PREVIOUS REPORTS IN SERIES

WASH-1311 A Compilation of Occupational Radiation Exposure from Light Water Cooled Nuclear Power Plants, 1969-1973, U.S. Atomic Energy Commission, May 1974.

NUREG-75/032 Occupational Radiation Exposure at Light Water Cooled Power Reactors, 1969-1974, U.S. Nuclear Regulatory Commission, June 1975.

NUREG-0109 Occupational Radiation Exposure at Light Water Cooled Power Reactors, 1969-1975, U.S. Nuclear Regulatory Commission, August 1976.

NUREG-0323 Occupational Radiation Exposure at Light Water Cooled Power Reactors, 1969-1976, U.S. Nuclear Regulatory Commission, March 1978.

NUREG-0482 Occupational Radiation Exposure at Light Water Cooled Power Reactors, 1977, U.S. Nuclear Regulatory Commission, May 1979.

NUREG-0594 Occupational Radiation Exposure at Commercial Nuclear Power Reactors, 1978, U.S. Nuclear Regulatory Commission, November 1979.

NUREG-0713 Occupational Radiation Exposure at Commercial Nuclear Power Reactors 1979, Vol. 1, U.S. Nuclear Regulatory Commission, March 1981.

NUREG-0713 Occupational Radiation Exposure at Commercial Nuclear Power Reactors 1980, Vol. 2, U.S. Nuclear Regulatory Commission, December 1981.

NUREG-0713 Occupational Radiation Exposure at Commercial Nuclear Power Reactors 1981, Vol. 3, U.S. Nuclear Regulatory Commission, November 1982.

NUREG-0713 Occupational Radiation Exposure at Commercial Nuclear Power Reactors 1982, Vol. 4, U.S. Nuclear Regulatory Commission, December 1983.

NUREG-0713 Occupational Radiation Exposure at Commercial Nuclear Power Reactors 1983, Vol. 5, U.S. Nuclear Regulatory Commission, March 1985.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1984, Vol. 6, U.S. Nuclear Regulatory Commission, October 1986.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1985, Vol. 7, U.S. Nuclear Regulatory Commission, April 1988.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1986, Vol. 8, U.S. Nuclear Regulatory Commission, August 1989.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1987, Vol. 9, U.S. Nuclear Regulatory Commission, November 1990.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1988, Vol. 10, U.S. Nuclear Regulatory Commission, July 1991.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1989, Vol. 11, U.S. Nuclear Regulatory Commission, April 1992.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1990, Vol. 12, U.S. Nuclear Regulatory Commission, January 1993.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1991, Vol. 13, U.S. Nuclear Regulatory Commission, July 1993.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1992, Vol. 14, U.S. Nuclear Regulatory Commission, December 1993.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1993, Vol. 15, U.S. Nuclear Regulatory Commission, January 1995.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1994, Vol. 16, U.S. Nuclear Regulatory Commission, January 1996.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1995, Vol. 17, U.S. Nuclear Regulatory Commission, January 1997.

Previous reports in the NUREG-0714 series, which are now combined with NUREG-0713, are as follows:

WASH-1350-R1 through WASH-1350-R6 First through Sixth Annual Reports of the Operation of the U.S. AEC's Centralized Ionizing Radiation Exposure Records and Reporting System, U.S. Atomic Energy Commission.

NUREG-75/108 Seventh Annual Occupational Radiation Exposure Report for Certain NRC Licensees - 1974, U.S. Nuclear Regulatory Commission, October 1975.

NUREG-0119 Eighth Annual Occupational Radiation Exposure Report for 1975, U.S. Nuclear Regulatory Commission, October 1976.

NUREG-0322 Ninth Annual Occupational Radiation Exposure Report for 1976, U.S. Nuclear Regulatory Commission, October 1977.

NUREG-0463 Tenth Annual Occupational Radiation Exposure Report for 1977, U.S. Nuclear Regulatory Commission, October 1978.

NUREG-0593 Eleventh Annual Occupational Radiation Exposure Report for 1978, U.S. Nuclear Regulatory Commission, January 1981.

NUREG-0714 Twelfth Annual Occupational Radiation Exposure Report for 1979, Vol. 1, U.S. Nuclear Regulatory Commission, August 1982.

NUREG-0714 Occupational Radiation Exposure, Thirteenth and Fourteenth Annual Reports, 1980 and 1981, Vols. 2 and 3, U.S. Nuclear Regulatory Commission, October 1983.

NUREG-0714 Occupational Radiation Exposure, Fifteenth and Sixteenth Annual Reports, 1982 and 1983, Vols. 4 and 5, U.S. Nuclear Regulatory Commission, October 1985.

ABSTRACT

This report summarizes the occupational exposure data that are maintained in the U.S. Nuclear Regulatory Commission's (NRC) Radiation Exposure Information and Reporting System (REIRS). The bulk of the information contained in the report was compiled from the 1996 annual reports submitted by six of the seven categories[1] of NRC licensees subject to the reporting requirements of 10 CFR 20.2206. Since there are no geologic repositories for high level waste currently licensed, only six categories will be considered in this report.

Annual reports for 1996 were received from a total of **300** NRC licensees, of which **109** were operators of nuclear power reactors in commercial operation. Compilations of the reports submitted by the 300 licensees indicated that **138,310** individuals were monitored, **75,139** of whom received a measurable dose (Table 3.1). The collective dose incurred by these individuals was **21,755** person-cSv (person-rem)[2] which represents a **13% decrease** from the 1995 value. The number of workers receiving a measurable dose also decreased, resulting in the average measurable dose of **0.29** cSv (rem) for 1996. The average measurable dose is defined to be the total collective dose (TEDE) divided by the number of workers receiving a measurable dose. These figures have been adjusted to account for transient reactor workers.

In 1996, the annual collective dose per reactor for light water reactor licensees (LWRs) was **173** person-cSv (person-rem). This represents a 13% decrease from the value reported for 1995. The annual collective dose per reactor for boiling water reactors (BWRs) was **256** person-cSv (person-rem) and, for pressurized water reactors (PWRs), it was **131** person-cSv (person-rem).

Analyses of transient worker data indicate that **22,348** individuals completed work assignments at two or more licensees during the monitoring year. The dose distributions are adjusted each year to account for the duplicate reporting of transient workers by multiple licensees. In 1996, the average measurable dose calculated from reported data was **0.24** cSv (rem). The corrected dose distribution resulted in an average measurable dose of **0.29** cSv (rem).

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1 Commercial nuclear power reactors; industrial radiographers; fuel processors, fabricators, and reprocessors; manufacturers and distributors of byproduct material; independent spent fuel storage installations; facilities for land disposal of low-level waste; and geologic repositories for high-level waste.

2 In the International System of Units the sievert (Sv) is the name given to the units for dose equivalent. One centisievert (cSv) equals one rem; therefore, person-rem becomes person-cSv.

EDITOR'S NOTE

The NRC currently has a five-year contract with Science Applications International Corporation (SAIC) to assist the NRC Staff in the preparation of the NUREG-0713 series. Mr. Charles Hinson (NRR) assisted in the preparation of this NUREG, serving as the NRC Technical reviewer. SAIC will be suggesting changes in the presentation of certain data in these reports. Readers should be alert to these changes, and the NRC welcomes responses, especially where these changes can be improved upon.

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PREFACE

A number of NRC licensees have inquired as to how the occupational radiation exposure data that are compiled from the individual exposure reports required by § 20.2206 and the annual dose data reported by work function in accordance with Subsection 6.9.1.5 of the standard technical specifications for nuclear power plants are used by the NRC staff. This is a very appropriate inquiry that may be of importance to many affected licensees. In combination with other sources of information, the principal uses of the data are to provide facts regarding routine occupational exposures to radiation and radioactive material that occur in connection with certain NRC-licensed activities. These facts are used by the NRC staff as indicated below:

1. The data permit evaluation, from the viewpoint of trends, of the effectiveness of the overall NRC/licensee radiation protection and ALARA efforts by certain licensees. They also provide for the identification (and subsequent correction) of unfavorable trends.

2. The external dose data assist in the evaluation of the radiological risk associated with certain categories of NRC-licensed activities and are used for comparative analyses of radiation protection performance: US/foreign, BWRs/PWRs, civilian/military, facility/facility, nuclear industry/other industries, etc.

3. The data provide for the monitoring of transient workers who may affect dose distribution statistics through multiple counting, or who may exceed regulatory limits on radiation exposure due to the accumulation of exposure at multiple sites per calendar quarter or calendar year.

4. The data help provide facts for evaluating the adequacy of the current risk limitation system (e.g., are individual lifetime dose limits, worker population collective dose limits, and requirements for optimization needed?).

5. The data permit comparisons of occupational radiation risks with potential public risks when action for additional protection of the public involves worker exposures.

6. The data are used in the establishment of priorities for the utilization of NRC health physics resources: research, standards development, and regulatory program development.

7. The data provide facts for answering Congressional and Administration inquiries and for responding to questions raised by public interest groups, special interest groups, labor unions, etc.

8. The data provide information that may be used in the planning of epidemiological studies.

Occupational Radiation Exposure
at Commercial Nuclear Power Reactors and Other Facilities
Twenty-ninth Annual Report, 1996

1 INTRODUCTION

One of the basic purposes of the Atomic Energy Act and the implementing regulations in Title 10, Code of Federal Regulations, Chapter I, Part 20, is to protect the health and safety of the public, including the employees of the licensees conducting operations under those regulations. Among the regulations designed to ensure that the standards for protection against radiation set out in 10 CFR 20 are met is a requirement that licensees provide individuals likely to be exposed to radiation with devices to monitor their exposure. Each licensee is also required to maintain indefinitely records of the results of such monitoring. However, there was no initial provision that these records or any summary of them be transmitted to a central location where the data could be retrieved and analyzed.

On November 4, 1968, the U.S. Atomic Energy Commission (AEC) published an amendment to 10 CFR 20 requiring the reporting of certain occupational radiation exposure information to a central repository at AEC Headquarters. This information was required of the four categories[3] of AEC licensees that were considered to involve the greatest potential for significant occupational doses and of AEC facilities and contractors exempt from licensing. A procedure was established whereby the appropriate occupational exposure data were extracted from these reports and entered into the Commission's Radiation Exposure Information Reporting System (REIRS), a computer system that was maintained at the Oak Ridge National Laboratory Computer Technology Center in Oak Ridge, Tennessee, until May 1990. At that time, the data were transferred to a database management system at Science Applications International Corporation (SAIC) at Oak Ridge, Tennessee. The computerization of these data ensures that they are kept indefinitely and facilitates their retrieval and analysis. The data maintained in REIRS have been summarized and published in a report every year since 1969. Annual reports for each of the years 1969 through 1973 presented the data reported by both AEC licensees and contractors and were published in six documents designated as WASH-1350-R1 through WASH-1350-R6.

In January 1975, with the separation of the AEC into the Energy Research and Development Administration (ERDA) and the U.S. Nuclear Regulatory Commission (NRC), each agency assumed responsibility for collecting and maintaining occupational radiation exposure information reported by the facilities under its jurisdiction. The annual reports published by the

[3] Commercial nuclear power reactors; industrial radiographers; fuel processors, fabricators, and reprocessors; manufacturers and distributors of specified quantities of byproduct material.

NRC on occupational exposure for calendar year 1974 and subsequent years do not contain information pertaining to ERDA facilities or contractors. Comparable information for facilities and contractors under ERDA, now the Department of Energy (DOE), is collected and published by DOE's Office of Health, a division of Environment, Safety and Health, in Germantown, Maryland.

In 1982 and 1983, paragraph 20.408(a) of Title 10 of the Code of Federal Regulations was amended to require three additional categories of NRC licensees to submit annual statistical exposure reports and individual termination exposure reports. The new categories are (1) geologic repositories for high-level radioactive waste, (2) independent spent fuel storage installations, and (3) facilities for the land disposal of low-level radioactive waste. Therefore, this document presents the exposure information that was reported by NRC licensees representing two of these new categories. (There are no geologic repositories for high-level waste currently licensed.)

This report and each of the predecessors summarizes information reported for both the current year and for previous years. More licensee-specific data for previous years, such as the annual reports submitted by each commercial power reactor pursuant to 10 CFR 20.407 and their technical specifications, may be found in those documents listed on the inside of the front cover of this report for the specific year desired. Additional operating data and statistics for each power reactor for the years 1973 through 1982 may be found in a series of reports, "Nuclear Power Plant Operating Experience" [Refs. 1-9]. These documents are available for viewing at all NRC public document rooms, or they may be purchased from the National Technical Information Service, as shown in the Reference section.

In May of 1991, the revised 10 CFR 20 "Standards for Protection Against Radiation; Final Rule" was published in the Federal Register. The revision redefined the radiation monitoring and reporting requirements of NRC licensees. Instead of summary annual reports (§ 20.407) and termination reports (§ 20.408), licensees are now required to submit an annual report of the dose received by each monitored worker (§ 20.2206). Licensees were required to implement the new requirements on or before January of 1994. This report is the third compilation of radiation exposure information collected under the revised 10 CFR 20. Certain sections of the report have been modified to account for the change in the reporting of exposure information. Readers are encouraged to comment on these changes. Recommendations for further analysis or for different presentation of information are welcome.

1.1 Radiation Exposure Information on the Internet

In May of 1995, the NRC began pursuing the dissemination of radiation exposure information via a World Wide Web site on the Internet. This allows interested parties with the appropriate equipment to access the data electronically rather than through the published NUREG-0713 document. A web site was created for radiation exposure and linked into the main NRC web page. The web site contains up-to-date information on radiation exposure, as well as information and guidance on reporting radiation exposure information to the NRC. Interested parties may read the documents on-line or down-load information to their systems for further analysis. Software, such as REMIT, is also available for downloading via the web site. There are also links to other web sites dealing with the topics of radiation and health physics. The NRC intends to continue pursuing the dissemination of radiation exposure information via the World Wide Web and will focus more resources on the electronic distribution of information rather than the published hard copy reports.

The main web URL address for the NRC is:

http://www.nrc.gov

The NRC radiation exposure information web URL address is:

http://www.saic.com/home/nrc_rad

Comments on this report or the NRC's web page should be directed to:

REIRS Project Manager
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, DC 20555

2 LIMITATIONS OF THE DATA

All of the figures compiled in this report relating to exposures and doses are based on the results and interpretations of the readings of various types of personnel monitoring devices employed by each licensee. This information, obtained from routine personnel monitoring programs, is sufficient to characterize the radiation environment in which individuals work and is used in evaluating the radiation protection program.

Monitoring requirements are specified in 10 CFR § 20.1502, which requires licensees to monitor individuals who receive or are likely to receive a dose in a year in excess of 10% of the applicable limits. For most adults, the annual limit for the whole body is 5 cSv (rem), so 0.5 cSv (rem) per year is the level above which monitoring is required. Separate dose limits have been established for minors and pregnant workers. Monitoring is required for any individual entering a high or very high radiation area. Depending on the administrative policy of each licensee, persons such as visitors and clerical workers may also be provided with monitoring devices for identification or convenience, although the probability of their being exposed to measurable levels of radiation is extremely small. Licensees are given the option of reporting the doses of only those individuals for whom monitoring is required, or the dose distribution of all those for whom monitoring is provided. Many licensees elect to report the latter; however, this may increase the number of individuals that one could consider to be radiation workers. In an effort to account for this, the number of individuals reported as having “no measurable exposure” has been subtracted from the total number of individuals monitored in order to calculate an average dose per individual receiving a measurable dose, as well as the average dose per monitored individual (for example, see Table 3.1).

The Revised 10 CFR § 20 was published in the Federal Register on May 21, 1991. With the revision of Part 20, licensees report the monitoring results for each individual. This has eliminated the need for the staff to calculate collective dose from the statistical distributions and has improved the accuracy of the collective dose information presented in this report. Licensees were required to implement the new reporting requirements as of January 1, 1994. Certain licensees began reporting under these new requirements during 1993, and that data has been included in the analyses presented here.

Another impact of the Revised Part 20 is the change from whole body dose to total effective dose equivalent (TEDE). The TEDE includes both external and internal dose. The TEDE is determined by summing the deep dose equivalent (DDE) from external radiation exposure and the committed effective dose equivalent (CEDE) from internal exposures. For reports prior to 1994, only the whole body dose (equivalent to the DDE) was reported and analyzed. In

subsequent reports, the TEDE is presented and analyzed in all graphs and tables unless otherwise noted. Readers should be aware of this change from external whole body dose to the TEDE. For most licensed activities, the internal dose is not a significant contributor to the TEDE. However, workers at Fuel Fabrication facilities receive significant exposures from internal exposure. This change in reporting requirements can be seen in the 1994 through 1996 data for this licensee category. (See Section 3.3.5)

The average dose per individual, as well as the dose distributions shown for groups of licensees, also can be affected by the multiple reporting of individuals who were monitored by two or more licensees during the year. Licensees are only required to report the doses received by individuals at their licensed facility. A dose distribution for a single licensee does not consider that some of the individuals may have received doses at other facilities. When the data are summed to determine the total number of individuals monitored by a group of licensees, individuals may be counted more than once. This can also affect the distribution of doses because individuals may be counted multiple times in the lower dose ranges rather than one time in the higher range corresponding to the actual accumulated dose for the year (the sum of the individual's dose accrued at all facilities). This source of error has the greatest potential impact on the data reported by power reactor facilities since they employ many short-term workers. Further discussion of this point is provided in Section 5.

Another fact that should be kept in mind when examining the annual statistical data is that all of the personnel included in the report may not have been monitored throughout the entire year. Many licensees, such as radiography firms and nuclear power facilities, may monitor numerous individuals for periods much less than a year. The average doses calculated from these data, therefore, are less than the average dose that an individual would receive if involved in that activity for the full year.

Considerable attention should also be given when referencing the collective totals presented in this report. The differences between the totals presented for all licensees that reported versus only those licensees that are required to report should be noted. Likewise, one should distinguish between the doses attributed to the high temperature gas reactor (HTGR), pressurized water reactors (PWRs), and boiling water reactors (BWRs). The totals may be inclusive or exclusive of those licensees that were in commercial operation for less than one full year. These parameters vary throughout the tables and appendices of this report in order to provide the most comprehensive analysis of all the data available. The apparent discrepancies among the various tables are a necessary side-effect of this endeavor.

Also, it should again be pointed out that this report contains information reported by NRC licensees only. Since the NRC licenses all commercial nuclear power reactors, fuel processors, fabricators and reprocessors, and independent spent fuel storage facilities, information shown

for these categories reflects the U.S. experience. This is not the case, however, for the remaining categories of industrial radiography, manufacturing and distribution of specified quantities of by-product material, and low-level waste disposal. Companies that conduct these types of activities in Agreement States[4] are licensed by the state and are not required to submit occupational exposure reports to the NRC. Approximately twice as many facilities are licensed to Agreement States than the number licensed by the NRC. This report also does not include non-occupational exposure such as exposure due to medical x-rays, fluoroscopy, and accelerators received as a patient. Information shown for these categories does not reflect the total U.S. experience.

[4] States that have entered into an agreement with the NRC that allows each state to license organizations using radioactive materials for certain purposes. As of 12/31/94, there are 29 Agreement States.

3 ANNUAL PERSONNEL MONITORING REPORTS - 10 CFR 20.2206

3.1 Definition of Terms and Sources of Data

3.1.1 Statistical Summary Reports

On February 4, 1974, 10 CFR 20.407 was amended to require certain categories[5] of licensees to submit an annual statistical report indicating the distribution of the whole body doses incurred by workers whom they monitored for exposure to radiation. Since the regulations did not require these licensees to report the collective dose incurred by the workers shown on the statistical reports, the dose distributions were used as the basis for the staff's calculation of the collective dose (see Section 3.1.4).

The revised 10 CFR 20 was published in the Federal Register on May 21, 1991. Section 20.2206 of the revised rule requires licensees to report the radiation exposure monitoring results for each individual for the monitoring year. All licensees were required to implement the new reporting requirements on or before January 1, 1994.

Under the new requirements, the individual's total effective dose equivalent (TEDE, as defined in § 20.1003) is reported, so that the dose distributions may be determined directly from the individual's exposure. The TEDE is summed per individual and tabulated into the appropriate dose range to generate the dose distribution for each licensee. The total collective dose is more accurate using this method, since the licensee reported the dose to each individual and the total collective dose was calculated from the sum of these doses and not statistically derived from the distribution (see Section 3.1.4). The TEDE includes the dose contribution from the committed effective dose equivalent (CEDE) for those workers who had intakes that required monitoring and reporting of internal dose. Reports submitted under formerly applicable 10 CFR 20.407 did not include the whole body contribution from internal dose.

3.1.2 Number of Monitored Workers

The number of monitored workers refers to the total number of workers that the NRC licensees, who are covered by 10 CFR 20.1502, reported as being monitored for exposure to external and internal radiation during the year. This number includes all workers for whom monitoring is required, and may include visitors, service representatives, contract workers, clerical workers, and any other workers for whom the licensee feels that monitoring devices should be provided.

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[5] Commercial nuclear power reactors; industrial radiographers; fuel processors, fabricators and reprocessors; and manufacturers and distributors of by-product material. Independent spent fuel storage installations; and facilities for land disposal of low-level radioactive waste were added to this list in 1983.

For licensees submitting under the revised 10 CFR 20.2206, the total number of workers was determined from the number of unique personal identification numbers submitted per licensee. Uniqueness is defined by the combination of identification number and identification type. [Ref. 18]

3.1.3 Number of Workers with Measurable Doses

Under the revised 10 CFR 20.2206, the number of workers with measurable dose includes any individual with a TEDE greater than zero cSv (rem). This does not include workers with a TEDE reported as zero, not detectable (ND), or not required to be reported (NR). [Ref. 18]

3.1.4 Collective Dose

The concept of collective dose is used in this report to denote the summation of the TEDE received by all monitored workers and has the units person-cSv (person-rem).[6] The revised 10 CFR 20.2206 requires that the TEDE be reported, so the collective dose is calculated by summing the TEDE for all monitored workers. The phrase “collective dose” is used throughout this report to mean the collective TEDE, unless otherwise specified.

It should be noted that the collective dose in past years was, in some cases, calculated from the dose distributions by summing the products obtained from multiplying the number of workers reported in each of the dose ranges by the midpoint of the corresponding dose range. This assumes that the midpoint of the range is equal to the arithmetic mean of the individual doses in the range. Past experience has shown that the actual mean dose of workers reported in each dose range is less than the midpoint of the range, and therefore the resultant calculated collective doses shown in this report for these licensees may be about 10% higher than the sum of the actual individual doses. Care should be taken when comparing the actual collective dose calculated for 1996 with the collective dose for previous years because of this change in methodology. In addition, prior to 1994, doses only included the external whole body dose. Although the contribution of internal dose to the TEDE is minimal for most licensees, it should be taken into consideration when comparing the 1996 collective dose with the collective dose for prior years. One noted exception is for fuel fabrication licensees where the CEDE in some cases contributes the majority of the TEDE (see Section 3.3.5.).

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[6] In the International System of Units, the sievert (Sv) is the name given to the units for dose equivalent. One centisievert (cSv) equals one rem; therefore person-rem becomes person-cSv.

3.1.5 Average Individual Dose

The average individual dose is obtained by dividing the collective dose by the total number of workers reported as being monitored. This figure is usually less than the average measurable dose (see below) because it includes the number of those workers who received zero or less than measurable doses.

3.1.6 Average Measurable Dose

The average measurable dose is obtained by dividing the collective TEDE by the number of workers who received a measurable dose. This is the average most commonly used in this and other reports when examining trends and comparing doses received by workers in various segments of the nuclear industry because it deletes those workers receiving zero or minimal doses, many of whom were monitored for convenience or identification purposes.

3.1.7 Number of Licensees Reporting

The number of licensees refers to the NRC licenses issued to companies to use radioactive material for certain activities that would place them in one of the six categories that are required to report pursuant to 10 CFR 20.2206. The third column in Table 3.1 shows the number of licensees that have filed such reports during the last 10 years. Agreement State licensees do not submit such reports to the NRC and are not included in this report.

3.1.8 CR

One of the parameters that the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) recommends be calculated for occupational dose distributions to aid in the comparison of exposure data is a ratio “CR.” CR is defined to be the ratio of the annual collective dose incurred by workers whose annual doses exceed 1.5 cSv to the total annual collective dose. One UNSCEAR report [Ref. 10] states that normal values of CR should be between 0.05 and 0.50. A CR of 0.50 means that 50% of the collective dose is due to individual doses that exceed 1.5 cSv (rem).

Prior to 1994, the value of CR was calculated from the statistical distributions that were submitted under 10 CFR 20.407. For this calculation, it was assumed that the doses were uniformly distributed between each dose range interval. The number of people in each dose range above 1.5 cSv was multiplied by the midpoint of the dose range to estimate the collective dose attributed to each dose range. The collective dose of workers with doses exceeding 1.5 cSv in the 1 to 2 cSv range was calculated by assuming that half of the collective dose incurred by workers with doses between 1 and 2 cSv was because of doses greater than 1.5 cSv. This value was then added to the collective dose incurred by workers in the higher ranges. This was known to yield a conservative CR value, but was a useful indicator when consistently applied to the data from year to year.

TABLE 3.1
ANNUAL EXPOSURE DATA FOR CERTAIN CATEGORIES OF LICENSEES
1987 - 1996

License Category* and Program Code	Calendar Year	Number of Licensees Reporting	Number of Monitored Individuals	Number of Workers With Measurable TEDE	Collective TEDE (person-cSv or person-rem)	Average TEDE (cSv or rem)	Average Measurable TEDE per Worker (cSv or rem)	CR**
Industrial	1996	144	3,631	2,537	1,385	0.38	0.55	0.42
Radiography	1995	139	3,530	2,465	1,338	0.38	0.54	0.40
03310	1994	139	3,230	2,351	1,415	0.44	0.60	0.51
03320	1993	176	4,721	3,007	1,596	0.34	0.53	0.45
	1992	246	6,703	4,265	1,864	0.28	0.44	0.37
	1991	248	6,820	4,649	2,160	0.32	0.46	0.40
	1990	258	6,523	4,458	2,120	0.33	0.48	0.42
	1989	276	6,745	4,352	2,067	0.31	0.47	0.42
	1988	286	6,878	4,223	1,981	0.29	0.47	0.43
	1987	312	7,236	4,454	1,835	0.25	0.41	0.36
Manufacturing	1996	36	2,628	1,239	556	0.21	0.45	0.53
and	1995	36	2,666	1,222	595	0.22	0.49	0.58
Distribution	1994	44	2,941	1,251	580	0.20	0.46	0.59
02500	1993	58	4,913	2,254	680	0.14	0.30	0.47
03211	1992	67	5,210	2,250	784	0.15	0.35	0.54
03212	1991	59	4,930	1,952	722	0.15	0.37	0.59
03214	1990	58	4,203	2,279	693	0.16	0.30	0.55
	1989	48	4,554	2,345	770	0.17	0.33	0.53
	1988	16	2,177	868	343	0.16	0.40	0.62
	1987	24	3,589	2,317	716	0.20	0.31	0.54
Low-Level	1996	2	165	67	8	0.05	0.12	0.00
Waste	1995	2	212	56	8	0.04	0.15	0.00
Disposal	1994	2	202	83	22	0.11	0.27	0.15
03231	1993	2	432	76	21	0.05	0.27	0.22
	1992	2	467	82	37	0.08	0.45	0.34
	1991	2	905	147	39	0.04	0.27	0.24
	1990	2	784	115	26	0.03	0.23	0.17
	1989	2	925	119	35	0.04	0.29	0.17
	1988	2	864	171	27	0.03	0.16	0.06
	1987	2	778	173	24	0.03	0.14	0.00
Independent	1996	1	97	53	54	0.56	1.02	0.73
Spent Fuel	1995	1	104	49	51	0.49	1.04	0.83
Storage	1994	1	158	89	42	0.27	0.47	0.44
23100	1993	2	135	52	14	0.10	0.26	0.11
	1992	2	290	85	11	0.04	0.13	0.00
	1991	2	41	24	4	0.10	0.17	0.00
	1990	2	56	22	6	0.11	0.27	0.00
	1989	2	190	102	33	0.17	0.32	0.09
	1988	2	217	57	25	0.12	0.44	0.27
	1987	2	129	64	41	0.32	0.64	0.60
Fuel	1996	8	4,369	3,061	878	0.20	0.29	0.19
Fabrication	1995	8	4,106	2,959	1,217	0.30	0.41	0.38
and	1994	8	3,596	2,847	1,147	0.32	0.40	0.40
Processing	1993	8	9,649	2,611	339	0.04	0.13	0.08
21210	1992	11	8,439	5,061	545	0.06	0.11	0.03
	1991	11	11,702	3,929	378	0.03	0.10	0.01
	1990	11	14,505	3,871	422	0.03	0.11	0.01
	1989	8	11,583	2,992	243	0.02	0.08	0.00
	1988	10	11,994	3,869	455	0.04	0.12	0.01
	1987	10	10,370	3,994	514	0.05	0.13	0.01
Commercial	1996	109	127,420	68,182	18,874	0.15	0.28	0.04
Light Water	1995	109	133,066	70,986	21,674	0.16	0.31	0.06
Reactors***	1994	109	142,707	73,780	21,695	0.15	0.29	0.08
	1993	114	169,862	86,187	26,365	0.16	0.31	0.22
	1992	114	183,900	94,317	29,298	0.16	0.31	0.24
	1991	115	179,043	91,085	28,528	0.16	0.31	0.26
	1990	116	187,081	98,802	36,607	0.20	0.37	0.33
	1989	113	188,477	100,080	35,930	0.19	0.36	0.33
	1988	111	193,532	96,653	40,055	0.21	0.41	0.38
	1987	105	205,895	97,992	39,708	0.19	0.41	0.37
Grand Totals	1996	300	138,310	75,139	21,755	0.16	0.29	0.09
and Averages	1995	295	143,684	77,737	24,884	0.17	0.32	0.11
	1994	303	152,834	80,401	24,901	0.16	0.31	0.13
	1993	360	189,712	94,187	29,014	0.15	0.31	0.24
	1992	442	205,009	106,060	32,538	0.16	0.31	0.25
	1991	437	203,441	101,786	31,831	0.16	0.31	0.27
	1990	447	213,152	109,547	39,874	0.19	0.36	0.34
	1989	449	212,474	109,990	39,078	0.18	0.36	0.34
	1988	427	215,662	105,841	42,886	0.20	0.41	0.38
	1987	455	227,997	108,994	42,838	0.19	0.39	0.37

* These categories consist only of NRC licensees. Agreement State licensed organizations do not report occupational exposure data to the NRC.
** CR is the ratio of the annual collective dose delivered at annual doses exceeding 1.5 cSv to the total annual collective dose. (Section 3.1.8)
*** Includes all LWRs in commercial operation, although some of them may not have been in operation for a full year. 1994 - 1996 data are only for reactors that completed a full year of operation during the year. Reactor data have been corrected to account for the multiple counting of transient reactor workers. (see Section 5)

The last column in Table 3.1 shows the values of CR for the different types of licensees. With the implementation of the revised 10 CFR 20 in 1994, licensees were required to submit dose records for each individual. This allowed the NRC to determine the CR value directly by summing the collective dose for individuals with a total TEDE greater than or equal to 1.5 cSv and divide it by the collective TEDE for the licensee. This method yielded a large reduction in the CR for Reactors. The CR value for Reactors dropped 64% from 0.22 in 1993 to 0.08 in 1994 and to 0.04 in 1996. Using the previous methodology, the CR value would have been calculated to be 0.12 for 1996. One of the contributing factors for this difference is the administrative controls imposed at nuclear power facilities for individuals who exceed 1 cSv. This causes the dose distribution to drop off sharply above 1 cSv with fewer exposures exceeding 1.5 cSv. Therefore, the actual CR is significantly less than the value that is calculated by assuming a uniform dose distribution.

Other licensees, such as Manufacturing and Distribution and Independent Spent Fuel Storage, have experienced increases in the CR value and exceed the 0.50 value recommended by UNSCEAR. Fuel Fabrication doses, including the CR value, have increased primarily because of the inclusion of internal exposure in the TEDE for 1994 through 1996. However, the overall average CR for all licensees remained below 0.50, and decreased to a value of 0.09 in 1996 primarily because of the decrease in CR at power reactor licensees.

3.2 Annual TEDE Dose Distributions

Table 3.2 is a statistical compilation of the exposure reports submitted by six categories of licensees (see Section 3.3 for a description of each licensee category). The dose distributions are generated by summing the TEDE for each individual and counting the number of individuals in each dose range. In nearly every category a large number of workers receive doses that are less than measurable, and very few doses exceed 4 or 5 cSv (rem). About 90% of the reported workers continue to be monitored by nuclear power facilities where they receive approximately 90% of the total collective dose.

Under the regulatory limits of the revised 10 CFR 20.1201, annual TEDE in excess of 5 cSv (rem) for occupationally exposed adults is, by definition, an exposure in excess of regulatory limits (see Section 6).

Table 3.3 gives a summary of the annual exposures reported to the Commission by certain categories of NRC licensees as required by 10 CFR 20.2206. Table 3.3 shows that ~ 95% of the exposures consistently remained <2 cSv (rem) between 1968 and 1984. For the past 10 years the percentage of workers with <2 cSv (rem) has been ≥98%. The number of workers receiving an annual exposure in excess of 5 cSv (rem) has been <0.01% since 1985.

TABLE 3.2
DISTRIBUTION OF ANNUAL COLLECTIVE TEDE BY LICENSE CATEGORY
1996

LICENSE CATEGORY (Number of sites reporting)	*Number of Individuals with TEDE in the Ranges (cSv or rem)													TOTAL NUMBER MONITORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE DOSE (TEDE) (person-cSv)
	No Meas.	Meas. <0.1	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	7-12	>12			
INDUSTRIAL RADIOGRAPHY																
Single Location (27)	231	32	12	11	4	1									291	60	10
Multiple Location (117)	863	694	462	435	254	159	353	86	29	4		1			3,340	2,477	1,375
Total (144)	1,094	726	474	446	258	160	353	86	29	4		1			3,631	2,537	1,385
MANUFACTURING AND DISTRIBUTION																	
"A" - Broad (7)	1,031	485	116	84	55	64	105	51	23	4					2,018	987	522
Limited (29)	358	180	40	15	11	1	4		1						610	252	34
Total (36)	1,389	665	156	99	66	65	109	51	24	4					2,628	1,239	556
LOW-LEVEL WASTE DISPOSAL																	
Total (2)	98	35	24	5	3										165	67	8
INDEPENDENT SPENT FUEL STORAGE																	
Total (1)	44	14	4	6	8	3	7	6	2	3					97	53	54
FUEL FABRICATION																	
Total (8)	1,308	1,652	422	394	205	126	232	26	4						4,369	3,061	878
COMMERCIAL POWER REACTORS**																	
Boiling Water (37)	29,333	16,985	8,335	6,456	3,009	1,452	1,374	26							66,970	37,637	9,461
Pressurized Water (72)	48,864	22,441	11,620	7,745	2,800	1,196	968	42							95,676	46,812	9,413
Total (109)	78,197	39,426	19,955	14,201	5,809	2,648	2,342	68							162,646	84,449	18,874
GRAND TOTALS	82,130	42,518	21,035	15,151	6,349	3,002	3,043	237	59	11		1			173,536	91,406	21,755

* Dose values exactly equal to the values separating ranges are reported in the next higher range.

** Includes all reactors in commercial operation for a full year during 1996.
These values have not been adjusted for the multiple counting of transient reactor workers (see Section 5).

TABLE 3.3

SUMMARY OF ANNUAL DOSE DISTRIBUTIONS FOR CERTAIN* NRC LICENSEES

1968-1996

Year	Total Number of Monitored Persons		Percent of Individuals With Doses < 2 cSv**	Percent of Individuals With Doses < 5 cSv**	Number of Individuals With Doses >12 cSv**
	Reported Number	Corrected Number			
1968	36,836		97.2%	99.5%	3
1969	31,176		96.5%	99.5%	7
1970	36,164		96.1%	99.4%	0
1971	36,311		96.3%	99.3%	1
1972	44,690		95.7%	99.5%	8
1973	67,862		95.0%	99.5%	1
1974	85,097		96.4%	99.7%	1
1975	78,713		94.8%	99.5%	1
1976	92,773		95.0%	99.6%	3
1977	98,212	93,438	93.8%	99.6%	1
1978	105,893	100,818	94.6%	99.8%	3
1979	131,027	125,316	95.2%	99.8%	1
1980	159,177	150,675	94.6%	99.7%	0
1981	157,874	149,314	94.6%	99.8%	1
1982	162,456	154,117	94.9%	99.9%	0
1983	172,927	164,239	94.6%	99.9%	0
1984	181,627	168,899	95.1%	99.9%	0
1985	212,217	201,339	97.5%	>99.99% (15)	2
1986	225,582	213,017	98.0%	>99.99% (8)	0
1987	243,562	227,997	98.7%	>99.99% (4)	1
1988	231,234	215,662	98.6%	>99.99% (8)	0
1989	229,353	212,474	98.9%	>99.99% (7)	1
1990	234,045	214,781	98.9%	>99.99% (3)	0
1991	219,229	206,732	99.4%	>99.99% (2)	0
1992	222,728	205,009	99.4%	>99.99% (1)	0
1993	209,386	189,711	99.5%	>99.99% (2)	0
1994	179,803	152,834	99.5%	>99.99% (1)	0
1995	179,176	143,684	99.5%	>99.99% (1)	0
1996	173,536	138,310	99.5%	>99.99% (1)	0

* Licensees required to submit radiation exposure reports to the NRC under 10 CFR 20.2206.

** Data for 1977-1996 are based on the distribution of individual doses after adjusting for the multiple counting of transient reactor workers (see Section 5). The number of people exceeding 5 cSv is shown in parentheses from 1985-1996.

3.3 Summary of Occupational Exposure Data by License Category

3.3.1 Industrial Radiography Licenses, Single and Multiple Locations

Industrial Radiography licenses are issued to allow the use of sealed radioactive materials, usually in exposure devices or “cameras,” that primarily emit gamma rays for nondestructive testing of pipeline weld joints, steel structures, boilers, aircraft and ship parts, and other high-stress alloy parts. Some firms are licensed to conduct such activities in one location, usually in a permanent facility that was designed and shielded for radiography, and others perform radiography at multiple, temporary sites in the field. The radioisotopes most commonly used are cobalt-60 and iridium-192. As shown in Table 3.1, annual reports were received for 144 radiography licensees in 1996. Table 3.4 summarizes the reported data for the two types of radiography licenses for 1996 and for the previous 2 years for comparison purposes.

For the years prior to 1994, the average measurable dose for workers performing radiography at a single location ranged from 20 to 40% of the average measurable dose of workers at multiple location facilities. This is because it is more difficult for workers to avoid exposure to radiation in the field, where conditions are not optimal and may change daily. In 1994, the average measurable dose for single location radiographers was much closer to the value for multiple location licensees because of high average doses at one licensee, Buckeye Steel Castings. For 1996, the average measurable dose for single location licensees increased to

TABLE 3.4
ANNUAL EXPOSURE INFORMATION FOR INDUSTRIAL RADIOGRAPHERS
1994 - 1996

Year	Type of License	Number of Licenses	Number of Monitored Workers	Workers with Measurable Dose	Collective Dose (person-cSv, rem)	Average Measurable Dose (cSv or rem)
	Single Location	27	291	60	10	0.17
1996	Multiple Locations	117	3,340	2,477	1,375	0.56
	Total	144	3,631	2,537	1,385	0.55
	Single Location	27	285	61	6	0.10
1995	Multiple Locations	112	3,245	2,404	1,332	0.55
	Total	139	3,530	2,465	1,338	0.54
	Single Location	29	330	89	44	0.50
1994	Multiple Locations	111	2,900	2,262	1,371	0.61
	Total	139	3,230	2,351	1,415	0.60

0.17 cSv (rem). To see the contribution that each radiography licensee made to the total collective dose, a summary of the information reported by each of these licensees in 1996 is presented in Appendix A in descending order of average measurable dose.

High exposures in radiography can be directly attributable to the type and location of the radiography field work. For example, locations such as oil drilling platforms and aerial tanks offer the radiographer little available shielding. In these situations, there may not be an opportunity to use distance as a means of minimizing exposure and achieving ALARA. Although these licensed activities usually result in average measurable doses that are higher than other licensees, they involve a relatively small number of exposed workers.

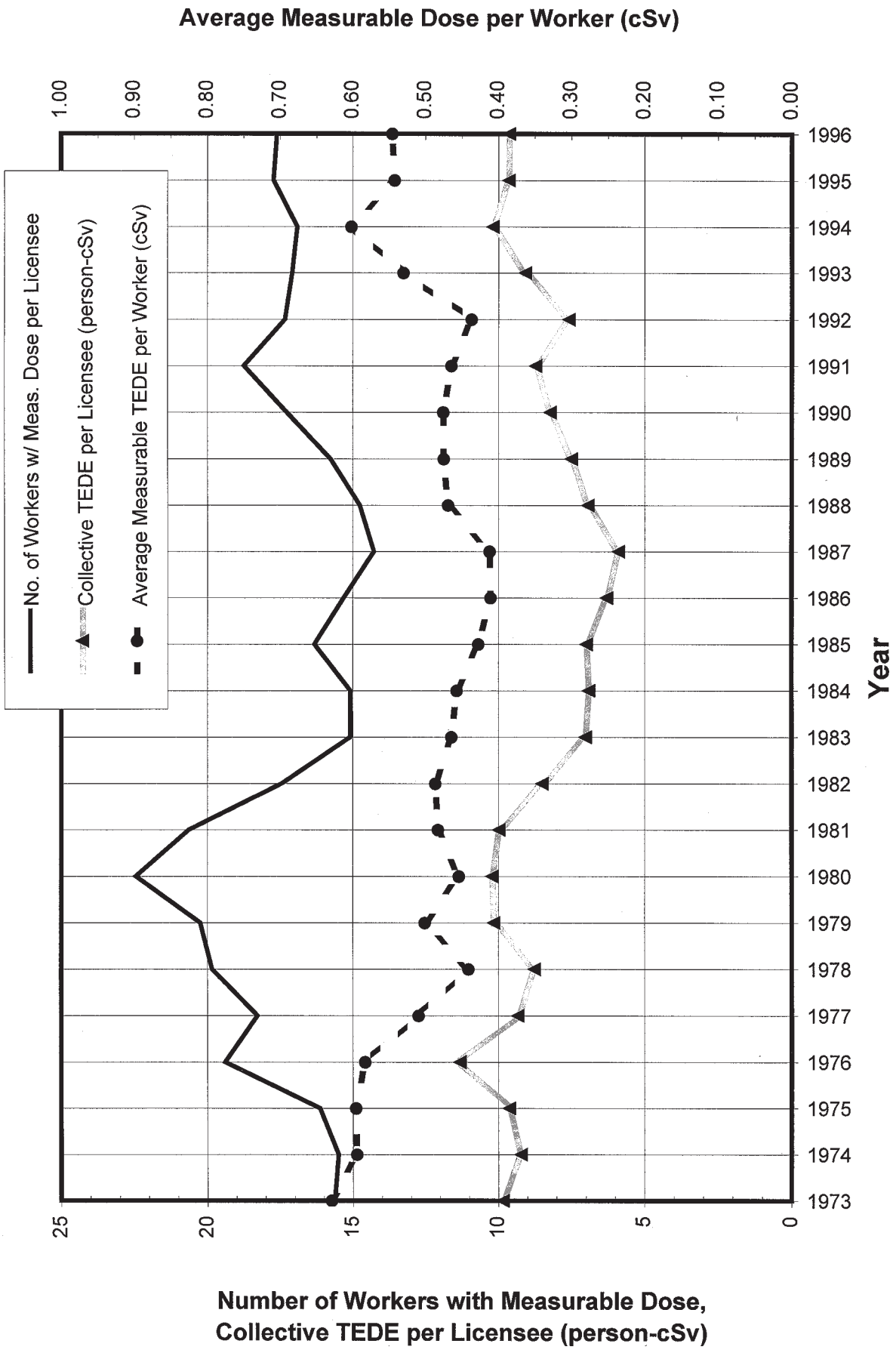
Figure 3.1 shows the number of workers with measurable dose per licensee, the total collective dose per licensee, and the average measurable dose per worker for both types of Industrial Radiography facilities from 1973 through 1996.

3.3.2 Manufacturing and Distribution Licenses, Type "A" Broad and Limited

Manufacturer and Distributor licenses are issued to allow the manufacture and distribution of radionuclides in various forms for a number of diverse purposes. The products are usually distributed to persons specifically licensed by the NRC or an Agreement State. Type "A" Broad licenses are issued to larger organizations that may use many different radionuclides in many different ways and that have a comprehensive radiation protection program. The Limited licenses are usually issued to smaller firms requiring a more restrictive license. Some firms are medical suppliers that process, package, or distribute such products as diagnostic test kits, radioactive surgical implants, and tagged radiochemicals for use in medical research, diagnosis, and therapy. Limited firms are suppliers of industrial radionuclides and are involved in the processing, encapsulation, packaging, and distribution of the radionuclides that they have purchased in bulk quantities from production reactors and cyclotrons. Major products include gamma radiography sources, cobalt irradiation sources, well-logging sources, sealed sources for gauges and smoke detectors, and radiochemicals for nonmedical research. However, only those NRC licensees that possess or use at any one time specified quantities of the nuclides listed in paragraph 20.2206(a)(7) are required to submit reports to the NRC.

Table 3.5 presents the annual data that were reported by the two types of licensees for 1996 and the previous 2 years. Looking at the information shown separately for the Type "A" Broad and Limited licensees, it can be seen that the values of all of the parameters remain higher for the Broad licensees. However, when attempting to examine trends in the data presented for this category of licensees, it should be noted that the types and quantities of radionuclides may fluctuate from year to year, and even during the year, so that some licensees may report dose data one year and not the next and may be included as a Broad licensee one year and a

FIGURE 3.1
Average Annual Values at Industrial Radiography Facilities 1973 - 1996



Limited licensee at other times. Because the number of reporting licensees is quite small, these fluctuations may have a significant impact on the values of the parameters.

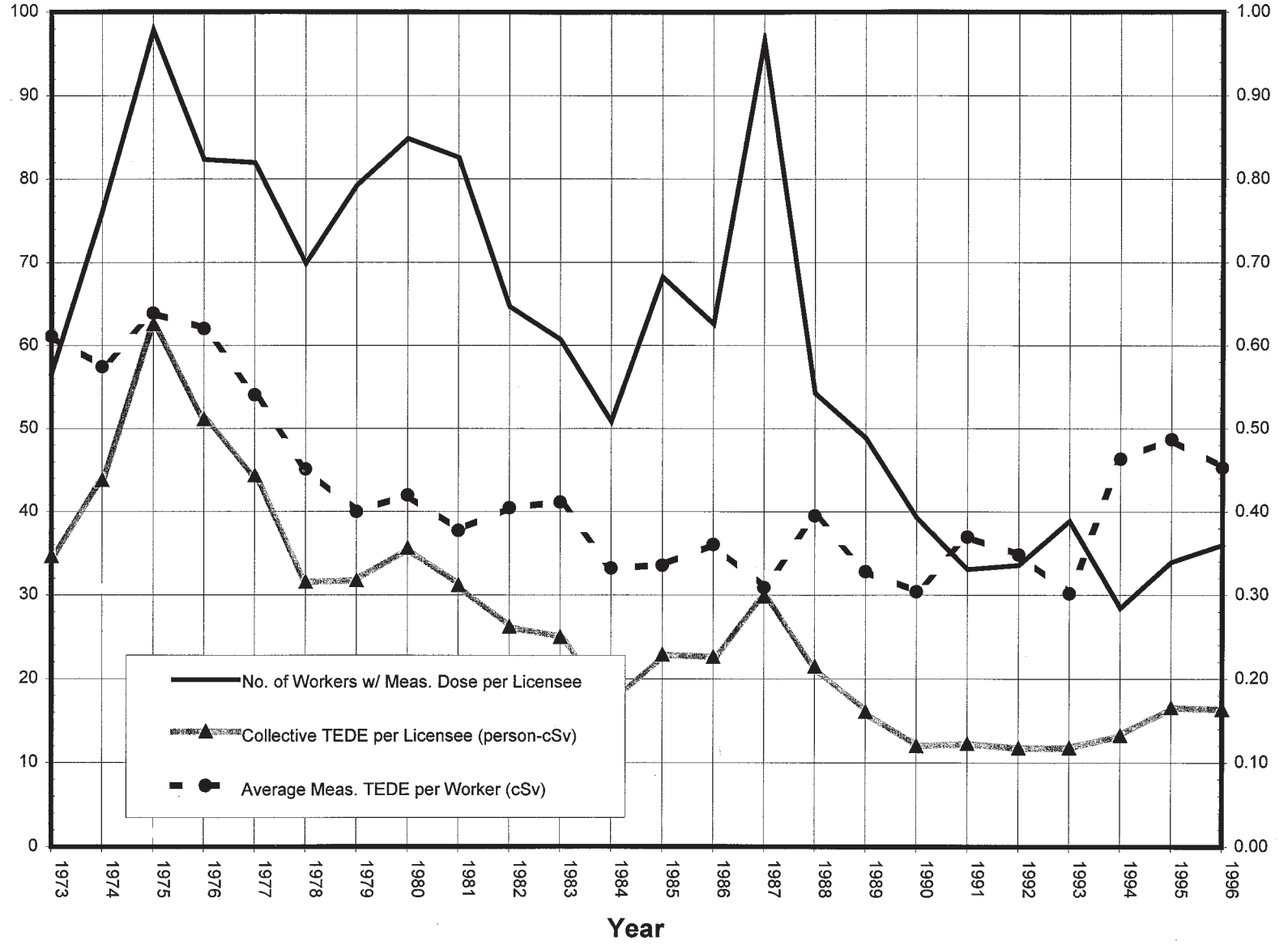
Figure 3.2 shows the number of workers with measurable dose per licensee, the total collective dose per licensee, and the average measurable dose per worker for both Type “A” Broad and Limited Manufacturing and Distribution facilities.

For the contribution that each of these licensees made toward the total values of the number of workers monitored, number of workers, and collective dose, see Appendix A, which lists the values of these parameters for each licensee in descending order of average measurable dose for 1996.

TABLE 3.5
ANNUAL EXPOSURE INFORMATION FOR MANUFACTURERS AND DISTRIBUTORS
1994 - 1996

Year	Type of License	Number of Licenses	Number of Monitored Workers	Workers with Measurable Dose	Collective Dose (person-cSv, rem)	Average Measurable Dose (cSv or rem)
	M & D-”A”-Broad	7	2,018	987	522	0.53
1996	M & D-Limited	29	610	252	34	0.13
	Total	36	2,628	1,239	556	0.45
	M & D-”A”-Broad	7	2,016	909	557	0.61
1995	M & D-Limited	29	650	313	38	0.12
	Total	36	2,666	1,222	595	0.49
	M & D-”A”-Broad	8	2,133	877	544	0.62
1994	M & D-Limited	36	808	374	36	0.10
	Total	44	2,941	1,251	580	0.46

FIGURE 3.2
Average Annual Values at Manufacturing and Distribution Facilities 1973 - 1996



3.3.3 Low-Level Waste Disposal Licenses

Low-Level Waste Disposal licenses are issued to allow the receipt, possession, and disposal of low-level radioactive wastes at a land disposal facility. The licensee has the appropriate facilities to receive wastes from such places as hospitals and laboratories, store them for a short time, and dispose of them in a properly prepared burial ground. The licensees in this category are located in and licensed by Agreement States which have primary regulatory authority over its activity. However, these licensees also have an NRC license that covers certain special nuclear material they might receive. The annual dose reports submitted by these licensees include all doses received during the year regardless of whether they were the result of NRC or Agreement State licensed material.

The requirement for this category of NRC licensee to file annual reports became effective in January 1983. There was only one licensee in this category in 1982 and 1983; however, there have been two licensees in this category since 1984. Table 3.1 summarizes the data reported for 1987 through 1996. Appendix A summarizes the exposure information reported by these two licensees in 1996.

Figure 3.3 shows the number of workers with measurable dose per licensee, the total collective dose per licensee, and the average measurable dose per worker for Low-Level Waste Disposal facilities from 1982 through 1996. Because only two licensees have been involved in this activity over the past 10 years, the numbers have remained fairly stable from 1984 through 1996.

3.3.4 Independent Spent Fuel Storage Installation Licenses

Independent Spent Fuel Storage Installation (ISFSI) licenses are issued to allow the possession of power reactor spent fuel and other associated radioactive materials for the purpose of storage of such fuel in an ISFSI. Here, the spent fuel, which has undergone at least 1 year of decay since being used as a source of energy in a power reactor, is provided interim storage, protection, and safeguarding for a limited time pending its ultimate disposal.

Eighteen licenses have been issued for these activities. Eleven are at nuclear power plants, allowing on-site temporary storage of fuel. These licensees report the dose from fuel storage activities along with the dose from reactor operations at these sites. Out of the seven remaining licenses, only one is active and is located at a facility that is independent of a reactor site. Only this licensee is included in this analysis of ISFSI facilities for 1996. Appendix A summarizes the exposure information reported by this installation.

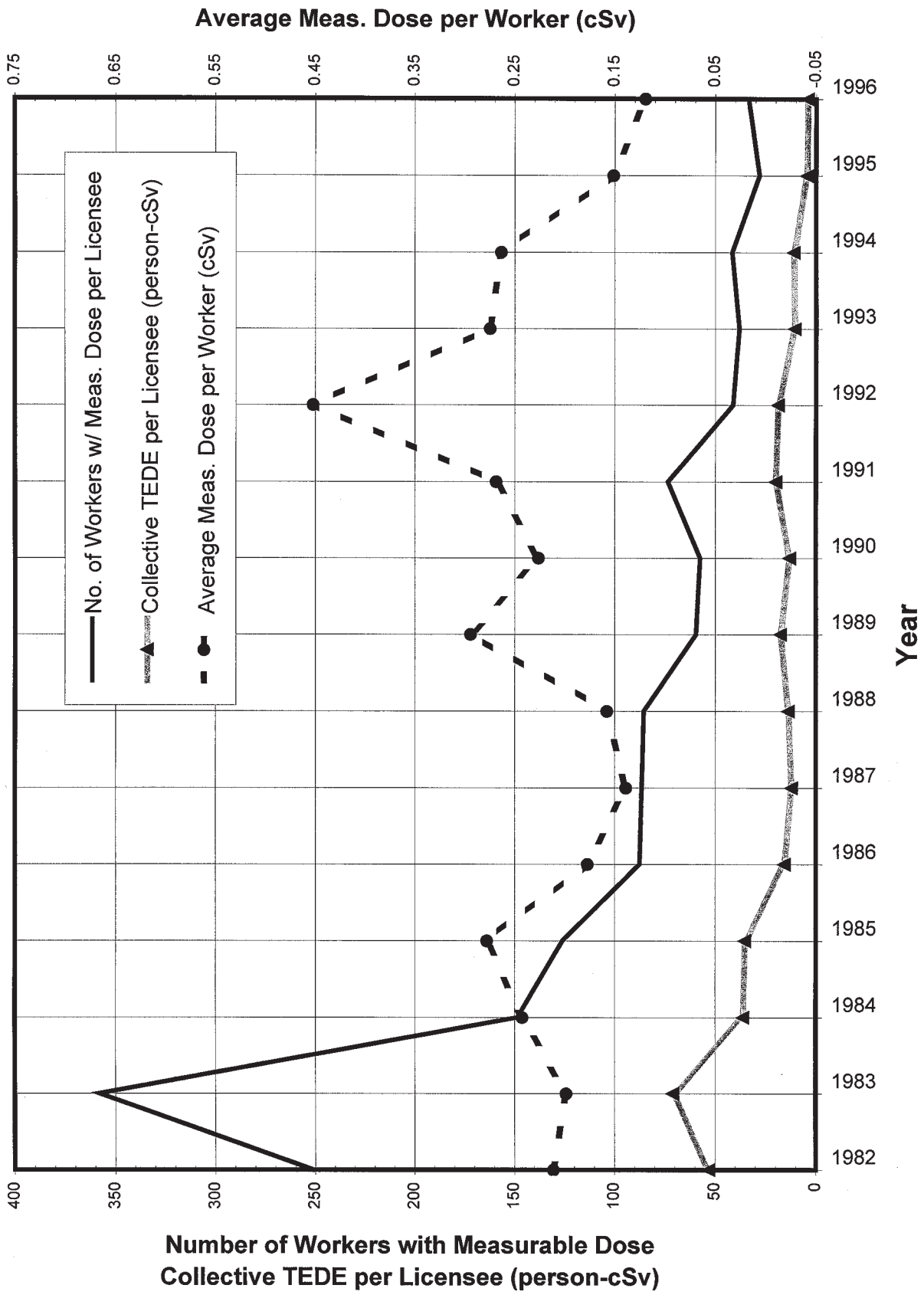


FIGURE 3.3
Average Annual Values at Low Level Waste Disposal Facilities
1982 - 1996

Figure 3.4 shows the number of workers with measurable dose per licensee, the total collective dose per licensee, and the average measurable dose per worker for Independent Spent Fuel Storage facilities. The large increase in the collective dose per licensee and number of workers per licensee in 1994 was mainly because only one licensee reported separately for 1994 through 1996, rather than the two licensees that reported in prior years. However, the average measurable dose has also increased significantly from 1992 to 1996 due to decreases in the number of individuals receiving measurable dose, and increases in the collective dose received by these individuals.

3.3.5 Fuel Fabrication and Processing Licenses

The Fuel Fabrication and Processing licenses are issued to allow the processing and fabrication of reactor fuels. In most uranium facilities where light water reactor fuels are processed, uranium hexafluoride enriched in the isotope U-235 is converted to solid uranium dioxide pellets and inserted into zirconium alloy tubes. The tubes are fabricated into fuel assemblies that are shipped to nuclear power plants. Some facilities also perform chemical operations to recover the uranium from scrap and other off-specification materials. On a much smaller scale, fuel assemblies containing plutonium oxide pellets can be similarly fabricated and used in reactors for experimental purposes. However, there are no NRC licensees engaged in this activity at this time.

Figure 3.5 shows the number of workers with measurable dose per licensee, the total collective dose per licensee, and the average measurable dose per worker for Fuel Fabrication and Processing licensees. In addition to the TEDE collective and average measurable dose, the Deep Dose Equivalent (DDE) collective dose and DDE average measurable dose are shown. Prior to 1994, only the “whole body” dose values were given, which were equivalent to the DDE. In 1994, the revised 10 CFR 20 went into effect, requiring the calculation of the CEDE and the summation of the DDE and CEDE into the TEDE. For Fuel Fabrication facilities, the CEDE is a significant contribution to the TEDE. To accurately reflect the exposure history for these facilities, it was necessary to continue to plot the old “whole body” external dose, now called DDE, in addition to the TEDE, which includes the CEDE contribution. The difference between the DDE and TEDE plots represents the CEDE contribution.

Appendix A lists each of the licensees reporting in 1996, with the number of workers monitored, the number of workers receiving measurable external doses, and the collective dose for each licensee in descending order of average measurable dose.

Table 3.6 shows that there were eight licensed Fuel Fabrication facilities in 1996. Several licensees were involved in decontamination and decommissioning of their plutonium facilities, and for several years the data for these licensees were shown in the “Decommissioning” category in Table 3.1. Because these facilities have ceased to fabricate plutonium fuel, they are not required to file annual reports and are no longer shown in the tables.

Fuel Reprocessing licenses are issued to allow the separation of useable uranium and plutonium from spent nuclear fuel. There was only one commercial facility that was ever licensed to reprocess fuel, and it has been shut down since 1972. However, the licensee did some decontamination work and stored radioactive waste at the facility for several years, and the annual report that was submitted each year was usually grouped with those of the Fuel Fabricators. In February 1982, the Department of Energy assumed possession and control of the reprocessing facility to conduct waste solidification activities necessary for final decommissioning. Therefore, the NRC license was suspended in 1982, and no reports have been filed with the NRC since this date.

TABLE 3.6

ANNUAL EXPOSURE INFORMATION FOR FUEL FABRICATORS

1994 - 1996

Year	Type of License	Number of Licenses	Number of Monitored Workers	Workers with Measureable Dose	Collective TEDE (pereson-cSv, rem)	Average Measureable Dose (cSv or rem)	Collective CEDE (person-cSv, rem)	Average CEDE (cSv or rem)
1996	Uranium Fuel Fab	8	4,369	3,061	878	0.29	711	0.32
1995	Uranium Fuel Fab	8	4,106	2,959	1,217	0.41	990	0.33
1994	Uranium Fuel Fab	8	3,596	2,847	1,147	0.40	867	0.30

FIGURE 3.4
Average Annual Values at Independent Spent Fuel Storage Facilities
1982 - 1996

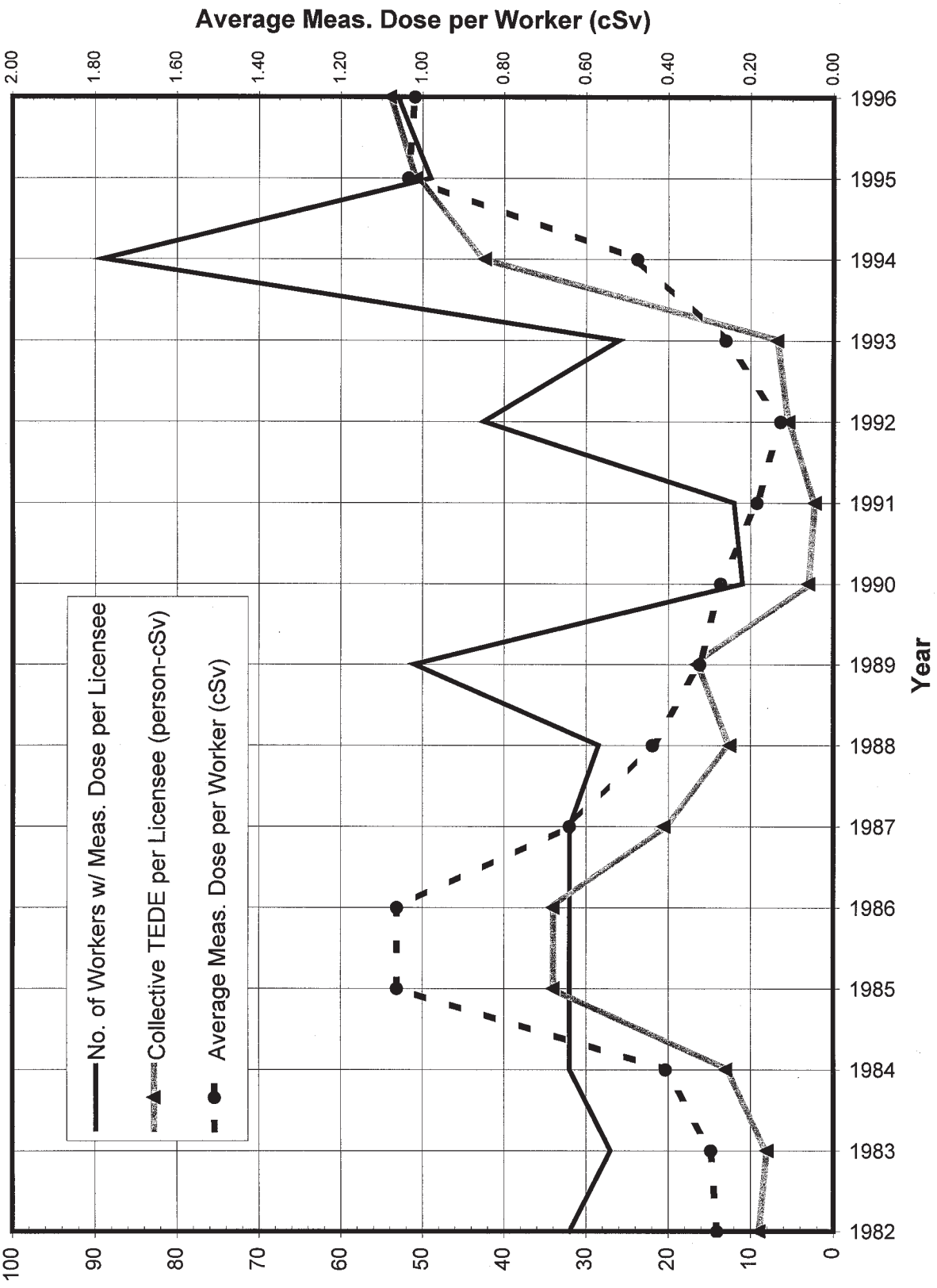
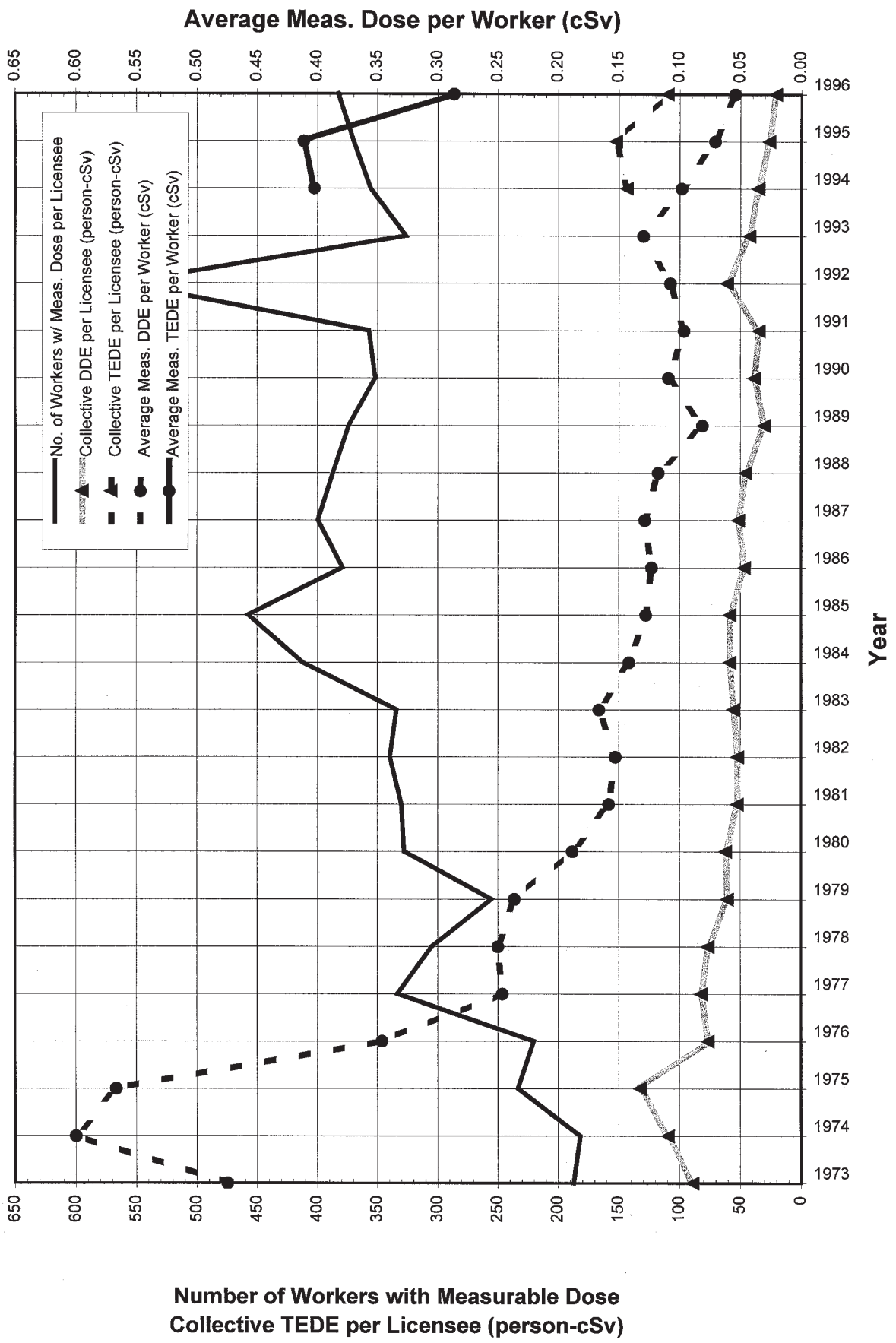


FIGURE 3.5
Average Annual Values at Fuel Fabrication and Processing Facilities
1973 - 1996



3.3.6 Light-Water-Cooled Power Reactor (LWR) Licenses

LWR licenses are issued to utilities to allow them to use special nuclear material in a reactor that produces heat to generate electricity to be sold to consumers. There are two major types of commercial LWRs in the United States - pressurized water reactors (PWRs) and boiling water reactors (BWRs) - each of which uses water as the primary coolant.

Table 3.1 shows the number of licensees, total number of monitored workers, the number of workers with measurable dose, the total collective dose, and average dose per worker for all reports received from reactor facilities that were in commercial operation for the years 1987 through 1996. This table includes reactors that may not have been in commercial operation for a full year. Data for 1987 through 1988 included all reactors that reported, even though some of them were shut down. Data for 1989 through 1996 do not include reactors that have been shut down. These figures have been adjusted for the multiple counting of transient workers (see Section 5). The reported dose distribution of workers monitored at each plant site is presented in alphabetical order by site name in Appendix B.

More detailed presentations and analyses of the annual exposure information reported by nuclear power facilities can be found in Sections 4 and 5.

3.3.7 High-Temperature Gas-Cooled Power Reactor (HTGR) Licenses

A license to operate a power reactor is issued to utilities to allow them to use special nuclear material in a reactor to produce heat to generate electricity to be sold to consumers. In the HTGR, a gas, usually helium, is used as the primary coolant. Fort St. Vrain, near Greeley, Colorado, was the only such reactor in operation in the United States. Fort St. Vrain shut down permanently in 1989. Table 3.7 shows the annual whole body doses incurred by workers at the plant. Since 1992, the doses have increased significantly because of decontamination and decommissioning operations.

TABLE 3.7

ANNUAL EXPOSURE INFORMATION FOR FORT ST. VRAIN

1974 - 1996

Year	No. of individuals in Dose Ranges (cSv or rem)					Number of Monitored Workers	Annual Collective Dose (person-cSv person-rem)	Gross Electricity Generated (MW-yr.)	Average Measureable Dose (cSv or rem)
	No. Meas'ble Dose	Meas'ble Dose <0.10	0.25	2.00	>2.0				
1974	1,597	63	1	0	0	1,661	3.3	0.0	0.05
1975	1,263	0	0	0	0	1,263	0.0	0.0	0.00
1976	1,362	25	0	0	0	1,387	1.3	2.8	0.05
1977	946	55	1	0	0	1,002	2.9	29.8	0.05
1978	896	34	0	0	0	930	1.7	75.7	0.05
1979	1,149	120	2	0	0	1,271	6.4	28.6	0.05
1980	902	57	1	0	0	960	3.0	83.2	0.05
1981	1,096	31	0	0	0	1,127	1.0	93.6	0.03
1982	978	22	0	0	0	1,000	0.4	72.6	0.02
1983	965	48	0	0	0	1,013	1.0	94.4	0.02
1984	1,616	62	8	0	0	1,686	3.0	10.9	0.04
1985	1,929	370	40	33	0	2,372	35.0	3.8	0.08
1986	221	66	4	0	0	291	1.8	9.7	0.03
1987	155	52	2	0	0	209	1.2	23.8	0.02
1988	238	24	0	0	0	262	0.7	81.8	0.03
1989	316	47	6	2	0	371	2.7	0.0	0.05
1990	226	30	0	0	0	256	0.6	0.0	0.02
1991	525	63	9	4	0	601	5.4	0.0	0.07
1992	520	144	36	34	0	734	25.4	0.0	0.12
1993	657	51	37	78	1	823	75.2	0.0	0.45
1994	390	89	33	79	4	591	78.0	0.0	0.39
1995	460	62	52	127	37	738	210.3	0.0	0.75
1996	230	25	2	0	0	251	1.2	0.0	0.04

3.4 Summary of Intake Data by License Category

With the revision of 10 CFR 20 in 1994, licensees were required to report additional data to the NRC concerning intakes of radioactive material. Licensees were required to list for each intake the radionuclide that was taken into the body, the pulmonary clearance class, intake mode, and amount of the intake in microcuries. An NRC Form 5 report containing this information is required to be completed and submitted to the NRC under 10 CFR 20.2206.

Tables 3.8 and 3.9 summarize the intake data reported to the NRC during 1996. The data are categorized by licensee type and are listed in order of radionuclide and pulmonary clearance class. Table 3.8 lists the intakes where the mode of intake into the body was recorded as ingestion. Table 3.9 lists the intakes where the mode of intake was inhalation from ambient airborne radioactive material in the workplace. The pulmonary clearance class is recorded as D, W, or Y corresponding to its clearance half-time in the order of **d**ays, **w**eeks, or **y**ears from the pulmonary region of the lung into the blood and gastrointestinal tract. The amount of material taken into the body is given in microcuries, a unit of measure of the quantity of radioactive material. For each category of licensee, the maximum number of intake records and the maximum intake is highlighted in the table in bold for ease of reference.

TABLE 3.8
INTAKE BY LICENSEE TYPE AND RADIONUCLIDE
MODE OF INTAKE - ***INGESTION***
1996

Licensee Type	Program Code	Radionuclide	Number of Intake Records*	Intake in microcuries
Nuclear Pharmacies	02500	I-131	1	0.0342
	02500	TC-99M	**78**	**15.1500**
Fuel Fabrication	21210	U-234	1	**0.0021**
	21210	U-235	1	0.0001
	21210	U-238	1	0.0003
Power Reactors	41111	AM-241	3	0.0078
	41111	CE-144	2	0.0139
	41111	CM-242	1	0.0002
	41111	CM-244	3	0.0047
	41111	CO-58	21	**23.6353**
	41111	CO-60	**49**	12.6120
	41111	CR-51	13	5.2249
	41111	FE-59	5	0.1667
	41111	H-3	1	0.3120
	41111	I-131	1	0.0430
	41111	IN-113M	2	0.0551
	41111	MN-54	18	4.6161
	41111	NB-95	2	1.8650
	41111	PU-238	3	0.0067
	41111	PU-239	3	0.0026
	41111	PU-241	1	0.0048
	41111	RU-103	1	0.0688
	41111	RU-106	2	0.0556
	41111	SB-124	1	0.2190
	41111	SN-113	2	0.0551
	41111	SR-90	1	0.0002
	41111	U-233/234	2	0.0037
	41111	U-235	2	0.0003
	41111	U-238	2	0.0025
	41111	UNKNOWN	3	0.4800
	41111	ZN-65	5	0.4968
	41111	ZR-95	14	12.3190

*An intake event may involve multiple nuclides, and individuals may incur multiple intakes during the year. The number of intake records given here indicates the number of separate intake reports that were submitted on NRC Form 5 reports under 10 CFR 20.2206.

TABLE 3.9
INTAKE BY LICENSEE TYPE AND RADIONUCLIDE
MODE OF INTAKE - ***INHALATION***
1996

Licensee Type	Program Code	Radionuclide	Pulmonary Clearance Class	Number of Intake Records*	Intake in microcuries	Intake in microcuries (sci. notation)
Nuclear Pharmacies	02500	I-131	D	**98**	21.8424	2.18E+01
	02500	TC-99M	D	3	**7545.0000**	**7.55E+03**
Manufacturing and Distribution	03211	CO-60	Y	7	0.4542	4.54E-01
Fuel Fabrication	21210	CO-60	Y	245	0.3885	3.89E-01
	21210	CS-137	D	23	0.0000	3.12E-06
	21210	NP-237	W	23	0.0000	3.87E-06
	21210	PA-234	W	23	0.0001	8.16E-05
	21210	PU-238	W	23	0.0000	4.66E-08
	21210	PU-239	W	60	0.0006	5.78E-04
	21210	PU-239	Y	3	0.0000	2.06E-07
	21210	TC-99	D	23	0.0003	3.21E-04
	21210	TH-228	W	22	1.7500	1.75E+00
	21210	TH-228	Y	262	0.0006	6.06E-04
	21210	TH-230	W	23	0.0000	1.63E-05
	21210	TH-230	Y	261	0.0003	2.78E-04
	21210	TH-232Y	W	22	0.0000	7.28E-07
	21210	TH-232Y	Y	262	0.0006	6.07E-04
	21210	TH-234	Y	23	0.0000	3.22E-05
	21210	U-234	D	210	1.0925	1.09E+00
	21210	U-234	W	1	0.0011	1.09E-03
	21210	U-234	Y	**1911**	**5.4843**	**5.48E+00**
	21210	U-235	W	1	0.0005	4.54E-04
	21210	U-235	Y	919	1.1446	1.14E+00
	21210	U-236	Y	239	0.0031	3.12E-03
	21210	U-238	D	200	0.1801	1.80E-01
	21210	U-238	W	1	0.0030	2.99E-03
	21210	U-238	Y	1821	0.7653	7.65E-01
Power Reactors	41111	AG-110M	D	1	0.1310	1.31E-01
	41111	AM-241	W	4	0.0005	4.80E-04
	41111	CE-144	Y	2	0.0151	1.51E-02
	41111	CM-242	W	2	0.0000	0.00E+00
	41111	CM-243	W	2	0.0000	0.00E+00
	41111	CM-244	W	2	0.0003	2.70E-04
	41111	CO-58	Y	196	31.3243	3.13E+01
	41111	CO-60	D	1	0.3280	3.28E-01
	41111	CO-60	V	2	0.1350	1.35E-01
	41111	CO-60	W	3	0.0883	8.83E-02
	41111	CO-60	Y	**350**	**541.6916**	**5.42E+02**
	41111	CO-60M	Y	1	0.1100	1.10E-01
	41111	CR-51	Y	6	1.9000	1.90E+00
	41111	CS-134	D	9	0.0749	7.49E-02
	41111	CS-137	D	115	1.8652	1.87E+00
	41111	FE-55	W	4	24.7570	2.48E+01
	41111	FE-59	D	2	0.0660	6.60E-02

TABLE 3.9
INTAKE BY LICENSEE TYPE AND RADIONUCLIDE
MODE OF INTAKE - ***INHALATION***
1996

Licensee Type	Program Code	Radionuclide	Pulmonary Clearance Class	Number of Intake Records*	Intake in microcuries	Intake in microcuries (sci. notation)
	41111	FE-59	W	2	89.0080	8.90E+01
	41111	H-3	V	4	20.4600	2.05E+01
	41111	HF-181	W	1	0.1113	1.11E-01
	41111	I-131	D	38	432.3244	4.32E+02
	41111	I-132	D	6	0.5250	5.25E-01
	41111	I-133	D	3	0.5214	5.21E-01
	41111	MIXTURE	W	40	0.0370	3.70E-02
	41111	MN-54	W	81	213.5056	2.14E+02
	41111	MN-54	Y	1	0.0340	3.40E-02
	41111	NB-95	Y	64	2.1620	2.16E+00
	41111	NI-63	W	4	11.4610	1.15E+01
	41111	PU-238	Y	4	0.0006	5.90E-04
	41111	PU-239	Y	4	0.0002	2.12E-04
	41111	RU-103	Y	1	0.0460	4.60E-02
	41111	RU-106	Y	2	0.0094	9.40E-03
	41111	U-233/234	Y	2	0.0002	2.14E-04
	41111	U-235	Y	2	0.0000	1.67E-05
	41111	U-238	Y	2	0.0001	1.45E-04
	41111	ZN-65	Y	36	0.8832	8.83E-01
	41111	ZR-95	D	3	2.1200	2.12E+00
	41111	ZR-95	W	14	0.5790	5.79E-01
	41111	ZR-95	Y	33	1.5860	1.59E+00
	41111	ZRNB-95	W	3	4.1078	4.11E+00

*An intake event may involve multiple nuclides, and individuals may incur multiple intakes during the year. The number of intake records given here indicates the number of separate intake reports that were submitted on NRC Form 5 reports under 10 CFR 20.2206.

4 COMMERCIAL LIGHT WATER REACTORS - FURTHER ANALYSIS

4.1 Introduction

General trends in occupational radiation exposures at nuclear power reactors are best evaluated within the context of other pertinent information. In this chapter, some of the tables and appendices that summarize exposure data also show the type, capacity, and age of the reactor; the amount of electricity generated; the types of workers being exposed; and the sort of tasks being performed. Exposure data are then presented as a function of these data.

4.2 Definition of Terms and Sources of Data

4.2.1 Number of Reactors

The *number of reactors* shown in Tables 4.1, 4.2, and 4.3 is the number of BWRs, PWRs, and LWRs, respectively, that had been in commercial operation for at least 1 full year as of December 31 of each of the indicated years. This is the number of reactors on which the *average number of workers with measurable dose* and *average collective dose per reactor* is based. Excluded are those reactors that had been in commercial operation for less than 12 months during the first year and reactors that have been permanently defueled. This yields conservative values for many of the averages shown in the tables. The date that each reactor was declared to be in commercial operation was taken from Reference 14.

Three Mile Island (TMI) 2 had been included in the compilation of data for commercially operating reactors through 1988 even though the reactor was shut down following the 1979 accident and has been in the process of defueling and decommissioning since that time. TMI 2 has not been included in the data analysis since 1988. Data for this reactor, however, will be listed in Appendices B, C, D and E for reference purposes.

4.2.2 Electric Energy Generated

The electric energy generated in gross megawatt-years (MW-yr) each year by each facility is shown in Appendix C and graphically represented in Appendix E. This number was obtained by dividing the gross megawatt-hours of electricity annually produced by each facility by 8,760, the number of hours in the year, except for leap years when the number is 8,784 hours. The gross electricity generated (in megawatt-years) that is presented in Tables 4.1, 4.2, and 4.3 is the summation of electricity generated by the number of reactors included in each year. These sums are divided by the number of reactors included in each year to yield the average amount of electric energy generated per reactor, which is also shown in Tables 4.1, 4.2, and 4.3. The number of gross megawatt-hours of electricity produced each year was found in Reference 14.

TABLE 4.1

SUMMARY OF INFORMATION REPORTED BY COMMERCIAL BOILING WATER REACTORS

1973 - 1996

Year	Number of Reactors Included*	Annual Collective Dose (person-cSv or person-rem)	No. of Workers With Measurable Dose**	Gross Electricity Generated (MW-yrs)	Average Measurable Dose Per Worker (cSv or rem)**	Average Collective Dose Per Reactor (person-cSv or person-rem)	Average No. Personnel With Measurable Doses Per Reactor**	Average Collective Dose per MW-yr (person-cSv /MW-yr)	Average Electricity Generated Per Reactor (MW-yr)	Average Maximum Dependable Capacity Net (MWe)	Percent of Maximum Dependable Capacity Achieved
1973	12	4,564	5,340	3,393.9	0.85	380	445	1.34	283	438	65%
1974	14	7,095	8,769	4,060.2	0.81	507	626	1.75	290	485	60%
1975	18	12,611	14,607	5,786.4	0.86	701	812	2.18	321	595	54%
1976	22	12,300	16,604	8,137.9	0.74	559	755	1.51	370	630	59%
1977	23	19,041	21,388	9,102.5	0.89	828	930	2.09	396	637	62%
1978	25	15,273	20,278	11,856.0	0.75	611	811	1.29	474	660	72%
1979	25	18,325	25,245	11,671.0	0.73	733	1,010	1.57	467	660	71%
1980	26	29,530	34,094	10,868.2	0.87	1,136	1,311	2.72	418	663	63%
1981	26	25,472	34,755	10,899.2	0.73	980	1,337	2.34	419	663	63%
1982	26	24,437	32,235	10,614.6	0.76	940	1,240	2.30	408	663	62%
1983	26	27,455	33,473	9,730.1	0.82	1,056	1,287	2.82	374	663	56%
1984	27	27,097	41,105	10,019.2	0.66	1,004	1,522	2.70	371	754	49%
1985	29	20,573	38,237	12,284.0	0.54	709	1,319	1.67	424	775	55%
1986	30	19,349	37,928	12,102.1	0.51	645	1,264	1.60	403	786	51%
1987	32	16,717	41,737	15,109.0	0.40	522	1,304	1.11	472	832	57%
1988	34	17,983	40,305	16,665.4	0.45	529	1,185	1.08	490	845	58%
1989	36	15,549	44,360	17,543.5	0.35	432	1,232	0.89	487	857	57%
1990	37	15,780	41,577	21,336.1	0.38	426	1,124	0.74	577	862	67%
1991	37	12,005	38,492	21,505.8	0.31	324	1,040	0.56	581	860	68%
1992	37	13,309	42,095	20,592.2	0.32	360	1,138	0.65	557	859	65%
1993	37	12,221	39,352	21,995.6	0.31	330	1,064	0.56	594	798	74%
1994	37	12,092	39,108	22,139.0	0.31	327	1,057	0.55	598	801	75%
1995	37	9,467	35,659	24,737.0	0.27	256	964	0.38	669	835	80%
1996	37	9,461	37,637	24,322.2	0.25	256	1,017	0.39	657	838	78%

* Includes only those reactors that had been in commercial operation for at least one full year as of December 31 of each of the indicated years.
** Figures are not adjusted for the multiple reporting of transient individuals. See Section 5.

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TABLE 4.2

SUMMARY OF INFORMATION REPORTED BY COMMERCIAL PRESSURIZED WATER REACTORS

1973 - 1996

Year	Number of Reactors Included*	Annual Collective Dose (person-cSv or person-rem)	No. of Workers With Measurable Dose**	Gross Electricity Generated (MW-yrs)	Average Measurable Dose Per Worker (cSv or rem)**	Average Collective Dose Per Reactor (person-cSv or person-rem)	Average No. Personnel With Measurable Doses Per Reactor**	Average Collective Dose per MW-yr (person-cSv /MW-yr)	Average Electricity Generated Per Reactor (MW-yr)	Average Maximum Dependable Capacity Net (MWe)	Percent of Maximum Dependable Capacity Achieved
1973	12	9,398	9,440	3,770.2	1.00	783	787	2.49	314	544	58%
1974	19	6,555	9,370	6,530.7	0.70	345	493	1.00	344	591	58%
1975	26	8,268	10,884	11,982.5	0.76	318	419	0.69	461	647	71%
1976	30	13,807	17,588	13,325.0	0.79	460	586	1.04	444	701	63%
1977	34	13,467	20,878	17,345.8	0.65	396	614	0.78	510	688	74%
1978	39	16,528	25,700	19,840.5	0.64	424	659	0.83	509	706	72%
1979	42	21,657	38,828	18,255.0	0.56	516	924	1.19	435	746	58%
1980	42	24,267	46,237	18,289.3	0.52	578	1,101	1.33	435	746	58%
1981	44	28,673	47,351	20,553.7	0.61	652	1,076	1.40	467	752	62%
1982	48	27,754	52,146	22,140.6	0.53	578	1,086	1.25	461	777	59%
1983	49	29,017	52,173	23,195.5	0.56	592	1,065	1.25	473	785	60%
1984	51	28,138	56,994	26,478.4	0.49	552	1,118	1.06	519	809	64%
1985	53	22,469	54,633	29,470.7	0.41	424	1,031	0.76	556	820	68%
1986	60	23,032	62,995	33,593.0	0.37	384	1,050	0.69	560	878	64%
1987	64	23,684	62,597	37,007.3	0.38	370	978	0.64	578	900	64%
1988	68	22,786	62,921	42,929.7	0.36	335	925	0.53	631	885	71%
1989	71	20,381	63,894	44,679.5	0.32	287	900	0.46	629	897	70%
1990	73	20,812	67,081	46,955.6	0.31	285	919	0.44	643	907	71%
1991	74	16,510	60,269	51,942.6	0.27	223	814	0.32	702	913	77%
1992	73	15,985	61,048	53,419.8	0.26	219	836	0.30	732	923	79%
1993	71	14,142	56,588	50,480.6	0.25	199	797	0.28	711	945	75%
1994	72	9,603	44,766	54,618.3	0.21	133	622	0.18	759	932	81%
1995	72	12,207	51,867	55,825.1	0.24	170	720	0.22	775	933	83%
1996	72	9,413	46,812	55,337.8	0.20	131	650	0.17	769	935	82%

* Includes only those reactors that had been in commercial operation for at least one full year as of December 31 of each of the indicated years.
** Figures are not adjusted for the multiple reporting of transient individuals. See Section 5.

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TABLE 4.3

SUMMARY OF INFORMATION REPORTED BY COMMERCIAL LIGHT WATER REACTORS

1973 - 1996

Year	Number of Reactors Included*	Annual Collective Dose (person-cSv or person-rem)	No. of Workers With Measurable Dose**	Gross Electricity Generated (MW-yrs)	Average Measurable Dose Per Worker (cSv or rem)**	Average Collective Dose Per Reactor (person-cSv or person-rem)	Average No. Personnel With Measurable Doses Per Reactor**	Average Collective Dose per MW-yr (person-cSv /MW-yr)	Average Electricity Generated Per Reactor (MW-yr)	Average Maximum Dependable Capacity Net (MWe)	Percent of Maximum Dependable Capacity Achieved
1973	24	13,962	14,780	7,164.1	0.94	582	616	1.95	299	491	61%
1974	33	13,650	18,139	10,590.9	0.75	414	550	1.29	321	546	59%
1975	44	20,879	25,491	17,768.9	0.82	475	579	1.18	404	626	65%
1976	52	26,107	34,192	21,462.9	0.76	502	658	1.22	413	671	62%
1977	57	32,508	42,266	26,448.3	0.77	570	742	1.23	464	667	70%
1978	64	31,801	45,978	31,696.5	0.69	497	718	1.00	495	688	72%
1979	67	39,982	64,073	29,926.0	0.62	597	956	1.34	447	714	63%
1980	68	53,797	80,331	29,157.5	0.67	791	1,181	1.85	429	714	60%
1981	70	54,145	82,106	31,452.9	0.66	774	1,173	1.72	449	719	63%
1982	74	52,191	84,381	32,755.2	0.62	705	1,140	1.59	443	737	60%
1983	75	56,472	85,646	32,925.6	0.66	753	1,142	1.72	439	743	59%
1984	78	55,235	98,099	36,497.6	0.56	708	1,258	1.51	468	790	59%
1985	82	43,042	92,870	41,754.7	0.46	525	1,133	1.03	509	804	63%
1986	90	42,381	100,923	45,695.1	0.42	471	1,121	0.93	508	847	60%
1987	96	40,401	104,334	52,116.3	0.39	421	1,087	0.78	543	877	62%
1988	102	40,769	103,226	59,595.1	0.39	400	1,012	0.68	584	871	67%
1989	107	35,930	108,254	62,223.0	0.33	336	1,012	0.58	582	883	66%
1990	110	36,592	108,658	68,291.7	0.34	333	988	0.54	621	892	70%
1991	111	28,515	98,761	73,448.4	0.29	257	890	0.39	662	895	74%
1992	110	29,294	103,143	74,012.0	0.28	266	938	0.40	673	901	75%
1993	108	26,363	95,940	72,476.2	0.27	244	888	0.36	671	895	75%
1994	109	21,695	83,874	76,757.3	0.26	199	769	0.28	704	888	79%
1995	109	21,674	87,526	80,562.1	0.25	199	803	0.27	739	900	82%
1996	109	18,874	84,449	79,660.0	0.22	173	775	0.24	731	902	81%

* Includes only those reactors that had been in commercial operation for at least one full year as of December 31 of each of the indicated years.
** Figures are not adjusted for the multiple reporting of transient individuals. See Section 5.

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4.2.3 Collective Dose per Megawatt-Year

The number of megawatt-years of electricity generated was used in determining the ratio of the average value of the annual collective dose (TEDE) to the number of megawatt-years of electricity generated. The ratio was calculated by dividing the total collective dose in person-cSv (person-rem) by the gross electric energy generated in megawatt-years and is a measure of the dose incurred by workers at power plants in relation to the gross electric energy produced. This ratio was also calculated for each reactor site and is presented in Tables 4.1, 4.2, and 4.3 and Appendix C.

4.2.4 Average Maximum Dependable Capacity

Average maximum dependable capacity, shown in Tables 4.1, 4.2, and 4.3, was found by dividing the sum of the net maximum dependable capacities of the reactors in megawatts (net MWe) by the number of reactors included each year. The net maximum dependable capacity is defined as 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 “capacity” of each plant was found in Reference 14, and it is shown for each site in Appendix C.

4.2.5 Percent of Maximum Dependable Capacity Achieved

The *percent of maximum dependable capacity achieved* is shown for all LWRs in Table 4.3. This parameter gives an indication of the overall power generation performance of LWRs as compared to the maximum capacity that could be obtained in a given year. It is calculated by dividing the average electricity generated per reactor by the average maximum dependable capacity for each year.

From 1973 to 1978 this indicator exhibited an increasing trend as a number of new reactors began producing power at higher efficiencies. Following the accident at Three Mile Island, reactor operations personnel concentrated on improving safety systems and complying with the new regulations for these systems. During this time period, from 1979 to 1987, the percent of maximum dependable capacity remained around 61%. Following the completion of most of these mandated repairs, reactors have increased the percent of maximum dependable capacity from 62% in 1987 to 81% in 1996, a gain of nearly 20% in 10 years.

4.3 Annual TEDE Distributions

Table 4.4 summarizes the distribution of the annual TEDE doses received by workers at all commercial LWRs during each of the years 1977 through 1996. This distribution is the sum of the annual dose distributions reported by each licensed LWR each year. As previously mentioned, the distribution reported by each LWR site for 1996 is shown in Appendix B. Table 4.4 shows the reported dose distributions corrected for the number of transient workers that were reported by more than one site (see Section 5). The total collective dose decreased by 13% to a value of 18,874 person-cSv (person-rem) in 1996. The value of CR decreased to a value of 0.05. The large decrease in the value of CR from 1993 to 1994 is primarily because of the change in methodology by which the CR value is determined (see Section 3.1.8). For the years 1994 to 1996, the CR value was determined directly from the individual radiation exposure records submitted under 10 CFR 20.2206 (Form 5) rather than calculating the value indirectly from the statistical dose distribution summary as in prior years. This is the twelfth consecutive year that the value of CR has been <0.50.

4.4 Average Annual TEDE Doses

Some of the data presented in Tables 4.1, 4.2, and 4.3 are graphically displayed in Figure 4.1, where it can be seen that the average collective dose and average number of workers per BWR have been higher than those for PWRs since 1974 and that the values of both parameters, in general, continued to rise at both types of facilities until 1983. Between 1983 and 1996, the average collective dose per reactor dropped by 77%. In 1996, the collective dose per reactor for PWRs decreased by 23% to 131 person-cSv (person-rem). The collective dose per reactor for BWRs remained unchanged at 256 person-cSv (person-rem) in 1996. The overall collective dose per reactor for LWRs decreased by 13% to 173 person-cSv (person-rem) in 1996. The number of workers with measurable dose per reactor increased to 1,017 for BWRs but decreased to 650 for PWRs in 1996. The overall decreasing trend in average reactor collective doses since 1983 indicates that licensees are continuing to successfully implement ALARA dose reduction features at their facilities.

Figures 4.2 and 4.3 are plots of most of the other information that is given in Tables 4.1, 4.2, and 4.3. The value for the total collective dose for all LWRs decreased by 13% from a value of 21,674 person-cSv (person-rem) in 1995 to 18,874 person-cSv (person-rem) in 1996. Together with the decrease in the number of workers with measurable dose, this resulted in the average measurable dose per worker decreasing to 0.22 cSv (rem) in 1996. Figure 4.2 shows that in 1996 the gross electricity generated was 79,660 megawatt-years.

TABLE 4.4

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

1977 - 1996

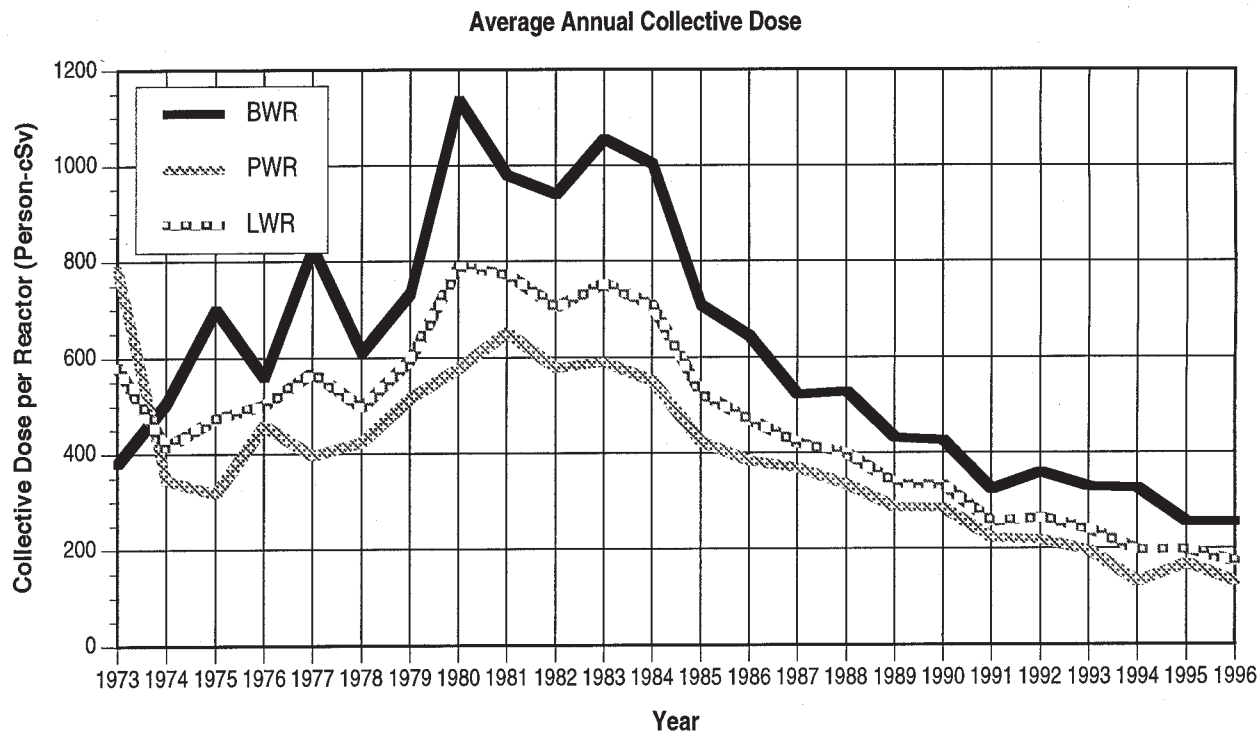
Year	Number of Individuals with Whole Body Doses in the Ranges (cSv or rem)																	Total Number Monitored	Number with Measurable Exposure	Collective Dose** (person-cSv or rem)	CR***
	No Meas'ble Exposure	Meas'ble <0.10	0.10-0.25	0.25-0.5	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0	10.0-12.0	>12				
1977	23,562	12,395	6,030	4,518	2,890	2,220	5,649	2,856	1,288	661	186	89	47	23	6			62,420	38,858	32,508	0.65
1978	28,372	15,101	6,342	4,998	3,088	2,247	5,995	3,034	1,197	514	109	37	9	0	1	0	2	71,046	42,674	31,801	0.61
1979	43,330	22,508	8,985	7,469	4,797	3,259	7,572	3,404	1,400	545	117	42	17	3	1			103,449	60,119	39,982	0.57
1980	50,873	26,903	10,676	8,904	5,570	4,134	10,671	4,607	1,816	831	235	119	29	7	1			125,376	74,503	53,795	0.59
1981	39,265	26,836	11,226	9,330	6,042	4,497	11,170	4,811	1,999	533	103	93	9	3	1	0	1	115,919	76,654	54,144	0.57
1982	41,713	29,225	11,713	9,903	6,229	4,420	10,220	4,716	2,066	596	97	31	5	0	1	1		120,936	79,223	52,190	0.58
1983	47,048	29,107	11,195	9,344	5,851	4,276	11,345	5,332	2,269	716	121	38	8	2				126,652	79,604	56,472	0.60
1984	54,670	36,296	13,427	10,275	6,336	4,804	11,283	5,206	2,122	487	52	22						144,980	90,310	55,235	0.57
1985	59,634	36,831	13,008	11,041	6,627	4,547	10,040	3,575	1,001	157	1							146,462	86,828	43,042	0.48
1986	67,701	41,467	14,570	11,842	7,016	4,693	10,241	3,062	868	146								161,606	93,905	42,381	0.45
1987	85,181	41,222	15,834	12,839	7,586	5,332	10,611	2,192	477	69								181,343	96,162	40,401	0.38
1988	87,254	40,225	15,913	13,153	7,903	5,461	10,310	2,442	511	26		1						183,199	95,945	40,769	0.39
1989	83,947	45,282	17,267	13,777	7,945	5,137	8,634	1,614	370	34								184,007	100,060	35,930	0.33
1990	83,873	42,607	17,529	14,192	8,226	5,260	8,594	1,794	335	21								182,431	98,558	36,592	0.33
1991	87,250	42,587	16,764	13,184	7,187	4,194	5,975	938	219	17								178,315	91,065	28,527	0.27
1992	87,717	41,934	17,822	14,777	8,134	4,520	6,076	808	85	4								181,877	94,160	29,294	0.24
1993	83,069	37,331	17,235	13,733	7,562	4,289	5,322	638	76	5								169,260	86,191	26,363	0.22
1994	68,927	31,100	15,750	12,386	6,362	3,655	4,092	415	20									142,707	73,780	21,695	0.08
1995	62,080	29,681	15,152	12,083	6,146	3,306	3,905	590	121	2								133,066	70,986	21,674	0.06
1996	59,238	30,432	14,626	11,248	5,389	2,823	3,186	409	69									127,420	68,182	18,874	0.05

*Summary of reports submitted in accordance with 10 CFR 20.407 or 20.2206 (since 1994) by only those plants that had been in commercial operation for at least 1 full year as of December 31 of each of the indicated years. Figures shown have been adjusted for the multiple reporting of transient individuals (see Section 5).

** The collective dose, when not reported by the licensee, was calculated by the NRC staff using methods described in Section 3.1.4.

***CR is the ratio of annual collective dose delivered at individual doses exceeding 1.5 cSv (rem) to the total annual collective dose. For 1994 - 1996, CR was determined directly from individual dose records submitted under 10 CFR 20.2206.

