.04	1.65	
ENGINEERING PERSONNEL	0	0	5		0.09	0.14	2.26	
TOTAL	10	9	74	93	8.52	15.61	34.50	58.63
* TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	61	99	406	566	32.54	53.80	217.91	304.25
OPERATING PERSONNEL	21	0	0	21	6.04	0.19	0.05	6.28
HEALTH PHYSICS PERSONNEL	27	0	130	157	16.72	0.11	57.83	74.66
SUPERVISORY PERSONNEL	6	0	38	44	2.44	0.28	20.82	23.54
ENGINEERING PERSONNEL	11	16	65	92	6.47	4.50	28.08	39.05
GRAND TOTAL	126	115	639	880	64.21	58.88	324.69	447.78

* Workers may be counted in more than one category.

** Routine Maintenance includes Inservice Inspection.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: TURKEY POINT 1,2 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
* REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	158	16	158		71.288	2.870	40.474	
OPERATING PERSONNEL	44	0	2		52.856	0.0	1.830	
HEALTH PHYSICS PERSONNEL	27	0	80		21.868	0.0	51.757	
SUPERVISORY PERSONNEL	1	0	2		0.150	0.0	0.371	
ENGINEERING PERSONNEL	21	4	11		8.923	0.835	2.220	
TOTAL	251	20	253	524	155.085	3.705	96.652	255.442
* ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	165	53	483		127.981	51.357	369.217	
OPERATING PERSONNEL	11	0	1		2.923	0.0	0.175	
HEALTH PHYSICS PERSONNEL	16	0	60		4.500	0.0	38.102	
SUPERVISORY PERSONNEL	0	0	1		0.0	0.0	0.248	
ENGINEERING PERSONNEL	13	7	31		4.934	2.648	12.012	
TOTAL	205	60	576	841	140.338	54.005	419.754	614.097
* IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	61	22	630		23.330	4.908	716.604	
OPERATING PERSONNEL	4	0	0		0.840	0.0	0.0	
HEALTH PHYSICS PERSONNEL	13	0	41		6.593	0.0	17.682	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	9	8	49		10.546	2.915	53.620	
TOTAL	87	30	720	837	41.309	7.823	787.906	837.038
* SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	7	0	58		1.906	0.0	25.464	
OPERATING PERSONNEL	2	0	0		0.270	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	2	6		0.0	0.485	1.676	
TOTAL	9	2	64	75	2.176	0.485	27.140	29.801
WASTE PROCESSING								
MAINTENANCE PERSONNEL	24	0	4		8.521	0.0	2.384	
OPERATING PERSONNEL	1	0	2		0.815	0.0	0.425	
HEALTH PHYSICS PERSONNEL	7	0	9		5.063	0.0	3.293	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	1	0	0		0.105	0.0	0.0	
TOTAL	33	0	15	48	14.504	0.0	6.102	20.606
* REFUELING								
MAINTENANCE PERSONNEL	64	15	12		32.315	13.575	3.679	
OPERATING PERSONNEL	33	0	0		7.747	0.0	0.0	
HEALTH PHYSICS PERSONNEL	3	0	6		0.480	0.0	1.030	
SUPERVISORY PERSONNEL	1	0	0		0.385	0.0	0.0	
ENGINEERING PERSONNEL	6	1	1		2.490	0.475	0.160	
TOTAL	107	16	19	142	43.417	14.050	4.869	62.336
* TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	479 (220)	106 (57)	1345 (902)	1930 (1,179)	265.341	72.710	1157.822	1495.873
OPERATING PERSONNEL	95 (71)	0 (0)	5 (3)	100 (74)	65.451	0.0	2.430	67.881
HEALTH PHYSICS PERSONNEL	66 (28)	0 (0)	196 (110)	262 (138)	38.504	0.0	111.864	150.368
SUPERVISORY PERSONNEL	2 (1)	0 (0)	3 (3)	5 (44)	0.535	0.0	0.619	1.154
ENGINEERING PERSONNEL	50 (47)	22 (15)	98 (52)	170 (114)	26.998	7.358	69.688	104.044
GRAND TOTAL	692 (366)	128 (72)	1647 (1,070)	2467 (1,507)	396.829	80.068	1342.423	1819.320