Figure 4.1
Average Collective Dose and Number of Workers per Reactor 1973 – 1996



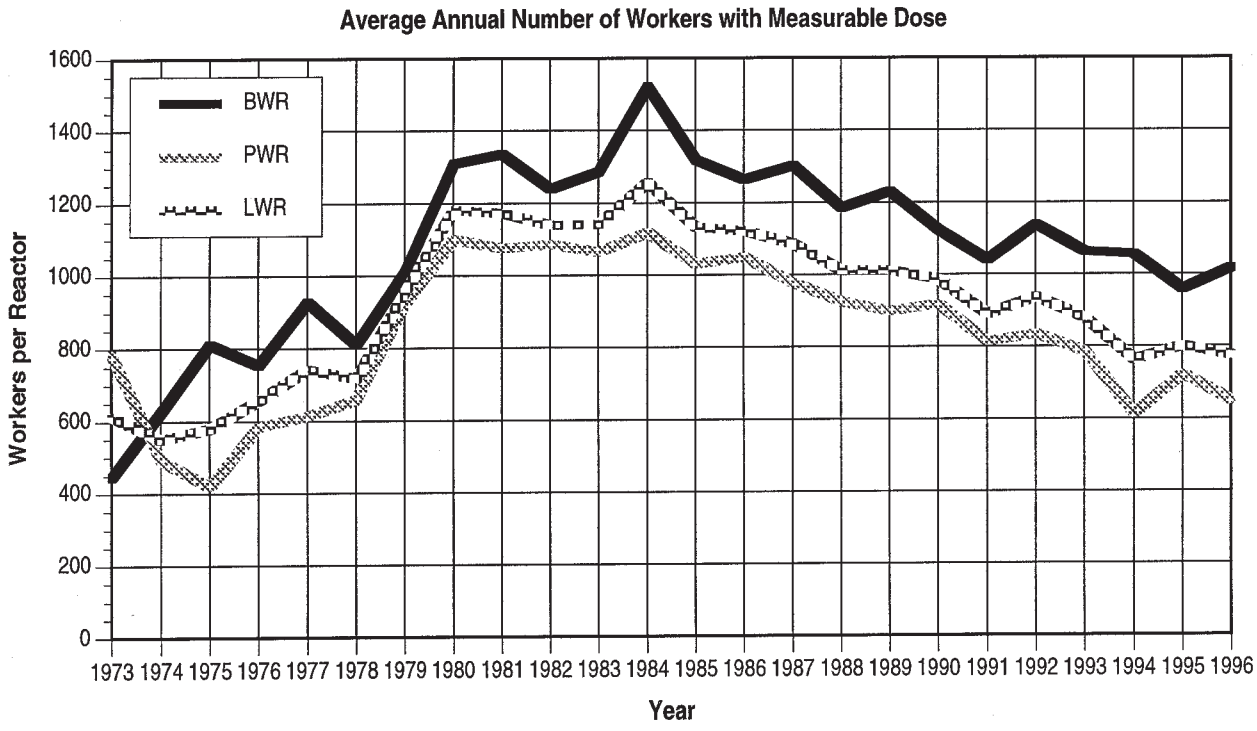
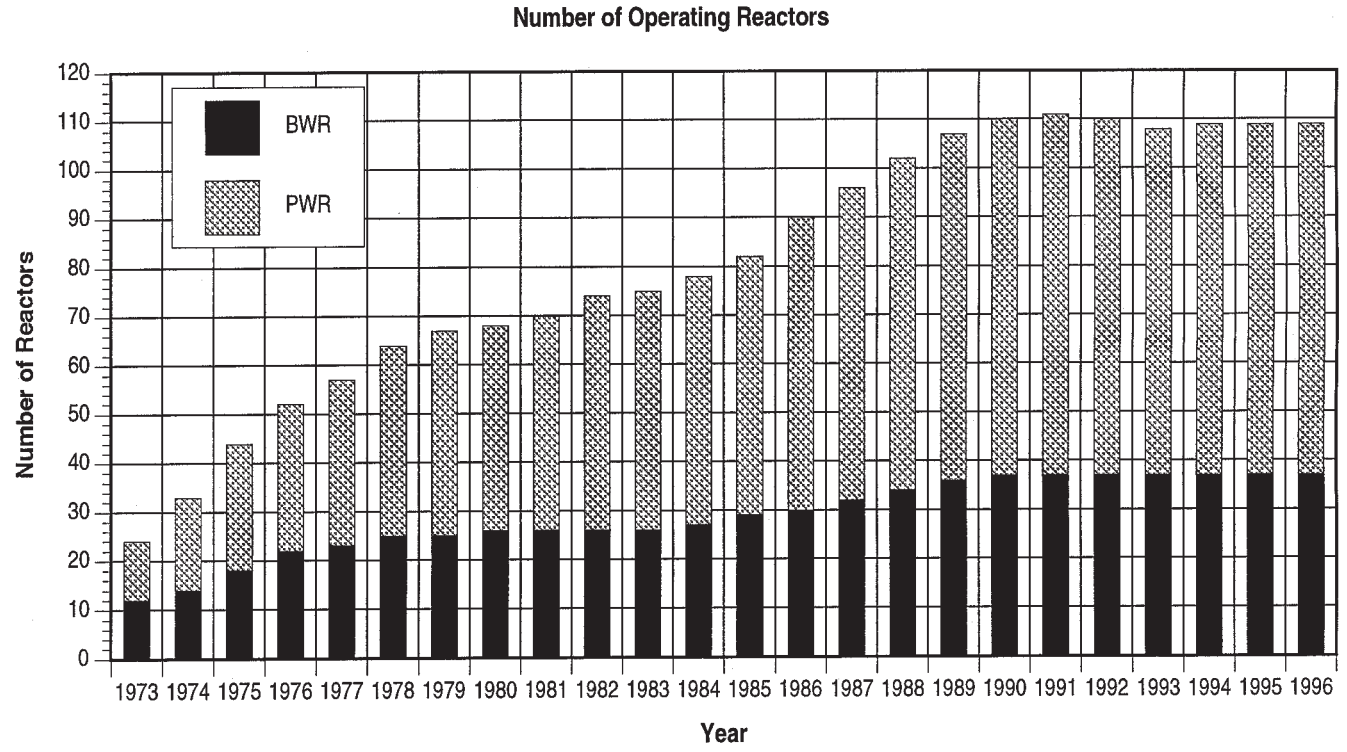


Figure 4.2
Number of Operating Reactors and Gross Electricity Generated 1973 – 1996



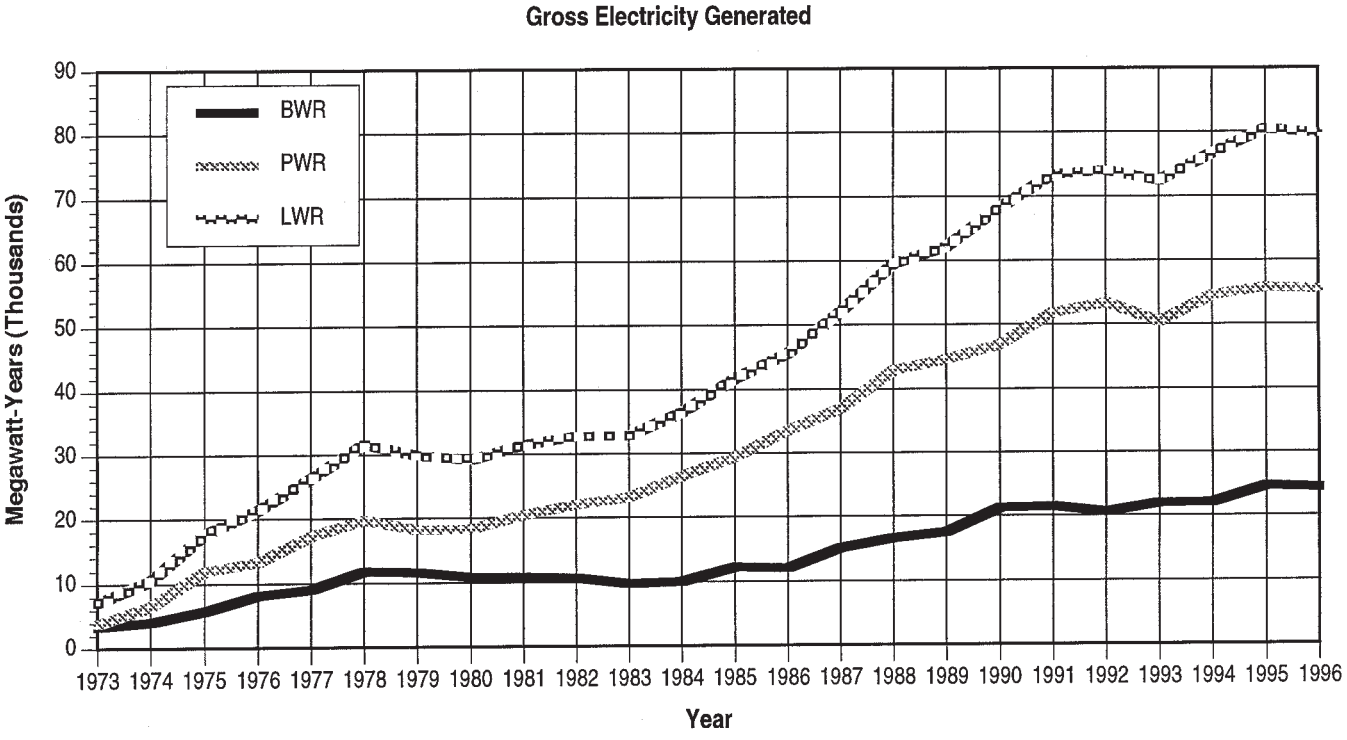
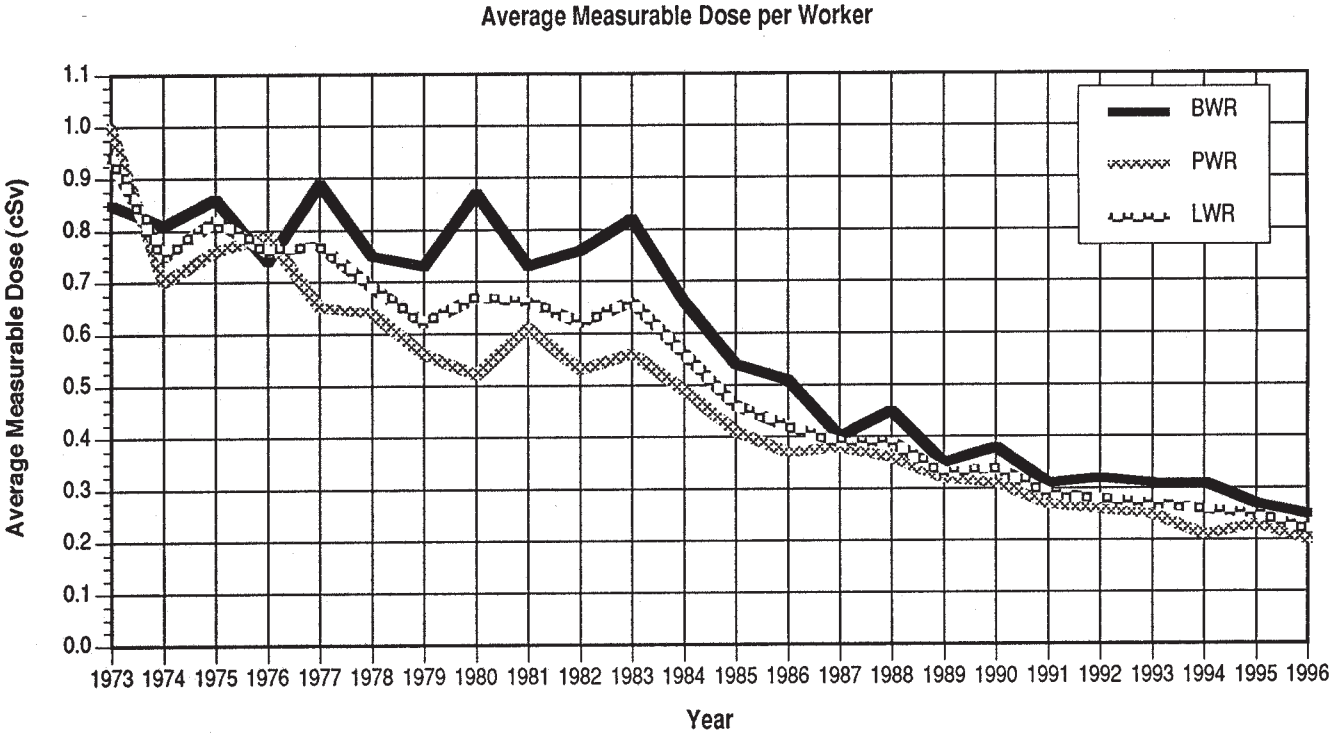
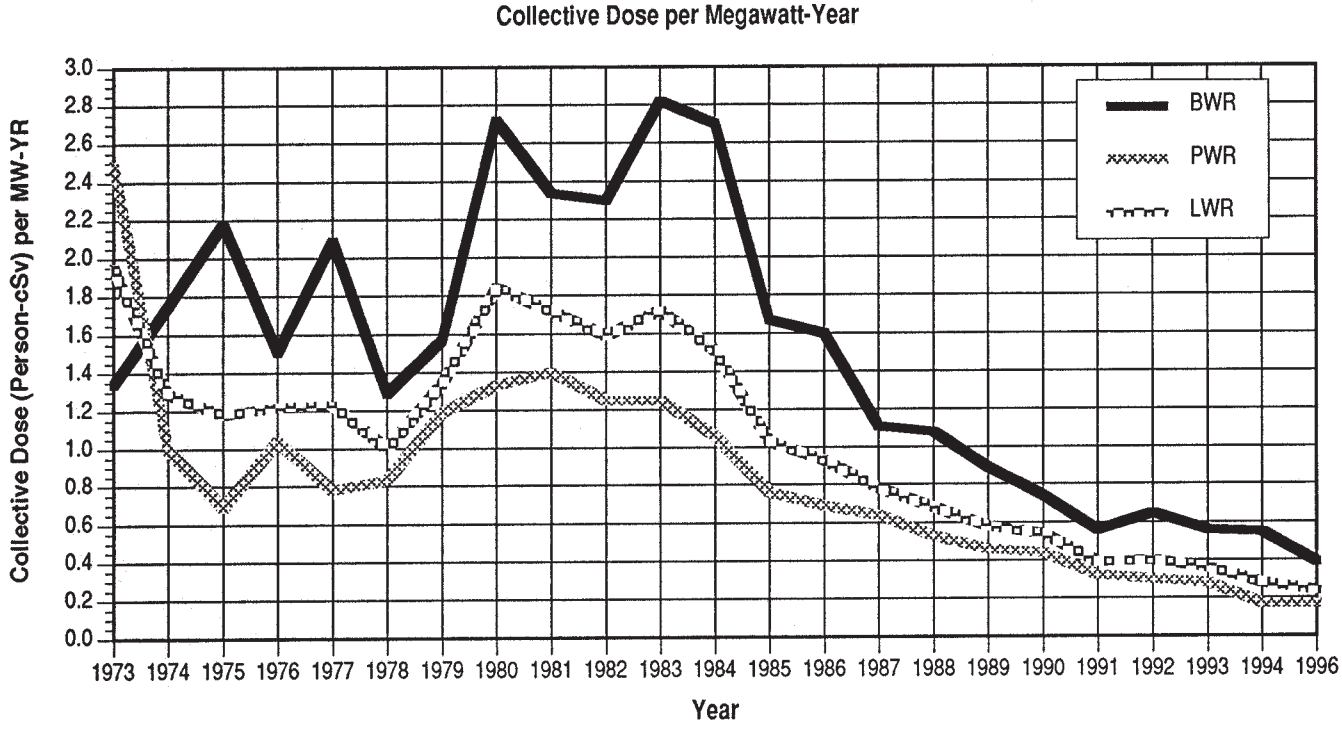


Figure 4.3
Average Measurable Dose per Worker and Collective Dose per Megawatt-Year 1973 – 1996



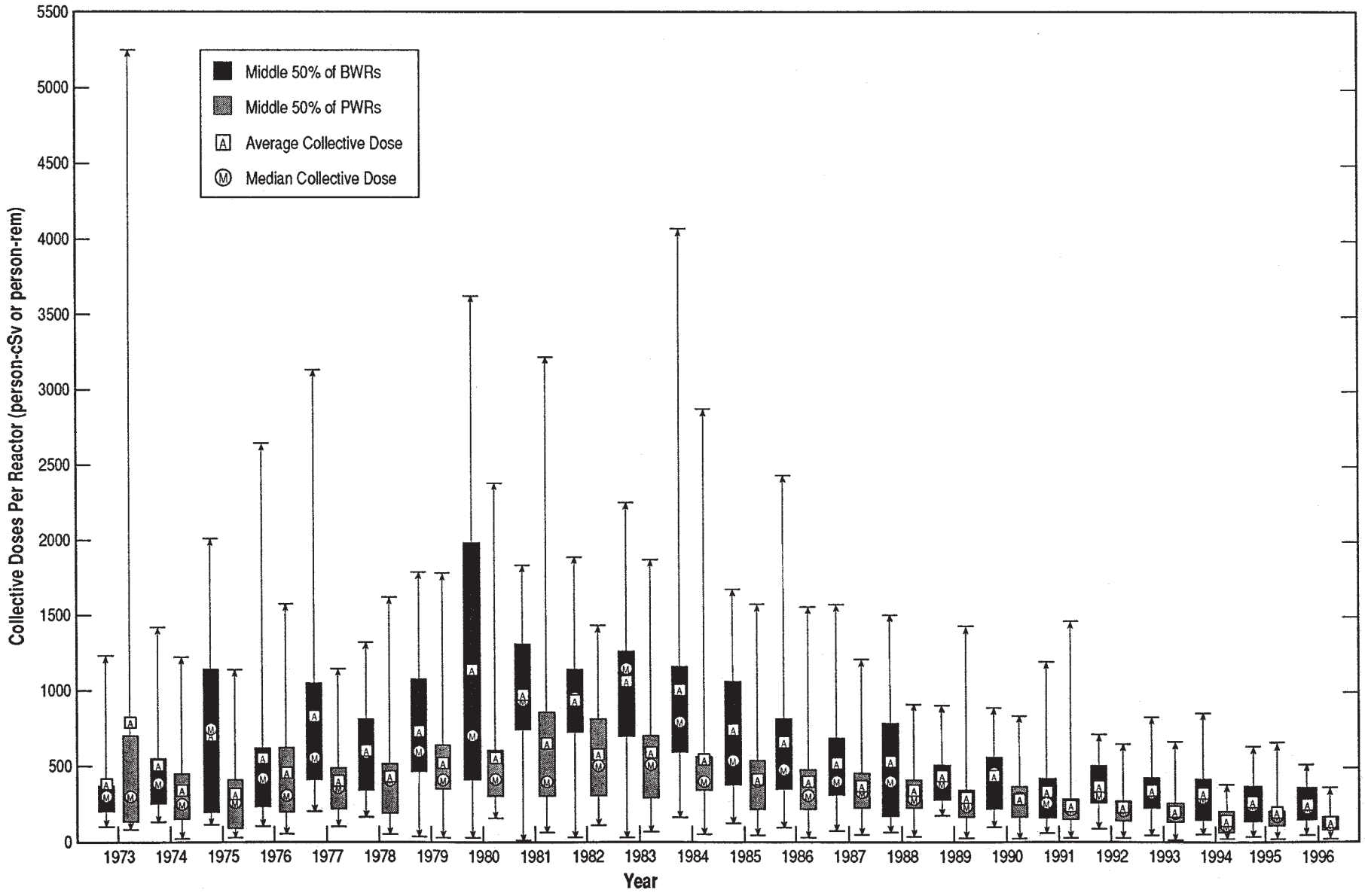


The fluctuations in the parameters for the years following the accident at the TMI plant in 1979 may reflect some of the impact that this incident had on the nuclear power industry. The decrease seen in dose trends since 1983 may be attributable to several factors. Utilities have completed most of the tasks initiated as a result of the lessons learned from the Three Mile Island accident, and they are increasing efforts to avoid and reduce exposure. The importance of exposure control and the concept of keeping exposures to ALARA levels is continually being stressed, and most utilities have established programs to collect and share information relative to tasks, techniques, and exposures.

To further assist in the identification of any trends that might exist, Figure 4.4 displays the average and median[9] values of the collective dose per reactor for BWRs and for PWRs for the years 1973 through 1996. 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. Since the median values usually are not as greatly affected by the extreme values of the collective doses, they do not normally fluctuate as much from year to year as do the average values. The median collective dose for PWRs experienced a decrease from 146 person-cSv (person-rem) in 1995 to 120 person-cSv (person-rem) in 1996. At BWRs, the median fluctuates more from year to year, and in 1996 the median collective dose decreased to 228 person-cSv (person-rem). Figure 4.4 also shows that, in 1996, 50% of the PWRs reported collective doses between 88 and 167 person-cSv (person-rem) while 50% of the BWRs reported collective doses between 145 and 358 person-cSv (person-rem). Nearly every year, 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).

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

Figure 4.4
Average, Median, and Extreme Values of the Collective Dose Per Reactor 1973 – 1996



4.5 Plant Rankings by Collective Dose per Reactor

Because the number of reactors from which data have been collected is still statistically rather small, 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 4.5 and 4.6 list the BWRs and PWRs in ascending order of collective dose per reactor for each of the 5 years from 1992 through 1996. The total collective dose per site is listed in the tables even though the dose per reactor was used for all ranking. Two other parameters, average measurable dose per worker and collective dose per megawatt-year, are also given for each plant. Also shown is a parameter CR, which is defined as the ratio of the annual collective dose delivered at individual doses exceeding 1.5 cSv (rem) to the total annual collective dose. The value of CR has continued to decline for most plants, and in 1996, the CR for all the U.S. LWRs fell between 0.05 and 0.50, the range recommended by the UNSCEAR [Ref. 10]. Note that for 1994 through 1996, the CR value was determined directly from the individual radiation exposure records submitted under 10 CFR 20.2206 (Form 5) rather than calculating the value from the statistical dose distribution summary (see Section 3.1.8).

In 1996, the five BWR sites with the highest collective doses all exceeded 409 person-cSv (person-rem) per reactor (Table 4.5). These reactors were Lasalle 1 and 2, Millstone Point 1, Oyster Creek, River Bend, and Quad Cities. Although the seven reactors at these five sites represented only 19% of the 37 BWRs, they contributed 34% of the total collective dose incurred at BWRs in 1996.

Some of the activities that contributed to the collective dose accumulated at the BWR site with the highest collective dose per reactor [Quad Cities 1 and 2 with 1,025 person-cSv (person-rem)] were valve repair, reactor water cleanup system replacement, in-service inspection, and residual heat removal room structural modifications.

In 1996, the five PWR sites with the highest collective doses all exceeded 226 person-cSv (person-rem) per reactor (Table 4.6). These reactors were Vogtle 1 and 2, Byron 1 and 2, Callaway, Palisades, and Crystal River 3. Although representing 10% of the 72 PWRs included in 1996, they contributed 19% of the total collective dose at PWRs. Much of the collective dose accumulated at the plant with the highest dose per reactor in 1996 [Crystal River 3 with 353 person-cSv (person-rem)] was attributed to reactor head work, steam generator work, health physics activities, scaffolding work, and system maintenance.

TABLE 4.5
BOILING WATER REACTORS LISTED IN ASCENDING ORDER OF COLLECTIVE DOSE PER REACTOR***
1992 - 1996

1992				
Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
COOPER STATION	84	0.18	0.1	0.07
MILLSTONE POINT 1	99	0.28	0.2	0.47
MONTICELLO	114	0.25	0.2	0.19
LIMERICK 1,2	330	0.21	0.2	0.06
BROWNS FERRY 1,2,3	516	0.19	0.5	0.04
FERMI 2	245	0.20	0.3	0.01
PEACH BOTTOM 2,3	502	0.26	0.3	0.16
HATCH 1,2	550	0.34	0.4	0.16
BIG ROCK POINT	277	0.56	8.5	0.52
PILGRIM	281	0.21	0.5	0.02
NINE MILE POINT 1,2	563	0.31	0.6	0.17
DRESDEN 2,3	619	0.34	0.7	0.22
BRUNSWICK 1,2	623	0.23	1.7	0.16
SUSQUEHANNA 1,2	724	0.38	0.5	0.23
VERMONT YANKEE	381	0.41	0.9	0.19
CLINTON	431	0.36	0.7	0.12
HOPE CREEK 1	436	0.26	0.5	0.18
GRAND GULF	484	0.24	0.5	0.14
DUANE ARNOLD	502	0.48	1.2	0.28
PERRY	571	0.38	0.7	0.15
QUAD CITIES 1,2	1,157	0.48	1.2	0.31
LASALLE 1,2	1,167	0.48	0.8	0.32
WASHINGTON NUCLEAR 2	612	0.41	0.9	0.24
OYSTER CREEK	657	0.24	1.2	0.16
FITZPATRICK	674	0.28	---	0.24
RIVER BEND 1	710	0.35	2.1	0.21

1993				
Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
FERMI 2	35	0.10	0.0	0.00
MILLSTONE POINT 1	81	0.27	0.1	0.15
HOPE CREEK 1	98	0.14	0.1	0.05
LIMERICK 1,2	217	0.17	0.1	0.02
BIG ROCK POINT	152	0.36	3.0	0.26
SUSQUEHANNA 1,2	335	0.23	0.2	0.05
RIVER BEND 1	180	0.21	0.3	0.14
VERMONT YANKEE	217	0.26	0.5	0.08
FITZPATRICK	232	0.16	0.4	0.14
PEACH BOTTOM 2,3	552	0.31	0.3	0.17
PERRY	278	0.23	0.6	0.03
BROWNS FERRY 1,2,3	870	0.24	1.3	0.08
NINE MILE POINT 1,2	633	0.27	0.5	0.14
GRAND GULF	332	0.18	0.4	0.07
HATCH 1,2	669	0.39	0.6	0.18
COOPER STATION	391	0.35	0.9	0.20
DUANE ARNOLD	407	0.39	1.0	0.34
OYSTER CREEK	416	0.16	0.8	0.07
QUAD CITIES 1,2	849	0.39	0.9	0.24
LASALLE 1,2	854	0.50	0.6	0.33
PILGRIM	435	0.33	0.8	0.03
BRUNSWICK 1,2	872	0.30	1.9	0.17
WASHINGTON NUCLEAR 2	469	0.34	0.6	0.19
MONTICELLO	494	0.52	1.1	0.30
CLINTON	498	0.40	0.7	0.09
DRESDEN 2,3	1,655	0.60	1.7	0.38

1994				
Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
VERMONT YANKEE	38	0.17	0.1	0.00
GRAND GULF	56	0.12	0.0	0.03
CLINTON	63	0.15	0.1	0.00
NINE MILE POINT 1,2	149	0.19	0.1	0.02
COOPER STATION	79	0.24	0.3	0.00
BIG ROCK POINT	119	0.38	2.4	0.14
DUANE ARNOLD	120	0.24	0.2	0.03
LIMERICK 1,2	275	0.18	0.1	0.00
PILGRIM	200	0.26	0.4	0.00
FERMI 2	213	0.19	---	0.00
SUSQUEHANNA 1,2	442	0.28	0.2	0.02
BROWNS FERRY 1,2,3	855	0.26	1.0	0.05
PEACH BOTTOM 2,3	579	0.27	0.3	0.09
FITZPATRICK	322	0.20	0.5	0.10
HOPE CREEK 1	326	0.18	0.4	0.05
LASALLE 1,2	726	0.40	0.5	0.08
MILLSTONE POINT 1	391	0.30	1.0	0.01
MONTICELLO	395	0.50	0.8	0.17
DRESDEN 2,3	833	0.36	1.2	0.05
HATCH 1,2	864	0.39	0.7	0.20
BRUNSWICK 1,2	999	0.33	0.8	0.05
RIVER BEND 1	519	0.23	0.9	0.06
QUAD CITIES 1,2	1,128	0.52	1.7	0.31
PERRY	691	0.33	1.3	0.03
OYSTER CREEK	844	0.35	2.0	0.24
WASHINGTON NUCLEAR 2	866	0.46	1.1	0.20

1995				
Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
FERMI 2	28	0.07	0.0	0.00
MONTICELLO	44	0.22	0.1	0.00
BIG ROCK POINT	54	0.26	0.9	0.18
PERRY	64	0.11	0.1	0.00
RIVER BEND 1	85	0.13	0.1	0.00
OYSTER CREEK	90	0.12	0.1	0.00
LIMERICK 1,2	260	0.16	0.1	0.02
BROWNS FERRY 1,2,3	409	0.16	0.4	0.00
VERMONT YANKEE	182	0.25	0.4	0.00
HOPE CREEK 1	196	0.13	0.2	0.07
PEACH BOTTOM 2,3	398	0.21	0.2	0.03
COOPER STATION	228	0.21	0.5	0.02
SUSQUEHANNA 1,2	476	0.27	0.3	0.05
HATCH 1,2	488	0.33	0.4	0.10
LASALLE 1,2	512	0.32	0.3	0.02
CLINTON	316	0.27	0.4	0.01
FITZPATRICK	327	0.26	0.6	0.03
BRUNSWICK 1,2	683	0.26	0.5	0.00
GRAND GULF	342	0.22	0.4	0.01
DUANE ARNOLD	357	0.32	0.8	0.01
QUAD CITIES 1,2	736	0.36	0.7	0.01
NINE MILE POINT 1,2	759	0.33	0.5	0.12
DRESDEN 2,3	875	0.35	1.4	0.07
WASHINGTON NUCLEAR 2	456	0.27	0.6	0.03
PILGRIM	482	0.37	0.9	0.00
MILLSTONE POINT 1	620	0.68	1.2	0.16

1996				
Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
COOPER STATION	48	0.10	0.1	0.00
PILGRIM	116	0.22	0.2	0.00
LIMERICK 1,2	234	0.14	0.1	0.00
BROWNS FERRY 1,2,3	384	0.22	0.2	0.02
PEACH BOTTOM 2,3	282	0.17	0.1	0.02
SUSQUEHANNA 1,2	289	0.20	0.1	0.02
NINE MILE POINT 1,2	290	0.18	0.2	0.02
FERMI 2	157	0.11	0.3	0.00
HOPE CREEK 1	158	0.15	0.2	0.01
BIG ROCK POINT	208	0.60	4.7	0.23
HATCH 1,2	441	0.29	0.3	0.05
DRESDEN 2,3	456	0.26	0.7	0.00
VERMONT YANKEE	231	0.24	0.5	0.00
MONTICELLO	240	0.32	0.5	0.06
DUANE ARNOLD	270	0.25	0.6	0.06
PERRY	307	0.19	0.3	0.00
CLINTON	350	0.30	0.6	0.06
FITZPATRICK	357	0.26	0.6	0.02
GRAND GULF	357	0.23	0.3	0.03
BRUNSWICK 1,2	716	0.26	0.6	0.09
WASHINGTON NUCLEAR 2	373	0.26	0.6	0.02
LASALLE 1,2	819	0.29	0.8	0.03
MILLSTONE POINT 1	431	0.58	---	0.17
OYSTER CREEK	449	0.24	0.9	0.07
RIVER BEND 1	473	0.23	0.6	0.07
QUAD CITIES 1,2	1,025	0.46	1.2	0.08

* For sites with more than one operating reactor, the collective dose per reactor is obtained by dividing the collective dose for the site by the number of reactors.

** CR is the ratio of the annual collective dose delivered at individual doses exceeding 1.5 cSv (rems) to the collective dose. For '94 - '96 data, the CR value was determined from the individual Form 5 submittals.

*** All doses are in cSv (rems).

TABLE 4.6
PRESSURIZED WATER REACTORS LISTED IN ASCENDING ORDER OF COLLECTIVE DOSE PER REACTOR***
1992 - 1996

1992

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Y	CR**
DAVIS-BESSE	19	0.07	0.0	0.00
SUMMER 1	27	0.11	0.0	0.00
THREE MILE ISLAND 1	34	0.06	0.0	0.00
SOUTH TEXAS 1,2	147	0.16	0.1	0.01
WOLF CREEK 1	78	0.17	0.1	0.12
TROJAN	84	0.15	0.2	0.03
INDIAN POINT 2	97	0.20	0.1	0.13
BYRON 1,2	199	0.19	0.1	0.02
PRAIRIE ISLAND 1,2	211	0.25	0.3	0.10
SAN ONOFRE 1,2,3	324	0.20	0.1	0.02
BRAIDWOOD 1,2	228	0.22	0.1	0.05
KEWAUNEE	122	0.27	0.3	0.07
POINT BEACH 1,2	256	0.41	0.3	0.24
ST. LUCIE 1,2	264	0.21	0.2	0.04
BEAVER VALLEY 1,2	289	0.20	0.2	0.06
SEABROOK	147	0.18	0.2	0.01
TURKEY POINT 3,4	325	0.24	0.3	0.11
CALVERT CLIFFS 1,2	330	0.17	0.3	0.16
PALO VERDE 1,2,3	541	0.27	0.2	0.19
COMANCHE PEAK	188	0.17	0.2	0.02
MCGUIRE 1,2	386	0.24	0.2	0.13
CATAWBA 1,2	394	0.26	0.2	0.05
HADDAM NECK	202	0.25	0.4	0.08
INDIAN POINT 3	212	0.21	0.4	0.04
HARRIS	213	0.23	0.3	0.07
VOGTLE 1,2	426	0.34	0.2	0.10
SALEM 1,2	431	0.10	0.4	0.06
OCONEE 1,2,3	649	0.33	0.3	0.10
WATERFORD 3	226	0.19	0.2	0.05
DIABLO CANYON 1,2	459	0.25	0.2	0.09
SEQUOYAH 1,2	465	0.27	0.3	0.09
COOK 1,2	492	0.25	0.6	0.12
GINNA	261	0.31	0.6	0.09
SURRY 1,2	539	0.32	0.4	0.15
FORT CALHOUN	272	0.34	0.9	0.10
NORTH ANNA 1,2	576	0.27	0.4	0.27
PALISADES	295	0.23	0.5	0.18
CALLAWAY 1	336	0.30	0.3	0.12
ROBINSON 2	352	0.28	0.7	0.09
FARLEY 1,2	805	0.40	0.6	0.28
CRYSTAL RIVER 3	424	0.30	0.7	0.16
ARKANSAS 1,2	876	0.28	0.6	0.18
MAINE YANKEE	461	0.39	0.7	0.17
ZION 1,2	1,043	0.60	0.9	0.44
MILLSTONE POINT 2,3	1,280	0.40	1.1	0.33

1993

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
SEABROOK	6	0.05	0.0	0.00
WATERFORD 3	15	0.08	0.0	0.00
COOK 1,2	44	0.07	0.0	0.00
HARRIS	31	0.09	0.0	0.00
PRAIRIE ISLAND 1,2	106	0.20	0.1	0.00
COMANCHE PEAK 1,2	109	0.12	0.1	0.03
CRYSTAL RIVER 3	60	0.09	0.1	0.00
INDIAN POINT 3	60	0.13	0.4	0.00
OCONEE 1,2,3	237	0.16	0.1	0.00
POINT BEACH 1,2	186	0.33	0.2	0.16
KEWAUNEE	106	0.24	0.2	0.06
SOUTH TEXAS 1,2	251	0.22	1.5	0.04
ARKANSAS 1,2	268	0.14	0.2	0.01
BRAIDWOOD 1,2	273	0.26	0.1	0.03
TURKEY POINT 3,4	275	0.22	0.2	0.08
DIABLO CANYON 1,2	281	0.19	0.1	0.03
FORT CALHOUN	157	0.22	0.4	0.01
FARLEY 1,2	333	0.26	0.2	0.12
WOLF CREEK 1	183	0.19	0.2	0.01
VOGTLE 1,2	367	0.27	0.2	0.11
SEQUOYAH 1,2	372	0.23	0.9	0.08
SURRY 1,2	383	0.27	0.3	0.09
GINNA	193	0.23	0.5	0.08
PALO VERDE 1,2,3	592	0.28	0.2	0.16
CATAWBA 1,2	396	0.25	0.2	0.07
CALVERT CLIFFS 1,2	405	0.28	0.3	0.14
SALEM 1,2	408	0.11	0.3	0.07
THREE MILE ISLAND 1	206	0.11	0.3	0.01
BYRON 1,2	432	0.32	0.2	0.09
CALLAWAY 1	225	0.20	0.2	0.02
MCGUIRE 1,2	463	0.27	0.3	0.14
ST. LUCIE 1,2	492	0.34	0.4	0.16
SAN ONOFRE 1,2,3	767	0.35	0.4	0.14
MILLSTONE POINT 2,3	557	0.27	0.4	0.16
PALISADES	289	0.32	0.7	0.13
SUMMER 1	297	0.26	0.4	0.08
BEAVER VALLEY 1,2	621	0.30	0.5	0.12
ZION 1,2	643	0.36	0.4	0.22
ROBINSON 2	337	0.28	0.7	0.11
DAVIS-BESSE	348	0.28	0.5	0.11
MAINE YANKEE	377	0.37	0.6	0.13
HADDAM NECK	408	0.41	0.9	0.25
NORTH ANNA 1,2	908	0.33	0.6	0.28
INDIAN POINT 2	675	0.45	1.0	0.23

1994

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Y	CR**
CALLAWAY 1	14	0.07	0.0	0.00
SAN ONOFRE 2,3	32	0.06	0.0	0.00
BEAVER VALLEY 1,2	44	0.09	0.0	0.00
FORT CALHOUN	23	0.11	0.0	0.00
SOUTH TEXAS 1,2	47	0.07	0.0	0.00
THREE MILE ISLAND 1	40	0.09	0.1	0.00
COMANCHE PEAK 1,2	90	0.09	0.1	0.02
INDIAN POINT 2	48	0.13	0.1	0.06
PRAIRIE ISLAND 1,2	109	0.23	0.1	0.00
INDIAN POINT 3	58	0.11	---	0.00
PALISADES	60	0.15	0.1	0.00
ROBINSON 2	63	0.15	0.1	0.00
KEWAUNEE	72	0.20	0.2	0.00
MAINE YANKEE	84	0.28	0.1	0.02
POINT BEACH 1,2	170	0.31	0.2	0.01
ARKANSAS 1,2	172	0.13	0.1	0.00
MILLSTONE POINT 2,3	188	0.15	0.1	0.01
SALEM 1,2	188	0.20	0.1	0.05
NORTH ANNA 1,2	193	0.19	0.1	0.00
CATAWBA 1,2	207	0.16	0.1	0.01
VOGTLE 1,2	217	0.21	0.1	0.01
SEABROOK	113	0.13	0.2	0.00
FARLEY 1,2	125	0.24	0.2	0.03
HADDAM NECK	135	0.29	0.3	0.17
GINNA	138	0.20	0.3	0.00
BYRON 1,2	280	0.29	0.1	0.02
DAVIS-BESSE	144	0.17	0.2	0.00
SEQUOYAH 1,2	292	0.18	0.2	0.02
BRAIDWOOD 1,2	298	0.24	0.2	0.01
ZION 1,2	306	0.26	0.2	0.02
PALO VERDE 1,2,3	462	0.23	0.2	0.07
OCONEE 1,2,3	537	0.28	0.3	0.08
SURRY 1,2	378	0.25	0.3	0.00
WATERFORD 3	191	0.16	0.2	0.00
MCGUIRE 1,2	397	0.24	0.2	0.07
HARRIS	222	0.20	0.3	0.00
CALVERT CLIFFS 1,2	454	0.31	0.3	0.00
CRYSTAL RIVER 3	228	0.21	0.3	0.02
WOLF CREEK 1	235	0.22	0.2	0.01
TURKEY POINT 3,4	476	0.32	0.4	0.03
COOK 1,2	479	0.27	0.4	0.01
ST. LUCIE 1,2	505	0.27	0.4	0.05
DIABLO CANYON 1,2	590	0.25	0.3	0.05
SUMMER 1	374	0.24	0.7	0.00

1995

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Y	CR**
DAVIS-BESSE	7	0.03	0.0	0.00
CRYSTAL RIVER 3	8	0.04	0.0	0.00
SUMMER 1	13	0.05	0.0	0.00
WOLF CREEK 1	14	0.06	0.0	0.00
PRAIRIE ISLAND 1,2	107	0.21	0.1	0.00
INDIAN POINT 3	67	0.11	0.4	0.00
MCGUIRE 1,2	138	0.11	0.1	0.00
COMANCHE PEAK 1,2	179	0.19	0.1	0.00
POINT BEACH 1,2	190	0.35	0.2	0.04
VOGTLE 1,2	199	0.21	0.1	0.00
OCONEE 1,2,3	304	0.19	0.1	0.09
COOK 1,2	203	0.15	0.1	0.00
SEABROOK	102	0.13	0.1	0.00
TURKEY POINT 3,4	215	0.19	0.2	0.00
KEWAUNEE	109	0.26	0.2	0.00
SALEM 1,2	218	0.17	0.4	0.02
CALVERT CLIFFS 1,2	235	0.20	0.2	0.00
BRAIDWOOD 1,2	236	0.21	0.1	0.01
GINNA	136	0.18	0.3	0.06
FORT CALHOUN	139	0.22	0.3	0.00
DIABLO CANYON 1,2	286	0.18	0.1	0.06
SOUTH TEXAS 1,2	291	0.20	0.1	0.00
BYRON 1,2	306	0.28	0.2	0.06
WATERFORD 3	153	0.14	0.2	0.00
PALO VERDE 1,2,3	482	0.26	0.1	0.05
HARRIS	174	0.16	0.2	0.01
SEQUOYAH 1,2	358	0.22	0.2	0.02
NORTH ANNA 1,2	367	0.24	0.2	0.05
CALLAWAY 1	187	0.18	0.2	0.00
ARKANSAS 1,2	386	0.17	0.3	0.03
SURRY 1,2	406	0.22	0.3	0.10
ST. LUCIE 1,2	413	0.28	0.3	0.07
MILLSTONE POINT 2,3	416	0.25	0.3	0.51
THREE MILE ISLAND 1	213	0.17	0.3	0.00
ROBINSON 2	215	0.20	0.3	0.00
BEAVER VALLEY 1,2	453	0.29	0.3	0.02
SAN ONOFRE 1,2,3	455	0.24	0.3	0.00
CATAWBA 1,2	462	0.24	0.2	0.03
FARLEY 1,2	463	0.29	0.4	0.08
ZION 1,2	797	0.44	0.5	0.15
HADDAM NECK	442	0.44	1.0	0.14
PALISADES	462	0.38	0.8	0.10
INDIAN POINT 2	548	0.32	0.9	0.07
MAINE YANKEE	653	0.56	27.7	0.26

1996

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
SEABROOK	10	0.05	0.0	0.00
THREE MILE ISLAND 1	16	0.06	0.0	0.00
HARRIS	17	0.04	0.0	0.00
INDIAN POINT 3	22	0.08	0.0	0.00
WATERFORD 3	27	0.08	0.0	0.00
INDIAN POINT 2	54	0.14	0.1	0.00
MAINE YANKEE	56	0.14	0.1	0.00
PRAIRIE ISLAND 1,2	112	0.20	0.1	0.00
MILLSTONE POINT 2,3	126	0.13	0.3	0.17
SAN ONOFRE 2,3	129	0.10	0.1	0.00
SOUTH TEXAS 1,2	137	0.12	0.1	0.00
OCONEE 1,2,3	257	0.17	0.1	0.00
DIABLO CANYON 1,2	176	0.12	0.1	0.00
TURKEY POINT 3,4	187	0.16	0.1	0.00
SUMMER 1	97	0.14	0.1	0.00
PALO VERDE 1,2,3	302	0.18	0.1	0.00
ARKANSAS 1,2	203	0.14	0.1	0.02
SURRY 1,2	209	0.21	0.1	0.07
COOK 1,2	214	0.19	0.1	0.00
FARLEY 1,2	232	0.20	0.2	0.09
MCGUIRE 1,2	238	0.15	0.1	0.00
CALVERT CLIFFS 1,2	239	0.20	0.2	0.00
KEWAUNEE	126	0.27	0.3	0.03
SEQUOYAH 1,2	265	0.19	0.1	0.00
POINT BEACH 1,2	276	0.27	0.3	0.01
COMANCHE PEAK 1,2	288	0.20	0.2	0.00
NORTH ANNA 1,2	291	0.24	0.2	0.05
SALEM 1,2	300	0.18	---	0.01
CATAWBA 1,2	302	0.19	0.2	0.01
BRAIDWOOD 1,2	334	0.25	0.2	0.00
DAVIS-BESSE	167	0.18	0.2	0.00
ROBINSON 2	167	0.16	0.3	0.00
GINNA	168	0.17	0.5	0.00
WOLF CREEK 1	171	0.17	0.2	0.00
HADDAM NECK	175	0.26	0.5	0.06
ST. LUCIE 1,2	385	0.27	0.3	0.06
ZION 1,2	437	0.28	0.3	0.05
BEAVER VALLEY 1,2	449	0.27	0.4	0.05
FORT CALHOUN	226	0.31	0.6	0.00
VOGTLE 1,2	452	0.32	0.2	0.09
BYRON 1,2	455	0.28	0.3	0.03
CALLAWAY 1	248	0.25	0.2	0.12
PALISADES	318	0.29	0.5	0.13
CRYSTAL RIVER 3	353	0.30	1.2	0.05

* For sites with more than one operating reactor, the collective dose per reactor is obtained by dividing the collective dose for the site by the number of reactors.

** CR is the ratio of the annual collective dose delivered at individual doses exceeding 1.5 cSv (rems) to the collective dose. For '94 - '96 data, the CR value was determined from the individual Form 5 submittals.

*** All doses are in cSv (rems).

Tables 4.7a and b list the sites that had been in commercial operation for at least 5 years as of December 31, 1996, and show the values of several parameters for each of the sites. They also give averages for the two types of reactors. Based on the 185 reactor-years of operation accumulated by the 37 BWRs listed, the average annual collective dose per reactor was found to be 306 person-cSv (person-rem), the average measurable dose per worker was 0.29 cSv (rem), and the average collective dose per megawatt-year was 0.5.

Based on the 351 reactor-years of operation at the 71 PWRs listed, the average annual collective dose per reactor, average measurable dose per worker, and average collective dose per megawatt-year were found to be 172 person-cSv (person-rem), 0.24 cSv (rem), and 0.2 person-cSv/MW-yr, respectively. All of these values, at both types of facilities, are lower than those found for the 5 year period ending in 1995, with the exception of the average collective dose per megawatt-year at PWRs, which remained the same.

In some cases, the plants having the lower values for most of the parameters shown in Tables 4.7a and b are the newer plants. Some of the older, smaller plants, such as Big Rock Point, also appear near the top of the listings because they report small collective doses. However, the ratio of collective dose to megawatt-years is generally higher for these plants because of their limited power generation capability.

Usually, the combination of a large annual collective dose and a large collective dose to megawatt-year ratio for a plant indicates that extensive maintenance or modifications were undertaken during the year. Jobs that were large contributors to BWR doses in 1996 included valve repair, reactor water cleanup system replacement, drywell inspections, in-service inspections, and weld overlays. At PWR facilities, the major contributors to the collective dose were refueling, steam generator work, resistance temperature detector modifications, and reactor head work.

A complete breakdown of the activities contributing to the collective dose at the ten sites with the highest dose per reactor ranking in 1996 (from Tables 4.5 and 4.6) is given in Tables 4.8a and 4.8b for BWRs and PWRs respectively. The outage dose and duration are shown as well as the collective dose for each activity.

TABLE 4.7a
5-YEAR TOTALS AND AVERAGES LISTED IN ASCENDING ORDER OF COLLECTIVE DOSE PER BWR

1992 - 1996

Site Name*	Number of Reactor Years	Annual Collective Dose per Reactor	Total Coll. Dose per Site (cSv)	Workers with Meas. Doses	Avg. Meas. Dose (cSv)	Total MW-yrs	Average Collective Dose per MW-yr
LIMERICK 1,2	10	132	1,316	7,624	0.17	9,576.8	0.1
FERMI 2	5	136	678	4,495	0.15	3,052.8	0.2
BIG ROCK POINT	5	162	810	1,777	0.46	239.4	3.4
COOPER STATION	5	166	830	3,489	0.24	2,655.8	0.3
BROWNS FERRY 1,2,3	15	202	3,034	13,840	0.22	5,648.4	0.5
VERMONT YANKEE	5	210	1,049	3,662	0.29	2,278.5	0.5
SUSQUEHANNA 1,2	10	227	2,266	8,156	0.28	8,864.7	0.3
PEACH BOTTOM 2,3	10	231	2,313	9,398	0.25	9,060.8	0.3
NINE MILE POINT 1,2	10	239	2,394	8,852	0.27	6,912.2	0.3
HOPE CREEK 1	5	243	1,214	6,801	0.18	4,392.3	0.3
MONTICELLO	5	257	1,287	3,153	0.41	2,482.7	0.5
HATCH 1,2	10	301	3,012	8,544	0.35	6,664.1	0.5
PILGRIM	5	303	1,514	5,229	0.29	2,689.6	0.6
GRAND GULF	5	314	1,571	7,447	0.21	5,094.7	0.3
MILLSTONE POINT 1	5	324	1,622	3,631	0.45	1,974.3	0.8
DUANE ARNOLD	5	331	1,656	4,801	0.34	2,236.5	0.7
CLINTON	5	332	1,658	5,237	0.32	3,538.5	0.5
PERRY	5	382	1,911	7,029	0.27	3,870.3	0.5
FITZPATRICK	5	382	1,912	8,029	0.24	2,339.4	0.8
BRUNSWICK 1,2	10	389	3,893	14,101	0.28	4,783.6	0.8
RIVER BEND 1	5	393	1,967	7,838	0.25	3,372.7	0.6
LASALLE 1,2	10	408	4,078	10,336	0.39	7,316.9	0.6
DRESDEN 2,3	10	444	4,438	11,169	0.40	3,776.7	1.2
QUAD CITIES 1,2	10	490	4,895	11,015	0.44	4,493.9	1.1
OYSTER CREEK	5	491	2,456	10,307	0.24	2,648.9	0.9
WASHINGTON NUCLEAR 2	5	555	2,776	7,891	0.35	3,821.5	0.7
Grand Totals and Averages	185		56,550	193,851	0.29	113,786.0	0.5
Averages Per Reactor-Year			306	1,048		615.1	

* Sites where not all reactors had completed 5 full years of commercial operation as of 12/31/96 are not included.

TABLE 4.7b
5-YEAR TOTALS AND AVERAGES LISTED IN ASCENDING ORDER OF COLLECTIVE DOSE PER PWR

1992 - 1996

Site Name*	Number of Reactor Years	Annual Collective Dose per Reactor	Total Coll. Dose per Site (cSv)	Workers with Meas. Doses	Avg. Meas. Dose (cSv)	Total MW-yrs	Average Collective Dose per MW-yr
PRAIRIE ISLAND 1,2	10	65	645	2,912	0.22	4,799.4	0.1
SEABROOK	5	76	378	2,774	0.14	4,901.2	0.1
INDIAN POINT 3	5	84	419	2,937	0.14	1,570.4	0.3
SOUTH TEXAS 1,2	10	87	873	5,352	0.16	8,712.6	0.1
THREE MILE ISLAND 1	5	102	509	4,314	0.12	3,985.5	0.1
KEWAUNEE	5	107	535	2,139	0.25	2,239.1	0.2
POINT BEACH 1,2	10	108	1,078	3,301	0.33	4,379.9	0.2
WATERFORD 3	5	122	612	4,009	0.15	4,936.3	0.1
HARRIS	5	131	657	3,858	0.17	3,905.0	0.2
OCONEE 1,2,3	15	132	1,984	8,441	0.24	10,863.1	0.2
WOLF CREEK 1	5	136	681	3,731	0.18	5,144.4	0.1
BRAIDWOOD 1,2	10	137	1,369	5,829	0.23	9,215.8	0.1
DAVIS-BESSE	5	137	685	3,597	0.19	4,107.2	0.2
COOK 1,2	10	143	1,432	6,713	0.21	7,383.4	0.2
TURKEY POINT 3,4	10	148	1,478	6,433	0.23	6,011.2	0.2
SALEM 1,2	10	155	1,545	11,751	0.13	4,492.7	0.3
SAN ONOFRE 1,2,3*	11	155	1,707	7,558	0.23	9,991.1	0.2
PALO VERDE 1,2,3	15	159	2,379	9,745	0.24	15,345.4	0.2
SUMMER 1	5	162	808	3,877	0.21	3,905.5	0.2
MCGUIRE 1,2	10	162	1,622	7,822	0.21	9,024.2	0.2
FORT CALHOUN	5	163	817	3,093	0.26	1,942.6	0.4
VOGTLE 1,2	10	166	1,661	5,996	0.28	10,615.0	0.2
CALVERT CLIFFS 1,2	10	166	1,663	7,293	0.23	7,052.8	0.2
BYRON 1,2	10	167	1,672	6,070	0.28	9,281.5	0.2
SEQUOYAH 1,2	10	175	1,752	8,022	0.22	7,541.5	0.2
CATAWBA 1,2	10	176	1,761	7,827	0.22	9,850.0	0.2
DIABLO CANYON 1,2	10	179	1,792	8,752	0.20	9,785.3	0.2
GINNA	5	179	896	4,081	0.22	2,026.5	0.4
BEAVER VALLEY 1,2	10	186	1,856	7,212	0.26	6,769.2	0.3
ARKANSAS 1,2	10	191	1,905	10,156	0.19	7,609.5	0.3
SURRY 1,2	10	192	1,915	7,458	0.26	6,891.9	0.3
CALLAWAY 1	5	202	1,010	4,492	0.22	5,219.5	0.2
ST. LUCIE 1,2	10	206	2,059	7,540	0.27	6,940.3	0.3
FARLEY 1,2	10	208	2,083	7,068	0.29	7,230.6	0.3
CRYSTAL RIVER 3	5	215	1,073	4,566	0.23	3,222.8	0.3
ROBINSON 2	5	227	1,134	4,997	0.23	2,821.9	0.4
NORTH ANNA 1,2	10	234	2,335	8,717	0.27	7,780.4	0.3
MILLSTONE POINT 2,3	10	257	2,567	9,178	0.28	5,892.0	0.4
HADDAM NECK	5	272	1,362	3,943	0.35	2,139.7	0.6
INDIAN POINT 2	5	284	1,422	4,462	0.32	4,044.4	0.4
PALISADES	5	285	1,424	4,911	0.29	2,768.0	0.5
ZION 1,2	10	323	3,226	8,054	0.40	6,817.7	0.5
MAINE YANKEE	5	326	1,631	4,077	0.40	2,714.2	0.6
Grand Totals and Averages	351		60,412	255,058	0.24	261,870.7	0.2
Averages Per Reactor-Year			172	727		746.1	

* Sites where not all reactors had completed 5 full years of commercial operation as of 12/31/96 are not included. San Onofre is included in the compilation even though Unit 1 is no longer in operation.

TABLE 4.8a
ACTIVITIES CONTRIBUTING TO HIGH COLLECTIVE DOSES AT SELECTED PLANTS IN 1996
BWRs with High Collective Doses

Oyster Creek (449 rem)

Outage dose/duration: 372 rem/48 days
Average daily outage dose: 5.4 rem/day
Average daily operating dose: 0.249 rem/day

-Drywell inspections (in-service inspection, non-destructive evaluation, general electric remote inspection system, intergranular stress corrosion cracking) (82 rem)
-Drywell scaffolding (67 rem)
-Drywell shielding (27 rem)
-Drywell insulation (21 rem)
-Refueling activities (20 rem)
-Drywell safety relief valve/electro magnetic relief valve exchange (11 rem)
-Condenser bay scaffolding (9 rem)
-Reactor water cleanup system - valve maintenance (5 rem)

Millstone Point 1 (431 rem)

Outage dose/duration: 431 rem/365 days
Average daily outage dose: 1.18 rem/day
Average daily operating dose : N/A

-Weld overlays (76.3 rem)
-Lower radwaste remediation (74.2 rem)
-Mechanical stress improvement process (19.8 rem)
-Painting (16.4 rem)
-Intergranular stress corrosion cracking mitigation (11.4 rem)
-Reactor coolant pump inspection/shaft replacement (11.4 rem)
-Staging (11 rem)
-Valve PMs and CMs (10.5 rem)
-Beltline inspection (7.5 rem)
-Drywell insulation replacement (5.8 rem)
-50.54 design engineering inspections (3.8 rem)
-Drywell ladder modifications (3.6 rem)
-General access (3 rem)
-Local leak rate testing (2.9 rem)
-Motor operated valve analysis and testing system & Valve operation test & evaluation system testing (1.8 rem)
-Hanger repairs and mods (1.4 rem)

Quad Cities (1025 rem)

Outage dose/duration (Unit 1): 730.3 rem/209 days
Outage dose/duration (Unit 2): 89.5 rem/101 days
Average daily outage dose: 3.85 rem/day
Average daily operating dose: 0.598 rem/day

-Valve work (114 rem)
-Reactor water cleanup system replacement (92 rem)
-In-service inspection (78.5 rem)
-Residual heat removal rooms structural steel modification (Unit 1 - 51.7 rem, Unit 2 - 53.4 rem)
-Weld overlays (5) (41 rem)
-Turbine overhaul (1 high pressure , 1 low pressure valves) (34.2 rem)

River Bend (473 rem)

Outage dose/duration (Refueling): 384.4 rem/40 days
Outage dose/duration (Forced Outage): 14 rem/18 days
Average daily outage dose (Refueling): 9.657 rem/day
Average daily outage dose (Forced Outage): 0.768 rem/day
Average daily operating dose: 0.243 rem/day

-In-service inspection (59.4 rem)
-Refueling (22.5 rem)
-Emergency core cooling system modification (18.3 rem)
-Shielding (11.6 rem)
-Leak, off line removal (9.9 rem)
-Hydrogen ignitors vibration modification (9.8 rem)
-Motor-operated valve (9.5 rem)
-Control rod drive (6.7 rem)
-Local power range monitor (6.5 rem)
-Safety relief valve replacement (6.1 rem)
-Local leak rate testing (5.4 rem)
-Suppression pool cleanup (5.2 rem)
-Emergent work (51.7 rem) includes:
  Valve modifications (18.3 rem)
  Miscellaneous (15 rem)
  Valve repairs (4.9 rem)
  Recirc pump seals (3.8 rem)
  Safety relief valve air check valves (3.5 rem)
  Reactor water cleanup system - Heat exchanger repair (2.2 rem)

LaSalle (819 rem)

Outage dose/duration: 645.9 rem/264days
Average daily outage dose: 2.4 rem/day
Average daily operating dose: 0.455 rem/day

Unit 1 (332.2 rem):
-In-service inspection (34.9 rem)
-Vessel disassembly/reassembly (24.7 rem)
-Control rod drive pull/put (20 rem)
-Under vessel work (13.3 rem)
-Chemical decontamination (12.8 rem)
-Radiation protection support (10 rem)
-Safety relief valve work (9.2 rem)
-Drywell housekeeping (9.1 rem)
-Motor operated valve work (8.9)

Unit 2 (295.6 rem):
-In-service inspection (39.5 rem)
-Control rod drive pull/put (29 rem)
-Safety relief valve work (9.8 rem)
-Radiation protection support (7.4 rem)
-Motor operated valve work (7 rem)
-Drywell housekeeping (6.7 rem)
-Under vessel work (5.4 rem)
-Vessel disassembly (3.6 rem)

*All doses refer to the collective dose in person-rem (person-cSv).

TABLE 4.8b
ACTIVITIES CONTRIBUTING TO HIGH COLLECTIVE DOSES AT SELECTED PLANTS IN 1996
PWRs with High Collective Doses

Byron Station (455 rem)

Outage dose/duration (Unit 1-Refuel): 235 rem/98 days
Outage dose/duration (Unit 2-Refuel): 159.7 rem/52 days
Outage dose/duration (Unit 1-Forced Outage): 11.2 rem
Outage dose/duration (Unit 2-Forced Outage): 23.1 rem
Average daily outage dose (Unit 1-Refuel): 2.40 rem/day
Average daily outage dose (Unit 2-Refuel): 3.07 rem/day
Average daily operating dose: N/A

Unit 1:
-Steam generator work (73.3 rem)
-Resistance temperature detector modifications (62.9 rem)
-In-service inspection (10.6 rem)
-Scaffold work (8.8 rem)
-Reactor Dis/assembly (8.6 rem)
-Snubber work (1.3 rem)

Unit 2:
-Resistance temperature detector modifications (74.1 rem)
-Steam generator work (22.8 rem)
-Scaffold (14.3 rem)
-Seal weld cap work (9.2 rem)
-Reactor Dis/assembly (8.9 rem)
-In-service inspection (3.9 rem)
-Repair reactor head guide funnels (3.4 rem)
-Snubbers (2.1 rem)

Callaway Plant (248 rem)

Outage dose/duration: 232 rem/31 days
Average daily outage dose: 7.484 rem/day
Average daily operating dose: 0.048 rem/day

-Steam generator maintenance (64 rem)
  Primary side work (53.8 rem)
  Secondary side work (10.2 rem)
-Reactor head activities (20.9 rem)
  Inspection/repair of reactor head funnel welds (7 rem)
-Reactor coolant pump maintenance (19.7 rem)
  Includes first of four reactor coolant pump internals replacement (5.6 rem)
  Repair of seal housing to pump case leakage (9.3 rem)
  One reactor coolant pump motor replacement (2.4 rem)
-Modification work (14.3 rem)
  Steam generator platform enlargement (5 rem)
  Reactor cavity seal hatch repairs (2.6 rem)
-Miscellaneous maintenance (16.1 rem)
  In-service inspection (2.9 rem)
  Bolting exams (6.5 rem)
  Excess letdown weld overlay piping replacement (2.8 rem)

*All doses refer to the collective dose in person-rem (person-cSv).

Vogtle (452 rem)

Outage dose/duration (Unit 1): 219 rem/50 days
Outage dose/duration (Unit 2): 202 rem/35 days
Average daily outage dose (Unit 1): 4.4 rem/day
Average daily outage dose (Unit 2): 5.8 rem/day
Average daily operating dose: 0.11 rem/day

Unit 1:
-Steam generator maintenance (37.9 rem)
-Refueling operation (22.1 rem)
-Emergent work/forced outages (48.5 rem)
Unit 2:
-Steam generator maintenance (40.9 rem)
-Refueling operation (21.7 rem)
-Emergent work/forced outages (48.5 rem)

Crystal River 3 (353 rem)

Outage dose/duration: 315 rem/91 days
Average daily outage dose: 3.46 rem/day
Average daily operating dose: 0.14 rem/day

-Reactor head work (57.0 rem)
-Steam generator work (48.6 rem)
-Health physics (34.7 rem)
-Scaffolding (34.7 rem)
-System maintenance (30.6 rem)
-Facility maintenance/rad-waste (29.9 rem)
-Mechanical controls (17.8 rem)
-Electrical (13.2 rem)
-Operations (8.9 rem)
-Insulation work (8.9 rem)
-Laborers (8.6 rem)
-Pipefitters (7.9 rem)
-Instruments and controls (7.0 rem)
-Sheet metal workers (5.9 rem)
-Nuclear waste (5.5 rem)
-Quality control (5.2 rem)

Palisades (318 rem)

Outage dose/duration: 268 rem/49 days
Average daily outage dose: 5.0 rem/day
Average daily operating dose: 0.209 rem/day

-Refueling services (101 rem) (contractor)
-Steam generator maintenance (61.8 rem)
-Fuel carrier repairs (25 rem)
-Health physics support (20 rem)
-Emergent work (18 rem)
-Scaffolding (13.2 rem)
-Valve repairs (11 rem)
-Insulation (10.2 rem)
-Small bore piping (hangers) (6.3 rem)
-In-service inspection (5.3 rem)

Even with the use of better techniques and robotics, these tasks continue to be responsible for a major percentage of the collective dose. It should be noted that the differences in nuclear plant designs and the ages of the plants, even between plants of a given type, affect the nature of these parameters [Ref. 15]. Therefore, care should be exercised when attempting to draw conclusions from these data.

From the above analysis, one can see that the largest contributor to the collective dose is usually associated with outages at a site. In analyzing collective dose trends, it is useful to examine the outage data for reactors to look for a relationship between the collective dose and the outage information for the reactors. Figure 4.5 displays the total number of outage days for BWRs and PWRs respectively. The collective dose and average measurable dose are also plotted to allow for the comparison of outage duration to collective dose.

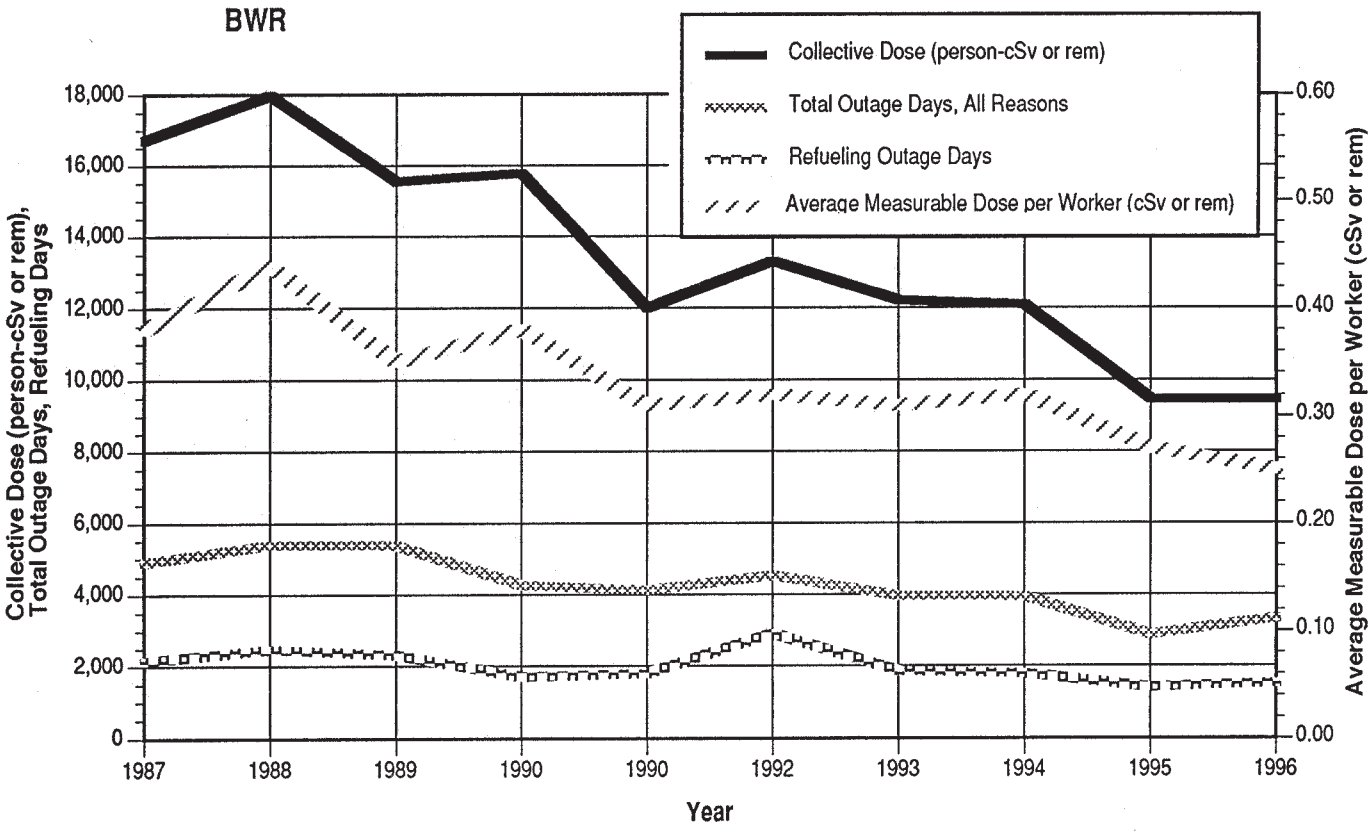
4.6 Collective Dose by Work Function and Employee Type

Each plant is required by its Technical Specifications to submit an annual report in accordance with Regulatory Guide 1.16 that provides the collective dose of workers monitored at each plant site by employee type (plant, utility, or contractor) and by work and job functions. A copy of the report submitted for each reactor site is provided in Appendix D, and much of the data are graphically represented for each site in Appendix E. Tables 4.9 through 4.14 summarize the 1996 data for BWRs, PWRs, and LWRs. Table 4.9 shows that, at both BWRs and PWRs, about 65% of the collective dose is incurred during routine and special maintenance activities. Also, the portion of the collective dose incurred during most of the other activities is similar at the two types of plants.

One should note that the collective doses obtained from these reports are not used in any other tables in this document. This is because the Technical Specifications of each plant require only 80% of the plant's collective dose be accounted for, and some utilities may use the results of self-reading pocket dosimeters instead of the results of the dosimeter of record (usually thermoluminescent dosimeters) in compiling the data. Also, when examining the number of personnel shown on these reports, it should be remembered that individuals who perform tasks in more than one category may be counted more than once.

Table 4.10 shows that for the past 10 years, the percentage of collective dose attributed to routine maintenance has been greater than that of special maintenance. This may be indicative of a trend showing a reduction in TMI-related activities and a greater emphasis on steady-state routine maintenance. Overall, values have been fairly stable over the years with these two categories, special maintenance and routine maintenance, always accounting for the majority of the collective dose. Some of the fluctuations shown in the percentage of the dose incurred during refueling activities (particularly in 1992 through 1995, when it increased to

Figure 4.5
Outage Days, Average Dose, and Collective Dose



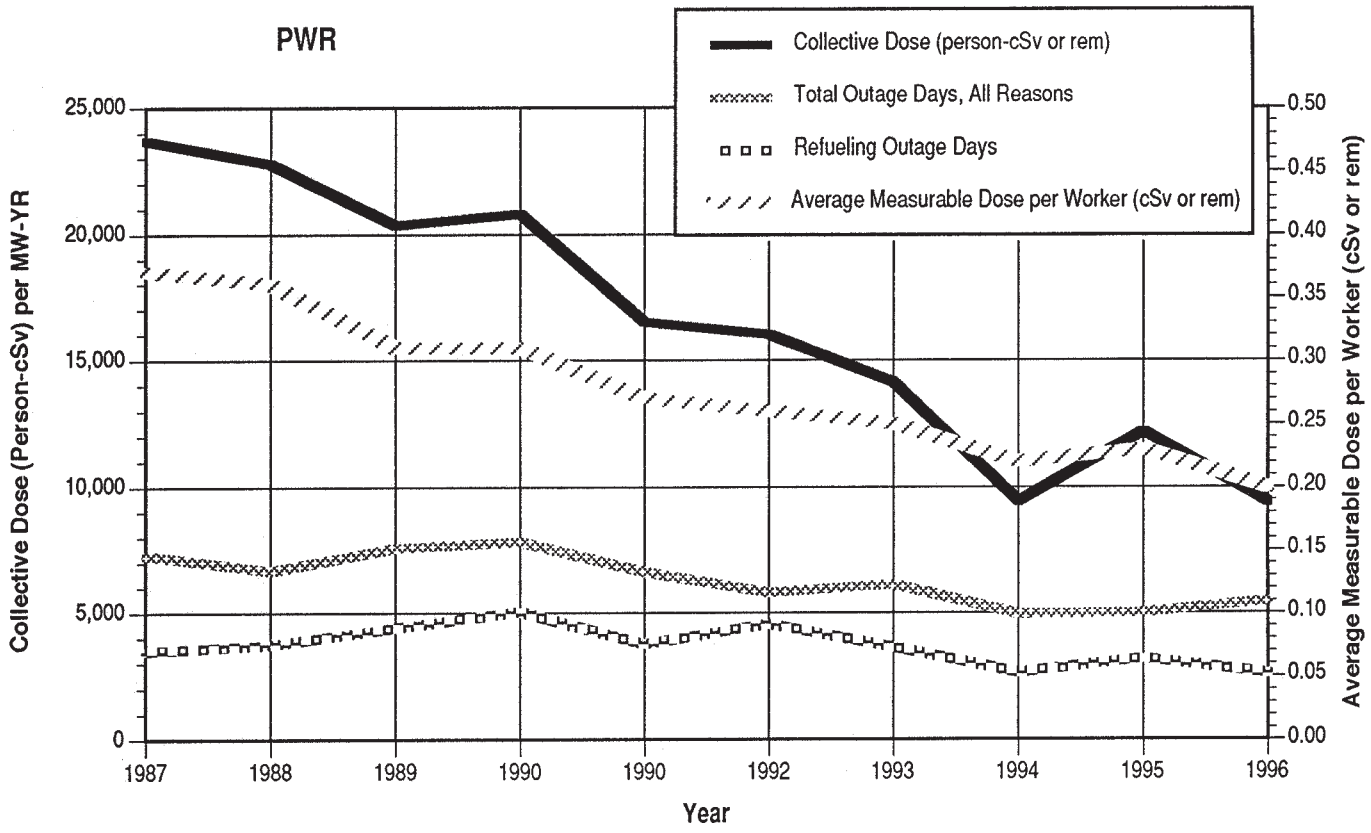


TABLE 4.9

ANNUAL COLLECTIVE DOSE

BY WORK FUNCTION AND PERSONNEL TYPE

1996

WORK AND JOB FUNCTION	STATION EMPLOYEES PERSON-cSv	% OF TOTAL	UTILITY EMPLOYEES PERSON-cSv	% OF TOTAL	CONTRACT WORKERS PERSON-cSv	% OF TOTAL	TOTAL PER WORK FUNCTION PERSON-cSv	% OF TOTAL
BOILING WATER REACTORS								
REACTOR OPS & SURV	962	10.2%	70	0.7%	550	5.8%	1,583	16.8%
ROUTINE MAINTENANCE	1,468	15.6%	139	1.5%	2,639	28.0%	4,246	45.1%
IN-SERVICE INSPECTION	96	1.0%	31	0.3%	592	6.3%	720	7.6%
SPECIAL MAINTENANCE	335	3.6%	70	0.7%	1,604	17.0%	2,009	21.3%
WASTE PROCESSING	96	1.0%	5	0.1%	91	1.0%	192	2.0%
REFUELING	211	2.2%	77	0.8%	385	4.1%	672	7.1%
TOTAL	3,168	33.6%	392	4.2%	5,862	62.2%	9,422	100.0%
PRESSURIZED WATER REACTORS								
REACTOR OPS & SURV	542	6.1%	20	0.2%	244	2.7%	805	9.1%
ROUTINE MAINTENANCE	1,371	15.4%	309	3.5%	2,250	25.3%	3,929	44.2%
IN-SERVICE INSPECTION	112	1.3%	55	0.6%	1,096	12.3%	1,263	14.2%
SPECIAL MAINTENANCE	400	4.5%	238	2.7%	1,079	12.1%	1,718	19.3%
WASTE PROCESSING	126	1.4%	3	0.0%	127	1.4%	255	2.9%
REFUELING	298	3.3%	57	0.6%	569	6.4%	923	10.4%
TOTAL	2,847	32.0%	682	7.7%	5,364	60.3%	8,893	100.0%
ALL LIGHT WATER REACTORS								
REACTOR OPS & SURV	1,504	8.2%	90	0.5%	794	4.3%	2,388	13.0%
ROUTINE MAINTENANCE	2,839	15.5%	448	2.4%	4,889	26.7%	8,175	44.6%
IN-SERVICE INSPECTION	208	1.1%	86	0.5%	1,688	9.2%	1,983	10.8%
SPECIAL MAINTENANCE	735	4.0%	308	1.7%	2,683	14.7%	3,727	20.3%
WASTE PROCESSING	221	1.2%	8	0.0%	218	1.2%	447	2.4%
REFUELING	508	2.8%	134	0.7%	953	5.2%	1,596	8.7%
TOTAL	6,015	32.8%	1,075	5.9%	11,225	61.3%	18,315	100.0%

TABLE 4.10

PERCENTAGES OF ANNUAL COLLECTIVE
DOSE AT LWRs BY WORK FUNCTION
1985 - 1996

WORK FUNCTION	PERCENTAGE OF COLLECTIVE DOSE EACH YEAR											
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
REACTOR OPERATIONS AND SURVEILLANCE	12.8%	12.8%	11.9%	11.0%	12.2%	12.3%	14.0%	11.6%	11.2%	12.8%	13.5%	13.0%
ROUTINE MAINTENANCE	34.6%	33.2%	35.0%	37.7%	36.2%	36.5%	36.1%	38.7%	42.0%	42.7%	43.5%	44.6%
IN-SERVICE INSPECTION	8.6%	8.3%	8.0%	8.7%	9.5%	8.8%	8.9%	9.2%	10.8%	8.5%	10.4%	10.8%
SPECIAL MAINTENANCE	32.5%	35.5%	33.2%	30.1%	31.3%	31.6%	28.2%	25.8%	22.0%	19.9%	18.5%	20.3%
WASTE PROCESSING	5.1%	4.0%	3.9%	3.6%	3.4%	3.0%	3.1%	3.1%	2.5%	2.7%	2.4%	2.4%
REFUELING	6.5%	6.2%	8.1%	8.8%	7.3%	7.7%	9.7%	11.5%	11.4%	13.3%	11.7%	8.7%

over 11%) is due to the fact that some sites include doses other than those directly associated with fuel movement in this category.

Figure 4.6 graphically shows the trends in the collective dose by work function and type of personnel for the years 1990 through 1996 for BWRs and PWRs separately. The general decrease in collective dose is also apparent among most of these activities.

Table 4.11 presents the distribution of the collective dose for 1996 at all LWRs among five occupational categories. As in past years, maintenance personnel incurred the majority (65%) of the collective dose with contractor maintenance personnel receiving about twice as much as the station maintenance employees combined. None of the values listed changed significantly from those found for 1987 through 1995. The collective doses shown in Tables 4.9 and 4.11 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 D rather than the collective dose that was obtained or calculated from the annual reports submitted pursuant to 10 CFR 20.2206.

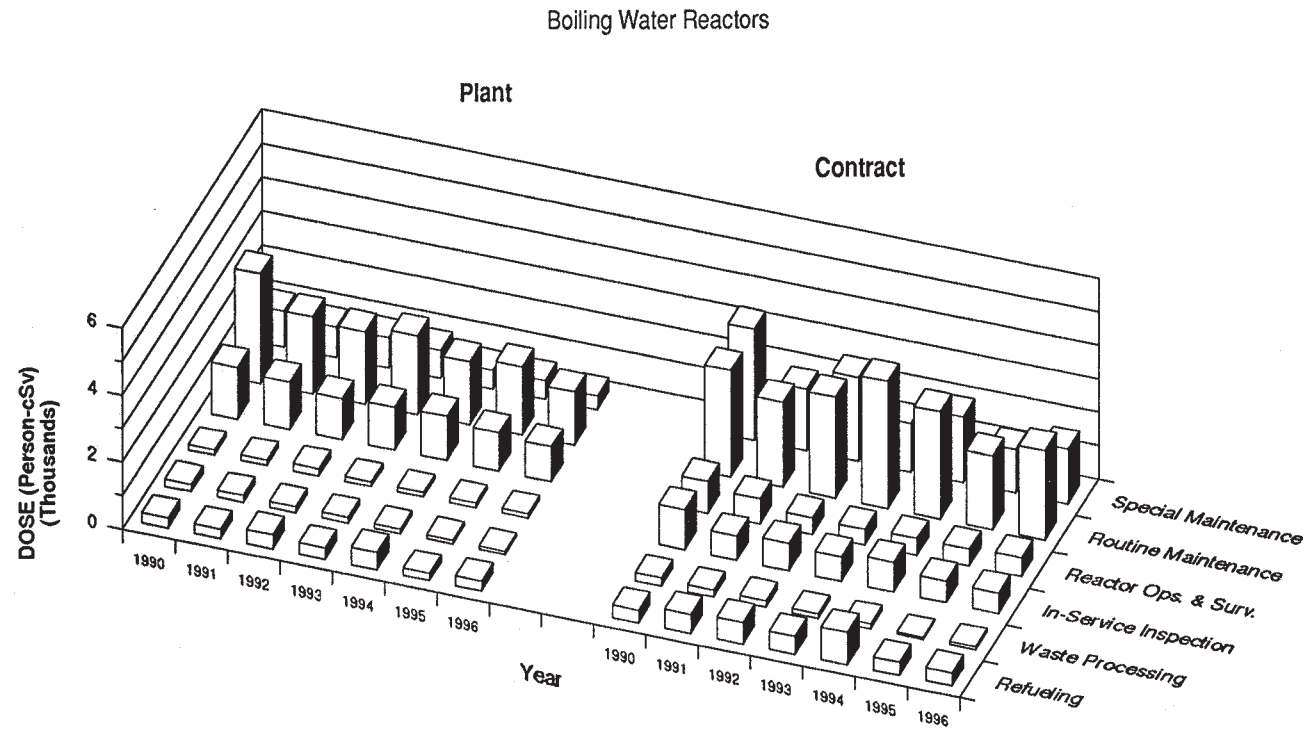
Another use made of the reports submitted under Regulatory Guide 1.16 shown in Appendix D is in proportioning the collective dose obtained from the § 20.2206 annual reports into the work functions and personnel types shown in Appendix C. This was done in the following way:

(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 column in Appendix D) was determined.

(2) The ratio of this dose to the total collective dose (the last number in the last column in Appendix D) was calculated and multiplied by the total collective dose that had been obtained from the § 20.2206 annual reports. This product is the collective dose shown in the column headed “Operations” in Appendix C.

(3) The collective dose shown in the column headed “Maintenance and Others” in Appendix C was determined by first summing the collective doses incurred by workers in the five remaining functions given in Appendix D and then calculating the fraction that this dose is of the total collective dose. This fraction was multiplied by the total collective dose calculated from the § 20.2206 annual reports to yield the collective dose shown in this column of Appendix C.

Figure 4.6
Collective Dose by Work Function and Personnel Type 1990 – 1996



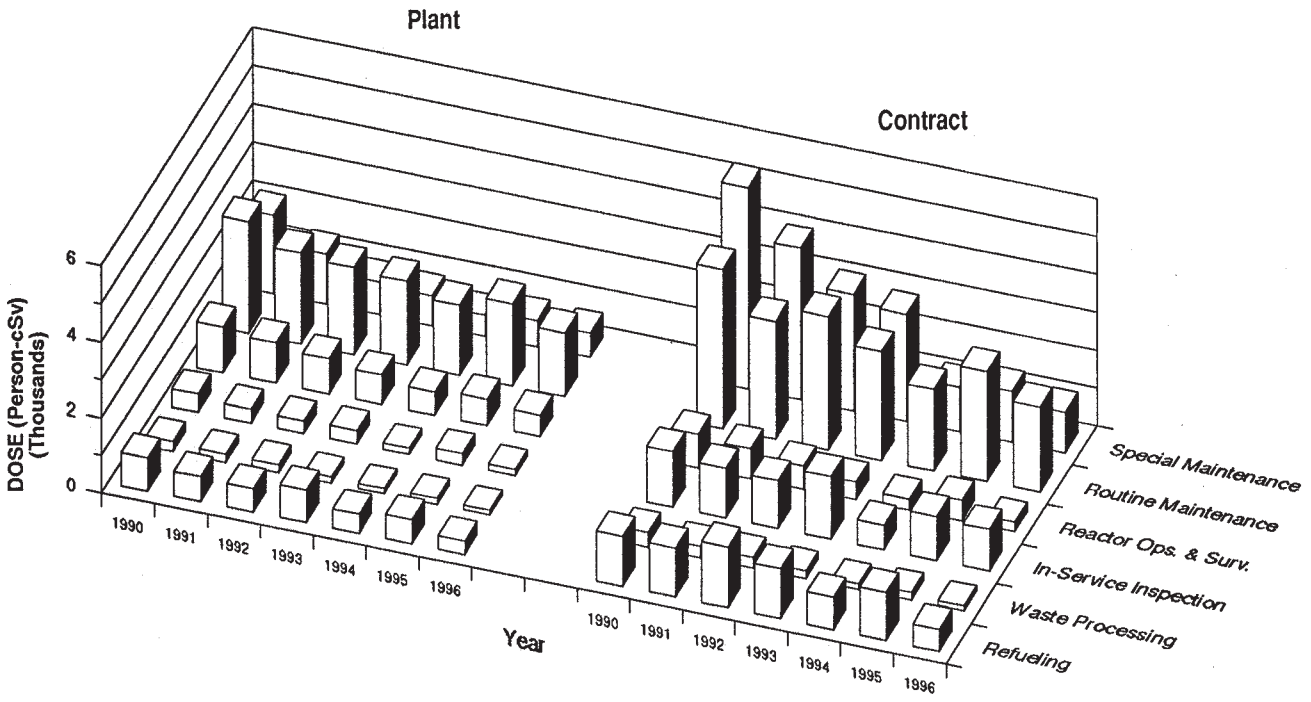


TABLE 4.11
ANNUAL COLLECTIVE DOSE
BY OCCUPATION AND PERSONNEL TYPE
1996

OCCUPATION	STATION EMPLOYEES PERSON-cSv	% OF TOTAL	UTILITY EMPLOYEES PERSON-cSv	% OF TOTAL	CONTRACT WORKERS PERSON-cSv	% OF TOTAL	TOTAL PER WORK FUNCTION PERSON-cSv	% OF TOTAL
BOILING WATER REACTORS								
MAINTENANCE	1,591	16.9%	278	3.0%	4,384	46.5%	6,252	66.4%
OPERATIONS	679	7.2%	25	0.3%	173	1.8%	877	9.3%
HEALTH PHYSICS	528	5.6%	37	0.4%	398	4.2%	963	10.2%
SUPERVISORY	192	2.0%	16	0.2%	246	2.6%	454	4.8%
ENGINEERING	179	1.9%	37	0.4%	660	7.0%	876	9.3%
TOTAL	3,168	33.6%	392	4.2%	5,862	62.2%	9,422	100.0%
PRESSURIZED WATER REACTORS								
MAINTENANCE	1,411	15.9%	579	6.5%	3,609	40.6%	5,599	63.0%
OPERATIONS	519	5.8%	23	0.3%	346	3.9%	888	10.0%
HEALTH PHYSICS	583	6.6%	13	0.1%	673	7.6%	1,268	14.3%
SUPERVISORY	174	2.0%	30	0.3%	266	3.0%	470	5.3%
ENGINEERING	161	1.8%	37	0.4%	471	5.3%	668	7.5%
TOTAL	2,847	32.0%	682	7.7%	5,364	60.3%	8,893	100.0%
ALL LIGHT WATER REACTORS								
MAINTENANCE	3,002	16.4%	858	4.7%	7,992	43.6%	11,852	64.7%
OPERATIONS	1,197	6.5%	48	0.3%	519	2.8%	1,765	9.6%
HEALTH PHYSICS	1,111	6.1%	49	0.3%	1,071	5.8%	2,231	12.2%
SUPERVISORY	366	2.0%	46	0.3%	512	2.8%	925	5.0%
ENGINEERING	339	1.9%	73	0.4%	1,131	6.2%	1,543	8.4%
TOTAL	6,015	32.8%	1,075	5.9%	11,225	61.3%	18,315	100.0%

(4) A similar procedure was followed in determining the collective dose for the columns headed “Contractor” and “Station & Utility” in Appendix C.

4.7 Number of Personnel by Work Function and Employee Type

Half of the information presented in the statistical annual reports shown in Appendix D concerns the number of various types of personnel that performed certain work functions. Tables 4.12 and 4.13 sum this information to show the percentage of personnel by work function and occupation. The major problem in interpreting the numbers shown in these tables is that the same person may perform several work functions during the year so that the total number of personnel obtained by summing those shown in the various work functions would be inflated. However, Table 4.12 is still useful in showing the percentage of personnel associated with each of the six work functions shown. About 59% of the personnel performed routine or special maintenance functions, 21% were involved with reactor operations and surveillance, and the remaining 20% were divided among the other three work functions.

Table 4.13 shows the percentage of personnel in each of five occupational categories at BWRs, PWRs, and LWRs. The workers were similarly distributed at BWRs and PWRs. The largest difference occurred in the maintenance percentages for 1996. Overall, 53% of the personnel were contractors, 40% were station employees, and 8% were utility employees in 1996.

Table 4.14 presents the average annual dose incurred by workers in the five occupational categories in 1996. These averages were calculated by dividing the collective dose reported for these groups (see Table 4.11) by the number of individuals shown in Table 4.13. It shows that, in most instances, the maintenance personnel incur the highest average doses. Examination of the values of the averages given in Table 4.14 is subject to several sources of error: (1) the number of individuals may be inflated because the same plant contractor employee may work at several plants so that the employee would be counted more than once in a summary such as Table 4.14; (2) the occupations are not clearly defined so that workers performing certain tasks in one plant may be classified as being in one occupation and be included in a different one at another plant; and (3) some plants count only those workers whose doses exceed 0.10 cSv (rem) while other plants count all workers regardless of the dose received. Because of these factors, the usefulness of the numbers of individuals obtained from the reports provided in Appendix D is limited; therefore, they are not used to develop any other statistics in this document.

TABLE 4.12

NUMBER OF PERSONNEL*

BY WORK FUNCTION AND PERSONNEL TYPE

1996

WORK AND JOB FUNCTION	STATION EMPLOYEES NUMBER	% OF TOTAL	UTILITY EMPLOYEES NUMBER	% OF TOTAL	CONTRACT WORKERS NUMBER	% OF TOTAL	TOTAL PER WORK FUNCTION NUMBER	% OF TOTAL
BOILING WATER REACTORS								
REACTOR OPS & SURV	6,626	11.2%	1,499	2.5%	7,325	12.4%	15,450	26.1%
ROUTINE MAINTENANCE	7,628	12.9%	1,522	2.6%	12,265	20.7%	21,415	36.2%
IN-SERVICE INSPECTION	945	1.6%	296	0.5%	2,972	5.0%	4,213	7.1%
SPECIAL MAINTENANCE	2,262	3.8%	428	0.7%	6,351	10.7%	9,041	15.3%
WASTE PROCESSING	1,202	2.0%	196	0.3%	1,254	2.1%	2,652	4.5%
REFUELING	2,220	3.8%	829	1.4%	3,380	5.7%	6,429	10.9%
TOTAL	20,883	35.3%	4,770	8.1%	33,547	56.7%	59,200	100.0%
PRESSURIZED WATER REACTORS								
REACTOR OPS & SURV	6,809	9.8%	1,415	2.0%	3,652	5.2%	11,876	17.1%
ROUTINE MAINTENANCE	15,548	22.3%	2,698	3.9%	14,277	20.5%	32,523	46.7%
IN-SERVICE INSPECTION	738	1.1%	535	0.8%	3,288	4.7%	4,561	6.6%
SPECIAL MAINTENANCE	3,692	5.3%	1,213	1.7%	7,878	11.3%	12,783	18.4%
WASTE PROCESSING	1,662	2.4%	136	0.2%	1,405	2.0%	3,203	4.6%
REFUELING	1,725	2.5%	515	0.7%	2,421	3.5%	4,661	6.7%
TOTAL	30,174	43.3%	6,512	9.4%	32,921	47.3%	69,607	100.0%
ALL LIGHT WATER REACTORS								
REACTOR OPS & SURV	13,435	10.4%	2,914	2.3%	10,977	8.5%	27,326	21.2%
ROUTINE MAINTENANCE	23,176	18.0%	4,220	3.3%	26,542	20.6%	53,938	41.9%
IN-SERVICE INSPECTION	1,683	1.3%	831	0.6%	6,260	4.9%	8,774	6.8%
SPECIAL MAINTENANCE	5,954	4.6%	1,641	1.3%	14,229	11.0%	21,824	16.9%
WASTE PROCESSING	2,864	2.2%	332	0.3%	2,659	2.1%	5,855	4.5%
REFUELING	3,945	3.1%	1,344	1.0%	5,801	4.5%	11,090	8.6%
TOTAL	51,057	39.6%	11,282	8.8%	66,468	51.6%	128,807	100.0%

* Workers may be counted in more than one category. The number of personnel in Table 4.12 should be considered to be more accurate than the number of personnel in Table 4.11, because the actual total number of individuals in each profession was provided by some plants in an attempt to correct for the multiple counting of individiuals.

TABLE 4.13
NUMBER OF PERSONNEL*
BY OCCUPATION AND PERSONNEL TYPE
1996

OCCUPATION	STATION EMPLOYEES NUMBER	STATION EMPLOYEES % OF TOTAL	UTILITY EMPLOYEES NUMBER	UTILITY EMPLOYEES % OF TOTAL	CONTRACT WORKERS NUMBER	CONTRACT WORKERS % OF TOTAL	TOTAL PER WORK FUNCTION NUMBER	TOTAL PER WORK FUNCTION % OF TOTAL
BOILING WATER REACTORS								
MAINTENANCE	7,379	13.4%	2,293	4.2%	20,994	38.2%	30,666	55.9%
OPERATIONS	4,402	8.0%	468	0.9%	1,839	3.4%	6,709	12.2%
HEALTH PHYSICS	2,483	4.5%	786	1.4%	1,998	3.6%	5,267	9.6%
SUPERVISORY	2,423	4.4%	156	0.3%	3,155	5.7%	5,734	10.4%
ENGINEERING	2,285	4.2%	885	1.6%	3,347	6.1%	6,517	11.9%
TOTAL	18,972	34.6%	4,588	8.4%	31,333	57.1%	54,893	100.0%
PRESSURIZED WATER REACTORS								
MAINTENANCE	14,637	22.9%	2,439	3.8%	18,894	29.6%	35,970	56.3%
OPERATIONS	5,331	8.4%	364	0.6%	2,151	3.4%	7,846	12.3%
HEALTH PHYSICS	4,618	7.2%	305	0.5%	6,401	10.0%	11,324	17.7%
SUPERVISORY	1,660	2.6%	221	0.3%	1,239	1.9%	3,120	4.9%
ENGINEERING	1,761	2.8%	1,466	2.3%	2,356	3.7%	5,583	8.7%
TOTAL	28,007	43.9%	4,795	7.5%	31,041	48.6%	63,843	100.0%
ALL LIGHT WATER REACTORS								
MAINTENANCE	22,016	18.5%	4,732	4.0%	39,888	33.6%	66,636	56.1%
OPERATIONS	9,733	8.2%	832	0.7%	3,990	3.4%	14,555	12.3%
HEALTH PHYSICS	7,101	6.0%	1,091	0.9%	8,399	7.1%	16,591	14.0%
SUPERVISORY	4,083	3.4%	377	0.3%	4,394	3.7%	8,854	7.5%
ENGINEERING	4,046	3.4%	2,351	2.0%	5,703	4.8%	12,100	10.2%
TOTAL	46,979	39.6%	9,383	7.9%	62,374	52.5%	118,736	100.0%

* Workers may be counted in more than one category. The number of personnel in this table is considered to be more accurate than the number of personnel in Table 4.11 because the actual total number of individuals in each category was provided by some plants in an attempt to correct for the multiple counting of individuals.

TABLE 4.14
AVERAGE DOSES BY OCCUPATION
AND PERSONNEL TYPE*
1996

OCCUPATION	STATION			UTILITY			CONTRACT			TOTAL		
	COLL. DOSE	NUMBER OF EMPLOYEES	AVG. DOSE	COLL. DOSE	NUMBER OF EMPLOYEES	AVG. DOSE	COLL. DOSE	NUMBER OF EMPLOYEES	AVG. DOSE	COLL. DOSE	NUMBER OF EMPLOYEES	AVG. DOSE
BOILING WATER REACTORS												
MAINTENANCE	1,591	7,379	0.22	278	2,293	0.12	4,384	20,994	0.21	6,252	30,666	0.20
OPERATIONS	679	4,402	0.15	25	468	0.05	173	1,839	0.09	877	6,709	0.13
HEALTH PHYSICS	528	2,483	0.21	37	786	0.05	398	1,998	0.20	963	5,267	0.18
SUPERVISORY	192	2,423	0.08	16	156	0.10	246	3,155	0.08	454	5,734	0.08
ENGINEERING	179	2,285	0.08	37	885	0.04	660	3,347	0.20	876	6,517	0.13
TOTAL	3,168	18,972	0.17	392	4,588	0.09	5,862	31,333	0.19	9,422	54,893	0.17
PRESSURIZED WATER REACTORS												
MAINTENANCE	1,411	14,637	0.10	579	2,439	0.24	3,609	18,894	0.19	5,599	35,970	0.16
OPERATIONS	519	5,331	0.10	23	364	0.06	346	2,151	0.16	888	7,846	0.11
HEALTH PHYSICS	583	4,618	0.13	13	305	0.04	673	6,401	0.11	1,268	11,324	0.11
SUPERVISORY	174	1,660	0.11	30	221	0.14	266	1,239	0.21	470	3,120	0.15
ENGINEERING	161	1,761	0.09	37	1,466	0.03	471	2,356	0.20	668	5,583	0.12
TOTAL	2,847	28,007	0.10	682	4,795	0.14	5,364	31,041	0.17	8,893	63,843	0.14
ALL LIGHT WATER REACTORS												
MAINTENANCE	3,002	22,016	0.14	858	4,732	0.18	7,992	39,888	0.20	11,852	66,636	0.18
OPERATIONS	1,197	9,733	0.12	48	832	0.06	519	3,990	0.13	1,765	14,555	0.12
HEALTH PHYSICS	1,111	7,101	0.16	49	1,091	0.05	1,071	8,399	0.13	2,231	16,591	0.13
SUPERVISORY	366	4,083	0.09	46	377	0.12	512	4,394	0.12	925	8,854	0.10
ENGINEERING	339	4,046	0.08	73	2,351	0.03	1,131	5,703	0.20	1,543	12,100	0.13
TOTAL	6,015	46,979	0.13	1,075	9,383	0.11	11,225	62,374	0.18	18,315	118,736	0.15

* Workers may be counted in more than one category, but the actual total number of individuals in each category was used when it was provided by the plant.

4.8 Graphical Representation of Dose Trends in Appendix E

Each page of Appendix E presents two types of graphs for one site. One graph plots selected dose-performance indicators from 1973 through 1996, and the other indicates the collective dose by job function for 1978 through 1996. The dose and performance indicators shown in the top graph illustrate the history of the collective dose for the site, the rolling 3-year average collective dose per reactor, and the gross electricity generated at the site. These data are plotted, beginning with the plant's first full year of commercial operation, and continuing through 1996. However, any data reported prior to 1973 are not included. The 3-year average collective dose per reactor data is included because it provides a better overall indication of the plant's general trend in collective dose. This average is determined by summing the collective dose for the current year and the previous 2 years and then dividing this sum by the number of reactors reporting during those years. Data for years when the plant was not in commercial operation have been included when available. Depicting dose trends using a 3-year average reduces the sporadic effects on annual doses of refueling operations (usually a 2- to 3-year cycle) and occasional high-dose maintenance activities, and gives a better idea of collective dose trends over the life of the plant. For sites with more than one reactor, the plot of the 3-year rolling average will lie below that of the plot of the annual collective dose for the site because it is calculated on a per-reactor basis.

The second type of graph at the bottom of each page in Appendix E displays the breakdown of collective dose by job function and employee type for the years 1978 through 1996. The horizontal axis lists the six job functions of reactor operations, routine maintenance, in-service inspection, special maintenance, waste management, and refueling operations, and the vertical axis indicates collective dose at each site. This representation shows the job functions where most of the dose was accumulated as well as the division of the collective dose between plant and contract workers. The data are taken from the submittals presented in Appendix D and therefore represent at least 80% of the collective dose at each site. Only those reactors that have completed at least 1 full year of commercial operation are presented in Appendix E.

4.9 Health Implications of Average Annual Doses

Studies of populations chronically exposed to low levels of radiation delivered over protracted periods have not shown consistent or conclusive evidence of an associated increase in the risk of cancer. Thus, there is no evidence that the doses to workers recorded here cause harm.

The risk estimates presented below are based on extensive studies of Japanese Atomic bomb survivors and other populations exposed to large doses of radiation delivered in short periods of time. This information is supplemented by animal and *in vitro* studies, such as irradiation of cell cultures. These studies have confirmed that human cells have mechanisms that repair

damaged chromosomes. The existence of this repair helps to explain the finding that lower doses of radiation delivered at lower dose rates produce less of an effect on a cell per unit dose than high-dose, high-dose-rate irradiations. Thus the estimates of risks to radiation workers are likely to be conservative.

Health effects due to radiation exposure fall into three groups: carcinogenic effects, genetic effects, and mental retardation. Mental retardation has been observed only in Japanese A-bomb survivors exposed at 8-15 weeks gestational age, and is consequently not applicable to the workplace except in the case of a pregnant female worker. Genetic effects have never been observed in man, though they have been observed in mice.

Risk of cancer induction is known to increase with increasing dose, but is hard to quantify as the risk varies with the site of the cancer, the age and sex of the exposed individual, the energy and nature of the radiation, the magnitude and duration of the dose, and exposure to other carcinogens. Since nearly 20% of all deaths in the United States occur from cancer, the estimated number of cancers attributable to occupational radiation exposure is a small fraction of the total number that occur. (Those who do not succumb to cancer will, perforce, succumb to some other cause and in essentially the same time frame.)

The Committee on the Biological Effects of Ionizing Radiations (BEIR) of the National Academy of Sciences (NAS) National Research Council has been conducting an ongoing study of the health effects of ionizing radiation. Based on the BEIR V report, published in 1990, the 75,139 workers receiving the average dose of 0.29 cSv (rem) continuously during an entire working career (working from age 18 until age 65) or the maximum accidental dose of 8.3 cSv (rem) to the whole body during 1996 (see Section 6) might expect an increased cancer death risk of about 8 chances in 1000 for the average dose and 6 chances per 1000 for the maximum dose.[10] Should a worker receive 0.29 cSv (rem) continuously during an entire working career (working from age 18 until age 65), his/her lifetime risk of dying from cancer is estimated to increase by approximately 4%. Since the American Cancer Society estimates that an individual's risk of dying of cancer is about 20% (one in five), the risk to an individual receiving 0.29 cSv (rem) would be approximately 21%.

The potential genetic effects from a worker population receiving 21,755 person-cSv (person-rem) (Table 3.1) are small compared to genetic damages that normally occur spontaneously in a population of this size. Approximately 100,000 serious genetic defects occur normally in one million live births, i.e., an average of about one serious defect in every ten live births. Theoretically, the total genetic damage in the first generation children of the 75,016 exposed workers would, according to NUREG/CR-4214 [Ref. 17], be an increase of about 6

[10] These estimates were calculated from Table 4-2 of Ref. 16. The average dose risk estimate assumes continuous lifetime exposure (ages 18-65), while the acute dose risk estimate assumes a one-time, instantaneous exposure. Note that these estimates are based on observations of individuals exposed to high doses of radiation over short periods of time. The BEIR committee, in its report, cautions that dose rate reduction factors (DREFs) will need to be applied to low-dose and low-dose-rate exposures. (see Ref. 16, pp. 171 and 174)

cases (approximately 0.01%) compared to the expected 8,000 cases that occur normally.[11] No significant increase in the number of genetic defects has been observed in the children of individuals exposed to much higher levels of ionizing radiation at Hiroshima and Nagasaki, Japan.

[11] Assuming that, on the average, each exposed person will have one live-born child in the future, i.e., 75,139 children born to this worker population. The estimates were calculated from Table 4.1 of reference 17.

5 TRANSIENT WORKERS AT NRC LICENSED FACILITIES

5.1 Termination Reports

Under the revised 10 CFR 20, licensees are required to submit NRC Form 5s to the Commission for each individual who is required to be monitored at the end of the monitoring year or upon the individual's termination of employment at the facility. The "termination reports" submitted in accordance with the old § 20.408, listing the individual's complete dose history during employment at the facility, are no longer required.

However, the Form 5s submitted to the NRC upon an individual's termination of employment serve the same function as the previous requirements with regard to the analysis of transient workers at NRC-licensed facilities. The following analysis examines the workers who had more than one Form 5 dose record at more than one NRC-licensed facility during the monitoring year. These workers are defined to be transient in that they worked at more than one facility during the monitoring year.

The term "monitoring year" is used here in accordance with the definition of a year given in § 20.1003, which defines a year as "the period of time beginning in January used to determine compliance with the provisions of this part. The licensee may change the start date of the monitoring year used to determine compliance provided that the change is made at the beginning of the monitoring/calendar year and that no day is omitted or duplicated in consecutive years".

5.2 Transient Workers at NRC Facilities

Examination of the data reported for workers who began and terminated two or more periods of employment with two or more different facilities within one monitoring year is useful in many ways. For example, the number and average dose for these "annual transients" can be determined from examining these data.

Additionally, the distribution of the doses received by transient workers can be useful in determining the impact that the inclusion of these individuals in each of two or more licensees' annual reports has on the annual summary (as reported in Appendices B and F) for all nuclear power facilities, and all NRC licensees combined (one of the problems mentioned in Section 2). Table 5.1 shows the "actual distribution" of transient worker doses as determined from the above-mentioned Form 5 termination reports and compares it with the "reported distribution" of the doses of these workers as they would have appeared in a summation of the annual reports submitted by each of the licensees.

TABLE 5.1

EFFECTS OF TRANSIENT WORKERS ON ANNUAL STATISTICAL COMPILATIONS

1996

License Category	Number of Individuals with TEDE in the Ranges (cSv or rem)												Total Number Monitored	Number with Measurable Exposure	Collective TEDE (person-cSv or rem)	Average TEDE (cSv or rem)	Average Meas. TEDE (cSv or rem)
	No Meas'ble Exposure	Meas'ble <0.10	0.10-0.25	0.25-0.5	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					
POWER REACTORS																	
FORM 5 SUMMATION ①	78,197	39,426	19,955	14,201	5,809	2,648	2,342	68					162,646	84,449	18,874	0.12	0.22
TRANSIENTS - AS REPORTED ②	24,317	13,500	8,541	6,133	2,476	1,127	1,105	43					57,242	32,925	8,032	0.14	0.24
TRANSIENTS- ACTUAL ③	5,358	4,506	3,212	3,180	2,056	1,302	1,949	384	69				22,016	16,658	8,032	0.36	0.48
CORRECTED DISTRIBUTION (1-(2-3))	**59,238**	**30,432**	**14,626**	**11,248**	**5,389**	**2,823**	**3,186**	**409**	**69**				**127,420**	**68,182**	**18,874**	**0.15**	**0.28**
ALL LICENSEES																	
FORM 5 SUMMATION ①	82,130	42,518	21,035	15,151	6,349	3,002	3,043	237	59	11	0	1	173,536	91,406	21,755	0.13	0.24
TRANSIENTS - AS REPORTED ②	24,562	13,661	8,644	6,204	2,509	1,148	1,136	49	3				57,916	33,354	8,223	0.14	0.25
TRANSIENTS- ACTUAL ③	5,402	4,559	3,268	3,237	2,090	1,324	1,994	400	73	1			22,348	16,946	8,223	0.37	0.49
CORRECTED DISTRIBUTION (1-(2-3))	**62,970**	**33,416**	**15,659**	**12,184**	**5,930**	**3,178**	**3,901**	**588**	**129**	**12**	**0**	**1**	**137,968**	**74,998**	**21,755**	**0.16**	**0.29**

Because >95% of these transients are reported by nuclear power facilities, these data were considered separately. Table 5.1 shows that the power reactor transient data constitute the vast majority of the transient worker exposure. The nonreactor licensees contribute only an additional 0.5% of the transient workforce and an additional 0.4% to the collective dose.

The following definitions apply to Table 5.1:

Form 5 Summation	The summation of the TEDE from each of the Form 5s submitted for the monitoring year. This is the summation of each dose record grouped by licensee and individual. This distribution takes into account multiple Form 5s for an individual at one NRC-licensed facility but not multiple exposures at multiple licensees.
Transients - As Reported	This distribution represents the population of transient workers as they were reported by each licensee. This distribution is the subset of all Form 5s where individuals were monitored at more than one licensee during the monitoring year. This is the summation of dose records grouped by individual and by licensee, so the distribution representshow the transient worker population would appear within the total distribution of all workers. This distribution takes into account multiple Form 5s for an individual at one NRC-licensed facility but not multiple exposures at multiple licensees.
Transients - Actual	This is the actual distribution for transient workers summed per individual. This represents the true number of individuals and places each individual in the correct dose range. This distribution accounts for multiple records per individual and multiple licensees.
Corrected Distribution	This distribution represents the correction of the reported distribution by subtracting the difference in the reported and actual distribution for transient workers. This represents the most accurate dose distribution for the licensee category and accounts for the multiple reporting of individuals.

Table 5.1 illustrates the impact that the multiple reporting of these transient individuals had on the summation of the exposure reports for 1996. Because each licensee reports the doses received by workers while monitored by the particular licensee during the year, one would expect that a summation 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 the same, the number of workers, their dose distribution, and average dose would be affected by this multiple reporting. This was found to be

true because too few workers were reported in the higher dose ranges. For example, in 1996, Table 5.1 shows that the summation of annual reports for reactor licensees indicated that 68 individuals received doses greater than 2 cSv (rem). After accounting for those individuals who were reported more than once, the corrected distribution indicated that there were really 478 workers who received doses greater than 2 cSv (rem). Correcting for the multiple counting of individuals also has a significant effect on the average measurable dose for these workers. The corrected average measurable dose for transient workers is twice as high as the value calculated by the summation of licensee records. The transient workers represent 23% of the workforce that receives measurable dose and increases the average measurable dose for all licensees by 17% from 0.24 cSv (rem) to 0.29 cSv (rem).

One purpose of the REIRS database, which tracks occupational radiation exposures at NRC-licensed facilities, is to identify individuals who may have exceeded the occupational radiation exposure limits because of multiple exposures at different facilities throughout the year. The REIRS database stores the radiation exposure information for an individual by their unique identification number and identification type [Ref. 18, Section 1.5] and sums the exposure for all facilities during the monitoring year. An individual exceeding the TEDE 5 cSv (rem) per year regulatory limit would be identified in Table 5.1 in one of the dose ranges >5 rem. In 1996, one individual exceeded this dose limit as reported by the licensee, but no individual was discovered to have exceeded the limit as a result of the correction for transient workers. **Since 1985, there have been no additional transient workers identified as having received a dose of >5 cSv (rem) that have not appeared in the annual reports received by the Commission**. This reflects the industry's continuing concerted efforts to keep the total annual doses of all workers under 5 cSv (rem) and shows that such reductions can be accomplished without increasing the collective dose because the collective dose has decreased during this same time period.

6 EXPOSURES TO PERSONNEL IN EXCESS OF REGULATORY LIMITS

6.1 Control Levels

Exposures in excess of regulatory limits are sometimes referred to as “overexposures.” The phrase “exposures in excess of regulatory limits” is preferred to “overexposures” because the latter suggests that a worker has been subjected to an unacceptable biological risk, which may, or may not, be the case.

The implementation date for the revised 10 CFR 20 was January 1, 1994. The separate limits on internal and external exposure in the old 10 CFR 20 are no longer applicable. The revised 10 CFR 20 now includes requirements for summing internal and external dose equivalents to yield TEDE and to implement a similar limitation system for organs and tissues (such as the gonads, red bone marrow, bone surfaces, lung, thyroid, and breast). The dose equivalent limits for the skin of the whole body and for the extremities have been revised, and a new limit for dose equivalent to the lens of the eye has been added. The revised 10 CFR 20.1201 limits the TEDE of workers to ionizing radiation from licensed material and other sources of radiation within the licensee’s control. The revised 10 CFR 20 no longer contains quarterly exposure limits but has reporting requirements for planned special exposures (PSEs)[*]. The annual TEDE limit for adult workers is 5 cSv (rem).

The revised 10 CFR 20.2202 and 10 CFR 20.2203 require that all persons licensed by the NRC submit reports of all occurrences involving personnel radiation exposures that exceed certain control levels, thus providing for investigations and corrective actions as necessary. Based on the magnitude of the exposure, the occurrence may be placed into one of three categories:

(1) Category A

10 CFR 20.2202(a)(1) - a TEDE to any individual to 25 cSv (rem) or more; an eye dose equivalent of 0.75 Sv (75 rem) or more; or a shallow-dose equivalent to the skin or extremities of 2.5 Gy (250 rad) or more. The Commission must be notified immediately of these events.

(2) Category B

10 CFR 20.2202(b)(1) - a TEDE to any individual to 5 cSv (rem) or more; an eye dose equivalent of 0.15 Sv (15 rem) or more; or a shallow-dose equivalent to the skin or extremities of 0.5 Sv (50 rem) or more in a 24-hour period. The Commission must be notified within 24 hours of these events.

[*] See 10 CFR 20.1206, 20.2204 and Regulatory Guide 8.35 for more information on PSEs and their reporting requirements.

(3) Category C

10 CFR 20.2203 - In addition to the notification required by 20.2202 (category A and B occurrences), each licensee must submit a written report within 30 days after learning of any of the following occurrences: (1) Any incident for which notification is required by 20.2202; or (2) Doses that exceed the limits in 20.1201, 20.1207, 20.1208, 20.1301 (for adults, minors, the embryo/fetus of a declared pregnant worker, and the public, respectively), or any applicable limit in the license; or (3) Levels of radiation or concentrations of radioactive material that exceed any applicable license limit for restricted areas or that, for unrestricted areas, are in excess of 10 times any applicable limit set forth in this part or in the license (whether or not involving exposure of any individual in excess of the limits in 20.1301); or (4) For licensees subject to the provisions of the Environmental Protection Agency's generally applicable environmental radiation standards in 40 CFR 190, levels of radiation or releases of radioactive material in excess of those standards, or of license conditions related to those standards.

6.2 Limitations of the Data

It is important to note that this summary of events includes ***only***:

Occupational radiation exposures in excess of regulatory limits
Events at NRC-licensed facilities
Final dose of record assigned to an individual

It ***does not*** include:

Medical misadministrations to medical patients
Exposures in excess of regulatory limits to the general public
Agreement State-licensed activities
Other radiation-related violations, such as high dose rate areas or effluent limits
Exposures to dosimeters that, upon evaluation, have been determined to be high dosimeter readings only and are not assigned to an individual as the dose of record by the NRC

Care should be taken when comparing the summary information presented here with other reports and analyses published by the NRC or other agencies. Various reports may include other types of "overexposure" events; therefore, the distinctions should be noted.

The analysis and summary of incidents presented here involving exposures in excess of regulatory limits represent the status of events as of the publication of this report. Exposure events of this type typically undergo a long review and evaluation process by the licensee, the NRC inspector for the regional office, and NRC headquarters. Preliminary dose estimates submitted by licensees are often conservatively high and do not represent the final (record) dose assigned for the event. It is therefore not uncommon for an "overexposure" event to be reassessed and the final assigned dose to be categorized as not having been in excess of the regulatory limits. In other cases, the exposure may not be identified until a later date, such as during the next scheduled audit or inspection of the licensee's exposure records.

For these reasons, an attempt is made to keep current the exposure events summary presented here. An event that has been reassessed and determined not to be an exposure in excess of the limits is not included in this report. In addition, events that occurred in prior years are added to the summary in the appropriate year of occurrence. The reader should note that the summary presented here represents a "snapshot" of the status of events as of the publication date of this report. Previous or future reports may not correlate in the exact number of events because of the review cycle and reassessment of the events.

6.3 Summary of Exposures in Excess of Regulatory Limits

Table 6.1 summarizes the occupational exposures in excess of regulatory limits as reported by Commission licensees pursuant to 10 CFR 20.2202 and 10 CFR 20.2203 from 1994 to 1996. Table 6.2 shows the data reported under 10 CFR 20.403 and 10 CFR 20.405 for the period 1985-1993. Note that the categorization criteria changed effective with the revised 10 CFR 20. The dose reporting thresholds have been revised — the skin of the whole body and the extremities now have the same dose limits, and a new set of dose limits has been added for the lens of the eye.

For the period 1990-1993, Table 6.2 shows the number of individuals who exceeded various limits while employed by one of several types of licensees. For the period 1985-1989, only the exposures in excess of regulatory limits reported by licensed industrial radiography firms are shown separately. Most of the occurrences included in the "Others" category come from research facilities, universities, and measuring and well-logging activities.

In 1996, one worker received a dose that exceeded the regulatory limit. There were no occurrences in which individuals received an exposure of the magnitude described previously as "Category A." Two "Category B" occurrences were reported.

The incident involved an individual working at a multi-location radiography licensee who received a TEDE dose of 8.3 cSv (rem) during 1996. A radiographer performed several radiographic exposures on a pressure vessel. The radiographer concluded his last exposure for the day and prepared to leave the facility. He retracted the source but failed to perform a lockout survey of the device. The second radiographer arrived to fulfill additional exposures on

the pressure vessel. This second radiographer proceeded to retrieve film and other equipment needed to complete his work and positioned the source guide tube for the next exposure. Before completing the exposure he noticed that his pocket dosimeter was off scale. The film badge worn during the month for this second radiographer read 6.465 cSv (rem), bringing his annual dose to 8.3 cSv (rem). The first radiographer did not exceed the annual dose limit.

6.4 Maximum Exposures Below the NRC Limits

Because few exposures exceed the NRC occupational exposure limits, certain researchers have expressed an interest in a listing of the maximum exposures received at NRC licensees that do not exceed the limits. This would allow an examination of exposures that approach, but do not exceed the limits. Table 6.3 shows the maximum exposures for each dose category required to be reported to the NRC. In addition, the number of exposures in certain dose ranges is shown to reflect the number of exposures that approach the NRC limits.

TABLE 6.1
OCCUPATIONAL EXPOSURES IN EXCESS OF REGULATORY LIMITS
1994 - 1996

YEAR	LICENSE CATEGORY	PERSONS AND DOSES (REM)	TYPES OF EXPOSURES AND DOSES								
			TEDE (cSv or rem)			Lens of the Eye (cSv or rem)			Skin/Extremity (cSv or rem)		
			<5	5-25	>25	<15	15-75	>75	<50	50-250	>250 rad
1996	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS		1							
		SUM OF DOSES		8.3							
	POWER REACTORS	NO. OF PERSONS								1[a]	
		SUM OF DOSES								70.6	
	MEDICAL FACILITIES	NO. OF PERSONS									
		SUM OF DOSES									
	MARKETING & MANUFACT.	NO. OF PERSONS									
		SUM OF DOSES									
	OTHER	NO. OF PERSONS									
		SUM OF DOSES									
1995	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS		1							
		SUM OF DOSES		5.1							
	POWER REACTORS	NO. OF PERSONS									
		SUM OF DOSES									
	MEDICAL FACILITIES	NO. OF PERSONS									
		SUM OF DOSES									
	MARKETING & MANUFACT.	NO. OF PERSONS								2[b]	
		SUM OF DOSES								572	
	OTHER	NO. OF PERSONS									
		SUM OF DOSES									
1994	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS		2							
		SUM OF DOSES		12.2							
	POWER REACTORS	NO. OF PERSONS							1		
		SUM OF DOSES							34		
	MEDICAL FACILITIES	NO. OF PERSONS SUM OF DOSES									
	MARKETING & MANUFACT.	NO. OF PERSONS								1[c]	
		SUM OF DOSES								180	
	OTHER	NO. OF PERSONS									
		SUM OF DOSES									

[a] This exposure was from a hot particle to a localized area of the skin.

[b] These two exposures (230 cSv and 342 cSv) were the result of hot particles.

[c] This exposure was from a hot particle to a localized area of the skin.

TABLE 6.2
OCCUPATIONAL EXPOSURES IN EXCESS OF REGULATORY LIMITS
1985 - 1993

YEAR	LICENSE CATEGORY	PERSONS AND DOSES (REM)	TYPES OF EXPOSURES AND DOSES								
			WHOLE BODY (REM)			SKIN (REMS)			EXTREMITY (REMS)		
			(<5)	(5-25)	(>25)	(>7.5<30)	(30-50)	(>150)	(>18.75<75)	(75-375)	(>375)
1993	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS		1							
		SUM OF DOSES		6							
	POWER REACTORS	NO. OF PERSONS									
		SUM OF DOSES									
	MEDICAL FACILITIES	NO. OF PERSONS	1						3[f]		
		SUM OF DOSES	1.3						187.3		
	MARKETING & MANUFACT.	NO. OF PERSONS	5								
		SUM OF DOSES	10.6								
	OTHER	NO. OF PERSONS	2[a]	1[a]						1	
		SUM OF DOSES	4.0	5.4						275	
1992	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS									1
		SUM OF DOSES									300-1000
	POWER REACTORS	NO. OF PERSONS	1			4					
		SUM OF DOSES	1.9			57.7					
	MEDICAL FACILITIES	NO. OF PERSONS							4	1	
		SUM OF DOSES							143.6	272	
	MARKETING & MANUFACT.	NO. OF PERSONS									
		SUM OF DOSES									
	OTHER	NO. OF PERSONS	1[b]			1			1		
		SUM OF DOSES	1.9			24.1			40.5		
1991	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS	2								
		SUM OF DOSES	5.6								
	POWER REACTORS	NO. OF PERSONS									
		SUM OF DOSES									
	MEDICAL FACILITIES	NO. OF PERSONS	2								
		SUM OF DOSES	3.8								
	MARKETING & MANUFACT.	NO. OF PERSONS							1		
		SUM OF DOSES							22.3		
	OTHER	NO. OF PERSONS	1								
		SUM OF DOSES	2.4								
1990	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS	3	3[c,d]				1[c]		1	2[d]
		SUM OF DOSES	7.2	49.9				6000		111	3962
	POWER REACTORS	NO. OF PERSONS							1		
		SUM OF DOSES							48.8		
	MEDICAL FACILITIES	NO. OF PERSONS	3[e]								
		SUM OF DOSES	8.9								
	MARKETING & MANUFACT.	NO. OF PERSONS									
		SUM OF DOSES									
	OTHER	NO. OF PERSONS	1								
		SUM OF DOSES	2.3								
1989	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS	3		1				1		
		SUM OF DOSES	8.1		93				72		
	ALL OTHER	NO. OF PERSONS	4			1			2	1	
		SUM OF DOSES	6.6			9.2			105	178	
1988	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS	3	1						1	
		SUM OF DOSES	8.1	6.1						118	
	ALL OTHER	NO. OF PERSONS	7			4	1	1	1	1	
		SUM OF DOSES	19.34			66.8	61	278	58	127	
1987	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS	1							1	
		SUM OF DOSES	3.1							180	
	ALL OTHER	NO. OF PERSONS	2	1		5			3		1
		SUM OF DOSES	2.8	7.5		128.4			72.0		650
1986	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS	2								
		SUM OF DOSES	4.4								
	ALL OTHER	NO. OF PERSONS	3						1	1	2
		SUM OF DOSES	9.6						41.2	115	930
1985	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS	6	3	1					1	
		SUM OF DOSES	16.7	32.6	27.0					288	
	ALL OTHER	NO. OF PERSONS	7						3	1	
		SUM OF DOSES	11.8						60.2	93	

[a] Same individual exceeded 1.25 rem/qtr limit twice during 1993.
[b] This 1992 exposure was reported in 1994.
[c] This individual received a whole-body dose of 24 rem in addition to a 6000 rem skin dose.
[d] One of these individuals received a 9 rem whole-body dose in addition to a 1070 rem extremity dose.
[e] One of these individuals exceeded the quarterly whole-body dose limits three times in one calendar year.
[f] An additional 1993 exposure was reported in 1994.

TABLE 6.3
MAXIMUM OCCUPATIONAL EXPOSURES FOR EACH EXPOSURE CATEGORY
1996

Exposure Category	Annual Dose Limit 10CFR20	Maximum Exposure Reported cSv (rem)	Max Dose Percent of the Limit	Number of Individuals with Measureable Dose	Number of Individuals >25% of the Limit	Number of Individuals >50% of the Limit	Number of Individuals >75% of the Limit	Number of Individuals >95% of the Limit
SDE-ME	50 rem	41.960	84%	57,840	101	24	1	0
SDE-WB	50 rem	22.710	45%	71,923	4	3	1	1 (>limit)[a]
LDE	15 rem	13.800	92%	71,508	20	2	1	0
CEDE		3.179[b]		2,893				
CDE		27.604[b]		2,651				
DDE		8.3[c]		73,076				
TEDE	5 rem	8.3[c]	> limit	74,616	2,764	331	24	1 (>limit)
TODE	50 rem	27.830[b]	56%	60,405	77	3	0	0

[a] This dose was from a hot particle to a localized area of the skin
[b] These doses were received by the same individual
[c] These internal doses were received by the same individual

Shaded boxes represent dose categories that do not have specific dose limits defined in 10 CFR 20.

As can be seen from Table 6.3, few exposures exceed half of the NRC occupational annual limits. The only dose to come within 5% of the limit was the one exposure that exceeded the limit.

7 REFERENCES

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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, DC 20555.

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APPENDIX A

Listing of Annual Exposure Data Compiled for Certain NRC Licensees in Descending Order of Average Measureable Dose

1996

* The data values shown bolded and in boxes represent the highest value in each category.

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1996

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)												TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)	AVERAGE MEAS. TEDE (cSv, rems)
		No Meas. Exposure	Meas. <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	6.00-12.0	>12.0				
NUCLEAR PHARMACIES - 02500																		
CAPITAL PHARMACY INCORPORATED	21-26597-01MD	9	1	2	-	-	-	-	-	-	-	-	-	-	12	3	0.260	0.087
MALLINCKRODT INCORPORATED	24-04206-08MD	4	13	2	-	-	-	-	-	-	-	-	-	-	19	15	0.790	0.053
MALLINCKRODT MEDICAL INCORPORATED	24-04206-19MD	1	10	2	2	-	-	-	-	-	-	-	-	-	15	14	1.700	0.121
MALLINCKRODT MEDICAL, INC.	24-04206-15MD	7	6	1	-	3	-	-	-	-	-	-	-	-	17	10	2.180	**0.218**
MALLINCKRODT MEDICAL, INC.	24-04206-14MD	4	9	5	2	-	-	-	-	-	-	-	-	-	20	16	1.670	0.104
MALLINCKRODT MEDICAL, INC.	24-04206-17MD	-	1	2	-	-	-	-	-	-	-	-	-	-	3	3	0.250	0.083
MALLINCKRODT MEDICAL, INC.	24-04206-01MD	3	6	2	-	-	-	-	-	-	-	-	-	-	11	8	0.560	0.070
MALLINCKRODT, INC.	24-04206-12MD	2	3	2	1	1	-	-	-	-	-	-	-	-	9	7	1.230	0.176
MEDI-PHYSICS, INC.	48-26240-01MD	13	4	2	-	-	-	-	-	-	-	-	-	-	19	6	0.470	0.078
MID-AMERICA ISOTOPES, INC.	24-26241-01	14	4	-	-	-	-	-	-	-	-	-	-	-	18	4	0.070	0.018
NORTHERN VIRGINIA ISOTOPES, INC.	45-25221-01MD	7	11	2	2	1	-	-	-	-	-	-	-	-	23	16	1.979	0.124
OKLAHOMA, UNIVERSITY OF	35-03176-04MD	4	14	2	-	1	-	-	-	-	-	-	-	-	21	17	1.259	0.074
PHARMALOGIC LTD.	44-30124-01MD	8	3	1	-	-	-	-	-	-	-	-	-	-	12	4	0.260	0.065
SPECTRUM PHARMACY INCORPORATED	13-26367-01	9	21	1	2	2	-	-	-	-	-	-	-	-	35	**26**	**2.470**	0.095
SYNCOR INT'L CORP.	04-26507-01MD	46	17	2	-	-	-	-	-	-	-	-	-	-	**65**	19	1.088	0.057
Total	**15**	**131**	**123**	**28**	**9**	**8**	-	-	-	-	-	-	-	-	**299**	**168**	**16.236**	**0.097**
MANUFACTURING AND DISTRIBUTION - TYPE A BROAD - 03211																		
ABB INDUSTRIAL SYSTEMS INC.	34-00255-03	2	1	-	-	-	-	-	-	-	-	-	-	-	3	1	0.010	0.010
ADVANCED MEDICAL SYS., INC.	34-19089-01	11	1	1	1	3	-	2	-	-	-	-	-	-	19	8	4.810	0.601
AMERSHAM CORPORATION	20-12836-01	24	24	5	2	4	4	1	-	-	-	-	-	-	64	40	9.390	0.235
DU PONT MERCK PHARMACEUTICAL CO.	20-28598-01	321	241	75	56	31	38	52	14	5	-	-	-	-	**833**	**512**	215.390	0.421
E. I. DU PONT DE NEMOURS & CO., INC	20-00320-21	-	2	8	4	-	-	-	-	-	-	-	-	-	14	14	2.661	0.190
E. R. SQUIBB & SONS, INC.	29-00139-02	641	133	6	3	5	1	1	1	-	-	-	-	-	791	150	12.300	0.082
MALLINCKRODT, INC.	24-04206-01	32	83	21	18	12	21	49	36	18	4	-	-	-	294	262	**277.605**	**1.060**
Total	**7**	**1,031**	**485**	**116**	**84**	**55**	**64**	**105**	**51**	**23**	**4**	-	-	-	**2,018**	**987**	**522.166**	**0.529**

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1996

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)												TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)	AVERAGE MEAS. TEDE (cSv, rems)
		No Meas. Exposure	Meas. <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	6.00-12.0	>12.0				
MANUFACTURING AND DISTRIBUTION - TYPE B BROAD - 03212																		
BEST INDUSTRIES, INC.	45-19757-01	38	9	1	4	1	-	-	-	-	-	-	-	-	53	15	2.616	0.174
Total	**1**	**38**	**9**	**1**	**4**	**1**	-	-	-	-	-	-	-	-	**53**	**15**	**2.616**	**0.174**
MANUFACTURING AND DISTRIBUTION - OTHER - 03214																		
BERTHOLD SYSTEMS, INC.	37-21226-01	11	18	3	-	-	-	-	-	1	-	-	-	-	33	22	4.730	0.215
CERBERUS TECHNOLOGIES, INC.	29-08864-03	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
CIS-US, INC.	20-20973-01	8	4	1	2	1	-	2	-	-	-	-	-	-	18	10	4.230	0.423
CIS-US, INC.	20-27966-01	1	1	1	-	-	-	-	-	-	-	-	-	-	3	2	0.260	0.130
DU PONT MERCK PHARMACEUTICAL CO.	20-00320-19	-	1	4	-	-	-	1	-	-	-	-	-	-	6	6	2.180	0.363
ELIAS USA, INC.	48-26355-01	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
HARRIS SEMICONDUCTOR	37-24841-01	19	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-
INTERGRATED INDUSTRIAL SYS., INC.	06-21253-01	26	2	-	-	-	-	-	-	-	-	-	-	-	28	2	0.020	0.010
LIFECODES CORPORATION	06-28766-01	16	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-
NUCLEAR RESEARCH CORPORATION	37-02401-01	36	9	-	-	-	-	-	-	-	-	-	-	-	45	9	0.230	0.026
SAINT-GOBAIN/NORTON	34-06558-05	54	6	-	-	-	-	-	-	-	-	-	-	-	60	6	0.130	0.022
SEAMAN NUCLEAR CORPORATION	48-12016-01	-	-	1	-	1	1	1	-	-	-	-	-	-	4	4	2.930	0.733
THERATRONICS INTERNATIONAL LIMITED	54-28315-01	15	7	1	-	-	-	-	-	-	-	-	-	-	23	8	0.380	0.048
Total	**13**	**189**	**48**	**11**	**2**	**2**	**1**	**4**	-	**1**	-	-	-	-	**258**	**69**	**15.090**	**0.219**
LOW LEVEL WASTE DISPOSAL FACILITIES - 03231																		
CHEM-NUCLEAR SYSTEMS, INC.	12-13536-01	92	29	18	5	3	-	-	-	-	-	-	-	-	147	55	7.140	0.130
U. S. ECOLOGY, INC.	16-19204-01	6	6	6	-	-	-	-	-	-	-	-	-	-	18	12	1.158	0.097
Total	**2**	**98**	**35**	**24**	**5**	**3**	-	-	-	-	-	-	-	-	**165**	**67**	**8.298**	**0.124**

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1996

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)	AVERAGE MEAS. TEDE (cSv, rems)
		No Meas. Exposure	Meas. <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	6.00-12.0	>12.0				
INDUSTRIAL RADIOGRAPHY - SINGLE LOCATION - 03310																		
AMERICAN FOUNDRY GROUP,INC.	35-26893-01	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
ARMY, DEPARTMENT OF THE	13-18235-01	29	5	-	-	-	-	-	-	-	-	-	-	-	34	5	0.061	0.012
ARMY, DEPARTMENT OF THE	29-00047-06	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
ARROW TANK & ENGINEERING CO.	22-13253-01	2	1	3	-	2	-	-	-	-	-	-	-	-	8	6	1.780	0.297
BABCOCK & WILCOX COMPANY	34-02160-03	10	5	-	-	-	-	-	-	-	-	-	-	-	15	5	0.050	0.010
BUCKEYE STEEL CASTINGS	34-06627-01	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
CARONDELET FOUNDRY COMPANY	24-26136-01	6	1	1	-	-	-	-	-	-	-	-	-	-	8	2	0.160	0.080
CONNEX PIPE SYSTEMS INCORPORATED	45-26591-01	5	1	-	-	-	-	-	-	-	-	-	-	-	6	1	0.041	0.041
COPES-VULCAN, INC.	37-19530-01	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
DURALOY	37-02279-02	-	2	1	1	-	-	-	-	-	-	-	-	-	4	4	0.590	0.148
DURIRON CO., INC., (THE)	34-06398-01	1	2	1	-	-	-	-	-	-	-	-	-	-	4	3	0.260	0.087
GENERAL MOTORS CORP.	21-08678-05	2	1	-	-	-	-	-	-	-	-	-	-	-	3	1	0.030	0.030
GENERAL MOTORS CORPORATION	34-15315-02	5	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-
GREDE-PRYOR, INC.	35-18099-01	1	1	-	-	-	-	-	-	-	-	-	-	-	2	1	0.020	0.020
HARRISON STEEL CASTINGS COMPANY	13-02141-01	3	3	-	-	-	-	-	-	-	-	-	-	-	6	3	0.130	0.043
HIGH STEEL STRUCTURES, INC.	37-17534-01	9	4	1	-	-	-	-	-	-	-	-	-	-	14	5	0.380	0.076
INTERMET CORPORATION	45-17464-01	8	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-
MANOIR - ELECTRO ALLOYS, INC.	34-24346-01	3	3	2	3	-	-	-	-	-	-	-	-	-	11	**8**	1.490	0.186
MINNESOTA VALLEY ENGINEERING	22-24393-01	-	1	1	5	1	-	-	-	-	-	-	-	-	8	**8**	**2.670**	0.334
MISSOURI STEEL CASTINGS, A DIVISION	24-15152-01	6	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-
NILES STEEL TANK CO.	21-04741-01	3	1	-	-	-	-	-	-	-	-	-	-	-	4	1	0.010	0.010
NORTHWEST AIRLINES, INC.	22-12080-01	10	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-
PELTON CASTEEL, INC.	48-02669-02	3	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
TRANS WORLD AIRLINES, INC.	24-05151-05	112	-	-	-	-	-	-	-	-	-	-	-	-	**112**	-	-	-
WAUKESHA FOUNDRY DIVISION	48-13776-01	3	-	1	-	-	-	-	-	-	-	-	-	-	4	1	0.180	0.180
WILLIAM POWELL COMPANY (THE)	34-02963-01	2	1	-	-	-	-	-	-	-	-	-	-	-	3	1	0.050	0.050
WISCONSIN CENTRIFUGAL, INC.	48-11641-01	2	-	1	2	1	1	-	-	-	-	-	-	-	7	5	2.250	**0.450**
Total	**27**	**231**	**32**	**12**	**11**	**4**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**291**	**60**	**10.152**	**0.169**

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1996

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)	AVERAGE MEAS. TEDE (cSv, rems)
		No Meas. Exposure	Meas. <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	6.00-12.0	>12.0				
INDUSTRIAL RADIOGRAPHY - MULTIPLE LOCATION - 03320																		
ABC TESTING, INC.	20-19778-01	1	1	-	2	1	-	-	-	-	-	-	-	-	5	4	1.240	0.310
ACCU-TECH EVALUATION SERVICES, INC	29-28358-01	-	1	6	4	1	-	4	2	-	-	-	-	-	18	18	14.420	0.801
AKRON INDUSTRIAL SERV., INC.	34-24673-01	-	-	-	1	-	-	-	1	-	-	-	-	-	2	2	2.400	1.200
ALASKA INDUSTRIAL X-RAY	50-16084-01	-	3	-	2	2	1	2	-	-	-	-	-	-	10	10	5.340	0.534
ALLEGHENY LABORATORIES	37-20734-01	4	1	1	1	-	-	-	-	-	-	-	-	-	7	3	0.640	0.213
ALONSO & CARUS IRON WORKS, INC.	52-21350-01	3	4	-	-	-	-	-	-	-	-	-	-	-	7	4	0.161	0.040
AMERICAN AIRLINES, INC.	35-13964-01	26	8	-	-	-	-	-	-	-	-	-	-	-	34	8	0.110	0.014
ANVIL CORPORATION	46-23236-03	5	19	14	7	-	2	1	-	-	-	-	-	-	48	43	8.380	0.195
ARCTIC SLOPE INSP. SERVICES, INC.	50-29015-01	5	4	7	2	1	-	-	-	-	-	-	-	-	19	14	2.700	0.193
ARMY, DEPARTMENT OF THE	30-02405-05	-	2	-	-	-	-	-	-	-	-	-	-	-	2	2	0.013	0.007
ASTROTECH, INC.	37-09928-01	4	6	4	1	1	-	-	-	-	-	-	-	-	16	12	1.670	0.139
BAKER TESTING SERV., INC.	20-19067-01	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	0.010	0.010
BARNETT INDUSTRIAL X-RAY	35-26953-01	5	2	6	1	1	-	3	1	-	-	-	-	-	19	14	8.360	0.597
BIG STATE X-RAY, INC.	35-21144-01	1	4	3	2	4	4	7	-	-	-	-	-	-	25	24	15.916	0.663
BILL MILLER, INC.	35-19048-01	4	4	8	8	3	3	7	-	1	-	-	-	-	38	34	20.940	0.616
BRANCH RADIOGRAPHIC LABS., INC.	29-03405-02	5	6	4	4	2	1	-	-	-	-	-	-	-	22	17	4.079	0.240
BRAUN INTERTEC CORPORATION	22-16537-02	2	11	1	7	5	5	-	1	-	-	-	-	-	32	30	13.180	0.439
CALUMET TESTING SERV., INC.	13-16347-01	15	5	-	-	-	1	7	1	1	-	-	-	-	30	15	17.120	1.141
CAPITAL X-RAY SERV., INC.	35-11114-01	-	1	-	11	1	1	6	6	-	-	-	-	-	26	26	30.040	1.155
CENTURY INSPECTION, INC.	42-08456-02	10	27	28	25	17	9	7	1	1	-	-	-	-	125	115	47.775	0.415
CERTIFIED TESTING LABS., INC.	29-14150-01	10	15	3	2	1	1	1	-	-	-	-	-	-	33	23	4.616	0.201
CHICAGO BRIDGE AND IRON COMPANY	42-13553-02	40	28	8	6	1	2	1	-	-	-	-	-	-	86	46	7.240	0.157
COLBY & THIELMEIER TESTING CO.	24-13737-01	-	1	1	1	2	-	4	-	-	-	-	-	-	9	9	6.903	0.767
COMO TECH INSPECTION	15-26978-01	-	-	3	2	-	1	2	-	-	-	-	-	-	8	8	4.473	0.559
CONAM INSPECTION	12-16559-01	42	38	42	29	18	11	12	4	1	1	-	-	-	198	156	73.313	0.470
CONNELL LIMITED PARTNERSHIP	35-13735-01	1	1	-	-	-	-	1	-	-	-	-	-	-	3	2	1.160	0.580
CONSUMERS POWER CO.	21-08606-03	6	5	2	6	1	-	-	-	-	-	-	-	-	20	14	3.227	0.231
CTI ALASK, INC.	50-19202-01	35	17	9	31	23	9	15	3	-	-	-	-	-	142	107	62.830	0.587

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		No Meas. Exposure	Meas. <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	6.00-12.0	>12.0				
INDUSTRIAL RADIOGRAPHY - MULTIPLE LOCATION - 03320 Continued																		
DAYTON X-RAY CO.	34-06943-01	2	6	4	6	2	3	7	1	-	-	-	-	-	31	29	19.472	0.671
DIAMOND H TESTING COMPANY	11-27316-01	3	4	4	5	2	1	1	-	-	-	-	-	-	20	17	5.734	0.337
EASTERN TESTING & INSPECTION, INC.	29-09814-01	3	3	1	3	-	-	-	-	-	-	-	-	-	10	7	1.130	0.161
EDWARDS PIPELINE TESTING, INC.	35-23193-01	5	19	33	30	16	13	13	-	-	-	-	-	-	129	124	54.622	0.441
EG&G FLORIDA, INC.	FL-1219-1	29	7	1	-	-	-	-	-	-	-	-	-	-	37	8	0.240	0.030
ELECTRIC BOAT CORPORATION	06-01781-08	-	10	11	3	-	-	-	-	-	-	-	-	-	24	24	3.183	0.133
ETT: X-RAY, INC.	46-03414-03	9	9	5	1	2	-	1	-	-	-	-	-	-	27	18	4.754	0.264
FROEHLING & ROBERTSON, INC.	45-08890-01	9	2	3	-	-	-	-	-	-	-	-	-	-	14	5	0.510	0.102
GENERAL TESTING & INSPECTION CO.	34-09037-01	1	1	1	-	1	-	-	-	-	-	-	-	-	4	3	0.920	0.307
GLITSCH FIELD SERVICES/NDE,INC.	34-14071-01	9	9	6	7	2	3	3	-	-	-	-	-	-	39	30	11.260	0.375
GLOBE X-RAY SERV., INC.	35-15194-01	2	3	2	6	4	2	6	3	1	1	-	-	-	30	28	32.100	1.146
GREAT LAKES TESTING, INC.	48-26484-01	1	1	2	-	2	-	5	-	-	-	-	-	-	11	10	8.300	0.830
GRINNELL CORPORATION	38-28750-01	3	2	1	-	-	-	-	-	-	-	-	-	-	6	3	0.210	0.070
H&G INSPECTION COMPANY, INC.	42-26838-01	1	-	1	1	2	1	6	-	1	-	-	-	-	13	12	15.530	1.294
HIGH MOUNTAIN INSPECTION SERV, INC	49-26808-02	-	6	7	7	4	3	8	-	-	-	-	-	-	35	35	19.793	0.566
H. R. INSPECTION SERV., INC.	15-06209-01	1	1	1	-	1	-	4	-	-	-	-	-	-	8	7	6.080	0.869
HUNTINGTON TESTING & TECHNOLOGY	47-23076-01	-	4	3	6	1	5	6	2	-	-	-	-	-	27	27	21.240	0.787
INDUSTRIAL NDT SERVICES DIVISION	13-06147-04	3	10	3	1	-	1	-	-	1	-	-	-	-	19	16	5.670	0.354
INSPECTION MANAGEMENT CORP	35-26824-01	1	-	-	1	-	-	5	1	-	-	-	-	-	8	7	9.620	1.374
INTEGRATED TECH. INC.	06-30317-01	4	2	1	1	-	-	-	-	-	-	-	-	-	8	4	0.660	0.165
INTERMOUNTAIN TESTING CO.	05-07872-01	-	1	3	2	1	1	6	1	4	-	-	-	-	19	19	28.585	1.504
ITT INSPECTION TECH	24-26628-01	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
JAN X-RAY SERVICES, INC.	21-16560-01	1	7	5	14	8	5	10	1	1	-	-	-	-	52	51	35.260	0.691
LIBERTY TECHNOLOGIES, INC.	39-24888-01	-	5	5	5	2	1	-	-	-	-	-	-	-	18	18	4.730	0.263
LONGVIEW INSPECTION, INC.	45-25279-01	1	6	1	1	1	3	3	1	-	-	-	-	-	17	16	11.125	0.695
LONGVIEW INSPECTION INCORPORATED	48-17480-01	2	13	17	14	5	9	15	2	1	-	-	-	-	78	76	50.020	0.658
LUCIUS PITKIN, INC.	29-27816-01	1	2	-	5	1	-	-	-	-	-	-	-	-	9	8	2.634	0.329
MAGNA CHEK, INC.	21-19111-02	20	3	-	-	-	-	-	-	-	-	-	-	-	23	3	0.120	0.040

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		No Meas. Exposure	Meas. <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	6.00-12.0	>12.0				
INDUSTRIAL RADIOGRAPHY - MULTIPLE LOCATION - 03320 Continued																		
MARYLAND Q.C. LABORATORIES, INC.	19-28683-01	9	4	6	6	1	-	2	-	-	-	-	-	-	28	19	6.420	0.338
MASSACHUSETTS MATERIALS RESEARCH	07-01173-03	2	2	2	1	-	-	1	-	-	-	-	-	-	8	6	1.840	0.307
MATERIAL TESTING LABORATORIES, INC.	45-17151-01	4	2	3	1	-	-	1	-	-	-	-	-	-	11	7	2.555	0.365
MATTINGLY TESTING SERVICES, INC.	25-21479-01	1	1	3	-	4	1	3	-	-	-	-	-	-	13	12	8.085	0.674
MAXIM TECHNOLOGIES, INC.	22-01376-02	3	3	1	6	2	3	6	-	-	-	-	-	-	24	21	16.610	0.791
MET-CHEM TESTING LABS. OF UTAH,INC.	43-27362-01	1	5	4	3	1	4	3	1	1	-	-	-	-	23	22	16.218	0.737
MID AMERICAN INSPECTION SERIVES,INC	21-26060-01	3	-	1	-	1	2	4	2	-	-	-	-	-	13	10	13.570	1.357
MIDWEST INDUSTRIAL X-RAY, INC.	33-27427-01	4	1	3	2	2	-	4	4	1	-	-	-	-	21	17	21.150	1.244
MIDWEST INSPECTION SERVICES	35-27005-01	5	4	4	6	5	3	8	5	6	1	-	-	-	47	42	56.050	1.335
MONTANA X-RAY, INC.	25-21134-01	-	-	-	1	-	-	-	-	-	-	-	-	-	1	1	0.390	0.390
MQS INSPECTION, INC.	12-00622-07	149	73	35	34	14	16	37	4	-	-	-	-	-	**362**	**213**	**104.115**	0.489
NDT SERVICES, INC.	52-19438-01	3	-	1	2	4	-	2	-	-	-	-	-	-	12	9	5.516	0.613
NEWPORT NEWS SHIPBUILDING & DRYDOCK	45-09428-02	-	24	10	-	-	-	-	-	-	-	-	-	-	34	34	2.366	0.070
NOOTER CORPORATION	24-03783-01	7	11	1	-	-	-	-	-	-	-	-	-	-	19	12	0.480	0.040
NORFOLK SHIPBUILDING & DRYDOCK CO.	45-12042-01	8	6	-	-	-	-	-	-	-	-	-	-	-	14	6	0.170	0.028
NORTH AMERICAN INSPECTION, INC.	37-23370-01	1	1	4	2	-	1	6	2	-	-	-	-	-	17	16	14.410	0.901
NORTHWEST INSP. & TESTING SERV. INC	11-27394-01	-	-	1	-	-	-	1	-	-	-	-	-	-	2	2	1.873	0.937
NOVA DATA TESTING LABS, INC.	45-24872-01	2	1	6	-	-	-	1	-	-	-	-	-	-	10	8	2.140	0.268
PITT-DES MOINES, INC.	37-27878-01	12	4	2	3	2	1	4	-	-	-	-	-	-	28	16	8.510	0.532
PRECISION COMPONENTS CORP.	37-16280-01	33	12	2	2	-	-	-	-	-	-	-	-	-	49	16	1.220	0.076
PROFESSIONAL SERV. INDUS., INC.	12-16941-03	8	2	5	2	6	3	8	1	-	1	-	-	-	36	28	25.250	0.902
PROFESSIONAL WELDING ASSOC.,INC.	48-25806-01	-	3	2	-	-	-	-	-	-	-	-	-	-	5	5	0.430	0.086
PROGRESS SERV., INC.	34-19592-01	3	3	2	1	-	-	-	-	-	-	-	-	-	9	6	0.840	0.140
PSI ENERGY, INC.	13-15544-06	2	3	-	-	-	-	-	-	-	-	-	-	-	5	3	0.120	0.040
Q.C. LABS., INC.	09-11579-03	2	8	5	-	3	-	-	-	-	-	-	-	-	18	16	2.910	0.182
QSL INSPECTION, INC.	37-28085-01	6	6	3	7	3	1	11	6	-	-	-	-	-	43	37	37.400	1.011
QUALITY ENERGY SERV. & TESTS CORP.	35-26815-01	1	2	-	-	-	-	4	3	2	-	-	-	-	12	11	20.883	**1.898**
QUALITY INSPECTION & TESTING	50-29038-01	-	2	1	-	2	-	1	-	-	-	-	-	-	6	6	2.580	0.430

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		No Meas. Exposure	Meas. <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	6.00-12.0	>12.0				
INDUSTRIAL RADIOGRAPHY - MULTIPLE LOCATION - 03320 Continued																		
RAYTHEON ENGINEERS & CONSTRUCTORS	29-07056-03	-	-	-	-	4	-	1	1	-	-	-	-	-	6	6	5.830	0.972
RIDGEWATER COLLEGE	22-15554-01	53	10	-	-	-	-	-	-	-	-	-	-	-	63	10	0.150	0.015
RIVEST TESTING USA, INC.	35-27438-01	-	1	2	-	1	-	-	-	-	-	-	-	-	4	4	0.815	0.204
RUST UTILITY SERVICES, INC.	06-20794-01	10	9	5	-	-	-	-	-	-	-	-	-	-	24	14	1.090	0.078
SGS INDUSTRIAL SERVICES	04-29067-02	15	31	20	23	10	5	3	-	-	-	-	-	-	107	92	27.680	0.301
S. K. MCBRYDE, INC.	32-25137-01	2	2	3	-	-	-	-	-	-	-	-	-	-	7	5	0.680	0.136
SAM-SON INSPECTION & TECH.SERV.INC.	34-25898-01	4	4	3	3	-	-	2	-	-	-	-	-	-	16	12	4.250	0.354
SENIOR ENGINEERING CO.	24-19500-01	1	3	-	-	-	-	-	-	-	-	-	-	-	4	3	0.090	0.030
SIERRA TESTING, INC.	35-26950-01	1	2	1	2	-	1	4	3	1	-	-	-	-	15	14	18.850	1.346
SOUTHWEST X-RAY CORPORATION	49-27434-01	11	1	1	-	-	2	8	1	1	-	-	-	-	25	14	18.950	1.354
SPEC CONSULTANTS, INC.	37-27891-01	5	9	2	3	5	-	2	-	-	-	-	-	-	26	21	7.220	0.344
ST. LOUIS TESTING LABS., INC.	24-00188-02	1	3	2	5	2	-	2	-	-	-	-	-	-	15	14	6.190	0.442
TECHNICAL WELDING LABORATORY, INC.	42-25214-01	3	1	2	3	2	2	8	1	1	-	-	-	-	23	20	20.760	1.038
TEI ANALYTICAL SERVICE	37-28004-01	13	7	8	7	3	3	8	1	-	-	-	-	-	50	37	22.180	0.599
TENNECO GAS PIPELINE	42-09073-02	6	8	1	-	-	-	-	-	-	-	-	-	-	15	9	0.250	0.028
TENNESSEE VALLEY AUTHORITY	41-06832-06	10	9	4	5	5	-	-	-	-	-	-	-	-	33	23	6.134	0.267
TESTING INST. OF AK, INC.	50-17446-01	6	6	-	3	1	-	1	1	-	-	-	-	-	18	12	5.926	0.494
TESTING TECHNOLOGIES, INC.	45-25007-01	3	2	7	7	2	1	2	1	-	-	-	-	-	25	22	11.010	0.500
TESTMASTER INSPECTION CO.,INC.	34-24872-01	-	2	1	7	1	2	2	2	-	-	-	-	-	17	17	12.490	0.735
TRI STATE ASSOCIATES, INC.	45-24967-01	2	1	-	1	1	-	-	-	-	-	-	-	-	5	3	1.030	0.343
TRI STATE INSPECTION & CONSULTANTS	37-19640-01	1	1	-	-	1	-	-	-	-	-	-	-	-	3	2	0.550	0.275
TULSA GAMMA RAY, INC.	35-17178-01	1	7	6	6	10	2	11	6	1	-	-	1	-	51	50	52.220	1.044
TWIN PORTS TESTING, INC.	48-23476-01	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1	0.550	0.550
VALLEY INDUSTRIAL X-RAY	04-29076-01	6	10	3	4	8	4	4	4	2	-	-	-	-	45	39	32.985	0.846
VALLEY INSPECTION SERVICE, INC.	37-28385-01	1	3	2	-	-	-	2	-	-	-	-	-	-	8	7	2.900	0.414
VENEGAS INDUSTRIAL TESTING	28-14847-02	-	1	1	-	-	-	-	-	-	-	-	-	-	2	2	0.270	0.135
VERMONT NONDESTRUCTIVE TESTING, INC	44-28509-01	1	2	-	-	-	-	-	-	-	-	-	-	-	3	2	0.100	0.050
VOITH HYDRO, INC.	37-16280-03	7	2	-	-	-	-	-	-	-	-	-	-	-	9	2	0.040	0.020

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		No Meas. Exposure	Meas. <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	6.00-12.0	>12.0				
INDUSTRIAL RADIOGRAPHY - MULTIPLE LOCATION - 03320 Continued																		
WALASHEK ENTERPRISES, INC.	53-23225-01	3	2	1	-	-	-	-	-	-	-	-	-	-	6	3	0.260	0.087
WESTERN IND. X-RAY INSPECTION CO.	49-27356-01	2	2	2	1	1	-	-	2	-	-	-	-	-	10	8	5.915	0.739
WESTERN X-RAY COMPANY	35-19993-01	-	-	2	2	4	-	7	3	-	-	-	-	-	18	18	20.060	1.114
WESTINGHOUSE ELECTRIC CORP.	37-05809-02	4	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-
X-R-I TESTING	21-05472-01	85	19	5	-	-	-	-	-	-	-	-	-	-	109	24	1.580	0.066
Total	**117**	**863**	**694**	**462**	**435**	**254**	**159**	**353**	**86**	**29**	**4**	**-**	**1**	**-**	**3,340**	**2,477**	**1,374.864**	**0.555**
FUEL FABRICATION FACILITIES - 21210																		
B&W FUEL CO.	SNM-1168	214	192	44	7	2	3	-	-	-	-	-	-	-	462	248	18.984	0.077
BABCOCK & WILCOX CO.	SNM-42	50	48	34	85	40	28	42	1	-	-	-	-	-	328	278	147.486	0.531
COMBUSTION ENGINEERING, INC.	SNM-33	266	90	-	-	-	-	-	-	-	-	-	-	-	356	90	0.113	0.001
GENERAL ATOMICS	SNM-696	62	13	7	7	3	-	-	-	-	-	-	-	-	92	30	5.738	0.191
GENERAL ELECTRIC CO.	SNM-1097	317	536	147	132	68	36	79	2	-	-	-	-	-	1,317	1,000	261.514	0.262
NUCLEAR FUEL SERVICES, INC.	SNM-124	178	195	26	26	7	3	-	-	-	-	-	-	-	435	257	24.937	0.097
SIEMENS POWER CORP.	SNM-1227	102	409	91	57	40	27	34	1	-	-	-	-	-	761	659	142.483	0.216
WESTINGHOUSE ELECTRIC CORP.	SNM-1107	119	169	73	80	45	29	77	22	4	-	-	-	-	618	499	276.355	0.554
Total	**8**	**1,308**	**1,652**	**422**	**394**	**205**	**126**	**232**	**26**	**4**	**-**	**-**	**-**	**-**	**4,369**	**3,061**	**877.610**	**0.287**
INDEPENDENT SPENT FUEL STORAGE INSTALLATION - 23200																		
GENERAL ELECTRIC CO.	SNM-2500	44	14	4	6	8	3	7	6	2	3	-	-	-	97	53	54.301	1.025
Total	**1**	**44**	**14**	**4**	**6**	**8**	**3**	**7**	**6**	**2**	**3**	**-**	**-**	**-**	**97**	**53**	**54.301**	**1.025**

APPENDIX B

Annual Whole Body Doses at Licensed Nuclear Power Plants

1996

APPENDIX B
ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES
CY 1996

PLANT NAME	TYPE	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)														TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)
		No Meas. Exposure	Meas. <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	7.00-12.00	>12.0			
ARKANSAS 1,2	PWR	1,362	793	419	167	44	10	8	-	-	-	-	-	-	-	2,803	1,441	203
BEAVER VALLEY 1,2	PWR	1,100	657	428	315	147	84	53	4	-	-	-	-	-	-	2,788	1,688	449
BIG ROCK POINT	BWR	181	85	50	52	39	29	92	-	-	-	-	-	-	-	528	347	208
BRAIDWOOD 1,2	PWR	1,229	468	380	310	122	55	21	-	-	-	-	-	-	-	2,585	1,356	334
BROWNS FERRY 1,2,3	BWR	1,649	794	402	328	144	59	22	-	-	-	-	-	-	-	3,398	1,749	384
BRUNSWICK 1,2	BWR	1,437	1,310	574	448	219	90	141	2	-	-	-	-	-	-	4,221	2,784	716
BYRON 1,2	PWR	1,415	577	388	356	154	65	70	-	-	-	-	-	-	-	3,025	1,610	455
CALLAWAY 1	PWR	707	382	279	187	69	25	32	6	-	-	-	-	-	-	1,687	980	248
CALVERT CLIFFS 1,2	PWR	1,530	528	319	188	84	32	16	-	-	-	-	-	-	-	2,697	1,167	239
CATAWBA 1,2	PWR	1,887	698	504	261	68	29	28	-	-	-	-	-	-	-	3,475	1,588	302
CLINTON	BWR	882	408	267	242	126	53	57	1	-	-	-	-	-	-	2,036	1,154	350
COMANCHE PEAK 1,2	PWR	1,065	710	364	236	92	34	26	-	-	-	-	-	-	-	2,527	1,462	288
COOK 1,2	PWR	1,082	527	260	212	91	21	3	-	-	-	-	-	-	-	2,196	1,114	214
COOPER STATION	BWR	787	314	104	35	14	1	-	-	-	-	-	-	-	-	1,255	468	48
CRYSTAL RIVER 3	PWR	873	424	269	256	135	60	45	3	-	-	-	-	-	-	2,065	1,192	353
DAVIS-BESSE	PWR	723	462	263	143	64	17	-	-	-	-	-	-	-	-	1,672	949	167
DIABLO CANYON 1,2	PWR	1,825	938	342	117	43	17	5	-	-	-	-	-	-	-	3,287	1,462	176
DRESDEN 2,3	BWR	1,887	788	351	329	183	89	48	-	-	-	-	-	-	-	3,675	1,788	456
DUANE ARNOLD	BWR	606	446	269	224	82	40	31	1	-	-	-	-	-	-	1,699	1,093	270
FARLEY 1,2	PWR	808	565	326	160	43	19	37	-	-	-	-	-	-	-	1,958	1,150	232
FERMI 2	BWR	1,794	870	353	158	21	-	-	-	-	-	-	-	-	-	3,196	1,402	157
FITZPATRICK	BWR	850	587	304	257	129	56	51	-	-	-	-	-	-	-	2,234	1,384	357
FORT CALHOUN	PWR	504	281	140	147	82	57	33	-	-	-	-	-	-	-	1,244	740	226
GINNA	PWR	932	440	289	205	34	4	4	-	-	-	-	-	-	-	1,908	976	168
GRAND GULF	BWR	1,092	744	343	250	126	61	39	1	-	-	-	-	-	-	2,656	1,564	357
HADDAM NECK	PWR	953	342	106	99	55	35	36	-	-	-	-	-	-	-	1,626	673	175
HARRIS	PWR	550	394	36	14	-	-	-	-	-	-	-	-	-	-	994	444	17
HATCH 1,2	BWR	765	571	319	304	136	93	70	2	-	-	-	-	-	-	2,260	1,495	441
HOPE CREEK 1	BWR	895	591	220	173	55	21	9	-	-	-	-	-	-	-	1,964	1,069	158
INDIAN POINT 2	PWR	725	229	97	44	11	4	3	-	-	-	-	-	-	-	1,113	388	54
INDIAN POINT 3	PWR	1,099	231	36	17	4	-	1	-	-	-	-	-	-	-	1,388	289	22
KEWAUNEE	PWR	238	213	78	92	47	22	22	-	-	-	-	-	-	-	712	474	126
LASALLE 1,2	BWR	1,218	1,175	500	515	293	146	149	4	-	-	-	-	-	-	4,000	2,782	819
LIMERICK 1,2	BWR	2,148	997	374	184	67	25	7	-	-	-	-	-	-	-	3,802	1,654	234
MAINE YANKEE	PWR	805	229	103	64	9	3	-	-	-	-	-	-	-	-	1,213	408	56
MCGUIRE 1,2	PWR	1,800	891	447	206	50	18	10	-	-	-	-	-	-	-	3,422	1,622	238
MILLSTONE POINT 1	BWR	1,127	325	152	108	57	40	58	7	-	-	-	-	-	-	1,874	747	431
MILLSTONE POINT 2,3	PWR	1,481	428	201	142	74	53	77	9	-	-	-	-	-	-	2,465	984	126
MONTICELLO	BWR	625	266	180	141	80	45	45	-	-	-	-	-	-	-	1,382	757	240

APPENDIX B (Continued)
ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES
CY 1996

PLANT NAME	TYPE	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)														TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)
		No Meas. Exposure	Meas. <0.10	0.10-0.25	0.25-0.5	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	7.00-12.00	>12.0			
NINE MILE POINT 1,2	BWR	1,293	764	420	291	88	20	13	-	-	-	-	-	-	-	2,889	1,596	290
NORTH ANNA 1,2	PWR	1,236	455	359	240	78	37	32	2	-	-	-	-	-	-	2,439	1,203	291
OCONEE 1,2,3	PWR	1,831	710	447	207	79	21	15	-	-	-	-	-	-	-	3,310	1,479	257
OYSTER CREEK	BWR	642	859	418	272	135	67	79	3	-	-	-	-	-	-	2,475	1,833	449
PALISADES	PWR	628	490	244	181	71	48	67	8	-	-	-	-	-	-	1,737	1,109	318
PALO VERDE 1,2,3	PWR	1,342	929	356	281	85	45	21	-	-	-	-	-	-	-	3,059	1,717	302
PEACH BOTTOM 2,3	BWR	1,712	924	377	211	93	31	21	-	-	-	-	-	-	-	3,369	1,657	282
PERRY	BWR	1,279	670	516	318	89	22	7	-	-	-	-	-	-	-	2,901	1,622	307
PILGRIM	BWR	822	209	116	132	50	10	-	-	-	-	-	-	-	-	1,339	517	116
POINT BEACH 1,2	PWR	517	373	241	242	103	40	30	-	-	-	-	-	-	-	1,546	1,029	276
PRAIRIE ISLAND 1,2	PWR	483	251	141	113	38	12	3	-	-	-	-	-	-	-	1,041	558	112
QUAD CITIES 1,2	BWR	1,167	614	375	443	278	224	314	-	-	-	-	-	-	-	3,415	2,248	1,025
RIVER BEND 1	BWR	701	1,030	433	331	161	76	57	5	-	-	-	-	-	-	2,794	2,093	473
ROBINSON 2	PWR	600	546	239	175	54	14	3	-	-	-	-	-	-	-	1,631	1,031	167
SALEM 1,2	PWR	1,401	925	343	270	87	32	14	-	-	-	-	-	-	-	3,072	1,671	300
SAN ONOFRE 2,3	PWR	3,440	821	318	116	14	3	-	-	-	-	-	-	-	-	4,712	1,272	129
SEABROOK	PWR	934	183	16	7	-	-	-	-	-	-	-	-	-	-	1,140	206	10
SEQUOYAH 1,2	PWR	1,533	657	361	274	79	26	7	-	-	-	-	-	-	-	2,937	1,404	265
SOUTH TEXAS 1,2	PWR	1,516	713	247	150	30	4	1	-	-	-	-	-	-	-	2,661	1,145	137
ST. LUCIE 1,2	PWR	1,203	563	360	282	100	58	69	1	-	-	-	-	-	-	2,636	1,433	385
SUMMER 1	PWR	928	376	205	99	19	2	-	-	-	-	-	-	-	-	1,629	701	97
SURRY 1,2	PWR	1,225	408	306	174	50	27	15	3	-	-	-	-	-	-	2,208	983	209
SUSQUEHANNA 1,2	BWR	1,600	698	333	245	91	46	17	-	-	-	-	-	-	-	3,030	1,430	289
THREE MILE ISLAND 1	PWR	457	232	34	1	-	-	-	-	-	-	-	-	-	-	724	267	16
TURKEY POINT 3,4	PWR	1,155	570	326	199	45	14	3	-	-	-	-	-	-	-	2,312	1,157	187
VERMONT YANKEE	BWR	1,163	311	299	207	107	19	8	-	-	-	-	-	-	-	2,114	951	231
VOGTLE 1,2	PWR	860	507	308	275	126	75	102	2	-	-	-	-	-	-	2,255	1,395	452
WASHINGTON NUCLEAR 2	BWR	1,011	635	286	258	146	89	39	-	-	-	-	-	-	-	2,464	1,453	373
WATERFORD 3	PWR	993	246	75	20	1	-	-	-	-	-	-	-	-	-	1,335	342	27
WOLF CREEK 1	PWR	820	474	289	153	52	17	1	-	-	-	-	-	-	-	1,806	986	171
ZION 1,2	PWR	1,069	605	331	348	167	57	55	4	-	-	-	-	-	-	2,636	1,567	437
TOTALS: 37 BWRs		29,333	16,985	8,335	6,456	3,009	1,452	1,374	26	-	-	-	-	-	-	66,970	37,637	9,461
TOTALS: 72 PWRs		48,864	22,441	11,620	7,745	2,800	1,196	968	42	-	-	-	-	-	-	95,676	46,812	9,413
TOTALS: 109 LWRs		78,197	39,426	19,955	14,201	5,809	2,648	2,342	68	-	-	-	-	-	-	162,646	84,449	18,874

APPENDIX B (Continued)
ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES
FACILITIES NOT IN OPERATION OR IN OPERATION LESS THAN ONE YEAR
CY 1996

PLANT NAME	TYPE	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)														TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)
		No Meas. Exposure	Meas. <0.10	0.10-0.25	0.25-0.5	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	7.00-12.00	>12.0			
DRESDEN 1 *	BWR	Reported with Dresden 2,3																
FORT ST. VRAIN *	HTGR	229	26	1	-	-	-	1	-	-	-	-	-	-	-	257	28	2
HUMBOLDT BAY *	BWR	185	48	13	4	1	-	-	-	-	-	-	-	-	-	251	66	5
INDIAN POINT 1 *	PWR	Reported with Indian Point 2														-		
LACROSSE *	BWR	49	7	15	3	-	-	-	-	-	-	-	-	-	-	74	25	4
RANCHO SECO *	PWR	176	16	-	-	-	-	-	-	-	-	-	-	-	-	192	16	1
SAN ONOFRE 1*	PWR	Reported with San Onofre 2,3														-		
THREE MILE ISLAND 2*	PWR	209	106	15	1	-	-	-	-	-	-	-	-	-	-	331	122	2
TROJAN *	PWR	255	55	21	9	8	4	15	-	-	-	-	-	-	-	367	112	41
WATTS BAR 1,2	PWR	1,563	335	31	-	-	-	-	-	-	-	-	-	-	-	1,929	366	15
YANKEE-ROWE *	PWR	674	69	62	37	27	15	29	-	-	-	-	-	-	-	913	239	95
TOTAL REPORTING: 8		3,340	662	158	54	36	19	45	-	-	-	-	-	-	-	4,314	974	165

* Indicates plants that are no longer in commercial operation.

APPENDIX C*

Personnel, Dose, and Power Generation Summary

1969-1996

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

APPENDIX C
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
ARKANSAS 1,2	1975	588.0	76.5	147	21					0.14	0.0
Docket 50-313, 50-368; DPR-51; NPF-6	1976	464.6	56.6	476	289	27	262	100	189	0.61	0.6
1st commercial operation 12/74, 3/80	1977	610.3	76.8	601	256	28	228	111	145	0.43	0.4
Type - PWRs	1978	627.2	77.5	722	189	32	157	109	80	0.26	0.3
Capacity - 836, 858 MWe	1979	397.0	55.3	1,321	369	54	315	252	117	0.28	0.9
	1980	452.8	63.7	1,233	342	81	261	213	129	0.28	0.8
	1981	1,104.7	68.3	2,225	1,102	130	972	843	259	0.50	1.0
	1982	905.4	58.6	1,608	803	97	706	505	298	0.50	0.9
	1983	915.0	54.7	2,109	1,397	96	1,301	1,145	252	0.66	1.5
	1984	1,289.1	77.4	1,742	806	89	717	533	273	0.46	0.6
	1985	1,192.3	73.6	1,262	286	62	224	148	138	0.23	0.2
	1986	1,070.3	66.9	2,135	1,141	194	947	881	260	0.53	1.1
	1987	1,366.1	88.9	1,123	382	92	290	205	177	0.34	0.3
	1988	1,070.3	69.4	2,421	1,387	138	1,249	1,094	293	0.57	1.3
	1989	1,066.3	72.0	2,063	711	36	675	522	189	0.34	0.7
	1990	1,351.9	84.2	2,493	762	32	730	625	137	0.31	0.6
	1991	1,515.8	88.4	2,064	351	35	316	242	109	0.17	0.2
	1992	1,352.1	77.4	3,114	876	21	855	719	157	0.28	0.6
	1993	1,606.0	91.3	1,981	268	9	259	194	74	0.14	0.2
	1994	1,662.8	93.6	1,361	172	80	91	122	49	0.13	0.1
	1995	1,397.0	82.7	2,259	386	34	352	273	113	0.17	0.3
	1996	1,596.0	89.5	1,441	203	51	152	128	75	0.14	0.1
BEAVER VALLEY 1,2	1977	355.6	57.0	331	878	79	58	29		0.26	0.2
Docket 50-334, 50-412; DPR-66, NPF-73	1978	304.2	40.8	646	190	11	179	151	39	0.29	0.6
1st commercial operation 10/76, 11/87	1979	221.0	40.0	704	132	22	110	67	65	0.19	0.6
Type - PWRs	1980	39.8	6.8	1,817	553	76	477	477	76	0.30	13.9
Capacity - 810, 820	1981	573.4	73.6	1,237	229	38	191	142	87	0.19	0.4
	1982	326.7	41.6	1,755	599	126	473	481	118	0.34	1.8
	1983	561.2	68.2	1,485	772	158	614	615	157	0.52	1.4
	1984	576.7	71.8	1,393	504	124	380	302	202	0.36	0.9
	1985	717.7	91.9	619	60	17	43	12	48	0.10	0.1
	1986	581.3	70.7	1,575	627	82	545	456	171	0.40	1.1
	1987	684.1	83.8	1,282	210	43	167	137	73	0.16	0.3
	1988	1,386.1	87.4	1,764	530	90	440	438	92	0.30	0.4
	1989	1,017.4	69.6	2,349	1,378	197	1,181	1,151	227	0.59	1.4
	1990	1,271.0	85.3	1,675	348	33	315	268	80	0.21	0.3
	1991	1,267.5	78.6	1,689	495	62	433	325	170	0.29	0.4
	1992	1,441.9	89.1	1,414	289	29	260	203	86	0.20	0.2

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems)					Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
BEAVER VALLEY 1,2 (continued)	1993	1,157.9	73.1	2,087	621	59	562	490	131	0.30	0.5
	1994	1,514.6	88.6	487	44	9	34	5	38	0.09	0.0
	1995	1,389.2	83.1	1,536	453	46	407	336	117	0.29	0.3
	1996	1,269.0	76.5	1,688	449	48	401	368	81	0.27	0.4
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 - 67 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	91	263	91	263	0.59	7.2
	1981	56.9	90.6	479	160	58	102	38	122	0.33	2.8
	1982	43.6	70.8	521	328	129	199	67	261	0.63	7.5
	1983	42.3	71.0	493	263	32	231	55	208	0.53	6.2
	1984	50.3	78.6	297	155	37	118	21	134	0.52	3.1
	1985	43.8	73.5	435	291	54	237	60	231	0.67	6.6
	1986	61.0	95.5	202	84	34	50	17	67	0.42	1.4
	1987	45.3	71.0	251	222	45	177	35	187	0.88	4.9
	1988	46.1	72.8	303	170	34	136	25	145	0.56	3.7
	1989	50.2	79.0	418	177	38	139	32	145	0.42	3.5
	1990	51.3	77.2	351	232	33	199	45	187	0.66	4.5
	1991	59.1	85.2	435	226	31	195	42	184	0.52	3.8
	1992	32.7	54.5	496	277	36	241	51	226	0.56	8.5
	1993	51.2	79.4	419	152	30	122	41	111	0.36	3.0
	1994	49.5	75.3	310	119	25	93	24	94	0.38	2.4
	1995	62.2	95.0	205	54	20	34	13	41	0.26	0.9
	1996	43.9	64.5	347	208	31	177	73	135	0.60	4.7
BRAIDWOOD 1,2	1989	1,381.8	75.4	1,460	296	7	289	198	98	0.20	0.2
Docket 50-456, 50-457; NPF-72, NPF-77	1990	1,740.2	84.1	1,081	186	9	177	107	79	0.17	0.1
1st commercial operation 7/88, 10/88	1991	1,377.2	68.9	1,641	550	101	449	387	163	0.34	0.4
Type - PWRs	1992	1,885.9	89.0	1,059	228	29	199	140	88	0.22	0.1
Capacity - 1120, 1120 MWe	1993	1,899.3	86.9	1,043	273	23	250	170	103	0.26	0.1

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
BRAIDWOOD 1,2 (continued)	1994	1,666.1	77.2	1,237	298	17	2800	179	118	0.24	0.1
	1995	1,914.7	85.4	1,134	236	13	223	2	234	0.21	0.1
	1996	1,854.9	82.1	1,356	334	18	316	241	93	0.25	0.2
BROWNS FERRY 1,2,3	1975	161.7	17.8	2,380	325					0.14	2.0
Docket 50-259, 50-260, 50-296	1976	337.6	26.9	2,207	234					0.11	0.7
DPR - 33, - 52, - 68	1977	1,327.5	73.7	1,858	863	60	803	249	614	0.46	0.7
1st commercial operation 8/74, 3/75,	1978	1,992.1	73.5	2,376	1,792	4	1,788	261	1,531	0.75	0.9
3/77	1979	2,393.0	79.1	2,689	1,667	0	1,667	289	1,378	0.62	0.7
Type - BWRs	1980	2,182.1	73.6	2,712	1,826	4	1,822	50	1,776	0.67	0.8
Capacity - 0, 1065, 1065 MWe	1981	2,132.9	69.5	3,379	2,380	100	2,280	404	1,976	0.70	1.1
	1982	2,025.4	67.6	3,277	2,220	181	2,039	317	1,903	0.68	1.1
	1983	1,641.0	54.3	3,302	3,363	276	3,087	909	2,454	1.02	2.0
	1984	1,431.9	54.2	2,962	1,940	229	1,711	541	1,399	0.65	1.4
	1985	368.2	11.9	2,755	1,159	201	958	306	853	0.42	3.1
	1986	0.0	0.0	3,003	1,050	196	854	343	707	0.35	---
	1987	0.0	0.0	3,115	1,181	187	994	222	959	0.38	---
	1988	0.0	0.0	3,324	1,155	234	921	109	1,046	0.35	---
	1989	0.0	0.0	2,683	656	97	559	131	525	0.24	---
	1990	0.0	0.0	2,717	1,310	64	1,246	68	1,242	0.48	---
	1991	445.0	17.7	1,815	354	134	220	121	233	0.20	0.8
	1992	979.9	32.2	2,658	516	85	431	299	217	0.19	0.5
	1993	675.1	66.8	3,594	870	78	792	600	270	0.24	1.3
	1994	860.2	83.4	3,299	855	54	800	649	205	0.26	0.9
	1995	1,165.8	98.6	2,540	409	64	345	281	128	0.16	0.4
	1996	1,972.8	93.0	1,749	384	54	330	196	188	0.22	0.2
BRUNSWICK 1,2	1976	297.2	56.0	1,265	326	15	311	222	104	0.26	1.1
Docket 50-324, 50-325; DPR-62, -71	1977	291.1	55.7	1,512	1,120	48	1,071	782	337	0.74	3.8
1st commercial operation 3/77, 11/75	1978	1,173.1	83.7	1,458	1,004	99	905	695	309	0.69	0.9
Type - BWRs	1979	810.0	60.1	2,891	2,602	97	2,505	2,074	528	0.90	3.2
Capacity - 767, 754 MWe	1980	687.2	52.2	3,788	3,870	111	3,759	3,098	772	1.02	5.6
	1981	925.2	56.9	3,854	2,638	159	2,479	1,890	748	0.68	2.9
	1982	540.3	50.3	4,957	3,792	162	3,630	2,841	951	0.76	7.0
	1983	636.7	44.3	5,602	3,475	152	3,323	2,428	1,047	0.62	5.5
	1984	761.3	51.5	5,046	3,260	143	3,117	2,363	897	0.65	4.3
	1985	822.2	58.4	4,057	2,804	120	2,684	2,077	727	0.69	3.4
	1986	1,051.3	69.1	3,370	1,909	97	1,812	1,273	636	0.57	1.8

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems)					Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Operations	Maint & Others	Contractor	Station & Utility		
BRUNSWICK 1,2 (continued)	1987	1,152.4	80.6	3,052	1,419	144	1,275	861	558	0.46	1.2
	1988	990.8	70.1	2,648	1,747	219	1,528	1,051	696	0.66	1.8
	1989	990.9	65.8	3,844	1,786	181	1,605	1,295	491	0.46	1.8
	1990	991.6	67.8	3,182	1,548	152	1,396	1,156	392	0.49	1.6
	1991	952.8	64.5	2,586	778	120	658	451	327	0.30	0.8
	1992	375.9	27.9	2,690	623	95	528	464	159	0.23	1.7
	1993	470.0	33.8	2,921	872	118	754	645	227	0.30	1.9
	1994	1,268.4	83.0	3,049	999	122	876	720	278	0.33	0.7
	1995	1,411.7	92.9	2,657	683	101	582	482	201	0.26	0.5
	1996	1,261.1	85.9	2,784	716	102	614	465	251	0.26	0.6
BYRON 1,2	1986	894.5	88.6	1,081	76	12	64	47	29	0.07	0.1
Docket 50-454, 50-455; NPF-37, NPF-66	1987	650.9	70.9	1,826	769	11	758	667	102	0.42	1.2
1st commercial operation 9/85,8/87	1988	1,534.7	86.3	1,222	459	0	459	333	126	0.38	0.3
Type - PWRS	1989	1,812.6	90.2	1,109	172	21	151	105	67	0.16	0.1
Capacity - 1105, 1105 MWe	1990	1,567.3	78.8	1,396	434	38	396	266	168	0.31	0.3
	1991	1,816.3	89.9	1,077	268	42	226	158	110	0.25	0.1
	1992	1,888.4	90.1	1,021	199	43	156	118	81	0.19	0.1
	1993	1,785.6	83.5	1,370	432	57	375	248	184	0.32	0.2
	1994	1,953.3	90.7	962	280	17	262	164	115	0.29	0.1
	1995	1,900.6	85.5	1,107	306	1	305	183	123	0.28	0.2
	1996	1,758.4	79.3	1,610	455	4	451	176	279	0.28	0.3
CALLAWAY 1	1985	967.4	90.0	964	36	16	20	7	29	0.04	0.0
Docket 50-483; NPF-30	1986	865.2	81.3	1,052	225	53	172	129	96	0.21	0.3
1st commercial operation 12/84	1987	759.0	71.1	1,082	393	89	304	249	144	0.36	0.5
Type - PWR	1988	1,069.2	93.4	353	27	12	15	2	25	0.08	0.0
Capacity - 1125 MWe	1989	1,000.3	85.4	1,055	283	46	237	191	92	0.27	0.3
	1990	960.7	84.1	1,134	442	50	392	332	110	0.39	0.5
	1991	1,193.1	99.7	280	21	9	12	2	19	0.07	0.0
	1992	967.5	83.0	1,133	336	52	284	244	92	0.30	0.3
	1993	1,002.9	86.4	1,126	225	73	152	157	68	0.20	0.2
	1994	1,196.4	100.0	191	14	6	7	0	13	0.07	0.0
	1995	989.6	84.7	1,062	187	30	157	118	69	0.18	0.2
	1996	1,066.0	90.5	980	248	29	219	188	60	0.25	0.2

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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	2,265	547	36	511	224	323	0.24	0.9
1st commercial operation 5/75, 4/77	1978	1,188.5	75.8	1,391	500	13	487	143	357	0.36	0.4
Type - PWRs	1979	1,161.0	74.0	1,428	805	32	773	426	379	0.56	0.7
Capacity - 835, 840 MWe	1980	1,309.9	84.1	1,496	677	15	662	402	275	0.45	0.5
	1981	1,379.7	83.1	1,555	607	29	578	378	229	0.39	0.4
	1982	1,238.3	73.7	1,805	1,057	84	973	402	655	0.59	0.9
	1983	1,397.2	81.6	1,915	668	5	663	143	525	0.35	0.5
	1984	1,389.4	79.3	1,369	479	61	418	79	400	0.35	0.3
	1985	1,189.8	68.4	1,598	694	69	625	144	550	0.43	0.6
	1986	1,530.0	87.2	1,296	347	2	345	101	246	0.27	0.2
	1987	1,207.3	71.8	1,384	412	29	383	110	302	0.30	0.3
	1988	1,397.7	81.0	1,296	291	30	261	90	201	0.22	0.2
	1989	333.6	20.1	1,786	346	11	335	216	130	0.19	1.0
	1990	161.1	11.0	2,019	304	12	292	203	101	0.15	1.9
	1991	1,085.0	64.7	1,974	132	25	107	70	62	0.07	0.1
	1992	1,271.2	73.9	1,979	330	35	295	228	102	0.17	0.3
	1993	1,462.1	83.9	1,462	405	13	392	299	106	0.28	0.3
	1994	1,342.1	79.4	1,482	454	30	424	333	121	0.31	0.3
	1995	1,542.8	89.9	1,203	235	29	206	174	61	0.20	0.2
	1996	1,438.5	82.4	1,167	239	16	223	162	77	0.20	0.2
CATAWBA 1,2	1986	638.9	49.9	1,724	286	27	259	68	218	0.17	0.4
Docket 50-413, 50-414; NPF-35, NPF-52	1987	1,651.2	75.9	1,865	449	32	417	161	288	0.24	0.3
1st commercial operation 6/85, 8/86	1988	1,675.2	77.2	2,009	556	71	485	200	356	0.28	0.3
Type - PWR	1989	1,733.6	79.5	1,660	334	48	286	110	224	0.20	0.2
Capacity - 1129, 1129 MWe	1990	1,616.3	70.8	2,174	809	58	751	292	517	0.37	0.5
	1991	1,691.5	74.6	1,871	462	50	412	141	321	0.25	0.3
	1992	1,962.8	83.9	1,515	414	52	362	92	322	0.27	0.2
	1993	1,896.1	81.5	1,564	396	29	367	59	337	0.25	0.2
	1994	2,105.2	90.2	1,268	207	35	172	47	160	0.16	0.1
	1995	2,011.9	85.3	1,892	462	62	400	83	379	0.24	0.2
	1996	1,879.1	80.5	1,588	302	36	266	135	167	0.19	0.2
CLINTON	1988	701.3	84.2	769	130	48	82	64	66	0.17	0.2
Docket 50-461; NPF-62	1989	348.3	48.5	1,196	372	91	281	261	111	0.31	1.1
1st commercial operation 11/87	1990	435.8	55.1	1,390	553	407	146	438	115	0.40	1.3
Type - BWR	1991	722.7	80.8	1,010	233	222	11	143	90	0.23	0.3
Capacity - 930 MWe	1992	589.7	68.6	1,195	431	63	368	287	144	0.36	0.7

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems)					Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
CLINTON (continued)	1993	701.5	79.6	1,253	498	48	450	367	131	0.40	0.7
	1994	883.3	94.8	409	63	1	62	7	56	0.15	0.0
	1995	731.1	83.0	1,182	316	25	291	202	114	0.27	0.4
	1996	634.7	66.7	1,154	350	45	305	243	107	0.30	0.6
COMANCHE PEAK 1,2	1991	644.4	82.2	985	148	13	135	111	37	0.15	0.2
Docket 50-445; NPF-87	1992	830.8	84.0	1,128	188	28	160	158	30	0.17	0.2
1st commercial operation 8/90, 8/93	1993	853.8	81.2	945	109	25	84	92	17	0.12	0.1
Type - PWR	1994	1,750.0	93.7	970	90	22	68	75	15	0.09	0.1
Capacity - 1150 1150 MWe	1995	2,022.6	92.5	951	179	21	158	154	25	0.19	0.1
	1996	1,804.8	81.4	1,462	288	35	253	229	59	0.20	0.2
COOK 1,2	1976	807.4	83.1	395	116	13	103	71	45	0.29	0.1
Docket 5-315; DPR-58, -74	1977	573.0	76.1	802	300	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	0.5
Type - PWRs	1979	1,373.0	65.3	1,445	718	45	673	454	264	0.50	0.5
Capacity - 1000, 1060 MWe	1980	1,552.4	74.1	1,345	493	46	447	323	170	0.37	0.3
	1981	1,557.3	73.4	1,341	656	48	608	443	213	0.49	0.4
	1982	1,461.6	69.8	1,527	699	67	632	472	227	0.46	0.5
	1983	1,456.5	71.2	1,418	658	50	608	467	191	0.46	0.5
	1984	1,526.0	75.3	1,559	762	43	719	597	165	0.49	0.5
	1985	925.4	47.6	1,984	945	92	853	758	187	0.48	1.0
	1986	1,307.1	73.4	1,774	745	64	681	585	160	0.42	0.6
	1987	1,199.5	70.2	1,696	666	79	587	525	141	0.39	0.6
	1988	1,160.4	63.5	2,266	867	52	815	762	105	0.38	0.7
	1989	1,433.1	72.8	1,575	493	50	443	421	72	0.31	0.3
	1990	1,318.5	67.9	1,851	580	87	493	504	76	0.31	0.4
	1991	1,837.4	90.2	815	69	28	41	48	21	0.08	0.0
	1992	760.9	50.8	1,954	492	60	432	416	76	0.25	0.6
	1993	1,927.7	98.5	587	44	10	34	29	15	0.07	0.0
	1994	1,105.2	65.2	1,748	479	26	453	362	117	0.27	0.4
	1995	1,656.0	82.1	1,310	203	29	174	142	61	0.15	0.1
	1996	1,938.9	92.7	1,114	214	25	189	147	67	0.19	0.1

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
COOPER STATION	1975	456.4	83.6	579	117	30	87	19	98	0.20	0.3
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	198	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	90	131	0.52	0.4
	1980	448.3	71.2	785	859	71	788	644	215	1.09	1.9
	1981	457.1	71.2	935	579	63	516	382	197	0.62	1.3
	1982	622.3	84.6	743	542	66	476	361	181	0.73	0.9
	1983	396.6	63.3	1,383	1,293	57	1,236	1,081	212	0.93	3.3
	1984	411.9	67.2	1,598	799	46	753	635	164	0.50	1.9
	1985	127.3	21.5	1,980	1,333	49	1,284	1,104	229	0.67	10.5
	1986	480.0	74.7	895	320	49	271	115	205	0.36	0.7
	1987	652.3	96.2	549	103	26	77	11	92	0.19	0.2
	1988	493.4	67.9	942	251	40	211	118	133	0.27	0.5
	1989	564.3	76.2	1,202	343	40	303	228	115	0.29	0.6
	1990	602.0	79.4	1,174	379	34	345	265	114	0.32	0.6
	1991	566.3	78.8	1,099	405	50	355	255	150	0.37	0.7
	1992	731.0	96.4	463	84	16	68	16	68	0.18	0.1
	1993	436.1	58.8	1,130	391	33	358	245	146	0.35	0.9
	1994	262.2	35.1	333	79	24	55	7	72	0.24	0.3
	1995	486.5	66.8	1,095	228	31	197	137	91	0.21	0.5
	1996	742.1	97.9	468	48	18	30	10	38	0.10	0.1
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	1,150	495	29	466	346	149	0.43	1.1
1st commercial operation 3/77	1980	404.1	53.2	1,053	625	24	601	382	243	0.59	1.5
Type - PWR	1981	490.4	62.2	1,120	408	18	390	236	172	0.36	0.8
Capacity - 818 MWe	1982	589.8	76.0	780	177	9	168	116	61	0.23	0.3
	1983	452.1	58.8	1,720	552	71	481	353	199	0.32	1.2
	1984	774.2	94.5	549	49	10	39	22	27	0.09	0.1
	1985	344.2	47.6	1,976	689	44	645	424	265	0.35	2.0
	1986	319.5	41.8	1,057	472	25	447	298	174	0.45	1.5
	1987	436.0	60.9	1,384	488	49	439	302	186	0.35	1.1
	1988	690.2	84.0	569	64	2	62	17	47	0.11	0.1
	1989	352.8	48.8	880	234	5	229	128	106	0.27	0.7
	1990	497.8	63.8	1,441	476	8	468	318	158	0.33	1.0
	1991	654.6	82.0	821	116	8	108	59	57	0.14	0.2
	1992	632.1	76.1	1,403	424	7	417	333	91	0.30	0.7
	1993	722.4	85.0	683	60	4	56	31	29	0.09	0.1
	1994	711.9	84.3	1,079	228	7	221	156	72	0.21	0.3

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
CRYSTAL RIVER 3 (continued)	1995	866.3	100.0	209	8	1	7	1	7	0.04	0.0
	1996	290.8	37.7	1,192	353	7	346	244	109	0.30	1.2
DAVIS-BESSE 1	1978	326.4	48.7	421	48	13	35	14	34	0.11	0.1
Docket 50-346; NPF-3	1979	381.0	67.0	304	30	8	22	5	25	0.10	0.1
1st commercial operation 7/78	1980	256.4	36.2	1,283	154	4	150	121	33	0.12	0.6
Type - PWR	1981	531.4	67.4	578	58	1	57	32	26	0.10	0.1
Capacity - 873 MWe	1982	390.8	51.5	1,350	164	12	152	139	25	0.12	0.4
	1983	592.1	73.0	718	80	6	74	46	34	0.11	0.1
	1984	518.5	62.5	1,088	177	10	167	122	55	0.16	0.3
	1985	238.3	31.2	718	71	5	66	44	27	0.10	0.3
	1986	3.3	1.3	981	124	22	102	103	21	0.13	37.6
	1987	618.0	89.6	625	47	11	36	27	20	0.08	0.1
	1988	144.1	27.1	1,183	307	36	271	255	52	0.26	2.1
	1989	880.0	98.6	404	38	5	33	5	33	0.09	0.0
	1990	500.0	56.7	1,377	489	14	475	414	75	0.36	1.0
	1991	703.6	81.8	1,000	216	38	178	159	57	0.22	0.3
	1992	915.2	100.0	287	19	10	9	0	19	0.07	0.0
	1993	729.5	83.4	1,244	348	12	336	269	79	0.28	0.5
	1994	768.4	88.0	861	144	28	116	69	75	0.17	0.2
	1995	920.4	100.0	256	7	2	5	0	7	.03	0.0
	1996	775.8	85.3	949	167	18	149	107	60	0.18	0.2
DIABLO CANYON 1,2	1986	641.5	80.6	1,260	304	4	300	206	98	0.24	0.5
Docket 50-275, 50-323; DPR-80, DPR-82	1987	1,688.6	83.0	1,170	336	5	331	226	110	0.29	0.2
1st commercial operation 5/85, 3/86	1988	1,386.1	67.6	1,826	877	4	873	593	284	0.48	0.6
Type - PWRs	1989	1,899.0	87.5	1,646	465	3	462	329	136	0.28	0.2
Capacity - 1073, 1087 MWe	1990	1,952.6	91.0	1,441	323	1	322	220	103	0.22	0.2
	1991	1,809.6	83.8	2,040	546	1	545	377	169	0.27	0.3
	1992	1,995.7	90.9	1,850	459	0	459	303	156	0.25	0.2
	1993	2,008.6	91.4	1,508	281	0	281	182	99	0.19	0.1
	1994	1,832.6	83.3	2,317	590	1	589	399	191	0.26	0.3
	1995	1,950.3	90.0	1,615	286	2	284	189	97	0.18	0.1
	1996	2,003.6	90.7	1,462	176	2	174	121	55	0.12	0.1

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
DRESDEN 1[1],2,3	1969	99.7			286						2.9
Docket 50-010, 50-237, 50-249;	1970	163.1			143						0.9
DPR-2, -19, -25	1971	394.5			715						1.8
1st commercial operation 7/60, 6/70, 11/71	1972	1,243.7			728						0.6
Type - BWRs	1973	1,112.2		1,341	939	143	796	344	595	0.70	0.8
Capacity - 197, 772, 773 MWe	1974	842.5	54.9	1,594	1,662			57	1,605	1.04	2.0
	1975	708.1	54.6	2,310	3,423	271	3,152	2,252	1,171	1.48	4.8
	1976	1,127.2	80.8	1,746	1,680	228	1,452	749	931	0.96	1.5
	1977	1,132.9	77.0	1,862	1,694	316	1,377	693	1,000	0.91	1.5
	1978	1,242.2	79.5	1,946	1,529	359	1,170	619	1,529	0.79	1.2
	1979	1,013.0	74.7	2,407	1,800	191	1,609	641	1,159	0.75	1.8
	1980	1,074.4	55.0	2,717	2,105	236	1,869	1,093	1,012	0.77	2.0
	1981	1,035.7	51.5	2,331	2,802	120	2,682	1,850	952	1.20	2.7
	1982	1,085.3	77.9	2,572	2,923	136	2,787	1,731	1,192	1.14	2.7
	1983	913.6	65.6	2,854	3,582	176	3,406	2,127	1,455	1.26	3.9
	1984	789.8	55.3	2,261	1,774	153	1,621	815	959	0.78	2.2
	1985	903.0	64.5	2,817	1,686	474	1,212	879	807	0.60	1.9
	1986	740.5	52.6	3,111	2,668	268	2,400	2,009	659	0.86	3.6
	1987	933.9	74.0	2,052	1,145	241	904	593	552	0.56	1.2
	1988	1,014.7	75.8	2,414	1,409	215	1,194	808	601	0.58	1.4
	1989	1,184.2	83.1	2,259	1,131	154	976	641	489	0.50	1.0
	1990	1,107.8	76.6	2,235	1,400	176	1,224	753	647	0.63	1.3
	1991	675.2	60.7	2,044	1,005	166	839	433	572	0.49	1.5
	1992	872.4	75.4	1,812	619	128	491	272	347	0.34	0.7
	1993	960.1	68.5	2,751	1,655	125	1,530	1,116	539	0.60	1.7
	1994	690.2	51.7	2,336	833	93	740	517	316	0.36	1.2
	1995	643.1	49.8	2,482	875	69	806	2	873	0.35	1.4
	1996	612.6	47.7	1,788	456	56	400	254	202	0.26	0.7
DUANE ARNOLD	1976	305.2	78.0	350	105	14	91	62	43	0.30	0.3
Docket 50-331; DPR-49	1977	353.6	78.9	538	299	36	263	220	79	0.56	0.8
1st commercial operation 2/75	1978	149.2	33.2	1,112	974	59	915	932	42	0.88	6.5
Type - BWR	1979	352.0	78.0	757	275	35	240	219	56	0.36	0.8
Capacity - 520 MWe	1980	339.1	73.3	1,108	671	32	639	570	101	0.61	2.0
	1981	277.7	69.8	1,286	790	56	734	598	192	0.61	2.8

[1]Dresden 1 has been shut down since 1978, and in 1985 it was decided that it would not be put in commercial operation again. Therefore, it is no longer included in the count of commercial reactors.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
DUANE ARNOLD (continued)	1982	278.5	74.7	524	229	18	211	175	54	0.44	0.8
	1983	283.0	62.9	1,468	1,135	42	1,093	1,016	119	0.77	4.0
	1984	329.4	72.9	611	189	28	161	117	72	0.31	0.6
	1985	236.2	53.8	1,414	1,112	49	1,063	954	158	0.79	4.7
	1986	365.5	82.0	476	187	49	138	94	93	0.39	0.5
	1987	308.4	64.7	1,094	667	241	426	478	189	0.61	2.2
	1988	386.5	75.2	1,136	614	71	543	416	198	0.54	1.6
	1989	388.5	79.0	425	194	49	145	58	136	0.46	0.5
	1990	367.4	75.8	1,460	861	126	735	644	217	0.59	2.3
	1991	503.7	94.5	336	202	34	168	43	159	0.60	0.4
	1992	416.5	81.9	1,043	502	123	379	276	226	0.48	1.2
	1993	393.4	79.5	1,043	407	86	321	299	108	0.39	1.0
	1994	498.6	94.0	493	120	14	106	24	96	0.24	0.2
	1995	452.5	83.8	1,129	357	39	318	217	140	0.32	0.8
	1996	476.8	90.7	1,093	270	22	248	196	74	0.25	0.6
FARLEY 1,2	1978	713.8	86.5	527	108	39	69	34	74	0.20	0.2
Docket 50-348, 50-364; NPF-2, -8	1979	211.0	28.6	1,227	643	108	535	460	183	0.52	3.0
1st commercial operation 12/77, 7/81	1980	557.3	69.3	1,330	435	106	329	185	250	0.33	0.8
Type - PWR	1981	310.2	41.4	1,331	512	96	416	270	242	0.38	1.7
Capacity - 812, 822 MWe	1982	1,271.5	79.2	1,453	484	155	329	196	288	0.33	0.4
	1983	1,356.5	83.0	1,938	1,021	241	780	479	542	0.53	0.8
	1984	1,447.0	86.6	2,046	902	178	724	505	397	0.44	0.6
	1985	1,368.2	81.1	2,551	799	158	641	442	357	0.31	0.6
	1986	1,409.4	83.8	2,314	858	148	710	464	394	0.37	0.6
	1987	1,369.7	84.7	1,871	598	105	493	347	251	0.32	0.4
	1988	1,567.7	92.3	1,840	552	74	478	340	212	0.30	0.4
	1989	1,402.9	84.6	2,206	749	88	661	516	233	0.34	0.5
	1990	1,464.0	86.7	1,700	457	47	410	342	115	0.27	0.3
	1991	1,464.0	88.1	1,645	648	106	542	498	150	0.39	0.4
	1992	1,331.7	81.8	2,018	805	121	684	570	235	0.40	0.6
	1993	1,455.5	88.3	1,284	333	22	311	224	109	0.26	0.2
	1994	1,587.2	93.0	1,035	250	29	221	150	100	0.24	0.2
	1995	1,311.2	83.8	1,574	460	60	400	307	153	0.29	0.4
	1996	1,549.2	90.9	1,150	232	32	200	159	73	0.20	0.1

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems)					Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
FERMI 2	1989	624.0	68.5	1,270	255	35	220	182	73	0.20	0.4
Docket 50-341; NPF-43	1990	848.2	84.7	462	83	31	52	14	69	0.18	0.1
1st commercial operation 1/88	1991	739.0	77.0	1,223	228	53	175	151	77	0.19	0.3
Type - BWR	1992	874.3	81.3	1,213	245	50	195	151	94	0.20	0.3
Capacity - 876 MWe	1993	984.3	92.9	360	35	23	12	7	28	0.10	0.0
	1994	0.0	2.2	1,130	213	68	145	153	60	0.19	---
	1995	618.3	86.9	390	28	21	7	10	18	0.07	0.0
	1996	577.5	69.1	1,402	157	37	120	115	42	0.11	0.3
FITZPATRICK	1976	489.0	71.6	600	202					0.34	0.4
Docket 50-333; DPR-59	1977	460.5	68.4	1,380	1,080	14	1,066	937	143	0.78	2.3
1st commercial operation 7/75	1978	497.0	72.1	904	909	166	743	597	312	1.01	1.8
Type - BWR	1979	349.0	50.8	850	859	169	690	538	321	1.01	2.5
Capacity - 762 MWe	1980	509.5	70.3	2,056	2,040	118	1,922	1,808	232	0.99	4.0
	1981	562.9	74.7	2,490	1,425	187	1,238	1,072	353	0.57	2.5
	1982	583.6	75.0	2,322	1,190	136	1,054	863	327	0.51	2.0
	1983	546.2	70.6	1,715	1,090	158	932	667	423	0.64	2.0
	1984	576.2	76.8	1,610	971	82	889	467	504	0.60	1.7
	1985	492.3	63.7	1,845	1,051	85	966	718	333	0.57	2.1
	1986	711.2	90.6	1,185	411	81	330	168	243	0.35	0.6
	1987	496.2	70.3	1,578	940	164	776	616	324	0.60	1.9
	1988	514.0	69.0	1,553	786	162	624	506	280	0.51	1.5
	1989	727.5	92.3	1,027	377	58	319	191	186	0.37	0.5
	1990	543.8	72.6	1,536	884	92	792	557	327	0.58	1.6
	1991	399.7	53.4	1,269	333	48	285	127	206	0.26	0.8
	1992	0.0	0.0	2,374	674	70	604	476	198	0.28	---
	1993	559.6	81.7	1,427	232	33	199	81	151	0.16	0.4
	1994	588.4	83.2	1,595	322	276	46	141	181	0.20	0.5
	1995	569.8	74.5	1,249	327	292	35	151	176	0.26	0.6
	1996	623.3	83.1	1,384	357	26	331	210	147	0.26	0.6
FORT CALHOUN	1975	252.3	67.4	469	294			92	202	0.63	1.2
Docket 50-285; DPR-40	1976	265.9	69.5	516	313	28	285	38	275	0.61	1.2
1st commercial operation 6/74	1977	351.8	79.4	535	297	33	264	72	225	0.56	0.8
Type - PWR	1978	342.3	75.1	596	410	59	351	151	259	0.69	1.2
Capacity - 478 MWe	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
	1981	260.9	72.3	822	458	61	397	254	204	0.56	1.8

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
FORT CALHOUN (continued)	1982	418.0	89.7	604	217	45	172	102	115	0.36	0.5
	1983	330.4	73.1	860	433	66	367	205	228	0.50	1.3
	1984	279.2	59.9	913	563	91	472	313	250	0.62	2.0
	1985	367.0	73.7	982	373	54	319	231	142	0.38	1.0
	1986	431.8	94.3	756	74	26	48	30	44	0.10	0.2
	1987	366.0	75.4	1,247	388	78	310	226	162	0.31	1.1
	1988	315.5	74.1	1,594	272	74	198	173	99	0.17	0.9
	1989	395.7	89.2	1,210	93	31	62	50	43	0.08	0.2
	1990	290.0	64.2	760	290	30	260	160	130	0.38	1.0
	1991	391.1	91.7	284	57	14	43	25	32	0.20	0.1
	1992	303.4	65.9	802	272	59	213	154	118	0.34	0.9
	1993	369.7	80.8	713	157	16	141	87	70	0.22	0.4
	1994	492.8	99.6	211	23	5	18	6	17	0.11	0.0
	1995	402.8	83.2	627	139	16	123	62	77	0.22	0.3
	1996	374.9	79.5	740	226	26	200	105	121	0.31	0.6
GINNA	1971	327.8		340	430	69	361	108	322	1.26	1.3
Docket 50-244; DPR-18	1972	293.6		677	1,032	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	1,225					1.39	4.8
Capacity - 470 MWe	1975	365.2	76.7	685	538					0.79	1.5
	1976	248.8	58.2	758	636	29	607	210	426	0.84	2.6
	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	206	386	0.67	1.7
	1980	370.5	76.0	1,073	708	64	644	302	406	0.66	1.9
	1981	399.0	82.1	925	655	49	606	321	334	0.71	1.6
	1982	289.0	58.8	1,117	1,140	80	1,060	471	669	1.02	3.9
	1983	365.0	74.6	969	855	42	813	378	477	0.88	2.3
	1984	378.1	77.2	713	395	58	337	195	200	0.55	1.0
	1985	436.7	87.9	845	426	89	337	183	243	0.50	1.0
	1986	433.3	87.4	901	357	45	312	107	250	0.40	0.8
	1987	459.0	91.5	773	344	35	309	151	193	0.45	0.7
	1988	423.1	87.4	897	295	37	258	114	181	0.33	0.7
	1989	369.2	75.9	1,254	605	57	548	172	433	0.48	1.6
	1990	414.3	84.4	991	347	38	309	207	140	0.35	0.8
	1991	418.6	86.7	947	328	36	292	201	127	0.35	0.8
	1992	417.6	86.9	832	261	27	234	144	117	0.31	0.6
	1993	419.6	86.3	856	193	18	175	101	92	0.23	0.5
	1994	405.3	83.2	679	138	19	119	66	72	0.20	0.3

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
GINNA (continued)	1995	437.0	89.6	738	136	8	128	95	41	0.18	0.3
	1996	347.9	71.1	976	168	19	149	90	78	0.17	0.5
GRAND GULF	1986	494.7	60.9	1,486	436	68	368	329	107	0.29	0.9
Docket 50-416; NPF-29	1987	920.7	82.2	1,358	420	106	314	303	117	0.31	0.5
1st commercial operation 7/85	1988	1,136.6	96.7	692	147	57	90	52	95	0.21	0.1
Type - BWR	1989	932.6	80.0	1,972	498	93	405	333	165	0.25	0.5
Capacity - 1179 MWe	1990	883.5	78.9	1,765	482	52	430	321	161	0.27	0.5
	1991	1,085.2	94.0	699	94	22	72	25	69	0.13	0.1
	1992	969.0	83.7	2,032	484	68	416	349	135	0.24	0.5
	1993	936.4	81.5	1,807	332	38	294	223	109	0.18	0.4
	1994	1,143.2	96.6	455	56	31	25	13	43	0.12	0.0
	1995	952.9	80.4	1,589	342	27	315	208	134	0.22	0.4
	1996	1,096.2	88.7	1,564	357	25	332	213	144	0.23	0.3
HADDAM NECK	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 - 560 MWe	1973	293.1		951	697			544	153	0.73	2.4
	1974	521.4	91.2	550	201					0.37	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	1,226	1,162	74	1,088	783	379	0.95	2.4
	1980	426.8	75.0	1,860	1,353	175	1,178	1,076	277	0.73	3.2
	1981	487.5	84.3	1,554	1,036	174	862	809	227	0.67	2.1
	1982	543.9	93.4	559	126	46	80	22	104	0.23	0.2
	1983	453.7	77.8	1,645	1,384	107	1,277	1,022	362	0.84	3.1
	1984	404.0	71.7	1,430	1,216	154	1,062	803	413	0.85	3.0
	1985	556.1	98.4	384	101	21	80	22	79	0.26	0.2
	1986	294.8	53.6	1,945	1,567	179	1,388	1,274	293	0.81	5.3
	1987	304.6	54.0	1,763	750	99	651	553	197	0.43	2.5
	1988	397.4	70.3	735	237	43	194	107	130	0.32	0.6
	1989	356.4	67.2	1,455	596	68	528	472	124	0.41	1.7
	1990	142.7	32.2	979	421	75	346	268	153	0.43	3.0
	1991	444.4	76.4	1,168	590	80	510	463	127	0.51	1.3
	1992	465.2	80.1	797	202	28	174	129	73	0.25	0.4
	1993	448.6	81.6	1,004	408	42	366	312	96	0.41	0.9

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
HADDAM NECK (continued)	1994	455.6	77.7	463	135	0	0	0	0	0.29	0.3
	1995	439.4	77.7	1,006	442	74	368	348	94	0.44	1.0
	1996	331.8	55.7	673	175	53	122	115	60	0.26	0.5
HARRIS 1	1988	652.9	75.0	721	169	29	140	118	51	0.23	0.3
Docket 50-400; NPF-63	1989	690.6	79.5	929	156	32	124	85	71	0.17	0.2
1st commercial operation 5/87	1990	776.4	89.6	453	85	13	72	47	38	0.19	0.1
Type - PWR	1991	724.8	81.5	872	226	27	199	150	76	0.26	0.3
Capacity - 860 MWe	1992	661.8	74.9	930	213	34	179	134	79	0.23	0.3
	1993	913.0	99.7	327	31	9	22	10	21	0.09	0.0
	1994	740.8	82.7	1,089	222	22	200	167	55	0.20	0.3
	1995	731.1	83.8	1,068	174	11	163	121	53	0.16	0.2
	1996	860.6	95.4	444	17	6	11	4	13	0.04	0.0
HATCH 1,2	1976	496.3	83.8	630	134	79	55	4	130	0.21	0.3
Docket 50-321, 50-366; DPR-57;	1977	446.8	66.3	1,303	465	96	369	220	245	0.36	1.0
NPF-05	1978	513.0	72.8	1,304	248	88	160	52	196	0.19	0.5
1st commercial operation 12/75, 9/79	1979	401.0	54.6	2,131	582	85	497	381	201	0.27	1.5
Type - BWRs	1980	1,008.7	70.9	1,930	449	143	306	163	286	0.23	0.4
Capacity - 805, 809 MWe	1981	870.9	64.3	2,899	1,337	200	1,137	792	545	0.46	1.5
	1982	768.0	56.6	3,418	1,460	218	1,242	1,064	396	0.43	1.9
	1983	934.7	68.6	3,428	1,299	253	1,046	851	448	0.38	1.4
	1984	658.6	47.3	4,110	2,218	311	1,907	1,861	357	0.54	3.4
	1985	1,211.0	79.6	2,841	818	182	636	508	310	0.29	0.7
	1986	872.0	64.8	3,486	1,497	347	1,150	1,107	390	0.43	1.7
	1987	1,295.4	89.7	2,202	816	207	609	435	381	0.37	0.6
	1988	1,001.4	70.4	2,509	1,401	275	1,126	927	474	0.56	1.4
	1989	1,271.1	87.1	1,350	556	154	402	305	251	0.41	0.4
	1990	1,268.0	83.5	2,902	1,455	224	1,231	1,074	381	0.50	1.1
	1991	1,152.4	77.4	2,508	1,161	196	965	798	363	0.46	1.0
	1992	1,293.8	88.6	1,615	550	119	431	294	256	0.34	0.4
	1993	1,189.6	85.5	1,733	669	139	530	339	270	0.39	0.6
	1994	1,289.0	87.1	2,243	864	168	696	559	305	0.39	0.7
	1995	1,376.3	90.6	1,458	488	85	403	240	248	0.33	0.4
	1996	1,519.6	94.0	1,495	441	237	204	209	232	0.29	0.3

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
HOPE CREEK 1	1987	869.2	86.4	589	117	21	96	40	77	0.20	0.1
Docket 50-354; NPF-57	1988	832.7	80.7	1,734	287	38	249	163	124	0.17	0.3
1st commercial operation 12/86	1989	791.1	77.8	1,873	465	40	425	292	173	0.25	0.6
Type - BWR	1990	966.4	91.6	1,394	196	26	170	89	107	0.14	0.2
Capacity - 1031 MWe	1991	882.5	84.2	1,700	373	11	362	249	124	0.22	0.4
	1992	841.9	80.8	1,694	436	9	427	304	132	0.26	0.5
	1993	1,049.2	97.8	688	98	22	76	8	90	0.14	0.1
	1994	852.0	81.2	1,779	326	34	292	194	132	0.18	0.3
	1995	844.5	79.8	1,571	196	27	169	101	95	0.12	0.2
	1996	806.9	77.4	1,069	158	35	123	78	80	0.15	0.2
HUMBOLDT BAY[2]	1969	44.6		125	164	69	95	12	152	1.31	3.7
Docket 50-133; DPR-7	1970	49.3		115	209	130	79	37	172	1.82	4.2
1st commercial operation 8/63	1971	39.6		140	292	114	178	65	227	2.09	7.4
Type - BWR	1972	43.1		127	253	81	172	57	196	1.99	5.9
Capacity - 63 MWe	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	0.0	1,063	1,905	24	1,880	973	931	1.79	---
	1978	0.0	0.0	320	335	13	322	145	190	1.05	---
	1979	0.0	0.0	135	31	11	20	2	29	0.23	---
	1980	0.0	0.0	142	22	10	12	3	19	0.15	---
	1981	0.0	0.0	75	9	3	6	3	6	0.12	---
	1982	0.0	0.0	71	19	5	14	0	19	0.27	---
	1983	0.0	0.0	84	17	4	13	0	17	0.20	---
	1993	0.0	0.0	24	1	0	0	0	0	0.04	---
	1994	0.0	0.0	21	1	0	0	0	0	0.05	---
	1995	0.0	0.0	42	2	---	---	---	---	0.05	---
	1996	0.0	0.0	66	5	---	---	---	---	0.08	---

[2]Humboldt Bay has been shutdown since 1976, and in 1984 it was decided that it would not be placed in operation again. Therefore, it is no longer included in the count of commercial reactors.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
INDIAN POINT 1[3],2,3[4]	1969	206.2			298						1.4
Docket 50-3, 50-247, 50-286;	1970	43.3			1,639						37.8
DPR-5, -26, -64	1971	154.0			768						5.0
1st commercial operation 10/62, 8/74,	1972	142.3			967						6.8
8/76	1973	0.0		2,998	5,262	709	4,553	2,847	2,415	1.76	---
Type - PWR	1974	556.1	59.4	1,019	910					0.89	1.6
Capacity - 0, 951, 965 MWe	1975	584.4	74.8	891	705	166	539	47	658	0.79	1.2
	1976	273.9	34.8	1,590	1,950	154	1,796	172	1,778	1.23	7.1
	1977	1,278.3	75.3	1,391	1,070	189	881	383	687	0.77	0.8
	1978	1,172.3	67.8	1,909	2,006	260	1,746	759	1,247	1.05	1.7
INDIAN POINT 1[5],2	1979	574.0	71.4	1,349	1,279	209	1,070	612	667	0.95	2.2
	1980	510.8	64.8	1,577	971	304	667	6	965	0.62	1.9
	1981	367.5	46.0	2,595	2,731	237	2,494	1,595	1,136	1.05	7.4
	1982	532.4	65.4	2,144	1,635	343	1,292	883	752	0.76	3.1
	1983	702.6	84.0	1,057	486	202	284	219	267	0.46	0.7
INDIAN POINT 2	1984	416.7	51.9	2,919	2,644	650	1,994	1,863	781	0.91	6.3
Docket 50-247; DPR-26	1985	791.4	95.7	708	192	123	69	95	97	0.27	0.2
1st commercial operation 8/74	1986	457.5	56.2	1,926	1,250	350	900	349	901	0.65	2.7
Type - PWR	1987	611.4	73.4	1,980	1,217	128	1,089	805	412	0.61	2.0
Capacity - 951 MWe	1988	719.3	86.9	890	235	51	184	117	118	0.26	0.3
	1989	532.5	64.6	2,093	1,436	208	1,228	813	623	0.69	2.7
	1990	618.0	66.6	1,061	608	66	542	450	158	0.57	1.0
	1991	461.2	55.7	1,810	1,468	179	1,289	927	541	0.81	3.2
	1992	930.9	99.1	489	97	27	70	39	58	0.20	0.1
	1993	702.1	75.7	1,514	675	77	598	480	195	0.45	1.0
	1994	903.8	100.0	381	48	0	0	0	0	0.13	0.1

[3]Indian Point 1 was defuelled in 1975, and in 1984 it was decided that it would not be placed in operation again. Therefore, it is no longer included in the count of commercial reactors.