*Workers may be counted in more than one category. Numbers in parentheses are total numbers of individuals.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: †VERMONT-YANKEE (BWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	10	2	10		9.172	0.723	10.614	
OPERATING PERSONNEL	50	0	3		53.042	0.0	0.842	
HEALTH PHYSICS PERSONNEL	24	0	41		22.700	0.0	25.377	
SUPERVISORY PERSONNEL	1	0	0		0.471	0.0	0.0	
ENGINEERING PERSONNEL	28	0	5		13.440	0.0	1.306	
TOTAL	113	2	59	174	98.825	0.723	38.139	137.687
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	47	123	600		102.783	92.955	194.292	
OPERATING PERSONNEL	34	0	0		15.466	0.0	0.0	
HEALTH PHYSICS PERSONNEL	12	0	18		4.338	0.0	5.230	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.194	20.052	
ENGINEERING PERSONNEL	13	0	2		3.913	0.0	0.381	
TOTAL	106	123	620	849	126.500	93.149	219.955	439.604
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	5	64	63		1.522	46.144	25.956	
OPERATING PERSONNEL	0	0	0		0.064	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.032	0.0	0.061	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.532	
ENGINEERING PERSONNEL	3	0	1		0.525	0.0	0.234	
TOTAL	8	64	64	136	2.143	46.144	26.783	75.070
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	21	42	684		6.300	12.673	606.630	
OPERATING PERSONNEL	3	0	0		0.770	0.0	0.0	
HEALTH PHYSICS PERSONNEL	3	0	4		0.901	0.0	3.883	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.028	
ENGINEERING PERSONNEL	0	0	0		0.064	0.0	0.0	
TOTAL	27	42	688	757	8.035	12.673	610.541	631.249
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	3		0.392	0.205	0.630	
OPERATING PERSONNEL	1	0	0		0.130	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	0	1		0.108	0.0	0.172	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	4	0	4	8	0.630	0.205	0.802	1.637
*REFUELING								
MAINTENANCE PERSONNEL	12	24	35		4.212	5.241	9.180	
OPERATING PERSONNEL	14	0	0		2.370	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	5		0.298	0.0	1.148	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	5	0	0		1.657	0.0	0.007	
TOTAL	31	24	40	95	8.537	5.241	10.335	24.113
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	97	255	1395	1747	124.381	157.941	847.302	1129.624
OPERATING PERSONNEL	102	0	3	105	71.842	0.0	0.842	72.684
HEALTH PHYSICS PERSONNEL	40	0	69	109	28.377	0.0	35.871	64.248
SUPERVISORY PERSONNEL	1	0	0	1	0.471	0.194	20.612	21.277
ENGINEERING PERSONNEL	49	0	8	57	19.599	0.0	1.928	21.527
GRAND TOTAL	289	255	1475	2019	244.670	158.135	906.555	1309.360

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: YANKEE-ROWE (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
*REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	0	0	0		0.405	0.362	3.100	
OPERATING PERSONNEL	15	0	0		3.303	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	1		0.255	0.0	0.220	
SUPERVISORY PERSONNEL	0	0	0		0.080	0.0	0.045	
ENGINEERING PERSONNEL	0	0	0		0.070	0.045	0.0	
TOTAL	15	0	1	16	4.113	0.407	0.365	4.885
*ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	20	10	4		6.400	3.538	1.625	
OPERATING PERSONNEL	10	0	0		2.616	0.0	0.0	
HEALTH PHYSICS PERSONNEL	1	0	1		0.242	0.0	0.738	
SUPERVISORY PERSONNEL	0	0	0		0.020	0.0	0.118	
ENGINEERING PERSONNEL	1	0	0		0.143	0.187	0.0	
TOTAL	32	10	5	47	9.421	3.725	2.481	15.627
*IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	0	0	0.0	0.0	0.0	0.0
*SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	27	52	52		14.542	50.805	48.655	
OPERATING PERSONNEL	29	0	0		8.640	0.0	0.0	
HEALTH PHYSICS PERSONNEL	10	0	29		3.301	0.0	14.564	
SUPERVISORY PERSONNEL	0	0	1		0.115	0.0	0.414	
ENGINEERING PERSONNEL	0	3	0		0.373	1.294	0.0	
TOTAL	66	55	82	203	26.971	52.099	63.633	142.703
*WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	5		0.295	0.360	1.370	
OPERATING PERSONNEL	15	0	0		3.820	0.0	0.0	
HEALTH PHYSICS PERSONNEL	5	0	12		1.640	0.0	7.823	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.020	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	20	0	17	37	5.755	0.360	9.213	15.328
*REFUELING								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	0	0	0	0.0	0.0	0.0	0.0
*TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	47	62	61	170	21.642	55.065	51.750	128.457
OPERATING PERSONNEL	69	0	0	69	18.379	0.0	0.0	18.379
HEALTH PHYSICS PERSONNEL	16	0	43	59	5.438	0.0	23.345	28.783
SUPERVISORY PERSONNEL	0	0	1	1	0.215	0.0	0.597	0.812
ENGINEERING PERSONNEL	1	3	0	4	0.586	1.924	0.0	2.510
GRAND TOTAL	133	65	105	303	46.260	56.991	75.692	178.943