[4]Indian Point 3 was purchased by a different utility and now reports separately.

[5]Indian Point 1 was defuelled in 1975, and in 1984 it was decided that it would not be placed in operation again. Therefore, it is no longer included in the count of commercial reactors.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
INDIAN POINT 2 (continued)	1995	582.4	70.8	1,690	548	97	451	368	180	0.32	0.9
	1996	927.8	94.8	388	54	18	36	26	28	0.14	0.1
INDIAN POINT 3[6]	1979	574.0	66.5	808	636	63	573	482	154	0.79	1.1
Docket 50-286; DPR-64	1980	367.3	53.2	977	308	47	261	210	98	0.32	0.8
1st commercial operation 8/76	1981	367.5	59.8	677	364	46	318	255	109	0.54	1.0
Type - PWR	1982	171.5	22.5	1,477	1,226	42	1,184	1,093	133	0.83	7.1
Capacity - 965 MWe	1983	7.8	2.6	941	607	38	569	494	113	0.65	77.8
	1984	714.4	76.3	658	230	48	182	127	103	0.35	0.3
	1985	566.5	66.0	1,093	570	35	535	455	115	0.52	1.0
	1986	655.3	73.4	588	202	34	168	123	79	0.34	0.3
	1987	574.6	62.7	1,308	500	84	416	365	135	0.38	0.9
	1988	792.5	83.3	451	93	41	52	39	54	0.21	0.1
	1989	587.8	61.1	1,800	876	130	746	776	100	0.49	1.5
	1990	595.3	62.9	1,066	358	69	289	230	128	0.34	0.6
	1991	862.8	87.5	299	40	23	17	5	35	0.13	0.0
	1992	561.7	61.4	1,003	212	53	159	132	80	0.21	0.4
	1993	140.5	14.9	478	60	23	37	19	41	0.13	0.4
	1994	0.0	0.0	529	58	36	22	28	30	0.11	---
	1995	174.8	21.4	638	67	37	30	32	35	0.11	0.4
	1996	695.3	74.8	289	22	22	0	4	18	0.08	0.0
KEWAUNEE	1975	401.9	88.2	104	28	1	27	12	16	0.27	0.1
Docket 50-305; DPR-43	1976	405.9	78.9	381	270	16	254	193	77	0.71	0.7
1st commercial operation 6/74	1977	425.0	79.9	312	140	8	131	76	63	0.45	0.3
Type - PWR	1978	466.6	89.5	335	154	11	143	89	65	0.46	0.3
Capacity - 511 MWe	1979	412.0	79.0	343	127	6	121	79	48	0.37	0.3
	1980	433.8	82.1	401	165	7	158	103	62	0.41	0.4
	1981	451.8	86.7	383	141	7	134	94	47	0.37	0.3
	1982	458.4	87.6	353	101	5	96	51	50	0.29	0.2
	1983	444.1	83.7	445	165	10	155	119	46	0.37	0.4
	1984	455.3	85.7	482	139	7	132	89	50	0.29	0.3
	1985	443.1	82.4	519	176	9	167	114	62	0.34	0.4
	1986	461.7	85.8	502	169	8	161	111	58	0.34	0.4

[6] Indian Point 3 was purchased by a different utility and now reports separately.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
KEWAUNEE (continued)	1987	480.0	89.7	755	226	8	218	173	53	0.30	0.5
	1988	467.5	88.3	705	210	6	204	165	45	0.30	0.4
	1989	449.1	84.9	570	239	10	229	179	60	0.42	0.5
	1990	468.8	87.9	490	145	5	140	112	33	0.30	0.3
	1991	441.8	83.4	495	221	4	217	188	33	0.45	0.5
	1992	471.4	88.0	450	122	3	119	88	34	0.27	0.3
	1993	457.1	86.8	436	106	2	104	65	41	0.24	0.2
	1994	475.6	88.8	364	72	2	70	38	34	0.20	0.2
	1995	455.6	87.8	415	109	3	106	71	38	0.26	0.2
	1996	380.4	71.8	474	126	1	125	75	51	0.27	0.3
LACROSSE[7]	1970	15.3			111			40	71		7.2
Docket 50-409; DPR-45	1971	323.1		218	158					0.72	4.8
1st commercial operation 11/69	1972	29.2			151	172				1.14	5.9
Type - BWR	1973	24.4			157	221				1.41	9.1
Capacity - 48 MWe	1974	37.9	81.0	115	139	89	50	6	133	1.21	3.7
	1975	32.0	69.6	165	234					1.42	7.3
	1976	21.2	47.6	118	110	40	71	6	105	0.93	5.2
	1977	11.3	33.7	141	225	60	164	8	216	1.60	19.9
	1978	21.6	62.0	182	164	69	95	6	158	0.90	7.6
	1979	24.0	71.8	153	186	65	121	21	165	1.22	7.8
	1980	26.4	68.5	124	218	63	155	11	207	1.76	8.3
	1981	29.6	76.0	187	123	62	61	3	120	0.66	4.2
	1982	17.2	44.6	148	205	65	140	16	189	1.39	11.9
	1983	24.8	59.7	160	313	103	210	31	282	1.96	12.6
	1984	38.5	80.5	288	252	141	111	5	247	0.88	6.5
	1985	39.2	86.7	373	173	76	97	22	151	0.46	4.4
	1986	19.6	46.1	260	290					1.12	14.8
	1987	0.0	0.0	127	68	42	26	2	66	0.54	—
	1993	0.0	0.0	48	8	0	0	0	0	0.17	—
	1994	0.0	0.0	65	8	3	5	4	4	0.12	—
	1995	0.0	0.0	31	3	—	—	—	—	0.10	—
	1996	0.0	0.0	25	4	—	—	—	—	0.15	—

[7]LaCrosse ended commercial operation in 1987 and will not be put in commercial operation again. Therefore, it is no longer included in the count of commercial reactors.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
LASALLE 1,2	1984	677.8	77.8	1,245	252	29	223	88	164	0.20	0.4
Docket 50-373, -374; NPF-11, -18	1985	987.9	53.0	1,635	685	88	597	420	265	0.42	0.7
1st commercial operation 1/84, 6/84	1986	929.5	50.6	1,614	898	143	755	527	371	0.56	1.0
Type - BWR	1987	1,030.0	59.3	1,744	1,396	217	1,179	989	407	0.80	1.4
Capacity - 1036, 1036 MWe	1988	1,317.6	71.6	2,737	2,471	253	2,218	1,978	493	0.90	1.9
	1989	1,503.5	73.1	2,475	1,386	138	1,248	853	533	0.56	0.9
	1990	1,754.3	84.6	1,830	948	130	818	503	445	0.52	0.5
	1991	1,837.0	86.7	1,985	806	161	645	427	379	0.41	0.4
	1992	1,447.4	72.0	2,418	1,167	195	972	648	519	0.48	0.8
	1993	1,542.0	76.0	1,701	854	204	650	387	467	0.50	0.6
	1994	1,580.0	77.6	1,812	726	105	621	426	300	0.40	0.5
	1995	1,696.6	82.1	1,623	512	98	414	270	242	0.32	0.3
	1996	1,053.8	54.3	2,782	819	81	738	605	214	0.29	0.8
LIMERICK 1, 2	1987	636.1	70.2	2,156	174	7	167	114	60	0.08	0.3
Docket 50-352, 50-353; NPF-39,-85	1988	794.9	96.5	950	52	20	32	23	29	0.05	0.1
1st commercial operation 2/86, 1/90	1989	628.4	66.0	1,818	266	70	196	156	110	0.15	0.4
Type - BWRs	1990	1,527.7	78.2	1,422	175	37	138	78	97	0.12	0.1
Capacity - 1105, 1115 MWe	1991	1,810.9	86.8	1,151	106	24	82	52	54	0.09	0.1
	1992	1,741.4	84.8	1,559	330	23	307	182	148	0.21	0.2
	1993	1,913.2	91.6	1,287	217	33	184	113	104	0.17	0.1
	1994	1,944.4	94.9	1,543	275	44	231	161	114	0.18	0.1
	1995	1,957.1	93.0	1,581	260	136	124	136	124	0.16	0.1
	1996	2,026.2	93.3	1,654	234	85	149	102	132	0.14	0.1
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	95.0	244	85	27	58	26	59	0.35	0.1
Capacity - 860 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	0.7
	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
	1981	624.2	78.2	868	424	11	413	308	116	0.49	0.7
	1982	542.5	69.1	1,295	619	33	586	462	157	0.48	1.1
	1983	677.1	83.6	592	165	41	124	72	93	0.28	0.2
	1984	605.7	74.4	1,262	884	9	875	702	182	0.70	1.5
	1985	635.4	79.2	1,009	700	54	646	529	171	0.69	1.1
	1986	737.6	87.8	495	100	34	66	14	86	0.20	0.1

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
MAINE YANKEE (continued)	1987	478.1	65.3	1,100	722	39	683	531	191	0.66	1.5
	1988	591.9	79.1	1,058	725	52	673	576	149	0.69	1.2
	1989	819.2	93.7	375	99	38	61	25	74	0.26	0.1
	1990	573.0	71.0	1,359	682	146	536	547	135	0.50	1.2
	1991	738.1	86.6	426	105	27	78	46	59	0.25	0.1
	1992	631.7	79.1	1,189	461	87	374	360	101	0.39	0.7
	1993	674.8	79.8	1,016	377	74	303	309	68	0.37	0.6
	1994	782.8	90.9	297	84	16	68	57	27	0.28	0.1
	1995	23.6	3.7	1,167	653	116	537	533	120	0.56	27.7
	1996	602.9	78.1	408	56	3	53	30	26	0.14	0.1
MCGUIRE 1,2	1982	524.9	80.4	1,560	169	26	143	29	140	0.11	0.3
Docket 50-369, -370; NPF-9, -17	1983	558.3	55.4	1,751	521	35	486	123	398	0.30	0.9
1st commercial operation 12/81, 3/84	1984	764.1	68.5	1,663	507	35	472	106	401	0.30	0.7
Type - PWRS	1985	808.4	77.0	2,217	771	92	679	277	494	0.35	1.0
Capacity - 1129, 1129 MWe	1986	1,360.0	60.1	2,326	1,015	47	968	389	626	0.44	0.7
	1987	1,774.7	79.2	2,865	1,043	38	1,005	510	533	0.36	0.6
	1988	1,830.7	80.2	2,808	1,104	65	1,039	592	512	0.39	0.6
	1989	1,810.2	80.8	1,994	620	44	576	252	368	0.31	0.3
	1990	1,340.3	61.3	2,289	727	63	664	288	439	0.32	0.5
	1991	1,945.1	85.0	1,723	361	18	343	111	250	0.21	0.2
	1992	1,696.8	74.4	1,619	418	38	380	114	304	0.26	0.2
	1993	1,470.4	66.2	1,685	463	16	447	83	380	0.27	0.3
	1994	1,848.0	80.2	1,637	397	7	390	80	317	0.24	0.2
	1995	2,132.3	92.9	1,259	138	7	131	29	109	0.11	0.1
	1996	1,881.8	82.8	1,622	238	8	230	72	166	0.15	0.1
MILLSTONE POINT 1	1972	377.6		612	596	50	546	340	256	0.97	1.6
Docket 50-245; DPR-21	1973	225.1		1,184	663	125	538	422	241	0.56	2.9
1st commercial operation 3/71	1974	430.3	79.1	2,477	1,430					0.58	3.3
Type - BWR	1975	465.4	75.6	2,587	2,022					0.78	4.3
Capacity - 641 MWe	1976	449.8	76.1	1,387	1,194	54	1,140	955	239	0.86	2.7
	1977	575.7	89.6	1,075	394	118	274	159	233	0.37	0.7
	1978	556.6	87.6	1,391	1,416	160	1,256	1,036	380	1.02	2.5
	1979	505.0	77.3	2,001	1,795	198	1,597	1,327	468	0.90	3.6
	1980	405.8	69.0	3,024	2,157	100	2,057	1,863	294	0.71	5.3
	1981	304.3	51.6	2,506	1,496	96	1,400	1,201	295	0.60	4.9

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
MILLSTONE POINT 1 (continued)	1982	490.2	79.9	1,370	929	78	851	587	342	0.68	1.9
	1983	640.1	95.6	309	244	63	181	74	170	0.79	0.4
	1984	516.1	78.8	1,992	836	80	756	531	305	0.42	1.6
	1985	548.5	83.6	732	608	65	543	369	239	0.83	1.1
	1986	626.8	95.4	389	150	47	103	53	97	0.39	0.2
	1987	523.4	79.6	1,588	684	56	628	523	161	0.43	1.3
	1988	658.8	98.6	327	144	31	113	60	84	0.44	0.2
	1989	554.6	84.2	852	462	40	422	334	128	0.54	0.8
	1990	608.3	91.6	365	131	42	89	58	73	0.36	0.2
	1991	213.1	35.4	1,154	409	60	349	311	98	0.35	1.9
	1992	431.8	68.1	348	99	22	77	63	36	0.28	0.2
	1993	627.9	96.8	305	81	27	54	32	49	0.27	0.1
	1994	394.0	63.6	1,321	391	12	379	308	83	0.30	1.0
	1995	520.6	80.0	910	620	29	591	539	81	0.68	1.2
	1996	0.0	0.0	747	431	24	407	378	53	0.58	---
MILLSTONE POINT 2,3	1976	545.7	78.7	620	168	26	142	73	95	0.27	0.3
Docket 50-336, 50-423; DPR-65, NPF-49	1977	518.7	65.7	667	242	38	204	153	89	0.36	0.5
1st commercial operation 12/75, 4/86	1978	536.6	67.3	1,420	1,444	65	1,379	1,366	78	1.02	2.7
Type - PWR	1979	520.0	62.8	525	471	81	390	304	167	0.90	0.9
Capacity - 871, 1137 MWe	1980	579.3	69.2	893	637	76	561	515	122	0.71	1.1
	1981	722.4	82.6	890	531	44	487	393	138	0.60	0.7
	1982	595.9	70.6	2,083	1,413	27	1,386	1,219	194	0.68	2.4
	1983	294.0	34.2	2,383	1,881	170	1,711	1,548	333	0.79	6.4
	1984	782.7	93.5	285	120	11	109	63	57	0.42	0.2
	1985	417.8	49.4	1,905	1,581	60	1,521	1,256	325	0.83	3.8
	1986	1,313.8	80.4	2,393	993	27	966	784	209	0.41	0.8
	1987	1,624.5	84.1	1,441	505	19	486	370	135	0.35	0.3
	1988	1,594.8	83.2	1,827	804	31	773	523	281	0.44	0.5
	1989	1,428.3	72.9	1,984	1,079	44	1,035	877	202	0.54	0.8
	1990	1,614.9	87.1	1,652	593	35	558	491	102	0.36	0.4
	1991	819.5	69.7	1,084	381	21	360	256	125	0.35	0.5
	1992	1,115.1	59.9	3,190	1,280	35	1,245	1,173	107	0.40	1.1
	1993	1,525.2	79.7	2,064	557	29	528	234	323	0.27	0.4
	1994	1,556.6	73.1	1,249	188	35	153	123	65	0.15	0.1
	1995	1,278.1	60.5	1,691	416	150	266	284	132	0.25	0.3
	1996	418.1	19.3	983	126	38	88	62	64	0.13	0.3

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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	0.5
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	1,353	1,353					1.00	3.9
Capacity - 544 MWe	1976	476.4	91.5	325	263	59	204	52	212	0.81	0.6
	1977	425.6	79.9	860	1,000	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	52	105	0.42	0.3
	1980	411.8	78.2	1,114	531	82	449	248	283	0.48	1.3
	1981	389.3	72.6	1,446	1,004	101	903	756	248	0.69	2.6
	1982	291.1	63.3	1,307	993	130	863	760	233	0.76	3.4
	1983	494.6	96.3	416	121	57	64	23	98	0.29	0.2
	1984	33.7	9.2	1,872	2,462	208	2,254	927	1,535	1.32	73.1
	1985	509.8	91.7	586	327	87	240	47	280	0.56	0.6
	1986	402.7	79.1	895	596	94	502	114	482	0.67	1.5
	1987	422.5	81.9	941	568	102	466	115	453	0.60	1.3
	1988	542.5	99.8	375	110	40	70	10	100	0.29	0.2
	1989	318.2	76.2	1,102	507	99	408	113	394	0.46	1.6
	1990	536.0	96.9	336	94	42	52	11	83	0.28	0.2
	1991	429.4	80.8	964	465	102	363	101	364	0.48	1.1
	1992	528.3	97.5	454	114	46	68	10	104	0.25	0.2
	1993	458.1	84.4	954	494	118	376	94	400	0.52	1.1
	1994	471.3	87.0	788	395	83	312	102	293	0.50	0.8
	1995	564.7	100.0	200	44	27	17	3	41	0.22	0.1
	1996	461.6	86.9	757	240	67	173	112	128	0.32	0.5
NINE MILE POINT 1,2	1970	227.0		821	44	12	32	17	27	0.05	0.2
Docket 50-220, 50-410; DPR-63, NPF-69	1971	346.5		1,006	195	43	152	63	132	0.19	0.6
1st commercial operation 12/69, 4/88	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 - 565, 1105 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	1,093	1,383	41	1,342	883	500	1.27	4.0
	1978	527.7	95.1	561	314	59	255	26	288	0.56	0.6
	1979	354.0	66.1	1,326	1,497	106	1,391	940	557	1.13	4.2
	1980	533.9	92.3	1,174	591	75	516	251	340	0.50	1.1
	1981	385.2	66.0	2,029	1,592	144	1,448	1,064	528	0.78	4.1
	1982	133.5	21.4	1,352	1,264	63	1,201	944	320	0.93	9.5
	1983	329.8	56.2	1,405	860	50	810	576	284	0.61	2.6
	1984	426.8	71.9	1,530	890	163	727	372	518	0.58	2.1

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
NINE MILE POINT 1,2 (continued)	1985	580.9	96.4	1,007	265	61	204	43	222	0.26	0.5
	1986	371.0	65.3	1,878	1,275	38	1,237	730	545	0.68	3.4
	1987	542.6	93.3	1,190	141	35	106	39	102	0.12	0.3
	1988	0.0	0.0	2,626	854	33	821	509	345	0.33	---
	1989	527.5	29.7	2,737	564	53	511	382	182	0.21	1.1
	1990	656.2	46.6	2,405	699	85	614	467	232	0.29	1.1
	1991	1,250.8	79.7	1,543	292	72	220	94	198	0.19	0.2
	1992	965.9	61.8	1,800	563	102	461	184	379	0.31	0.6
	1993	1,380.2	84.6	2,352	633	90	543	427	206	0.27	0.5
	1994	1,589.6	95.9	800	149	56	93	52	97	0.19	0.1
	1995	1,382.2	82.5	2,304	759	87	672	579	180	0.33	0.5
	1996	1,598.6	91.6	1,596	290	66	224	150	140	0.18	0.2
NORTH ANNA 1,2	1979	507.0	61.7	2,025	449	78	371	190	259	0.22	0.9
Docket 50-338; NPF-04, -09	1980	681.8	86.5	2,086	218	128	90	85	133	0.10	0.3
1st commercial operation 6/78, 12/80	1981	1,241.9	71.5	2,416	680	188	492	343	337	0.28	0.5
Type - PWRs	1982	777.7	45.8	2,872	1,915	78	1,837	1,207	708	0.67	2.5
Capacity - 893, 897 MWe	1983	1,338.4	76.1	2,228	665	129	536	296	369	0.30	0.5
	1984	1,021.3	58.8	3,062	1,945	155	1,790	1,417	528	0.64	1.9
	1985	1,516.9	86.1	2,436	838	141	697	501	337	0.34	0.6
	1986	1,484.5	83.0	2,831	722	111	611	343	379	0.26	0.5
	1987	1,112.6	67.8	2,624	1,521	60	1,461	1,075	446	0.58	1.4
	1988	1,772.7	96.7	992	112	28	84	19	93	0.11	0.1
	1989	1,226.8	72.5	2,861	1,471	36	1,435	1,159	312	0.51	1.2
	1990	1,590.4	90.5	2,161	590	12	578	433	157	0.27	0.4
	1991	1,597.5	88.6	2,085	629	19	610	461	168	0.30	0.4
	1992	1,403.2	84.1	2,159	576	15	561	413	163	0.27	0.4
	1993	1,428.4	80.1	2,768	908	12	896	711	197	0.33	0.6
	1994	1,717.1	95.9	1,036	193	17	176	93	100	0.19	0.1
	1995	1,666.4	90.8	1,551	367	9	358	193	174	0.24	0.2
	1996	1,569.6	89.1	1,203	291	6	285	156	135	0.24	0.2
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	1,838.3	75.5	829	497	72	425	90	407	0.60	0.3
DPR-38, -47, -55	1976	1,561.4	63.0	1,215	1,026	65	961	219	807	0.84	0.7
1st commercial operation 7/73, 9/74, 12/74	1977	1,566.4	65.9	1,595	1,329	244	1,084	294	1,034	0.83	0.8
Type - PWRs	1978	1,909.0	75.8	1,636	1,393	179	1,214	340	1,053	0.85	0.7
Capacity - 846, 846, 846 MWe	1979	1,708.0	67.7	2,100	1,001	123	878	181	820	0.48	0.6

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems)					Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
OCONEE 1, 2, 3 (continued)	1980	1,703.7	70.1	2,124	1,055	117	938	162	893	0.50	0.6
	1981	1,661.5	66.8	2,445	1,211	113	1,098	275	936	0.50	0.7
	1982	1,293.1	52.5	2,445	1,792	97	1,695	364	1,428	0.73	1.4
	1983	2,141.5	82.2	1,902	1,207	88	1,119	316	891	0.63	0.6
	1984	2,242.9	85.7	2,085	1,106	63	1,043	260	846	0.53	0.5
	1985	2,036.3	80.5	2,729	1,304	144	1,160	378	926	0.48	0.6
	1986	1,995.6	79.0	2,499	949	36	913	261	688	0.38	0.5
	1987	1,962.6	82.4	2,672	1,142	51	1,091	376	766	0.43	0.6
	1988	2,228.9	87.2	2,672	871	51	820	317	554	0.33	0.4
	1989	2,188.6	85.4	2,205	684	53	631	200	484	0.31	0.3
	1990	2,405.2	91.4	1,948	404	36	368	132	272	0.21	0.2
	1991	2,275.0	86.7	1,966	551	46	505	143	408	0.28	0.2
	1992	2,110.7	82.0	1,954	612	60	552	166	446	0.31	0.3
	1993	2,399.2	91.3	1,499	237	23	214	43	194	0.16	0.1
	1994	2,144.3	82.2	1,923	537	40	497	114	423	0.28	0.2
	1995	2,366.1	89.5	1,586	304	31	273	63	241	0.19	0.1
	1996	1,847.9	70.3	1,479	257	22	235	75	182	0.17	0.1
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	1,236	195	1,041	683	553	1.58	2.9
Capacity - 619 MWe	1974	434.5	70.4	935	984	166	818	162	822	1.05	2.3
	1975	373.6	73.3	1,210	1,140	169	971	271	869	0.94	3.1
	1976	456.5	79.3	1,582	1,078	70	1,008	587	491	0.68	2.4
	1977	385.7	70.1	1,673	1,614	76	1,538	1,048	566	0.96	4.2
	1978	431.8	74.3	1,411	1,279	134	1,145	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	1,966	1,733	97	1,636	1,183	550	0.88	7.4
	1981	314.8	59.8	1,689	917	48	869	479	438	0.54	2.9
	1982	242.7	62.5	1,270	865	33	832	491	374	0.68	3.6
	1983	27.9	11.5	2,303	2,257	65	2,192	1,863	394	0.98	80.9
	1984	37.1	9.6	2,369	2,054	134	1,920	1,537	517	0.87	55.4
	1985	446.1	89.4	2,342	748	116	632	318	430	0.32	1.7
	1986	157.3	31.5	3,740	2,436	288	2,148	1,924	512	0.65	15.5
	1987	371.0	64.2	1,932	522	112	410	211	311	0.27	1.4
	1988	419.6	65.9	2,875	1,504	135	1,369	1,232	272	0.52	3.6
	1989	287.5	57.3	2,395	910	138	772	566	344	0.38	3.2
	1990	511.8	89.1	1,941	310	76	234	131	179	0.16	0.6
	1991	351.6	60.5	3,089	1,185	151	1,034	938	247	0.38	3.4
	1992	536.3	85.9	2,771	657	70	587	438	219	0.24	1.2

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
OYSTER CREEK (continued)	1993	551.9	87.8	2,560	416	60	356	238	178	0.16	0.8
	1994	431.7	70.8	2,382	844	56	788	621	223	0.35	2.0
	1995	615.4	97.4	761	90	21	69	17	73	0.12	0.1
	1996	515.0	82.6	1,833	449	17	432	305	144	0.24	0.9
PALISADES	1972	216.8			78						0.4
Docket 50-255; DPR-20	1973	286.8		975	1,133	16	1,117	661	472	1.16	4.0
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 - 730 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	1,599	854	99	755	360	494	0.53	2.1
	1980	288.3	42.9	1,307	424	57	367	312	112	0.32	1.5
	1981	418.2	57.2	2,151	902	167	735	737	165	0.42	2.2
	1982	404.3	54.7	1,554	330	73	257	203	127	0.21	0.8
	1983	454.4	60.3	2,167	977	145	832	494	483	0.45	2.2
	1984	98.7	15.2	1,344	573	79	494	239	334	0.43	5.8
	1985	639.2	83.8	1,355	507	105	402	239	268	0.37	0.8
	1986	102.3	15.1	1,438	672	148	524	204	468	0.47	6.6
	1987	319.2	48.2	1,122	456	85	371	216	240	0.41	1.4
	1988	413.4	56.8	1,472	730	138	592	466	264	0.50	1.8
	1989	442.8	69.1	1,026	314	70	244	190	124	0.31	0.7
	1990	366.7	58.7	2,414	766	109	657	629	137	0.32	2.1
	1991	587.0	78.1	1,315	211	42	169	133	78	0.16	0.4
	1992	581.9	76.1	1,267	295	37	258	211	84	0.23	0.5
	1993	424.4	53.7	908	289	45	244	188	101	0.32	0.7
	1994	541.8	67.0	397	60	17	43	21	39	0.15	0.1
	1995	583.5	75.8	1,230	462	65	397	315	147	0.38	0.8
	1996	638.2	81.4	1,109	318	37	281	236	82	0.29	0.5
PALO VERDE 1,2,3	1987	1,638.1	66.1	1,792	669	101	568	437	232	0.37	0.4
Docket 50-528, 50-529; 50-530;	1988	1,700.9	65.5	2,173	688	77	611	472	216	0.32	0.4
NPF-41, NPF-51, NPF-74	1989	965.3	26.5	2,615	720	87	633	559	161	0.28	0.7
1st commercial operation 1/86,9/86,1/88	1990	2,500.9	67.5	2,236	499	68	431	373	126	0.22	0.2
Type - PWRs	1991	3,043.9	78.9	2,242	605	79	526	422	183	0.27	0.2
Capacity - 1227, 1227, 1230 MWe	1992	3,102.3	82.0	1,981	541	53	488	373	168	0.27	0.2
	1993	2,677.1	74.3	2,124	592	51	541	435	157	0.28	0.2
	1994	2,827.6	79.1	2,048	462	40	422	310	152	0.23	0.2

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
PALO VERDE 1, 2, 3 (continued)	1995	3,265.2	85.6	1,875	482	62	420	278	204	0.26	0.1
	1996	3,482.7	90.0	1,717	302	31	271	157	145	0.18	0.1
PEACH BOTTOM 2,3	1975	1,234.3	80.9	971	228					0.23	0.2
Docket 50-277, 50-278; DPR-44, -56	1976	1,379.2	73.0	2,136	840	180	660	434	406	0.39	0.6
1st commercial operation 7/74, 12/74	1977	1,052.4	58.7	2,827	2,036	223	1,813	1,374	662	0.72	1.9
Type - BWR	1978	1,636.3	84.0	2,244	1,317	162	1,155	709	608	0.59	0.8
Capacity - 1093, 1093 MWe	1979	1,740.0	84.5	2,276	1,388	245	1,143	717	671	0.61	0.8
	1980	1,374.2	66.3	2,774	2,302	311	1,991	1,596	706	0.83	1.7
	1981	1,161.8	58.0	2,857	2,506	273	2,233	1,880	626	0.88	2.2
	1982	1,583.3	76.9	2,734	1,977	313	1,664	1,348	629	0.72	1.2
	1983	824.7	41.0	3,107	2,963	331	2,632	2,422	541	0.95	3.6
	1984	1,165.8	57.5	3,313	2,450	225	2,225	2,045	405	0.74	2.1
	1985	682.7	37.5	4,209	3,354	395	2,959	2,727	627	0.80	4.9
	1986	1,395.0	71.7	2,454	1,080	294	786	671	409	0.44	0.8
	1987	365.7	20.3	4,363	2,195	178	2,017	1,712	483	0.50	6.0
	1988	0.0	0.0	4,204	2,327	114	2,213	2,025	302	0.55	—
	1989	491.0	35.0	2,301	728	243	485	357	371	0.32	1.5
	1990	1,684.0	85.7	1,585	377	99	278	179	198	0.24	0.2
	1991	1,210.9	62.3	2,702	934	137	797	610	324	0.35	0.8
	1992	1,516.6	78.7	1,911	502	121	381	256	246	0.26	0.3
	1993	1,654.0	81.9	1,757	552	135	417	292	260	0.31	0.3
	1994	1,927.4	93.8	2,133	579	97	482	374	205	0.27	0.3
	1995	1,955.9	95.1	1,940	398	118	280	226	172	0.21	0.2
	1996	2,012.4	96.9	1,657	282	135	147	136	146	0.17	0.1
PERRY	1988	869.3	79.0	782	105	34	71	36	69	0.13	0.1
Docket 50-440; NPF-58	1989	642.2	57.0	1,883	767	113	654	604	163	0.41	1.2
1st commercial operation 11/87	1990	792.7	67.1	1,537	638	51	587	494	144	0.42	0.8
Type - BWR	1991	1,074.2	91.9	600	146	24	122	50	96	0.24	0.1
Capacity - 1160 MWe	1992	856.2	75.5	1,487	571	28	543	440	131	0.38	0.7
	1993	479.2	48.2	1,235	278	30	248	106	172	0.23	0.6
	1994	550.8	50.2	2,098	691	71	620	529	162	0.33	1.3
	1995	1,090.9	95.6	587	64	13	51	17	47	0.11	0.1
	1996	895.6	77.2	1,622	307	46	261	244	63	0.19	0.3

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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	1,317	2,648	66	2,582	2,270	378	2.01	9.2
Capacity - 670 MWe	1977	316.6	61.4	1,875	3,142	146	2,996	2,176	966	1.68	9.9
	1978	519.5	83.1	1,667	1,327	157	1,170	895	432	0.80	2.6
	1979	574.0	89.4	2,458	1,015	130	885	516	499	0.41	1.8
	1980	360.3	56.2	3,549	3,626	207	3,419	3,076	550	1.02	10.1
	1981	408.9	65.9	2,803	1,836	70	1,766	1,418	418	0.66	4.5
	1982	389.9	63.9	2,854	1,539	314	1,225	1,094	445	0.54	3.9
	1983	559.5	87.2	2,326	1,162	296	866	776	386	0.50	2.1
	1984	1.4	0.4	4,542	4,082	647	3,435	3,767	315	0.90	15.7
	1985	587.3	91.5	2,209	893	13	880	739	154	0.40	1.5
	1986	121.9	18.8	2,635	874	110	764	718	156	0.33	7.2
	1987	0.0	0.0	4,710	1,579	99	1,480	1,485	94	0.34	---
	1988	0.0	0.0	2,073	392	58	334	218	174	0.19	---
	1989	204.6	64.1	1,797	207	137	70	40	167	0.12	1.0
	1990	503.5	82.1	1,898	225	112	113	68	157	0.12	0.4
	1991	406.3	65.8	2,836	605	113	492	410	195	0.21	1.5
	1992	561.0	85.4	1,332	281	50	231	122	159	0.21	0.5
	1993	513.7	80.9	1,328	435	54	381	283	152	0.33	0.8
	1994	453.6	71.4	758	200	41	159	79	121	0.26	0.4
	1995	531.7	80.7	1,294	482	55	427	297	185	0.37	0.9
	1996	631.3	95.4	517	116	19	97	24	92	0.22	0.2
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 - PWRs	1974	760.2	81.3	400	295	70	225	81	214	0.74	0.4
Capacity - 485, 485 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	430	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	448	196	1.06	0.8
	1980	727.2	82.5	561	598	60	538	420	178	1.07	0.8
	1981	760.4	83.6	773	596	83	513	364	232	0.77	0.8
	1982	757.2	84.3	767	609	72	537	375	234	0.79	0.8
	1983	648.2	72.7	1,702	1,403	81	1,322	1,184	219	0.82	2.2
	1984	788.9	78.6	1,372	789	121	668	457	332	0.58	1.0
	1985	831.3	82.5	671	482	71	411	242	240	0.72	0.6
	1986	858.9	85.7	664	402	50	352	219	183	0.61	0.5

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
POINT BEACH 1, 2 (continued)	1987	857.5	85.5	720	554	55	499	369	185	0.77	0.6
	1988	899.3	88.6	734	410	64	346	235	175	0.56	0.5
	1989	847.8	85.5	736	504	77	427	284	220	0.68	0.6
	1990	875.5	86.5	617	378	53	325	161	217	0.61	0.4
	1991	874.8	87.1	724	265	42	223	134	131	0.37	0.3
	1992	866.7	85.8	617	256	39	217	118	138	0.41	0.3
	1993	911.0	90.0	559	186	26	160	63	123	0.33	0.2
	1994	914.5	91.2	548	170	34	136	75	95	0.31	0.2
	1995	858.4	86.1	548	190	29	161	92	98	0.35	0.2
	1996	831.6	84.7	1,029	276	61	215	85	191	0.27	0.3
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 - PWRs	1977	922.9	87.2	718	300	73	227	60	240	0.42	0.3
Capacity - 513, 512 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
	1981	844.9	80.5	836	329	37	292	128	201	0.39	0.4
	1982	944.9	90.4	645	229	30	199	68	161	0.36	0.2
	1983	921.1	86.8	654	233	14	219	73	160	0.36	0.3
	1984	972.4	91.7	546	147	18	129	52	95	0.27	0.2
	1985	882.6	84.0	1,082	416	31	385	136	280	0.38	0.5
	1986	930.6	90.3	818	255	18	237	80	175	0.31	0.3
	1987	969.6	91.6	593	135	9	126	51	84	0.23	0.1
	1988	932.0	89.1	732	199	17	182	62	137	0.27	0.2
	1989	1,001.8	94.7	476	99	10	89	28	71	0.21	0.1
	1990	925.4	89.2	737	188	8	180	74	114	0.26	0.2
	1991	1,023.3	95.6	586	98	10	88	26	72	0.17	0.1
	1992	811.6	76.2	845	211	12	199	72	139	0.25	0.3
	1993	978.3	90.7	532	106	5	101	32	74	0.20	0.1
	1994	996.9	91.5	478	109	17	92	41	68	0.23	0.1
	1995	1,023.2	93.9	499	107	11	96	40	67	0.21	0.1
	1996	992.1	91.4	558	112	9	103	46	66	0.20	0.1

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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	1,083	1,618	114	1,504	692	926	1.49	1.9
1st commercial operation 2/73, 3/73	1976	951.2	73.1	1,225	1,651	269	1,382	648	1,003	1.35	1.7
Type - BWRs	1977	970.1	84.0	907	1,031	108	923	373	658	1.14	1.1
Capacity - 769, 769 MWe	1978	1,124.5	88.6	1,207	1,618	358	1,260	722	1,618	1.34	1.4
	1979	1,075.0	84.6	1,688	2,158	215	1,943	1,250	908	1.28	2.0
	1980	866.9	64.4	3,089	4,838	291	4,547	3,657	1,181	1.57	5.6
	1981	1,156.9	81.1	2,246	3,146	100	3,046	2,623	523	1.40	2.7
	1982	1,018.7	76.0	2,314	3,757	177	3,580	2,653	1,104	1.62	3.7
	1983	1,088.5	79.2	1,802	2,491	168	2,323	1,898	593	1.38	2.3
	1984	994.6	65.7	1,678	1,579	122	1,457	1,075	504	0.94	1.6
	1985	1,268.0	82.7	1,184	990	172	818	27	963	0.84	0.8
	1986	1,093.2	71.0	1,451	950	128	822	568	382	0.65	0.9
	1987	1,126.6	75.3	1,429	720	79	641	435	285	0.50	0.6
	1988	1,173.7	84.1	1,486	827	136	691	545	282	0.56	0.7
	1989	1,196.3	85.9	1,721	900	143	757	616	284	0.52	0.8
	1990	1,148.9	77.8	2,186	1,028	183	845	713	315	0.47	0.9
	1991	1,044.5	73.2	1,722	509	107	402	292	217	0.30	0.5
	1992	960.8	68.0	2,413	1,157	168	989	754	403	0.48	1.2
	1993	974.9	67.0	2,150	849	131	718	491	358	0.39	0.9
	1994	681.5	48.7	2,163	1,128	144	984	789	339	0.52	1.7
	1995	1,002.5	70.4	2,041	736	101	635	441	295	0.36	0.7
	1996	876.6	60.1	2,248	1,025	92	933	762	263	0.46	1.2
RANCHO SECO[8]	1976	268.1	30.4	297	58	6	52	17	41	0.20	0.2
Docket 50-312; DPR-54	1977	706.4	77.1	515	391	61	329	248	142	0.76	0.6
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
	1981	321.2	40.2	772	402	83	319	266	136	0.52	1.3
	1982	409.5	53.3	766	337	49	288	217	120	0.44	0.8
	1983	347.9	46.8	1,338	787	158	629	604	183	0.59	2.3
	1984	460.0	58.3	802	222	73	149	115	107	0.28	0.5
	1985	238.7	30.8	1,764	756	183	573	583	173	0.43	3.2
	1986	0.0	0.0	1,513	402	36	366	277	125	0.27	---
	1987	0.0	0.0	1,533	300	52	248	216	84	0.20	---

[8]Rancho Seco has been permanently shutdown.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems)					Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Operations	Maint & Others	Contractor	Station & Utility		
RANCHO SECO[8] (continued)	1988	355.8	63.1	693	78	13	65	33	45	0.11	0.2
	1989	179.9	54.7	603	81	9	72	19	62	0.13	0.5
	1990	0.0	0.0	111	13	4	9	2	11	0.12	---
	1991	0.0	0.0	101	9	5	4	1	8	0.09	---
	1992	0.0	0.0	70	7	4	3	0	7	0.10	---
	1993	0.0	0.0	35	4	3	1	0	4	0.11	---
	1994	0.0	0.0	18	1	1	0	0	1	0.06	---
	1995	0.0	0.0	16	1	1	0	0	1	0.06	---
	1996	0.0	0.0	16	1	1	0	0	1	0.04	---
RIVER BEND 1	1987	605.2	68.4	1,268	378	70	308	249	129	0.30	0.6
Docket 50-458; NPF-47	1988	880.7	94.3	513	107	30	77	34	73	0.21	0.1
1st commercial operation 6/86	1989	584.5	69.1	1,566	558	44	514	412	146	0.36	1.0
Type - BWR	1990	682.2	78.0	1,616	489	49	440	348	141	0.30	0.7
Capacity - 936 MWe	1991	814.7	87.2	780	144	38	106	54	90	0.18	0.2
	1992	336.1	39.7	2,022	710	77	633	580	130	0.35	2.1
	1993	640.0	71.6	847	180	41	139	56	124	0.21	0.3
	1994	595.7	64.9	2,209	519	73	446	369	150	0.24	0.9
	1995	967.1	99.6	667	85	21	64	35	50	0.13	0.1
	1996	836.1	85.3	2,093	473	51	422	295	178	0.23	0.6
ROBINSON 2	1972	580.0		245	215	42	173	137	78	0.88	0.4
Docket 50-261; DPR-23	1973	455.1		831	695					0.84	1.5
1st commercial operation 3/71	1974	578.1	83.3	853	672	185	487			0.79	1.2
Type - PWR	1975	501.8	72.7	849	1,142					1.35	2.3
Capacity - 683 MWe	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	1,454	1,188	60	1,128	794	394	0.82	2.5
	1980	387.3	62.2	2,009	1,852	79	1,773	1,379	473	0.92	4.8
	1981	426.6	73.0	1,462	733	45	688	513	220	0.50	1.7
	1982	277.5	48.9	2,011	1,426	128	1,298	945	481	0.71	5.1
	1983	409.8	75.5	2,244	923	96	827	628	295	0.41	2.3
	1984	28.0	7.0	4,127	2,880	196	2,684	2,549	331	0.70	102.9
	1985	629.5	87.9	1,378	311	52	259	164	147	0.23	0.5
	1986	577.1	80.3	1,571	539	46	493	340	199	0.34	0.9
	1987	510.1	72.5	1,379	499	54	445	313	186	0.36	1.0

[8]Rancho Seco has been permanently shutdown

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
ROBINSON 2 (continued)	1988	385.0	65.9	1,351	564	44	520	370	194	0.42	1.5
	1989	336.6	48.7	1,098	195	31	164	88	107	0.18	0.6
	1990	400.3	64.8	1,626	437	33	404	356	81	0.27	1.1
	1991	575.1	81.4	885	193	31	162	139	54	0.22	0.3
	1992	487.2	66.8	1,267	352	51	301	260	92	0.28	0.7
	1993	502.7	70.7	1,221	337	13	324	246	91	0.28	0.7
	1994	560.3	79.5	420	63	9	54	17	46	0.15	0.1
	1995	618.7	84.7	1,058	215	12	203	111	104	0.20	0.3
	1996	654.8	88.6	1,031	167	18	149	93	74	0.16	0.3
SALEM 1,2	1978	546.4	55.6	574	122	28	94	32	90	0.21	0.2
Docket 50-272, -311; DPR-70, -75	1979	250.0	25.5	1,488	584	100	484	359	225	0.39	2.3
1st commercial operation 6/77, 10/81	1980	680.6	69.2	1,704	449	55	394	281	168	0.26	0.7
Type - PWRs	1981	743.0	78.1	1,652	254	4	250	152	102	0.15	0.3
Capacity - 1106, 1106 MWe	1982	1,440.4	72.6	3,228	1,203	66	1,137	846	357	0.37	0.8
	1983	742.0	30.5	2,383	581	10	571	463	118	0.24	0.8
	1984	650.1	31.8	1,395	681	10	671	469	212	0.49	1.0
	1985	1,657.7	75.8	1,112	204	59	145	54	150	0.18	0.1
	1986	1,484.3	70.4	3,554	599	10	589	459	140	0.17	0.4
	1987	1,478.2	73.3	2,543	600	8	592	433	167	0.24	0.4
	1988	1,591.6	73.6	1,609	503	1	502	329	174	0.31	0.3
	1989	1,675.4	79.5	2,944	338	4	334	209	129	0.11	0.2
	1990	1,362.6	65.1	3,636	272	6	266	188	84	0.07	0.2
	1991	1,726.4	79.3	4,201	458	15	443	366	92	0.11	0.3
	1992	1,200.9	61.1	4,376	431	16	415	340	91	0.10	0.4
	1993	1,366.3	65.4	3,559	408	11	397	318	90	0.11	0.3
	1994	1,367.4	73.8	950	188	2	186	122	66	0.20	0.1
	1995	558.1	29.3	1,195	218	4	214	147	71	0.18	0.4
	1996	0.0	0.0	1,671	300	1	299	271	29	0.18	---
SAN ONOFRE 1[9], 2,3	1969	314.1		123	42	10	32	5	37	0.34	0.1
Docket 50-206, -361, -362;	1970	365.9		251	155	13	142	59	96	0.62	0.4
DPR-13, NPF-10, NPF-15	1971	362.1		121	50	12	38	3	47	0.41	0.1
1st commercial operation 1/68,8/83,4/84	1972	338.5		326	256	29	227	117	139	0.79	0.8
Type - PWR	1973	273.7		570	353	40	313	168	185	0.62	1.3
Capacity - 436, 1070, 1080 MWe	1974	377.8	86.1	219	71					0.32	0.2
	1975	389.0	87.4	424	292					0.69	0.8

[9]San Onofre 1 was shut down 11/92 and is no longer included in the count of commercial reactors.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
SAN ONOFRE 1[9],2,3 (continued)	1976	297.9	70.2	1,330	880	147	733	629	251	0.66	3.0
	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	3,063	2,386	219	2,167	2,017	369	0.78	24.5
	1981	95.9	26.7	2,902	3,223	100	3,123	3,104	119	1.11	33.6
	1982	61.6	15.7	3,055	832	81	751	730	102	0.27	13.5
	1983	0.0	0.0	1,701	155	31	124	113	42	0.09	---
	1984	670.4	68.3	7,514	986	105	881	831	155	0.27	1.5
	1985	1,381.8	132.9	5,742	722	16	173	151	38	0.24	15.5
	1986	1,698.2	61.1	3,594	824	86	738	574	250	0.24	1.1
	1987	1,983.0	78.8	2,138	696	113	583	408	288	0.33	0.4
	1988	1,982.3	68.4	2,324	781	99	682	518	263	0.34	0.4
	1989	1,840.8	64.9	2,237	567	23	544	357	210	0.25	0.3
	1990	1,980.5	69.1	2,224	885	109	776	693	192	0.40	0.4
	1991	1,987.6	75.3	1,814	412	43	369	289	123	0.23	0.2
	1992	2,228.6	87.1	1,651	324	5	319	229	95	0.20	0.1
	1993	1,771.3	79.9	2,193	767	89	678	598	169	0.35	0.4
	1994	2,220.7	100.0	528	32	7	25	10	22	0.06	0.0
	1995	1,686.9	79.1	1,914	455	0	455	301	154	0.24	0.3
	1996	2,089.3	93.2	1,272	129	0	129	74	55	0.10	0.1
SEABROOK	1991	810.4	75.9	699	92	2	90	43	49	0.13	0.1
Docket 50-443; NPF-86	1992	932.4	81.3	806	147	0	147	128	19	0.18	0.2
1st commercial operation 8/90	1993	1,071.5	93.6	110	6	0	6	0	6	0.05	0.0
Type - PWR	1994	736.4	63.5	852	113	28	85	87	26	0.13	0.2
Capacity - 1158 Mwe	1995	995.5	87.5	800	102	2	100	76	26	0.13	0.1
	1996	1,168.6	99.6	206	10	0	10	0	10	0.05	0.0
SEQUOYAH 1,2	1982	583.5	52.8	1,965	570	73	497	61	509	0.29	1.0
Docket 50-327, -328; DPR-77, -79	1983	1,663.7	75.1	1,772	491	74	417	46	445	0.28	0.3
1st commercial operation 7/81, 6/82	1984	1,481.9	69.0	2,373	1,117	152	965	111	1,006	0.47	0.8
Type - PWR	1985	1,151.3	51.3	1,854	1,071	118	953	243	828	0.58	0.9
Capacity - 1117, 1117 MWe	1986	0.0	0.0	1,735	526	101	425	70	456	0.30	---
	1987	0.0	0.0	2,080	420	55	365	101	319	0.20	---
	1988	490.8	31.8	2,439	678	73	605	115	563	0.28	1.4
	1989	1,851.7	85.7	2,007	657	71	586	140	517	0.33	0.4
	1990	1,662.6	77.2	2,934	1,678	102	1,576	352	1,326	0.57	1.0

[9]San Onofre 1 was shut down 11/92 and is no longer included in the count of commercial reactors.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function Opera-tions	Per Work Function Maint & Others	Per Personnel Type Con-tractor	Per Personnel Type Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
SEQUOYAH 1, 2 (continued)	1991	1,965.4	88.0	1,928	698	39	659	299	399	0.36	0.4
	1992	1,849.0	85.4	1,714	465	32	433	343	122	0.27	0.3
	1993	405.7	21.8	1,629	372	29	343	272	100	0.23	0.9
	1994	1,418.7	66.3	1,657	292	18	274	210	82	0.18	0.2
	1995	1,864.2	86.1	1,618	358	28	330	250	108	0.22	0.2
	1996	2,009.4	87.9	1,404	265	20	245	173	92	0.19	0.1
SOUTH TEXAS 1, 2	1989	769.3	65.6	989	161	10	151	114	47	0.16	0.2
Docket 50-498, 50-499; NPF -76,-80	1990	1,504.1	65.9	1,136	206	18	188	126	80	0.18	0.1
1st commercial operation 8/88, 6/89	1991	1,741.5	72.4	1,144	257	38	219	172	85	0.22	0.1
Type - PWRs	1992	2,096.0	83.8	923	147	9	138	91	56	0.16	0.1
Capacity - 1251, 1251 MWe	1993	163.1	8.3	1,138	251	12	239	197	54	0.22	1.5
	1994	1,700.2	70.6	661	47	11	36	26	21	0.07	0.0
	1995	2,294.2	89.9	1,485	291	15	276	208	83	0.20	0.1
	1996	2,465.9	95.0	1,145	137	14	123	92	45	0.12	0.1
ST. LUCIE 1,2	1977	649.1	84.7	445	152	26	126	92	60	0.34	0.2
Docket 50-335, -389; DPR-67; NPF-16	1978	606.4	76.5	797	337	15	322	140	197	0.42	0.6
1st commercial operation 12/76, 8/83	1979	592.0	74.0	907	438	25	413	209	229	0.48	0.7
Type - PWRs	1980	627.9	77.5	1,074	532	82	450	195	337	0.50	0.8
Capacity - 839, 839 MWe	1981	599.1	72.7	1,473	929	20	909	556	373	0.63	1.6
	1982	816.8	94.0	1,045	272	17	255	105	167	0.26	0.3
	1983	290.3	15.4	2,211	1,204	5	1,199	924	280	0.54	4.1
	1984	1,183.0	69.6	2,090	1,263	40	1,223	807	456	0.60	1.1
	1985	1,445.8	82.5	1,971	1,344	294	1,050	810	534	0.68	0.9
	1986	1,588.6	89.1	1,279	491	81	410	322	169	0.38	0.3
	1987	1,407.9	81.9	2,012	951	1	950	560	391	0.47	0.7
	1988	1,639.7	93.0	1,448	611	54	557	371	240	0.42	0.4
	1989	1,493.1	85.1	1,414	495	24	471	298	197	0.35	0.3
	1990	1,188.4	70.0	1,876	777	83	694	482	295	0.41	0.7
	1991	1,592.8	90.8	1,282	479	38	441	303	176	0.37	0.3
	1992	1,511.9	87.3	1,251	264	29	235	153	111	0.21	0.2
	1993	1,227.6	77.7	1,462	492	36	456	304	188	0.34	0.4
	1994	1,424.8	85.0	1,896	505	24	481	302	203	0.27	0.4
	1995	1,306.6	76.0	1,498	413	20	393	197	216	0.28	0.3
	1996	1,473.4	86.5	1,433	385	10	375	246	139	0.27	0.3

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
SUMMER 1	1984	504.6	61.1	1,120	295	29	266	202	93	0.26	0.6
Docket 50-395; NPF-12	1985	627.7	71.6	1,201	379	74	305	241	138	0.32	0.6
1st commercial operation 1/84	1986	853.7	95.3	392	23	5	18	12	11	0.06	0.03
Type - PWR	1987	618.7	71.0	1,075	560	34	526	454	106	0.52	0.9
Capacity - 945 MWe	1988	605.3	69.1	1,127	511	35	476	403	108	0.45	0.8
	1989	652.4	83.1	374	52	11	41	27	25	0.14	0.1
	1990	730.0	83.9	1,090	376	29	347	322	54	0.34	0.5
	1991	642.5	82.9	984	291	21	270	253	38	0.30	0.5
	1992	892.6	97.4	249	27	6	21	12	15	0.11	0.0
	1993	728.3	84.0	1,121	297	11	286	253	44	0.26	0.4
	1994	536.7	69.5	1,549	374	27	347	334	40	0.24	0.7
	1995	899.8	97.2	257	13	3	10	4	9	0.05	0.0
	1996	850.4	90.3	701	97	10	87	62	35	0.14	0.1
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	1,715	884	72	812			0.52	1.2
1st commercial operation 12/72, 5/73	1975	1,079.0	70.8	1,948	1,649	27	1,622	1,065	584	0.85	1.5
Type - PWRs	1976	930.7	60.4	2,753	3,165	444	2,721	1,873	1,292	1.15	3.4
Capacity - 801, 801 MWe	1977	1,139.0	72.2	1,860	2,307	348	1,959	1,380	927	1.24	2.0
	1978	1,210.6	77.2	2,203	1,837	530	1,307	1,248	589	0.83	1.5
	1979	343.0	42.3	5,065	3,584	173	3,411	2,975	609	0.71	10.4
	1980	568.2	40.3	5,317	3,836	353	3,483	3,117	719	0.72	6.8
	1981	907.6	59.3	3,753	4,244	428	3,816	3,040	1,204	1.13	4.7
	1982	1,323.3	88.5	1,878	1,490	399	1,091	506	984	0.79	1.1
	1983	916.2	61.3	2,754	3,220	571	2,649	1,786	1,434	1.17	3.5
	1984	1,026.7	71.0	3,198	2,247	536	1,711	1,575	672	0.70	2.2
	1985	1,166.4	78.2	3,206	1,815	509	1,306	1,232	583	0.57	1.6
	1986	1,080.5	69.0	3,763	2,356	430	1,926	1,677	679	0.63	2.2
	1987	1,132.7	72.7	2,675	712	192	520	325	387	0.27	0.6
	1988	750.4	50.0	3,184	1,542	68	1,474	1,117	425	0.48	2.1
	1989	489.3	33.0	3,100	836	27	809	530	306	0.27	1.7
	1990	1,276.4	83.9	1,947	575	53	522	389	186	0.30	0.5
	1991	1,271.9	84.5	1,547	510	45	465	311	199	0.33	0.4
	1992	1,396.3	88.9	1,660	539	108	431	383	156	0.32	0.4
	1993	1,283.1	84.6	1,402	383	72	311	241	142	0.27	0.3
	1994	1,320.9	85.2	1,530	378	66	312	254	124	0.25	0.3
	1995	1,333.0	84.2	1,883	406	60	346	246	160	0.22	0.3
	1996	1,562.9	93.1	983	209	36	173	94	115	0.21	0.1

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
SUSQUEHANNA 1,2	1984	719.9	72.6	2,827	308	74	234	127	181	0.11	0.4
Docket 50-387, 50-388; NPF-14; NPF-22	1985	1,452.2	76.4	3,669	1,106	78	1,028	790	316	0.30	0.8
1st commercial operation 6/83, 2/85	1986	1,344.8	67.0	2,996	828	50	778	402	426	0.28	0.6
Type - BWR	1987	1,749.5	85.3	2,548	621	36	585	341	280	0.24	0.4
Capacity - 1090, 1094 MWe	1988	1,691.0	83.5	1,904	516	52	464	281	235	0.27	0.3
	1989	1,572.5	77.1	2,063	704	32	672	332	372	0.34	0.4
	1990	1,746.9	85.4	1,691	440	30	410	179	261	0.26	0.3
	1991	1,878.0	89.8	1,844	507	44	463	251	256	0.27	0.3
	1992	1,604.2	79.7	1,885	724	29	695	356	368	0.38	0.5
	1993	1,602.1	77.3	1,488	335	19	316	172	163	0.23	0.2
	1994	1,814.4	85.4	1,580	442	20	422	246	196	0.28	0.2
	1995	1,850.8	85.3	1,773	476	54	422	176	300	0.27	0.3
	1996	1,998.7	90.7	1,430	289	49	240	112	177	0.20	0.1
THREE MILE ISLAND 1,2	1975	675.9	82.2	131	73			18	55	0.56	0.1
Docket 50-289, -320; DPR-50, -73	1976	530.0	65.4	819	286	23	263	69	217	0.35	0.5
1st commercial operation 9/74, 12/78	1977	664.5	80.9	1,122	360	15	344	128	231	0.32	0.5
Type - PWRs	1978	690.0	85.1	1,929	504	32	472	235	269	0.26	0.7
Capacity - 786, 880 MWe	1979	266.0	21.9	3,975	1,392	197	1,195	907	485	0.35	5.2
	1980	0.0	0.0	2,328	394	29	365	239	155	0.17	---
	1981	0.0	0.0	2,103	376	50	326	190	186	0.18	---
	1982	0.0	0.0	2,123	1,004	62	942	433	571	0.47	---
	1983	0.0	0.0	1,592	1,159	85	1,074	633	526	0.73	---
	1984	0.0	0.0	1,079	688	50	638	330	358	0.64	---
	1985	103.6	10.6	1,890	857	230	627	266	591	0.45	8.3
THREE MILE ISLAND 1[10]	1986	585.2	70.9	1,360	213	44	169	89	124	0.16	0.4
Docket 50-289; DPR-50	1987	610.7	73.6	1,259	149	40	109	50	99	0.12	0.2
1st commercial operation 9/74	1988	661.0	77.8	1,012	210	40	170	88	122	0.21	0.3
Type - PWR	1989	871.3	100.0	670	54	22	32	3	51	0.08	0.1
Capacity - 786 MWe	1990	645.5	84.6	1,319	264	53	211	121	143	0.20	0.4
	1991	688.7	86.4	1,542	198	47	151	99	99	0.13	0.3
	1992	836.8	100.0	558	34	15	19	5	29	0.06	0.0
	1993	722.0	88.5	1,835	206	53	153	110	96	0.11	0.3
	1994	798.7	95.5	434	40	19	21	1	39	0.09	0.1

[10]Three Mile Island 1 resumed commercial power generation 10/85 after being under regulatory restraint since 1979.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
THREE MILE ISLAND 1[10](continued)	1995	772.9	90.8	1,220	213	31	182	126	87	0.17	0.3
	1996	857.4	100.0	267	16	1	15	0	16	0.06	0.0
THREE MILE ISLAND 2[11]	1986	0.0	0.0	1,497	915	97	818	615	300	0.61	---
Docket 50-320; DPR-73	1987	0.0	0.0	1,378	977	90	887	687	290	0.71	---
1st commercial operation 12/78	1988	0.0	0.0	1,247	917	26	891	691	226	0.74	---
Type - PWR	1989	0.0	0.0	1,014	639	88	551	382	257	0.63	---
Capacity - 880 MWe	1990	0.0	0.0	484	136	25	111	50	86	0.28	---
	1991	0.0	0.0	153	37	1	36	3	34	0.24	---
	1992	0.0	0.0	315	157	7	150	99	58	0.50	---
	1993	0.0	0.0	167	33	1	32	19	14	0.20	---
	1994	0.0	0.0	259	7	0	7	2	5	0.03	---
	1995	0.0	0.0	191	2	1	1	0	2	0.01	---
	1996	0.0	0.0	122	2	1	1	0	2	0.02	---
TROJAN[12]	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	83	236	125	194	0.45	1.6
1st commercial operation 5/76	1979	631.0	58.1	736	258	74	184	113	145	0.35	0.4
Type - PWR	1980	727.5	72.5	1,159	421	77	344	305	116	0.36	0.6
Capacity - 1095 MWe	1981	775.6	74.1	1,311	609	113	496	363	246	0.46	0.8
	1982	579.5	60.8	977	419	76	343	168	251	0.43	0.7
	1983	494.2	62.4	969	307	35	272	129	178	0.32	0.6
	1984	567.0	54.4	1,042	433	41	392	230	203	0.42	0.8
	1985	829.1	76.7	852	363	31	332	210	153	0.43	0.4
	1986	852.4	79.7	1,321	381	46	335	274	107	0.29	0.4
	1987	525.5	54.0	1,209	363	66	297	266	97	0.30	0.7
	1988	758.6	67.5	1,408	401	108	293	311	90	0.28	0.5
	1989	666.8	61.9	1,360	421	37	384	317	104	0.31	0.6
	1990	732.4	66.3	1,169	258	9	249	185	73	0.22	0.4

[10]Three Mile Island 1 resumed commercial power generation 10/85 after being under regulatory restraint since 1979.

[11]Three Mile Island 2 has been shut down since the 1979 accident, but was still included in the count of reactors through 1988 since dose was still being accumulated to defuel and decontaminate the unit during this time period.

[12]Trojan ended commercial operation as of 1/93, and will not be put in commercial operation again. It is no longer included in the count of commercial reactors.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
TROJAN[12] (continued)	1991	181.6	16.1	1,496	567	17	550	475	92	0.38	3.1
	1992	553.9	68.4	567	84	8	76	52	32	0.15	0.2
	1993	0.0	68.4	54	21	3	18	12	9	0.39	---
	1994	0.0	0.0	51	9	2	7	6	3	0.18	---
	1995	0.0	0.0	141	44	---	---	---	---	0.31	---
	1996	0.0	0.0	112	41	---	---	---	---	0.37	---
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	1,003.7	74.9	1,176	876	270	606	559	317	0.74	0.9
Type - PWRs	1976	974.2	71.2	1,647	1,184	89	1,095	868	316	0.72	1.2
Capacity - 693, 693 MWe	1977	979.5	72.1	1,319	1,036	94	942	522	514	0.79	1.1
	1978	1,000.2	78.8	1,336	1,032	90	942	546	486	0.77	1.0
	1979	811.0	62.4	2,002	1,680	299	1,381	997	683	0.84	2.1
	1980	990.6	73.6	1,803	1,651	232	1,419	1,218	433	0.92	1.7
	1981	654.0	46.8	2,932	2,251	274	1,977	1,854	397	0.77	3.4
	1982	915.7	65.2	2,956	2,119	197	1,922	1,656	463	0.72	2.3
	1983	878.4	62.8	2,930	2,681	272	2,409	2,119	562	0.92	3.1
	1984	946.7	68.5	2,010	1,255	217	1,038	876	379	0.62	1.3
	1985	1,034.9	74.7	1,905	1,253	91	1,162	817	436	0.66	1.2
	1986	754.1	54.9	1,808	946	71	875	716	230	0.52	1.3
	1987	431.3	36.6	1,980	1,371	79	1,292	987	384	0.69	3.2
	1988	809.8	59.5	1,841	738	18	720	523	215	0.40	0.9
	1989	689.9	56.8	1,625	433	25	408	281	152	0.27	0.6
	1990	933.1	69.0	2,099	730	140	590	475	255	0.35	0.8
	1991	258.2	21.0	2,087	939	105	834	685	254	0.45	3.6
	1992	968.9	75.5	1,374	325	32	293	173	152	0.24	0.3
	1993	1,244.8	91.0	1,271	275	6	269	164	111	0.22	0.2
	1994	1,172.9	87.2	1,489	476	0	476	231	245	0.32	0.4
	1995	1,320.3	94.6	1,142	215	0	215	102	113	0.19	0.2
	1996	1,307.8	94.0	1,157	187	0	187	89	98	0.16	0.1
VERMONT YANKEE	1973	222.1		244	85					0.35	0.4
Docket 50-271; DPR-28	1974	303.5		357	216	24	192	103	113	0.61	0.7
1st commercial operation 11/72	1975	429.0	87.8	282	153	70	83	63	90	0.54	0.4
Type - BWR	1976	389.6	77.1	815	411	36	375	246	165	0.50	1.1
Capacity - 510 MWe	1977	423.5	85.1	641	258	83	175	90	168	0.40	0.6

[12]Trojan ended commercial operation as of 1/93, and will not be put in commercial operation again. It is no longer included in the count of commercial reactors.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems)					Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
VERMONT YANKEE (continued)	1978	387.5	75.9	934	339	78	261	158	181	0.36	0.9
	1979	414.0	82.1	1,220	1,170	546	624	642	528	0.96	2.8
	1980	357.8	71.5	1,443	1,338	141	1,197	926	412	0.93	3.7
	1981	429.1	84.6	1,264	731	121	610	408	323	0.58	1.7
	1982	501.0	96.0	481	205	60	145	80	125	0.43	0.4
	1983	346.1	69.3	1,316	1,527	215	1,312	787	740	1.16	4.4
	1984	398.1	79.0	954	626	83	543	318	308	0.66	1.6
	1985	361.4	71.8	1,392	1,051	163	888	898	153	0.76	2.9
	1986	248.1	48.9	1,389	1,188	44	1,144	1,091	97	0.86	4.8
	1987	423.6	84.2	827	303	37	266	226	77	0.37	0.7
	1988	492.1	95.7	379	124	27	97	67	57	0.33	0.3
	1989	432.8	84.7	832	288	43	245	220	68	0.35	0.7
	1990	433.1	85.9	849	307	37	270	236	71	0.36	0.7
	1991	492.3	94.3	310	118	19	99	66	52	0.38	0.2
	1992	446.8	88.1	921	381	58	323	319	62	0.41	0.9
	1993	402.3	80.1	833	217	41	176	166	51	0.26	0.5
	1994	515.8	98.7	220	38	24	14	18	20	0.17	0.1
	1995	462.1	87.0	737	182	47	135	151	31	0.25	0.4
	1996	452.7	85.2	951	231	57	174	196	35	0.24	0.5
VOGTLE 1,2	1988	820.4	77.7	1,108	138	13	125	107	31	0.12	0.2
Docket 50-424, 50-425; NPF-68, -81	1989	1,045.8	96.0	427	32	7	25	14	18	0.07	0.0
1st commercial operation 6/87, 5/89	1990	1,710.9	82.7	1,602	466	89	377	323	143	0.29	0.3
Type - PWRs	1991	1,966.5	89.2	1,357	362	50	312	296	66	0.27	0.2
Capacity - 1162, 1162 MWe	1992	2,047.9	90.0	1,262	426	51	375	310	116	0.34	0.2
	1993	2,060.4	88.3	1,338	367	34	333	251	116	0.27	0.2
	1994	2,170.1	91.3	1048	217	8	209	120	97	0.21	0.1
	1995	2,285.4	95.2	953	199	13	186	94	105	0.21	0.1
	1996	2,056.8	86.5	1,395	452	49	403	234	218	0.32	0.2
WASHINGTON NUCLEAR 2	1985	616.0	87.6	755	119	42	77	42	77	0.16	0.2
Docket 50-397; NPF-21	1986	616.0	74.4	1,013	222	56	166	70	152	0.22	0.4
1st commercial operation 12/84	1987	639.0	70.8	1,201	406	95	311	143	263	0.34	0.6
Type - BWR	1988	707.7	71.8	1,050	353	81	272	93	260	0.34	0.5
Capacity - 1107 MWe	1989	727.2	78.3	1,299	492	161	331	216	276	0.38	0.7
	1990	684.7	67.5	1,348	536	121	415	209	327	0.40	0.8
	1991	508.5	50.3	1,088	387	88	299	143	244	0.36	0.8
	1992	682.3	65.6	1,489	612	11	601	307	305	0.41	0.9
	1993	849.6	79.5	1,385	469	1	468	207	262	0.34	0.6

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
WASHINGTON NUCLEAR 2 (continued)	1994	803.8	75.2	1,870	866	108	758	468	398	0.46	1.1
	1995	824.7	83.8	1,694	456	91	365	219	237	0.27	0.6
	1996	662.9	82.2	1,453	373	71	302	221	152	0.26	0.6
WATERFORD 3	1986	875.7	79.1	1,244	223	62	161	178	45	0.18	0.3
Docket 50-382; NPF-38	1987	891.8	82.5	959	156	33	123	106	50	0.16	0.2
1st commercial operation 9/85	1988	784.3	75.4	1,246	259	79	180	207	52	0.21	0.3
Type - PWR	1989	909.8	82.6	1,306	265	70	195	231	34	0.20	0.3
Capacity - 1075 MWe	1990	1,027.9	92.8	432	47	0	47	24	23	0.11	0.0
	1991	870.6	79.8	1,301	364	101	263	307	57	0.28	0.4
	1992	909.6	83.2	1,213	226	52	174	177	49	0.19	0.2
	1993	1,088.3	99.4	195	15	3	12	5	10	0.08	0.0
	1994	949.1	87.0	1,167	191	47	144	143	48	0.16	0.2
	1995	927.4	83.4	1,092	153	2	151	93	60	0.14	0.2
	1996	1,064.8	94.2	342	27	16	11	5	22	0.08	0.0
WOLF CREEK 1	1986	832.8	73.3	682	143	27	116	78	65	0.21	0.2
Docket 50-482; NPF-42	1987	778.8	71.1	675	138	26	112	82	56	0.20	0.2
1st commercial operation 9/85	1988	794.7	70.7	1,010	297	62	235	177	120	0.29	0.4
Type - PWR	1989	1,108.4	99.5	186	18	4	14	8	10	0.10	0.0
Capacity - 1163 MWe	1990	940.2	81.0	798	195	29	166	130	65	0.24	0.2
	1991	707.6	71.9	1,010	331	37	294	244	87	0.33	0.5
	1992	1,010.8	86.7	446	78	17	61	42	36	0.17	0.1
	1993	940.5	80.6	975	183	31	152	117	66	0.19	0.2
	1994	1,017.2	86.8	1,082	235	36	199	170	65	0.22	0.2
	1995	1,198.0	98.7	242	14	5	9	2	12	0.06	0.0
	1996	980.6	81.2	986	171	28	143	114	57	0.17	0.2
YANKEE ROWE[13]	1969	138.3		193	215	83	132	78	133	1.11	1.6
Docket 50-29; DPR-3	1970	146.1		355	255	90	165	158	97	0.72	1.7
1st commercial operation 7/61	1971	173.5		155	90	46	44	19	71	0.58	0.5
Type - PWR	1972	78.7		282	255	63	192	146	109	0.90	3.2
Capacity - 167 MWe	1973	127.1		133	99			47	52	0.74	0.8

[13]Yankee Rowe ended commercial operation as of 10/91, and will not be put in commercial operation again. It is no longer included in the count of commercial reactors.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
YANKEE ROWE[13] (continued)	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	24	258	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
	1981	109.0	74.4	515	302	8	294	136	166	0.59	2.8
	1982	108.6	73.4	814	474	7	467	215	259	0.58	4.4
	1983	163.5	91.4	395	68	18	50	7	61	0.17	0.4
	1984	124.8	71.4	654	348	15	333	141	207	0.53	2.8
	1985	144.3	85.3	653	211	17	194	81	130	0.32	1.5
	1986	169.7	95.0	384	45	20	25	2	43	0.12	0.3
	1987	138.7	82.7	593	217	37	180	126	91	0.37	1.6
	1988	136.4	85.2	738	227	35	192	148	79	0.31	1.7
	1989	159.4	92.9	496	62	20	42	19	43	0.12	0.4
	1990	101.1	61.5	702	246	32	214	170	76	0.35	2.4
	1991	121.2	72.3	162	40	11	29	16	24	0.25	0.3
	1992	0.0	0.0	324	94	10	84	59	35	0.29	---
	1993	0.0	0.0	313	163	8	155	153	10	0.52	---
	1994	0.0	0.0	222	156	4	152	137	19	0.70	---
	1995	0.0	0.0	191	78	3	75	71	7	0.41	---
	1996	0.0	0.0	239	95	4	91	88	7	0.40	---
ZION 1,2	1974	425.3	71.1	306	56			13	43	0.18	0.1
Docket 50-295, 50-304; DPR-39, -48	1975	1,181.5	74.9	436	127	17	110	49	78	0.29	0.1
1st commercial operation 12/73, 9/74	1976	1,134.9	61.9	774	571	64	507	257	314	0.74	0.5
Type - PWRs	1977	1,358.6	75.0	784	1,003	43	960	561	442	1.28	0.7
Capacity - 1040, 1040 MWe	1978	1,613.5	80.2	1,104	1,017	294	723	418	1,017	0.92	0.6
	1979	1,238.0	67.6	1,472	1,274	168	1,106	747	527	0.87	1.0
	1980	1,411.2	74.1	1,363	920	107	813	560	360	0.67	0.7
	1981	1,366.9	72.3	1,754	1,720	50	1,670	1,155	565	0.98	1.3
	1982	1,186.4	64.3	1,575	2,103	42	2,061	1,688	415	1.34	1.8
	1983	1,222.3	69.4	1,285	1,311	118	1,193	905	406	1.02	1.1
	1984	1,389.9	69.6	1,110	786	23	763	556	230	0.71	0.6
	1985	1,187.9	62.9	1,498	1,166	39	1,127	787	379	0.78	1.0
	1986	1,462.0	73.2	967	474	21	453	330	144	0.49	0.3

[13]Yankee Rowe ended commercial operation as of 10/91, and will not be put in commercial operation again. It is no longer included in the count of commercial reactors.

APPENDIX C (continued)
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems)					Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
ZION 1,2 (continued)	1987	1,337.0	71.0	1,046	653	38	615	432	221	0.62	0.5
	1988	1,549.1	78.3	1,926	1,260	38	1,222	1,045	215	0.65	0.8
	1989	1,514.1	77.6	1,282	624	21	603	392	232	0.49	0.4
	1990	860.4	46.9	1,385	696	19	677	492	204	0.50	0.8
	1991	1,125.7	58.2	902	173	26	147	90	83	0.19	0.2
	1992	1,128.8	59.0	1,732	1,043	19	1,024	783	260	0.60	0.9
	1993	1,458.2	70.9	1,772	643	15	628	461	182	0.36	0.4
	1994	1,224.9	59.9	1,176	306	14	292	176	130	0.26	0.2
	1995	1,471.6	72.4	1,807	797	8	789	590	207	0.44	0.5
	1996	1,538.4	75.8	1,567	437	14	423	325	112	0.28	0.3

APPENDIX D*

Number of Personnel and Person-rem by Work and Job Function

1996

NOTE: Appendix D contains data on operating plants as well as plants which are no longer in commercial operation.

APPENDIX D

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

1996

PLANT: ***ARKANSAS 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	11	5	28	44	1.517	1.277	4.488	7.282
OPERATIONS PERSONNEL	29	2	0	31	5.008	0.593	0.000	5.601
HEALTH PHYSICS PERSONNEL	48	6	18	72	15.516	1.816	4.359	21.691
SUPERVISORY PERSONNEL	4	0	1	5	0.504	0.000	0.382	0.886
ENGINEERING PERSONNEL	5	0	0	5	1.029	0.000	0.000	1.029
TOTAL	97	13	47	157	23.574	3.686	9.229	36.489
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	42	7	54	103	6.372	1.130	8.666	16.168
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.270	0.000	0.000	0.270
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	3	4	0.116	0.000	0.499	0.615
TOTAL	45	7	57	109	6.758	1.130	9.165	17.053
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	3	1	79	83	0.768	0.133	35.629	36.530
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	8	0	3	11	4.263	0.000	0.458	4.721
SUPERVISORY PERSONNEL	2	0	0	2	0.350	0.000	0.000	0.350
ENGINEERING PERSONNEL	7	0	6	13	1.464	0.000	2.933	4.397
TOTAL	20	1	88	109	6.845	0.133	39.020	45.998
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	12	0	87	99	1.953	0.000	23.825	25.778
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	2	0	2	4	0.254	0.000	0.501	0.755
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.150	0.150
ENGINEERING PERSONNEL	7	1	7	15	1.125	0.109	3.612	4.846
TOTAL	21	1	97	119	3.332	0.109	28.088	31.529
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
REFUELING								
MAINTENANCE PERSONNEL	14	4	22	40	3.215	0.894	4.816	8.925
OPERATIONS PERSONNEL	10	0	0	10	1.774	0.000	0.000	1.774
HEALTH PHYSICS PERSONNEL	4	0	1	5	1.055	0.000	0.108	1.163
SUPERVISORY PERSONNEL	5	0	0	5	1.099	0.000	0.000	1.099
ENGINEERING PERSONNEL	1	0	3	4	0.106	0.000	0.592	0.698
TOTAL	34	4	26	64	7.249	0.894	5.516	13.659
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	82	17	270	369	13.825	3.434	77.424	94.683
OPERATIONS PERSONNEL	39	2	0	41	6.782	0.593	0.000	7.375
HEALTH PHYSICS PERSONNEL	64	6	24	94	21.358	1.816	5.426	28.600
SUPERVISORY PERSONNEL	11	0	2	13	1.953	0.000	0.532	2.485
ENGINEERING PERSONNEL	21	1	19	41	3.840	0.109	7.636	11.585
GRAND TOTALS	217	26	315	558	47.758	5.952	91.018	144.728

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***BEAVER VALLEY 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	8	0	17	25	1.671	0.000	9.521	11.192
OPERATIONS PERSONNEL	45	0	0	45	8.874	0.000	0.000	8.874
HEALTH PHYSICS PERSONNEL	21	0	38	59	4.825	0.000	15.431	20.256
SUPERVISORY PERSONNEL	8	0	1	9	1.286	0.000	0.302	1.588
ENGINEERING PERSONNEL	1	0	0	1	0.117	0.000	0.116	0.233
TOTAL	83	0	56	139	16.773	0.000	25.370	42.143
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	154	0	270	424	38.534	0.000	106.530	145.064
OPERATIONS PERSONNEL	3	0	0	3	0.592	0.000	0.000	0.592
HEALTH PHYSICS PERSONNEL	8	0	26	34	1.777	0.000	9.439	11.216
SUPERVISORY PERSONNEL	9	0	8	17	1.887	0.000	1.763	3.650
ENGINEERING PERSONNEL	2	0	4	6	0.410	0.000	0.824	1.234
TOTAL	176	0	308	484	43.200	0.000	118.556	161.756
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	227	228	0.159	0.000	122.789	122.948
OPERATIONS PERSONNEL	0	0	0	0	0.028	0.000	0.000	0.028
HEALTH PHYSICS PERSONNEL	0	0	20	20	0.033	0.000	8.059	8.092
SUPERVISORY PERSONNEL	10	0	7	17	4.066	0.000	3.016	7.082
ENGINEERING PERSONNEL	0	0	1	1	0.096	0.000	0.315	0.411
TOTAL	11	0	255	266	4.382	0.000	134.179	138.561
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	2	2	0.000	0.000	0.352	0.352
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.009	0.000	0.001	0.010
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.007	0.007
TOTAL	0	0	2	2	0.009	0.000	0.360	0.369
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	3	4	0.155	0.000	0.422	0.577
OPERATIONS PERSONNEL	4	0	0	4	0.873	0.000	0.000	0.873
HEALTH PHYSICS PERSONNEL	1	0	6	7	0.277	0.000	1.692	1.969
SUPERVISORY PERSONNEL	1	0	0	1	0.209	0.000	0.000	0.209
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	0	9	16	1.514	0.000	2.114	3.628
REFUELING								
MAINTENANCE PERSONNEL	5	0	61	66	1.056	0.000	35.288	36.344
OPERATIONS PERSONNEL	1	0	0	1	0.412	0.000	0.000	0.412
HEALTH PHYSICS PERSONNEL	2	0	15	17	0.398	0.000	4.718	5.116
SUPERVISORY PERSONNEL	7	0	2	9	2.960	0.000	0.814	3.774
ENGINEERING PERSONNEL	1	0	3	4	0.243	0.000	2.211	2.454
TOTAL	16	0	81	97	5.069	0.000	43.031	48.100
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	169	0	580	749	41.575	0.000	274.902	316.477
OPERATIONS PERSONNEL	53	0	0	53	10.779	0.000	0.000	10.779
HEALTH PHYSICS PERSONNEL	32	0	105	137	7.310	0.000	39.339	46.649
SUPERVISORY PERSONNEL	35	0	18	53	10.417	0.000	5.896	16.313
ENGINEERING PERSONNEL	4	0	8	12	0.866	0.000	3.473	4.339
GRAND TOTALS	293	0	711	1004	70.947	0.000	323.610	394.557

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: *BIG ROCK POINT TYPE: BWR

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	1	0	0	1	0.394	0.003	0.002	0.399
OPERATIONS PERSONNEL	36	0	0	36	22.582	0.009	0.003	22.594
HEALTH PHYSICS PERSONNEL	8	0	8	16	3.166	0.010	2.636	5.812
SUPERVISORY PERSONNEL	2	0	1	3	0.781	0.025	0.405	1.211
ENGINEERING PERSONNEL	1	0	0	1	0.801	0.067	0.117	0.985
TOTAL	48	0	9	57	27.724	0.114	3.163	31.001
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	25	37	7	69	16.138	19.383	1.820	37.341
OPERATIONS PERSONNEL	4	0	0	4	0.726	0.000	0.000	0.726
HEALTH PHYSICS PERSONNEL	9	0	16	25	3.317	0.000	5.212	8.529
SUPERVISORY PERSONNEL	1	3	2	6	0.241	0.518	1.355	2.114
ENGINEERING PERSONNEL	5	0	2	7	1.890	0.016	2.039	3.945
TOTAL	44	40	27	111	22.312	19.917	10.426	52.655
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	16	3	19	0.141	8.366	1.505	10.012
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	1	0	8	9	0.210	0.000	1.330	1.540
SUPERVISORY PERSONNEL	1	6	15	22	0.237	3.542	5.077	8.856
ENGINEERING PERSONNEL	1	0	0	1	0.231	0.000	0.009	0.240
TOTAL	3	22	26	51	0.819	11.908	7.921	20.648
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	22	10	37	2.052	8.719	5.283	16.054
OPERATIONS PERSONNEL	2	0	0	2	0.407	0.000	0.000	0.407
HEALTH PHYSICS PERSONNEL	8	1	14	23	3.205	0.130	4.286	7.621
SUPERVISORY PERSONNEL	0	3	27	30	0.204	1.412	20.299	21.915
ENGINEERING PERSONNEL	3	2	0	5	0.680	0.928	0.095	1.703
TOTAL	18	28	51	97	6.548	11.189	29.963	47.700
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	1	3	4	0.302	0.251	3.731	4.284
OPERATIONS PERSONNEL	1	0	0	1	0.469	0.000	0.000	0.469
HEALTH PHYSICS PERSONNEL	18	2	5	25	14.747	0.475	1.470	16.692
SUPERVISORY PERSONNEL	1	0	13	14	0.485	0.000	14.451	14.936
ENGINEERING PERSONNEL	2	0	0	2	0.941	0.000	0.008	0.949
TOTAL	22	3	21	46	16.944	0.726	19.660	37.330
REFUELING								
MAINTENANCE PERSONNEL	12	15	0	27	4.270	6.838	0.000	11.108
OPERATIONS PERSONNEL	21	0	0	21	4.232	0.000	0.000	4.232
HEALTH PHYSICS PERSONNEL	4	0	5	9	0.784	0.008	1.011	1.803
SUPERVISORY PERSONNEL	4	0	2	6	1.006	0.007	0.379	1.392
ENGINEERING PERSONNEL	0	0	0	0	0.078	0.053	0.000	0.131
TOTAL	41	15	7	63	10.370	6.906	1.390	18.666
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	43	91	23	157	23.297	43.560	12.341	79.198
OPERATIONS PERSONNEL	64	0	0	64	28.416	0.009	0.003	28.428
HEALTH PHYSICS PERSONNEL	48	3	56	107	25.429	0.623	15.945	41.997
SUPERVISORY PERSONNEL	9	12	60	81	2.954	5.504	41.966	50.424
ENGINEERING PERSONNEL	12	2	2	16	4.621	1.064	2.268	7.953
GRAND TOTALS	176	108	141	425	84.717	50.760	72.523	208.000

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***BRAIDWOOD 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	5	0	3	8	1.104	0.711	0.000	1.815
OPERATIONS PERSONNEL	53	1	27	81	5.674	0.008	0.272	5.954
HEALTH PHYSICS PERSONNEL	20	8	12	40	5.159	0.046	2.492	7.697
SUPERVISORY PERSONNEL	33	1	13	47	1.056	0.001	0.194	1.251
ENGINEERING PERSONNEL	34	2	5	41	0.926	0.012	0.064	1.002
TOTAL	145	12	60	217	13.919	0.778	3.022	17.719
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	162	15	646	823	36.691	0.019	132.684	169.394
OPERATIONS PERSONNEL	81	57	1	139	8.712	0.916	0.005	9.633
HEALTH PHYSICS PERSONNEL	42	36	41	119	10.716	0.217	8.893	19.826
SUPERVISORY PERSONNEL	183	17	83	283	5.830	0.018	1.260	7.108
ENGINEERING PERSONNEL	97	22	19	138	2.632	0.119	0.226	2.977
TOTAL	565	147	790	1502	64.581	1.289	143.068	208.938
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	134	135	0.329	0.000	27.406	27.735
OPERATIONS PERSONNEL	1	0	0	1	0.158	0.000	0.000	0.158
HEALTH PHYSICS PERSONNEL	1	1	1	3	0.170	0.005	0.249	0.424
SUPERVISORY PERSONNEL	1	0	0	1	0.011	0.000	0.006	0.017
ENGINEERING PERSONNEL	8	0	0	8	0.209	0.000	0.000	0.209
TOTAL	12	1	135	148	0.877	0.005	27.661	28.543
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	10	1	294	305	2.272	0.001	60.314	62.587
OPERATIONS PERSONNEL	0	3	1	4	0.002	0.050	0.006	0.058
HEALTH PHYSICS PERSONNEL	3	44	19	66	0.691	0.267	4.075	5.033
SUPERVISORY PERSONNEL	29	0	0	29	0.914	0.000	0.000	0.914
ENGINEERING PERSONNEL	15	0	13	28	0.404	0.000	0.163	0.567
TOTAL	57	48	327	432	4.283	0.318	64.558	69.159
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	3	3	0.001	0.000	0.522	0.523
OPERATIONS PERSONNEL	1	0	157	158	0.075	0.000	1.569	1.644
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.332	0.000	0.092	0.424
SUPERVISORY PERSONNEL	1	0	0	1	0.046	0.000	0.001	0.047
ENGINEERING PERSONNEL	0	0	0	0	0.002	0.000	0.000	0.002
TOTAL	3	0	160	163	0.456	0.000	2.184	2.640
REFUELING								
MAINTENANCE PERSONNEL	15	0	6	21	3.453	0.000	1.191	4.644
OPERATIONS PERSONNEL	17	0	0	17	1.882	0.000	0.000	1.882
HEALTH PHYSICS PERSONNEL	2	42	0	44	0.466	0.255	0.021	0.742
SUPERVISORY PERSONNEL	39	0	0	39	1.234	0.000	0.000	1.234
ENGINEERING PERSONNEL	2	0	0	2	0.066	0.000	0.000	0.066
TOTAL	75	42	6	123	7.101	0.255	1.212	8.568
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	193	16	1086	1295	43.850	0.731	222.117	266.698
OPERATIONS PERSONNEL	153	61	186	400	16.503	0.974	1.852	19.329
HEALTH PHYSICS PERSONNEL	69	131	73	273	17.534	0.790	15.822	34.146
SUPERVISORY PERSONNEL	286	18	96	400	9.091	0.019	1.461	10.571
ENGINEERING PERSONNEL	156	24	37	217	4.239	0.131	0.453	4.823
GRAND TOTALS	857	250	1478	2585	91.217	2.645	241.705	335.567

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***BROWNS FERRY 1,2,3** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	115	13	113	241	1.560	0.441	0.823	2.824
OPERATIONS PERSONNEL	104	3	17	124	30.011	0.872	2.661	33.544
HEALTH PHYSICS PERSONNEL	40	11	12	63	11.340	1.321	3.517	16.178
SUPERVISORY PERSONNEL	47	1	16	64	4.861	0.035	0.293	5.189
ENGINEERING PERSONNEL	33	3	16	52	1.709	0.017	0.202	1.928
TOTAL	339	31	174	544	49.481	2.686	7.496	59.663
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	193	28	407	628	76.362	8.752	119.826	204.940
OPERATIONS PERSONNEL	127	3	27	157	9.796	0.459	1.893	12.148
HEALTH PHYSICS PERSONNEL	40	14	9	63	5.249	0.694	0.530	6.473
SUPERVISORY PERSONNEL	45	2	42	89	3.997	0.052	7.148	11.197
ENGINEERING PERSONNEL	31	10	23	64	3.286	0.179	3.082	6.547
TOTAL	436	57	508	1001	98.690	10.136	132.479	241.305
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	93	11	121	225	6.903	0.891	15.521	23.315
OPERATIONS PERSONNEL	46	1	7	54	0.826	0.006	1.112	1.944
HEALTH PHYSICS PERSONNEL	29	7	2	38	1.033	1.108	0.011	2.152
SUPERVISORY PERSONNEL	14	5	16	35	0.978	0.672	1.960	3.610
ENGINEERING PERSONNEL	16	6	12	34	1.736	1.103	5.482	8.321
TOTAL	198	30	158	386	11.476	3.780	24.086	39.342
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	100	14	206	320	8.508	0.839	13.325	22.672
OPERATIONS PERSONNEL	47	2	8	57	1.638	0.029	0.292	1.959
HEALTH PHYSICS PERSONNEL	36	4	5	45	1.939	0.084	0.113	2.136
SUPERVISORY PERSONNEL	22	0	26	48	0.769	0.000	1.157	1.926
ENGINEERING PERSONNEL	8	3	7	18	0.270	0.466	0.816	1.552
TOTAL	213	23	252	488	13.124	1.418	15.703	30.245
WASTE PROCESSING								
MAINTENANCE PERSONNEL	34	4	95	133	0.719	0.003	8.194	8.916
OPERATIONS PERSONNEL	20	0	2	22	5.560	0.000	0.245	5.805
HEALTH PHYSICS PERSONNEL	31	5	0	36	1.560	0.011	0.000	1.571
SUPERVISORY PERSONNEL	10	0	10	20	0.699	0.000	0.459	1.158
ENGINEERING PERSONNEL	2	0	0	2	0.032	0.000	0.000	0.032
TOTAL	97	9	107	213	8.570	0.014	8.898	17.482
REFUELING								
MAINTENANCE PERSONNEL	47	6	171	224	1.675	0.181	24.368	26.224
OPERATIONS PERSONNEL	40	3	8	51	2.972	0.129	0.421	3.522
HEALTH PHYSICS PERSONNEL	19	3	7	29	1.945	0.029	0.290	2.264
SUPERVISORY PERSONNEL	11	1	11	23	0.350	0.024	1.304	1.678
ENGINEERING PERSONNEL	11	0	6	17	0.599	0.000	0.395	0.994
TOTAL	128	13	203	344	7.541	0.363	26.778	34.682
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	582	76	1113	1771	95.727	11.107	182.057	288.891
OPERATIONS PERSONNEL	384	12	69	465	50.803	1.495	6.624	58.922
HEALTH PHYSICS PERSONNEL	195	44	35	274	23.066	3.247	4.461	30.774
SUPERVISORY PERSONNEL	149	9	121	279	11.654	0.783	12.321	24.758
ENGINEERING PERSONNEL	101	22	64	187	7.632	1.765	9.977	19.374
GRAND TOTALS	1411	163	1402	2976	188.882	18.397	215.440	422.719

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***BRUNSWICK 1,2** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	5	0	12	17	2.834	0.122	6.344	9.300
OPERATIONS PERSONNEL	86	0	18	104	31.978	0.004	5.301	37.283
HEALTH PHYSICS PERSONNEL	67	0	36	103	31.728	0.093	13.747	45.568
SUPERVISORY PERSONNEL	5	0	0	5	3.265	0.085	0.308	3.658
ENGINEERING PERSONNEL	11	0	5	16	3.842	0.043	2.283	6.168
TOTAL	174	0	71	245	73.647	0.347	27.983	101.977
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	182	22	378	582	88.703	10.949	182.545	282.197
OPERATIONS PERSONNEL	4	1	0	5	2.024	0.553	0.083	2.660
HEALTH PHYSICS PERSONNEL	20	1	14	35	7.771	0.316	8.527	16.614
SUPERVISORY PERSONNEL	16	1	6	23	7.745	0.405	4.575	12.725
ENGINEERING PERSONNEL	56	0	187	243	22.158	0.722	150.930	173.810
TOTAL	278	25	585	888	128.401	12.945	346.660	488.006
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	3	0	0	3	1.198	0.038	0.887	2.123
OPERATIONS PERSONNEL	6	0	0	6	2.523	0.000	0.012	2.535
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.009	0.009
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.011	0.011
ENGINEERING PERSONNEL	5	0	7	12	1.904	0.000	3.941	5.845
TOTAL	14	0	7	21	5.625	0.038	4.860	10.523
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	6	10	166	182	2.473	2.865	59.694	65.032
OPERATIONS PERSONNEL	1	0	1	2	0.190	0.174	0.169	0.533
HEALTH PHYSICS PERSONNEL	15	0	10	25	4.632	0.002	3.053	7.687
SUPERVISORY PERSONNEL	0	0	1	1	0.753	0.007	0.671	1.431
ENGINEERING PERSONNEL	0	0	7	7	1.323	0.110	4.557	5.990
TOTAL	22	10	185	217	9.371	3.158	68.144	80.673
WASTE PROCESSING								
MAINTENANCE PERSONNEL	11	0	4	15	4.806	0.076	3.270	8.152
OPERATIONS PERSONNEL	0	0	0	0	0.080	0.000	0.000	0.080
HEALTH PHYSICS PERSONNEL	6	0	1	7	1.586	0.014	0.276	1.876
SUPERVISORY PERSONNEL	0	0	0	0	0.085	0.000	0.030	0.115
ENGINEERING PERSONNEL	0	0	1	1	0.252	0.000	0.926	1.178
TOTAL	17	0	6	23	6.809	0.090	4.502	11.401
REFUELING								
MAINTENANCE PERSONNEL	5	0	17	22	3.292	0.360	6.025	9.677
OPERATIONS PERSONNEL	0	0	0	0	0.252	0.000	0.000	0.252
HEALTH PHYSICS PERSONNEL	0	0	2	2	0.135	0.000	0.252	0.387
SUPERVISORY PERSONNEL	7	0	0	7	2.911	0.000	0.048	2.959
ENGINEERING PERSONNEL	7	0	26	33	3.757	0.028	6.606	10.391
TOTAL	19	0	45	64	10.347	0.388	12.931	23.666
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	212	32	577	821	103.306	14.410	258.765	376.481
OPERATIONS PERSONNEL	97	1	19	117	37.047	0.731	5.565	43.343
HEALTH PHYSICS PERSONNEL	108	1	63	172	45.852	0.425	25.864	72.141
SUPERVISORY PERSONNEL	28	1	7	36	14.759	0.497	5.643	20.899
ENGINEERING PERSONNEL	79	0	233	312	33.236	0.903	169.243	203.382
GRAND TOTALS	524	35	899	1458	234.200	16.966	465.080	716.246

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***BYRON 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	3	0	2	5	0.979	0.000	0.430	1.409
OPERATIONS PERSONNEL	4	0	0	4	0.288	0.000	0.000	0.288
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.474	0.000	0.000	0.474
SUPERVISORY PERSONNEL	5	1	0	6	0.287	0.006	0.017	0.310
ENGINEERING PERSONNEL	27	24	2	53	1.090	0.409	0.044	1.543
TOTAL	41	25	4	70	3.118	0.415	0.491	4.024
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	187	42	500	729	54.246	1.837	100.998	157.081
OPERATIONS PERSONNEL	163	0	50	213	11.443	0.000	0.445	11.888
HEALTH PHYSICS PERSONNEL	73	0	78	151	16.328	0.000	22.829	39.157
SUPERVISORY PERSONNEL	186	61	40	287	11.174	0.230	10.836	22.240
ENGINEERING PERSONNEL	31	229	24	284	1.270	3.975	0.562	5.807
TOTAL	640	332	692	1664	94.461	6.042	135.670	236.173
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	0	105	107	0.649	0.000	21.220	21.869
OPERATIONS PERSONNEL	7	0	0	7	0.449	0.000	0.000	0.449
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.105	0.000	0.002	0.107
SUPERVISORY PERSONNEL	9	3	34	46	0.547	0.011	9.399	9.957
ENGINEERING PERSONNEL	1	9	5	15	0.027	0.156	0.118	0.301
TOTAL	19	12	144	175	1.777	0.167	30.739	32.683
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	0	728	733	1.286	146.791	0.012	148.089
OPERATIONS PERSONNEL	0	0	0	0	0.022	0.003	0.000	0.025
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.103	0.015	0.000	0.118
SUPERVISORY PERSONNEL	38	0	73	111	2.233	19.729	0.000	21.962
ENGINEERING PERSONNEL	0	59	3	62	0.004	0.081	1.019	1.104
TOTAL	43	59	804	906	3.648	166.619	1.031	171.298
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	5	5	0.497	0.000	4.951	5.448
OPERATIONS PERSONNEL	1	0	128	129	1.844	0.000	0.000	1.844
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.026	0.000	0.000	0.026
SUPERVISORY PERSONNEL	0	0	0	0	0.686	0.015	1.215	1.916
ENGINEERING PERSONNEL	0	0	0	0	0.141	0.005	0.000	0.146
TOTAL	1	0	133	134	3.194	0.020	6.166	9.380
REFUELING								
MAINTENANCE PERSONNEL	2	0	25	27	0.000	0.000	0.962	0.962
OPERATIONS PERSONNEL	26	0	0	26	0.069	0.000	1.143	1.212
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.010	0.000	0.000	0.010
SUPERVISORY PERSONNEL	11	4	4	19	0.009	0.000	0.000	0.009
ENGINEERING PERSONNEL	4	0	0	4	0.000	0.000	0.000	0.000
TOTAL	43	4	29	76	0.088	0.000	2.105	2.193
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	199	42	1365	1606	57.657	148.628	128.573	334.858
OPERATIONS PERSONNEL	201	0	178	379	14.115	0.003	1.588	15.706
HEALTH PHYSICS PERSONNEL	75	0	78	153	17.046	0.015	22.831	39.892
SUPERVISORY PERSONNEL	249	69	151	469	14.936	19.991	21.467	56.394
ENGINEERING PERSONNEL	63	321	34	418	2.532	4.626	1.743	8.901
GRAND TOTALS	787	432	1806	3025	106.286	173.263	176.202	455.751

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***CALLAWAY 1** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.249	0.000	0.338	0.587
OPERATIONS PERSONNEL	27	0	0	27	5.550	0.000	0.000	5.550
HEALTH PHYSICS PERSONNEL	38	0	31	69	8.870	0.001	8.002	16.873
SUPERVISORY PERSONNEL	5	0	0	5	1.928	0.014	0.094	2.036
ENGINEERING PERSONNEL	8	2	0	10	2.814	1.176	0.000	3.990
TOTAL	78	2	31	111	19.411	1.191	8.434	29.036
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	75	0	173	248	20.356	0.065	67.010	87.431
OPERATIONS PERSONNEL	0	0	1	1	0.371	0.000	0.120	0.491
HEALTH PHYSICS PERSONNEL	2	1	0	3	1.151	0.212	0.294	1.657
SUPERVISORY PERSONNEL	3	0	1	4	1.078	0.008	0.245	1.331
ENGINEERING PERSONNEL	10	1	1	12	3.380	0.430	0.115	3.925
TOTAL	90	2	176	268	26.336	0.715	67.784	94.835
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	103	104	0.892	0.000	65.856	66.748
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.014	0.014
HEALTH PHYSICS PERSONNEL	3	0	12	15	1.078	0.000	2.849	3.927
SUPERVISORY PERSONNEL	3	0	0	3	0.819	0.000	0.000	0.819
ENGINEERING PERSONNEL	3	0	0	3	0.803	0.052	0.002	0.857
TOTAL	10	0	115	125	3.592	0.052	68.721	72.365
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	54	54	0.438	0.000	18.890	19.328
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	0.102	0.102
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.026	0.000	0.001	0.027
ENGINEERING PERSONNEL	5	0	0	5	1.173	0.013	0.062	1.248
TOTAL	5	0	55	60	1.637	0.013	19.055	20.705
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.112	0.000	0.000	0.112
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	10	0	3	13	2.861	0.000	0.759	3.620
SUPERVISORY PERSONNEL	0	0	0	0	0.075	0.000	0.000	0.075
ENGINEERING PERSONNEL	0	0	0	0	0.059	0.000	0.000	0.059
TOTAL	10	0	3	13	3.107	0.000	0.759	3.866
REFUELING								
MAINTENANCE PERSONNEL	0	1	43	44	0.155	0.659	20.169	20.983
OPERATIONS PERSONNEL	0	0	0	0	0.197	0.000	0.029	0.226
HEALTH PHYSICS PERSONNEL	3	0	11	14	1.028	0.000	2.344	3.372
SUPERVISORY PERSONNEL	2	0	0	2	0.749	0.000	0.000	0.749
ENGINEERING PERSONNEL	2	1	0	3	1.034	0.436	0.104	1.574
TOTAL	7	2	54	63	3.163	1.095	22.646	26.904
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	76	1	373	450	22.202	0.724	172.263	195.189
OPERATIONS PERSONNEL	27	0	2	29	6.118	0.000	0.265	6.383
HEALTH PHYSICS PERSONNEL	56	1	57	114	14.988	0.213	14.248	29.449
SUPERVISORY PERSONNEL	13	0	1	14	4.675	0.022	0.340	5.037
ENGINEERING PERSONNEL	28	4	1	33	9.263	2.107	0.283	11.653
GRAND TOTALS	200	6	434	640	57.246	3.066	187.399	247.711

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***CALLAWAY 1** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.249	0.000	0.338	0.587
OPERATIONS PERSONNEL	27	0	0	27	5.550	0.000	0.000	5.550
HEALTH PHYSICS PERSONNEL	38	0	31	69	8.870	0.001	8.002	16.873
SUPERVISORY PERSONNEL	5	0	0	5	1.928	0.014	0.094	2.036
ENGINEERING PERSONNEL	8	2	0	10	2.814	1.176	0.000	3.990
TOTAL	78	2	31	111	19.411	1.191	8.434	29.036
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	75	0	173	248	20.356	0.065	67.010	87.431
OPERATIONS PERSONNEL	0	0	1	1	0.371	0.000	0.120	0.491
HEALTH PHYSICS PERSONNEL	2	1	0	3	1.151	0.212	0.294	1.657
SUPERVISORY PERSONNEL	3	0	1	4	1.078	0.008	0.245	1.331
ENGINEERING PERSONNEL	10	1	1	12	3.380	0.430	0.115	3.925
TOTAL	90	2	176	268	26.336	0.715	67.784	94.835
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	103	104	0.892	0.000	65.856	66.748
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.014	0.014
HEALTH PHYSICS PERSONNEL	3	0	12	15	1.078	0.000	2.849	3.927
SUPERVISORY PERSONNEL	3	0	0	3	0.819	0.000	0.000	0.819
ENGINEERING PERSONNEL	3	0	0	3	0.803	0.052	0.002	0.857
TOTAL	10	0	115	125	3.592	0.052	68.721	72.365
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	54	54	0.438	0.000	18.890	19.328
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	0.102	0.102
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.026	0.000	0.001	0.027
ENGINEERING PERSONNEL	5	0	0	5	1.173	0.013	0.062	1.248
TOTAL	5	0	55	60	1.637	0.013	19.055	20.705
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.112	0.000	0.000	0.112
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	10	0	3	13	2.861	0.000	0.759	3.620
SUPERVISORY PERSONNEL	0	0	0	0	0.075	0.000	0.000	0.075
ENGINEERING PERSONNEL	0	0	0	0	0.059	0.000	0.000	0.059
TOTAL	10	0	3	13	3.107	0.000	0.759	3.866
REFUELING								
MAINTENANCE PERSONNEL	0	1	43	44	0.155	0.659	20.169	20.983
OPERATIONS PERSONNEL	0	0	0	0	0.197	0.000	0.029	0.226
HEALTH PHYSICS PERSONNEL	3	0	11	14	1.028	0.000	2.344	3.372
SUPERVISORY PERSONNEL	2	0	0	2	0.749	0.000	0.000	0.749
ENGINEERING PERSONNEL	2	1	0	3	1.034	0.436	0.104	1.574
TOTAL	7	2	54	63	3.163	1.095	22.646	26.904
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	76	1	373	450	22.202	0.724	172.263	195.189
OPERATIONS PERSONNEL	27	0	2	29	6.118	0.000	0.265	6.383
HEALTH PHYSICS PERSONNEL	56	1	57	114	14.988	0.213	14.248	29.449
SUPERVISORY PERSONNEL	13	0	1	14	4.675	0.022	0.340	5.037
ENGINEERING PERSONNEL	28	4	1	33	9.263	2.107	0.283	11.653
GRAND TOTALS	200	6	434	640	57.246	3.066	187.399	247.711

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***CATAWBA 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	113	341	150	604	3.690	2.049	6.114	11.853
OPERATIONS PERSONNEL	74	1	40	115	10.874	0.085	2.355	13.314
HEALTH PHYSICS PERSONNEL	19	1	62	82	1.845	0.000	3.042	4.887
SUPERVISORY PERSONNEL	3	2	2	7	0.099	0.015	0.000	0.114
ENGINEERING PERSONNEL	3	6	62	71	0.013	0.065	1.686	1.764
TOTAL	212	351	316	879	16.521	2.214	13.197	31.932
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	113	338	150	601	16.632	73.747	34.301	124.680
OPERATIONS PERSONNEL	58	1	45	104	0.488	0.001	7.782	8.271
HEALTH PHYSICS PERSONNEL	18	1	62	81	1.502	0.372	12.245	14.119
SUPERVISORY PERSONNEL	3	2	0	5	0.187	0.794	0.000	0.981
ENGINEERING PERSONNEL	3	6	62	71	0.514	2.431	43.619	46.564
TOTAL	195	348	319	862	19.323	77.345	97.947	194.615
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	76	104	55	235	2.488	5.684	1.723	9.895
OPERATIONS PERSONNEL	23	1	3	27	0.302	0.003	0.222	0.527
HEALTH PHYSICS PERSONNEL	5	0	11	16	0.001	0.000	0.052	0.053
SUPERVISORY PERSONNEL	0	1	2	3	0.000	0.162	0.008	0.170
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	104	106	71	281	2.791	5.849	2.005	10.645
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	102	292	131	525	3.062	16.125	2.350	21.537
OPERATIONS PERSONNEL	68	1	40	109	1.265	0.000	1.021	2.286
HEALTH PHYSICS PERSONNEL	13	1	49	63	0.480	0.013	0.642	1.135
SUPERVISORY PERSONNEL	3	1	0	4	0.109	0.000	0.000	0.109
ENGINEERING PERSONNEL	3	5	20	28	0.334	0.307	0.277	0.918
TOTAL	189	300	240	729	5.250	16.445	4.290	25.985
WASTE PROCESSING								
MAINTENANCE PERSONNEL	8	18	9	35	0.000	0.000	0.012	0.012
OPERATIONS PERSONNEL	7	0	31	38	0.245	0.000	0.077	0.322
HEALTH PHYSICS PERSONNEL	12	1	24	37	0.781	0.000	1.874	2.655
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	3	3	0.000	0.000	0.000	0.000
TOTAL	27	19	67	113	1.026	0.000	1.963	2.989
REFUELING								
MAINTENANCE PERSONNEL	32	64	33	129	0.357	1.728	0.074	2.159
OPERATIONS PERSONNEL	17	1	20	38	0.372	0.029	0.449	0.850
HEALTH PHYSICS PERSONNEL	2	0	18	20	0.012	0.000	0.167	0.179
SUPERVISORY PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	1	0	2	0.067	0.000	0.000	0.067
TOTAL	53	66	71	190	0.808	1.757	0.690	3.255
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	444	(113) 157	(341) 528	(150) 2129	(604)	26.229	99.333	44.574	170.136
OPERATIONS PERSONNEL	247	(74) 5	(1) 179	(45) 431	(120)	13.546	0.118	11.906	25.570
HEALTH PHYSICS PERSONNEL	69	(19) 4	(1) 226	(62) 299	(82)	4.621	0.385	18.022	23.028
SUPERVISORY PERSONNEL	10	(3) 6	(2) 4	(2) 20	(7)	0.395	0.971	0.008	1.374
ENGINEERING PERSONNEL	10	(3) 18	(6) 147	(62) 175	(71)	0.928	2.803	45.582	49.313
GRAND TOTALS	780	(212) 190	(351) 1084	(321) 3054	(884)	45.719	103.610	120.092	269.421

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

APPENDIX D (Continued)

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

1996

PLANT: ***CLINTON** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	122	0	344	466	9.579	0.000	6.677	16.256
OPERATIONS PERSONNEL	81	1	17	99	9.915	0.162	0.298	10.375
HEALTH PHYSICS PERSONNEL	41	0	41	82	8.231	0.000	5.301	13.532
SUPERVISORY PERSONNEL	27	0	2	29	1.514	0.000	0.034	1.548
ENGINEERING PERSONNEL	13	0	35	48	1.068	0.000	0.164	1.232
TOTAL	284	1	439	724	30.307	0.162	12.474	42.943
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	116	0	170	286	15.519	0.000	35.151	50.670
OPERATIONS PERSONNEL	69	0	2	71	5.853	0.000	0.187	6.040
HEALTH PHYSICS PERSONNEL	35	0	29	64	1.695	0.000	1.312	3.007
SUPERVISORY PERSONNEL	13	0	2	15	1.352	0.000	0.673	2.025
ENGINEERING PERSONNEL	7	0	1	8	0.480	0.000	0.000	0.480
TOTAL	240	0	204	444	24.899	0.000	37.323	62.222
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	17	0	54	71	0.869	0.000	6.567	7.436
OPERATIONS PERSONNEL	22	0	1	23	2.383	0.000	0.274	2.657
HEALTH PHYSICS PERSONNEL	15	0	32	47	1.832	0.000	1.817	3.649
SUPERVISORY PERSONNEL	5	0	0	5	0.261	0.000	0.000	0.261
ENGINEERING PERSONNEL	4	0	47	51	0.758	0.000	40.355	41.113
TOTAL	63	0	134	197	6.103	0.000	49.013	55.116
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	110	0	304	414	24.474	0.000	111.012	135.486
OPERATIONS PERSONNEL	40	0	13	53	1.779	0.000	1.796	3.575
HEALTH PHYSICS PERSONNEL	32	0	35	67	2.555	0.000	4.722	7.277
SUPERVISORY PERSONNEL	12	0	2	14	1.387	0.000	0.168	1.555
ENGINEERING PERSONNEL	10	0	5	15	0.624	0.000	0.888	1.512
TOTAL	204	0	359	563	30.819	0.000	118.586	149.405
WASTE PROCESSING								
MAINTENANCE PERSONNEL	12	0	8	20	0.629	0.000	0.485	1.114
OPERATIONS PERSONNEL	13	0	0	13	0.093	0.000	0.000	0.093
HEALTH PHYSICS PERSONNEL	16	0	1	17	0.332	0.000	0.001	0.333
SUPERVISORY PERSONNEL	4	0	0	4	0.017	0.000	0.000	0.017
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	45	0	9	54	1.071	0.000	0.486	1.557
REFUELING								
MAINTENANCE PERSONNEL	49	0	147	196	1.914	0.000	8.992	10.906
OPERATIONS PERSONNEL	55	0	7	62	3.078	0.000	1.021	4.099
HEALTH PHYSICS PERSONNEL	24	0	21	45	1.027	0.000	1.382	2.409
SUPERVISORY PERSONNEL	20	0	0	20	1.791	0.000	0.000	1.791
ENGINEERING PERSONNEL	7	0	12	19	0.094	0.000	1.547	1.641
TOTAL	155	0	187	342	7.904	0.000	12.942	20.846
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	426	0	1027	1453	52.984	0.000	168.884	221.868
OPERATIONS PERSONNEL	280	1	40	321	23.101	0.162	3.576	26.839
HEALTH PHYSICS PERSONNEL	163	0	159	322	15.672	0.000	14.535	30.207
SUPERVISORY PERSONNEL	81	0	6	87	6.322	0.000	0.875	7.197
ENGINEERING PERSONNEL	41	0	100	141	3.024	0.000	42.954	45.978
GRAND TOTALS	991	1	1332	2324	101.103	0.162	230.824	332.089

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***COMANCHE PEAK 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	22	22	0.165	0.000	6.552	6.717
OPERATIONS PERSONNEL	42	0	0	42	10.070	0.026	0.636	10.732
HEALTH PHYSICS PERSONNEL	16	0	39	55	4.903	0.087	11.520	16.510
SUPERVISORY PERSONNEL	0	0	0	0	0.137	0.000	0.067	0.204
ENGINEERING PERSONNEL	0	0	0	0	0.939	0.010	0.203	1.152
TOTAL	58	0	61	119	16.214	0.123	18.978	35.315
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	44	0	255	299	10.656	0.000	82.980	93.636
OPERATIONS PERSONNEL	9	0	4	13	2.732	0.060	1.420	4.212
HEALTH PHYSICS PERSONNEL	4	1	8	13	1.408	0.155	2.332	3.895
SUPERVISORY PERSONNEL	0	0	0	0	0.118	0.000	0.005	0.123
ENGINEERING PERSONNEL	4	0	7	11	2.190	0.029	1.698	3.917
TOTAL	61	1	274	336	17.104	0.244	88.435	105.783
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	4	0	100	104	2.406	0.000	43.741	46.147
OPERATIONS PERSONNEL	10	0	2	12	8.431	0.000	0.505	8.936
HEALTH PHYSICS PERSONNEL	3	0	14	17	1.840	0.000	3.492	5.332
SUPERVISORY PERSONNEL	1	0	0	1	0.649	0.000	0.000	0.649
ENGINEERING PERSONNEL	5	0	5	10	3.358	0.042	1.644	5.044
TOTAL	23	0	121	144	16.684	0.042	49.382	66.108
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	50	51	0.300	0.000	16.545	16.845
OPERATIONS PERSONNEL	0	0	3	3	0.265	0.010	1.246	1.521
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.097	0.000	0.583	0.680
SUPERVISORY PERSONNEL	0	0	0	0	0.021	0.000	0.000	0.021
ENGINEERING PERSONNEL	2	0	4	6	0.406	0.000	1.217	1.623
TOTAL	3	0	57	60	1.089	0.010	19.591	20.690
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	2	2	0.059	0.000	0.706	0.765
OPERATIONS PERSONNEL	1	0	1	2	0.956	0.000	0.551	1.507
HEALTH PHYSICS PERSONNEL	5	1	0	6	1.544	0.187	0.488	2.219
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.076	0.000	0.000	0.076
TOTAL	6	1	3	10	2.635	0.187	1.745	4.567
REFUELING								
MAINTENANCE PERSONNEL	2	0	94	96	0.896	0.000	47.557	48.453
OPERATIONS PERSONNEL	6	0	1	7	1.680	0.004	0.188	1.872
HEALTH PHYSICS PERSONNEL	4	0	8	12	1.899	0.000	2.524	4.423
SUPERVISORY PERSONNEL	0	0	0	0	0.011	0.000	0.006	0.017
ENGINEERING PERSONNEL	1	0	1	2	0.445	0.000	0.597	1.042
TOTAL	13	0	104	117	4.931	0.004	50.872	55.807
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	51	0	523	574	14.482	0.000	198.081	212.563
OPERATIONS PERSONNEL	68	0	11	79	24.134	0.100	4.546	28.780
HEALTH PHYSICS PERSONNEL	32	2	69	103	11.691	0.429	20.939	33.059
SUPERVISORY PERSONNEL	1	0	0	1	0.936	0.000	0.078	1.014
ENGINEERING PERSONNEL	12	0	17	29	7.414	0.081	5.359	12.854
GRAND TOTALS	164	2	620	786	58.657	0.610	229.003	288.270

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***COOK 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	1	0	0	1	1.732	0.069	1.723	3.524
OPERATIONS PERSONNEL	34	0	1	35	8.158	0.125	1.527	9.810
HEALTH PHYSICS PERSONNEL	27	0	4	31	7.968	0.001	3.227	11.196
SUPERVISORY PERSONNEL	2	0	0	2	0.814	0.001	0.052	0.867
ENGINEERING PERSONNEL	0	0	0	0	0.981	0.107	0.397	1.485
TOTAL	64	0	5	69	19.653	0.303	6.926	26.882
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	77	0	211	288	22.620	0.002	89.046	111.668
OPERATIONS PERSONNEL	16	1	11	28	4.497	0.383	4.079	8.959
HEALTH PHYSICS PERSONNEL	28	0	39	67	9.303	0.000	13.266	22.569
SUPERVISORY PERSONNEL	2	0	1	3	0.346	0.000	0.245	0.591
ENGINEERING PERSONNEL	8	5	5	18	2.893	1.354	2.556	6.803
TOTAL	131	6	267	404	39.659	1.739	109.192	150.590
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	0	14	16	1.462	0.039	7.455	8.956
OPERATIONS PERSONNEL	1	0	8	9	0.662	0.003	1.764	2.429
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.050	0.000	0.074	0.124
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.040	0.040
ENGINEERING PERSONNEL	0	0	0	0	0.108	0.020	0.275	0.403
TOTAL	3	0	22	25	2.282	0.062	9.608	11.952
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	3	0	56	59	1.965	0.000	16.216	18.181
OPERATIONS PERSONNEL	0	0	1	1	0.354	0.000	0.181	0.535
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.127	0.000	0.001	0.128
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.062	0.062
ENGINEERING PERSONNEL	0	0	0	0	0.219	0.035	0.048	0.302
TOTAL	3	0	57	60	2.665	0.035	16.508	19.208
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.068	0.068
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.010	0.010
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.057	0.000	0.465	0.522
SUPERVISORY PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
TOTAL	0	0	1	1	0.059	0.000	0.543	0.602
REFUELING								
MAINTENANCE PERSONNEL	3	0	17	20	1.691	0.000	5.652	7.343
OPERATIONS PERSONNEL	7	0	21	28	2.538	0.000	9.387	11.925
HEALTH PHYSICS PERSONNEL	4	0	0	4	1.899	0.000	0.805	2.704
SUPERVISORY PERSONNEL	1	0	0	1	0.155	0.000	0.010	0.165
ENGINEERING PERSONNEL	0	0	1	1	0.260	0.024	0.595	0.879
TOTAL	15	0	39	54	6.543	0.024	16.449	23.016
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	86	0	298	384	29.470	0.110	120.160	149.740
OPERATIONS PERSONNEL	58	1	42	101	16.209	0.511	16.948	33.668
HEALTH PHYSICS PERSONNEL	59	0	44	103	19.404	0.001	17.838	37.243
SUPERVISORY PERSONNEL	5	0	1	6	1.316	0.001	0.409	1.726
ENGINEERING PERSONNEL	8	5	6	19	4.462	1.540	3.871	9.873
GRAND TOTALS	216	6	391	613	70.861	2.163	159.226	232.250

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***COOPER STATION** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	104	6	21	131	2.392	0.010	1.224	3.626
OPERATIONS PERSONNEL	83	0	0	83	7.581	0.000	0.000	7.581
HEALTH PHYSICS PERSONNEL	49	1	12	62	4.341	0.000	0.381	4.722
SUPERVISORY PERSONNEL	100	7	145	252	0.823	0.007	0.624	1.454
ENGINEERING PERSONNEL	128	4	171	303	1.734	0.005	2.105	3.844
TOTAL	464	18	349	831	16.871	0.022	4.334	21.227
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	128	2	22	152	8.359	0.000	1.261	9.620
OPERATIONS PERSONNEL	63	0	0	63	3.307	0.000	0.000	3.307
HEALTH PHYSICS PERSONNEL	40	0	17	57	4.731	0.000	0.652	5.383
SUPERVISORY PERSONNEL	56	2	3	61	0.557	0.002	0.000	0.559
ENGINEERING PERSONNEL	68	2	63	133	0.412	0.005	0.655	1.072
TOTAL	355	6	105	466	17.366	0.007	2.568	19.941
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	4	5	0.006	0.000	0.071	0.077
TOTAL	1	0	4	5	0.006	0.000	0.071	0.077
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	82	1	10	93	5.002	0.002	0.584	5.588
OPERATIONS PERSONNEL	25	0	0	25	0.568	0.000	0.000	0.568
HEALTH PHYSICS PERSONNEL	31	0	9	40	1.944	0.000	1.189	3.133
SUPERVISORY PERSONNEL	18	2	3	23	0.549	0.001	0.007	0.557
ENGINEERING PERSONNEL	37	0	30	67	0.590	0.000	1.631	2.221
TOTAL	193	3	52	248	8.653	0.003	3.411	12.067
WASTE PROCESSING								
MAINTENANCE PERSONNEL	14	2	1	17	0.023	0.000	0.000	0.023
OPERATIONS PERSONNEL	20	0	0	20	0.210	0.000	0.000	0.210
HEALTH PHYSICS PERSONNEL	19	0	6	25	0.891	0.000	1.621	2.512
SUPERVISORY PERSONNEL	2	2	0	4	0.069	0.000	0.000	0.069
ENGINEERING PERSONNEL	0	0	6	6	0.000	0.000	0.002	0.002
TOTAL	55	4	13	72	1.193	0.000	1.623	2.816
REFUELING								
MAINTENANCE PERSONNEL	8	0	0	8	0.003	0.000	0.000	0.003
OPERATIONS PERSONNEL	9	0	0	9	0.018	0.000	0.000	0.018
HEALTH PHYSICS PERSONNEL	6	0	3	9	0.031	0.000	0.014	0.045
SUPERVISORY PERSONNEL	1	0	0	1	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	2	0	5	7	0.006	0.000	0.070	0.076
TOTAL	26	0	8	34	0.059	0.000	0.084	0.143
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	336	11	54	401	15.779	0.012	3.069	18.860
OPERATIONS PERSONNEL	200	0	0	200	11.684	0.000	0.000	11.684
HEALTH PHYSICS PERSONNEL	145	1	47	193	11.938	0.000	3.857	15.795
SUPERVISORY PERSONNEL	177	13	151	341	1.999	0.010	0.631	2.640
ENGINEERING PERSONNEL	236	6	279	521	2.748	0.010	4.534	7.292
GRAND TOTALS	1094	31	531	1656	44.148	0.032	12.091	56.271

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***CRYSTAL RIVER 3** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.067	0.000	0.000	0.067
OPERATIONS PERSONNEL	31	0	0	31	6.922	0.038	0.000	6.960
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.002	0.002
SUPERVISORY PERSONNEL	0	0	0	0	0.081	0.075	0.000	0.156
ENGINEERING PERSONNEL	0	0	0	0	0.089	0.005	0.000	0.094
TOTAL	31	0	0	31	7.159	0.118	0.002	7.279
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	93	61	101	255	32.160	21.868	60.728	114.756
OPERATIONS PERSONNEL	43	13	168	224	12.127	3.715	84.004	99.846
HEALTH PHYSICS PERSONNEL	28	0	38	66	11.385	0.052	17.181	28.618
SUPERVISORY PERSONNEL	11	11	60	82	3.676	5.036	32.791	41.503
ENGINEERING PERSONNEL	2	8	5	15	0.589	3.379	3.859	7.827
TOTAL	177	93	372	642	59.937	34.050	198.563	292.550
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	23	23	0.068	0.054	10.757	10.879
OPERATIONS PERSONNEL	7	0	31	38	1.246	0.000	11.327	12.573
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.056	0.000	0.112	0.168
SUPERVISORY PERSONNEL	0	1	17	18	0.101	0.378	5.949	6.428
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.262	0.164	0.426
TOTAL	7	1	72	80	1.471	0.694	28.309	30.474
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
WASTE PROCESSING								
MAINTENANCE PERSONNEL	4	1	0	5	0.729	0.234	0.049	1.012
OPERATIONS PERSONNEL	7	0	0	7	2.193	0.000	0.017	2.210
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.064	0.000	0.151	0.215
SUPERVISORY PERSONNEL	0	0	0	0	0.155	0.004	0.001	0.160
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	11	1	0	12	3.141	0.238	0.218	3.597
REFUELING								
MAINTENANCE PERSONNEL	2	2	21	25	0.469	0.595	5.442	6.506
OPERATIONS PERSONNEL	0	1	22	23	0.198	0.782	5.980	6.960
HEALTH PHYSICS PERSONNEL	1	0	4	5	0.188	0.000	1.259	1.447
SUPERVISORY PERSONNEL	0	0	8	8	0.170	0.017	3.146	3.333
ENGINEERING PERSONNEL	0	0	2	2	0.002	0.062	0.520	0.584
TOTAL	3	3	57	63	1.027	1.456	16.347	18.830
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	99	64	145	308	33.493	22.751	76.976	133.220
OPERATIONS PERSONNEL	88	14	221	323	22.686	4.535	101.328	128.549
HEALTH PHYSICS PERSONNEL	29	0	42	71	11.693	0.052	18.705	30.450
SUPERVISORY PERSONNEL	11	12	85	108	4.183	5.510	41.887	51.580
ENGINEERING PERSONNEL	2	8	8	18	0.680	3.708	4.543	8.931
GRAND TOTALS	229	98	501	828	72.735	36.556	243.439	352.730

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***DAVIS-BESSE** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.130	0.000	0.201	0.331
OPERATIONS PERSONNEL	28	0	0	28	5.584	0.000	0.002	5.586
HEALTH PHYSICS PERSONNEL	10	1	23	34	3.886	0.169	6.706	10.761
SUPERVISORY PERSONNEL	0	0	0	0	0.202	0.000	0.009	0.211
ENGINEERING PERSONNEL	0	0	0	0	0.166	0.000	0.092	0.258
TOTAL	38	1	23	62	9.968	0.169	7.010	17.147
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	31	13	16	60	9.790	3.927	9.570	23.287
OPERATIONS PERSONNEL	1	0	0	1	0.505	0.000	0.002	0.507
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.354	0.000	0.086	0.440
SUPERVISORY PERSONNEL	0	0	0	0	0.082	0.000	0.003	0.085
ENGINEERING PERSONNEL	2	0	0	2	1.957	0.000	0.294	2.251
TOTAL	36	13	16	65	12.688	3.927	9.955	26.570
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	7	0	58	65	2.481	0.002	18.590	21.073
OPERATIONS PERSONNEL	0	0	0	0	0.016	0.000	0.000	0.016
HEALTH PHYSICS PERSONNEL	0	0	2	2	0.013	0.000	0.744	0.757
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.005	0.005
ENGINEERING PERSONNEL	0	0	33	33	0.193	0.000	10.177	10.370
TOTAL	7	0	93	100	2.703	0.002	29.516	32.221
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	20	9	47	76	6.977	2.794	15.120	24.891
OPERATIONS PERSONNEL	1	0	0	1	0.643	0.000	0.000	0.643
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.709	0.000	0.594	1.303
SUPERVISORY PERSONNEL	0	0	0	0	0.057	0.000	0.000	0.057
ENGINEERING PERSONNEL	7	0	20	27	2.467	0.000	5.914	8.381
TOTAL	29	9	67	105	10.853	2.794	21.628	35.275
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.260	0.049	0.257	0.566
OPERATIONS PERSONNEL	0	0	0	0	0.182	0.000	0.000	0.182
HEALTH PHYSICS PERSONNEL	6	1	15	22	2.211	0.183	4.003	6.397
SUPERVISORY PERSONNEL	0	0	0	0	0.162	0.000	0.000	0.162
ENGINEERING PERSONNEL	1	0	0	1	0.237	0.000	0.000	0.237
TOTAL	7	1	15	23	3.052	0.232	4.260	7.544
REFUELING								
MAINTENANCE PERSONNEL	11	3	27	41	4.532	0.818	12.145	17.495
OPERATIONS PERSONNEL	2	0	0	2	2.055	0.000	0.003	2.058
HEALTH PHYSICS PERSONNEL	4	0	6	10	1.532	0.076	2.108	3.716
SUPERVISORY PERSONNEL	1	0	0	1	0.134	0.000	0.000	0.134
ENGINEERING PERSONNEL	6	0	32	38	2.312	0.000	15.834	18.146
TOTAL	24	3	65	92	10.565	0.894	30.090	41.549
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	69	25	148	242	24.170	7.590	55.883	87.643
OPERATIONS PERSONNEL	32	0	0	32	8.985	0.000	0.007	8.992
HEALTH PHYSICS PERSONNEL	23	2	46	71	8.705	0.428	14.241	23.374
SUPERVISORY PERSONNEL	1	0	0	1	0.637	0.000	0.017	0.654
ENGINEERING PERSONNEL	16	0	85	101	7.332	0.000	32.311	39.643
GRAND TOTALS	141	27	279	447	49.829	8.018	102.459	160.306

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***DIABLO CANYON 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	1	0	0	1	0.016	0.000	0.000	0.016
OPERATIONS PERSONNEL	15	0	1	16	0.802	0.000	0.034	0.836
HEALTH PHYSICS PERSONNEL	38	2	1	41	1.115	0.070	0.013	1.198
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.071	0.071
TOTAL	54	2	3	59	1.933	0.070	0.118	2.121
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	47	17	124	188	1.445	0.611	1.732	3.788
OPERATIONS PERSONNEL	9	1	3	13	0.095	0.148	0.018	0.261
HEALTH PHYSICS PERSONNEL	57	2	37	96	4.692	0.348	0.439	5.479
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	3	0	9	12	0.363	0.000	0.211	0.574
TOTAL	116	20	173	309	6.595	1.107	2.400	10.102
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	4	7	13	24	0.428	1.368	2.233	4.029
OPERATIONS PERSONNEL	4	0	2	6	1.495	0.000	0.411	1.906
HEALTH PHYSICS PERSONNEL	13	1	6	20	0.165	0.002	0.221	0.388
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	7	8	0.002	0.000	1.485	1.487
TOTAL	22	8	28	58	2.090	1.370	4.350	7.810
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	42	16	181	239	6.046	0.884	37.453	44.383
OPERATIONS PERSONNEL	4	0	14	18	0.081	0.000	10.267	10.348
HEALTH PHYSICS PERSONNEL	37	3	41	81	1.260	0.106	4.106	5.472
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.256	0.256
ENGINEERING PERSONNEL	3	1	8	12	0.037	0.001	0.182	0.220
TOTAL	86	20	245	351	7.424	0.991	52.264	60.679
WASTE PROCESSING								
MAINTENANCE PERSONNEL	14	3	13	30	0.156	0.089	0.615	0.860
OPERATIONS PERSONNEL	8	0	1	9	0.073	0.000	0.003	0.076
HEALTH PHYSICS PERSONNEL	41	3	4	48	4.669	0.327	0.856	5.852
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	2	3	0.004	0.000	0.020	0.024
TOTAL	64	6	20	90	4.902	0.416	1.494	6.812
REFUELING								
MAINTENANCE PERSONNEL	41	18	195	254	10.372	3.209	33.188	46.769
OPERATIONS PERSONNEL	22	0	6	28	1.640	0.000	0.846	2.486
HEALTH PHYSICS PERSONNEL	40	4	54	98	4.018	0.260	8.100	12.378
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	6	1	9	16	0.612	0.113	0.542	1.267
TOTAL	109	23	264	396	16.642	3.582	42.676	62.900
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	149	61	526	736	18.463	6.161	75.221	99.845
OPERATIONS PERSONNEL	62	1	27	90	4.186	0.148	11.579	15.913
HEALTH PHYSICS PERSONNEL	226	15	143	384	15.919	1.113	13.735	30.767
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.256	0.256
ENGINEERING PERSONNEL	14	2	36	52	1.018	0.114	2.511	3.643
GRAND TOTALS	451	79	733	1263	39.586	7.536	103.302	150.424

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***DRESDEN 2,3** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	5	4	13	22	2.066	0.082	1.201	3.349
OPERATIONS PERSONNEL	125	0	37	162	17.181	0.000	1.821	19.002
HEALTH PHYSICS PERSONNEL	49	34	40	123	14.557	0.236	8.049	22.842
SUPERVISORY PERSONNEL	106	0	97	203	5.734	0.000	0.610	6.344
ENGINEERING PERSONNEL	39	0	13	52	2.239	0.000	2.021	4.260
TOTAL	324	38	200	562	41.777	0.318	13.702	55.797
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	201	54	478	733	76.178	1.270	45.735	123.183
OPERATIONS PERSONNEL	94	0	27	121	12.879	0.000	1.295	14.174
HEALTH PHYSICS PERSONNEL	91	191	62	344	26.868	1.318	12.598	40.784
SUPERVISORY PERSONNEL	191	0	44	235	10.358	0.000	0.280	10.638
ENGINEERING PERSONNEL	166	0	652	818	9.538	0.000	101.047	110.585
TOTAL	743	245	1263	2251	135.821	2.588	160.955	299.364
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	6	6	0.061	0.000	0.570	0.631
OPERATIONS PERSONNEL	1	0	0	1	0.091	0.000	0.000	0.091
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.014	0.000	0.006	0.020
SUPERVISORY PERSONNEL	8	0	0	8	0.430	0.000	0.000	0.430
ENGINEERING PERSONNEL	22	0	32	54	1.291	0.000	5.007	6.298
TOTAL	31	0	38	69	1.887	0.000	5.583	7.470
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	338	338	0.044	0.000	32.321	32.365
OPERATIONS PERSONNEL	2	0	0	2	0.274	0.000	0.003	0.277
HEALTH PHYSICS PERSONNEL	0	1	16	17	0.003	0.005	3.083	3.091
SUPERVISORY PERSONNEL	1	0	0	1	0.049	0.000	0.000	0.049
ENGINEERING PERSONNEL	1	0	153	154	0.043	0.000	23.791	23.834
TOTAL	4	1	507	512	0.413	0.005	59.198	59.616
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.332	0.000	0.043	0.375
OPERATIONS PERSONNEL	15	0	96	111	2.066	0.000	4.676	6.742
HEALTH PHYSICS PERSONNEL	21	0	2	23	6.298	0.001	0.448	6.747
SUPERVISORY PERSONNEL	15	0	5	20	0.836	0.000	0.029	0.865
ENGINEERING PERSONNEL	0	0	50	50	0.000	0.000	7.767	7.767
TOTAL	52	0	153	205	9.532	0.001	12.963	22.496
REFUELING								
MAINTENANCE PERSONNEL	17	0	9	26	6.248	0.000	0.865	7.113
OPERATIONS PERSONNEL	13	0	3	16	1.839	0.000	0.158	1.997
HEALTH PHYSICS PERSONNEL	3	11	1	15	0.820	0.074	0.259	1.153
SUPERVISORY PERSONNEL	16	0	0	16	0.858	0.000	0.000	0.858
ENGINEERING PERSONNEL	3	0	3	6	0.179	0.000	0.361	0.540
TOTAL	52	11	16	79	9.944	0.074	1.643	11.661
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	224	58	844	1126	84.929	1.352	80.735	167.016
OPERATIONS PERSONNEL	250	0	163	413	34.330	0.000	7.953	42.283
HEALTH PHYSICS PERSONNEL	164	237	121	522	48.560	1.634	24.443	74.637
SUPERVISORY PERSONNEL	337	0	146	483	18.265	0.000	0.919	19.184
ENGINEERING PERSONNEL	231	0	903	1134	13.290	0.000	139.994	153.284
GRAND TOTALS	1206	295	2177	3678	199.374	2.986	254.044	456.404

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***DUANE ARNOLD** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	6	0	0	6	1.219	0.000	0.000	1.219
OPERATIONS PERSONNEL	28	0	0	28	8.632	0.000	0.000	8.632
HEALTH PHYSICS PERSONNEL	4	0	7	11	0.603	0.000	1.826	2.429
SUPERVISORY PERSONNEL	10	1	4	15	2.604	0.365	1.127	4.096
ENGINEERING PERSONNEL	2	0	1	3	0.262	0.000	0.129	0.391
TOTAL	50	1	12	63	13.320	0.365	3.082	16.767
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	77	0	237	314	22.458	0.000	73.472	95.930
OPERATIONS PERSONNEL	9	0	0	9	3.221	0.000	0.000	3.221
HEALTH PHYSICS PERSONNEL	4	0	23	27	0.609	0.000	10.467	11.076
SUPERVISORY PERSONNEL	8	0	5	13	1.418	0.000	1.767	3.185
ENGINEERING PERSONNEL	16	0	47	63	3.688	0.000	29.969	33.657
TOTAL	114	0	312	426	31.394	0.000	115.675	147.069
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	5	0	16	21	1.642	0.000	5.086	6.728
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.144	0.000	0.000	0.144
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	6	0	16	22	1.786	0.000	5.086	6.872
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	11	0	27	38	3.282	0.000	6.071	9.353
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	0	2	4	0.780	0.000	0.422	1.202
TOTAL	13	0	29	42	4.062	0.000	6.493	10.555
WASTE PROCESSING								
MAINTENANCE PERSONNEL	5	0	0	5	1.555	0.000	0.000	1.555
OPERATIONS PERSONNEL	6	0	1	7	1.008	0.000	0.245	1.253
HEALTH PHYSICS PERSONNEL	2	0	1	3	0.367	0.000	0.146	0.513
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	13	0	2	15	2.930	0.000	0.391	3.321
REFUELING								
MAINTENANCE PERSONNEL	9	0	31	40	2.114	0.000	11.806	13.920
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	1	0	10	11	0.236	0.000	2.098	2.334
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.114	0.114
ENGINEERING PERSONNEL	1	0	7	8	0.267	0.000	3.682	3.949
TOTAL	11	0	49	60	2.617	0.000	17.700	20.317
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	113	0	311	424	32.270	0.000	96.435	128.705
OPERATIONS PERSONNEL	43	0	1	44	12.861	0.000	0.245	13.106
HEALTH PHYSICS PERSONNEL	12	0	41	53	1.959	0.000	14.537	16.496
SUPERVISORY PERSONNEL	18	1	10	29	4.022	0.365	3.008	7.395
ENGINEERING PERSONNEL	21	0	57	78	4.997	0.000	34.202	39.199
GRAND TOTALS	207	1	420	628	56.109	0.365	148.427	204.901

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***FARLEY 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.102	0.000	0.322	0.424
OPERATIONS PERSONNEL	53	0	0	53	11.622	0.000	0.174	11.796
HEALTH PHYSICS PERSONNEL	19	0	47	66	5.313	0.000	13.442	18.755
SUPERVISORY PERSONNEL	0	0	0	0	0.288	0.107	0.197	0.592
ENGINEERING PERSONNEL	0	0	0	0	0.275	0.036	0.204	0.515
TOTAL	72	0	47	119	17.600	0.143	14.339	32.082
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	5	0	1	6	4.754	0.000	1.352	6.106
OPERATIONS PERSONNEL	0	0	0	0	0.166	0.000	0.000	0.166
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.221	0.000	0.000	0.221
SUPERVISORY PERSONNEL	0	0	0	0	0.014	0.001	0.000	0.015
ENGINEERING PERSONNEL	0	0	0	0	0.016	0.001	0.088	0.105
TOTAL	7	0	1	8	5.171	0.002	1.440	6.613
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	38	38	0.000	0.022	25.057	25.079
OPERATIONS PERSONNEL	0	0	4	4	0.181	0.000	2.221	2.402
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.046	0.000	0.068	0.114
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.098	0.004	0.102
ENGINEERING PERSONNEL	0	1	46	47	0.191	0.275	42.805	43.271
TOTAL	0	1	88	89	0.418	0.395	70.155	70.968
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	85	0	178	263	29.491	0.000	58.890	88.381
OPERATIONS PERSONNEL	8	0	3	11	2.675	0.000	0.701	3.376
HEALTH PHYSICS PERSONNEL	31	0	8	39	8.942	0.000	2.976	11.918
SUPERVISORY PERSONNEL	1	0	1	2	0.415	0.000	0.414	0.829
ENGINEERING PERSONNEL	3	0	25	28	0.754	0.009	7.950	8.713
TOTAL	128	0	215	343	42.277	0.009	70.931	113.217
WASTE PROCESSING								
MAINTENANCE PERSONNEL	3	0	0	3	0.414	0.000	0.020	0.434
OPERATIONS PERSONNEL	2	0	0	2	0.529	0.000	0.030	0.559
HEALTH PHYSICS PERSONNEL	16	0	1	17	4.862	0.000	0.628	5.490
SUPERVISORY PERSONNEL	0	0	0	0	0.010	0.000	0.000	0.010
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.005	0.005
TOTAL	21	0	1	22	5.815	0.000	0.683	6.498
REFUELING								
MAINTENANCE PERSONNEL	0	0	1	1	0.084	0.000	0.194	0.278
OPERATIONS PERSONNEL	0	0	2	2	0.693	0.000	0.939	1.632
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.015	0.000	0.000	0.015
SUPERVISORY PERSONNEL	0	0	0	0	0.206	0.000	0.008	0.214
ENGINEERING PERSONNEL	0	0	0	0	0.085	0.023	0.040	0.148
TOTAL	0	0	3	3	1.083	0.023	1.181	2.287
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	93	0	218	311	34.845	0.022	85.835	120.702
OPERATIONS PERSONNEL	63	0	9	72	15.866	0.000	4.065	19.931
HEALTH PHYSICS PERSONNEL	68	0	56	124	19.399	0.000	17.114	36.513
SUPERVISORY PERSONNEL	1	0	1	2	0.933	0.206	0.623	1.762
ENGINEERING PERSONNEL	3	1	71	75	1.321	0.344	51.092	52.757
GRAND TOTALS	228	1	355	584	72.364	0.572	158.729	231.665

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: *FERMI 2 TYPE: BWR

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	71	2	47	120	3.529	0.000	2.252	5.781
OPERATIONS PERSONNEL	84	1	25	110	7.488	0.002	5.166	12.656
HEALTH PHYSICS PERSONNEL	30	0	11	41	2.743	0.000	1.542	4.285
SUPERVISORY PERSONNEL	129	14	277	420	7.311	0.094	8.172	15.577
ENGINEERING PERSONNEL	80	3	2	85	1.633	0.000	0.000	1.633
TOTAL	394	20	362	776	22.704	0.096	17.132	39.932
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	57	2	80	139	7.468	0.016	6.063	13.547
OPERATIONS PERSONNEL	2	0	3	5	0.272	0.000	0.519	0.791
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.150	0.000	0.182	0.332
SUPERVISORY PERSONNEL	19	5	118	142	0.869	0.007	11.735	12.611
ENGINEERING PERSONNEL	9	1	2	12	0.284	0.000	0.200	0.484
TOTAL	88	8	204	300	9.043	0.023	18.699	27.765
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	2	2	0.000	0.000	0.020	0.020
OPERATIONS PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	1	19	20	0.000	0.016	0.400	0.416
ENGINEERING PERSONNEL	3	0	0	3	0.462	0.000	0.000	0.462
TOTAL	4	1	21	26	0.462	0.016	0.420	0.898
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	39	0	93	132	6.330	0.000	6.584	12.914
OPERATIONS PERSONNEL	4	0	5	9	0.039	0.000	0.976	1.015
HEALTH PHYSICS PERSONNEL	3	0	2	5	0.561	0.000	0.097	0.658
SUPERVISORY PERSONNEL	24	8	469	501	1.761	0.145	46.792	48.698
ENGINEERING PERSONNEL	11	1	1	13	0.335	0.008	0.255	0.598
TOTAL	81	9	570	660	9.026	0.153	54.704	63.883
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	2	2	0.000	0.000	0.158	0.158
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	3	3	0.000	0.000	0.320	0.320
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	5	5	0.000	0.000	0.478	0.478
REFUELING								
MAINTENANCE PERSONNEL	1	1	28	30	0.115	0.000	4.144	4.259
OPERATIONS PERSONNEL	8	0	4	12	0.387	0.000	0.696	1.083
HEALTH PHYSICS PERSONNEL	19	0	6	25	1.610	0.000	1.011	2.621
SUPERVISORY PERSONNEL	21	5	248	274	0.822	0.000	24.279	25.101
ENGINEERING PERSONNEL	18	0	7	25	0.641	0.000	0.670	1.311
TOTAL	67	6	293	366	3.575	0.000	30.800	34.375
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	168	5	250	423	17.442	0.016	19.063	36.521
OPERATIONS PERSONNEL	99	1	39	139	8.186	0.002	7.515	15.703
HEALTH PHYSICS PERSONNEL	53	0	20	73	5.064	0.000	2.832	7.896
SUPERVISORY PERSONNEL	193	33	1134	1360	10.763	0.262	91.698	102.723
ENGINEERING PERSONNEL	121	5	12	138	3.355	0.008	1.125	4.488
GRAND TOTALS	634	44	1455	2133	44.810	0.288	122.233	167.331

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***FITZPATRICK** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	4	0	0	4	0.000	0.000	0.030	0.030
OPERATIONS PERSONNEL	61	0	1	62	25.950	0.000	0.020	25.970
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	3	0	1	4	0.070	0.000	0.030	0.100
ENGINEERING PERSONNEL	0	1	0	1	0.040	0.020	0.000	0.060
TOTAL	70	1	2	73	26.060	0.020	0.080	26.160
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	109	1	383	493	58.960	0.700	116.030	175.690
OPERATIONS PERSONNEL	57	1	11	69	7.710	0.120	2.580	10.410
HEALTH PHYSICS PERSONNEL	50	0	52	102	16.260	0.020	11.390	27.670
SUPERVISORY PERSONNEL	13	1	13	27	4.520	0.000	3.060	7.580
ENGINEERING PERSONNEL	19	1	43	63	4.680	0.050	9.050	13.780
TOTAL	248	4	502	754	92.130	0.890	142.110	235.130
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	83	0	237	320	3.420	0.020	29.350	32.790
OPERATIONS PERSONNEL	60	1	4	65	5.900	0.010	0.820	6.730
HEALTH PHYSICS PERSONNEL	34	0	25	59	2.390	0.000	1.460	3.850
SUPERVISORY PERSONNEL	10	1	10	21	1.320	0.620	1.840	3.780
ENGINEERING PERSONNEL	14	1	14	29	1.600	0.140	3.020	4.760
TOTAL	201	3	290	494	14.630	0.790	36.490	51.910
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	37	0	118	155	0.440	0.000	11.510	11.950
OPERATIONS PERSONNEL	18	0	1	19	0.150	0.070	0.010	0.230
HEALTH PHYSICS PERSONNEL	23	0	7	30	0.110	0.000	0.190	0.300
SUPERVISORY PERSONNEL	5	0	3	8	0.060	0.000	0.110	0.170
ENGINEERING PERSONNEL	4	1	3	8	0.110	0.000	0.330	0.440
TOTAL	87	1	132	220	0.870	0.070	12.150	13.090
WASTE PROCESSING								
MAINTENANCE PERSONNEL	23	0	7	30	4.470	0.080	0.160	4.710
OPERATIONS PERSONNEL	7	1	1	9	1.520	0.210	0.340	2.070
HEALTH PHYSICS PERSONNEL	23	0	15	38	1.000	0.000	1.270	2.270
SUPERVISORY PERSONNEL	1	0	0	1	0.060	0.000	0.000	0.060
ENGINEERING PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
TOTAL	55	1	23	79	7.050	0.290	1.770	9.110
REFUELING								
MAINTENANCE PERSONNEL	56	0	84	140	1.300	0.000	11.750	13.050
OPERATIONS PERSONNEL	40	1	4	45	1.580	0.110	1.050	2.740
HEALTH PHYSICS PERSONNEL	26	0	27	53	0.970	0.000	2.420	3.390
SUPERVISORY PERSONNEL	7	0	5	12	0.250	0.000	0.170	0.420
ENGINEERING PERSONNEL	2	1	17	20	0.200	0.090	1.910	2.200
TOTAL	131	2	137	270	4.300	0.200	17.300	21.800
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	312 (115)	1 (1)	829 (401)	1142 (517)	68.590	0.800	168.830	238.220
OPERATIONS PERSONNEL	243 (75)	4 (1)	22 (12)	269 (88)	42.810	0.520	4.820	48.150
HEALTH PHYSICS PERSONNEL	158 (50)	0 (0)	126 (54)	284 (104)	20.730	0.020	16.730	37.480
SUPERVISORY PERSONNEL	39 (14)	2 (1)	32 (14)	73 (29)	6.280	0.620	5.210	12.110
ENGINEERING PERSONNEL	40 (20)	5 (2)	77 (44)	122 (66)	6.630	0.300	14.310	21.240
GRAND TOTALS	792 (274)	12 (5)	1086 (525)	1890 (804)	145.040	2.260	209.900	357.200

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

APPENDIX D (Continued)

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

1996

PLANT: ***FORT CALHOUN** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	2	0	0	2	1.021	0.070	0.014	1.105
OPERATIONS PERSONNEL	40	0	0	40	11.782	0.000	0.000	11.782
HEALTH PHYSICS PERSONNEL	13	0	10	23	7.961	0.000	5.067	13.028
SUPERVISORY PERSONNEL	3	0	0	3	1.163	0.000	0.000	1.163
ENGINEERING PERSONNEL	1	0	0	1	0.760	0.000	0.000	0.760
TOTAL	59	0	10	69	22.687	0.070	5.081	27.838
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	39	16	25	80	25.649	7.077	6.014	38.740
OPERATIONS PERSONNEL	4	0	0	4	0.943	0.000	0.000	0.943
HEALTH PHYSICS PERSONNEL	11	0	14	25	6.423	0.000	6.510	12.933
SUPERVISORY PERSONNEL	9	0	1	10	3.743	0.000	0.146	3.889
ENGINEERING PERSONNEL	12	0	2	14	3.621	0.000	0.546	4.167
TOTAL	75	16	42	133	40.379	7.077	13.216	60.672
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	6	10	25	41	4.958	5.606	9.365	19.929
OPERATIONS PERSONNEL	0	0	0	0	0.050	0.000	0.000	0.050
HEALTH PHYSICS PERSONNEL	2	0	11	13	1.706	0.000	8.269	9.975
SUPERVISORY PERSONNEL	4	0	1	5	2.950	0.000	0.584	3.534
ENGINEERING PERSONNEL	1	0	63	64	0.432	0.000	50.674	51.106
TOTAL	13	10	100	123	10.096	5.606	68.892	84.594
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	4	6	1.427	0.081	1.067	2.575
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.103	0.000	0.037	0.140
SUPERVISORY PERSONNEL	0	0	0	0	0.140	0.000	0.000	0.140
ENGINEERING PERSONNEL	1	0	0	1	0.132	0.000	0.038	0.170
TOTAL	3	0	4	7	1.802	0.081	1.142	3.025
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.041	0.035	0.034	0.110
OPERATIONS PERSONNEL	0	0	0	0	0.073	0.000	0.000	0.073
HEALTH PHYSICS PERSONNEL	5	0	4	9	2.918	0.000	1.755	4.673
SUPERVISORY PERSONNEL	0	0	0	0	0.044	0.000	0.000	0.044
ENGINEERING PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
TOTAL	5	0	4	9	3.077	0.035	1.789	4.901
REFUELING								
MAINTENANCE PERSONNEL	23	28	37	88	15.138	14.124	12.922	42.184
OPERATIONS PERSONNEL	6	0	0	6	1.308	0.000	0.000	1.308
HEALTH PHYSICS PERSONNEL	1	0	6	7	1.048	0.000	3.240	4.288
SUPERVISORY PERSONNEL	6	0	0	6	2.601	0.000	0.112	2.713
ENGINEERING PERSONNEL	5	0	10	15	1.858	0.000	4.686	6.544
TOTAL	41	28	53	122	21.953	14.124	20.960	57.037
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	72	54	91	217	48.234	26.993	29.416	104.643
OPERATIONS PERSONNEL	50	0	0	50	14.156	0.000	0.000	14.156
HEALTH PHYSICS PERSONNEL	32	0	45	77	20.159	0.000	24.878	45.037
SUPERVISORY PERSONNEL	22	0	2	24	10.641	0.000	0.842	11.483
ENGINEERING PERSONNEL	20	0	75	95	6.804	0.000	55.944	62.748
GRAND TOTALS	196	54	213	463	99.994	26.993	111.080	238.067

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***GINNA** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	812	79	340	1231	2.234	0.189	0.624	3.047
OPERATIONS PERSONNEL	1252	1	14	1267	1.598	0.004	0.082	1.684
HEALTH PHYSICS PERSONNEL	469	0	473	942	1.964	0.000	3.971	5.935
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	307	249	102	658	0.344	0.750	0.490	1.584
TOTAL	2840	329	929	4098	6.140	0.943	5.167	12.250
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	6846	340	1314	8500	17.346	2.224	2.179	21.749
OPERATIONS PERSONNEL	610	4	41	655	0.183	0.066	0.003	0.252
HEALTH PHYSICS PERSONNEL	783	0	2614	3397	1.631	0.001	1.539	3.171
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	123	372	292	787	0.078	0.629	6.386	7.093
TOTAL	8362	716	4261	13339	19.238	2.920	10.107	32.265
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	5	7	41	53	0.124	0.043	3.665	3.832
OPERATIONS PERSONNEL	41	0	0	41	0.160	0.000	0.033	0.193
HEALTH PHYSICS PERSONNEL	12	0	1	13	0.018	0.000	0.003	0.021
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	174	87	263	0.014	1.422	0.537	1.973
TOTAL	60	181	129	370	0.316	1.465	4.238	6.019
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1135	355	1747	3237	6.361	1.829	2.914	11.104
OPERATIONS PERSONNEL	46	0	0	46	0.048	0.000	0.715	0.763
HEALTH PHYSICS PERSONNEL	107	0	182	289	0.237	0.000	1.550	1.787
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	59	88	331	478	0.214	1.657	0.715	2.586
TOTAL	1347	443	2260	4050	6.860	3.486	5.894	16.240
WASTE PROCESSING								
MAINTENANCE PERSONNEL	49	4	5	58	0.007	0.025	0.634	0.666
OPERATIONS PERSONNEL	1	0	0	1	0.000	0.022	0.000	0.022
HEALTH PHYSICS PERSONNEL	570	12	177	759	0.998	0.090	5.920	7.008
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	35	0	35	0.000	0.138	0.000	0.138
TOTAL	620	51	182	853	1.005	0.275	6.554	7.834
REFUELING								
MAINTENANCE PERSONNEL	122	62	27	211	3.204	1.383	0.242	4.829
OPERATIONS PERSONNEL	90	25	504	619	0.694	0.133	23.051	23.878
HEALTH PHYSICS PERSONNEL	0	0	51	51	0.000	0.000	1.744	1.744
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	34	1	37	0.615	0.321	0.110	1.046
TOTAL	214	121	583	918	4.513	1.837	25.147	31.497
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	8969	847	3474	13290	29.276	5.693	10.258	45.227
OPERATIONS PERSONNEL	2040	30	559	2629	2.683	0.225	23.884	26.792
HEALTH PHYSICS PERSONNEL	1941	12	3498	5451	4.848	0.091	14.727	19.666
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	493	952	813	2258	1.265	4.917	8.238	14.420
GRAND TOTALS	13443	1841	8344	23628	38.072	10.926	57.107	106.105

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***GRAND GULF** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.675	0.045	0.342	1.062
OPERATIONS PERSONNEL	0	0	1	1	3.126	0.378	0.000	3.504
HEALTH PHYSICS PERSONNEL	12	2	19	33	3.427	5.975	8.759	18.161
SUPERVISORY PERSONNEL	11	14	0	25	0.522	0.259	0.245	1.026
ENGINEERING PERSONNEL	1	1	0	2	0.069	0.000	0.059	0.128
TOTAL	24	17	20	61	7.819	6.657	9.405	23.881
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	128	54	358	540	55.097	18.263	153.234	226.594
OPERATIONS PERSONNEL	50	2	5	57	19.625	0.464	3.155	23.244
HEALTH PHYSICS PERSONNEL	28	5	21	54	11.617	1.429	5.794	18.840
SUPERVISORY PERSONNEL	12	3	21	36	4.446	1.184	4.653	10.283
ENGINEERING PERSONNEL	16	3	0	19	5.176	1.071	0.024	6.271
TOTAL	234	67	405	706	95.961	22.411	166.860	285.232
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	24	24	0.004	0.000	7.136	7.140
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.003	0.000	0.079	0.082
SUPERVISORY PERSONNEL	3	2	11	16	0.642	0.476	7.482	8.600
ENGINEERING PERSONNEL	1	0	0	1	0.316	0.000	0.000	0.316
TOTAL	4	2	35	41	0.965	0.476	14.697	16.138
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	1	1	0.122	0.000	0.384	0.506
OPERATIONS PERSONNEL	0	0	5	5	0.000	0.000	1.004	1.004
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.050	0.000	0.047	0.097
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	6	6	0.172	0.000	1.435	1.607
REFUELING								
MAINTENANCE PERSONNEL	0	1	45	46	0.198	0.609	12.822	13.629
OPERATIONS PERSONNEL	2	0	0	2	0.690	0.091	0.000	0.781
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.003	0.011	0.036	0.050
SUPERVISORY PERSONNEL	2	2	2	6	0.735	0.778	0.345	1.858
ENGINEERING PERSONNEL	4	0	0	4	1.246	0.056	0.043	1.345
TOTAL	8	3	47	58	2.872	1.545	13.246	17.663
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	128	55	428	611	56.096	18.917	173.918	248.931
OPERATIONS PERSONNEL	52	2	11	65	23.441	0.933	4.159	28.533
HEALTH PHYSICS PERSONNEL	40	7	40	87	15.100	7.415	14.715	37.230
SUPERVISORY PERSONNEL	28	21	34	83	6.345	2.697	12.725	21.767
ENGINEERING PERSONNEL	22	4	0	26	6.807	1.127	0.126	8.060
GRAND TOTALS	270	89	513	872	107.789	31.089	205.643	344.521

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***HADDAM NECK** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	51	4	110	165	7.688	0.108	3.328	11.124
OPERATIONS PERSONNEL	36	1	0	37	12.744	0.172	0.000	12.916
HEALTH PHYSICS PERSONNEL	19	1	34	54	7.653	0.164	13.079	20.896
SUPERVISORY PERSONNEL	1	3	3	7	0.139	0.185	0.085	0.409
ENGINEERING PERSONNEL	12	7	41	60	1.644	0.403	0.627	2.674
TOTAL	119	16	188	323	29.868	1.032	17.119	48.019
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	50	1	95	146	6.863	0.147	7.802	14.812
OPERATIONS PERSONNEL	10	0	0	10	0.368	0.000	0.000	0.368
HEALTH PHYSICS PERSONNEL	15	1	25	41	0.145	0.320	1.159	1.624
SUPERVISORY PERSONNEL	1	3	3	7	0.007	0.217	0.114	0.338
ENGINEERING PERSONNEL	10	5	19	34	0.669	0.346	1.443	2.458
TOTAL	86	10	142	238	8.052	1.030	10.518	19.600
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	4	1	75	80	0.000	0.297	39.157	39.454
OPERATIONS PERSONNEL	1	0	0	1	0.006	0.000	0.000	0.006
HEALTH PHYSICS PERSONNEL	3	0	6	9	0.001	0.000	0.145	0.146
SUPERVISORY PERSONNEL	0	1	3	4	0.000	0.224	0.784	1.008
ENGINEERING PERSONNEL	1	1	21	23	0.003	0.131	12.773	12.907
TOTAL	9	3	105	117	0.010	0.652	52.859	53.521
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	31	2	71	104	1.195	0.368	3.325	4.888
OPERATIONS PERSONNEL	5	0	0	5	0.206	0.000	0.000	0.206
HEALTH PHYSICS PERSONNEL	18	0	17	35	3.349	0.000	1.155	4.504
SUPERVISORY PERSONNEL	0	3	2	5	0.000	0.378	0.065	0.443
ENGINEERING PERSONNEL	7	1	18	26	0.628	0.043	4.251	4.922
TOTAL	61	6	108	175	5.378	0.789	8.796	14.963
WASTE PROCESSING								
MAINTENANCE PERSONNEL	4	0	3	7	0.442	0.000	0.034	0.476
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	14	1	27	42	3.893	0.001	4.778	8.672
SUPERVISORY PERSONNEL	0	1	0	1	0.000	0.001	0.000	0.001
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.000	0.000
TOTAL	18	2	31	51	4.335	0.002	4.812	9.149
REFUELING								
MAINTENANCE PERSONNEL	33	1	25	59	3.198	0.001	9.551	12.750
OPERATIONS PERSONNEL	8	1	0	9	0.188	0.004	0.000	0.192
HEALTH PHYSICS PERSONNEL	5	0	7	12	0.088	0.000	0.119	0.207
SUPERVISORY PERSONNEL	0	1	1	2	0.000	0.000	0.009	0.009
ENGINEERING PERSONNEL	4	1	7	12	0.079	0.034	0.993	1.106
TOTAL	50	4	40	94	3.553	0.039	10.672	14.264
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	173	9	379	561	19.386	0.921	63.197	83.504
OPERATIONS PERSONNEL	60	2	0	62	13.512	0.176	0.000	13.688
HEALTH PHYSICS PERSONNEL	74	3	116	193	15.129	0.485	20.435	36.049
SUPERVISORY PERSONNEL	2	12	12	26	0.146	1.005	1.057	2.208
ENGINEERING PERSONNEL	34	15	107	156	3.023	0.957	20.087	24.067
GRAND TOTALS	343	41	614	998	51.196	3.544	104.776	159.516

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***HARRIS** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	1	0	1	2	0.435	0.003	0.232	0.670
OPERATIONS PERSONNEL	3	0	0	3	2.201	0.000	0.128	2.329
HEALTH PHYSICS PERSONNEL	9	0	0	9	2.867	0.000	0.091	2.958
SUPERVISORY PERSONNEL	0	0	0	0	0.054	0.006	0.002	0.062
ENGINEERING PERSONNEL	0	0	0	0	0.439	0.034	0.102	0.575
TOTAL	13	0	1	14	5.996	0.043	0.555	6.594
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	0	1	2.015	0.002	0.937	2.954
OPERATIONS PERSONNEL	0	0	0	0	0.261	0.000	0.000	0.261
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.296	0.000	0.001	0.297
SUPERVISORY PERSONNEL	0	0	0	0	0.007	0.000	0.001	0.008
ENGINEERING PERSONNEL	0	0	0	0	0.373	0.000	0.049	0.422
TOTAL	1	0	0	1	2.952	0.002	0.988	3.942
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.003	0.000	0.000	0.003
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.048	0.000	0.000	0.048
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.011	0.000	0.000	0.011
TOTAL	0	0	0	0	0.062	0.000	0.000	0.062
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	6	0	10	16	2.064	0.003	3.421	5.488
OPERATIONS PERSONNEL	0	0	0	0	0.071	0.000	0.032	0.103
HEALTH PHYSICS PERSONNEL	4	0	0	4	1.164	0.000	0.003	1.167
SUPERVISORY PERSONNEL	0	0	0	0	0.005	0.000	0.000	0.005
ENGINEERING PERSONNEL	1	0	0	1	0.372	0.000	0.006	0.378
TOTAL	11	0	10	21	3.676	0.003	3.462	7.141
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.243	0.000	0.053	0.296
OPERATIONS PERSONNEL	0	0	0	0	0.153	0.000	0.000	0.153
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.786	0.000	0.000	0.786
SUPERVISORY PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.022	0.000	0.052	0.074
TOTAL	1	0	0	1	1.205	0.000	0.105	1.310
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.095	0.000	0.065	0.160
OPERATIONS PERSONNEL	0	0	0	0	0.208	0.000	0.000	0.208
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.121	0.000	0.000	0.121
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.087	0.000	0.000	0.087
TOTAL	0	0	0	0	0.511	0.000	0.065	0.576
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	8	0	11	19	4.855	0.008	4.708	9.571
OPERATIONS PERSONNEL	3	0	0	3	2.894	0.000	0.160	3.054
HEALTH PHYSICS PERSONNEL	14	0	0	14	5.282	0.000	0.095	5.377
SUPERVISORY PERSONNEL	0	0	0	0	0.067	0.006	0.003	0.076
ENGINEERING PERSONNEL	1	0	0	1	1.304	0.034	0.209	1.547
GRAND TOTALS	26	0	11	37	14.402	0.048	5.175	19.625

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***HATCH 1,2** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	185	6	339	530	109.824	2.215	130.059	242.098
OPERATIONS PERSONNEL	15	0	0	15	5.995	0.000	0.009	6.004
HEALTH PHYSICS PERSONNEL	8	0	22	30	2.917	0.000	8.956	11.873
SUPERVISORY PERSONNEL	22	0	7	29	8.764	0.063	2.522	11.349
ENGINEERING PERSONNEL	12	0	21	33	4.398	0.067	6.311	10.776
TOTAL	242	6	389	637	131.898	2.345	147.857	282.100
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	9	0	3	12	4.852	0.107	4.108	9.067
OPERATIONS PERSONNEL	74	0	0	74	38.955	0.000	0.029	38.984
HEALTH PHYSICS PERSONNEL	65	0	24	89	30.674	0.008	7.526	38.208
SUPERVISORY PERSONNEL	11	0	3	14	4.008	0.040	0.849	4.897
ENGINEERING PERSONNEL	3	0	0	3	2.354	0.082	0.442	2.878
TOTAL	162	0	30	192	80.843	0.237	12.954	94.034
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	3	0	3	6	0.900	0.011	0.751	1.662
OPERATIONS PERSONNEL	24	0	0	24	7.470	0.000	0.000	7.470
HEALTH PHYSICS PERSONNEL	15	0	16	31	11.504	0.000	9.707	21.211
SUPERVISORY PERSONNEL	3	0	0	3	0.833	0.089	0.000	0.922
ENGINEERING PERSONNEL	1	0	13	14	0.444	0.021	4.192	4.657
TOTAL	46	0	32	78	21.151	0.121	14.650	35.922
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	69	0	96	165	25.649	0.021	36.207	61.877
OPERATIONS PERSONNEL	5	0	0	5	1.100	0.000	0.000	1.100
HEALTH PHYSICS PERSONNEL	5	0	16	21	0.891	0.000	10.480	11.371
SUPERVISORY PERSONNEL	7	0	1	8	2.908	0.000	1.003	3.911
ENGINEERING PERSONNEL	4	0	0	4	1.120	0.030	0.175	1.325
TOTAL	90	0	113	203	31.668	0.051	47.865	79.584
WASTE PROCESSING								
MAINTENANCE PERSONNEL	6	0	0	6	1.460	0.030	0.045	1.535
OPERATIONS PERSONNEL	0	0	1	1	0.017	0.000	0.223	0.240
HEALTH PHYSICS PERSONNEL	4	0	4	8	2.688	0.000	3.205	5.893
SUPERVISORY PERSONNEL	1	0	0	1	0.148	0.000	0.000	0.148
ENGINEERING PERSONNEL	0	0	0	0	0.002	0.000	0.000	0.002
TOTAL	11	0	5	16	4.315	0.030	3.473	7.818
REFUELING								
MAINTENANCE PERSONNEL	4	0	69	73	1.154	0.000	20.238	21.392
OPERATIONS PERSONNEL	9	0	0	9	1.994	0.000	0.000	1.994
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.089	0.089
SUPERVISORY PERSONNEL	0	0	0	0	0.185	0.000	0.194	0.379
ENGINEERING PERSONNEL	2	0	7	9	0.431	0.004	2.123	2.558
TOTAL	15	0	76	91	3.764	0.004	22.644	26.412
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	276	6	510	792	143.839	2.384	191.408	337.631
OPERATIONS PERSONNEL	127	0	1	128	55.531	0.000	0.261	55.792
HEALTH PHYSICS PERSONNEL	97	0	82	179	48.674	0.008	39.963	88.645
SUPERVISORY PERSONNEL	44	0	11	55	16.846	0.192	4.568	21.606
ENGINEERING PERSONNEL	22	0	41	63	8.749	0.204	13.243	22.196
GRAND TOTALS	566	6	645	1217	273.639	2.788	249.443	525.870

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***HOPE CREEK 1** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	25	3	2	30	7.916	1.558	1.282	10.756
OPERATIONS PERSONNEL	35	8	3	46	11.011	2.608	1.994	15.613
HEALTH PHYSICS PERSONNEL	25	1	5	31	5.494	0.238	2.204	7.936
SUPERVISORY PERSONNEL	0	0	0	0	0.010	0.018	0.020	0.048
ENGINEERING PERSONNEL	0	0	0	0	0.280	0.318	0.028	0.626
TOTAL	85	12	10	107	24.711	4.740	5.528	34.979
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	3	0	0	3	2.026	0.484	1.774	4.284
OPERATIONS PERSONNEL	1	0	0	1	0.610	0.329	0.248	1.187
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.255	0.000	0.103	0.358
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.002	0.003	0.005
ENGINEERING PERSONNEL	0	0	0	0	0.017	0.074	0.041	0.132
TOTAL	4	0	0	4	2.908	0.889	2.169	5.966
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	1	21	22	0.237	0.384	5.121	5.742
OPERATIONS PERSONNEL	0	0	1	1	0.024	0.157	0.429	0.610
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.053	0.003	0.090	0.146
SUPERVISORY PERSONNEL	0	0	0	0	0.002	0.039	0.030	0.071
ENGINEERING PERSONNEL	0	1	0	1	0.000	0.400	0.008	0.408
TOTAL	0	2	22	24	0.316	0.983	5.678	6.977
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	68	12	91	171	17.939	3.771	25.537	47.247
OPERATIONS PERSONNEL	21	6	25	52	5.330	2.142	8.867	16.339
HEALTH PHYSICS PERSONNEL	15	0	8	23	3.418	0.056	1.676	5.150
SUPERVISORY PERSONNEL	0	0	0	0	0.035	0.036	0.058	0.129
ENGINEERING PERSONNEL	0	2	0	2	0.220	0.722	0.081	1.023
TOTAL	104	20	124	248	26.942	6.727	36.219	69.888
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.298	0.058	0.001	0.357
OPERATIONS PERSONNEL	0	0	2	2	0.067	0.009	0.536	0.612
HEALTH PHYSICS PERSONNEL	3	0	1	4	0.830	0.033	0.244	1.107
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.001	0.000	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.060	0.000	0.060
TOTAL	4	0	3	7	1.195	0.161	0.781	2.137
REFUELING								
MAINTENANCE PERSONNEL	12	7	20	39	3.441	1.890	11.006	16.337
OPERATIONS PERSONNEL	4	0	27	31	0.948	0.497	13.642	15.087
HEALTH PHYSICS PERSONNEL	10	0	5	15	2.432	0.064	1.907	4.403
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.003	0.137	0.140
ENGINEERING PERSONNEL	0	0	0	0	0.022	0.065	0.006	0.093
TOTAL	26	7	53	86	6.843	2.519	26.698	36.060
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	109	23	134	266	31.857	8.145	44.721	84.723
OPERATIONS PERSONNEL	61	14	58	133	17.990	5.742	25.716	49.448
HEALTH PHYSICS PERSONNEL	53	1	19	73	12.482	0.394	6.224	19.100
SUPERVISORY PERSONNEL	0	0	1	1	0.047	0.099	0.248	0.394
ENGINEERING PERSONNEL	0	3	0	3	0.539	1.639	0.164	2.342
GRAND TOTALS	223	41	212	476	62.915	16.019	77.073	156.007

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***INDIAN POINT 2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	1	0	1	2	0.527	0.000	0.125	0.652
OPERATIONS PERSONNEL	35	0	0	35	6.889	0.000	0.000	6.889
HEALTH PHYSICS PERSONNEL	16	1	7	24	3.230	0.194	2.388	5.812
SUPERVISORY PERSONNEL	2	0	1	3	0.330	0.000	0.197	0.527
ENGINEERING PERSONNEL	2	0	0	2	0.285	0.000	0.000	0.285
TOTAL	56	1	9	66	11.261	0.194	2.710	14.165
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	0	1	0.106	0.000	0.000	0.106
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	0	1	0.104	0.000	0.000	0.104
TOTAL	2	0	0	2	0.210	0.000	0.000	0.210
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	30	3	18	51	6.180	0.393	2.742	9.315
OPERATIONS PERSONNEL	2	0	0	2	0.220	0.000	0.000	0.220
HEALTH PHYSICS PERSONNEL	3	0	2	5	0.396	0.000	0.391	0.787
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	4	0	1	5	0.656	0.000	0.145	0.801
TOTAL	39	3	21	63	7.452	0.393	3.278	11.123
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	20	22	0.585	0.000	10.525	11.110
OPERATIONS PERSONNEL	2	0	0	2	0.319	0.000	0.000	0.319
HEALTH PHYSICS PERSONNEL	1	0	4	5	0.219	0.000	2.520	2.739
SUPERVISORY PERSONNEL	2	0	1	3	1.079	0.000	0.325	1.404
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.358	0.358
TOTAL	7	0	26	33	2.202	0.000	13.728	15.930
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	34	3	39	76	7.398	0.393	13.392	21.183
OPERATIONS PERSONNEL	39	0	0	39	7.428	0.000	0.000	7.428
HEALTH PHYSICS PERSONNEL	20	1	13	34	3.845	0.194	5.299	9.338
SUPERVISORY PERSONNEL	4	0	2	6	1.409	0.000	0.522	1.931
ENGINEERING PERSONNEL	7	0	2	9	1.045	0.000	0.503	1.548
GRAND TOTALS	104	4	56	164	21.125	0.587	19.716	41.428

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***INDIAN POINT 3** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	11	0	12	23	3.800	0.000	2.520	6.320
OPERATIONS PERSONNEL	16	0	2	18	3.910	0.000	0.280	4.190
HEALTH PHYSICS PERSONNEL	15	0	0	15	3.820	0.000	0.000	3.820
SUPERVISORY PERSONNEL	1	0	0	1	0.150	0.000	0.000	0.150
ENGINEERING PERSONNEL	1	0	0	1	0.320	0.000	0.000	0.320
TOTAL	44	0	14	58	12.000	0.000	2.800	14.800
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	11	0	12	23	3.800	0.000	2.520	6.320
OPERATIONS PERSONNEL	16	0	2	18	3.910	0.000	0.280	4.190
HEALTH PHYSICS PERSONNEL	15	0	0	15	3.820	0.000	0.000	3.820
SUPERVISORY PERSONNEL	1	0	0	1	0.150	0.000	0.000	0.150
ENGINEERING PERSONNEL	1	0	0	1	0.320	0.000	0.000	0.320
GRAND TOTALS	44	0	14	58	12.000	0.000	2.800	14.800

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***KEWAUNEE** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	7	0	0	7	1.188	0.000	0.000	1.188
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	0	0	7	1.188	0.000	0.000	1.188
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	23	2	30	55	10.390	1.140	16.169	27.699
OPERATIONS PERSONNEL	7	0	0	7	2.468	0.000	0.000	2.468
HEALTH PHYSICS PERSONNEL	18	0	27	45	11.222	0.000	10.845	22.067
SUPERVISORY PERSONNEL	4	0	2	6	1.055	0.000	0.710	1.765
ENGINEERING PERSONNEL	10	0	0	10	3.124	0.000	0.000	3.124
TOTAL	62	2	59	123	28.259	1.140	27.724	57.123
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	5	0	0	5	1.140	0.000	0.000	1.140
OPERATIONS PERSONNEL	3	0	0	3	1.244	0.000	0.000	1.244
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	1	0	0	1	0.120	0.000	0.000	0.120
ENGINEERING PERSONNEL	0	0	12	12	0.000	0.000	3.620	3.620
TOTAL	9	0	12	21	2.504	0.000	3.620	6.124
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	1	83	85	1.010	0.150	32.920	34.080
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	6	6	0.000	0.000	1.610	1.610
TOTAL	1	1	89	91	1.010	0.150	34.530	35.690
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	1	0	0	1	0.660	0.000	0.000	0.660
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	1	0	0	1	0.660	0.000	0.000	0.660
REFUELING								
MAINTENANCE PERSONNEL	9	2	0	11	8.682	0.700	0.000	9.382
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	3	0	0	3	0.930	0.000	0.000	0.930
TOTAL	12	2	0	14	9.612	0.700	0.000	10.312
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	38	5	113	156	21.222	1.990	49.089	72.301
OPERATIONS PERSONNEL	18	0	0	18	5.560	0.000	0.000	5.560
HEALTH PHYSICS PERSONNEL	18	0	27	45	11.222	0.000	10.845	22.067
SUPERVISORY PERSONNEL	5	0	2	7	1.175	0.000	0.710	1.885
ENGINEERING PERSONNEL	13	0	18	31	4.054	0.000	5.230	9.284
GRAND TOTALS	92	5	160	257	43.233	1.990	65.874	111.097

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***LASALLE 1,2** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	10	1	26	37	4.443	0.048	6.824	11.315
OPERATIONS PERSONNEL	121	0	37	158	29.906	0.000	2.427	32.333
HEALTH PHYSICS PERSONNEL	45	57	24	126	16.541	1.252	6.019	23.812
SUPERVISORY PERSONNEL	74	0	42	116	5.217	0.000	2.037	7.254
ENGINEERING PERSONNEL	48	0	6	54	4.220	0.000	1.111	5.331
TOTAL	298	58	135	491	60.327	1.300	18.418	80.045
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	210	49	1486	1745	96.759	2.246	396.442	495.447
OPERATIONS PERSONNEL	30	0	7	37	7.421	3.600	0.438	11.459
HEALTH PHYSICS PERSONNEL	39	164	76	279	14.512	0.000	19.435	33.947
SUPERVISORY PERSONNEL	200	0	206	406	4.196	0.000	9.833	14.029
ENGINEERING PERSONNEL	91	0	248	339	7.898	0.000	45.701	53.599
TOTAL	570	213	2023	2806	130.786	5.846	471.849	608.481
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	190	190	0.000	0.000	50.663	50.663
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	60	15	75	0.149	1.302	3.897	5.348
SUPERVISORY PERSONNEL	7	0	1	8	0.471	0.000	0.043	0.514
ENGINEERING PERSONNEL	8	0	47	55	0.713	0.000	8.754	9.467
TOTAL	15	60	253	328	1.333	1.302	63.357	65.992
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	10	57	69	0.863	0.000	15.224	16.087
OPERATIONS PERSONNEL	0	0	0	0	0.016	0.000	0.000	0.016
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.001	0.458	0.005	0.464
SUPERVISORY PERSONNEL	1	0	2	3	0.062	0.000	0.072	0.134
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.021	0.021
TOTAL	3	10	59	72	0.942	0.458	15.322	16.722
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	19	19	0.077	0.000	4.946	5.023
OPERATIONS PERSONNEL	3	0	97	100	0.734	0.000	6.273	7.007
HEALTH PHYSICS PERSONNEL	1	1	0	2	0.378	0.018	0.070	0.466
SUPERVISORY PERSONNEL	4	0	0	4	0.317	0.000	0.006	0.323
ENGINEERING PERSONNEL	2	0	0	2	0.137	0.000	0.043	0.180
TOTAL	10	1	116	127	1.643	0.018	11.338	12.999
REFUELING								
MAINTENANCE PERSONNEL	2	0	34	36	1.085	0.000	9.130	10.215
OPERATIONS PERSONNEL	10	0	0	10	2.337	0.000	0.003	2.340
HEALTH PHYSICS PERSONNEL	4	58	0	62	1.287	1.257	0.000	2.544
SUPERVISORY PERSONNEL	20	0	3	23	1.422	0.000	0.162	1.584
ENGINEERING PERSONNEL	3	0	42	45	0.277	0.000	7.728	8.005
TOTAL	39	58	79	176	6.408	1.257	17.023	24.688
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	224	60	1812	2096	103.227	2.294	483.229	588.750
OPERATIONS PERSONNEL	164	0	141	305	40.414	3.600	9.141	53.155
HEALTH PHYSICS PERSONNEL	89	340	115	544	32.868	4.287	29.426	66.581
SUPERVISORY PERSONNEL	306	0	254	560	11.685	0.000	12.153	23.838
ENGINEERING PERSONNEL	152	0	343	495	13.245	0.000	63.358	76.603
GRAND TOTALS	935	400	2665	4000	201.439	10.181	597.307	808.927

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***LIMERICK 1,2** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	331	271	1048	1650	15.242	12.357	15.416	43.015
OPERATIONS PERSONNEL	199	29	136	364	13.766	1.462	9.997	25.225
HEALTH PHYSICS PERSONNEL	41	5	22	68	8.660	0.492	1.276	10.428
SUPERVISORY PERSONNEL	9	4	17	30	0.185	0.010	0.145	0.340
ENGINEERING PERSONNEL	108	72	20	200	3.893	1.317	0.237	5.447
TOTAL	688	381	1243	2312	41.746	15.638	27.071	84.455
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	66	38	20	124	1.236	0.363	0.077	1.676
OPERATIONS PERSONNEL	26	3	3	32	0.173	0.044	0.006	0.223
HEALTH PHYSICS PERSONNEL	18	0	4	22	0.377	0.000	0.021	0.398
SUPERVISORY PERSONNEL	2	0	1	3	0.009	0.000	0.015	0.024
ENGINEERING PERSONNEL	9	3	0	12	0.056	0.231	0.000	0.287
TOTAL	121	44	28	193	1.851	0.638	0.119	2.608
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	1	58	59	0.000	0.023	10.353	10.376
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	2	2	0.000	0.000	0.014	0.014
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	1	60	61	0.000	0.023	10.367	10.390
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	7	0	9	0.031	0.242	0.000	0.273
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.032	0.000	0.000	0.032
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	1	0	1	0.000	0.005	0.000	0.005
TOTAL	3	8	0	11	0.063	0.247	0.000	0.310
WASTE PROCESSING								
MAINTENANCE PERSONNEL	17	30	12	59	0.055	1.259	1.097	2.411
OPERATIONS PERSONNEL	8	2	20	30	0.340	0.003	0.505	0.848
HEALTH PHYSICS PERSONNEL	21	1	1	23	0.796	0.006	0.005	0.807
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.001	0.001
ENGINEERING PERSONNEL	2	0	1	3	0.008	0.020	0.000	0.028
TOTAL	48	33	35	116	1.199	1.288	1.608	4.095
REFUELING								
MAINTENANCE PERSONNEL	205	159	574	938	27.506	22.708	54.092	104.306
OPERATIONS PERSONNEL	116	23	60	199	7.739	1.256	6.862	15.857
HEALTH PHYSICS PERSONNEL	35	2	13	50	4.852	0.583	1.176	6.611
SUPERVISORY PERSONNEL	7	1	9	17	0.164	0.002	0.529	0.695
ENGINEERING PERSONNEL	70	40	8	118	3.231	1.085	0.192	4.508
TOTAL	433	225	664	1322	43.492	25.634	62.851	131.977
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	621 (549)	506 (441)	1712 (1576)	2839 (2566)	44.070	36.952	81.035	162.057
OPERATIONS PERSONNEL	349 (270)	57 (122)	219 (182)	625 (574)	22.018	2.765	17.370	42.153
HEALTH PHYSICS PERSONNEL	116 (51)	8 (9)	42 (24)	166 (84)	14.717	1.081	2.492	18.290
SUPERVISORY PERSONNEL	18 (20)	5 (17)	28 (76)	51 (113)	0.358	0.012	0.690	1.060
ENGINEERING PERSONNEL	189 (160)	116 (184)	29 (117)	334 (461)	7.188	2.658	0.429	10.275
GRAND TOTALS	1293 (1050)	692 (773)	2030 (1975)	4015 (3798)	88.351	43.468	102.016	233.835

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

APPENDIX D (Continued)

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

1996

PLANT: ***MAINE YANKEE** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.242	0.000	0.359	0.601
OPERATIONS PERSONNEL	0	0	0	0	0.072	0.000	0.048	0.120
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.040	0.000	0.015	0.055
SUPERVISORY PERSONNEL	0	0	0	0	0.020	0.000	0.329	0.349
ENGINEERING PERSONNEL	1	0	0	1	1.835	0.000	0.000	1.835
TOTAL	1	0	0	1	2.209	0.000	0.751	2.960
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	30	0	37	67	8.141	0.000	10.086	18.227
OPERATIONS PERSONNEL	28	0	3	31	9.405	0.000	1.023	10.428
HEALTH PHYSICS PERSONNEL	16	0	37	53	3.686	0.000	13.530	17.216
SUPERVISORY PERSONNEL	2	0	2	4	0.718	0.000	0.634	1.352
ENGINEERING PERSONNEL	8	0	1	9	2.870	0.000	0.675	3.545
TOTAL	84	0	80	164	24.820	0.000	25.948	50.768
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.012	0.000	0.051	0.063
TOTAL	0	0	0	0	0.012	0.000	0.051	0.063
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	16	18	1.147	0.000	4.336	5.483
OPERATIONS PERSONNEL	0	0	0	0	0.243	0.000	0.122	0.365
HEALTH PHYSICS PERSONNEL	1	0	5	6	0.734	0.000	1.227	1.961
SUPERVISORY PERSONNEL	0	0	4	4	0.010	0.000	0.877	0.887
ENGINEERING PERSONNEL	0	0	4	4	0.152	0.000	0.881	1.033
TOTAL	3	0	29	32	2.286	0.000	7.443	9.729
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.050	0.000	0.010	0.060
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.005	0.005
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.050	0.000	0.015	0.065
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	32	0	53	85	9.580	0.000	14.791	24.371
OPERATIONS PERSONNEL	28	0	3	31	9.720	0.000	1.193	10.913
HEALTH PHYSICS PERSONNEL	17	0	42	59	4.460	0.000	14.772	19.232
SUPERVISORY PERSONNEL	2	0	6	8	0.748	0.000	1.845	2.593
ENGINEERING PERSONNEL	9	0	5	14	4.869	0.000	1.607	6.476
GRAND TOTALS	88	0	109	197	29.377	0.000	34.208	63.585

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***MCGUIRE 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	132	255	168	555	0.937	0.248	0.181	1.366
OPERATIONS PERSONNEL	50	2	23	75	1.883	0.041	1.195	3.119
HEALTH PHYSICS PERSONNEL	14	0	32	46	0.934	0.000	0.447	1.381
SUPERVISORY PERSONNEL	1	0	1	2	0.011	0.000	0.000	0.011
ENGINEERING PERSONNEL	6	0	5	11	0.119	0.000	0.768	0.887
TOTAL	203	257	229	689	3.884	0.289	2.591	6.764
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	132	254	168	554	36.030	78.950	42.166	157.146
OPERATIONS PERSONNEL	55	2	26	83	6.305	0.209	6.443	12.957
HEALTH PHYSICS PERSONNEL	14	0	32	46	1.840	0.000	4.699	6.539
SUPERVISORY PERSONNEL	1	0	0	1	0.196	0.000	0.000	0.196
ENGINEERING PERSONNEL	6	0	3	9	1.159	0.000	0.495	1.654
TOTAL	208	256	229	693	45.530	79.159	53.803	178.492
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	30	22	18	70	0.294	0.800	0.112	1.206
OPERATIONS PERSONNEL	1	0	0	1	0.006	0.000	0.000	0.006
HEALTH PHYSICS PERSONNEL	1	0	3	4	0.000	0.000	0.013	0.013
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	0	1	0.007	0.000	0.000	0.007
TOTAL	33	22	21	76	0.307	0.800	0.125	1.232
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	65	48	22	135	0.843	1.047	0.405	2.295
OPERATIONS PERSONNEL	5	0	12	17	0.080	0.000	0.666	0.746
HEALTH PHYSICS PERSONNEL	10	0	10	20	0.432	0.000	0.048	0.480
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	0	0	2	0.000	0.000	0.000	0.000
TOTAL	82	48	44	174	1.355	1.047	1.119	3.521
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	1	0	1	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	1	0	17	18	0.003	0.000	0.110	0.113
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.005	0.000	0.000	0.005
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	3	1	17	21	0.008	0.000	0.110	0.118
REFUELING								
MAINTENANCE PERSONNEL	4	24	0	28	0.042	0.136	0.000	0.178
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	4	7	0.003	0.000	0.004	0.007
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	24	4	35	0.045	0.136	0.004	0.185
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	363	(132) 604 (255)	376	(168) 1343 (555)	38.146	81.181	42.864	162.191
OPERATIONS PERSONNEL	112	(55) 4 (2)	78	(26) 194 (83)	8.277	0.250	8.414	16.941
HEALTH PHYSICS PERSONNEL	44	(14) 0 (0)	81	(32) 125 (46)	3.214	0.000	5.211	8.425
SUPERVISORY PERSONNEL	2	(1) 0 (0)	1	(1) 3 (2)	0.207	0.000	0.000	0.207
ENGINEERING PERSONNEL	15	(6) 0 (0)	8	(5) 23 (11)	1.285	0.000	1.263	2.548
GRAND TOTALS	536	(208) 608 (257)	544	(232) 1688 (697)	51.129	81.431	57.752	190.312

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

APPENDIX D (Continued)

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

1996

PLANT: ***MILLSTONE POINT 1** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	25	8	119	152	1.295	0.034	1.815	3.144
OPERATIONS PERSONNEL	46	0	10	56	6.809	0.000	0.931	7.740
HEALTH PHYSICS PERSONNEL	39	2	39	80	4.361	0.525	5.914	10.800
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	5	4	6	15	0.016	0.028	0.006	0.050
TOTAL	115	14	175	304	12.481	0.587	8.666	21.734
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	63	37	400	500	2.965	0.411	13.340	16.716
OPERATIONS PERSONNEL	16	0	4	20	0.019	0.000	0.010	0.029
HEALTH PHYSICS PERSONNEL	6	0	33	39	0.582	0.000	1.577	2.159
SUPERVISORY PERSONNEL	0	0	5	5	0.000	0.000	0.107	0.107
ENGINEERING PERSONNEL	11	8	41	60	0.160	0.186	0.727	1.073
TOTAL	96	45	483	624	3.726	0.597	15.761	20.084
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	53	37	481	571	10.061	5.357	263.476	278.894
OPERATIONS PERSONNEL	24	0	11	35	1.620	0.000	1.708	3.328
HEALTH PHYSICS PERSONNEL	36	1	46	83	5.461	0.085	16.064	21.610
SUPERVISORY PERSONNEL	0	0	5	5	0.000	0.000	2.023	2.023
ENGINEERING PERSONNEL	13	11	59	83	1.796	2.333	29.945	34.074
TOTAL	126	49	602	777	18.938	7.775	313.216	339.929
WASTE PROCESSING								
MAINTENANCE PERSONNEL	63	26	268	357	2.468	0.061	3.966	6.495
OPERATIONS PERSONNEL	20	0	11	31	0.000	0.000	0.520	0.520
HEALTH PHYSICS PERSONNEL	25	0	31	56	0.882	0.000	1.329	2.211
SUPERVISORY PERSONNEL	0	0	2	2	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	6	1	12	19	0.000	0.001	0.002	0.003
TOTAL	114	27	324	465	3.350	0.062	5.817	9.229
REFUELING								
MAINTENANCE PERSONNEL	26	8	32	66	0.311	0.016	2.327	2.654
OPERATIONS PERSONNEL	3	0	0	3	0.040	0.000	0.000	0.040
HEALTH PHYSICS PERSONNEL	6	0	9	15	0.107	0.000	0.232	0.339
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	1	3	5	0.002	0.007	0.002	0.011
TOTAL	36	9	44	89	0.460	0.023	2.561	3.044
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	230	116	1300	1646	17.100	5.879	284.924	307.903
OPERATIONS PERSONNEL	109	0	36	145	8.488	0.000	3.169	11.657
HEALTH PHYSICS PERSONNEL	112	3	158	273	11.393	0.610	25.116	37.119
SUPERVISORY PERSONNEL	0	0	13	13	0.000	0.000	2.130	2.130
ENGINEERING PERSONNEL	36	25	121	182	1.974	2.555	30.682	35.211
GRAND TOTALS	487	144	1628	2259	38.955	9.044	346.021	394.020

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***MILLSTONE POINT 2,3** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	107	44	429	580	4.453	0.662	1.881	6.996
OPERATIONS PERSONNEL	46	0	11	57	10.290	0.000	0.220	10.510
HEALTH PHYSICS PERSONNEL	74	0	46	120	8.710	0.000	3.038	11.748
SUPERVISORY PERSONNEL	0	0	3	3	0.000	0.000	1.287	1.287
ENGINEERING PERSONNEL	15	2	29	46	1.130	0.173	0.055	1.358
TOTAL	242	46	518	806	24.583	0.835	6.481	31.899
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	72	38	324	434	5.738	1.115	6.941	13.794
OPERATIONS PERSONNEL	13	0	4	17	0.417	0.000	0.000	0.417
HEALTH PHYSICS PERSONNEL	26	0	20	46	0.683	0.000	0.250	0.933
SUPERVISORY PERSONNEL	0	0	2	2	0.000	0.000	0.008	0.008
ENGINEERING PERSONNEL	10	4	21	35	0.418	0.142	0.356	0.916
TOTAL	121	42	371	534	7.256	1.257	7.555	16.068
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	9	27	147	183	0.102	2.303	2.564	4.969
OPERATIONS PERSONNEL	4	0	4	8	0.080	0.000	0.006	0.086
HEALTH PHYSICS PERSONNEL	8	0	2	10	0.089	0.000	0.001	0.090
SUPERVISORY PERSONNEL	0	0	3	3	0.000	0.000	0.012	0.012
ENGINEERING PERSONNEL	5	0	13	18	0.037	0.000	0.912	0.949
TOTAL	26	27	169	222	0.308	2.303	3.495	6.106
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	88	51	530	669	5.045	2.437	26.277	33.759
OPERATIONS PERSONNEL	21	0	13	34	2.537	0.000	0.055	2.592
HEALTH PHYSICS PERSONNEL	37	0	22	59	2.076	0.000	1.460	3.536
SUPERVISORY PERSONNEL	0	0	6	6	0.000	0.000	0.006	0.006
ENGINEERING PERSONNEL	13	6	34	53	0.563	0.136	0.679	1.378
TOTAL	159	57	605	821	10.221	2.573	28.477	41.271
WASTE PROCESSING								
MAINTENANCE PERSONNEL	60	35	313	408	2.199	0.026	2.868	5.093
OPERATIONS PERSONNEL	17	0	18	35	0.049	0.000	0.378	0.427
HEALTH PHYSICS PERSONNEL	34	0	27	61	0.376	0.000	0.797	1.173
SUPERVISORY PERSONNEL	0	0	2	2	0.000	0.000	0.002	0.002
ENGINEERING PERSONNEL	2	1	10	13	0.000	0.000	0.001	0.001
TOTAL	113	36	370	519	2.624	0.026	4.046	6.696
REFUELING								
MAINTENANCE PERSONNEL	23	3	28	54	1.966	0.006	1.416	3.388
OPERATIONS PERSONNEL	4	0	0	4	0.035	0.000	0.000	0.035
HEALTH PHYSICS PERSONNEL	7	0	4	11	0.107	0.000	0.034	0.141
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	0	1	3	0.014	0.000	0.178	0.192
TOTAL	36	3	34	73	2.122	0.006	1.628	3.756
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	359	198	1771	2328	19.503	6.549	41.947	67.999
OPERATIONS PERSONNEL	105	0	50	155	13.408	0.000	0.659	14.067
HEALTH PHYSICS PERSONNEL	186	0	121	307	12.041	0.000	5.580	17.621
SUPERVISORY PERSONNEL	0	0	17	17	0.000	0.000	1.315	1.315
ENGINEERING PERSONNEL	47	13	108	168	2.162	0.451	2.181	4.794
GRAND TOTALS	697	211	2067	2975	47.114	7.000	51.682	105.796

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***MONTICELLO** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	31	1	40	72	7.836	1.324	12.704	21.864
OPERATIONS PERSONNEL	38	0	0	38	19.839	0.000	0.271	20.110
HEALTH PHYSICS PERSONNEL	23	0	7	30	7.706	0.004	2.848	10.558
SUPERVISORY PERSONNEL	27	1	4	32	9.727	0.611	1.368	11.706
ENGINEERING PERSONNEL	8	0	0	8	2.695	0.064	0.000	2.759
TOTAL	127	2	51	180	47.803	2.003	17.191	66.997
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	38	55	99	192	20.975	22.253	40.705	83.933
OPERATIONS PERSONNEL	6	0	0	6	1.648	0.000	0.000	1.648
HEALTH PHYSICS PERSONNEL	10	0	9	19	5.538	0.006	7.130	12.674
SUPERVISORY PERSONNEL	22	4	11	37	7.575	1.558	5.497	14.630
ENGINEERING PERSONNEL	8	1	0	9	3.725	0.222	0.000	3.947
TOTAL	84	60	119	263	39.461	24.039	53.332	116.832
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	1	19	21	0.138	0.221	7.599	7.958
OPERATIONS PERSONNEL	0	0	0	0	0.006	0.000	0.000	0.006
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.088	0.000	0.244	0.332
SUPERVISORY PERSONNEL	0	1	22	23	0.294	0.303	5.700	6.297
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	1	2	41	44	0.526	0.524	13.543	14.593
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	3	2	49	54	1.083	0.551	23.776	25.410
OPERATIONS PERSONNEL	0	0	0	0	0.012	0.000	0.000	0.012
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.138	0.000	0.111	0.249
SUPERVISORY PERSONNEL	0	0	0	0	0.182	0.024	0.276	0.482
ENGINEERING PERSONNEL	0	0	0	0	0.011	0.000	0.000	0.011
TOTAL	3	2	49	54	1.426	0.575	24.163	26.164
WASTE PROCESSING								
MAINTENANCE PERSONNEL	5	0	3	8	1.803	0.000	1.778	3.581
OPERATIONS PERSONNEL	0	0	0	0	0.028	0.000	0.000	0.028
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.491	0.000	0.017	0.508
SUPERVISORY PERSONNEL	0	0	0	0	0.105	0.014	0.013	0.132
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	0	3	10	2.427	0.014	1.808	4.249
REFUELING								
MAINTENANCE PERSONNEL	7	8	6	21	2.119	1.959	1.234	5.312
OPERATIONS PERSONNEL	15	0	0	15	3.570	0.000	0.000	3.570
HEALTH PHYSICS PERSONNEL	2	0	4	6	0.515	0.000	0.927	1.442
SUPERVISORY PERSONNEL	3	3	0	6	1.082	0.583	0.130	1.795
ENGINEERING PERSONNEL	0	0	0	0	0.024	0.000	0.000	0.024
TOTAL	27	11	10	48	7.310	2.542	2.291	12.143
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	85	67	216	368	33.954	26.308	87.796	148.058
OPERATIONS PERSONNEL	59	0	0	59	25.103	0.000	0.271	25.374
HEALTH PHYSICS PERSONNEL	37	0	20	57	14.476	0.010	11.277	25.763
SUPERVISORY PERSONNEL	52	9	37	98	18.965	3.093	12.984	35.042
ENGINEERING PERSONNEL	16	1	0	17	6.455	0.286	0.000	6.741
GRAND TOTALS	249	77	273	599	98.953	29.697	112.328	240.978

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***NINE MILE POINT 1,2** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	325	0	575	900	12.478	0.000	6.031	18.509
OPERATIONS PERSONNEL	192	0	22	214	28.177	0.000	0.019	28.196
HEALTH PHYSICS PERSONNEL	129	0	48	177	13.386	0.000	2.078	15.464
SUPERVISORY PERSONNEL	66	0	112	178	3.000	0.000	0.186	3.186
ENGINEERING PERSONNEL	115	0	135	250	2.013	0.000	0.284	2.297
TOTAL	827	0	892	1719	59.054	0.000	8.598	67.652
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	351	0	326	677	43.654	0.000	62.776	106.430
OPERATIONS PERSONNEL	153	0	11	164	4.528	0.000	0.122	4.650
HEALTH PHYSICS PERSONNEL	104	0	42	146	10.168	0.000	5.599	15.767
SUPERVISORY PERSONNEL	224	0	85	309	5.482	0.000	2.478	7.960
ENGINEERING PERSONNEL	80	0	207	287	2.175	0.000	6.511	8.686
TOTAL	912	0	671	1583	66.007	0.000	77.486	143.493
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	35	0	219	254	2.615	0.000	26.937	29.552
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	0.004	0.004
HEALTH PHYSICS PERSONNEL	14	0	2	16	0.220	0.000	0.025	0.245
SUPERVISORY PERSONNEL	30	0	12	42	2.975	0.000	2.150	5.125
ENGINEERING PERSONNEL	2	0	37	39	0.043	0.000	7.495	7.538
TOTAL	81	0	271	352	5.853	0.000	36.611	42.464
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	86	0	193	279	2.866	0.000	13.914	16.780
OPERATIONS PERSONNEL	7	0	1	8	0.032	0.000	0.000	0.032
HEALTH PHYSICS PERSONNEL	22	0	6	28	0.067	0.000	0.037	0.104
SUPERVISORY PERSONNEL	42	0	14	56	0.254	0.000	0.236	0.490
ENGINEERING PERSONNEL	13	0	22	35	0.084	0.000	0.078	0.162
TOTAL	170	0	236	406	3.303	0.000	14.265	17.568
WASTE PROCESSING								
MAINTENANCE PERSONNEL	22	0	7	29	0.135	0.000	0.000	0.135
OPERATIONS PERSONNEL	57	0	5	62	5.007	0.000	0.410	5.417
HEALTH PHYSICS PERSONNEL	38	0	16	54	0.448	0.000	1.406	1.854
SUPERVISORY PERSONNEL	9	0	3	12	0.016	0.000	0.001	0.017
ENGINEERING PERSONNEL	8	0	8	16	0.042	0.000	0.342	0.384
TOTAL	134	0	39	173	5.648	0.000	2.159	7.807
REFUELING								
MAINTENANCE PERSONNEL	103	0	187	290	0.774	0.000	11.178	11.952
OPERATIONS PERSONNEL	84	0	3	87	1.483	0.000	0.035	1.518
HEALTH PHYSICS PERSONNEL	38	0	15	53	1.542	0.000	0.581	2.123
SUPERVISORY PERSONNEL	28	0	10	38	0.207	0.000	0.018	0.225
ENGINEERING PERSONNEL	16	0	43	59	0.091	0.000	3.302	3.393
TOTAL	269	0	258	527	4.097	0.000	15.114	19.211
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	922	0	1507	2429	62.522	0.000	120.836	183.358
OPERATIONS PERSONNEL	493	0	43	536	39.227	0.000	0.590	39.817
HEALTH PHYSICS PERSONNEL	345	0	129	474	25.831	0.000	9.726	35.557
SUPERVISORY PERSONNEL	399	0	236	635	11.934	0.000	5.069	17.003
ENGINEERING PERSONNEL	234	0	452	686	4.448	0.000	18.012	22.460
GRAND TOTALS	2393	0	2367	4760	143.962	0.000	154.233	298.195

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***NORTH ANNA 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	56	0	10	66	0.992	0.000	0.044	1.036
OPERATIONS PERSONNEL	93	11	16	120	5.657	0.005	0.005	5.667
HEALTH PHYSICS PERSONNEL	26	0	21	47	0.223	0.000	0.057	0.280
SUPERVISORY PERSONNEL	34	2	0	36	0.115	0.000	0.000	0.115
ENGINEERING PERSONNEL	11	0	0	11	0.121	0.000	0.000	0.121
TOTAL	220	13	47	280	7.108	0.005	0.106	7.219
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	260	4	755	1019	58.345	0.788	89.778	148.911
OPERATIONS PERSONNEL	236	89	116	441	11.937	0.806	1.250	13.993
HEALTH PHYSICS PERSONNEL	86	6	203	295	15.786	0.079	17.761	33.626
SUPERVISORY PERSONNEL	75	14	9	98	3.745	0.021	0.032	3.798
ENGINEERING PERSONNEL	94	13	50	157	6.134	0.109	1.622	7.865
TOTAL	751	126	1133	2010	95.947	1.803	110.443	208.193
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	18	0	62	80	0.701	0.000	10.447	11.148
OPERATIONS PERSONNEL	18	0	0	18	3.134	0.000	0.000	3.134
HEALTH PHYSICS PERSONNEL	11	0	28	39	0.134	0.000	0.372	0.506
SUPERVISORY PERSONNEL	1	1	1	3	0.001	0.026	0.034	0.061
ENGINEERING PERSONNEL	12	2	33	47	2.397	0.000	7.144	9.541
TOTAL	60	3	124	187	6.367	0.026	17.997	24.390
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	77	0	228	305	1.513	0.000	32.368	33.881
OPERATIONS PERSONNEL	10	2	4	16	0.065	0.132	0.065	0.262
HEALTH PHYSICS PERSONNEL	33	1	59	93	1.966	0.018	5.581	7.565
SUPERVISORY PERSONNEL	11	0	2	13	0.291	0.000	0.029	0.320
ENGINEERING PERSONNEL	12	0	15	27	0.284	0.000	1.064	1.348
TOTAL	143	3	308	454	4.119	0.150	39.107	43.376
WASTE PROCESSING								
MAINTENANCE PERSONNEL	75	0	12	87	0.406	0.000	0.070	0.476
OPERATIONS PERSONNEL	20	0	0	20	0.559	0.000	0.000	0.559
HEALTH PHYSICS PERSONNEL	34	0	11	45	0.781	0.000	0.040	0.821
SUPERVISORY PERSONNEL	6	0	0	6	0.069	0.000	0.000	0.069
ENGINEERING PERSONNEL	1	0	0	1	0.009	0.000	0.000	0.009
TOTAL	136	0	23	159	1.824	0.000	0.110	1.934
REFUELING								
MAINTENANCE PERSONNEL	115	2	85	202	26.746	0.348	7.080	34.174
OPERATIONS PERSONNEL	55	9	4	68	4.001	1.154	0.113	5.268
HEALTH PHYSICS PERSONNEL	16	1	36	53	1.272	0.002	2.110	3.384
SUPERVISORY PERSONNEL	14	0	0	14	1.312	0.000	0.000	1.312
ENGINEERING PERSONNEL	5	0	7	12	0.317	0.000	0.094	0.411
TOTAL	205	12	132	349	33.648	1.504	9.397	44.549
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	601	6	1152	1759	88.703	1.136	139.787	229.626
OPERATIONS PERSONNEL	432	111	140	683	25.353	2.097	1.433	28.883
HEALTH PHYSICS PERSONNEL	206	8	358	572	20.162	0.099	25.921	46.182
SUPERVISORY PERSONNEL	141	17	12	170	5.533	0.047	0.095	5.675
ENGINEERING PERSONNEL	135	15	105	255	9.262	0.109	9.924	19.295
GRAND TOTALS	1515	157	1767	3439	149.013	3.488	177.160	329.661