*Workers may be counted in more than one category.

APPENDIX C

NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

PLANT: ZION 1,2 (PWR) 1980

WORK & JOB FUNCTION	NUMBER OF PERSONNEL (>100 M REM) STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL PERSONS	TOTAL MAN-REMS STATION EMPLOYEES	UTILITY EMPLOYEES	CONTRACT & OTHERS	TOTAL MAN-REMS
REACTOR OPERATIONS & SURV.								
MAINTENANCE PERSONNEL	7	0	0		4.5	0.0	0.0	
OPERATING PERSONNEL	107	0	0		49.8	0.0	0.0	
HEALTH PHYSICS PERSONNEL	6	0	0		9.0	0.0	0.0	
SUPERVISORY PERSONNEL	47	0	0		5.6	0.0	0.0	
ENGINEERING PERSONNEL	82	127	0		23.3	8.0	0.0	
TOTAL	249	127	0	376	92.2	8.0	0.0	100.2
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	120	0	1203		129.0	0.0	526.0	
OPERATING PERSONNEL	26	0	0		12.3	0.0	0.0	
HEALTH PHYSICS PERSONNEL	16	0	0		23.5	0.0	0.0	
SUPERVISORY PERSONNEL	43	0	0		9.9	0.0	0.0	
ENGINEERING PERSONNEL	50	0	0		9.4	0.0	0.0	
TOTAL	255	0	1203	1458	184.1	0.0	526.0	710.1
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	7	0	0		1.4	0.0	0.0	
TOTAL	7	0	0	7	1.4	0.0	0.0	1.4
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	102	0		0.0	20.7	0.0	
OPERATING PERSONNEL	0	0	0		0.0	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	0	0	0		0.0	0.0	0.0	
TOTAL	0	102	0	102	0.0	20.7	0.0	20.7
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	16	0	0		7.8	0.0	0.0	
HEALTH PHYSICS PERSONNEL	5	0	0		6.7	0.0	0.0	
SUPERVISORY PERSONNEL	0	0	0		0.0	0.0	0.0	
ENGINEERING PERSONNEL	5	0	0		1.0	0.0	0.0	
TOTAL	26	0	0	26	15.5	0.0	0.0	15.5
REFUELING								
MAINTENANCE PERSONNEL	0	0	0		0.0	0.0	0.0	
OPERATING PERSONNEL	6	0	0		11.9	0.0	0.0	
HEALTH PHYSICS PERSONNEL	0	0	0		0.0	0.0	0.0	
SUPERVISORY PERSONNEL	3	0	0		2.5	0.0	0.0	
ENGINEERING PERSONNEL	7	0	0		1.4	0.0	0.0	
TOTAL	16	0	0	16	15.8	0.0	0.0	15.8
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	127	102	1203	1432	133.9	20.7	526.0	680.2
OPERATING PERSONNEL	155	0	0	155	81.8	0.0	0.0	81.8
HEALTH PHYSICS PERSONNEL	27	0	0	27	39.2	0.0	0.0	39.2
SUPERVISORY PERSONNEL	93	0	0	93	18.0	0.0	0.0	18.0
ENGINEERING PERSONNEL	151	127	0	278	36.5	8.0	0.0	44.5
GRAND TOTAL	553	229	1203	1985	309.4	28.7	526.0	863.7

*Workers may be counted in more than one category.