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***OCONEE 1,2,3** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	166	227	159	552	3.186	0.673	0.363	4.222
OPERATIONS PERSONNEL	66	0	28	94	11.178	0.000	0.371	11.549
HEALTH PHYSICS PERSONNEL	21	0	67	88	0.871	0.000	1.648	2.519
SUPERVISORY PERSONNEL	8	1	1	10	1.325	0.000	0.000	1.325
ENGINEERING PERSONNEL	3	0	2	5	0.032	0.000	0.000	0.032
TOTAL	264	228	257	749	16.592	0.673	2.382	19.647
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	164	223	153	540	46.907	49.148	25.959	122.014
OPERATIONS PERSONNEL	49	0	41	90	1.895	0.000	12.393	14.288
HEALTH PHYSICS PERSONNEL	21	0	67	88	2.173	0.000	10.832	13.005
SUPERVISORY PERSONNEL	6	1	1	8	0.593	0.004	0.137	0.734
ENGINEERING PERSONNEL	3	0	1	4	0.485	0.000	0.135	0.620
TOTAL	243	224	263	730	52.053	49.152	49.456	150.661
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	35	76	37	148	1.997	10.880	4.566	17.443
OPERATIONS PERSONNEL	1	0	14	15	0.083	0.000	0.232	0.315
HEALTH PHYSICS PERSONNEL	6	0	25	31	0.077	0.000	0.643	0.720
SUPERVISORY PERSONNEL	0	1	1	2	0.000	0.236	0.001	0.237
ENGINEERING PERSONNEL	2	0	1	3	0.117	0.000	0.207	0.324
TOTAL	44	77	78	199	2.274	11.116	5.649	19.039
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	76	134	79	289	3.249	14.583	4.529	22.361
OPERATIONS PERSONNEL	5	0	6	11	0.010	0.000	0.005	0.015
HEALTH PHYSICS PERSONNEL	10	0	29	39	0.116	0.000	0.669	0.785
SUPERVISORY PERSONNEL	1	0	1	2	0.002	0.000	0.009	0.011
ENGINEERING PERSONNEL	1	0	0	1	0.003	0.000	0.000	0.003
TOTAL	93	134	115	342	3.380	14.583	5.212	23.175
WASTE PROCESSING								
MAINTENANCE PERSONNEL	36	5	6	47	0.496	0.021	0.126	0.643
OPERATIONS PERSONNEL	23	0	38	61	0.992	0.000	0.925	1.917
HEALTH PHYSICS PERSONNEL	14	0	7	21	0.611	0.000	0.068	0.679
SUPERVISORY PERSONNEL	4	0	0	4	0.016	0.000	0.000	0.016
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	77	5	51	133	2.115	0.021	1.119	3.255
REFUELING								
MAINTENANCE PERSONNEL	30	52	17	99	1.382	5.655	1.042	8.079
OPERATIONS PERSONNEL	11	0	21	32	0.263	0.000	0.318	0.581
HEALTH PHYSICS PERSONNEL	6	0	16	22	0.013	0.000	0.524	0.537
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	0	1	3	0.054	0.000	0.000	0.054
TOTAL	49	52	56	157	1.712	5.655	1.884	9.251
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	507 (166)	717 (227)	451 (162)	1675 (555)	57.217	80.960	36.585	174.762
OPERATIONS PERSONNEL	155 (66)	0 (0)	148 (41)	303 (107)	14.421	0.000	14.244	28.665
HEALTH PHYSICS PERSONNEL	78 (21)	0 (0)	211 (67)	289 (88)	3.861	0.000	14.384	18.245
SUPERVISORY PERSONNEL	19 (8)	3 (1)	5 (1)	27 (10)	1.936	0.240	0.147	2.323
ENGINEERING PERSONNEL	11 (3)	0 (0)	5 (2)	16 (5)	0.691	0.000	0.342	1.033
GRAND TOTALS	770 (264)	720 (228)	820 (273)	2310 (765)	78.126	81.200	65.702	225.028

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

APPENDIX D (Continued)

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

1996

PLANT: ***OYSTER CREEK** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	134	2	22	158	4.009	0.002	1.359	5.370
OPERATIONS PERSONNEL	98	0	3	101	11.584	0.000	0.003	11.587
HEALTH PHYSICS PERSONNEL	42	0	1	43	2.272	0.000	0.000	2.272
SUPERVISORY PERSONNEL	14	0	0	14	0.240	0.000	0.000	0.240
ENGINEERING PERSONNEL	15	0	1	16	0.089	0.000	0.096	0.185
TOTAL	303	2	27	332	18.194	0.002	1.458	19.654
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	425	38	635	1098	30.343	1.400	15.970	47.713
OPERATIONS PERSONNEL	197	7	28	232	4.904	0.004	0.223	5.131
HEALTH PHYSICS PERSONNEL	83	0	57	140	6.858	0.000	2.733	9.591
SUPERVISORY PERSONNEL	78	4	18	100	1.299	0.055	0.566	1.920
ENGINEERING PERSONNEL	118	4	16	138	3.627	0.005	0.240	3.872
TOTAL	901	53	754	1708	47.031	1.464	19.732	68.227
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	43	1	196	240	0.969	0.024	4.272	5.265
OPERATIONS PERSONNEL	15	0	5	20	0.930	0.000	0.057	0.987
HEALTH PHYSICS PERSONNEL	8	0	5	13	0.072	0.000	0.083	0.155
SUPERVISORY PERSONNEL	1	0	1	2	0.003	0.000	0.002	0.005
ENGINEERING PERSONNEL	8	0	1	9	0.058	0.000	0.115	0.173
TOTAL	75	1	208	284	2.032	0.024	4.529	6.585
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	239	33	910	1182	61.908	3.655	300.753	366.316
OPERATIONS PERSONNEL	81	0	15	96	8.547	0.000	3.810	12.357
HEALTH PHYSICS PERSONNEL	60	0	43	103	9.571	0.000	6.694	16.265
SUPERVISORY PERSONNEL	21	2	15	38	2.534	0.064	1.660	4.258
ENGINEERING PERSONNEL	42	0	13	55	3.077	0.000	2.593	5.670
TOTAL	443	35	996	1474	85.637	3.719	315.510	404.866
WASTE PROCESSING								
MAINTENANCE PERSONNEL	65	4	21	90	0.452	0.013	0.477	0.942
OPERATIONS PERSONNEL	39	0	4	43	1.246	0.000	0.634	1.880
HEALTH PHYSICS PERSONNEL	22	0	6	28	0.236	0.000	0.027	0.263
SUPERVISORY PERSONNEL	5	0	0	5	0.064	0.000	0.000	0.064
ENGINEERING PERSONNEL	2	0	1	3	0.405	0.000	0.001	0.406
TOTAL	133	4	32	169	2.403	0.013	1.139	3.555
REFUELING								
MAINTENANCE PERSONNEL	26	1	74	101	0.215	0.003	3.065	3.283
OPERATIONS PERSONNEL	35	0	3	38	1.424	0.000	0.037	1.461
HEALTH PHYSICS PERSONNEL	9	0	6	15	0.292	0.000	0.093	0.385
SUPERVISORY PERSONNEL	1	0	3	4	0.219	0.000	0.317	0.536
ENGINEERING PERSONNEL	6	0	3	9	0.041	0.000	0.086	0.127
TOTAL	77	1	89	167	2.191	0.003	3.598	5.792
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	932 (458)	79 (39)	1858 (1025)	2869 (1522)	97.896	5.097	325.896	428.889
OPERATIONS PERSONNEL	465 (241)	7 (7)	58 (32)	530 (280)	28.635	0.004	4.764	33.403
HEALTH PHYSICS PERSONNEL	224 (87)	0 (0)	118 (60)	342 (147)	19.301	0.000	9.630	28.931
SUPERVISORY PERSONNEL	120 (81)	6 (4)	37 (23)	163 (108)	4.359	0.119	2.545	7.023
ENGINEERING PERSONNEL	191 (126)	4 (4)	35 (20)	230 (150)	7.297	0.005	3.131	10.433
GRAND TOTALS	1932 (993)	96 (54)	2106 (1160)	4134 (2207)	157.488	5.225	345.966	508.679

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

APPENDIX D (Continued)

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

1996

PLANT: ***PALISADES** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	2	0	1	3	2.001	0.210	0.715	2.926
OPERATIONS PERSONNEL	44	0	1	45	12.364	0.003	0.746	13.113
HEALTH PHYSICS PERSONNEL	15	0	36	51	3.908	0.008	11.056	14.972
SUPERVISORY PERSONNEL	7	0	0	7	1.729	0.002	0.018	1.749
ENGINEERING PERSONNEL	8	0	1	9	2.364	0.110	0.842	3.316
TOTAL	76	0	39	115	22.366	0.333	13.377	36.076
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	63	8	145	216	15.253	2.045	46.128	63.426
OPERATIONS PERSONNEL	5	0	3	8	1.338	0.000	0.446	1.784
HEALTH PHYSICS PERSONNEL	34	0	15	49	13.937	0.000	3.570	17.507
SUPERVISORY PERSONNEL	4	0	2	6	1.150	0.000	0.318	1.468
ENGINEERING PERSONNEL	3	0	7	10	0.921	0.113	1.644	2.678
TOTAL	109	8	172	289	32.599	2.158	52.106	86.863
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	1	49	50	0.000	0.589	41.248	41.837
OPERATIONS PERSONNEL	0	0	0	0	0.002	0.000	0.000	0.002
HEALTH PHYSICS PERSONNEL	1	0	14	15	0.922	0.000	3.901	4.823
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.023	0.023
ENGINEERING PERSONNEL	2	7	1	10	0.687	4.216	0.695	5.598
TOTAL	3	8	64	75	1.611	4.805	45.867	52.283
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	6	54	62	0.881	2.025	21.836	24.742
OPERATIONS PERSONNEL	0	0	4	4	0.056	0.000	0.781	0.837
HEALTH PHYSICS PERSONNEL	12	0	5	17	4.610	0.000	1.630	6.240
SUPERVISORY PERSONNEL	0	0	0	0	0.107	0.000	0.013	0.120
ENGINEERING PERSONNEL	2	0	17	19	0.463	0.022	8.625	9.110
TOTAL	16	6	80	102	6.117	2.047	32.885	41.049
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.110	0.005	0.009	0.124
OPERATIONS PERSONNEL	0	0	0	0	0.146	0.000	0.006	0.152
HEALTH PHYSICS PERSONNEL	7	0	0	7	3.001	0.000	0.075	3.076
SUPERVISORY PERSONNEL	1	0	0	1	0.458	0.000	0.000	0.458
ENGINEERING PERSONNEL	0	0	0	0	0.047	0.002	0.049	0.098
TOTAL	8	0	0	8	3.762	0.007	0.139	3.908
REFUELING								
MAINTENANCE PERSONNEL	2	0	86	88	0.300	0.006	72.186	72.492
OPERATIONS PERSONNEL	0	0	0	0	0.270	0.000	0.025	0.295
HEALTH PHYSICS PERSONNEL	1	0	9	10	0.561	0.000	5.163	5.724
SUPERVISORY PERSONNEL	1	0	2	3	0.510	0.000	2.438	2.948
ENGINEERING PERSONNEL	8	0	8	16	1.989	0.026	5.346	7.361
TOTAL	12	0	105	117	3.630	0.032	85.158	88.820
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	69	15	335	419	18.545	4.880	182.122	205.547
OPERATIONS PERSONNEL	49	0	8	57	14.176	0.003	2.004	16.183
HEALTH PHYSICS PERSONNEL	70	0	79	149	26.939	0.008	25.395	52.342
SUPERVISORY PERSONNEL	13	0	4	17	3.954	0.002	2.810	6.766
ENGINEERING PERSONNEL	23	7	34	64	6.471	4.489	17.201	28.161
GRAND TOTALS	224	22	460	706	70.085	9.382	229.532	308.999

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***PALO VERDE 1,2,3** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	2	0	4	6	1.156	0.000	1.298	2.454
OPERATIONS PERSONNEL	14	0	0	14	7.577	0.000	0.181	7.758
HEALTH PHYSICS PERSONNEL	56	0	14	70	14.532	0.000	5.066	19.598
SUPERVISORY PERSONNEL	6	0	0	6	1.911	0.000	0.039	1.950
ENGINEERING PERSONNEL	2	0	0	2	1.782	0.000	0.096	1.878
TOTAL	80	0	18	98	26.958	0.000	6.680	33.638
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	142	0	271	413	47.350	0.000	100.006	147.356
OPERATIONS PERSONNEL	32	0	1	33	15.128	0.000	0.231	15.359
HEALTH PHYSICS PERSONNEL	50	0	45	95	18.979	0.000	12.680	31.659
SUPERVISORY PERSONNEL	20	0	3	23	8.301	0.000	0.885	9.186
ENGINEERING PERSONNEL	14	0	16	30	7.067	0.000	4.281	11.348
TOTAL	258	0	336	594	96.825	0.000	118.083	214.908
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	0	33	35	1.138	0.000	11.611	12.749
OPERATIONS PERSONNEL	2	0	2	4	0.854	0.000	0.925	1.779
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.261	0.000	0.258	0.519
SUPERVISORY PERSONNEL	2	0	0	2	0.393	0.000	0.000	0.393
ENGINEERING PERSONNEL	3	0	7	10	0.753	0.000	2.530	3.283
TOTAL	9	0	42	51	3.399	0.000	15.324	18.723
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	0	28	33	2.768	0.000	14.274	17.042
OPERATIONS PERSONNEL	1	0	0	1	0.303	0.000	0.009	0.312
HEALTH PHYSICS PERSONNEL	4	0	5	9	1.171	0.000	1.913	3.084
SUPERVISORY PERSONNEL	4	0	0	4	3.358	0.000	0.099	3.457
ENGINEERING PERSONNEL	2	0	8	10	1.585	0.000	4.562	6.147
TOTAL	16	0	41	57	9.185	0.000	20.857	30.042
WASTE PROCESSING								
MAINTENANCE PERSONNEL	4	0	1	5	1.775	0.000	0.547	2.322
OPERATIONS PERSONNEL	1	0	1	2	0.334	0.000	0.112	0.446
HEALTH PHYSICS PERSONNEL	13	0	3	16	5.505	0.000	2.982	8.487
SUPERVISORY PERSONNEL	1	0	0	1	0.308	0.000	0.084	0.392
ENGINEERING PERSONNEL	0	0	0	0	0.067	0.000	0.018	0.085
TOTAL	19	0	5	24	7.989	0.000	3.743	11.732
REFUELING								
MAINTENANCE PERSONNEL	20	0	10	30	6.225	0.000	2.813	9.038
OPERATIONS PERSONNEL	4	0	0	4	1.307	0.000	0.022	1.329
HEALTH PHYSICS PERSONNEL	2	0	1	3	1.076	0.000	1.059	2.135
SUPERVISORY PERSONNEL	3	0	0	3	1.215	0.000	0.000	1.215
ENGINEERING PERSONNEL	3	0	1	4	0.954	0.000	0.191	1.145
TOTAL	32	0	12	44	10.777	0.000	4.085	14.862
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	175	0	347	522	60.412	0.000	130.549	190.961
OPERATIONS PERSONNEL	54	0	4	58	25.503	0.000	1.480	26.983
HEALTH PHYSICS PERSONNEL	125	0	68	193	41.524	0.000	23.958	65.482
SUPERVISORY PERSONNEL	36	0	3	39	15.486	0.000	1.107	16.593
ENGINEERING PERSONNEL	24	0	32	56	12.208	0.000	11.678	23.886
GRAND TOTALS	414	0	454	868	155.133	0.000	168.772	323.905

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***PEACH BOTTOM 2,3** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	414	375	740	1529	45.567	16.786	55.350	117.703
OPERATIONS PERSONNEL	118	52	92	262	4.668	0.914	4.220	9.802
HEALTH PHYSICS PERSONNEL	30	4	14	48	3.414	0.065	0.611	4.090
SUPERVISORY PERSONNEL	13	8	47	68	0.090	0.047	0.476	0.613
ENGINEERING PERSONNEL	56	66	18	140	1.115	1.156	0.203	2.474
TOTAL	631	505	911	2047	54.854	18.968	60.860	134.682
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	50	44	164	258	2.227	1.994	5.725	9.946
OPERATIONS PERSONNEL	4	1	4	9	0.335	0.001	0.097	0.433
HEALTH PHYSICS PERSONNEL	4	0	5	9	0.070	0.000	0.322	0.392
SUPERVISORY PERSONNEL	0	0	3	3	0.000	0.000	0.006	0.006
ENGINEERING PERSONNEL	1	0	1	2	0.018	0.000	0.003	0.021
TOTAL	59	45	177	281	2.650	1.995	6.153	10.798
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	7	23	258	288	0.122	0.383	11.760	12.265
OPERATIONS PERSONNEL	1	0	9	10	0.001	0.000	0.923	0.924
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.000	0.000	0.032	0.032
SUPERVISORY PERSONNEL	0	0	3	3	0.000	0.000	0.055	0.055
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	8	23	271	302	0.123	0.383	12.770	13.276
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	103	76	214	393	12.606	6.453	14.127	33.186
OPERATIONS PERSONNEL	3	4	11	18	0.202	0.060	1.346	1.608
HEALTH PHYSICS PERSONNEL	3	0	2	5	0.089	0.000	0.145	0.234
SUPERVISORY PERSONNEL	0	0	3	3	0.000	0.000	0.105	0.105
ENGINEERING PERSONNEL	4	5	6	15	0.114	0.055	0.096	0.265
TOTAL	113	85	236	434	13.011	6.568	15.819	35.398
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	9	9	0.000	0.000	0.885	0.885
OPERATIONS PERSONNEL	0	0	2	2	0.000	0.000	0.013	0.013
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	11	11	0.000	0.000	0.898	0.898
REFUELING								
MAINTENANCE PERSONNEL	225	293	647	1165	13.173	26.563	36.550	76.286
OPERATIONS PERSONNEL	40	25	29	94	2.849	1.074	1.810	5.733
HEALTH PHYSICS PERSONNEL	15	3	8	26	0.950	0.086	0.605	1.641
SUPERVISORY PERSONNEL	5	2	7	14	0.357	0.097	0.432	0.886
ENGINEERING PERSONNEL	32	31	10	73	1.456	0.684	0.326	2.466
TOTAL	317	354	701	1372	18.785	28.504	39.723	87.012
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	799	(526) 811 (515)	2032	(1328) 3642 (2369)	73.695	52.179	124.397	250.271
OPERATIONS PERSONNEL	166	(206) 82 (99)	147	(137) 395 (442)	8.055	2.049	8.409	18.513
HEALTH PHYSICS PERSONNEL	52	(51) 7 (8)	30	(17) 89 (76)	4.523	0.151	1.715	6.389
SUPERVISORY PERSONNEL	18	(20) 10 (16)	63	(99) 91 (135)	0.447	0.144	1.074	1.665
ENGINEERING PERSONNEL	93	(111) 102 (164)	35	(73) 230 (348)	2.703	1.895	0.628	5.226
GRAND TOTALS	1128	(914) 1012 (802)	2307	(1654) 4447 (3370)	89.423	56.418	136.223	282.064

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

APPENDIX D (Continued)

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

1996

PLANT: ***PERRY** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	180	78	632	890	1.183	0.484	9.418	11.085
OPERATIONS PERSONNEL	62	56	289	407	0.502	0.266	18.092	18.860
HEALTH PHYSICS PERSONNEL	54	16	151	221	7.682	1.964	14.214	23.860
SUPERVISORY PERSONNEL	3	5	56	64	0.002	0.043	0.266	0.311
ENGINEERING PERSONNEL	52	139	105	296	0.752	0.738	0.365	1.855
TOTAL	351	294	1233	1878	10.121	3.495	42.355	55.971
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	227	119	1122	1468	25.564	6.498	116.989	149.051
OPERATIONS PERSONNEL	281	85	156	522	5.924	3.197	17.291	26.412
HEALTH PHYSICS PERSONNEL	57	28	138	223	1.495	1.847	5.705	9.047
SUPERVISORY PERSONNEL	1	6	31	38	0.000	0.024	0.146	0.170
ENGINEERING PERSONNEL	58	161	138	357	1.082	4.778	5.667	11.527
TOTAL	624	399	1585	2608	34.065	16.344	145.798	196.207
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	39	9	437	485	0.154	0.293	59.595	60.042
OPERATIONS PERSONNEL	27	8	10	45	0.651	0.399	0.898	1.948
HEALTH PHYSICS PERSONNEL	23	1	26	50	0.664	0.000	0.830	1.494
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	5	25	33	63	0.035	0.724	2.637	3.396
TOTAL	94	43	506	643	1.504	1.416	63.960	66.880
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	60	19	399	478	1.655	0.478	7.841	9.974
OPERATIONS PERSONNEL	78	7	29	114	1.493	0.308	1.361	3.162
HEALTH PHYSICS PERSONNEL	19	6	46	71	0.336	0.022	1.160	1.518
SUPERVISORY PERSONNEL	0	1	1	2	0.000	0.000	0.001	0.001
ENGINEERING PERSONNEL	9	18	25	52	0.075	0.237	1.597	1.909
TOTAL	166	51	500	717	3.559	1.045	11.960	16.564
WASTE PROCESSING								
MAINTENANCE PERSONNEL	100	44	231	375	0.031	0.012	0.773	0.816
OPERATIONS PERSONNEL	96	26	24	146	1.780	0.312	0.267	2.359
HEALTH PHYSICS PERSONNEL	40	20	43	103	0.309	0.922	0.749	1.980
SUPERVISORY PERSONNEL	0	3	2	5	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	11	11	4	26	0.039	0.004	0.008	0.051
TOTAL	247	104	304	655	2.159	1.250	1.797	5.206
REFUELING								
MAINTENANCE PERSONNEL	21	5	249	275	0.162	0.007	27.768	27.937
OPERATIONS PERSONNEL	34	8	25	67	1.164	0.501	1.274	2.939
HEALTH PHYSICS PERSONNEL	20	4	35	59	0.116	0.018	0.430	0.564
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.002	0.002
ENGINEERING PERSONNEL	5	21	15	41	0.028	0.145	1.289	1.462
TOTAL	80	38	325	443	1.470	0.671	30.763	32.904
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	627	274	3070	3971	28.749	7.772	222.384	258.905
OPERATIONS PERSONNEL	578	190	533	1301	11.514	4.983	39.183	55.680
HEALTH PHYSICS PERSONNEL	213	75	439	727	10.602	4.773	23.088	38.463
SUPERVISORY PERSONNEL	4	15	91	110	0.002	0.067	0.415	0.484
ENGINEERING PERSONNEL	140	375	320	835	2.011	6.626	11.563	20.200
GRAND TOTALS	1562	929	4453	6944	52.878	24.221	296.633	373.732

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***PILGRIM** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	28	11	18	57	1.083	0.473	0.360	1.916
OPERATIONS PERSONNEL	69	1	81	151	14.334	0.203	2.766	17.303
HEALTH PHYSICS PERSONNEL	24	0	0	24	1.399	0.000	0.000	1.399
SUPERVISORY PERSONNEL	17	1	3	21	0.945	0.017	0.036	0.998
ENGINEERING PERSONNEL	12	2	1	15	0.796	0.000	0.001	0.797
TOTAL	150	15	103	268	18.557	0.693	3.163	22.413
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	144	59	289	492	43.814	6.131	11.150	61.095
OPERATIONS PERSONNEL	74	7	30	111	7.732	0.052	0.515	8.299
HEALTH PHYSICS PERSONNEL	44	3	26	73	13.510	0.008	1.734	15.252
SUPERVISORY PERSONNEL	104	11	54	169	7.151	0.561	0.453	8.165
ENGINEERING PERSONNEL	110	22	61	193	4.333	0.502	1.910	6.745
TOTAL	476	102	460	1038	76.540	7.254	15.762	99.556
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	0	44	46	0.112	0.000	5.726	5.838
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.000	0.000	0.110	0.110
SUPERVISORY PERSONNEL	4	0	3	7	0.063	0.000	0.614	0.677
ENGINEERING PERSONNEL	9	0	4	13	0.654	0.000	1.863	2.517
TOTAL	15	0	52	67	0.829	0.000	8.313	9.142
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	12	4	47	63	0.077	0.053	0.691	0.821
OPERATIONS PERSONNEL	20	0	1	21	0.152	0.000	0.003	0.155
HEALTH PHYSICS PERSONNEL	11	0	0	11	0.241	0.000	0.000	0.241
SUPERVISORY PERSONNEL	7	0	6	13	0.084	0.000	0.048	0.132
ENGINEERING PERSONNEL	3	1	7	11	0.105	0.002	0.030	0.137
TOTAL	53	5	61	119	0.659	0.055	0.772	1.486
WASTE PROCESSING								
MAINTENANCE PERSONNEL	36	7	5	48	0.376	0.107	0.042	0.525
OPERATIONS PERSONNEL	12	1	1	14	0.906	0.114	0.009	1.029
HEALTH PHYSICS PERSONNEL	28	0	1	29	1.055	0.000	0.013	1.068
SUPERVISORY PERSONNEL	6	0	0	6	0.245	0.000	0.000	0.245
ENGINEERING PERSONNEL	1	0	1	2	0.462	0.000	0.000	0.462
TOTAL	83	8	8	99	3.044	0.221	0.064	3.329
REFUELING								
MAINTENANCE PERSONNEL	79	37	3	119	1.088	0.532	0.003	1.623
OPERATIONS PERSONNEL	26	0	1	27	0.123	0.000	0.003	0.126
HEALTH PHYSICS PERSONNEL	20	0	1	21	0.206	0.000	0.000	0.206
SUPERVISORY PERSONNEL	8	0	0	8	0.106	0.000	0.000	0.106
ENGINEERING PERSONNEL	10	2	6	18	0.202	0.001	0.025	0.228
TOTAL	143	39	11	193	1.725	0.533	0.031	2.289
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	301	118	406	825	46.550	7.296	17.972	71.818
OPERATIONS PERSONNEL	201	9	114	324	23.247	0.369	3.296	26.912
HEALTH PHYSICS PERSONNEL	127	3	29	159	16.411	0.008	1.857	18.276
SUPERVISORY PERSONNEL	146	12	66	224	8.594	0.578	1.151	10.323
ENGINEERING PERSONNEL	145	27	80	252	6.552	0.505	3.829	10.886
GRAND TOTALS	920	169	695	1784	101.354	8.756	28.105	138.215

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***POINT BEACH 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	38	0	0	38	10.400	0.000	0.200	10.600
HEALTH PHYSICS PERSONNEL	22	0	0	22	6.750	0.000	0.000	6.750
SUPERVISORY PERSONNEL	6	0	0	6	1.260	0.000	0.000	1.260
ENGINEERING PERSONNEL	7	0	0	7	1.660	0.870	0.660	3.190
TOTAL	73	0	0	73	20.070	0.870	0.860	21.800
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	54	36	0	90	18.070	7.000	0.000	25.070
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	2	0	0	2	0.510	0.000	0.000	0.510
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	56	36	0	92	18.580	7.000	0.000	25.580
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	2	2	0.000	0.000	1.160	1.160
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	7	29	37	0.350	2.010	9.080	11.440
TOTAL	1	7	31	39	0.350	2.010	10.240	12.600
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	42	0	24	66	0.850	0.000	6.850	7.700
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	22	22	0.000	0.000	5.390	5.390
SUPERVISORY PERSONNEL	2	0	2	4	0.120	0.000	1.250	1.370
ENGINEERING PERSONNEL	0	0	14	14	0.000	0.000	4.390	4.390
TOTAL	44	0	62	106	0.970	0.000	17.880	18.850
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.400	0.400
OPERATIONS PERSONNEL	38	0	0	38	0.250	0.000	0.000	0.250
HEALTH PHYSICS PERSONNEL	22	0	2	24	0.390	0.000	1.060	1.450
SUPERVISORY PERSONNEL	1	0	0	1	0.170	0.000	0.000	0.170
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	61	0	2	63	0.810	0.000	1.460	2.270
REFUELING								
MAINTENANCE PERSONNEL	54	36	0	90	8.670	6.930	0.000	15.600
OPERATIONS PERSONNEL	38	0	0	38	1.200	0.000	0.000	1.200
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	7	0	0	7	1.040	0.000	0.000	1.040
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	99	36	0	135	10.910	6.930	0.000	17.840
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	150 (52)	72 (36)	26 (24)	248 (112)	27.590	13.930	8.410	49.930
OPERATIONS PERSONNEL	114 (38)	0 (0)	0 (0)	114 (38)	11.850	0.000	0.200	12.050
HEALTH PHYSICS PERSONNEL	44 (22)	0 (0)	24 (24)	68 (46)	7.140	0.000	6.450	13.590
SUPERVISORY PERSONNEL	18 (18)	0 (0)	2 (2)	20 (20)	3.100	0.000	1.250	4.350
ENGINEERING PERSONNEL	8 (8)	7 (7)	43 (43)	58 (58)	2.010	2.880	14.130	19.020
GRAND TOTALS	334 (138)	79 (43)	95 (93)	508 (274)	51.690	16.810	30.440	98.940

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

APPENDIX D (Continued)

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

1996

PLANT: ***PRAIRIE ISLAND 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.379	0.056	0.100	0.535
OPERATIONS PERSONNEL	0	0	0	0	1.531	0.000	0.000	1.531
HEALTH PHYSICS PERSONNEL	5	0	13	18	1.685	0.000	3.642	5.327
SUPERVISORY PERSONNEL	2	0	0	2	1.058	0.051	0.079	1.188
ENGINEERING PERSONNEL	2	0	0	2	0.743	0.000	0.000	0.743
TOTAL	9	0	13	22	5.396	0.107	3.821	9.324
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	15	22	14	51	3.410	7.579	5.146	16.135
OPERATIONS PERSONNEL	0	0	0	0	0.066	0.000	0.000	0.066
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.180	0.000	0.069	0.249
SUPERVISORY PERSONNEL	1	0	2	3	0.903	0.078	0.453	1.434
ENGINEERING PERSONNEL	3	0	0	3	0.820	0.000	0.000	0.820
TOTAL	19	22	16	57	5.379	7.657	5.668	18.704
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	5	33	11	49	2.830	11.652	3.982	18.464
OPERATIONS PERSONNEL	0	0	0	0	0.031	0.000	0.000	0.031
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.118	0.000	0.570	0.688
SUPERVISORY PERSONNEL	3	1	22	26	1.159	0.114	6.513	7.786
ENGINEERING PERSONNEL	1	0	1	2	0.165	0.000	0.181	0.346
TOTAL	9	34	35	78	4.303	11.766	11.246	27.315
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	4	5	4	13	1.701	3.512	1.227	6.440
OPERATIONS PERSONNEL	0	0	0	0	0.054	0.000	0.000	0.054
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.187	0.000	0.755	0.942
SUPERVISORY PERSONNEL	2	0	44	46	0.571	0.105	21.655	22.331
ENGINEERING PERSONNEL	2	0	0	2	0.266	0.000	0.000	0.266
TOTAL	8	5	48	61	2.779	3.617	23.637	30.033
WASTE PROCESSING								
MAINTENANCE PERSONNEL	5	0	1	6	2.294	0.214	0.116	2.624
OPERATIONS PERSONNEL	0	0	0	0	0.077	0.000	0.000	0.077
HEALTH PHYSICS PERSONNEL	3	0	0	3	1.259	0.000	0.116	1.375
SUPERVISORY PERSONNEL	0	0	0	0	0.148	0.041	0.000	0.189
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	8	0	1	9	3.778	0.255	0.232	4.265
REFUELING								
MAINTENANCE PERSONNEL	15	45	1	61	3.809	11.776	0.340	15.925
OPERATIONS PERSONNEL	5	0	0	5	3.043	0.000	0.000	3.043
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.035	0.000	0.188	0.223
SUPERVISORY PERSONNEL	4	0	0	4	1.102	0.043	0.000	1.145
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	24	45	2	71	7.989	11.819	0.528	20.336
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	44	105	31	180	14.423	34.789	10.911	60.123
OPERATIONS PERSONNEL	5	0	0	5	4.802	0.000	0.000	4.802
HEALTH PHYSICS PERSONNEL	8	0	15	23	3.464	0.000	5.340	8.804
SUPERVISORY PERSONNEL	12	1	68	81	4.941	0.432	28.700	34.073
ENGINEERING PERSONNEL	8	0	1	9	1.994	0.000	0.181	2.175
GRAND TOTALS	77	106	115	298	29.624	35.221	45.132	109.977

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***QUAD CITIES 1,2** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	2	33	6	41	1.575	0.396	2.759	4.730
OPERATIONS PERSONNEL	96	0	159	255	35.744	0.000	13.068	48.812
HEALTH PHYSICS PERSONNEL	32	0	22	54	14.423	0.000	9.087	23.510
SUPERVISORY PERSONNEL	94	0	11	105	8.237	0.000	1.038	9.275
ENGINEERING PERSONNEL	62	0	4	66	5.087	0.000	0.314	5.401
TOTAL	286	33	202	521	65.066	0.396	26.266	91.728
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	149	70	680	899	99.843	0.819	295.097	395.759
OPERATIONS PERSONNEL	23	0	10	33	8.589	0.000	0.807	9.396
HEALTH PHYSICS PERSONNEL	31	0	31	62	13.779	0.000	13.118	26.897
SUPERVISORY PERSONNEL	128	0	91	219	11.174	0.000	8.383	19.557
ENGINEERING PERSONNEL	71	0	63	134	5.809	0.000	5.235	11.044
TOTAL	402	70	875	1347	139.194	0.819	322.640	462.653
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	86	267	353	0.145	1.018	115.923	117.086
OPERATIONS PERSONNEL	1	0	1	2	0.329	0.000	0.052	0.381
HEALTH PHYSICS PERSONNEL	2	0	6	8	0.807	0.000	2.586	3.393
SUPERVISORY PERSONNEL	4	0	55	59	0.317	0.000	5.050	5.367
ENGINEERING PERSONNEL	48	0	42	90	3.969	0.000	3.502	7.471
TOTAL	55	86	371	512	5.567	1.018	127.113	133.698
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	25	589	619	3.151	0.301	256.016	259.468
OPERATIONS PERSONNEL	4	0	4	8	1.580	0.000	0.346	1.926
HEALTH PHYSICS PERSONNEL	6	0	21	27	2.684	0.000	8.613	11.297
SUPERVISORY PERSONNEL	20	0	100	120	1.768	0.000	9.181	10.949
ENGINEERING PERSONNEL	16	0	80	96	1.293	0.000	6.684	7.977
TOTAL	51	25	794	870	10.476	0.301	280.840	291.617
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	1	3	5	0.074	0.009	1.393	1.476
OPERATIONS PERSONNEL	15	0	21	36	5.446	0.000	1.763	7.209
HEALTH PHYSICS PERSONNEL	6	0	0	6	2.944	0.000	0.004	2.948
SUPERVISORY PERSONNEL	26	0	1	27	2.267	0.000	0.042	2.309
ENGINEERING PERSONNEL	1	0	0	1	0.024	0.000	0.000	0.024
TOTAL	49	1	25	75	10.755	0.009	3.202	13.966
REFUELING								
MAINTENANCE PERSONNEL	27	2	4	33	18.374	0.028	1.672	20.074
OPERATIONS PERSONNEL	16	0	0	16	5.946	0.000	0.000	5.946
HEALTH PHYSICS PERSONNEL	6	0	0	6	2.675	0.000	0.000	2.675
SUPERVISORY PERSONNEL	31	0	0	31	2.680	0.000	0.011	2.691
ENGINEERING PERSONNEL	2	0	2	4	0.197	0.000	0.163	0.360
TOTAL	82	2	6	90	29.872	0.028	1.846	31.746
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	184	217	1549	1950	123.162	2.571	672.860	798.593
OPERATIONS PERSONNEL	155	0	195	350	57.634	0.000	16.036	73.670
HEALTH PHYSICS PERSONNEL	83	0	80	163	37.312	0.000	33.408	70.720
SUPERVISORY PERSONNEL	303	0	258	561	26.443	0.000	23.705	50.148
ENGINEERING PERSONNEL	200	0	191	391	16.379	0.000	15.898	32.277
GRAND TOTALS	925	217	2273	3415	260.930	2.571	761.907	1025.408

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***RANCHO SECO** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	8	1	1	10	0.003	0.000	0.000	0.003
OPERATIONS PERSONNEL	51	0	8	59	0.136	0.000	0.002	0.138
HEALTH PHYSICS PERSONNEL	19	1	5	25	0.294	0.000	0.166	0.460
SUPERVISORY PERSONNEL	15	2	2	19	0.007	0.000	0.000	0.007
ENGINEERING PERSONNEL	14	3	18	35	0.007	0.000	0.001	0.008
TOTAL	107	7	34	148	0.447	0.000	0.169	0.616
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	25	0	5	30	0.180	0.000	0.003	0.183
OPERATIONS PERSONNEL	10	0	0	10	0.034	0.000	0.000	0.034
HEALTH PHYSICS PERSONNEL	6	0	2	8	0.005	0.000	0.025	0.030
SUPERVISORY PERSONNEL	3	0	0	3	0.039	0.000	0.000	0.039
ENGINEERING PERSONNEL	8	0	1	9	0.056	0.000	0.000	0.056
TOTAL	52	0	8	60	0.314	0.000	0.028	0.342
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
WASTE PROCESSING								
MAINTENANCE PERSONNEL	5	0	0	5	0.007	0.000	0.000	0.007
OPERATIONS PERSONNEL	3	0	0	3	0.014	0.000	0.000	0.014
HEALTH PHYSICS PERSONNEL	4	0	2	6	0.098	0.000	0.012	0.110
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	1	2	0.000	0.000	0.000	0.000
TOTAL	13	0	3	16	0.119	0.000	0.012	0.131
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	5	0	0	5	0.030	0.000	0.000	0.030
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.005	0.005
TOTAL	5	0	2	7	0.030	0.000	0.005	0.035
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	38	1	6	45	0.190	0.000	0.003	0.193
OPERATIONS PERSONNEL	69	0	8	77	0.214	0.000	0.002	0.216
HEALTH PHYSICS PERSONNEL	29	1	10	40	0.397	0.000	0.203	0.600
SUPERVISORY PERSONNEL	18	2	2	22	0.046	0.000	0.000	0.046
ENGINEERING PERSONNEL	23	3	21	47	0.063	0.000	0.006	0.069
GRAND TOTALS	177	7	47	231	0.910	0.000	0.214	1.124

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***RIVER BEND 1** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	2	1	6	9	1.276	0.088	0.884	2.248
OPERATIONS PERSONNEL	48	2	0	50	13.425	0.568	0.053	14.046
HEALTH PHYSICS PERSONNEL	21	22	20	63	7.049	5.209	7.407	19.665
SUPERVISORY PERSONNEL	0	2	2	4	0.008	0.384	0.219	0.611
ENGINEERING PERSONNEL	4	4	8	16	0.546	0.515	1.683	2.744
TOTAL	75	31	36	142	22.304	6.764	10.246	39.314
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	19	18	93	130	5.080	4.322	23.232	32.634
OPERATIONS PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
HEALTH PHYSICS PERSONNEL	0	6	4	10	0.446	0.437	0.725	1.608
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	2	5	8	0.171	0.181	3.960	4.312
TOTAL	20	26	102	148	5.698	4.940	27.917	38.555
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	8	3	50	61	3.041	0.993	24.480	28.514
OPERATIONS PERSONNEL	2	1	0	3	2.888	0.497	0.000	3.385
HEALTH PHYSICS PERSONNEL	0	2	0	2	0.728	1.164	0.320	2.212
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.009	0.009
ENGINEERING PERSONNEL	13	14	37	64	3.597	5.591	35.593	44.781
TOTAL	23	20	87	130	10.254	8.245	60.402	78.901
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	57	51	280	388	35.896	20.926	106.138	162.960
OPERATIONS PERSONNEL	1	0	9	10	1.533	0.000	1.882	3.415
HEALTH PHYSICS PERSONNEL	5	3	2	10	6.131	3.018	1.719	10.868
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.001	0.001
ENGINEERING PERSONNEL	1	9	24	34	0.336	2.263	5.190	7.789
TOTAL	64	63	315	442	43.896	26.207	114.930	185.033
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	1	1	0.003	0.000	1.033	1.036
OPERATIONS PERSONNEL	0	0	0	0	0.011	0.000	0.121	0.132
HEALTH PHYSICS PERSONNEL	2	1	0	3	1.396	0.332	0.047	1.775
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.009	0.009
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.002	0.000	0.002
TOTAL	2	1	1	4	1.410	0.334	1.210	2.954
REFUELING								
MAINTENANCE PERSONNEL	2	9	4	15	0.264	1.811	0.955	3.030
OPERATIONS PERSONNEL	3	1	1	5	0.332	0.124	0.149	0.605
HEALTH PHYSICS PERSONNEL	3	6	2	11	1.292	1.215	0.431	2.938
SUPERVISORY PERSONNEL	1	0	0	1	0.136	0.001	0.000	0.137
ENGINEERING PERSONNEL	3	15	40	58	0.325	1.961	11.822	14.108
TOTAL	12	31	47	90	2.349	5.112	13.357	20.818
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	88	82	434	604	45.560	28.140	156.722	230.422
OPERATIONS PERSONNEL	54	4	10	68	18.190	1.189	2.205	21.584
HEALTH PHYSICS PERSONNEL	31	40	28	99	17.042	11.375	10.649	39.066
SUPERVISORY PERSONNEL	1	2	2	5	0.144	0.385	0.238	0.767
ENGINEERING PERSONNEL	22	44	114	180	4.975	10.513	58.248	73.736
GRAND TOTALS	196	172	588	956	85.911	51.602	228.062	365.575

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***ROBINSON 2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	5	0	0	5	1.571	0.000	0.074	1.645
OPERATIONS PERSONNEL	13	0	0	13	3.372	0.019	0.097	3.488
HEALTH PHYSICS PERSONNEL	15	0	24	39	5.235	0.000	5.960	11.195
SUPERVISORY PERSONNEL	0	0	0	0	0.203	0.000	0.011	0.214
ENGINEERING PERSONNEL	0	0	0	0	0.729	0.006	0.093	0.828
TOTAL	33	0	24	57	11.110	0.025	6.235	17.370
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	4	0	40	44	3.011	0.088	13.808	16.907
OPERATIONS PERSONNEL	0	0	0	0	0.150	0.000	0.000	0.150
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.331	0.000	0.559	0.890
SUPERVISORY PERSONNEL	0	0	1	1	0.002	0.000	0.141	0.143
ENGINEERING PERSONNEL	1	0	1	2	0.570	0.009	0.770	1.349
TOTAL	5	0	43	48	4.064	0.097	15.278	19.439
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.033	0.000	0.008	0.041
OPERATIONS PERSONNEL	0	0	0	0	0.009	0.000	0.000	0.009
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.040	0.000	0.022	0.062
SUPERVISORY PERSONNEL	0	0	0	0	0.013	0.000	0.008	0.021
ENGINEERING PERSONNEL	0	0	0	0	0.162	0.006	0.231	0.399
TOTAL	0	0	0	0	0.257	0.006	0.269	0.532
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	16	1	4	21	5.349	0.310	2.009	7.668
OPERATIONS PERSONNEL	1	0	0	1	0.149	0.009	0.000	0.158
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.434	0.000	0.195	0.629
SUPERVISORY PERSONNEL	1	0	0	1	0.259	0.000	0.008	0.267
ENGINEERING PERSONNEL	6	0	15	21	1.514	0.009	4.672	6.195
TOTAL	25	1	19	45	7.705	0.328	6.884	14.917
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	3	4	0.656	0.000	0.462	1.118
OPERATIONS PERSONNEL	0	0	0	0	0.172	0.000	0.004	0.176
HEALTH PHYSICS PERSONNEL	5	0	2	7	2.018	0.000	0.567	2.585
SUPERVISORY PERSONNEL	0	0	0	0	0.003	0.000	0.007	0.010
ENGINEERING PERSONNEL	0	0	0	0	0.123	0.000	0.118	0.241
TOTAL	6	0	5	11	2.972	0.000	1.158	4.130
REFUELING								
MAINTENANCE PERSONNEL	64	6	131	201	18.157	1.427	37.201	56.785
OPERATIONS PERSONNEL	31	2	0	33	7.612	0.396	0.144	8.152
HEALTH PHYSICS PERSONNEL	13	0	3	16	3.523	0.000	1.339	4.862
SUPERVISORY PERSONNEL	15	0	3	18	5.441	0.001	0.565	6.007
ENGINEERING PERSONNEL	22	2	62	86	8.719	0.368	21.577	30.664
TOTAL	145	10	199	354	43.452	2.192	60.826	106.470
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	90	7	178	275	28.777	1.825	53.562	84.164
OPERATIONS PERSONNEL	45	2	0	47	11.464	0.424	0.245	12.133
HEALTH PHYSICS PERSONNEL	34	0	30	64	11.581	0.000	8.642	20.223
SUPERVISORY PERSONNEL	16	0	4	20	5.921	0.001	0.740	6.662
ENGINEERING PERSONNEL	29	2	78	109	11.817	0.398	27.461	39.676
GRAND TOTALS	214	11	290	515	69.560	2.648	90.650	162.858

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***SALEM 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.003	0.038	0.022	0.063
OPERATIONS PERSONNEL	0	0	0	0	0.004	0.000	0.096	0.100
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.069	0.090	0.183	0.342
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.068	0.000	0.000	0.068
TOTAL	0	0	0	0	0.144	0.128	0.301	0.573
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	9	4	49	62	6.818	2.729	25.636	35.183
OPERATIONS PERSONNEL	2	7	25	34	1.119	4.670	12.547	18.336
HEALTH PHYSICS PERSONNEL	1	0	16	17	1.975	0.354	6.548	8.877
SUPERVISORY PERSONNEL	0	0	2	2	0.054	0.024	0.456	0.534
ENGINEERING PERSONNEL	0	0	0	0	0.084	0.322	0.030	0.436
TOTAL	12	11	92	115	10.050	8.099	45.217	63.366
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	1	38	39	0.154	0.388	15.750	16.292
OPERATIONS PERSONNEL	0	2	158	160	0.007	0.990	55.459	56.456
HEALTH PHYSICS PERSONNEL	3	0	12	15	1.037	0.117	3.838	4.992
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.237	0.237
ENGINEERING PERSONNEL	0	0	5	5	0.005	0.104	2.279	2.388
TOTAL	3	3	213	219	1.203	1.599	77.563	80.365
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	6	0	257	263	2.606	0.314	98.207	101.127
OPERATIONS PERSONNEL	1	1	67	69	0.214	0.477	25.157	25.848
HEALTH PHYSICS PERSONNEL	5	2	16	23	1.069	0.257	6.038	7.364
SUPERVISORY PERSONNEL	0	0	0	0	0.010	0.026	0.135	0.171
ENGINEERING PERSONNEL	0	0	0	0	0.004	0.133	0.074	0.211
TOTAL	12	3	340	355	3.903	1.207	129.611	134.721
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	14	14	0.343	0.414	3.722	4.479
OPERATIONS PERSONNEL	0	0	10	10	0.318	0.086	2.134	2.538
HEALTH PHYSICS PERSONNEL	0	0	3	3	0.423	0.128	1.479	2.030
SUPERVISORY PERSONNEL	0	0	0	0	0.002	0.012	0.000	0.014
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.010	0.000	0.010
TOTAL	0	0	27	27	1.086	0.650	7.335	9.071
REFUELING								
MAINTENANCE PERSONNEL	1	0	4	5	0.175	0.105	1.743	2.023
OPERATIONS PERSONNEL	0	0	17	17	0.052	0.146	3.991	4.189
HEALTH PHYSICS PERSONNEL	0	0	5	5	0.104	0.008	1.313	1.425
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.094	0.094
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.006	0.000	0.006
TOTAL	1	0	26	27	0.331	0.265	7.141	7.737
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	16	5	362	383	10.099	3.988	145.080	159.167
OPERATIONS PERSONNEL	3	10	277	290	1.714	6.369	99.384	107.467
HEALTH PHYSICS PERSONNEL	9	2	52	63	4.677	0.954	19.399	25.030
SUPERVISORY PERSONNEL	0	0	2	2	0.066	0.062	0.922	1.050
ENGINEERING PERSONNEL	0	0	5	5	0.161	0.575	2.383	3.119
GRAND TOTALS	28	17	698	743	16.717	11.948	267.168	295.833

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***SAN ONOFRE 2,3** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	1	0	5	6	0.000	0.000	0.057	0.057
OPERATIONS PERSONNEL	1	0	0	1	0.009	0.000	0.000	0.009
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.012	0.000	0.000	0.012
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	4	0	5	9	0.021	0.000	0.057	0.078
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	110	3	206	319	23.523	1.492	38.179	63.194
OPERATIONS PERSONNEL	14	0	0	14	1.544	0.000	0.000	1.544
HEALTH PHYSICS PERSONNEL	59	0	65	124	9.060	0.000	8.154	17.214
SUPERVISORY PERSONNEL	5	0	0	5	0.262	0.000	0.000	0.262
ENGINEERING PERSONNEL	11	0	6	17	2.564	0.000	0.895	3.459
TOTAL	199	3	277	479	36.953	1.492	47.228	85.673
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	48	49	0.155	0.000	8.631	8.786
OPERATIONS PERSONNEL	1	0	0	1	0.082	0.000	0.000	0.082
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	2	0	48	50	0.237	0.000	8.631	8.868
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
WASTE PROCESSING								
MAINTENANCE PERSONNEL	3	0	4	7	0.149	0.000	0.001	0.150
OPERATIONS PERSONNEL	1	0	0	1	0.130	0.000	0.000	0.130
HEALTH PHYSICS PERSONNEL	35	0	32	67	6.019	0.000	4.390	10.409
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	39	0	36	75	6.298	0.000	4.391	10.689
REFUELING								
MAINTENANCE PERSONNEL	15	0	47	62	2.536	0.000	6.018	8.554
OPERATIONS PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	4	0	0	4	0.478	0.000	0.000	0.478
SUPERVISORY PERSONNEL	4	0	0	4	0.920	0.000	0.000	0.920
ENGINEERING PERSONNEL	6	0	1	7	0.511	0.000	0.004	0.515
TOTAL	30	0	48	78	4.445	0.000	6.022	10.467
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	130 (110)	3 (3)	310 (212)	443 (325)	26.363	1.492	52.886	80.741
OPERATIONS PERSONNEL	18 (14)	0 (0)	0 (0)	18 (14)	1.765	0.000	0.000	1.765
HEALTH PHYSICS PERSONNEL	100 (59)	0 (0)	97 (69)	197 (128)	15.569	0.000	12.544	28.113
SUPERVISORY PERSONNEL	9 (5)	0 (0)	0 (0)	9 (5)	1.182	0.000	0.000	1.182
ENGINEERING PERSONNEL	17 (12)	0 (0)	7 (6)	24 (18)	3.075	0.000	0.899	3.974
GRAND TOTALS	274 (200)	3 (3)	414 (287)	691 (490)	47.954	1.492	66.329	115.775

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

APPENDIX D (Continued)

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

1996

PLANT: *SEABROOK TYPE: PWR

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	8	0	0	8	0.872	0.000	0.000	0.872
OPERATIONS PERSONNEL	1	1	0	2	0.225	0.125	0.000	0.350
HEALTH PHYSICS PERSONNEL	11	0	0	11	2.276	0.000	0.000	2.276
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	20	1	0	21	3.373	0.125	0.000	3.498
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	1	0	0	1	0.000	0.000	0.000	0.000
WASTE PROCESSING								
MAINTENANCE PERSONNEL	3	0	1	4	0.300	0.000	0.184	0.484
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	4	0	0	4	0.017	0.000	0.000	0.017
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	0	1	8	0.317	0.000	0.184	0.501
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	11	0	1	12	1.172	0.000	0.184	1.356
OPERATIONS PERSONNEL	1	1	0	2	0.225	0.125	0.000	0.350
HEALTH PHYSICS PERSONNEL	16	0	0	16	2.293	0.000	0.000	2.293
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
GRAND TOTALS	28	1	1	30	3.690	0.125	0.184	3.999

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***SEQUOYAH 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	55	3	40	98	0.461	0.046	0.341	0.848
OPERATIONS PERSONNEL	45	3	1	49	5.929	0.190	0.000	6.119
HEALTH PHYSICS PERSONNEL	37	6	33	76	6.404	0.473	5.066	11.943
SUPERVISORY PERSONNEL	9	1	0	10	0.510	0.058	0.000	0.568
ENGINEERING PERSONNEL	22	6	11	39	0.395	0.137	0.344	0.876
TOTAL	168	19	85	272	13.699	0.904	5.751	20.354
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	105	6	267	378	21.659	0.725	54.411	76.795
OPERATIONS PERSONNEL	49	5	6	60	1.970	0.126	1.091	3.187
HEALTH PHYSICS PERSONNEL	70	6	34	110	14.300	0.200	3.156	17.656
SUPERVISORY PERSONNEL	17	3	0	20	0.980	0.099	0.000	1.079
ENGINEERING PERSONNEL	38	10	41	89	3.741	0.394	0.708	4.843
TOTAL	279	30	348	657	42.650	1.544	59.366	103.560
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	11	0	78	89	2.617	0.000	11.909	14.526
OPERATIONS PERSONNEL	5	0	5	10	0.211	0.000	0.860	1.071
HEALTH PHYSICS PERSONNEL	32	1	25	58	2.556	0.003	3.496	6.055
SUPERVISORY PERSONNEL	5	0	0	5	2.902	0.000	0.000	2.902
ENGINEERING PERSONNEL	10	13	102	125	3.081	2.169	33.169	38.419
TOTAL	63	14	210	287	11.367	2.172	49.434	62.973
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	77	4	123	204	5.840	0.258	22.815	28.913
OPERATIONS PERSONNEL	14	1	5	20	0.173	0.017	0.212	0.402
HEALTH PHYSICS PERSONNEL	38	2	15	55	2.039	0.055	0.331	2.425
SUPERVISORY PERSONNEL	14	0	0	14	0.917	0.000	0.000	0.917
ENGINEERING PERSONNEL	19	3	73	95	1.200	0.223	15.184	16.607
TOTAL	162	10	216	388	10.169	0.553	38.542	49.264
WASTE PROCESSING								
MAINTENANCE PERSONNEL	17	0	8	25	0.202	0.000	0.296	0.498
OPERATIONS PERSONNEL	1	0	2	3	0.001	0.000	0.081	0.082
HEALTH PHYSICS PERSONNEL	40	2	4	46	4.065	0.011	0.721	4.797
SUPERVISORY PERSONNEL	1	0	0	1	0.007	0.000	0.000	0.007
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.061	0.061
TOTAL	59	2	15	76	4.275	0.011	1.159	5.445
REFUELING								
MAINTENANCE PERSONNEL	18	1	39	58	1.134	0.010	8.698	9.842
OPERATIONS PERSONNEL	11	2	2	15	0.825	0.131	0.023	0.979
HEALTH PHYSICS PERSONNEL	14	1	7	22	0.356	0.130	0.335	0.821
SUPERVISORY PERSONNEL	5	1	0	6	1.430	0.521	0.000	1.951
ENGINEERING PERSONNEL	8	1	17	26	0.501	0.247	9.775	10.523
TOTAL	56	6	65	127	4.246	1.039	18.831	24.116
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	283	14	555	852	31.913	1.039	98.470	131.422
OPERATIONS PERSONNEL	125	11	21	157	9.109	0.464	2.267	11.840
HEALTH PHYSICS PERSONNEL	231	18	118	367	29.720	0.872	13.105	43.697
SUPERVISORY PERSONNEL	51	5	0	56	6.746	0.678	0.000	7.424
ENGINEERING PERSONNEL	97	33	245	375	8.918	3.170	59.241	71.329
GRAND TOTALS	787	81	939	1807	86.406	6.223	173.083	265.712

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***SOUTH TEXAS 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.671	0.000	0.100	0.771
OPERATIONS PERSONNEL	17	0	0	17	5.198	0.000	0.000	5.198
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	20	0	5	25	6.923	0.000	2.410	9.333
ENGINEERING PERSONNEL	2	0	0	2	0.805	0.000	0.000	0.805
TOTAL	39	0	5	44	13.597	0.000	2.510	16.107
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	22	0	4	26	7.948	0.000	2.216	10.164
OPERATIONS PERSONNEL	1	0	0	1	0.614	0.000	0.000	0.614
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	6	0	51	57	2.004	0.000	14.200	16.204
ENGINEERING PERSONNEL	0	0	0	0	0.310	0.000	0.001	0.311
TOTAL	29	0	55	84	10.876	0.000	16.417	27.293
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	9	0	0	9	2.508	0.000	0.901	3.409
OPERATIONS PERSONNEL	1	0	0	1	0.157	0.000	0.000	0.157
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	4	4	0.428	0.000	1.176	1.604
ENGINEERING PERSONNEL	3	0	2	5	0.944	0.000	0.764	1.708
TOTAL	13	0	6	19	4.037	0.000	2.841	6.878
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	28	0	23	51	7.456	0.000	7.404	14.860
OPERATIONS PERSONNEL	2	0	0	2	0.656	0.000	0.000	0.656
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	11	0	162	173	2.824	0.000	60.264	63.088
ENGINEERING PERSONNEL	0	0	0	0	0.139	0.000	0.000	0.139
TOTAL	41	0	185	226	11.075	0.000	67.668	78.743
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.063	0.000	0.011	0.074
OPERATIONS PERSONNEL	4	0	0	4	1.214	0.000	0.000	1.214
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	6	0	17	23	2.885	0.000	5.800	8.685
ENGINEERING PERSONNEL	0	0	0	0	0.071	0.000	0.000	0.071
TOTAL	10	0	17	27	4.233	0.000	5.811	10.044
REFUELING								
MAINTENANCE PERSONNEL	16	0	15	31	5.379	0.000	3.621	9.000
OPERATIONS PERSONNEL	1	0	0	1	0.252	0.000	0.000	0.252
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	4	0	31	35	1.376	0.000	8.895	10.271
ENGINEERING PERSONNEL	2	0	0	2	1.037	0.000	0.000	1.037
TOTAL	23	0	46	69	8.044	0.000	12.516	20.560
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	75	0	42	117	24.025	0.000	14.253	38.278
OPERATIONS PERSONNEL	26	0	0	26	8.091	0.000	0.000	8.091
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	47	0	270	317	16.440	0.000	92.745	109.185
ENGINEERING PERSONNEL	7	0	2	9	3.306	0.000	0.765	4.071
GRAND TOTALS	155	0	314	469	51.862	0.000	107.763	159.625

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***ST. LUCIE 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	3	3	0.324	0.029	1.180	1.533
OPERATIONS PERSONNEL	13	0	3	16	5.217	0.398	1.892	7.507
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.410	0.006	0.007	0.423
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.107	0.000	0.107
TOTAL	13	0	6	19	5.951	0.540	3.079	9.570
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	182	11	173	366	61.304	3.217	57.175	121.696
OPERATIONS PERSONNEL	35	3	6	44	8.583	1.029	2.829	12.441
HEALTH PHYSICS PERSONNEL	48	0	78	126	17.893	0.016	30.630	48.539
SUPERVISORY PERSONNEL	0	0	0	0	0.005	0.000	0.000	0.005
ENGINEERING PERSONNEL	0	1	0	1	0.004	0.809	0.001	0.814
TOTAL	265	15	257	537	87.789	5.071	90.635	183.495
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	91	91	0.227	0.214	74.217	74.658
OPERATIONS PERSONNEL	1	2	19	22	0.697	0.701	20.318	21.716
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.153	0.000	0.009	0.162
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	1	0	1	0.010	0.421	0.002	0.433
TOTAL	1	3	110	114	1.087	1.336	94.546	96.969
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	62	1	110	173	20.929	0.357	33.870	55.156
OPERATIONS PERSONNEL	1	3	5	9	0.568	1.235	1.438	3.241
HEALTH PHYSICS PERSONNEL	1	0	14	15	0.444	0.000	3.760	4.204
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.004	0.162	0.000	0.166
TOTAL	64	4	129	197	21.945	1.754	39.068	62.767
WASTE PROCESSING								
MAINTENANCE PERSONNEL	10	0	16	26	3.500	0.000	4.183	7.683
OPERATIONS PERSONNEL	0	0	0	0	0.127	0.000	0.109	0.236
HEALTH PHYSICS PERSONNEL	6	0	8	14	2.286	0.000	3.038	5.324
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	16	0	24	40	5.913	0.000	7.330	13.243
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.120	0.000	0.031	0.151
OPERATIONS PERSONNEL	0	0	0	0	1.487	0.044	0.057	1.588
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.046	0.000	0.039	0.085
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.139	0.000	0.139
TOTAL	0	0	0	0	1.653	0.183	0.127	1.963
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	254 (211)	12 (12)	393 (343)	659 (566)	86.404	3.817	170.656	260.877
OPERATIONS PERSONNEL	50 (55)	8 (9)	33 (29)	91 (93)	16.679	3.407	26.643	46.729
HEALTH PHYSICS PERSONNEL	55 (51)	0 (0)	100 (83)	155 (134)	21.232	0.022	37.483	58.737
SUPERVISORY PERSONNEL	0 (0)	0 (0)	0 (0)	0 (0)	0.005	0.000	0.000	0.005
ENGINEERING PERSONNEL	0 (0)	2 (4)	0 (0)	2 (4)	0.018	1.638	0.003	1.659
GRAND TOTALS	359 (317)	22 (25)	526 (455)	907 (797)	124.338	8.884	234.785	368.007

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

APPENDIX D (Continued)

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

1996

PLANT: ***SUMMER 1** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	5	5	0.253	0.000	1.636	1.889
OPERATIONS PERSONNEL	4	0	1	5	2.489	0.000	0.533	3.022
HEALTH PHYSICS PERSONNEL	9	0	7	16	1.906	0.000	3.025	4.931
SUPERVISORY PERSONNEL	2	0	0	2	0.540	0.000	0.034	0.574
ENGINEERING PERSONNEL	0	0	0	0	0.208	0.000	0.043	0.251
TOTAL	15	0	13	28	5.396	0.000	5.271	10.667
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	31	0	94	125	8.823	0.003	29.226	38.052
OPERATIONS PERSONNEL	10	0	8	18	4.407	0.129	1.943	6.479
HEALTH PHYSICS PERSONNEL	6	0	32	38	1.859	0.000	7.140	8.999
SUPERVISORY PERSONNEL	1	0	0	1	0.498	0.000	0.021	0.519
ENGINEERING PERSONNEL	1	0	8	9	0.517	0.010	3.123	3.650
TOTAL	49	0	142	191	16.104	0.142	41.453	57.699
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	28	29	0.446	0.005	9.807	10.258
OPERATIONS PERSONNEL	3	0	0	3	0.966	0.000	0.281	1.247
HEALTH PHYSICS PERSONNEL	0	0	2	2	0.255	0.000	1.047	1.302
SUPERVISORY PERSONNEL	1	0	0	1	0.321	0.000	0.000	0.321
ENGINEERING PERSONNEL	0	0	3	3	0.121	0.039	2.020	2.180
TOTAL	5	0	33	38	2.109	0.044	13.155	15.308
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	21	0	9	30	8.395	0.004	5.848	14.247
OPERATIONS PERSONNEL	7	0	1	8	2.689	0.014	0.338	3.041
HEALTH PHYSICS PERSONNEL	4	0	3	7	1.166	0.000	1.091	2.257
SUPERVISORY PERSONNEL	1	0	0	1	0.292	0.000	0.000	0.292
ENGINEERING PERSONNEL	0	0	0	0	0.058	0.000	0.407	0.465
TOTAL	33	0	13	46	12.600	0.018	7.684	20.302
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.076	0.000	0.114	0.190
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.016	0.016
HEALTH PHYSICS PERSONNEL	7	0	1	8	2.090	0.000	0.343	2.433
SUPERVISORY PERSONNEL	0	0	0	0	0.028	0.000	0.000	0.028
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	0	1	8	2.194	0.000	0.473	2.667
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.012	0.000	0.000	0.012
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.012	0.000	0.000	0.012
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	53	0	136	189	17.993	0.012	46.631	64.636
OPERATIONS PERSONNEL	24	0	10	34	10.551	0.143	3.111	13.805
HEALTH PHYSICS PERSONNEL	26	0	45	71	7.288	0.000	12.646	19.934
SUPERVISORY PERSONNEL	5	0	0	5	1.679	0.000	0.055	1.734
ENGINEERING PERSONNEL	1	0	11	12	0.904	0.049	5.593	6.546
GRAND TOTALS	109	0	202	311	38.415	0.204	68.036	106.655

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***SURRY 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	197	1	291	489	2.974	0.001	0.813	3.788
OPERATIONS PERSONNEL	255	48	37	340	13.039	0.205	0.290	13.534
HEALTH PHYSICS PERSONNEL	89	3	112	204	9.826	0.059	6.581	16.466
SUPERVISORY PERSONNEL	103	15	25	143	1.866	0.080	0.073	2.019
ENGINEERING PERSONNEL	88	23	6	117	0.559	0.034	0.000	0.593
TOTAL	732	90	471	1293	28.264	0.379	7.757	36.400
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	199	1	561	761	42.339	0.354	51.554	94.247
OPERATIONS PERSONNEL	208	41	21	270	3.969	0.163	0.233	4.365
HEALTH PHYSICS PERSONNEL	60	2	93	155	7.300	0.107	8.935	16.342
SUPERVISORY PERSONNEL	69	9	22	100	3.823	0.040	1.031	4.894
ENGINEERING PERSONNEL	57	10	11	78	1.544	0.132	1.246	2.922
TOTAL	593	63	708	1364	58.975	0.796	62.999	122.770
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	22	0	109	131	1.482	0.055	8.693	10.230
OPERATIONS PERSONNEL	3	0	0	3	0.047	0.000	0.000	0.047
HEALTH PHYSICS PERSONNEL	3	0	12	15	0.127	0.000	0.406	0.533
SUPERVISORY PERSONNEL	2	0	5	7	0.062	0.000	0.200	0.262
ENGINEERING PERSONNEL	6	0	24	30	0.443	0.000	3.152	3.595
TOTAL	36	0	150	186	2.161	0.055	12.451	14.667
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	130	0	166	296	9.427	0.000	6.280	15.707
OPERATIONS PERSONNEL	42	0	8	50	1.802	0.000	0.024	1.826
HEALTH PHYSICS PERSONNEL	40	0	23	63	1.934	0.000	0.488	2.422
SUPERVISORY PERSONNEL	20	0	14	34	0.388	0.000	0.207	0.595
ENGINEERING PERSONNEL	17	1	3	21	0.636	0.013	0.023	0.672
TOTAL	249	1	214	464	14.187	0.013	7.022	21.222
WASTE PROCESSING								
MAINTENANCE PERSONNEL	21	0	22	43	0.274	0.000	0.140	0.414
OPERATIONS PERSONNEL	31	2	2	35	0.722	0.009	0.007	0.738
HEALTH PHYSICS PERSONNEL	39	0	23	62	0.615	0.000	0.215	0.830
SUPERVISORY PERSONNEL	10	2	3	15	0.204	0.006	0.059	0.269
ENGINEERING PERSONNEL	0	1	1	2	0.000	0.000	0.000	0.000
TOTAL	101	5	51	157	1.815	0.015	0.421	2.251
REFUELING								
MAINTENANCE PERSONNEL	41	0	53	94	8.026	0.000	4.380	12.406
OPERATIONS PERSONNEL	30	8	2	40	1.012	0.055	0.181	1.248
HEALTH PHYSICS PERSONNEL	18	0	31	49	0.627	0.000	0.583	1.210
SUPERVISORY PERSONNEL	10	1	0	11	1.463	0.000	0.000	1.463
ENGINEERING PERSONNEL	8	0	0	8	0.104	0.000	0.000	0.104
TOTAL	107	9	86	202	11.232	0.055	5.144	16.431
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	610	2	1202	1814	64.522	0.410	71.860	136.792
OPERATIONS PERSONNEL	569	99	70	738	20.591	0.432	0.735	21.758
HEALTH PHYSICS PERSONNEL	249	5	294	548	20.429	0.166	17.208	37.803
SUPERVISORY PERSONNEL	214	27	69	310	7.806	0.126	1.570	9.502
ENGINEERING PERSONNEL	176	35	45	256	3.286	0.179	4.421	7.886
GRAND TOTALS	1818	168	1680	3666	116.634	1.313	95.794	213.741

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***SUSQUEHANNA 1,2** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	52	0	0	52	13.185	0.000	0.000	13.185
HEALTH PHYSICS PERSONNEL	23	1	33	57	12.993	0.104	10.568	23.665
SUPERVISORY PERSONNEL	2	0	0	2	0.992	0.000	0.000	0.992
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	77	1	33	111	27.170	0.104	10.568	37.842
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	226	2	147	375	81.009	1.042	52.694	134.745
OPERATIONS PERSONNEL	10	0	0	10	2.067	0.000	0.000	2.067
HEALTH PHYSICS PERSONNEL	39	0	23	62	14.179	0.000	8.223	22.402
SUPERVISORY PERSONNEL	2	1	1	4	0.746	0.199	0.143	1.088
ENGINEERING PERSONNEL	13	1	4	18	2.099	0.135	0.487	2.721
TOTAL	290	4	175	469	100.100	1.376	61.547	163.023
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	6	0	43	49	2.420	0.000	11.227	13.647
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.000	0.000	0.587	0.587
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	6	0	44	50	2.420	0.000	11.814	14.234
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	15	0	8	23	5.146	0.000	1.369	6.515
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	15	0	8	23	5.146	0.000	1.369	6.515
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	1.378	1.378
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.621	0.000	0.000	0.621
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.410	0.410
TOTAL	2	0	2	4	0.621	0.000	1.788	2.409
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	1	0	0	1	0.123	0.000	0.000	0.123
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	1	0	0	1	0.123	0.000	0.000	0.123
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	247	2	198	447	88.575	1.042	65.290	154.907
OPERATIONS PERSONNEL	63	0	1	64	15.375	0.000	1.378	16.753
HEALTH PHYSICS PERSONNEL	64	1	57	122	27.793	0.104	19.378	47.275
SUPERVISORY PERSONNEL	4	1	1	6	1.738	0.199	0.143	2.080
ENGINEERING PERSONNEL	13	1	5	19	2.099	0.135	0.897	3.131
GRAND TOTALS	391	5	262	658	135.580	1.480	87.086	224.146

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***THREE MILE ISLAND 1** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	64	2	1	67	0.159	0.010	0.089	0.258
OPERATIONS PERSONNEL	32	0	0	32	0.168	0.000	0.000	0.168
HEALTH PHYSICS PERSONNEL	53	0	0	53	0.791	0.000	0.000	0.791
SUPERVISORY PERSONNEL	28	1	0	29	0.047	0.000	0.000	0.047
ENGINEERING PERSONNEL	9	0	1	10	0.014	0.000	0.000	0.014
TOTAL	186	3	2	191	1.179	0.010	0.089	1.278
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	110	5	4	119	2.580	0.006	0.012	2.598
OPERATIONS PERSONNEL	97	0	1	98	2.721	0.000	0.000	2.721
HEALTH PHYSICS PERSONNEL	48	0	0	48	2.159	0.000	0.000	2.159
SUPERVISORY PERSONNEL	145	49	6	200	0.975	0.099	0.016	1.090
ENGINEERING PERSONNEL	66	9	3	78	0.272	0.015	0.017	0.304
TOTAL	466	63	14	543	8.707	0.120	0.045	8.872
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	19	0	0	19	0.047	0.000	0.000	0.047
OPERATIONS PERSONNEL	21	0	0	21	0.152	0.000	0.000	0.152
HEALTH PHYSICS PERSONNEL	13	0	0	13	0.014	0.000	0.000	0.014
SUPERVISORY PERSONNEL	8	0	0	8	0.006	0.000	0.000	0.006
ENGINEERING PERSONNEL	2	0	0	2	0.000	0.000	0.000	0.000
TOTAL	63	0	0	63	0.219	0.000	0.000	0.219
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	92	0	10	102	1.311	0.000	0.004	1.315
OPERATIONS PERSONNEL	31	0	0	31	1.560	0.000	0.000	1.560
HEALTH PHYSICS PERSONNEL	14	0	0	14	0.092	0.000	0.000	0.092
SUPERVISORY PERSONNEL	22	2	1	25	0.272	0.000	0.000	0.272
ENGINEERING PERSONNEL	15	0	0	15	0.014	0.000	0.000	0.014
TOTAL	174	2	11	187	3.249	0.000	0.004	3.253
WASTE PROCESSING								
MAINTENANCE PERSONNEL	21	0	0	21	0.073	0.000	0.000	0.073
OPERATIONS PERSONNEL	36	0	0	36	1.464	0.000	0.000	1.464
HEALTH PHYSICS PERSONNEL	22	0	0	22	0.043	0.000	0.000	0.043
SUPERVISORY PERSONNEL	17	6	0	23	0.074	0.036	0.000	0.110
ENGINEERING PERSONNEL	6	0	1	7	0.001	0.000	0.000	0.001
TOTAL	102	6	1	109	1.655	0.036	0.000	1.691
REFUELING								
MAINTENANCE PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	1	0	0	1	0.000	0.000	0.000	0.000
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	307 (117)	7 (7)	15 (13)	329 (137)	4.170	0.016	0.105	4.291
OPERATIONS PERSONNEL	217 (112)	0 (0)	1 (1)	218 (113)	6.065	0.000	0.000	6.065
HEALTH PHYSICS PERSONNEL	150 (71)	0 (0)	0 (0)	150 (71)	3.099	0.000	0.000	3.099
SUPERVISORY PERSONNEL	220 (162)	58 (55)	7 (6)	285 (223)	1.374	0.135	0.016	1.525
ENGINEERING PERSONNEL	98 (71)	9 (9)	5 (3)	112 (83)	0.301	0.015	0.017	0.333
GRAND TOTALS	992 (533)	74 (71)	28 (23)	1094 (627)	15.009	0.166	0.138	15.313

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

APPENDIX D (Continued)

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

1996

PLANT: ***THREE MILE ISLAND 2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	65	0	2	67	0.229	0.000	0.014	0.243
OPERATIONS PERSONNEL	80	0	0	80	0.326	0.000	0.000	0.326
HEALTH PHYSICS PERSONNEL	28	0	0	28	0.432	0.000	0.000	0.432
SUPERVISORY PERSONNEL	70	3	3	76	0.251	0.049	0.019	0.319
ENGINEERING PERSONNEL	14	2	0	16	0.005	0.000	0.000	0.005
TOTAL	257	5	5	267	1.243	0.049	0.033	1.325
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	26	0	0	26	0.442	0.000	0.000	0.442
OPERATIONS PERSONNEL	4	0	0	4	0.018	0.000	0.000	0.018
HEALTH PHYSICS PERSONNEL	6	0	0	6	0.255	0.000	0.000	0.255
SUPERVISORY PERSONNEL	3	1	0	4	0.052	0.166	0.000	0.218
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	39	1	0	40	0.767	0.166	0.000	0.933
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
OPERATIONS PERSONNEL	0	0	0	0	0.020	0.000	0.000	0.020
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.044	0.000	0.000	0.044
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.065	0.000	0.000	0.065
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	9	0	0	9	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	14	0	0	14	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	6	0	0	6	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	29	0	0	29	0.000	0.000	0.000	0.000
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	0	2	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	7	0	0	7	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	5	0	0	5	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	15	0	0	15	0.000	0.000	0.000	0.000
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	102 (73)	0 (0)	2 (2)	104 (75)	0.672	0.000	0.014	0.686
OPERATIONS PERSONNEL	105 (90)	0 (0)	0 (0)	105 (90)	0.364	0.000	0.000	0.364
HEALTH PHYSICS PERSONNEL	45 (30)	0 (0)	0 (0)	45 (30)	0.731	0.000	0.000	0.731
SUPERVISORY PERSONNEL	74 (70)	4 (3)	3 (3)	81 (76)	0.303	0.215	0.019	0.537
ENGINEERING PERSONNEL	14 (14)	2 (2)	0 (0)	16 (16)	0.005	0.000	0.000	0.005
GRAND TOTALS	340 (277)	6 (5)	5 (5)	351 (287)	2.075	0.215	0.033	2.323

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

APPENDIX D (Continued)

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

1996

PLANT: ***TURKEY POINT 3,4** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	199	0	191	390	63.273	0.020	61.994	125.287
OPERATIONS PERSONNEL	41	0	1	42	12.413	0.000	0.731	13.144
HEALTH PHYSICS PERSONNEL	35	0	50	85	12.587	0.016	13.831	26.434
SUPERVISORY PERSONNEL	5	0	41	46	2.426	0.145	14.911	17.482
ENGINEERING PERSONNEL	18	0	5	23	5.203	0.287	1.358	6.848
TOTAL	298	0	288	586	95.902	0.468	92.825	189.195
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	23	23	0.485	0.000	7.919	8.404
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.012	0.000	0.129	0.141
SUPERVISORY PERSONNEL	1	0	3	4	0.153	0.025	0.757	0.935
ENGINEERING PERSONNEL	1	0	6	7	0.273	0.045	1.068	1.386
TOTAL	2	0	32	34	0.923	0.070	9.873	10.866
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.151	0.000	0.000	0.151
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.018	0.000	0.000	0.018
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.004	0.000	0.000	0.004
TOTAL	0	0	0	0	0.173	0.000	0.000	0.173
WASTE PROCESSING								
MAINTENANCE PERSONNEL	5	0	2	7	2.865	0.000	0.583	3.448
OPERATIONS PERSONNEL	0	0	1	1	0.078	0.000	0.886	0.964
HEALTH PHYSICS PERSONNEL	5	0	0	5	1.340	0.000	0.033	1.373
SUPERVISORY PERSONNEL	0	0	0	0	0.011	0.000	0.047	0.058
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	10	0	3	13	4.294	0.000	1.549	5.843
REFUELING								
MAINTENANCE PERSONNEL	49	0	5	54	11.765	0.000	1.787	13.552
OPERATIONS PERSONNEL	6	0	2	8	2.713	0.000	0.591	3.304
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.166	0.000	0.212	0.378
SUPERVISORY PERSONNEL	0	0	0	0	0.231	0.000	0.000	0.231
ENGINEERING PERSONNEL	1	0	1	2	0.551	0.017	0.168	0.736
TOTAL	56	0	9	65	15.426	0.017	2.758	18.201
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	253	0	221	474	78.539	0.020	72.283	150.842
OPERATIONS PERSONNEL	47	0	4	51	15.204	0.000	2.208	17.412
HEALTH PHYSICS PERSONNEL	40	0	51	91	14.123	0.016	14.205	28.344
SUPERVISORY PERSONNEL	6	0	44	50	2.821	0.170	15.715	18.706
ENGINEERING PERSONNEL	20	0	12	32	6.031	0.349	2.594	8.974
GRAND TOTALS	366	0	332	698	116.718	0.555	107.005	224.278

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***VERMONT YANKEE** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	22	0	102	124	5.447	0.000	34.678	40.125
OPERATIONS PERSONNEL	25	0	1	26	7.978	0.000	0.304	8.282
HEALTH PHYSICS PERSONNEL	11	0	18	29	3.711	0.000	4.660	8.371
SUPERVISORY PERSONNEL	0	0	0	0	0.081	0.000	0.052	0.133
ENGINEERING PERSONNEL	0	0	0	0	0.139	0.000	0.000	0.139
TOTAL	58	0	121	179	17.356	0.000	39.694	57.050
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	22	1	371	394	9.001	0.101	114.502	123.604
OPERATIONS PERSONNEL	16	0	0	16	5.539	0.000	0.001	5.540
HEALTH PHYSICS PERSONNEL	4	0	27	31	1.463	0.000	9.676	11.139
SUPERVISORY PERSONNEL	3	0	1	4	0.645	0.000	0.272	0.917
ENGINEERING PERSONNEL	1	0	1	2	0.194	0.000	0.407	0.601
TOTAL	46	1	400	447	16.842	0.101	124.858	141.801
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	18	18	0.091	0.000	6.158	6.249
OPERATIONS PERSONNEL	0	0	0	0	0.038	0.000	0.000	0.038
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.112	0.000	0.166	0.278
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.003	0.000	0.000	0.003
TOTAL	0	0	18	18	0.244	0.000	6.324	6.568
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	56	56	0.019	0.000	23.860	23.879
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.007	0.007
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	56	56	0.019	0.000	23.867	23.886
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.068	0.000	0.428	0.496
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.053	0.000	0.042	0.095
SUPERVISORY PERSONNEL	0	0	0	0	0.006	0.000	0.000	0.006
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.127	0.000	0.470	0.597
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.293	0.000	0.498	0.791
OPERATIONS PERSONNEL	0	0	0	0	0.177	0.000	0.001	0.178
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.002	0.000	0.008	0.010
SUPERVISORY PERSONNEL	0	0	0	0	0.027	0.000	0.000	0.027
ENGINEERING PERSONNEL	0	0	0	0	0.112	0.000	0.000	0.112
TOTAL	0	0	0	0	0.611	0.000	0.507	1.118
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	44	1	547	592	14.919	0.101	180.124	195.144
OPERATIONS PERSONNEL	41	0	1	42	13.732	0.000	0.306	14.038
HEALTH PHYSICS PERSONNEL	15	0	45	60	5.341	0.000	14.559	19.900
SUPERVISORY PERSONNEL	3	0	1	4	0.759	0.000	0.324	1.083
ENGINEERING PERSONNEL	1	0	1	2	0.448	0.000	0.407	0.855
GRAND TOTALS	104	1	595	700	35.199	0.101	195.720	231.020

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***VOGTLE 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	15	0	6	21	4.602	0.303	2.279	7.184
OPERATIONS PERSONNEL	45	0	0	45	13.271	0.037	0.092	13.400
HEALTH PHYSICS PERSONNEL	36	6	37	79	10.168	1.849	14.011	26.028
SUPERVISORY PERSONNEL	2	0	1	3	1.122	0.028	0.486	1.636
ENGINEERING PERSONNEL	1	0	0	1	0.553	0.001	0.179	0.733
TOTAL	99	6	44	149	29.716	2.218	17.047	48.981
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	18	1	22	41	7.507	0.172	9.975	17.654
OPERATIONS PERSONNEL	6	0	0	6	2.794	0.088	0.048	2.930
HEALTH PHYSICS PERSONNEL	55	1	5	61	15.926	0.236	3.104	19.266
SUPERVISORY PERSONNEL	1	0	1	2	0.442	0.007	0.697	1.146
ENGINEERING PERSONNEL	1	0	0	1	0.584	0.000	0.120	0.704
TOTAL	81	2	28	111	27.253	0.503	13.944	41.700
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	29	30	0.622	0.008	15.032	15.662
OPERATIONS PERSONNEL	10	0	0	10	3.048	0.000	0.000	3.048
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.043	0.000	0.011	0.054
SUPERVISORY PERSONNEL	1	1	16	18	0.418	0.239	5.802	6.459
ENGINEERING PERSONNEL	2	0	7	9	0.429	0.051	2.976	3.456
TOTAL	14	1	52	67	4.560	0.298	23.821	28.679
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	111	8	200	319	89.881	4.068	112.194	206.143
OPERATIONS PERSONNEL	19	1	0	20	14.348	1.427	0.200	15.975
HEALTH PHYSICS PERSONNEL	24	2	6	32	6.716	0.365	2.875	9.956
SUPERVISORY PERSONNEL	9	1	15	25	5.455	0.193	8.404	14.052
ENGINEERING PERSONNEL	8	1	11	20	3.597	0.174	5.780	9.551
TOTAL	171	13	232	416	119.997	6.227	129.453	255.677
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	1	1	0.200	0.000	0.185	0.385
OPERATIONS PERSONNEL	5	0	0	5	3.452	0.000	0.049	3.501
HEALTH PHYSICS PERSONNEL	15	0	46	61	10.603	0.053	21.371	32.027
SUPERVISORY PERSONNEL	1	0	0	1	0.265	0.000	0.000	0.265
ENGINEERING PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
TOTAL	21	0	47	68	14.521	0.053	21.605	36.179
REFUELING								
MAINTENANCE PERSONNEL	11	1	13	25	4.430	0.222	12.374	17.026
OPERATIONS PERSONNEL	10	0	1	11	3.364	0.000	1.188	4.552
HEALTH PHYSICS PERSONNEL	9	0	19	28	4.439	0.007	7.883	12.329
SUPERVISORY PERSONNEL	1	0	6	7	0.219	0.001	3.388	3.608
ENGINEERING PERSONNEL	1	0	5	6	0.343	0.000	3.148	3.491
TOTAL	32	1	44	77	12.795	0.230	27.981	41.006
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	156	10	271	437	107.242	4.773	152.039	264.054
OPERATIONS PERSONNEL	95	1	1	97	40.277	1.552	1.577	43.406
HEALTH PHYSICS PERSONNEL	139	9	113	261	47.895	2.510	49.255	99.660
SUPERVISORY PERSONNEL	15	2	39	56	7.921	0.468	18.777	27.166
ENGINEERING PERSONNEL	13	1	23	37	5.507	0.226	12.203	17.936
GRAND TOTALS	418	23	447	888	208.842	9.529	233.851	452.222

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***WASHINGTON NUCLEAR 2** TYPE: **BWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	69	4	92	165	17.351	0.595	14.867	32.813
OPERATIONS PERSONNEL	32	3	1	36	15.795	0.381	0.163	16.339
HEALTH PHYSICS PERSONNEL	17	1	4	22	3.429	0.093	0.931	4.453
SUPERVISORY PERSONNEL	10	1	4	15	1.299	0.087	1.065	2.451
ENGINEERING PERSONNEL	14	9	25	48	2.803	1.189	6.632	10.624
TOTAL	142	18	126	286	40.677	2.345	23.658	66.680
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	55	1	200	256	43.856	0.664	121.330	165.850
OPERATIONS PERSONNEL	1	0	0	1	4.080	0.000	0.414	4.494
HEALTH PHYSICS PERSONNEL	17	1	45	63	9.943	0.285	16.377	26.605
SUPERVISORY PERSONNEL	2	0	6	8	3.569	0.046	2.599	6.214
ENGINEERING PERSONNEL	6	6	17	29	2.969	2.392	6.566	11.927
TOTAL	81	8	268	357	64.417	3.387	147.286	215.090
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	6	7	0.316	0.000	4.192	4.508
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.004	0.000	0.008	0.012
SUPERVISORY PERSONNEL	0	0	0	0	0.005	0.000	0.079	0.084
ENGINEERING PERSONNEL	0	0	1	1	0.031	0.149	0.527	0.707
TOTAL	1	0	7	8	0.356	0.149	4.806	5.311
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	14	0	44	58	4.048	0.000	13.194	17.242
OPERATIONS PERSONNEL	1	0	0	1	0.164	0.000	0.000	0.164
HEALTH PHYSICS PERSONNEL	4	0	0	4	1.148	0.000	0.000	1.148
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	4	0	21	25	1.114	0.124	6.371	7.609
TOTAL	23	0	65	88	6.474	0.124	19.565	26.163
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.482	0.592	0.024	1.098
OPERATIONS PERSONNEL	0	0	0	0	0.025	0.000	0.000	0.025
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.619	0.000	1.226	1.845
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.135	0.027	0.000	0.162
TOTAL	2	0	1	3	1.261	0.619	1.250	3.130
REFUELING								
MAINTENANCE PERSONNEL	20	0	11	31	18.443	0.008	6.415	24.866
OPERATIONS PERSONNEL	0	0	0	0	0.837	0.000	0.000	0.837
HEALTH PHYSICS PERSONNEL	1	0	10	11	0.775	0.000	3.368	4.143
SUPERVISORY PERSONNEL	4	1	0	5	1.351	0.228	0.003	1.582
ENGINEERING PERSONNEL	0	3	4	7	0.241	0.590	0.910	1.741
TOTAL	25	4	25	54	21.647	0.826	10.696	33.169
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	160	5	353	518	84.496	1.859	160.022	246.377
OPERATIONS PERSONNEL	34	3	1	38	20.901	0.381	0.577	21.859
HEALTH PHYSICS PERSONNEL	40	2	60	102	15.918	0.378	21.910	38.206
SUPERVISORY PERSONNEL	16	2	10	28	6.224	0.361	3.746	10.331
ENGINEERING PERSONNEL	24	18	68	110	7.293	4.471	21.006	32.770
GRAND TOTALS	274	30	492	796	134.832	7.450	207.261	349.543

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***WATERFORD 3** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	8	0	5	13	3.819	0.000	2.517	6.336
OPERATIONS PERSONNEL	12	0	0	12	4.233	0.001	0.361	4.595
HEALTH PHYSICS PERSONNEL	11	0	0	11	2.194	0.023	0.010	2.227
SUPERVISORY PERSONNEL	2	0	0	2	0.784	0.000	0.036	0.820
ENGINEERING PERSONNEL	0	0	0	0	0.488	0.001	0.083	0.572
TOTAL	33	0	5	38	11.518	0.025	3.007	14.550
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	5	0	0	5	2.674	0.000	0.583	3.257
OPERATIONS PERSONNEL	1	0	0	1	0.638	0.001	0.014	0.653
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.232	0.000	0.000	0.232
SUPERVISORY PERSONNEL	0	0	1	1	0.174	0.000	0.037	0.211
ENGINEERING PERSONNEL	0	0	0	0	0.038	0.000	0.134	0.172
TOTAL	6	0	1	7	3.756	0.001	0.768	4.525
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.023	0.000	0.000	0.023
OPERATIONS PERSONNEL	0	0	0	0	0.021	0.001	0.000	0.022
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.006	0.000	0.000	0.006
SUPERVISORY PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
TOTAL	0	0	0	0	0.052	0.001	0.000	0.053
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	10	0	0	10	2.977	0.000	0.020	2.997
OPERATIONS PERSONNEL	1	0	0	1	0.251	0.013	0.019	0.283
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.105	0.000	0.000	0.105
SUPERVISORY PERSONNEL	1	0	0	1	0.300	0.000	0.000	0.300
ENGINEERING PERSONNEL	2	0	0	2	0.330	0.000	0.010	0.340
TOTAL	14	0	0	14	3.963	0.013	0.049	4.025
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.224	0.000	0.000	0.224
OPERATIONS PERSONNEL	1	0	1	2	0.235	0.000	0.366	0.601
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.163	0.000	0.036	0.199
SUPERVISORY PERSONNEL	0	0	0	0	0.004	0.000	0.000	0.004
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.011	0.000	0.011
TOTAL	1	0	1	2	0.626	0.011	0.402	1.039
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	23	0	5	28	9.717	0.000	3.120	12.837
OPERATIONS PERSONNEL	15	0	1	16	5.378	0.016	0.760	6.154
HEALTH PHYSICS PERSONNEL	11	0	0	11	2.700	0.023	0.046	2.769
SUPERVISORY PERSONNEL	3	0	1	4	1.263	0.000	0.073	1.336
ENGINEERING PERSONNEL	2	0	0	2	0.857	0.012	0.227	1.096
GRAND TOTALS	54	0	7	61	19.915	0.051	4.226	24.192

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***WATTS BAR 1,2** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	1	0	3	4	0.010	0.000	0.004	0.014
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	6	1	3	10	0.358	0.000	0.000	0.358
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	1	6	14	0.368	0.000	0.004	0.372
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	16	18	0.048	0.000	0.000	0.048
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	6	1	1	8	0.155	0.000	0.001	0.156
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	8	1	17	26	0.203	0.000	0.001	0.204
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	2	2	0.000	0.000	0.026	0.026
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	6	0	0	6	0.002	0.000	0.000	0.002
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	6	0	2	8	0.002	0.000	0.026	0.028
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	27	29	0.210	0.000	3.649	3.859
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	6	1	3	10	0.275	0.103	0.358	0.736
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	3	3	0.000	0.000	0.338	0.338
TOTAL	8	1	33	42	0.485	0.103	4.345	4.933
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	5	0	48	53	0.268	0.000	3.679	3.947
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	24	3	7	34	0.790	0.103	0.359	1.252
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	3	3	0.000	0.000	0.338	0.338
GRAND TOTALS	29	3	58	90	1.058	0.103	4.376	5.537

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***WOLF CREEK 1** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.446	0.000	0.555	1.001
OPERATIONS PERSONNEL	11	1	0	12	5.446	0.535	0.007	5.988
HEALTH PHYSICS PERSONNEL	21	0	31	52	7.414	0.258	7.753	15.425
SUPERVISORY PERSONNEL	4	0	3	7	2.082	0.000	0.849	2.931
ENGINEERING PERSONNEL	3	0	1	4	1.629	0.238	0.456	2.323
TOTAL	39	1	35	75	17.017	1.031	9.620	27.668
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	10	0	12	22	6.227	0.000	7.119	13.346
OPERATIONS PERSONNEL	0	0	0	0	0.330	0.054	0.010	0.394
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.870	0.105	0.024	0.999
SUPERVISORY PERSONNEL	5	0	0	5	2.369	0.004	0.758	3.131
ENGINEERING PERSONNEL	0	0	0	0	0.855	0.174	0.599	1.628
TOTAL	15	0	12	27	10.651	0.337	8.510	19.498
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	9	0	13	22	2.288	0.000	5.143	7.431
OPERATIONS PERSONNEL	0	0	0	0	0.015	0.000	0.004	0.019
HEALTH PHYSICS PERSONNEL	3	0	7	10	0.885	0.000	2.101	2.986
SUPERVISORY PERSONNEL	2	0	4	6	0.626	0.000	2.066	2.692
ENGINEERING PERSONNEL	1	0	31	32	0.598	0.096	14.167	14.861
TOTAL	15	0	55	70	4.412	0.096	23.481	27.989
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	13	0	105	118	7.362	0.023	33.553	40.938
OPERATIONS PERSONNEL	1	0	0	1	0.319	0.000	0.000	0.319
HEALTH PHYSICS PERSONNEL	2	0	1	3	1.039	0.020	0.678	1.737
SUPERVISORY PERSONNEL	6	0	3	9	2.870	0.000	1.508	4.378
ENGINEERING PERSONNEL	1	1	70	72	0.838	0.144	18.522	19.504
TOTAL	23	1	179	203	12.428	0.187	54.261	66.876
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.562	0.000	0.387	0.949
OPERATIONS PERSONNEL	1	0	1	2	0.562	0.022	0.328	0.912
HEALTH PHYSICS PERSONNEL	15	0	13	28	4.972	0.067	4.110	9.149
SUPERVISORY PERSONNEL	0	0	0	0	0.342	0.000	0.027	0.369
ENGINEERING PERSONNEL	0	0	0	0	0.045	0.000	0.036	0.081
TOTAL	16	0	14	30	6.483	0.089	4.888	11.460
REFUELING								
MAINTENANCE PERSONNEL	1	0	9	10	1.211	0.000	3.933	5.144
OPERATIONS PERSONNEL	1	0	0	1	0.256	0.007	0.000	0.263
HEALTH PHYSICS PERSONNEL	2	0	1	3	0.848	0.000	0.324	1.172
SUPERVISORY PERSONNEL	2	0	3	5	0.815	0.000	1.394	2.209
ENGINEERING PERSONNEL	3	0	11	14	1.605	0.022	7.320	8.947
TOTAL	9	0	24	33	4.735	0.029	12.971	17.735
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	33	0	139	172	18.096	0.023	50.690	68.809
OPERATIONS PERSONNEL	14	1	1	16	6.928	0.618	0.349	7.895
HEALTH PHYSICS PERSONNEL	43	0	53	96	16.028	0.450	14.990	31.468
SUPERVISORY PERSONNEL	19	0	13	32	9.104	0.004	6.602	15.710
ENGINEERING PERSONNEL	8	1	113	122	5.570	0.674	41.100	47.344
GRAND TOTALS	117	2	319	438	55.726	1.769	113.731	171.226

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: ***YANKEE-ROWE** TYPE: **PWR**

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	3	3	0.050	0.069	2.105	2.224
OPERATIONS PERSONNEL	1	0	0	1	0.311	0.000	0.151	0.462
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.018	0.073	0.421	0.512
SUPERVISORY PERSONNEL	0	0	0	0	0.027	0.037	0.006	0.070
ENGINEERING PERSONNEL	0	1	0	1	0.005	0.215	0.092	0.312
TOTAL	1	1	3	5	0.411	0.394	2.775	3.580
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	1	2	0.293	0.000	0.316	0.609
OPERATIONS PERSONNEL	0	0	0	0	0.114	0.000	0.018	0.132
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.128	0.128
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.078	0.078
TOTAL	1	0	1	2	0.407	0.000	0.540	0.947
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	84	85	0.357	0.096	49.467	49.920
OPERATIONS PERSONNEL	1	0	1	2	0.256	0.000	0.307	0.563
HEALTH PHYSICS PERSONNEL	2	7	49	58	0.270	3.048	18.523	21.841
SUPERVISORY PERSONNEL	0	0	0	0	0.009	0.023	0.014	0.046
ENGINEERING PERSONNEL	1	2	2	5	0.343	0.389	0.449	1.181
TOTAL	5	9	136	150	1.235	3.556	68.760	73.551
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	19	19	0.005	0.000	7.396	7.401
OPERATIONS PERSONNEL	0	0	1	1	0.142	0.000	0.925	1.067
HEALTH PHYSICS PERSONNEL	0	0	9	9	0.009	0.233	8.211	8.453
SUPERVISORY PERSONNEL	0	0	0	0	0.064	0.000	0.000	0.064
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.133	0.069	0.202
TOTAL	0	0	29	29	0.220	0.366	16.601	17.187
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	2	0	107	109	0.705	0.165	59.284	60.154
OPERATIONS PERSONNEL	2	0	2	4	0.823	0.000	1.401	2.224
HEALTH PHYSICS PERSONNEL	2	7	58	67	0.297	3.354	27.283	30.934
SUPERVISORY PERSONNEL	0	0	0	0	0.100	0.060	0.020	0.180
ENGINEERING PERSONNEL	1	3	2	6	0.348	0.737	0.688	1.773
GRAND TOTALS	7	10	169	186	2.273	4.316	88.676	95.265

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1996

PLANT: *ZION 1,2 TYPE: PWR

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.043	0.000	0.053	0.096
OPERATIONS PERSONNEL	98	0	0	98	12.227	0.000	0.000	12.227
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	30	0	0	30	1.635	0.000	0.009	1.644
ENGINEERING PERSONNEL	1	0	1	2	0.051	0.000	0.026	0.077
TOTAL	129	0	1	130	13.956	0.000	0.088	14.044
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	143	15	1000	1158	42.924	1.274	255.534	299.732
OPERATIONS PERSONNEL	29	5	182	216	3.610	0.021	0.560	4.191
HEALTH PHYSICS PERSONNEL	60	63	75	198	17.026	1.055	21.850	39.931
SUPERVISORY PERSONNEL	168	0	149	317	9.041	0.000	6.298	15.339
ENGINEERING PERSONNEL	144	0	45	189	5.850	0.000	0.881	6.731
TOTAL	544	83	1451	2078	78.451	2.350	285.123	365.924
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	111	111	0.042	0.000	28.326	28.368
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	12	0	12	0.014	0.208	0.003	0.225
SUPERVISORY PERSONNEL	0	0	28	28	0.008	0.000	1.169	1.177
ENGINEERING PERSONNEL	1	0	18	19	0.040	0.000	0.367	0.407
TOTAL	1	12	157	170	0.104	0.208	29.865	30.177
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	5	5	0.000	0.000	1.142	1.142
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	117	117	0.000	0.000	4.972	4.972
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	122	122	0.000	0.000	6.114	6.114
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	6	7	0.395	0.000	1.525	1.920
OPERATIONS PERSONNEL	12	0	0	12	1.552	0.000	0.000	1.552
HEALTH PHYSICS PERSONNEL	3	0	4	7	0.776	0.003	1.026	1.805
SUPERVISORY PERSONNEL	9	0	0	9	0.473	0.000	0.000	0.473
ENGINEERING PERSONNEL	0	0	0	0	0.004	0.000	0.000	0.004
TOTAL	25	0	10	35	3.200	0.003	2.551	5.754
REFUELING								
MAINTENANCE PERSONNEL	29	1	4	34	8.718	0.088	1.046	9.852
OPERATIONS PERSONNEL	22	0	0	22	2.763	0.000	0.000	2.763
HEALTH PHYSICS PERSONNEL	0	14	0	14	0.090	0.235	0.132	0.457
SUPERVISORY PERSONNEL	26	0	1	27	1.398	0.000	0.039	1.437
ENGINEERING PERSONNEL	4	0	1	5	0.168	0.000	0.010	0.178
TOTAL	81	15	6	102	13.137	0.323	1.227	14.687
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	173	16	1126	1315	52.122	1.362	287.626	341.110
OPERATIONS PERSONNEL	161	5	182	348	20.152	0.021	0.560	20.733
HEALTH PHYSICS PERSONNEL	63	89	79	231	17.906	1.501	23.011	42.418
SUPERVISORY PERSONNEL	233	0	295	528	12.555	0.000	12.487	25.042
ENGINEERING PERSONNEL	150	0	65	215	6.113	0.000	1.284	7.397
GRAND TOTALS	780	110	1747	2637	108.848	2.884	324.968	436.700

*Workers may be counted in more than one category.

APPENDIX E*

Graphical Representation of Collective Dose Trends by Year and Job Function for Each Site

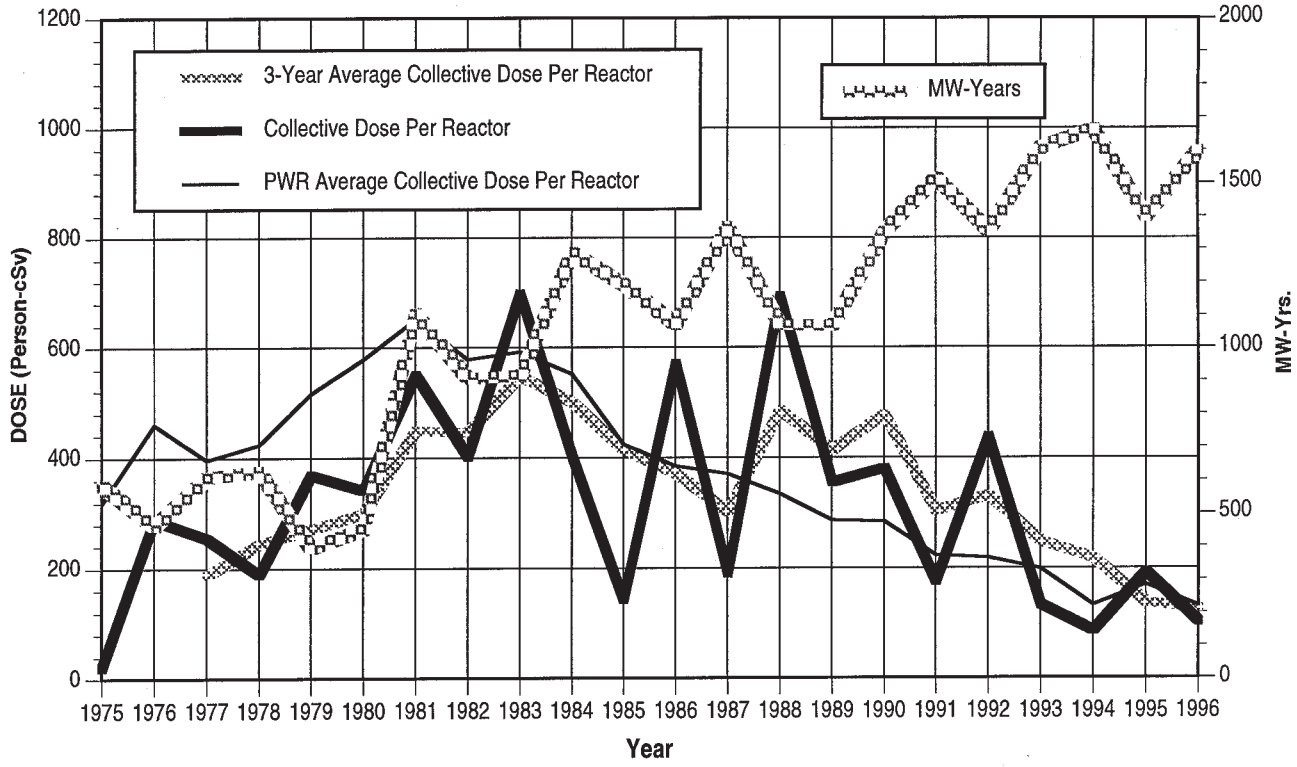
1973-1996

* Appendix E contains data on operating plants as well as plants which are no longer in commercial operation.

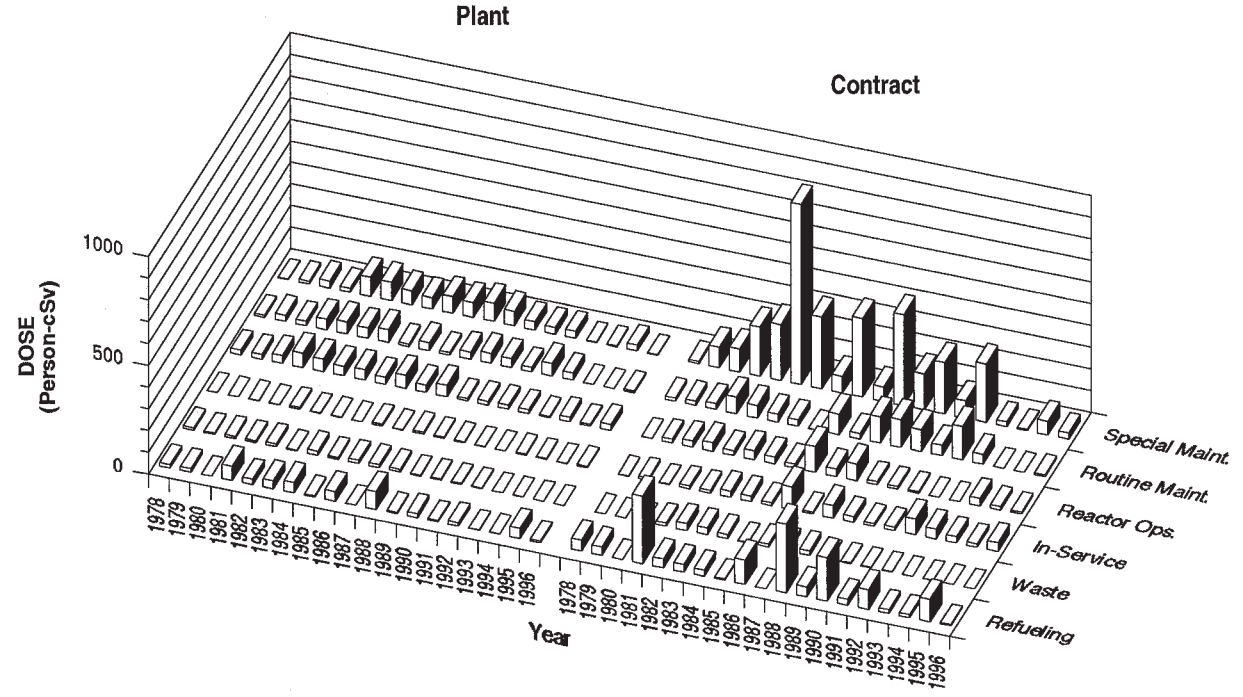
APPENDIX E

ARKANSAS 1, 2

Dose-Performance Indicators **PWR**



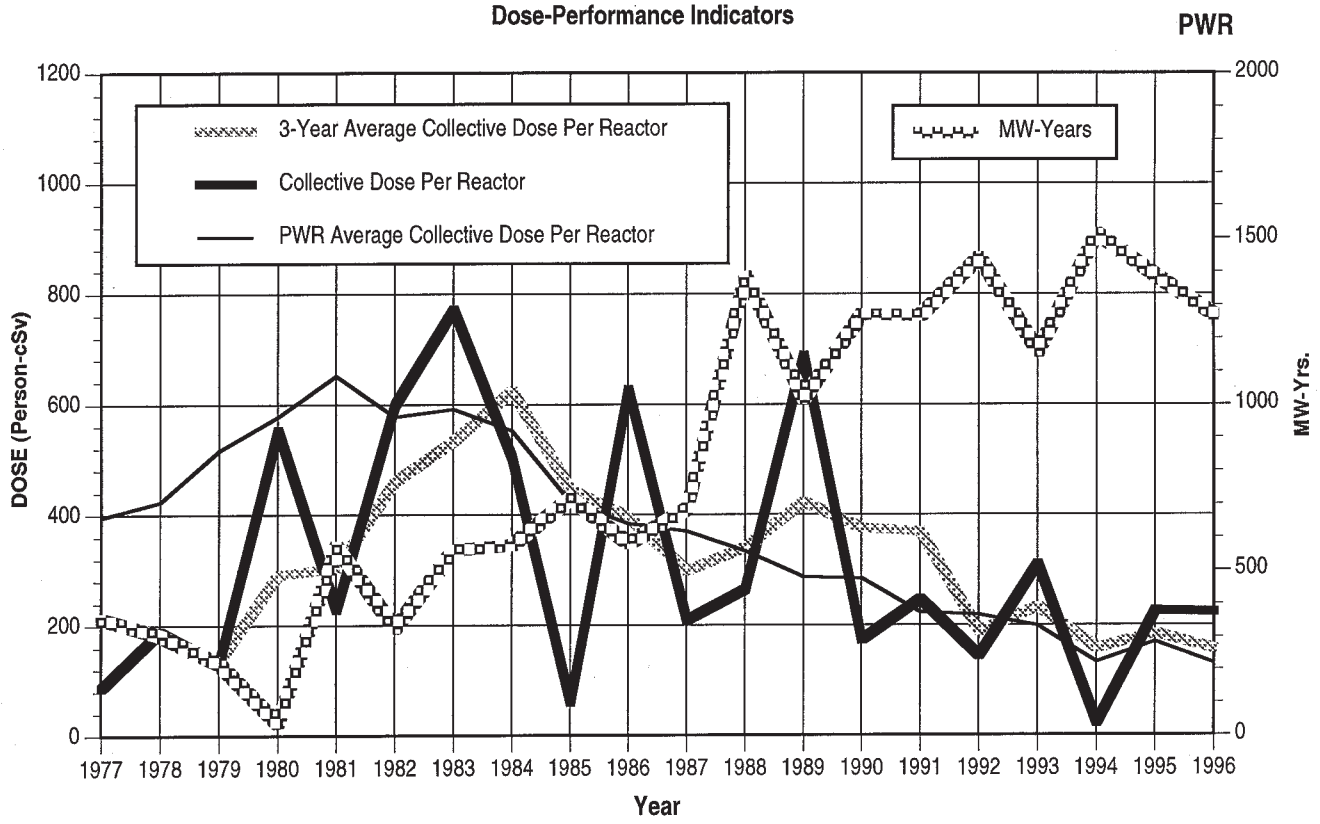
Breakdown by Job Function



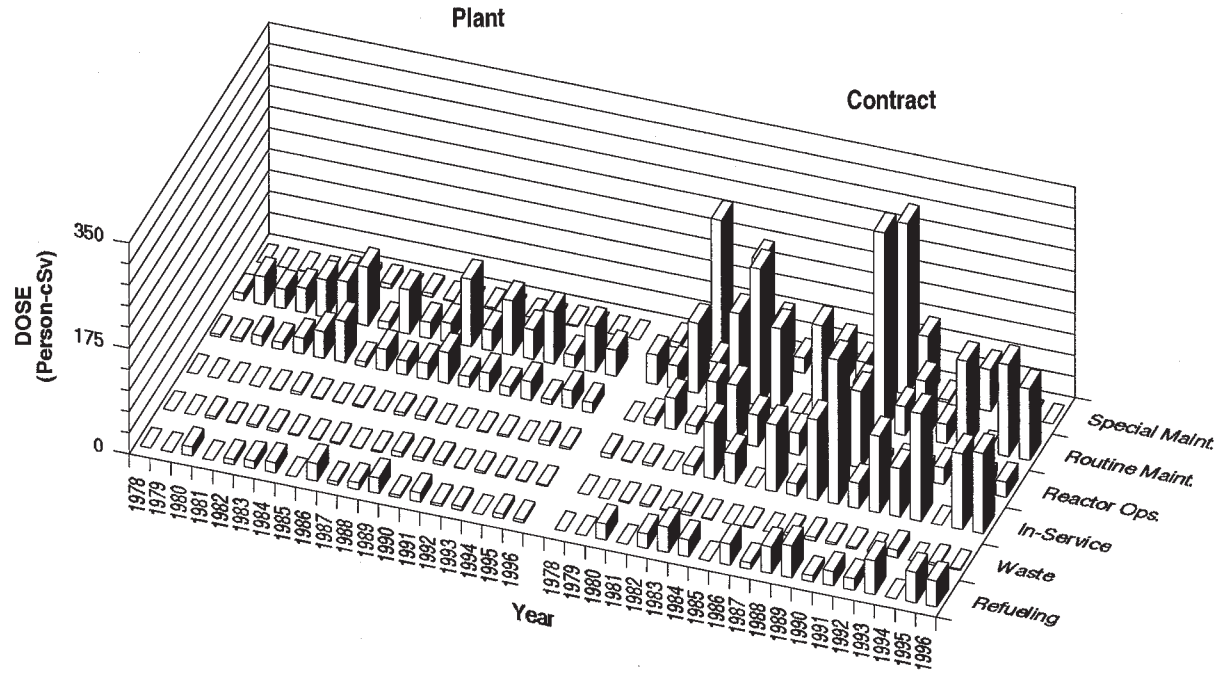
APPENDIX E (continued)

BEAVER VALLEY 1, 2

Dose-Performance Indicators



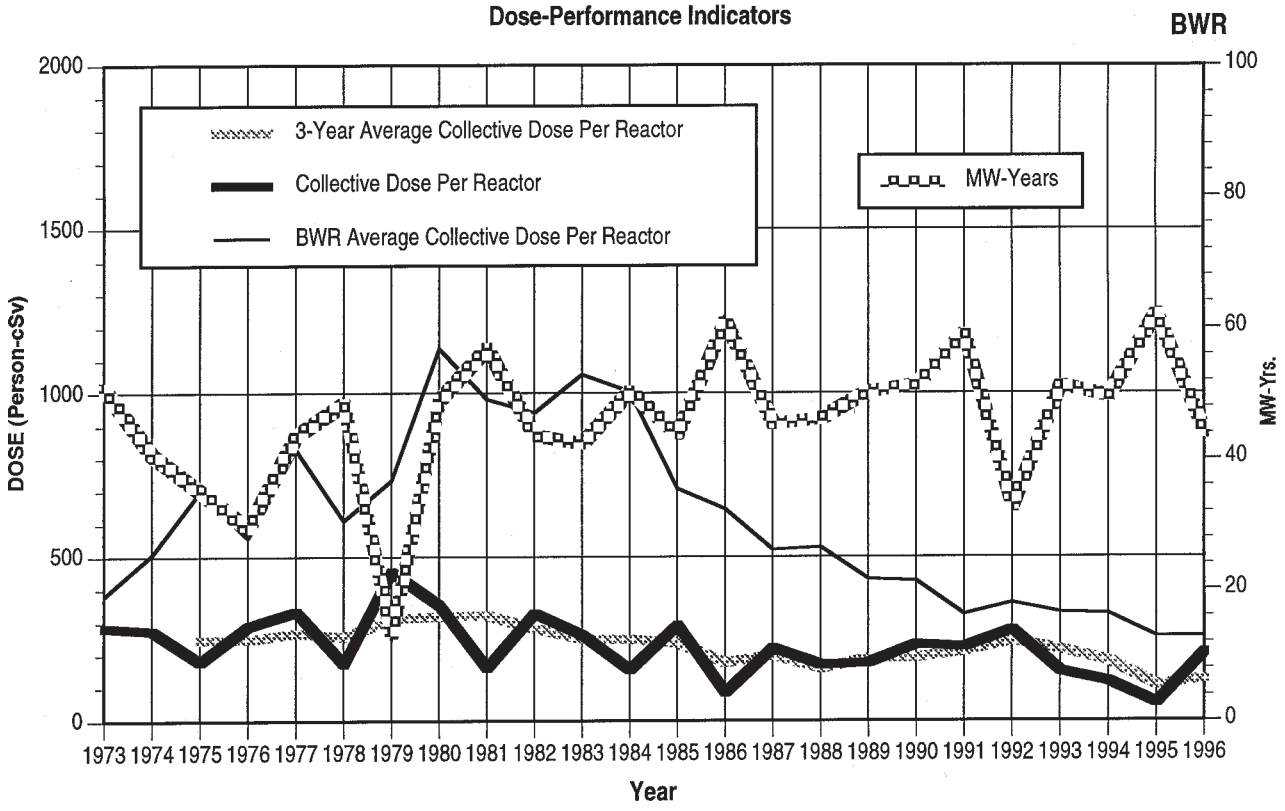
Breakdown by Job Function



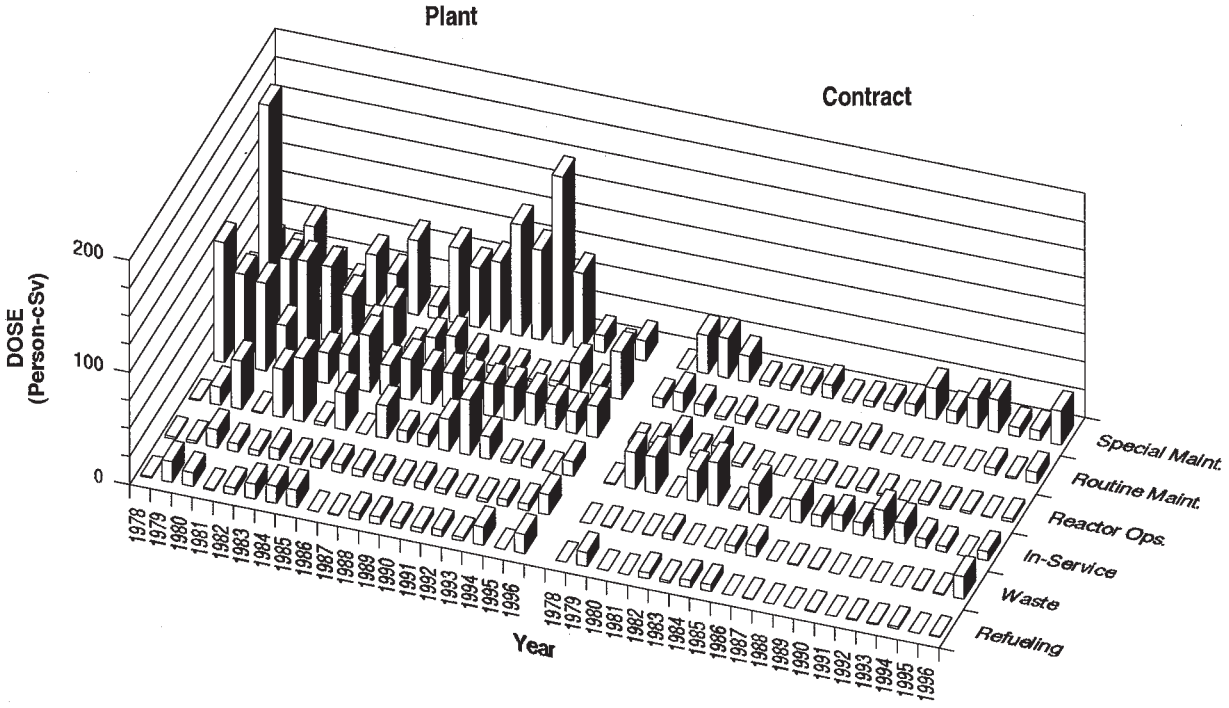
APPENDIX E (continued)

BIG ROCK POINT

Dose-Performance Indicators



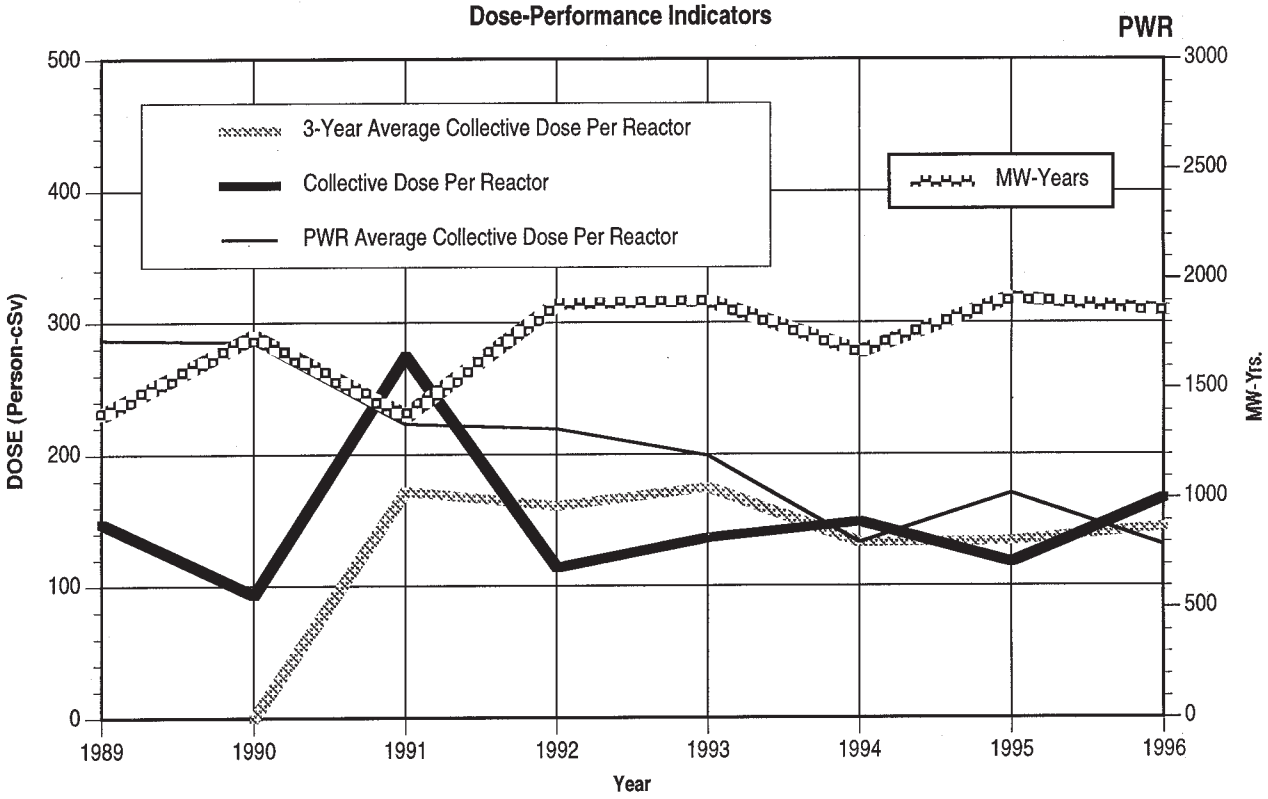
Breakdown by Job Function



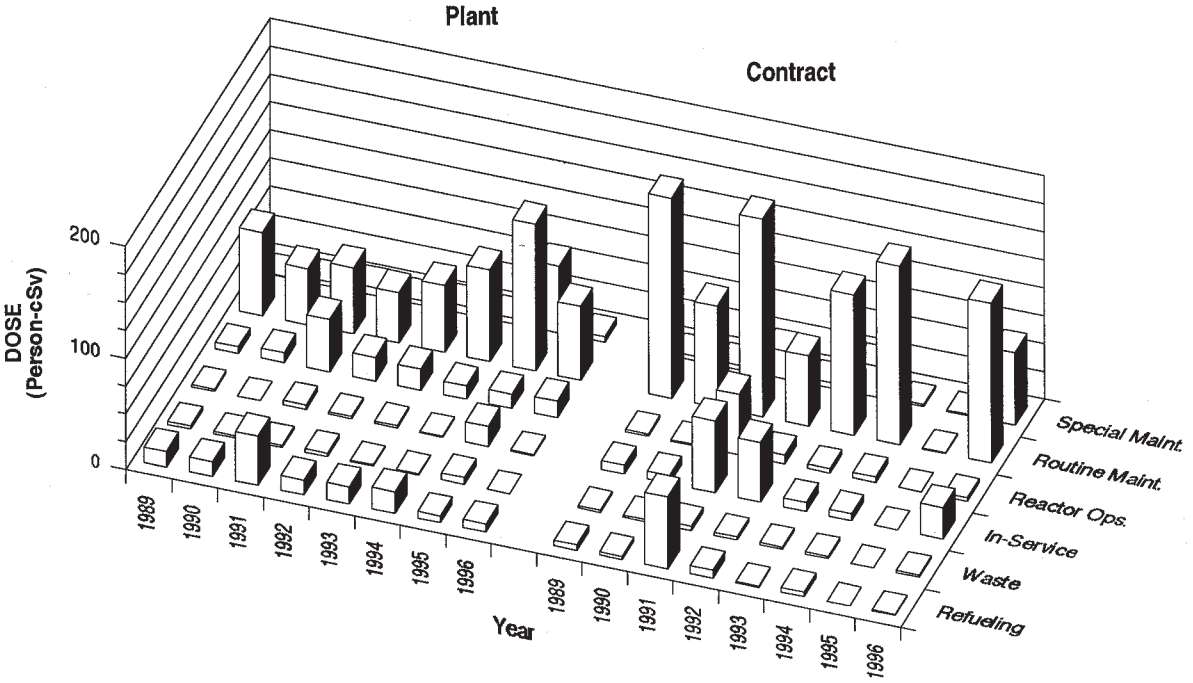
APPENDIX E (continued)

BRAIDWOOD 1, 2

Dose-Performance Indicators



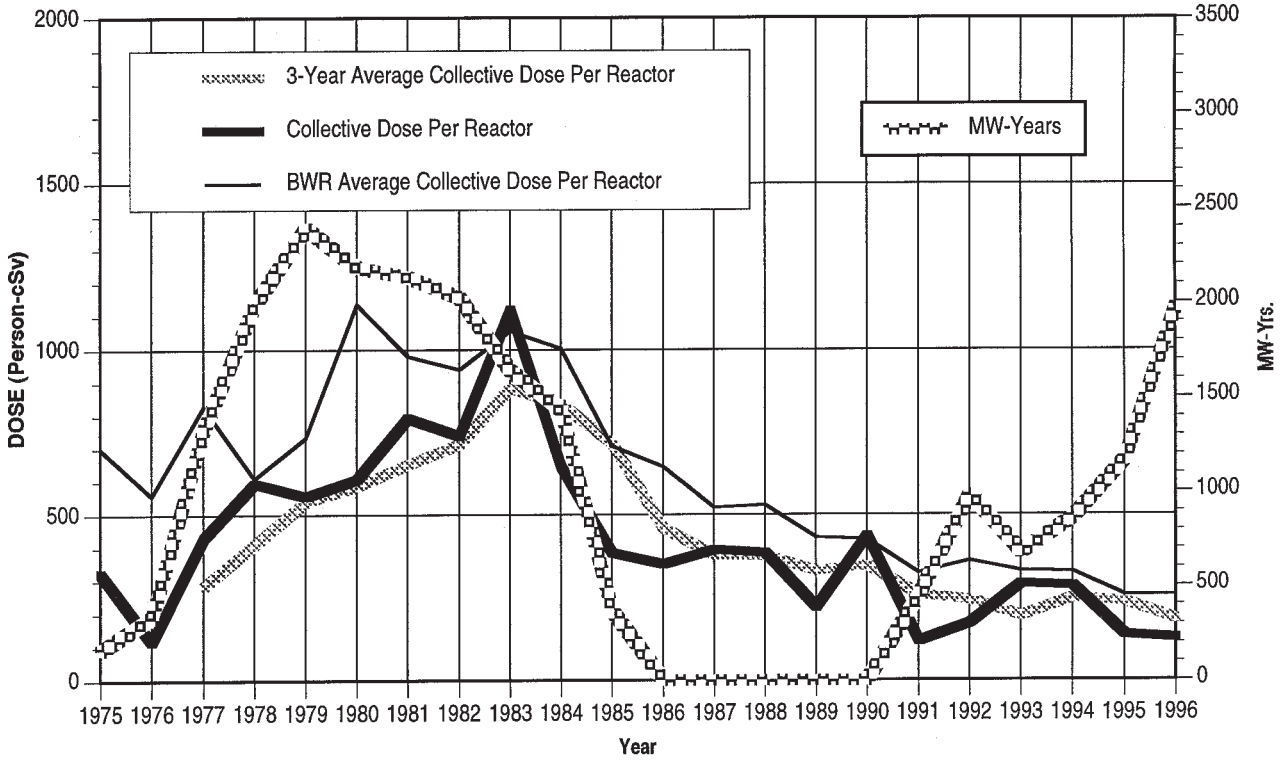
Breakdown by Job Function



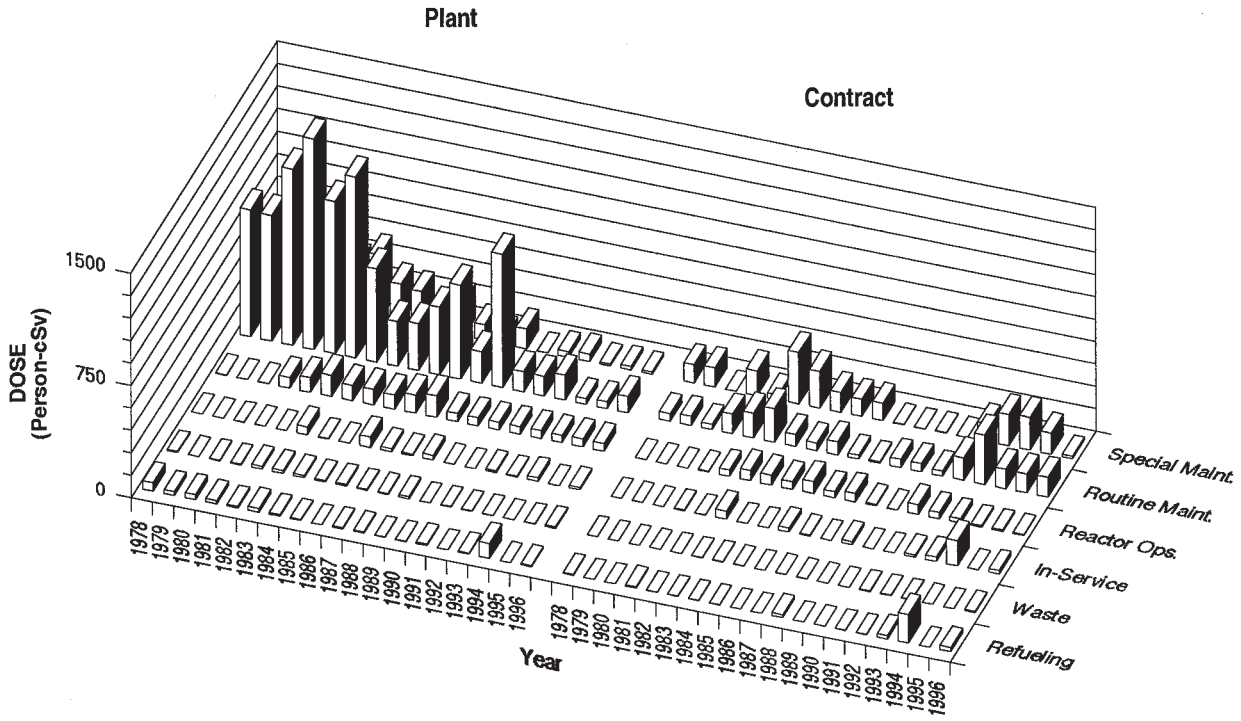
APPENDIX E (continued)

BROWNS FERRY 1, 2, 3

Dose-Performance Indicators **BWR**



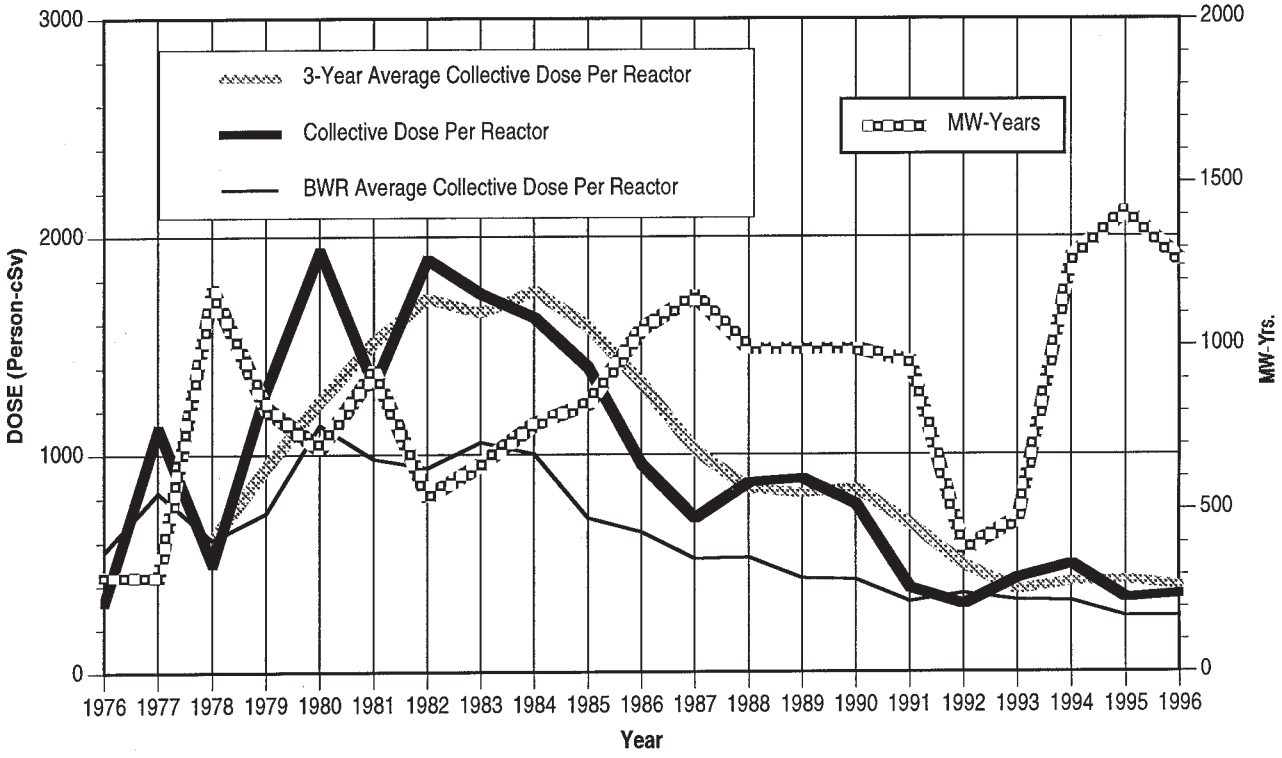
Breakdown by Job Function



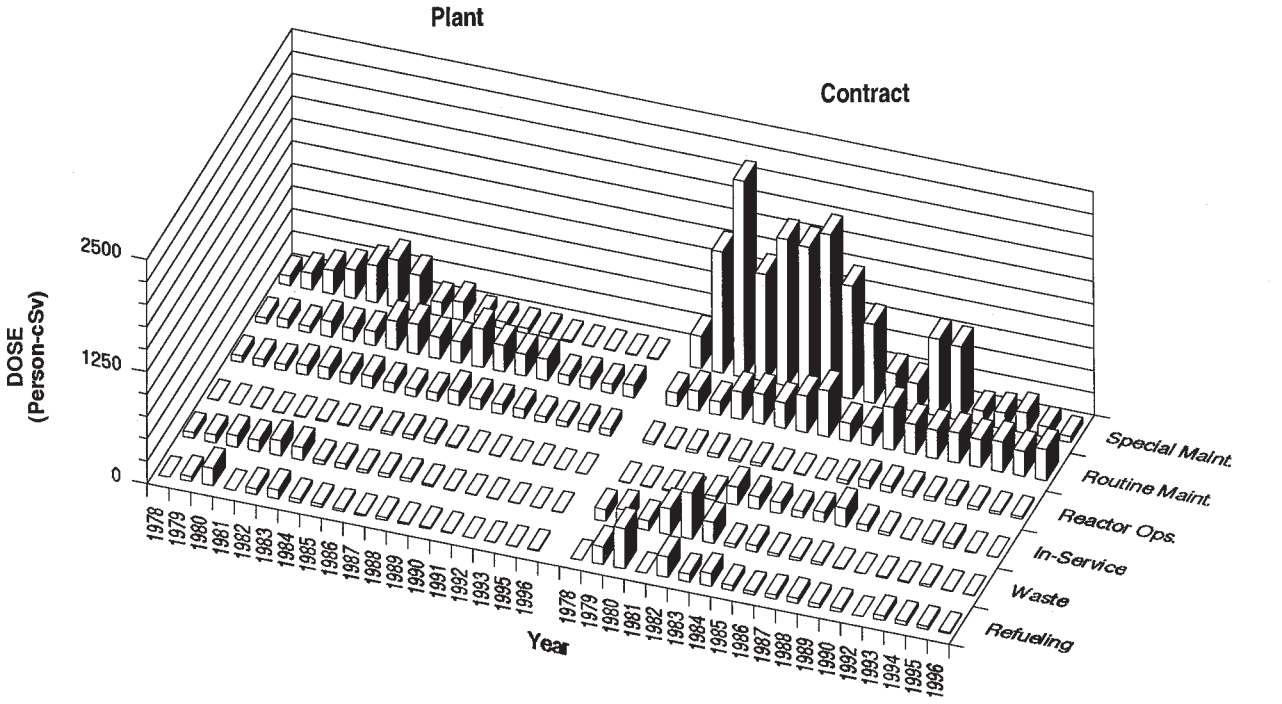
BRUNSWICK 1, 2

Dose-Performance Indicators

BWR



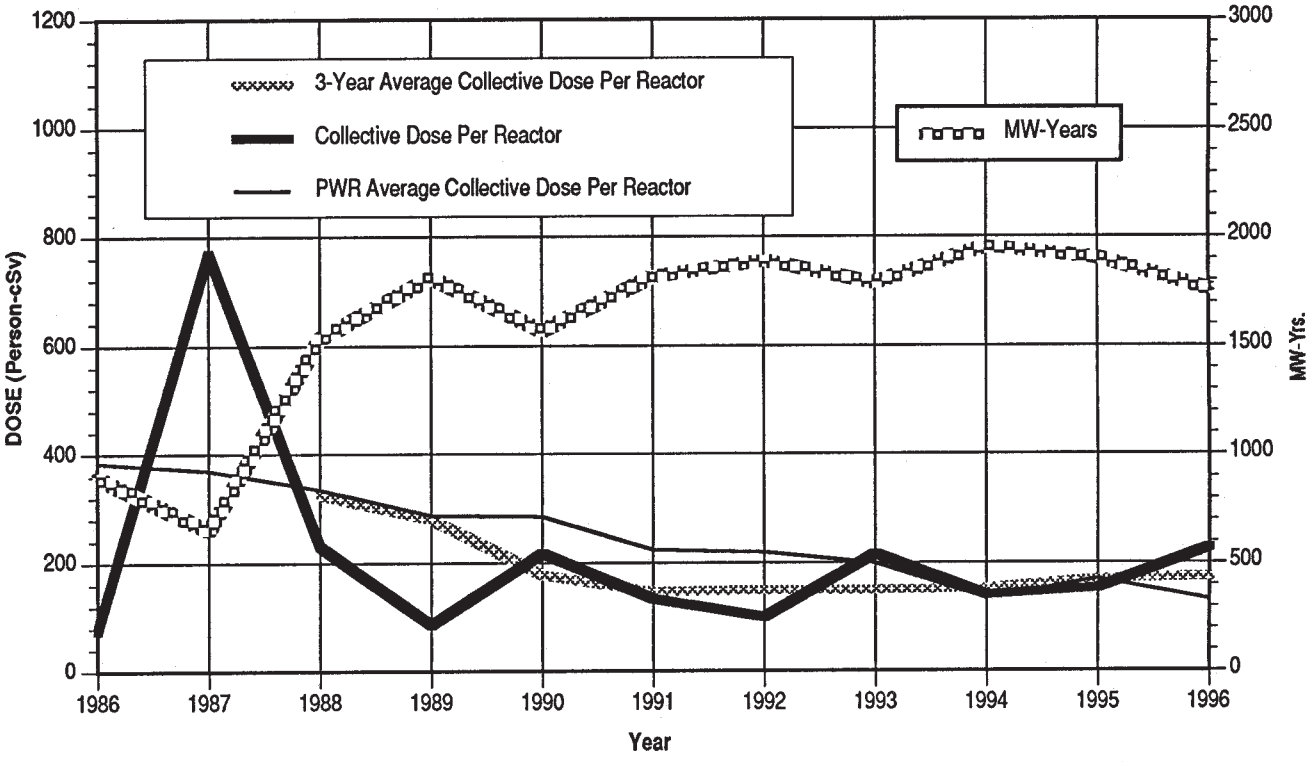
Breakdown by Job Function



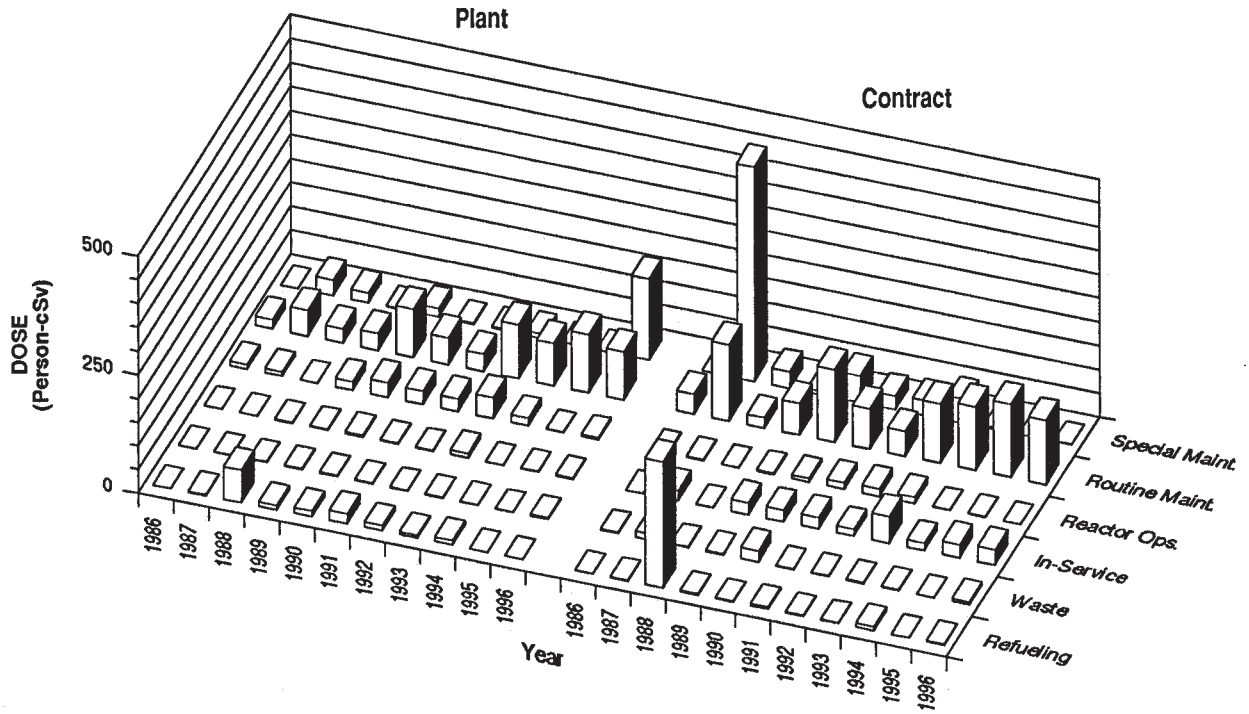
APPENDIX E (continued)

BYRON 1, 2

Dose-Performance Indicators **PWR**



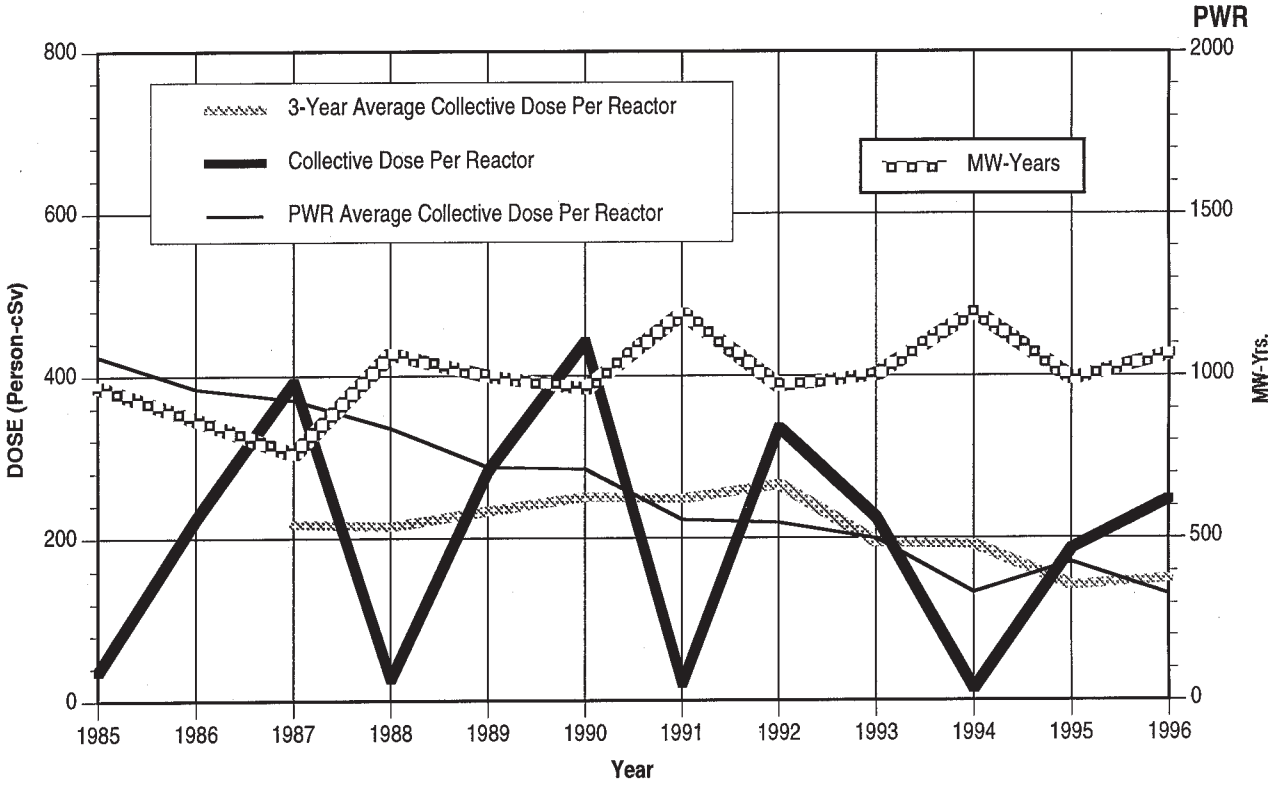
Breakdown by Job Function



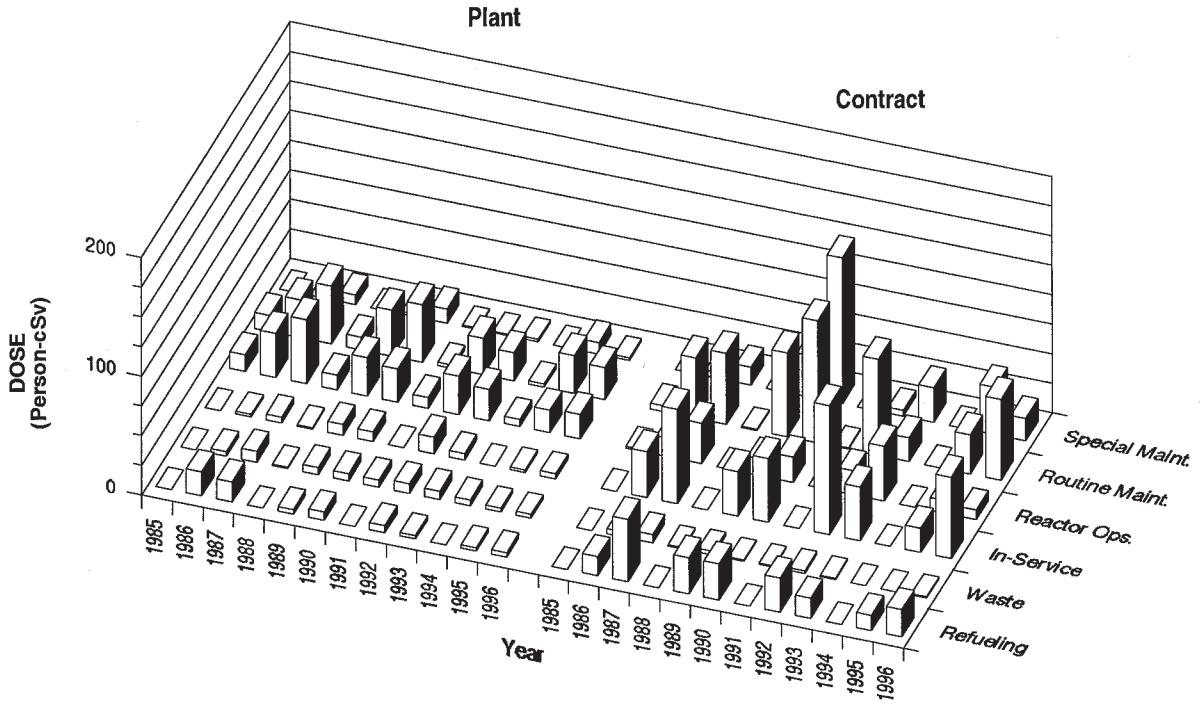
APPENDIX E (continued)

CALLAWAY 1

Dose-Performance Indicators



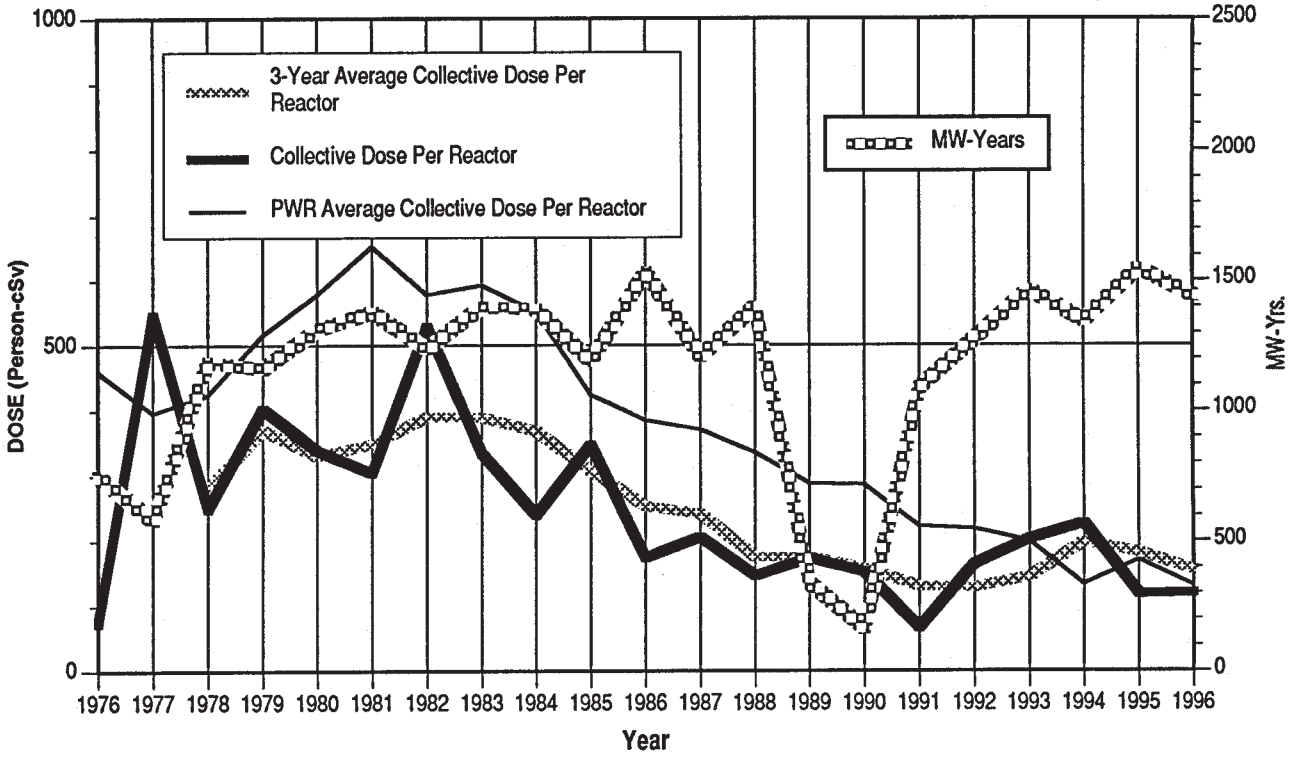
Breakdown by Job Function



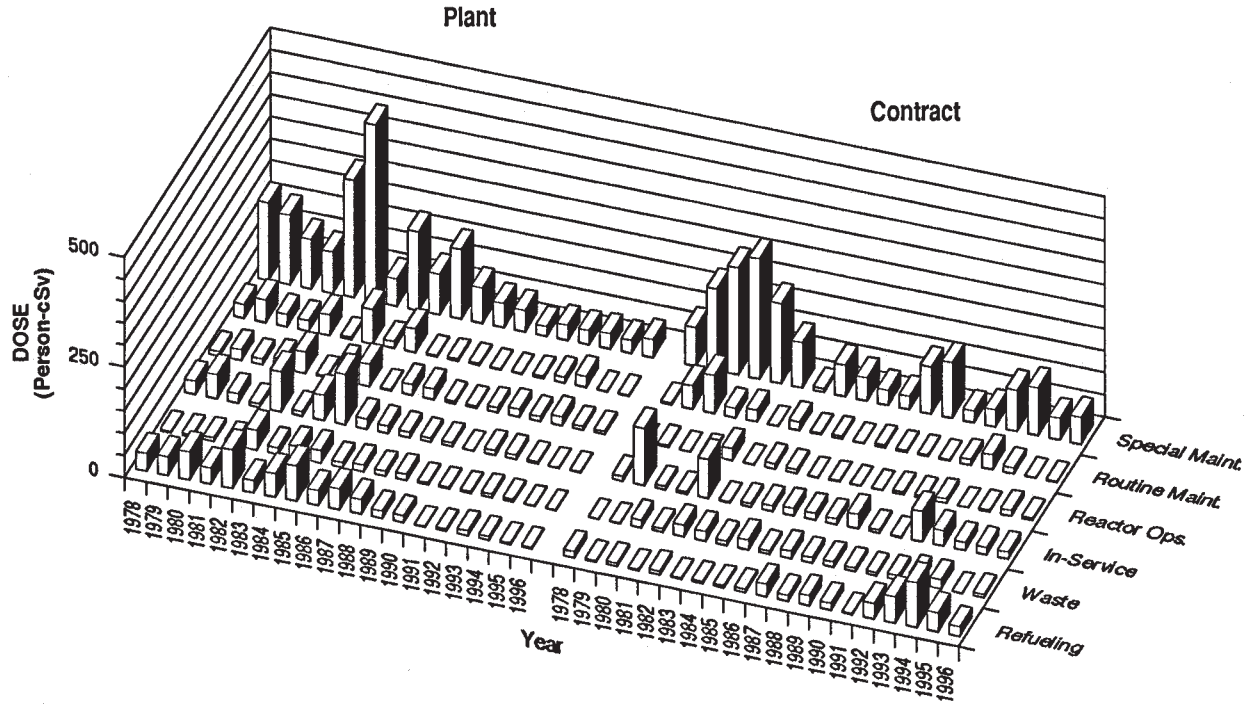
APPENDIX E (continued)

CALVERT CLIFFS 1, 2

Dose-Performance Indicators **PWR**



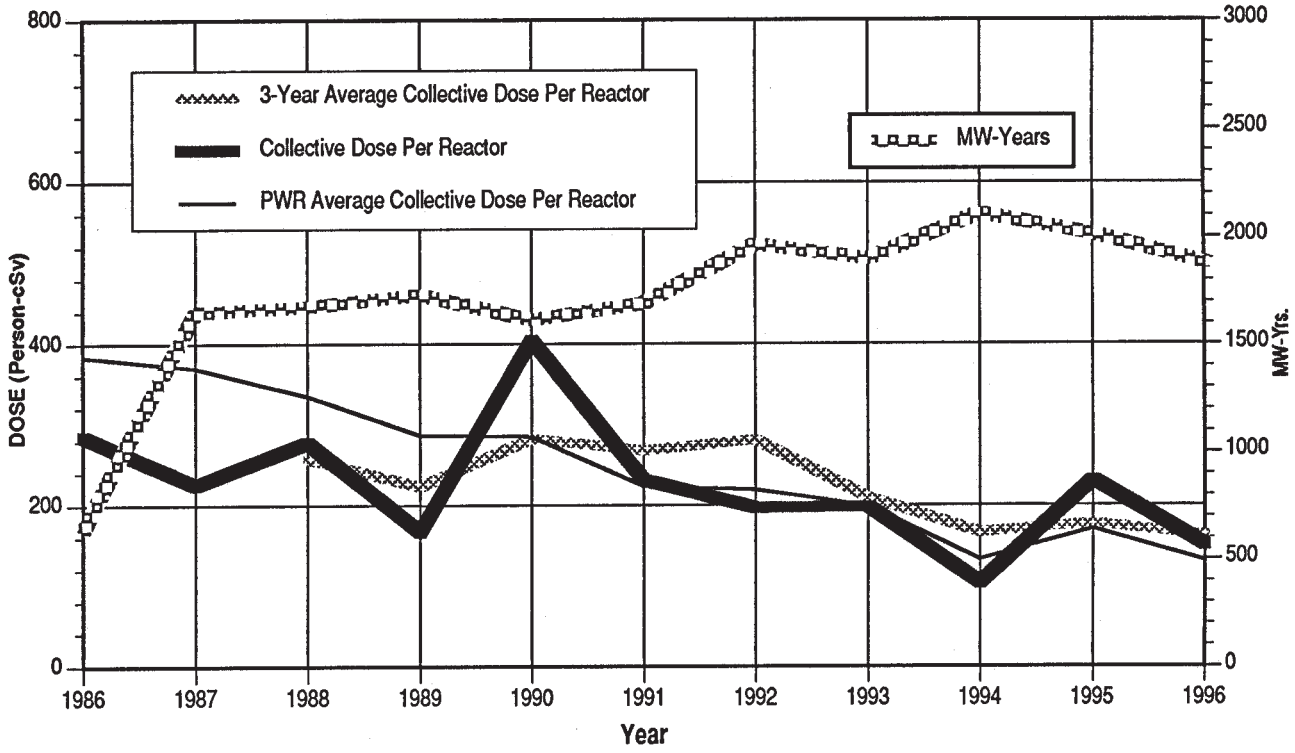
Breakdown by Job Function



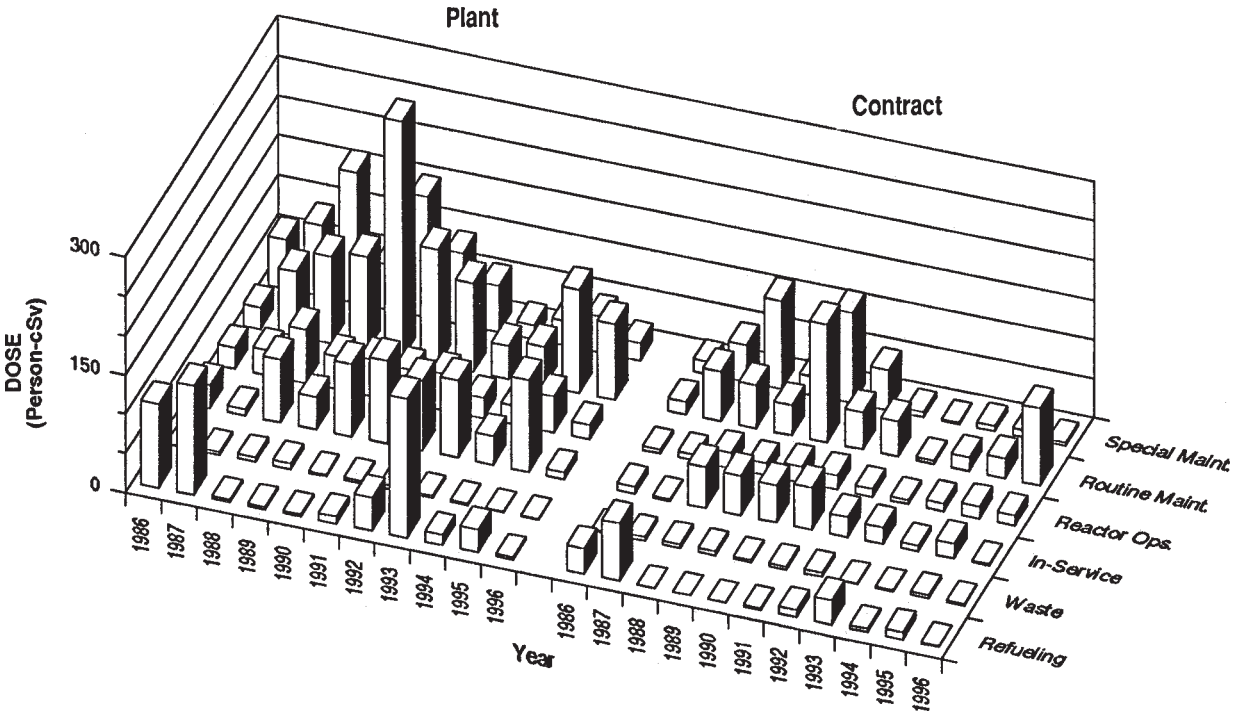
APPENDIX E (continued)

CATAWBA 1, 2

Dose-Performance Indicators **PWR**



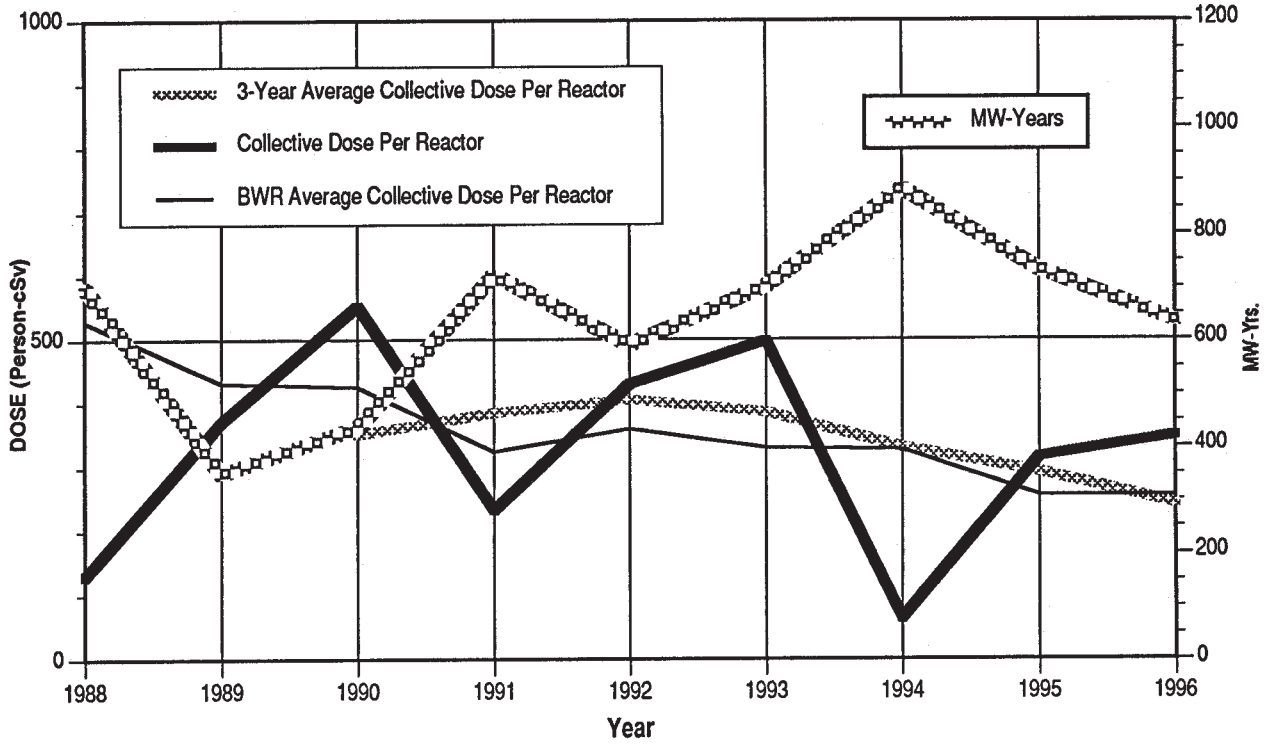
Breakdown by Job Function



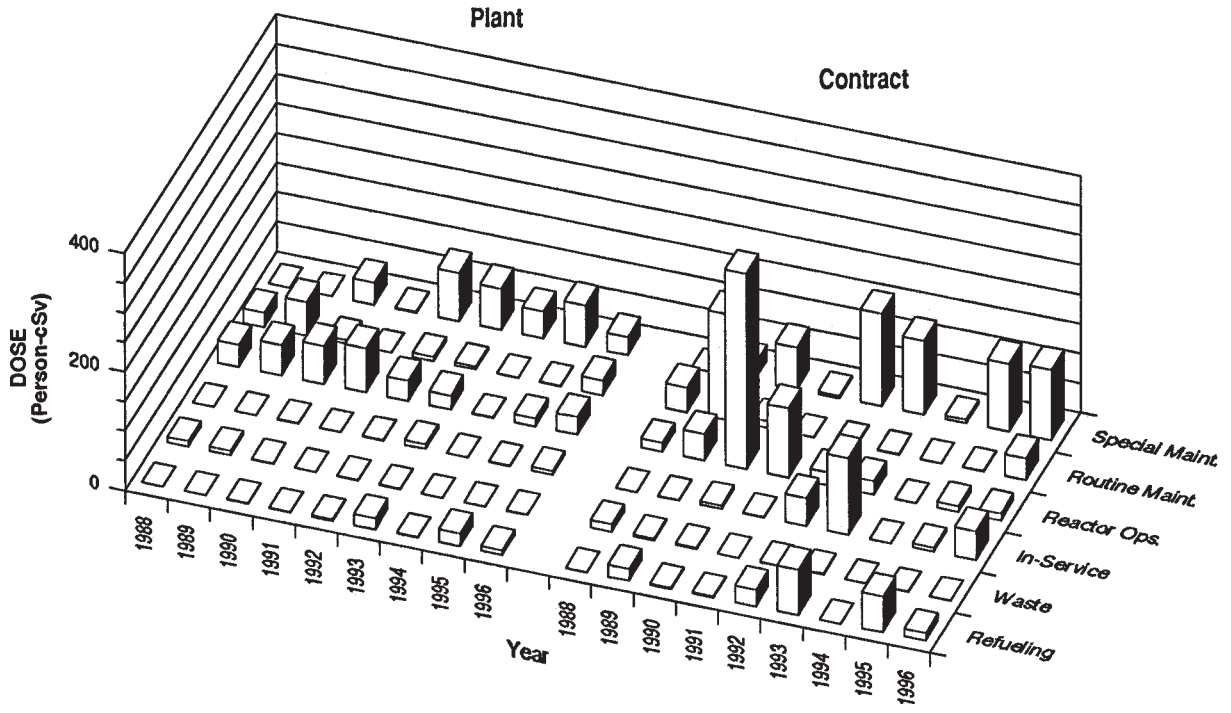
APPENDIX E (continued)

CLINTON

Dose-Performance Indicators **BWR**

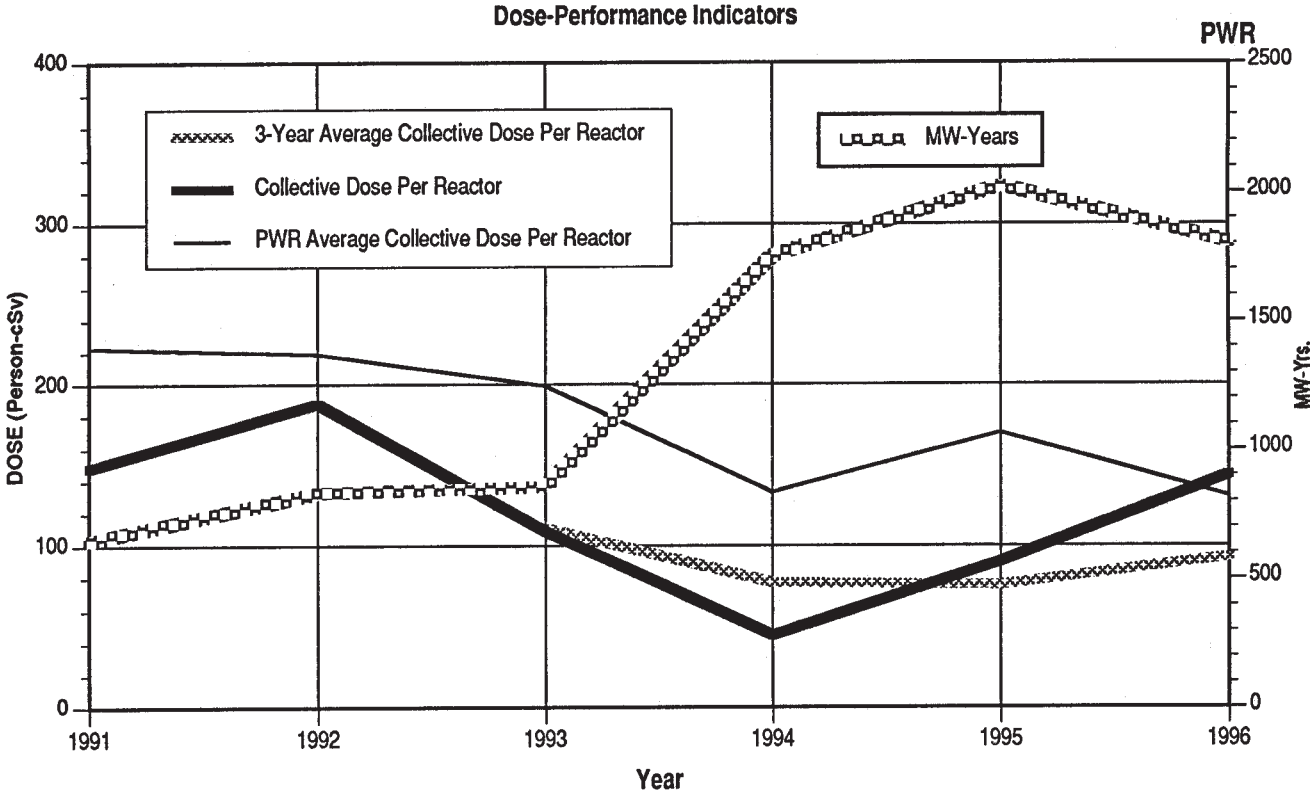


Breakdown by Job Function

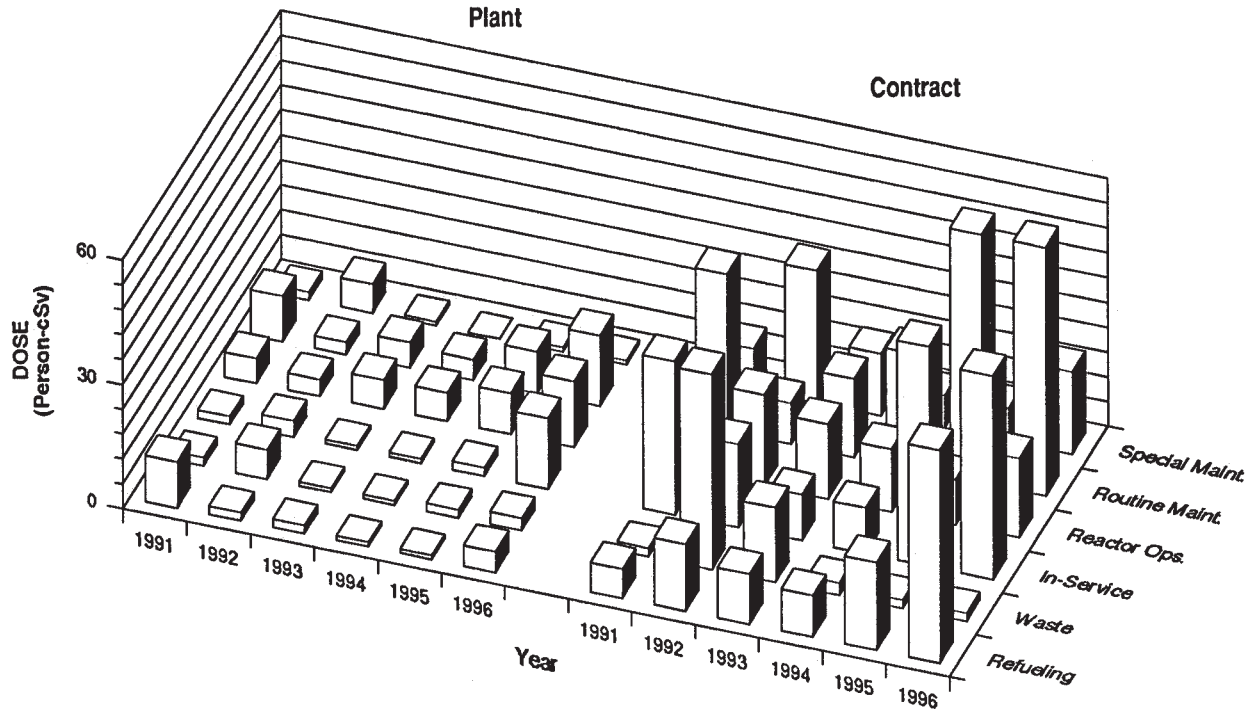


COMANCHE PEAK 1, 2

Dose-Performance Indicators



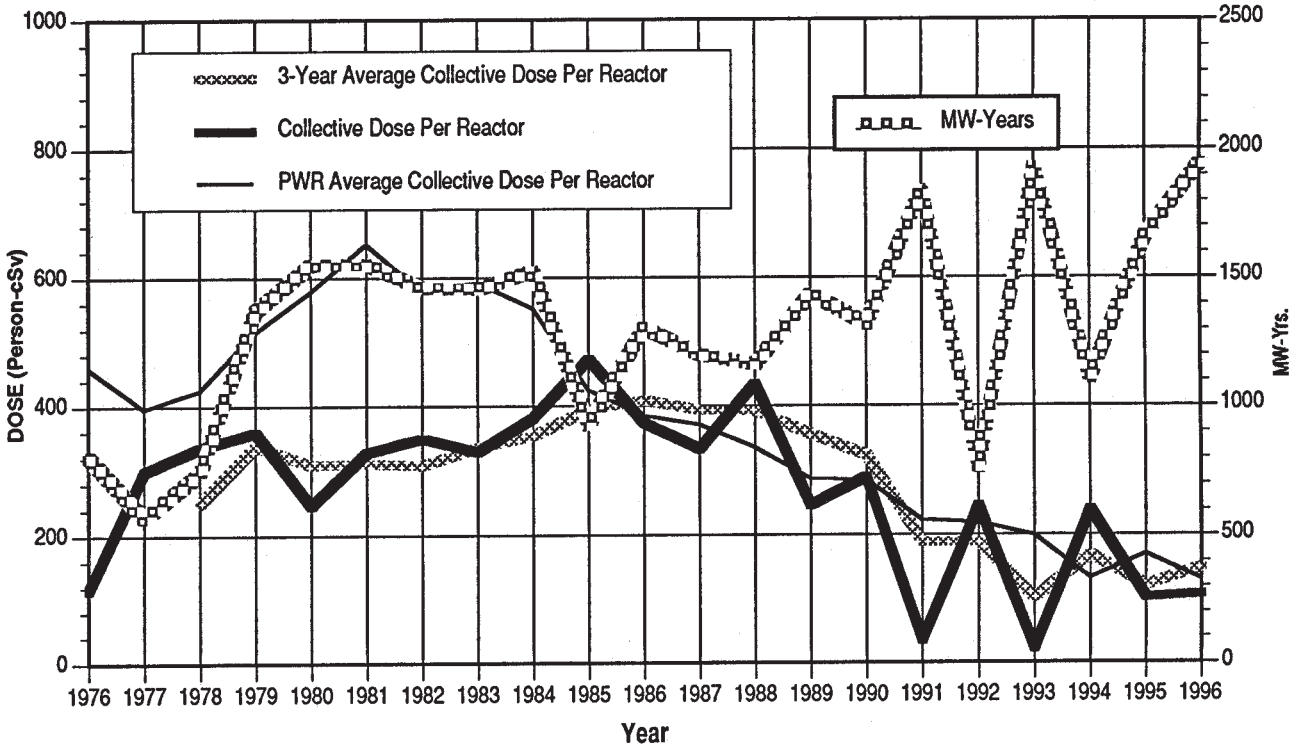
Breakdown by Job Function



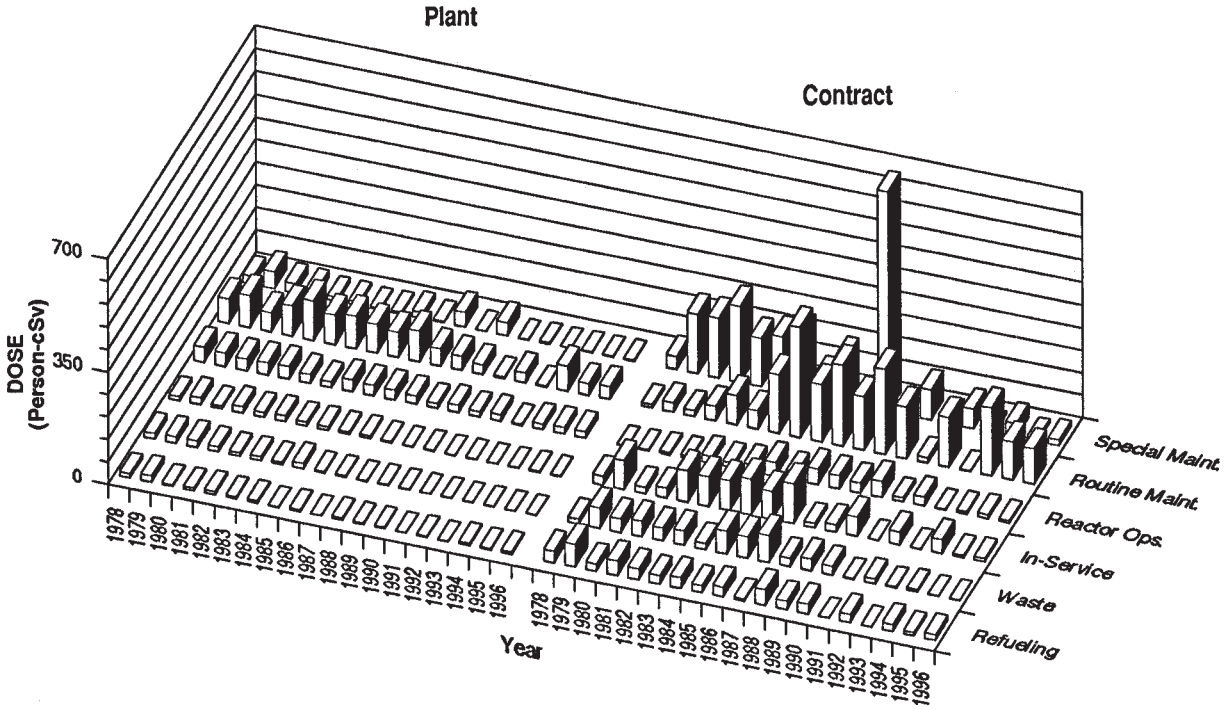
APPENDIX E (continued)

COOK 1, 2

Dose-Performance Indicators **PWR**



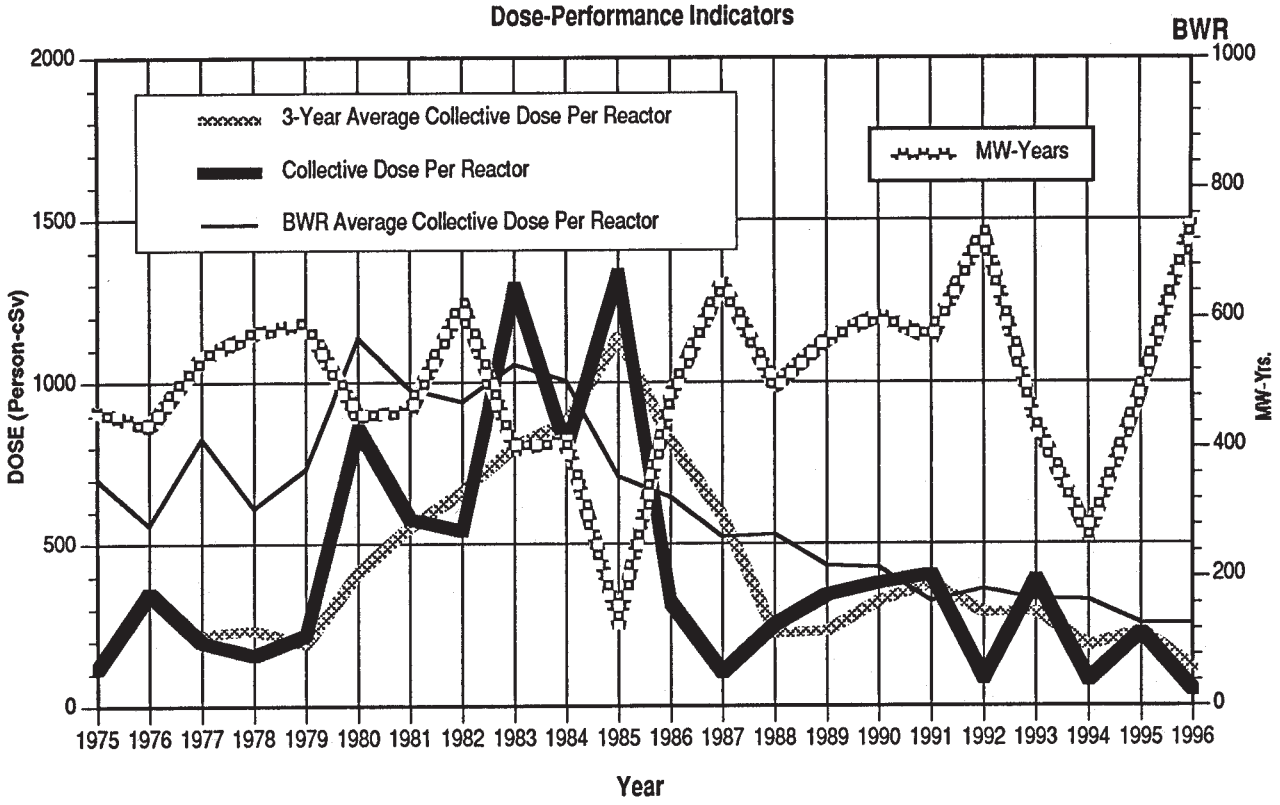
Breakdown by Job Function



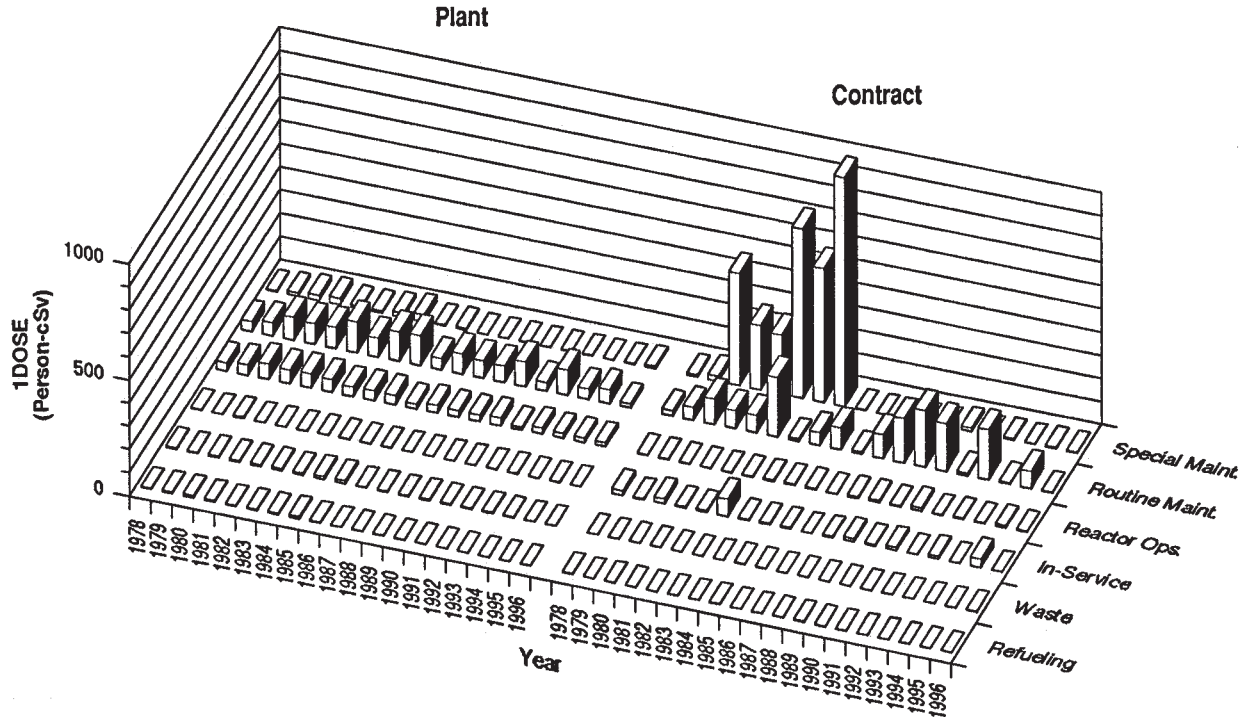
APPENDIX E (continued)

COOPER STATION

Dose-Performance Indicators



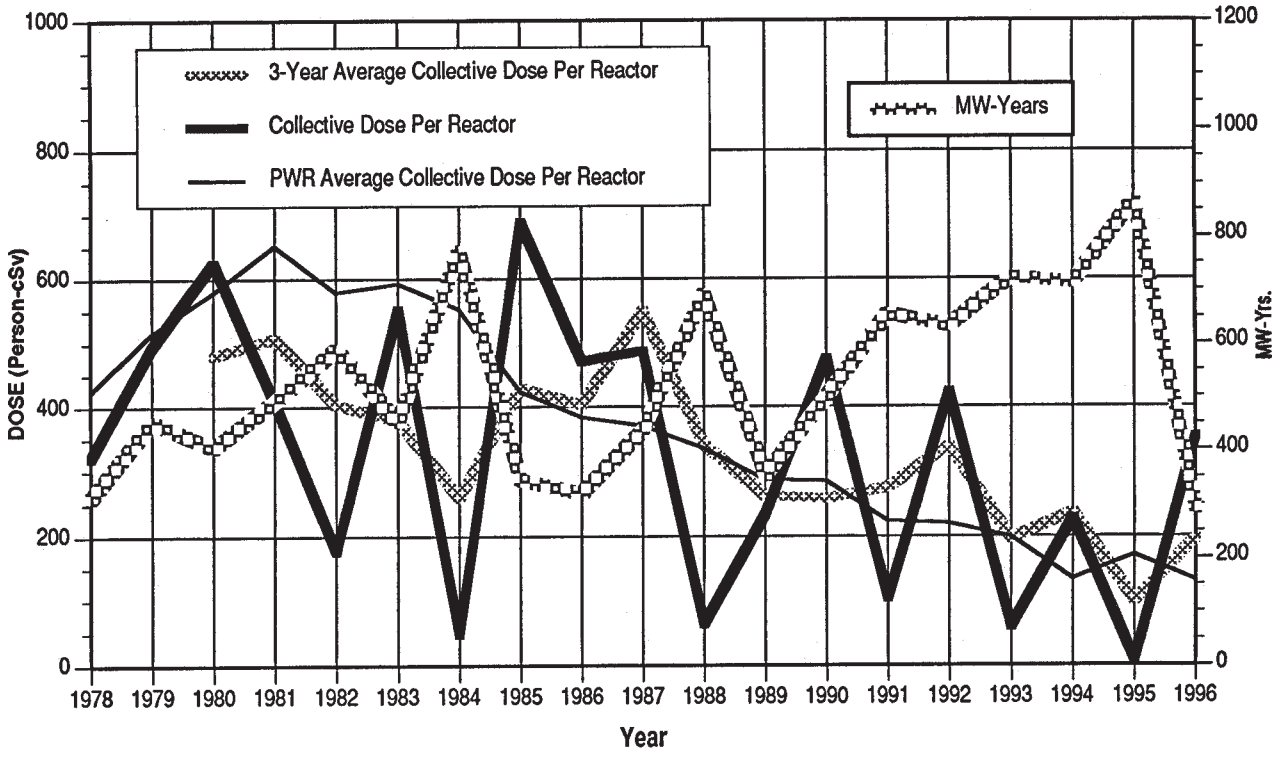
Breakdown by Job Function



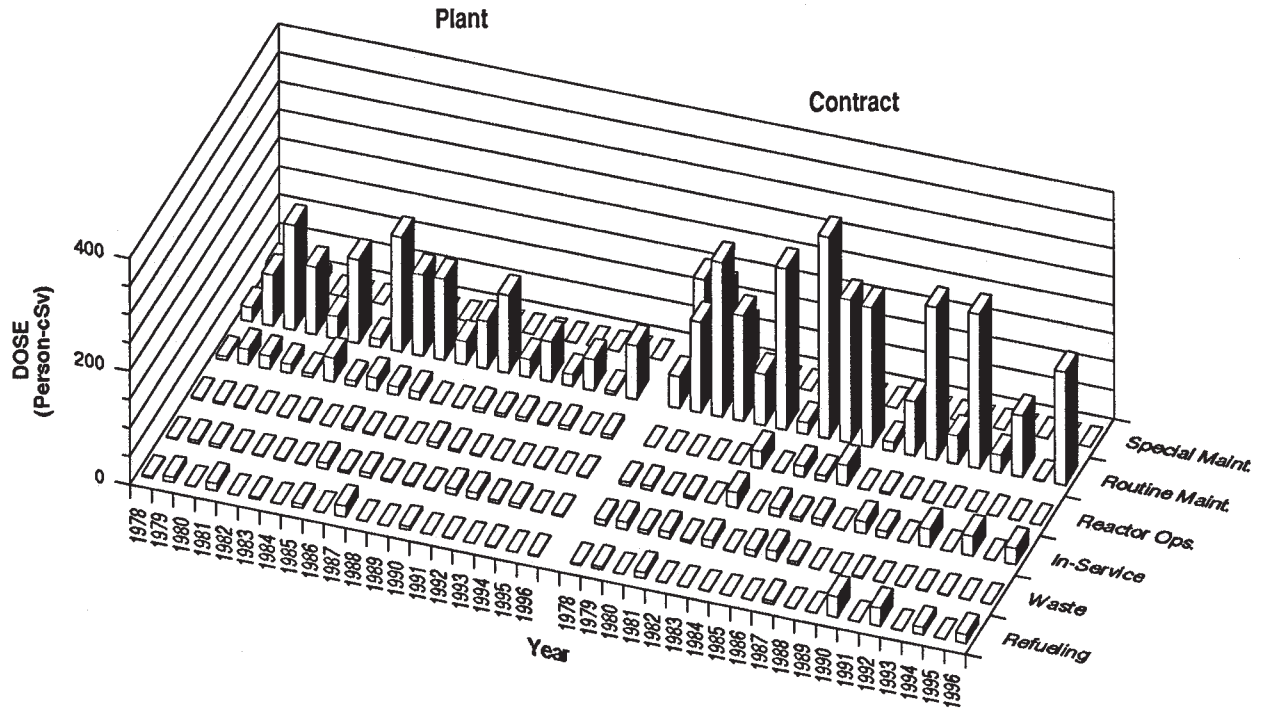
APPENDIX E (continued)

CRYSTAL RIVER 3

Dose-Performance Indicators **PWR**



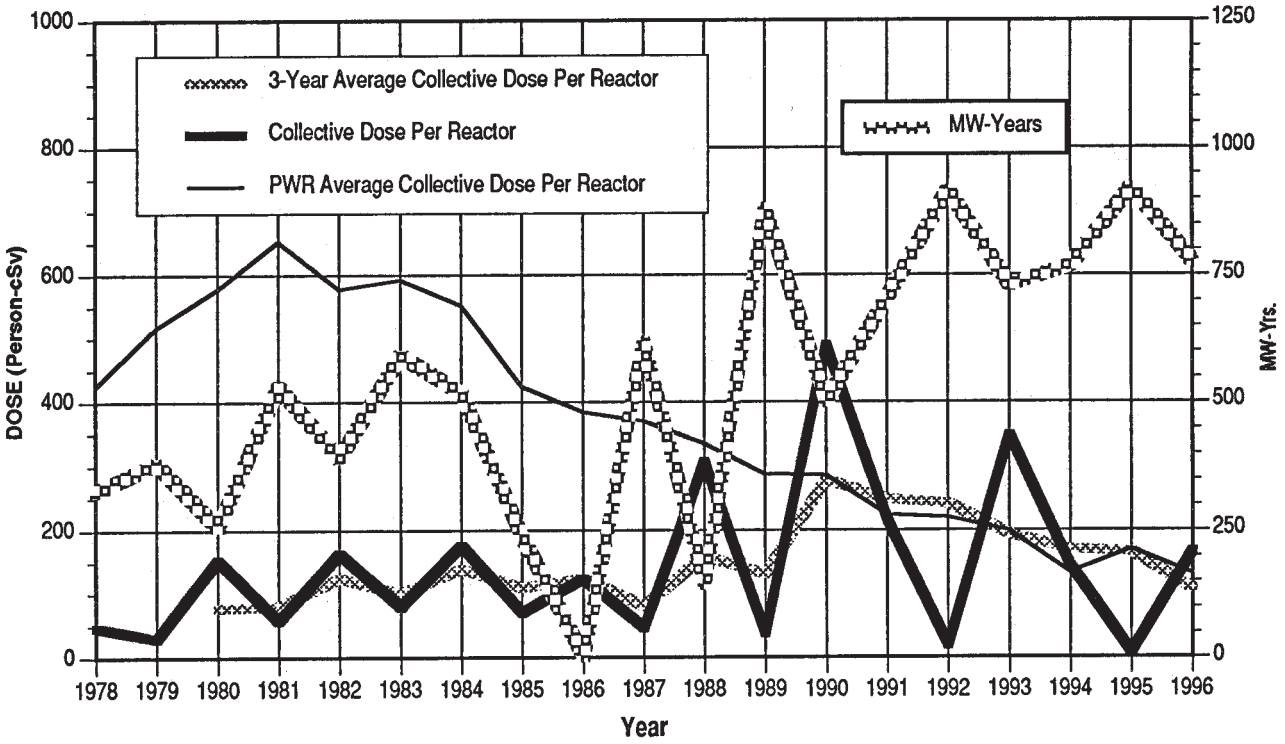
Breakdown by Job Function



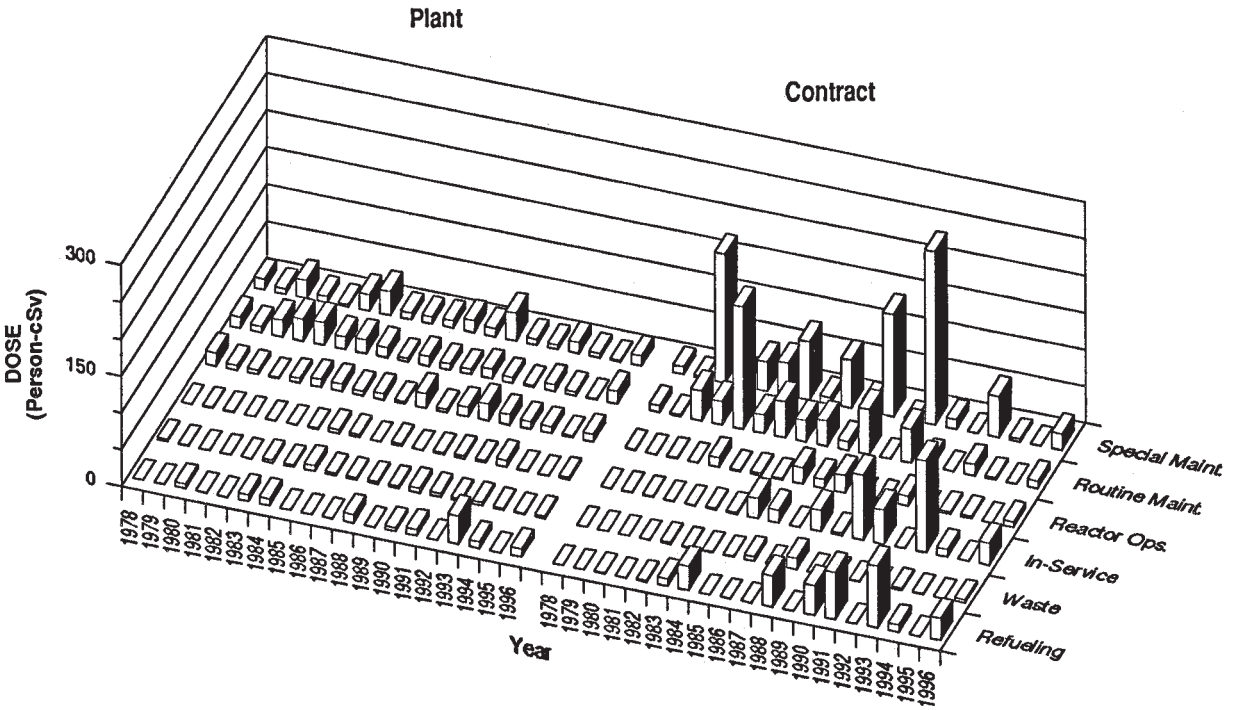
DAVIS-BESSE

Dose-Performance Indicators

PWR



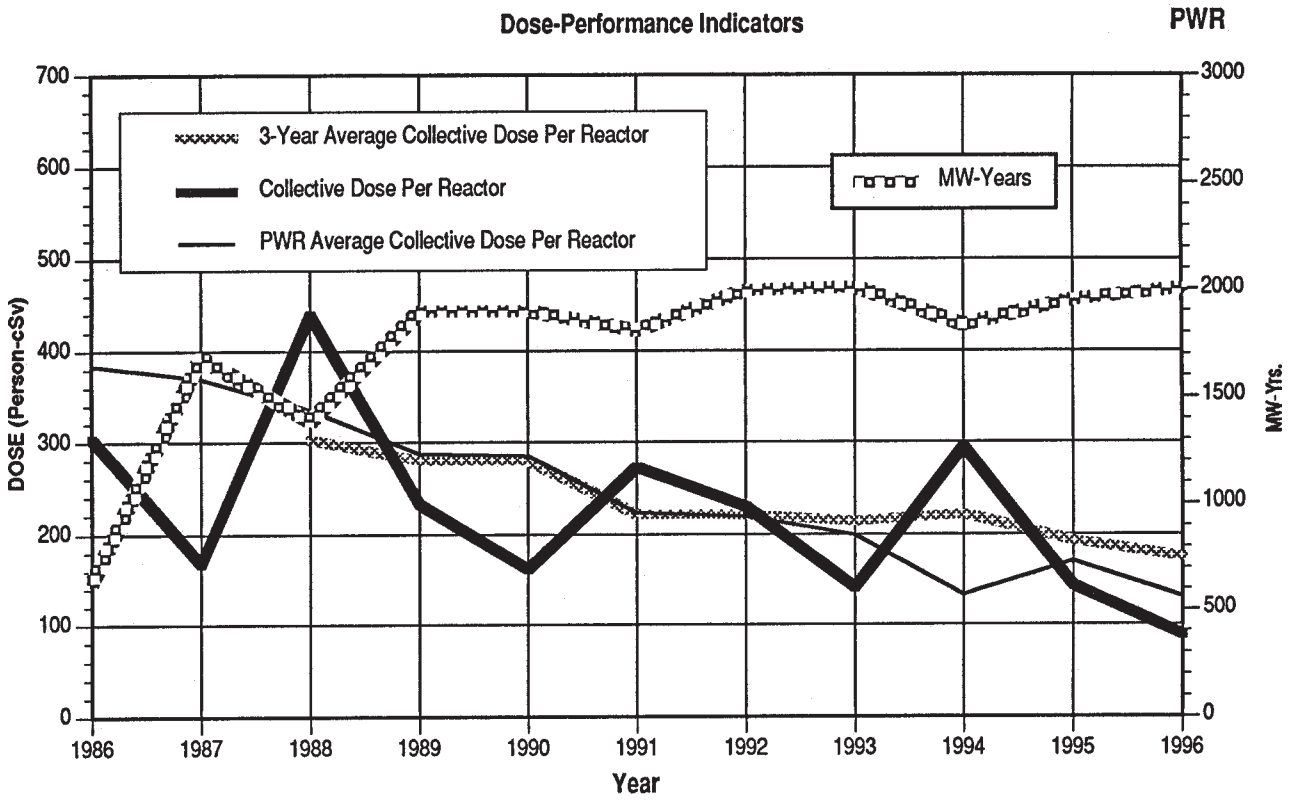
Breakdown by Job Function



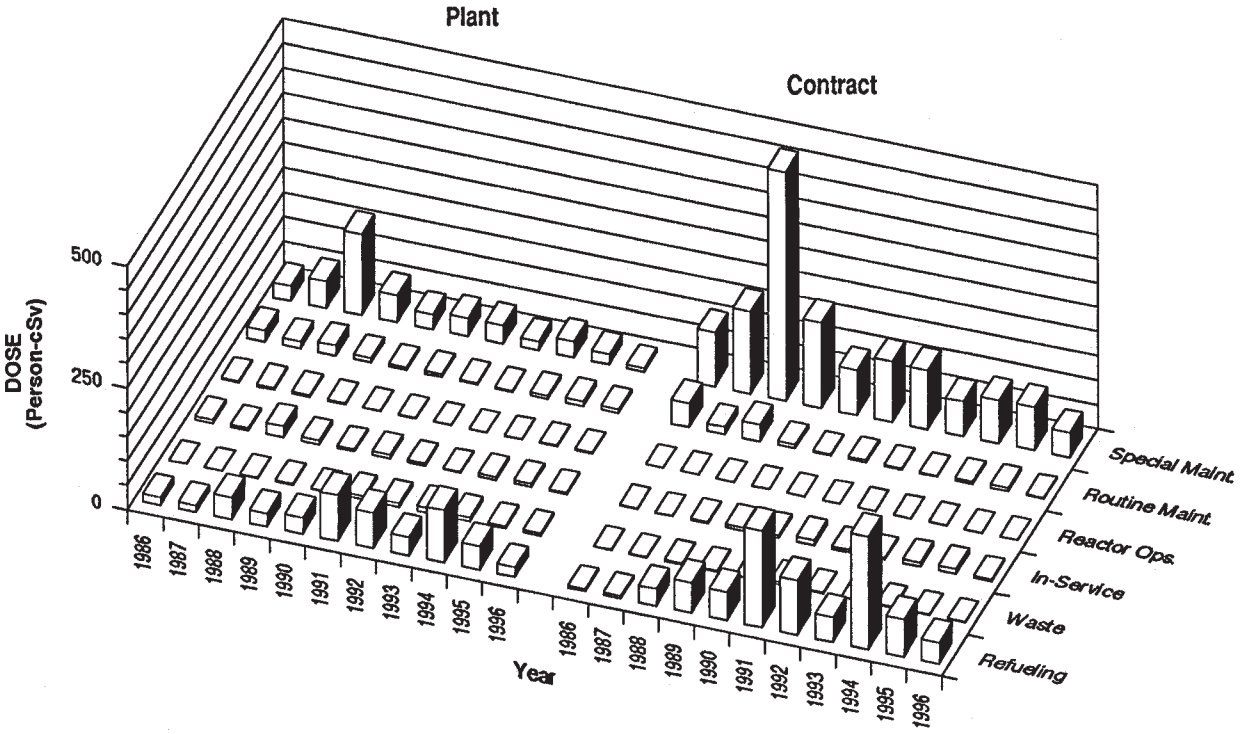
APPENDIX E (continued)

DIABLO CANYON 1, 2

Dose-Performance Indicators

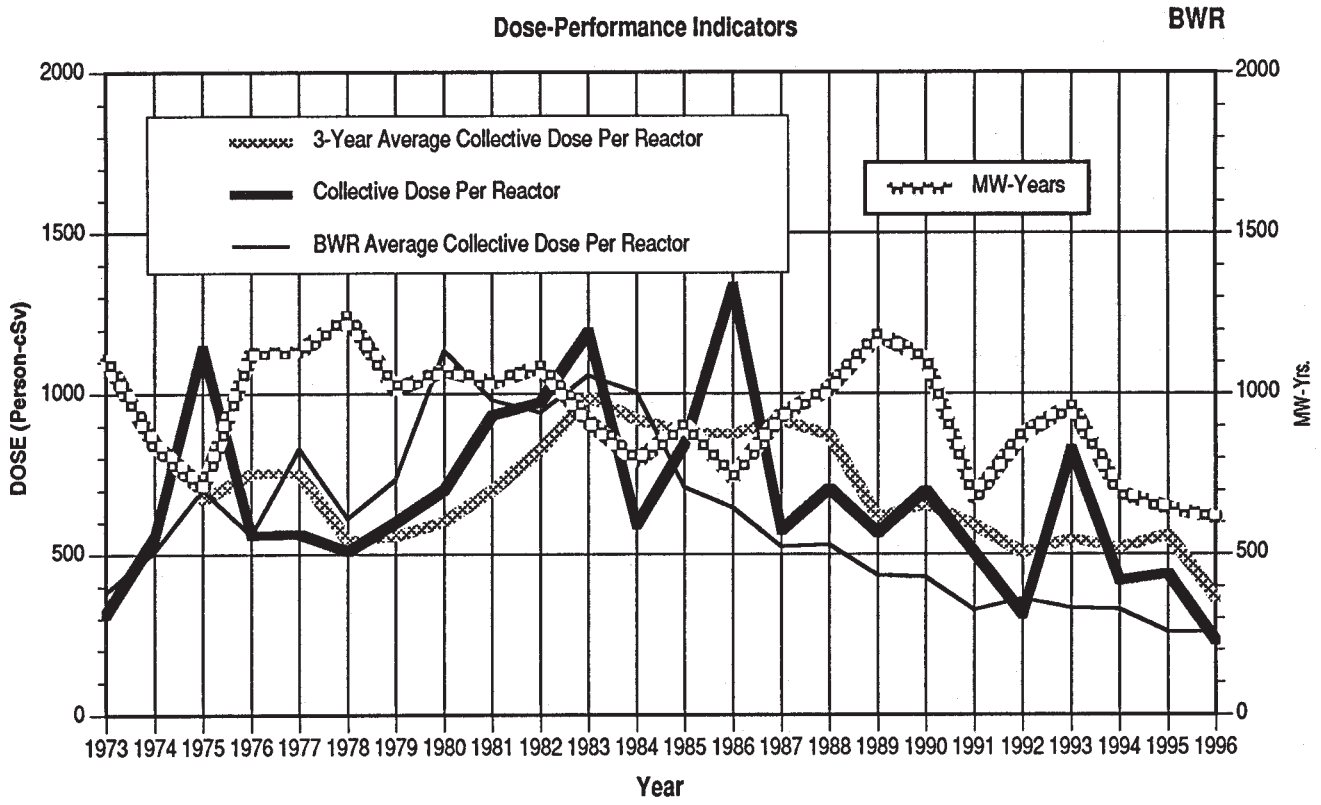


Breakdown by Job Function

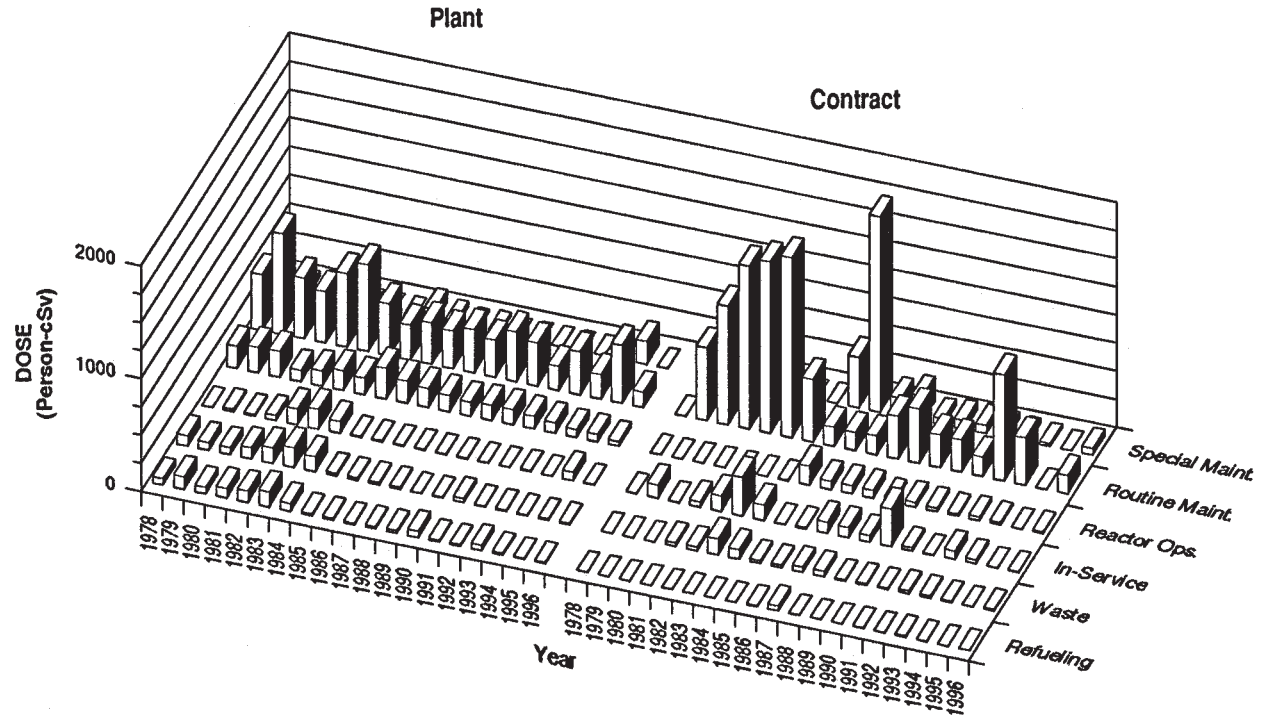


DRESDEN 2, 3

Dose-Performance Indicators



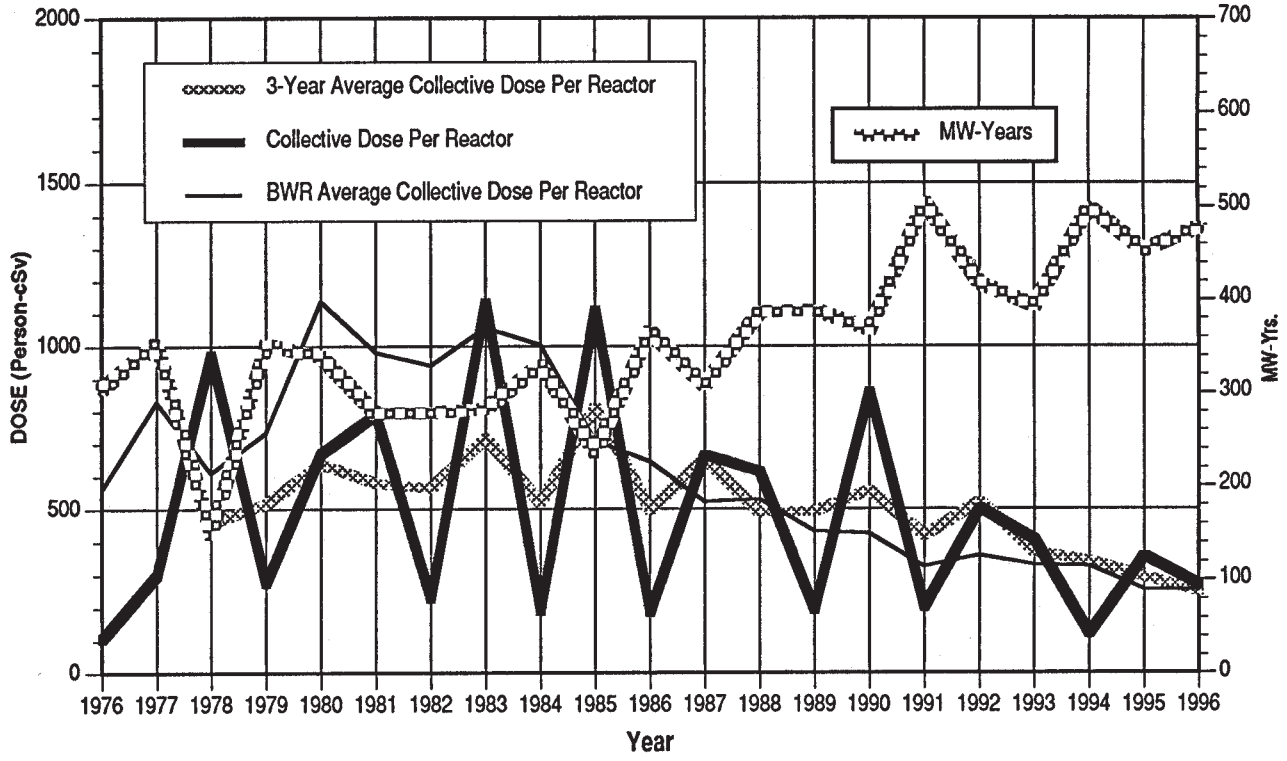
Breakdown by Job Function



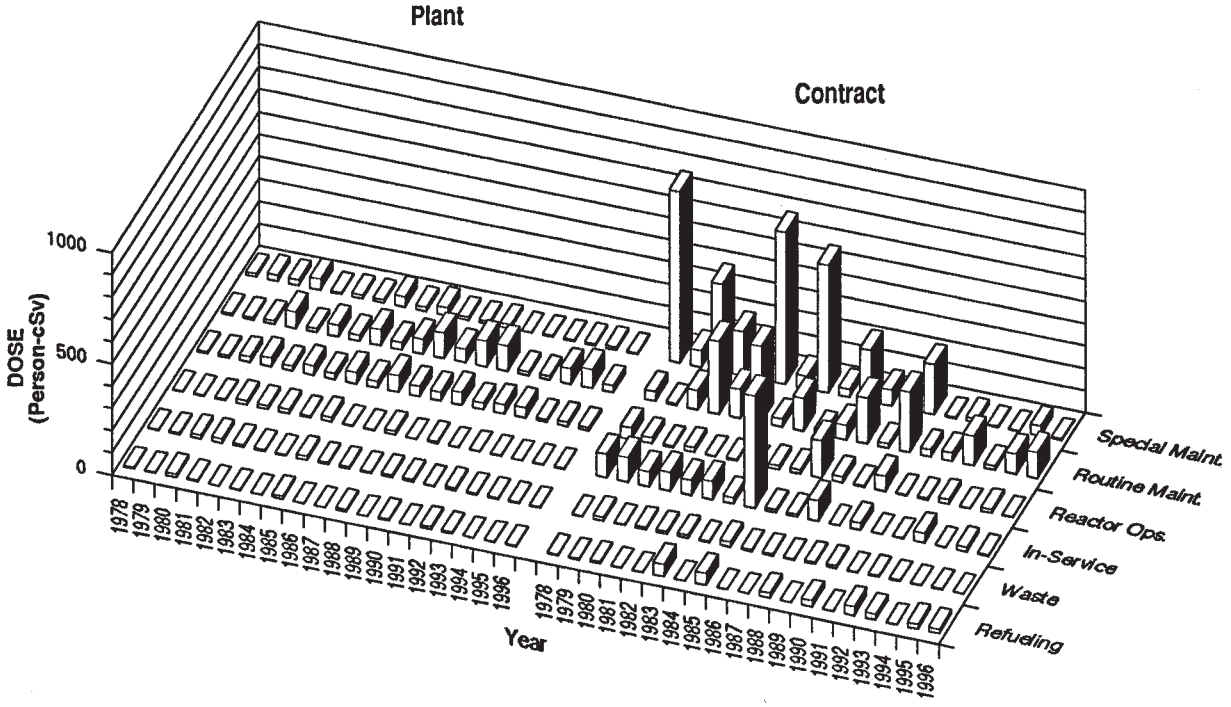
APPENDIX E (continued)

DUANE ARNOLD

Dose-Performance Indicators **BWR**

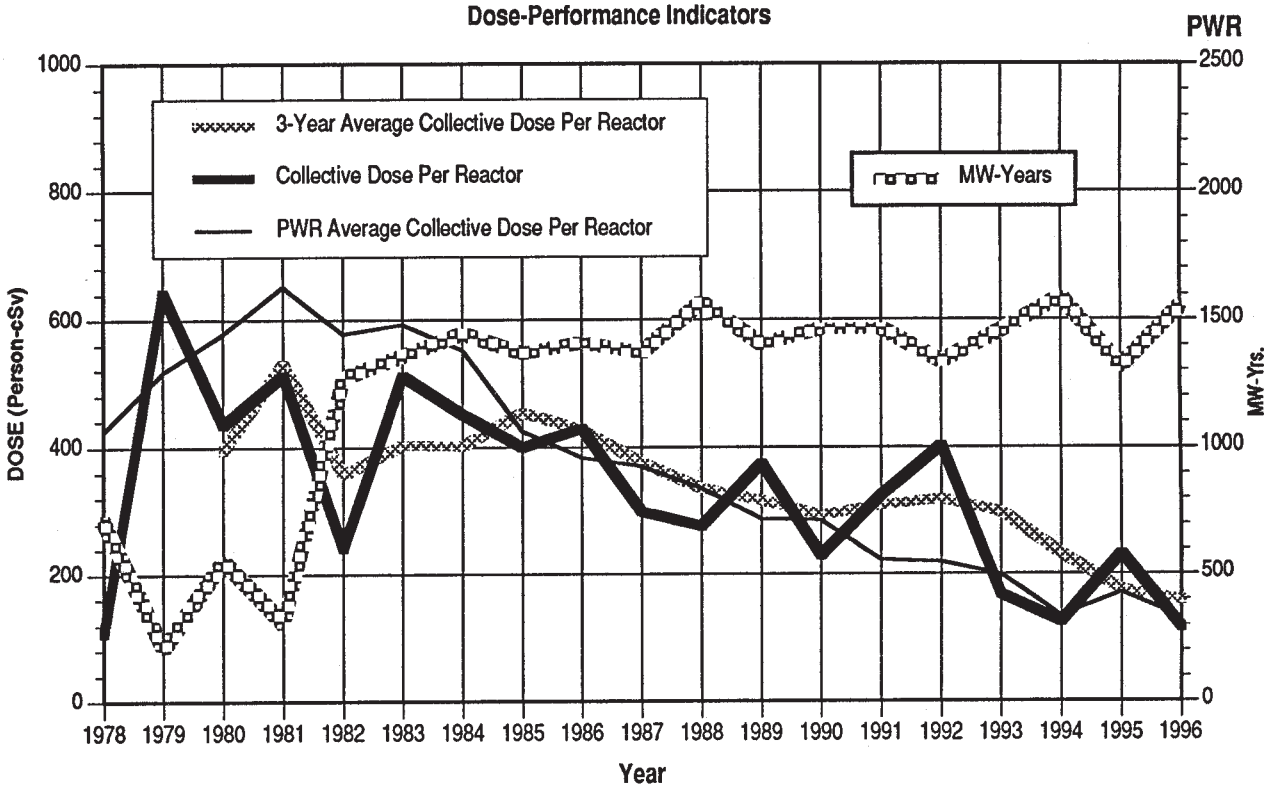


Breakdown by Job Function

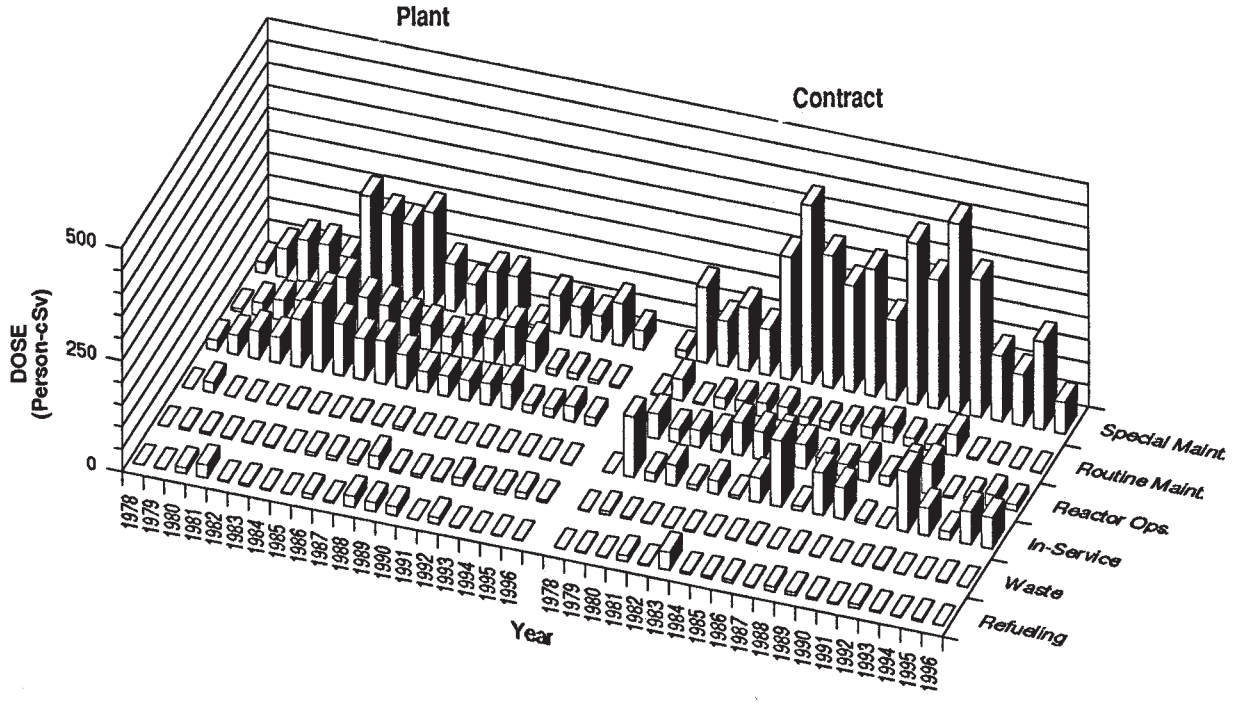


FARLEY 1, 2

Dose-Performance Indicators



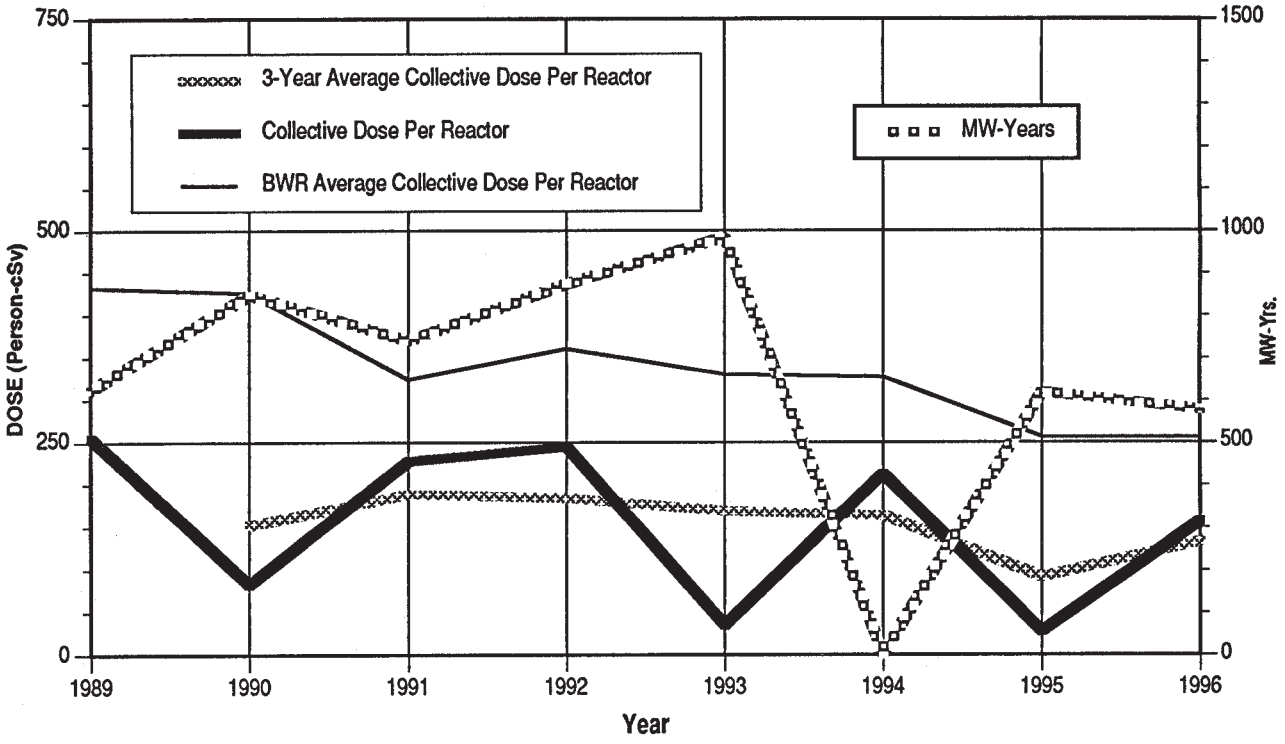
Breakdown by Job Function



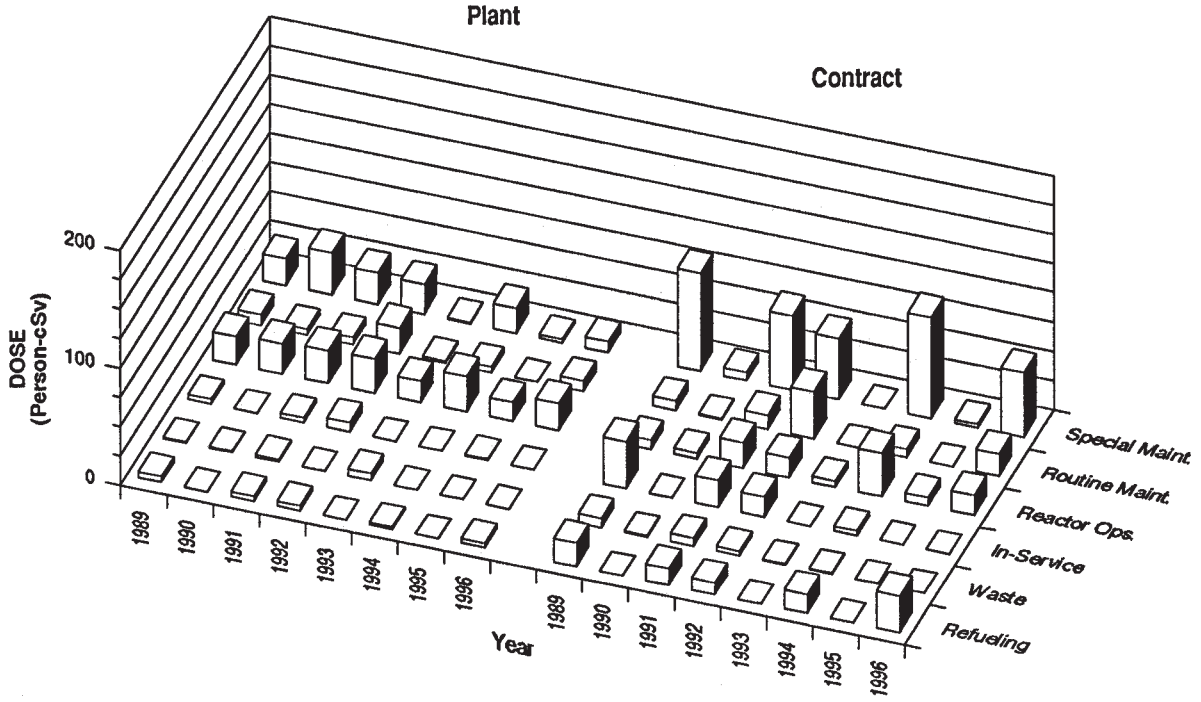
FERMI 2

Dose-Performance Indicators

BWR

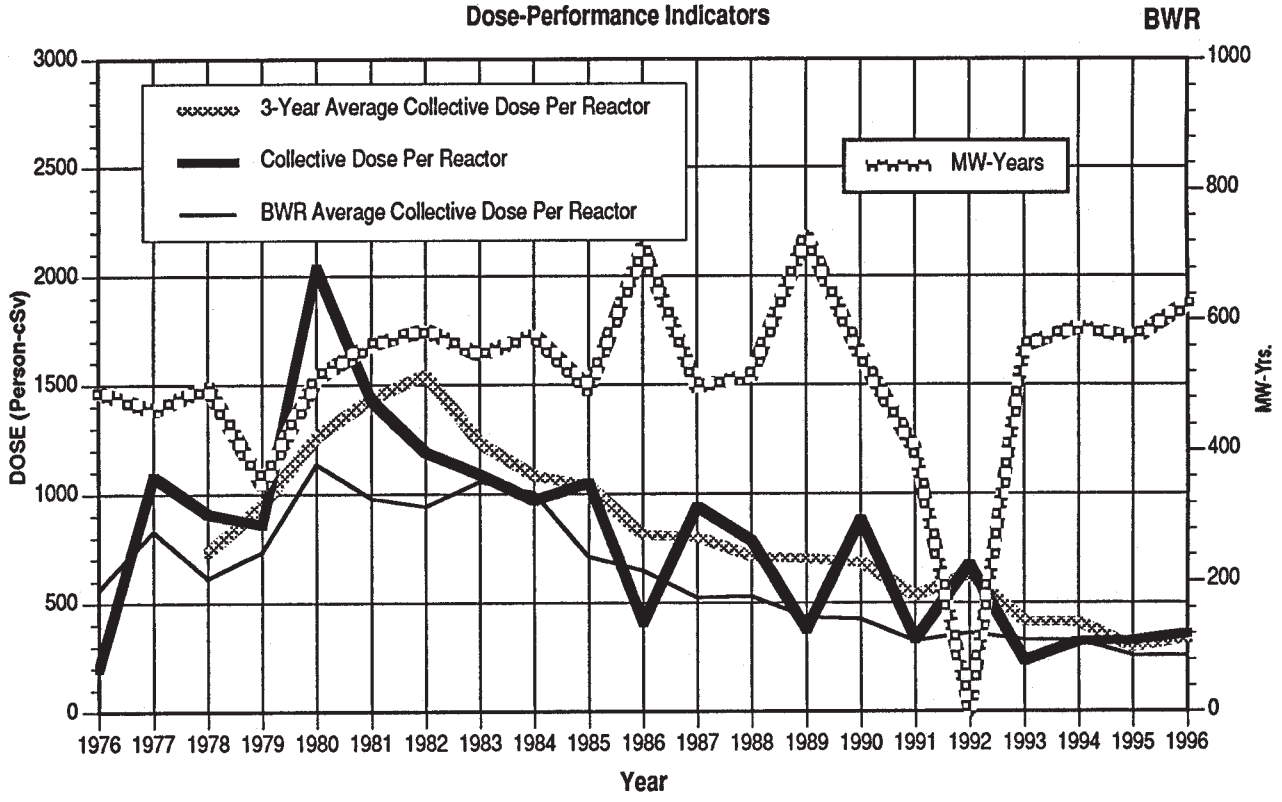


Breakdown by Job Function

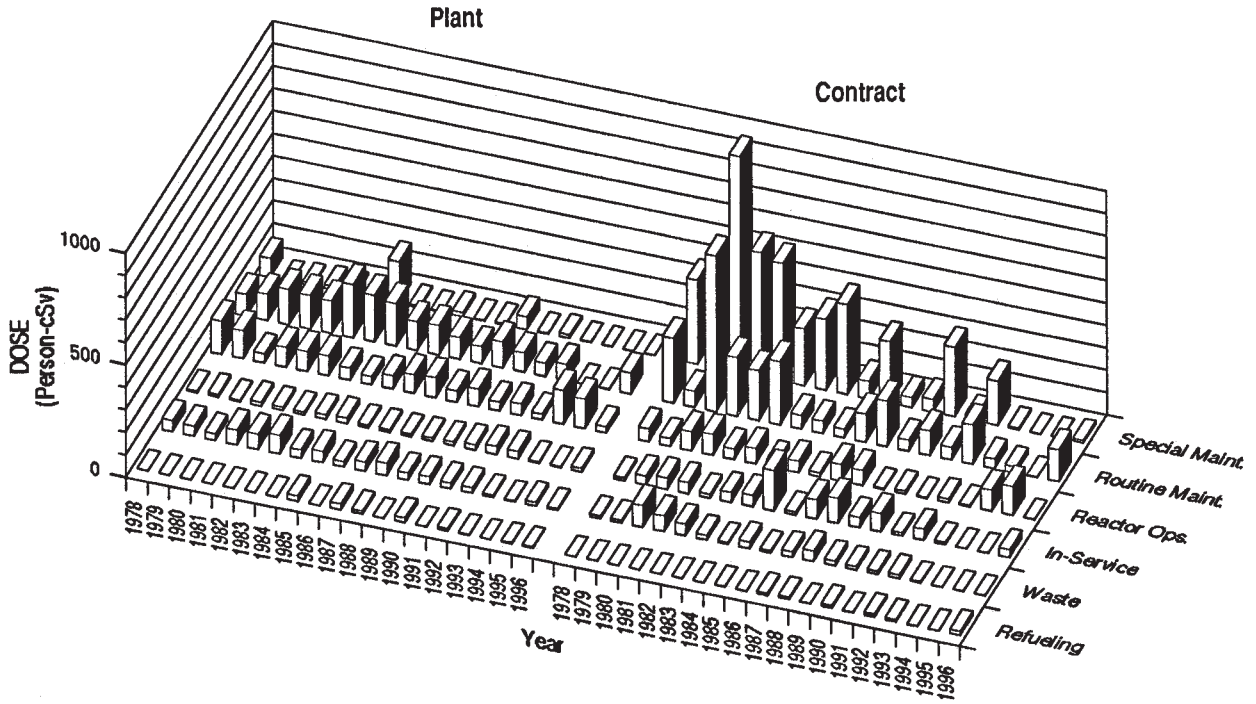


FITZPATRICK

Dose-Performance Indicators

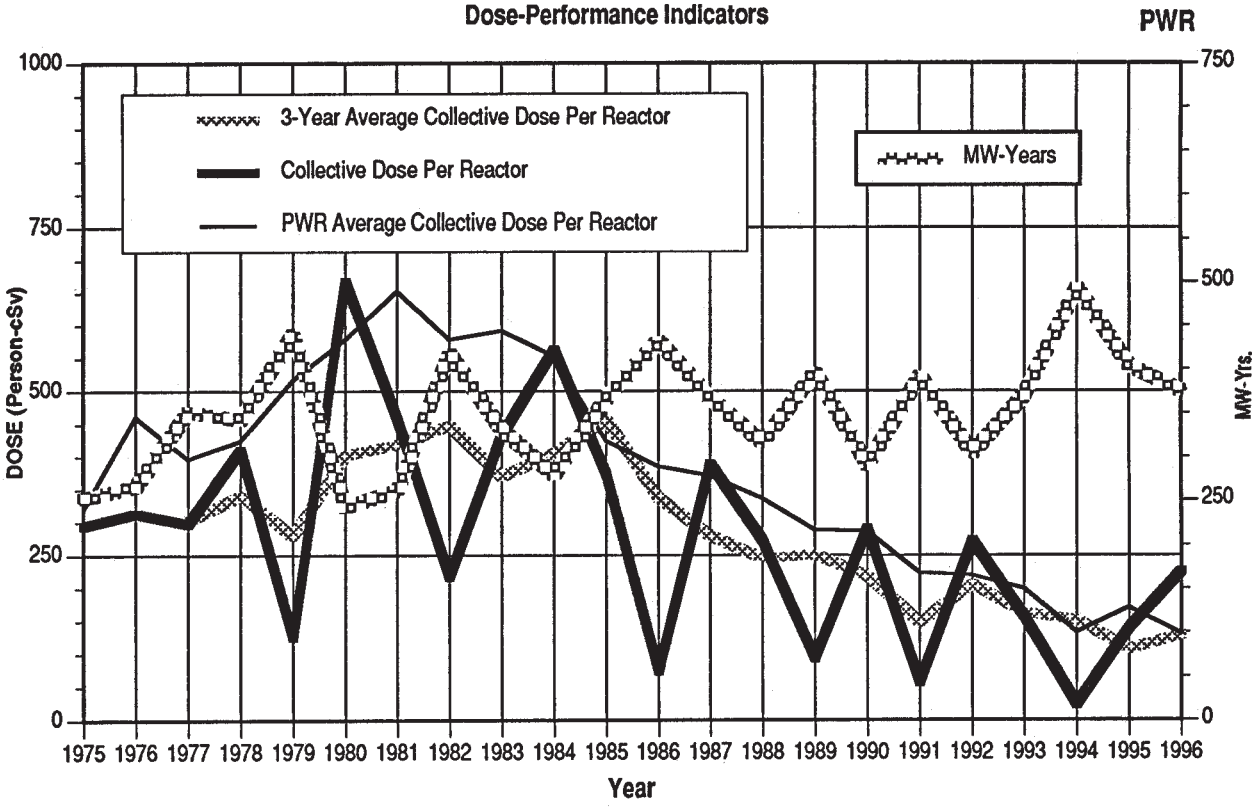


Breakdown by Job Function

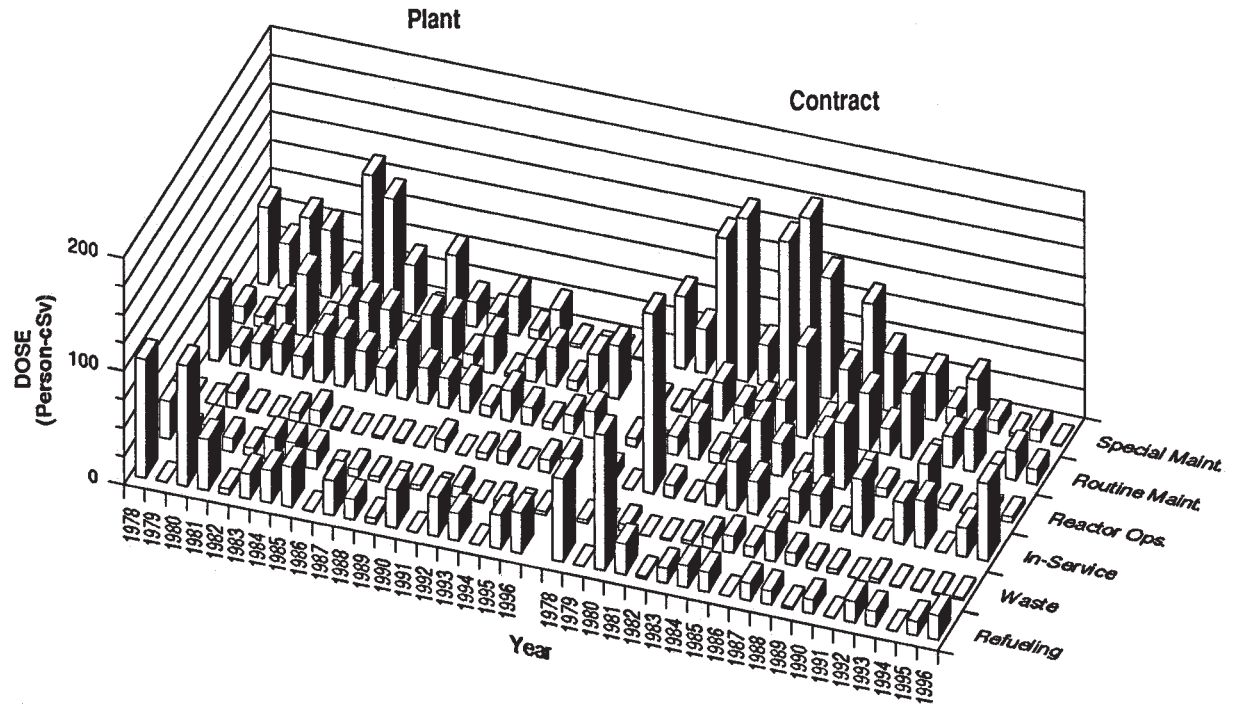


FORT CALHOUN

Dose-Performance Indicators



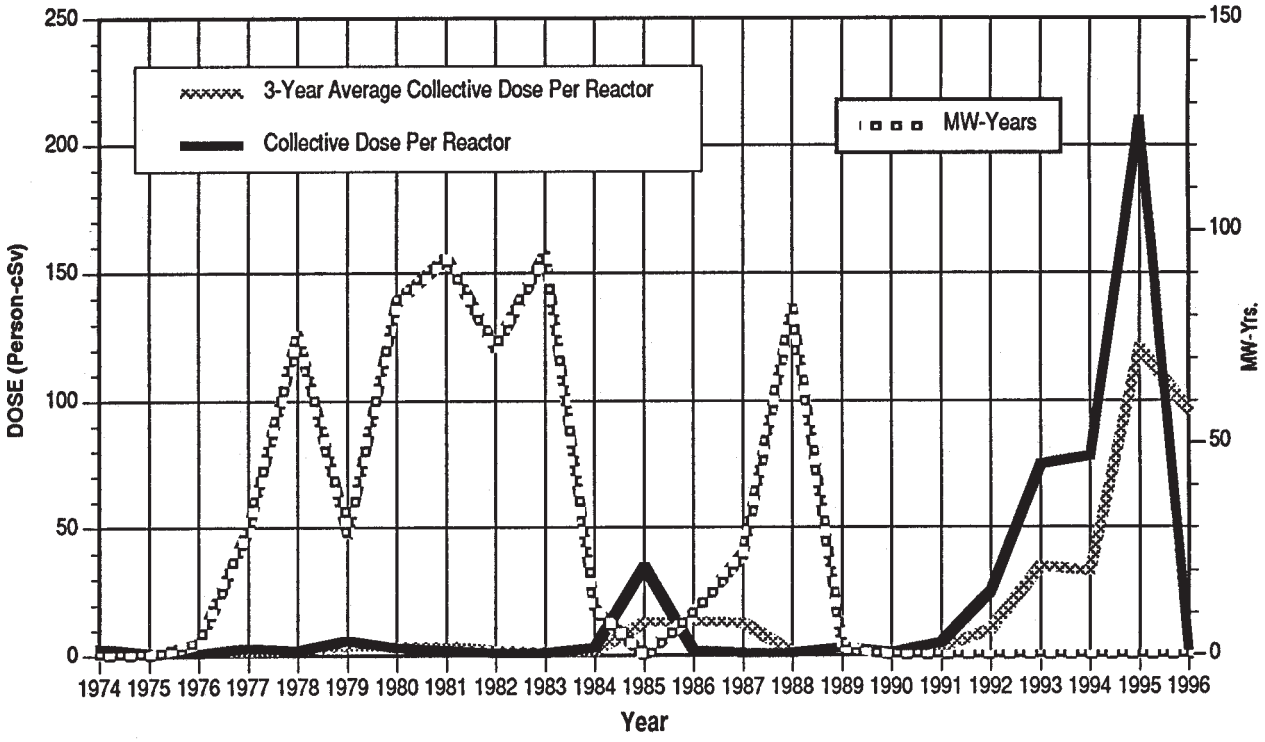
Breakdown by Job Function



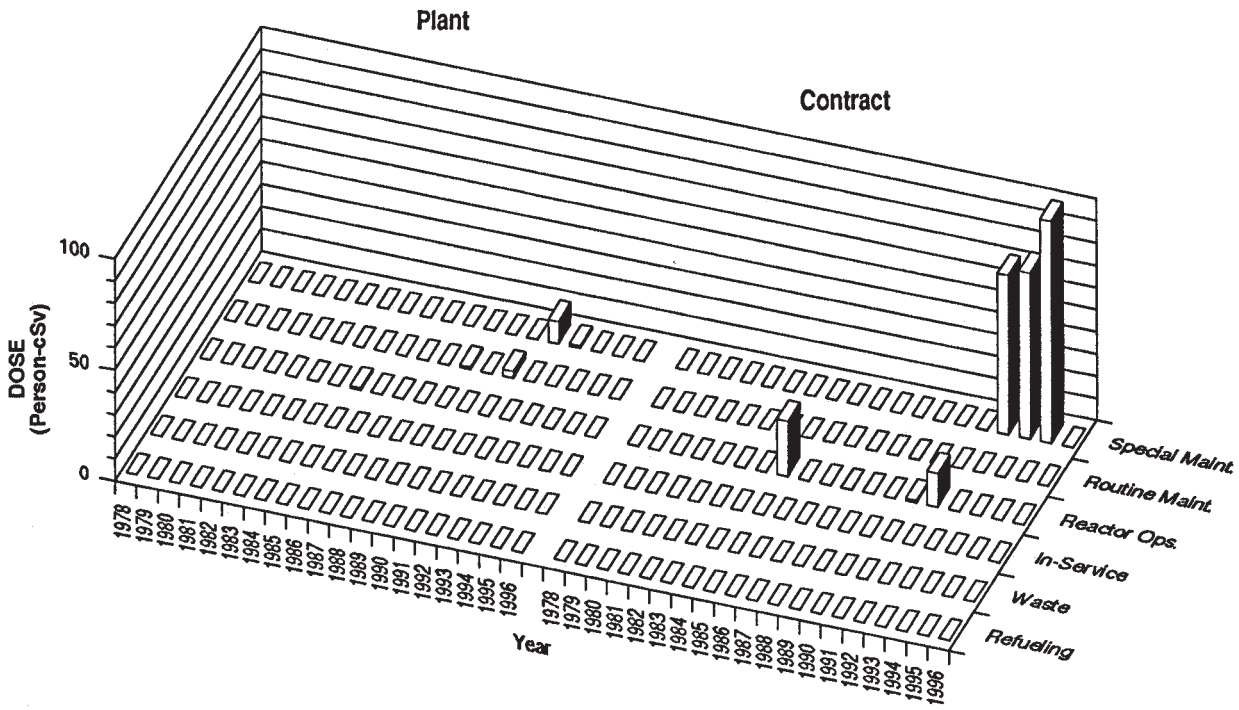
FORT ST. VRAIN

Dose-Performance Indicators

HTGR



Breakdown by Job Function

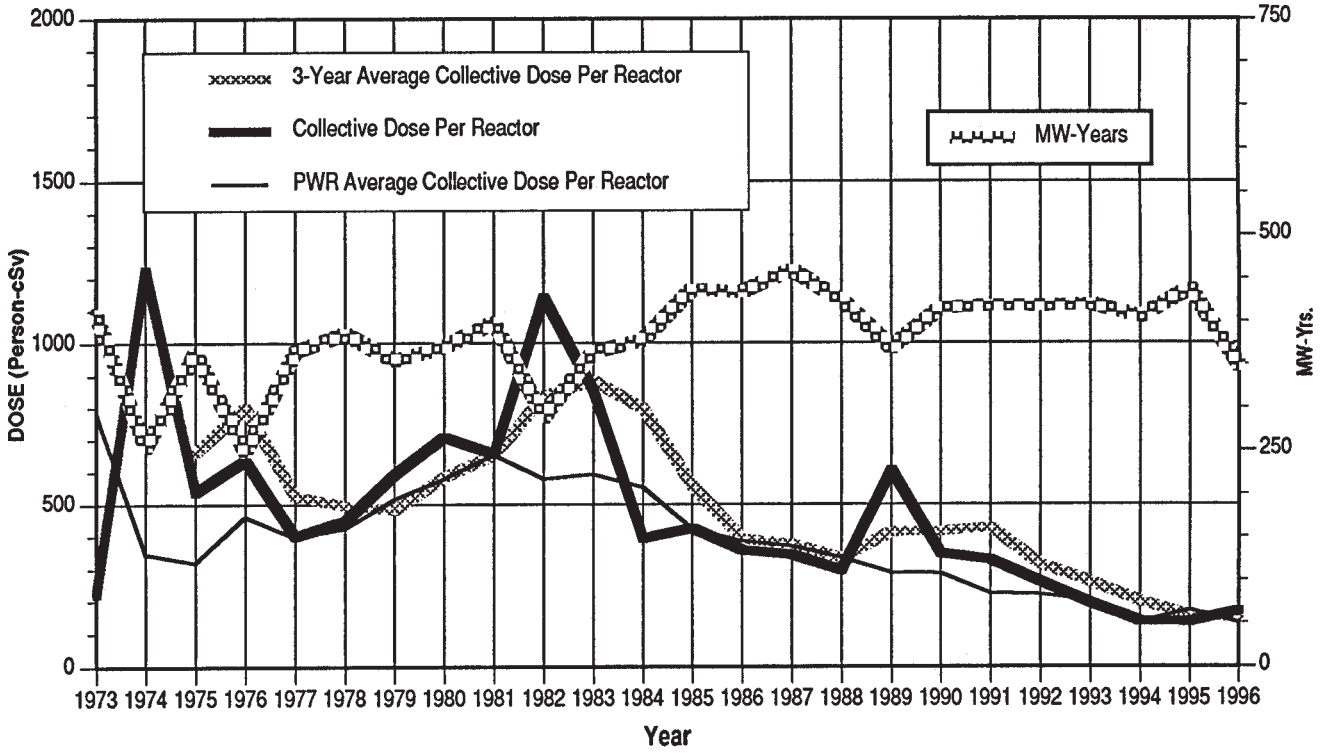


APPENDIX E (continued)

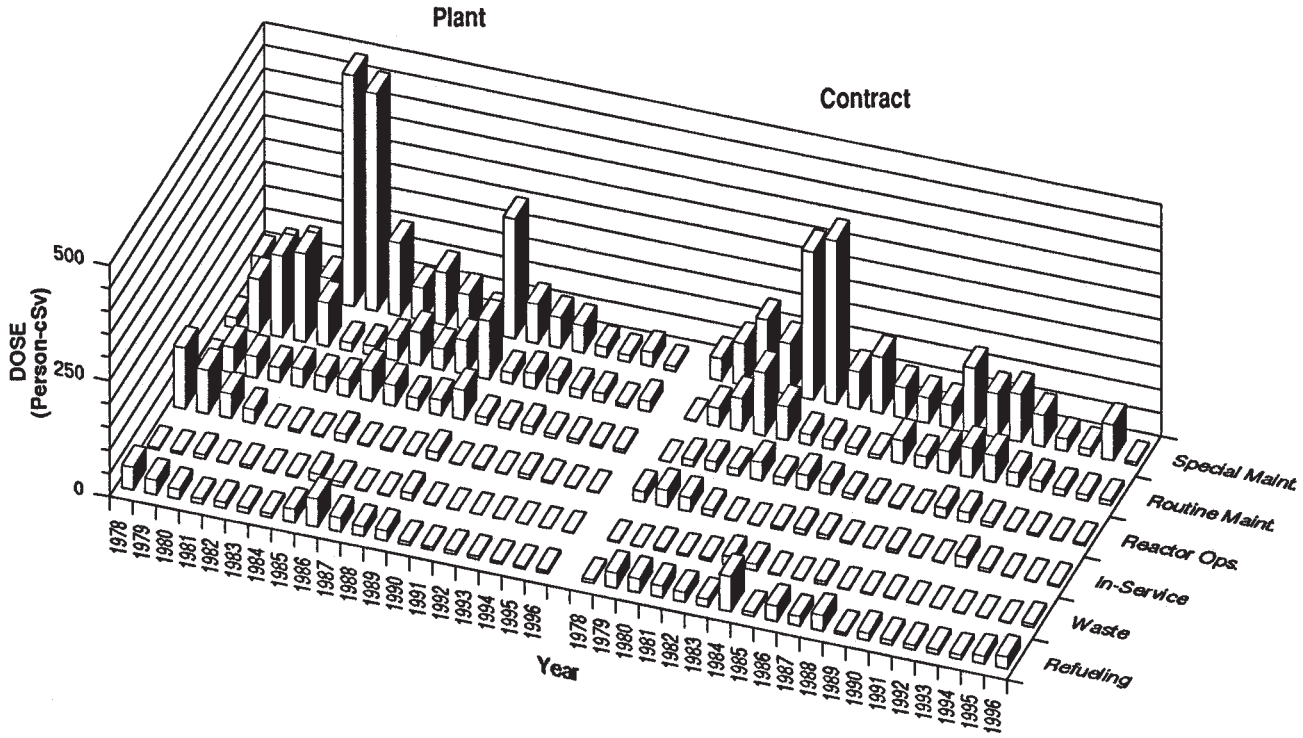
GINNA

Dose-Performance Indicators

PWR



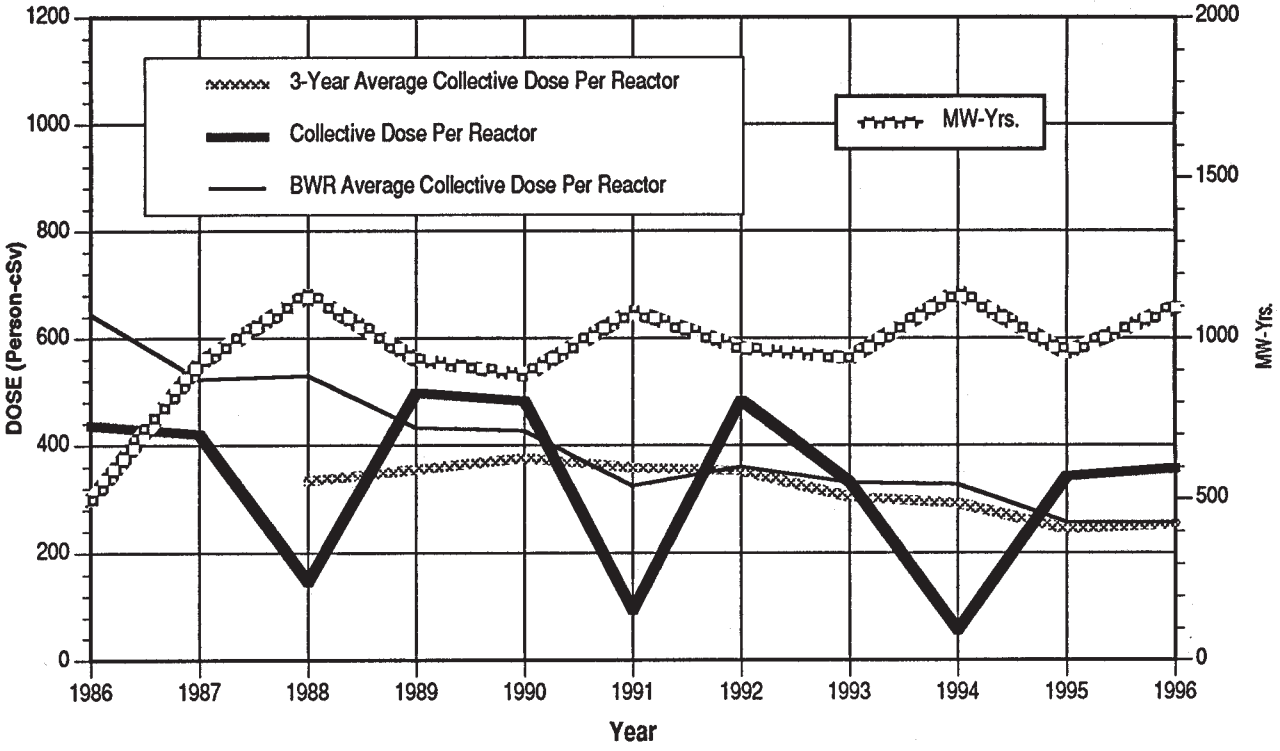
Breakdown by Job Function



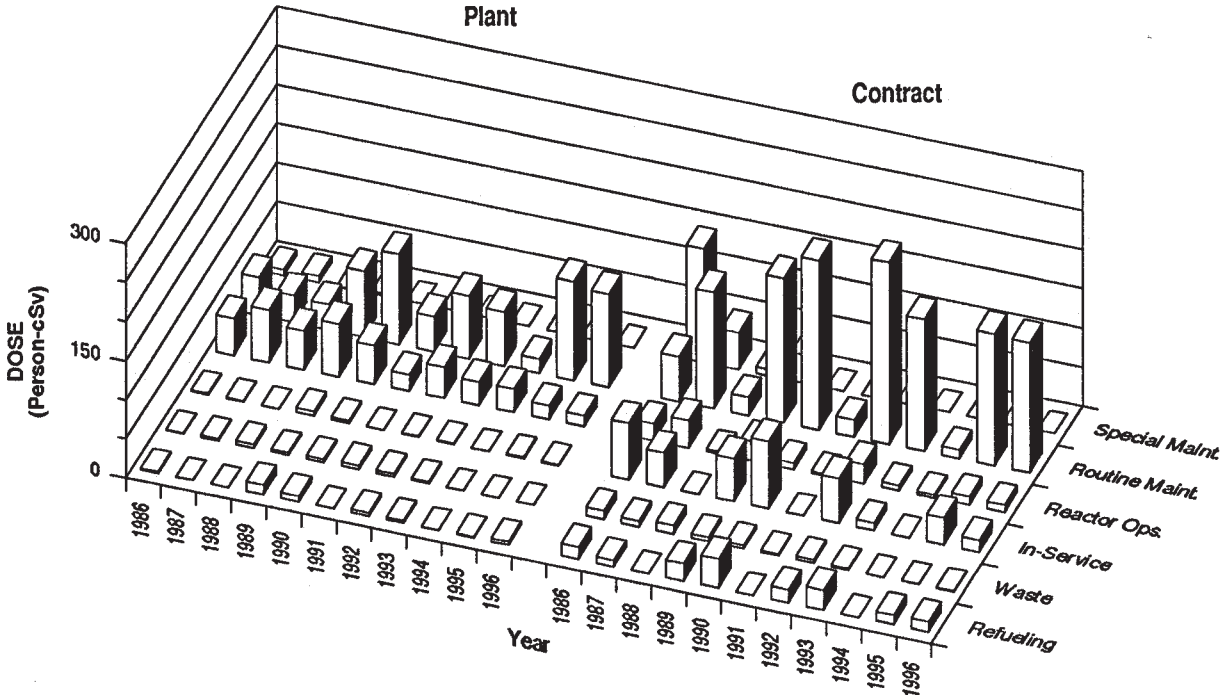
GRAND GULF

Dose-Performance Indicators

BWR



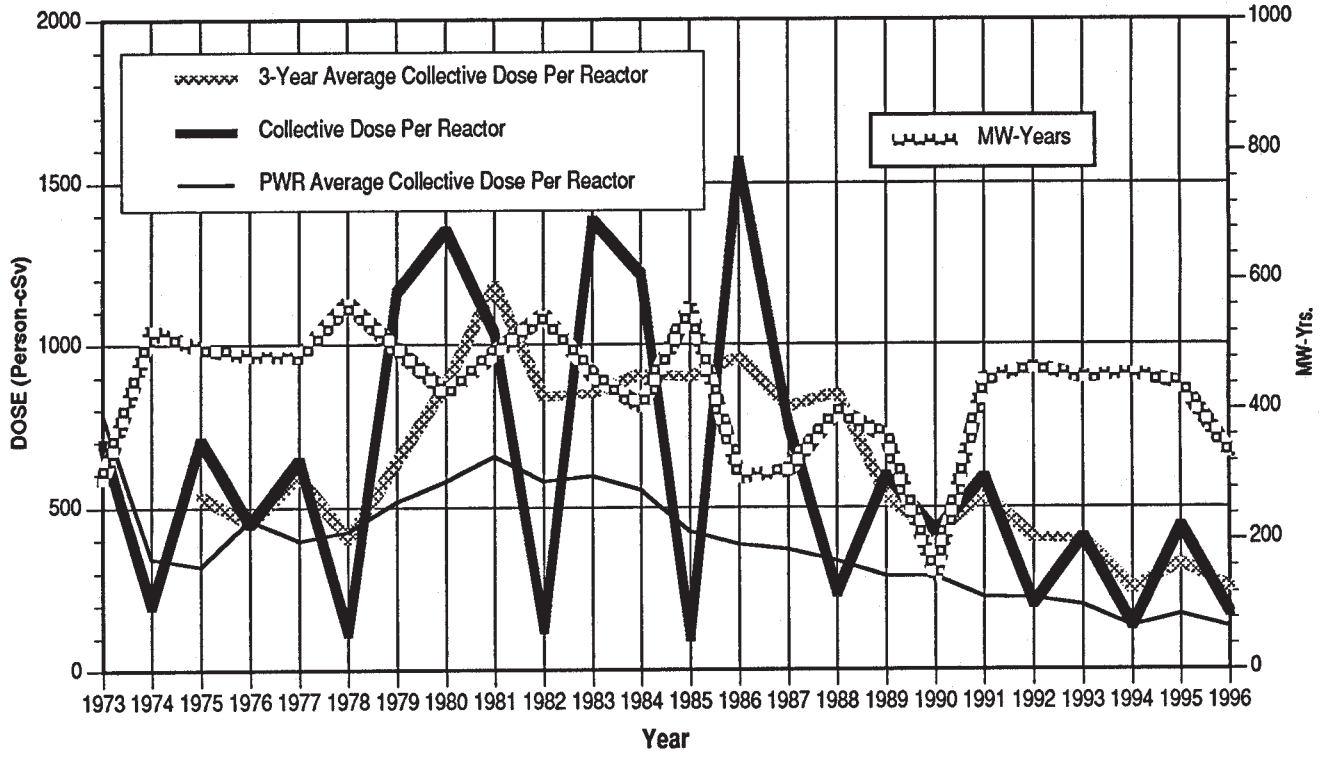
Breakdown by Job Function



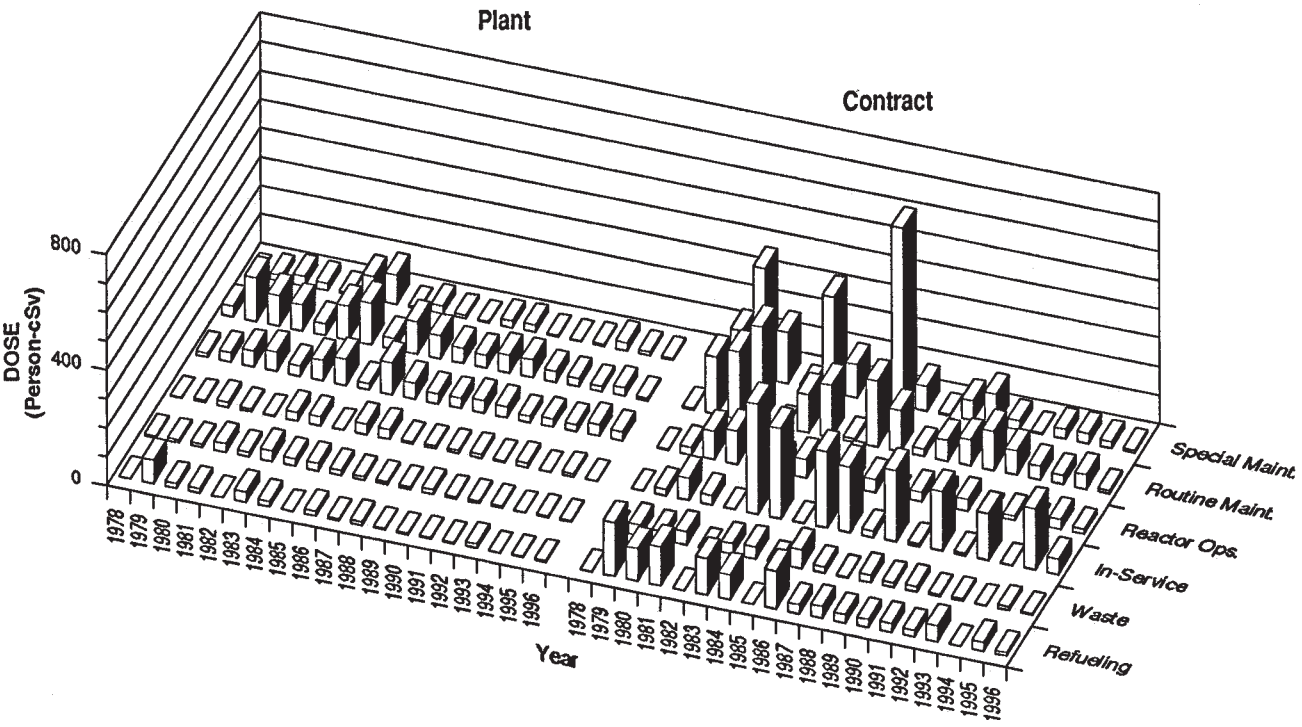
APPENDIX E (continued)

HADDAM NECK

Dose-Performance Indicators **PWR**



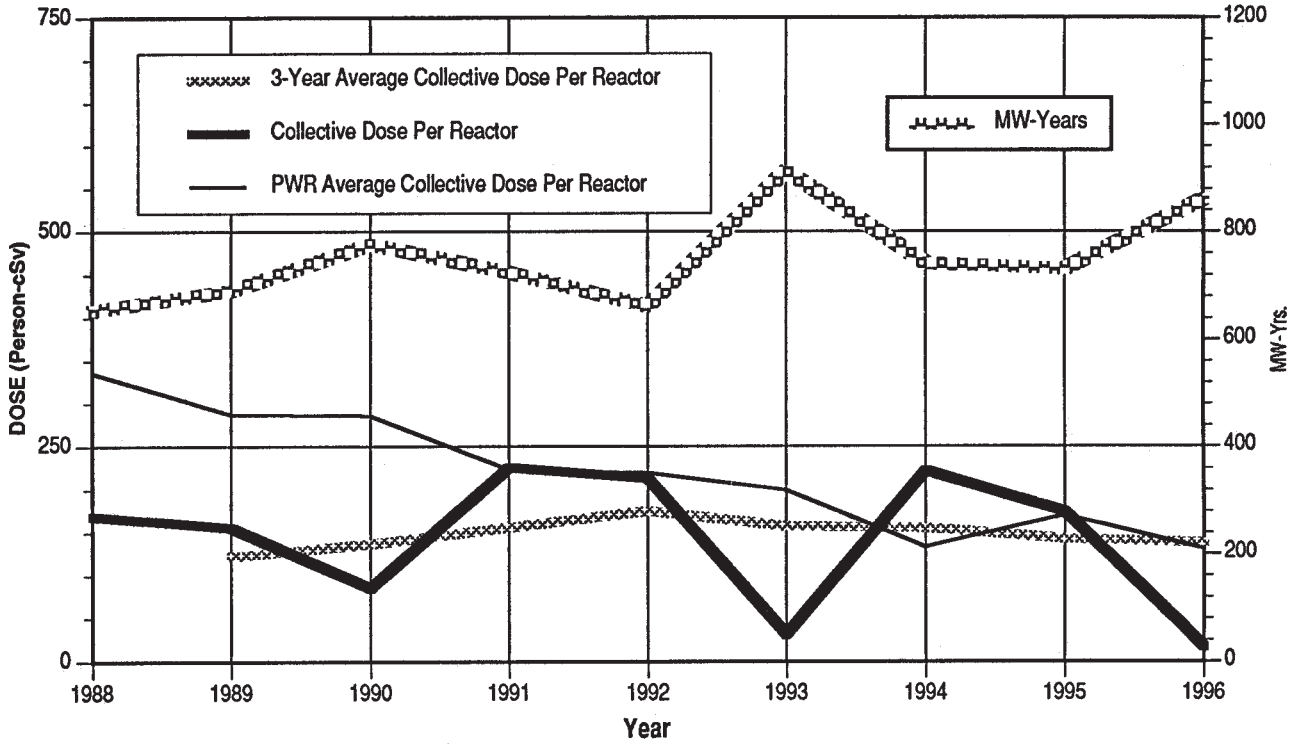
Breakdown by Job Function



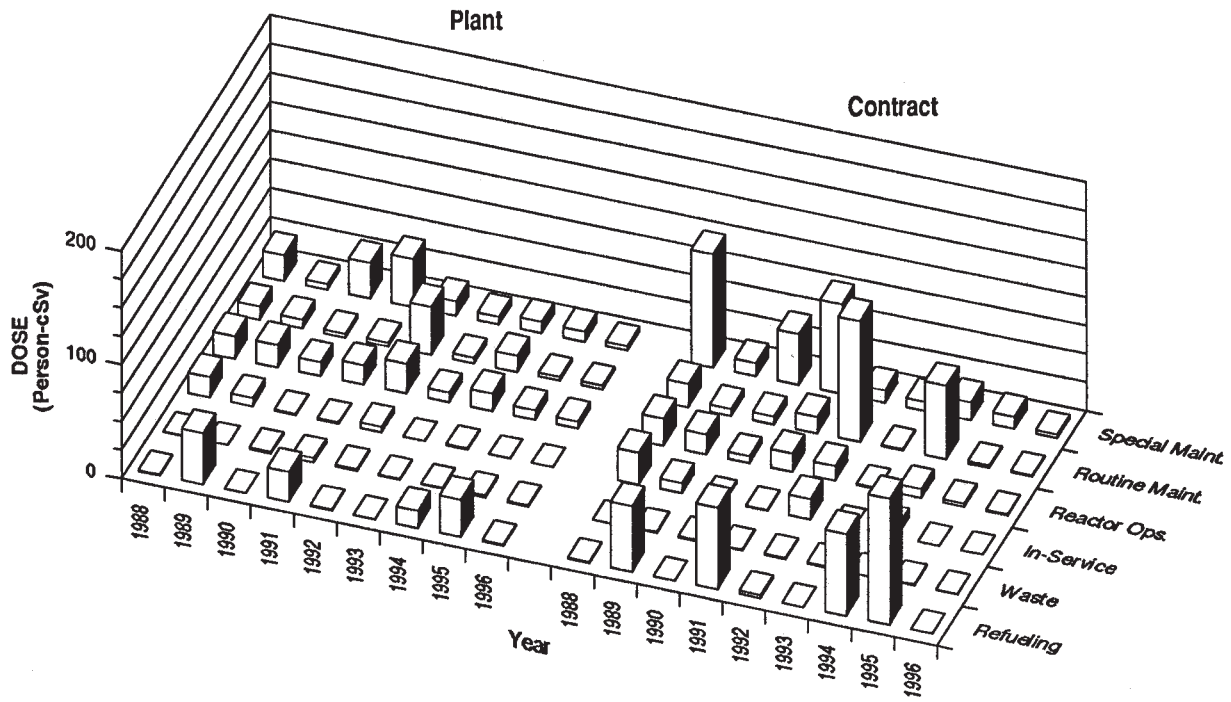
APPENDIX E (continued)

HARRIS

Dose-Performance Indicators **PWR**



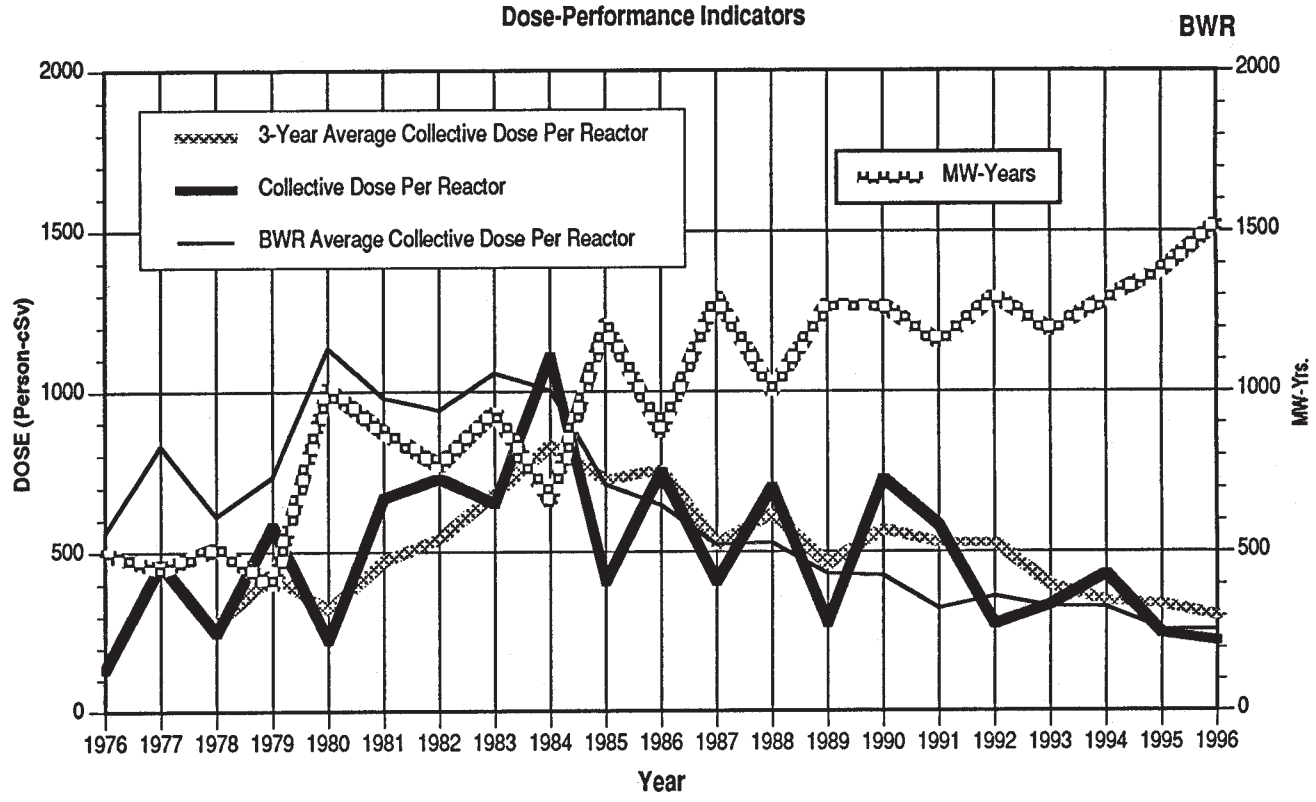
Breakdown by Job Function



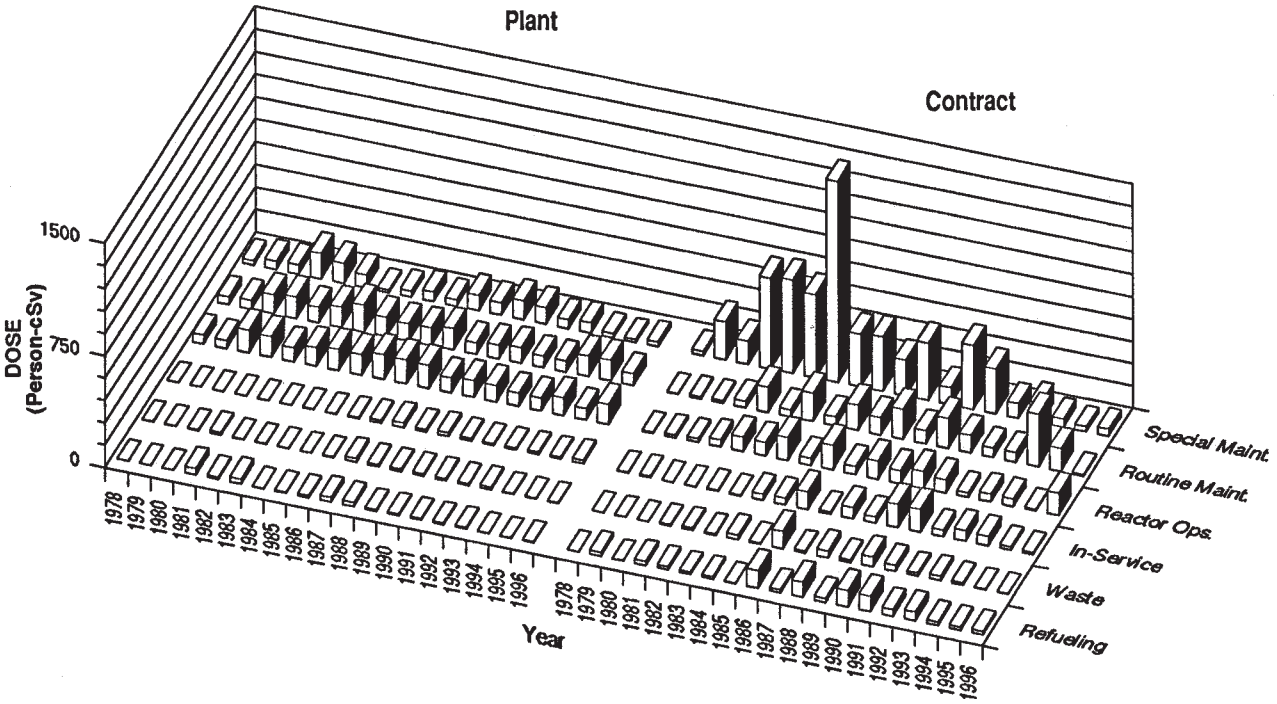
APPENDIX E (continued)

HATCH 1, 2

Dose-Performance Indicators



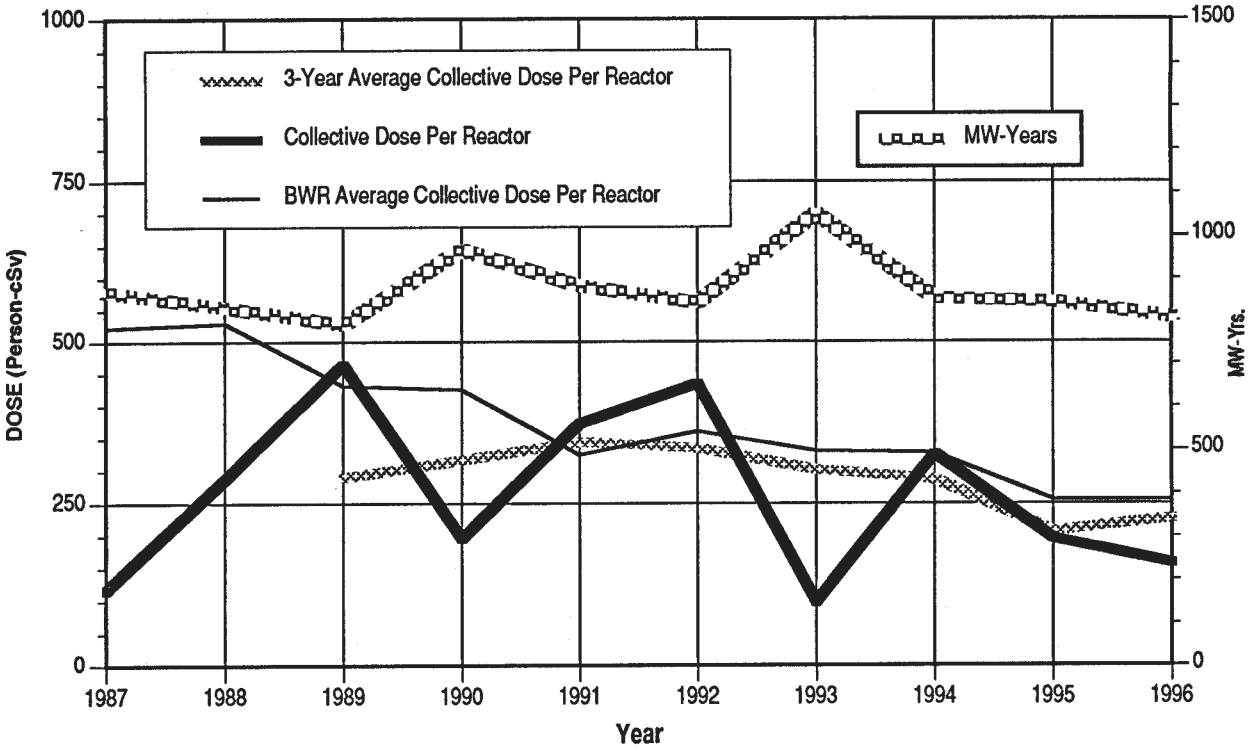
Breakdown by Job Function



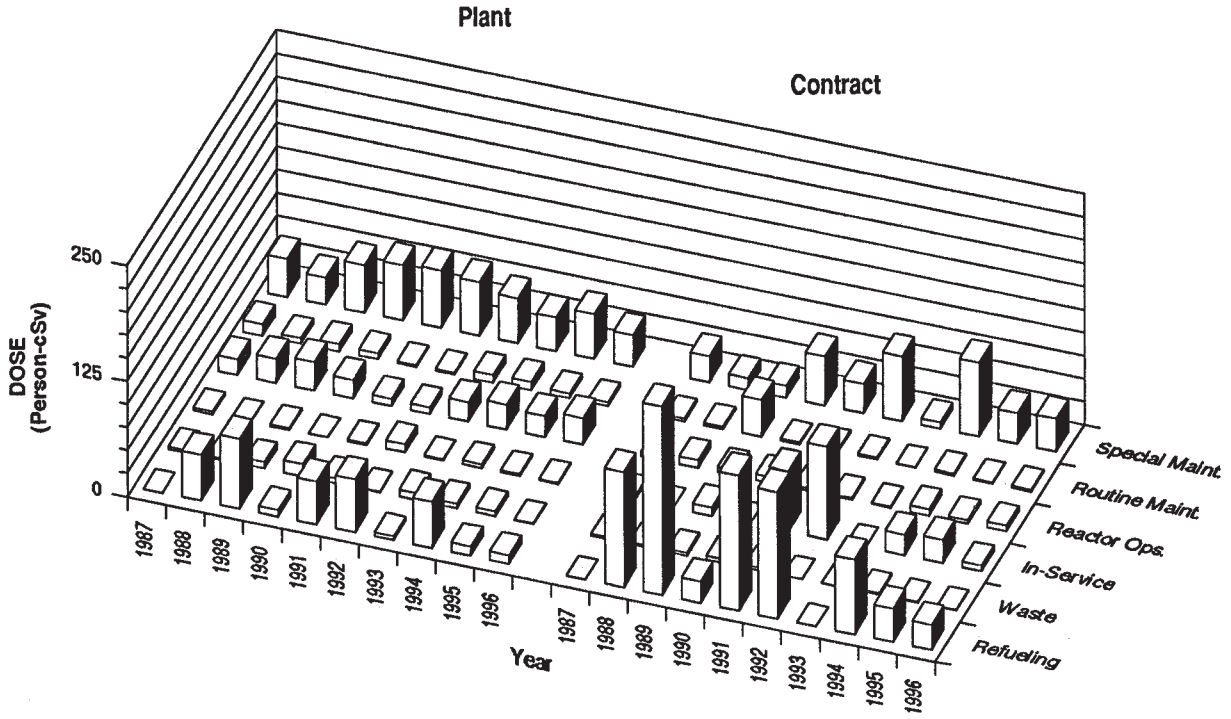
APPENDIX E (continued)

HOPE CREEK 1

Dose-Performance Indicators **BWR**



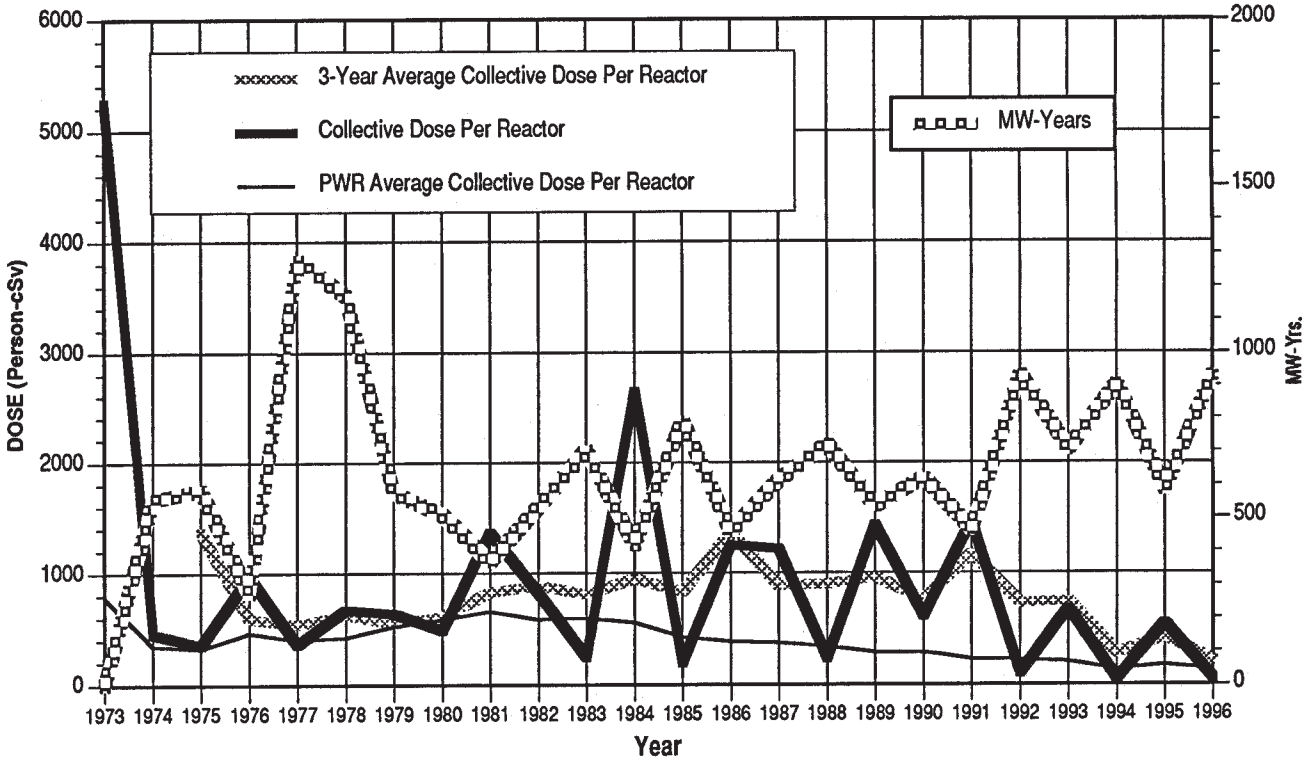
Breakdown by Job Function



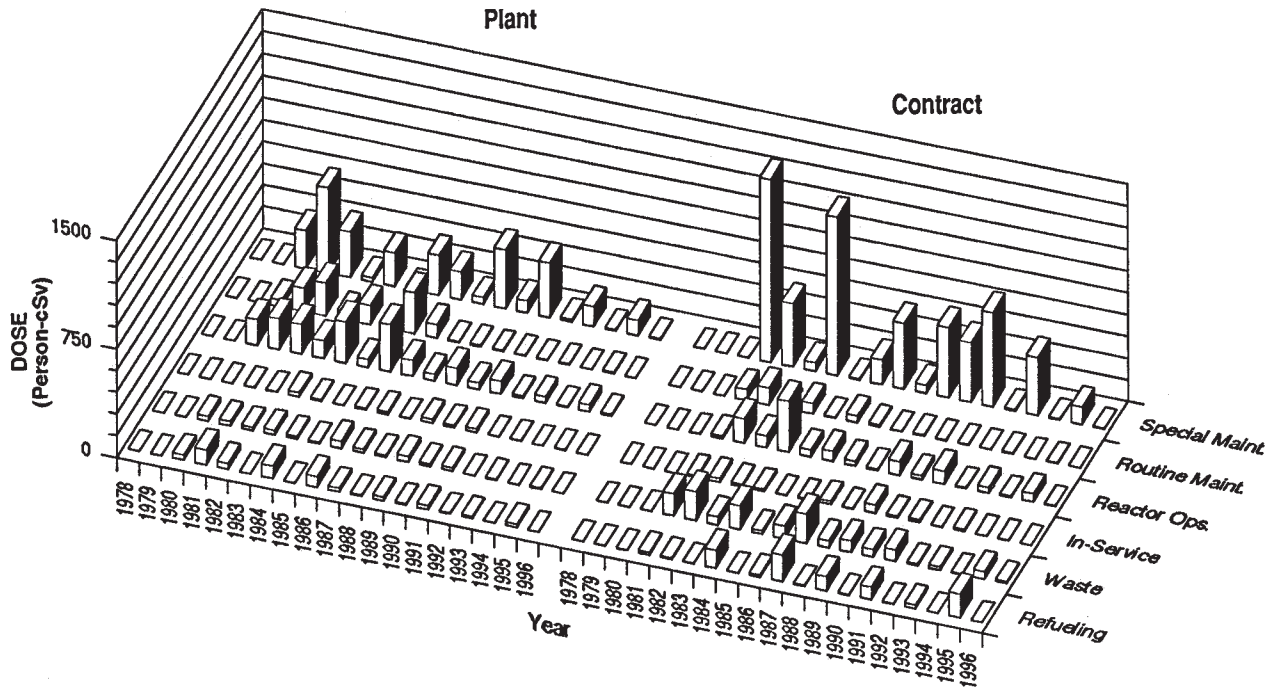
APPENDIX E (continued)

INDIAN POINT 2

Dose-Performance Indicators **PWR**



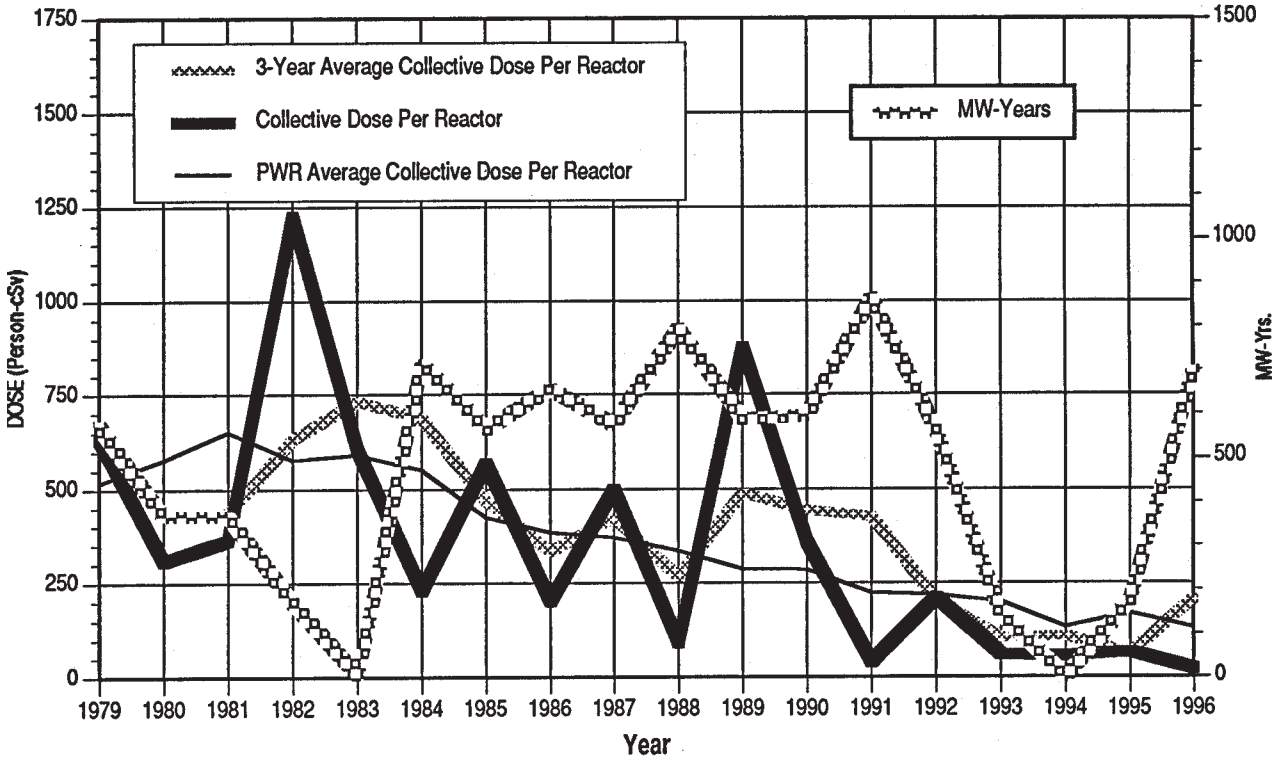
Breakdown by Job Function



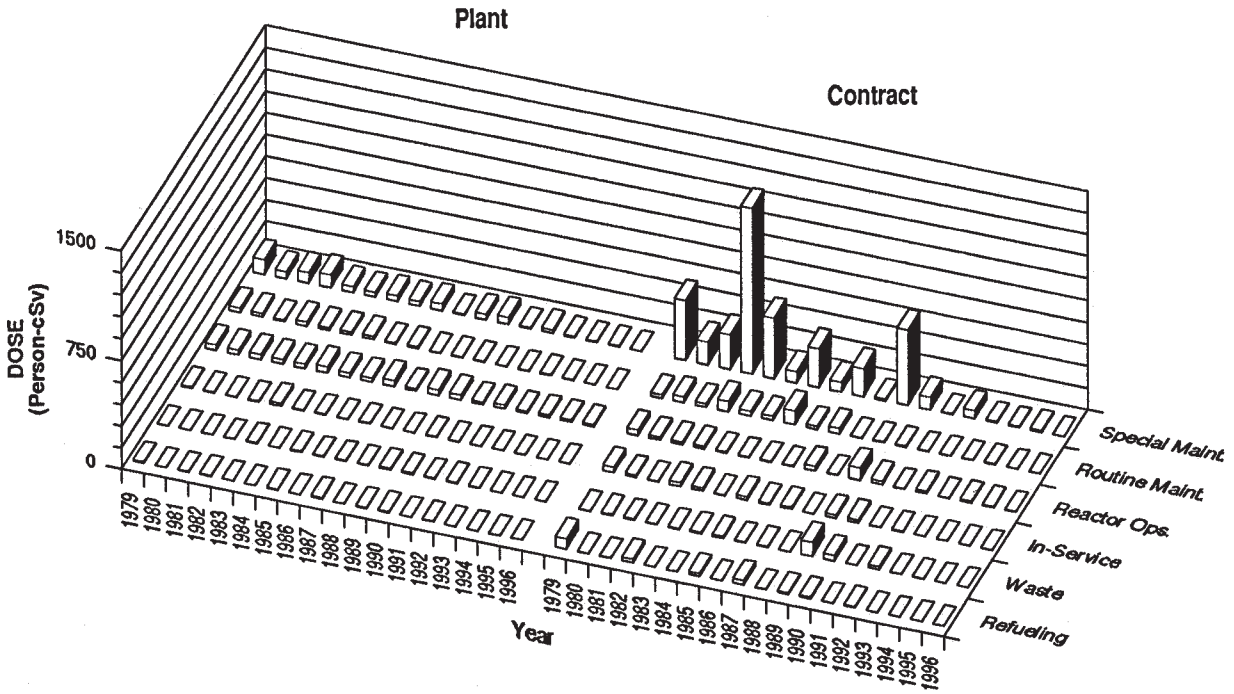
APPENDIX E (continued)

INDIAN POINT 3

Dose-Performance Indicators **PWR**



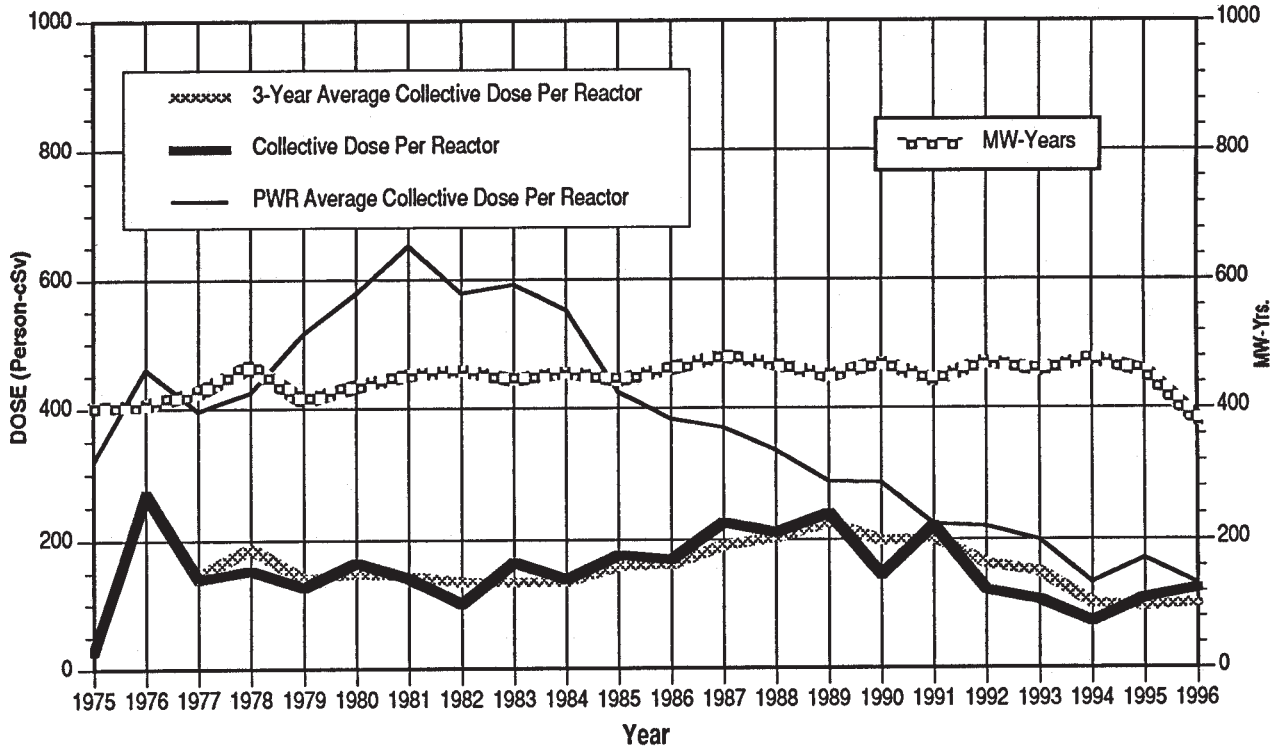
Breakdown by Job Function



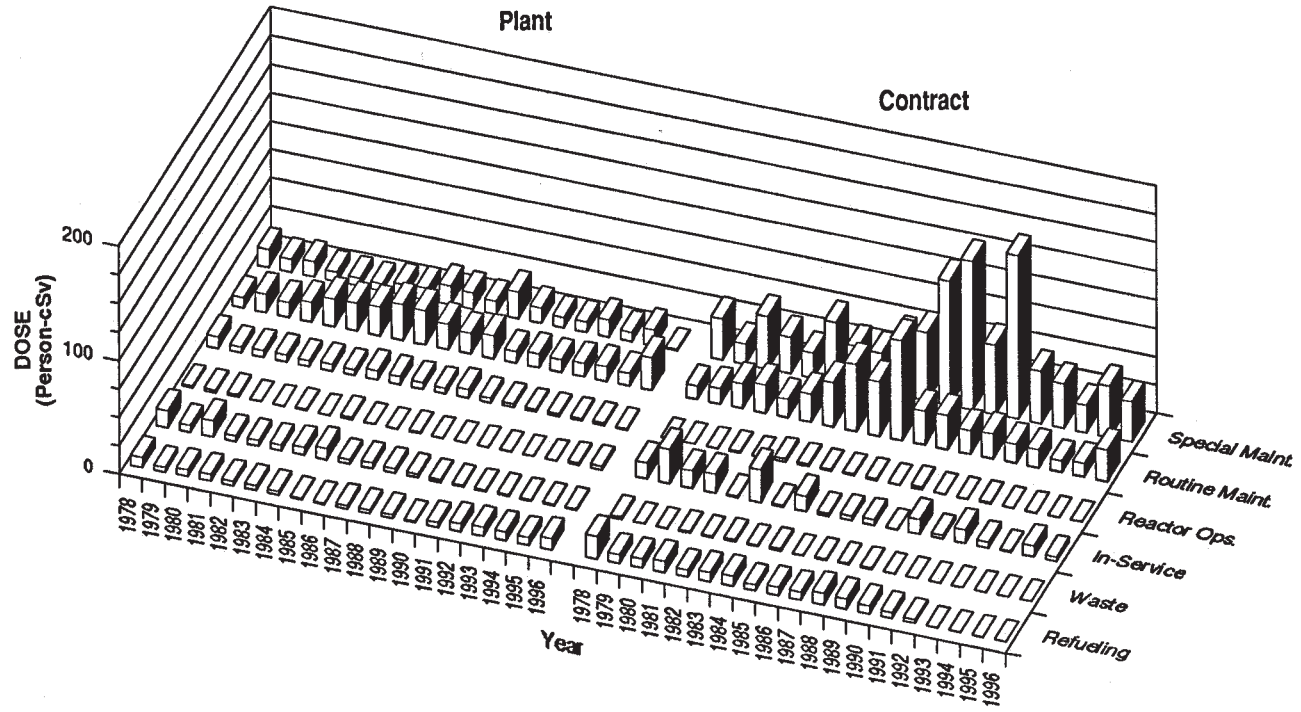
KEWAUNEE

Dose-Performance Indicators

PWR



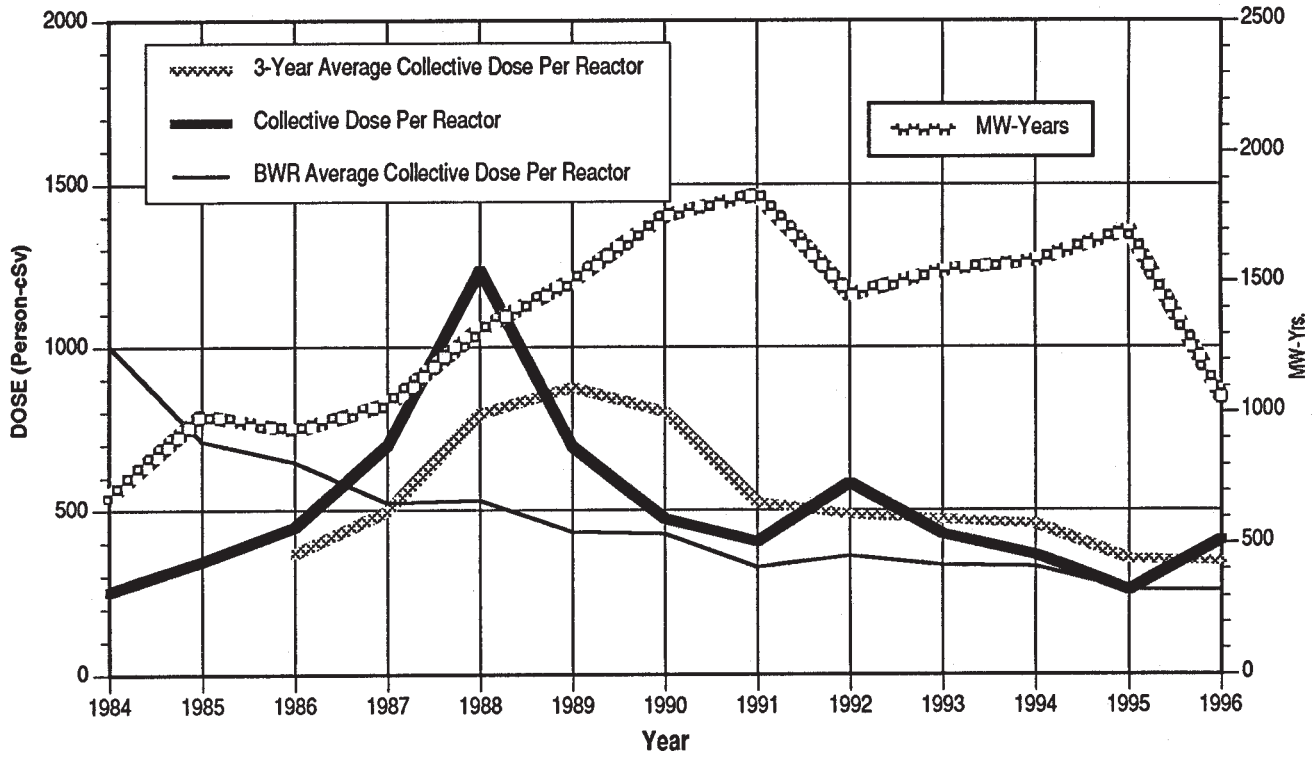
Breakdown by Job Function



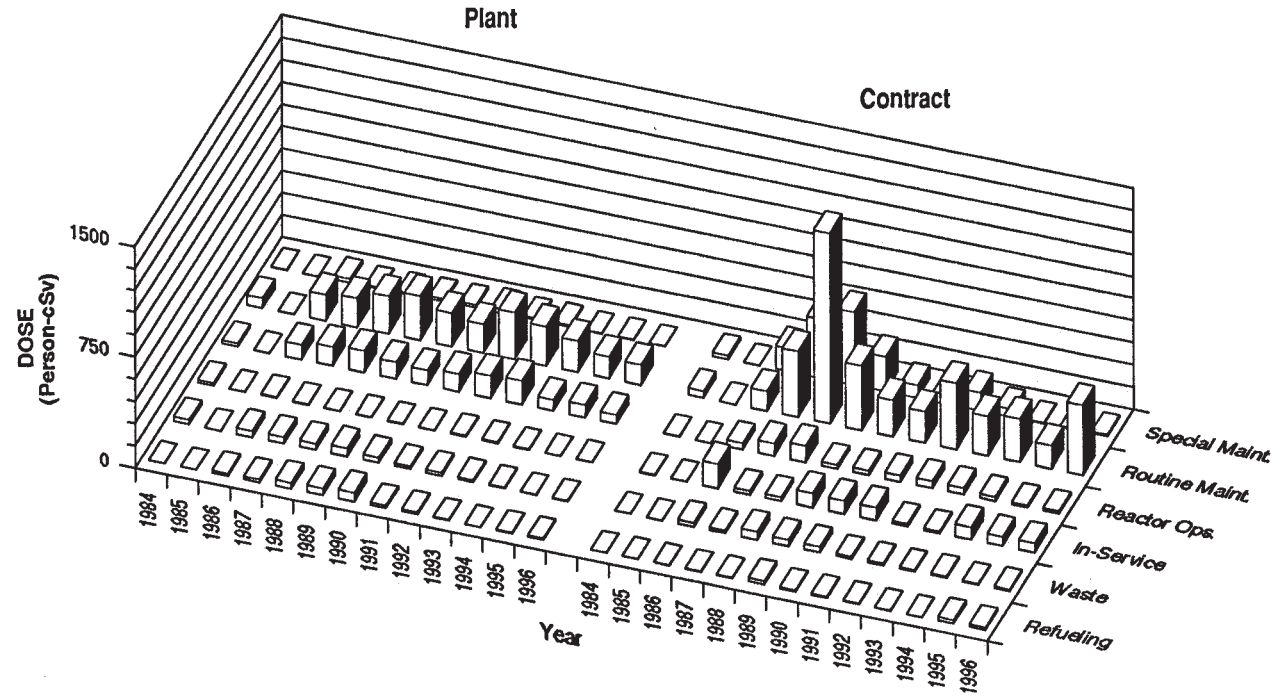
LASALLE 1, 2

Dose-Performance Indicators

BWR



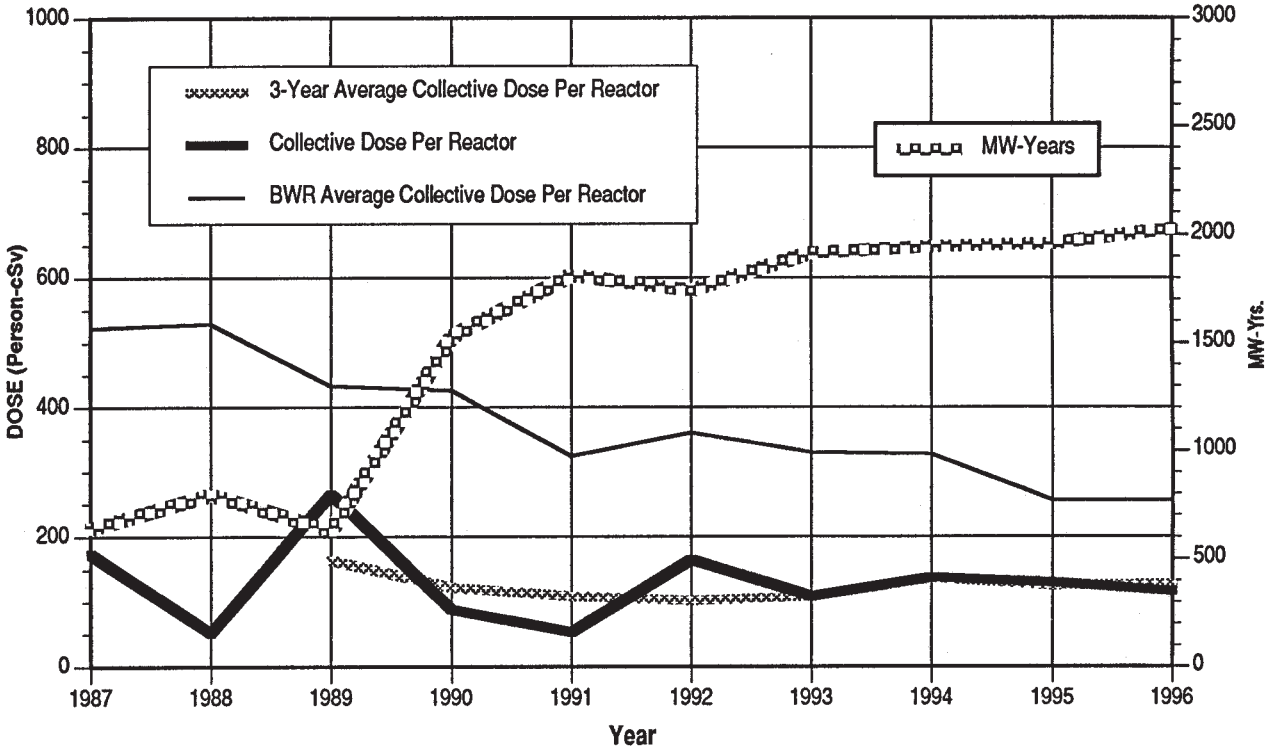
Breakdown by Job Function



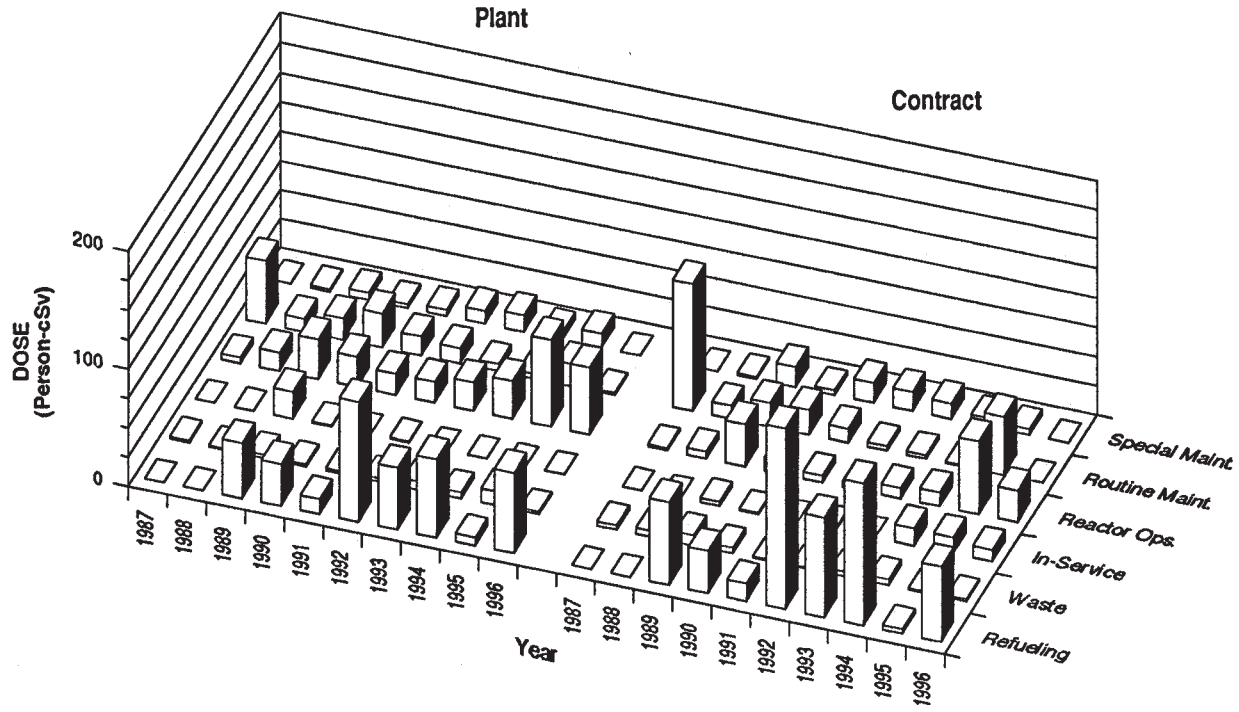
LIMERICK 1, 2

Dose-Performance Indicators

BWR



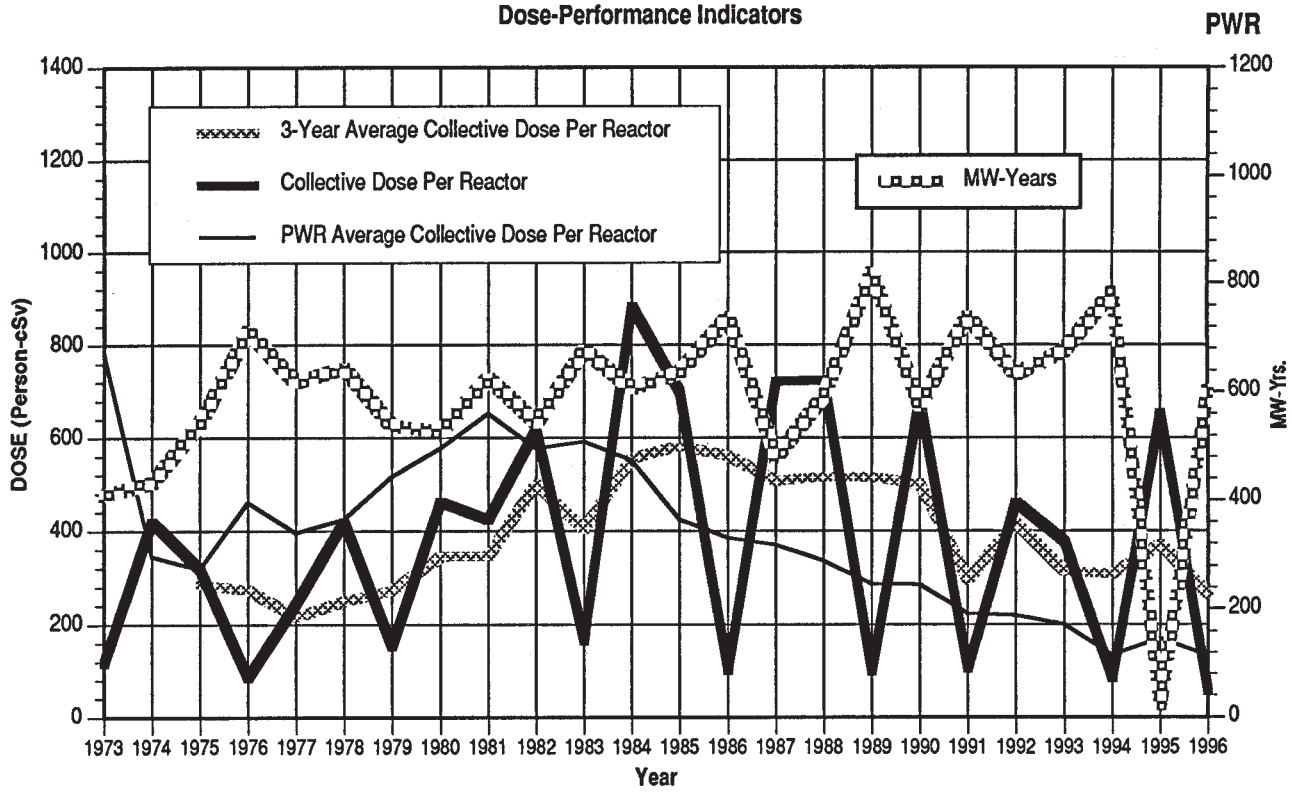
Breakdown by Job Function



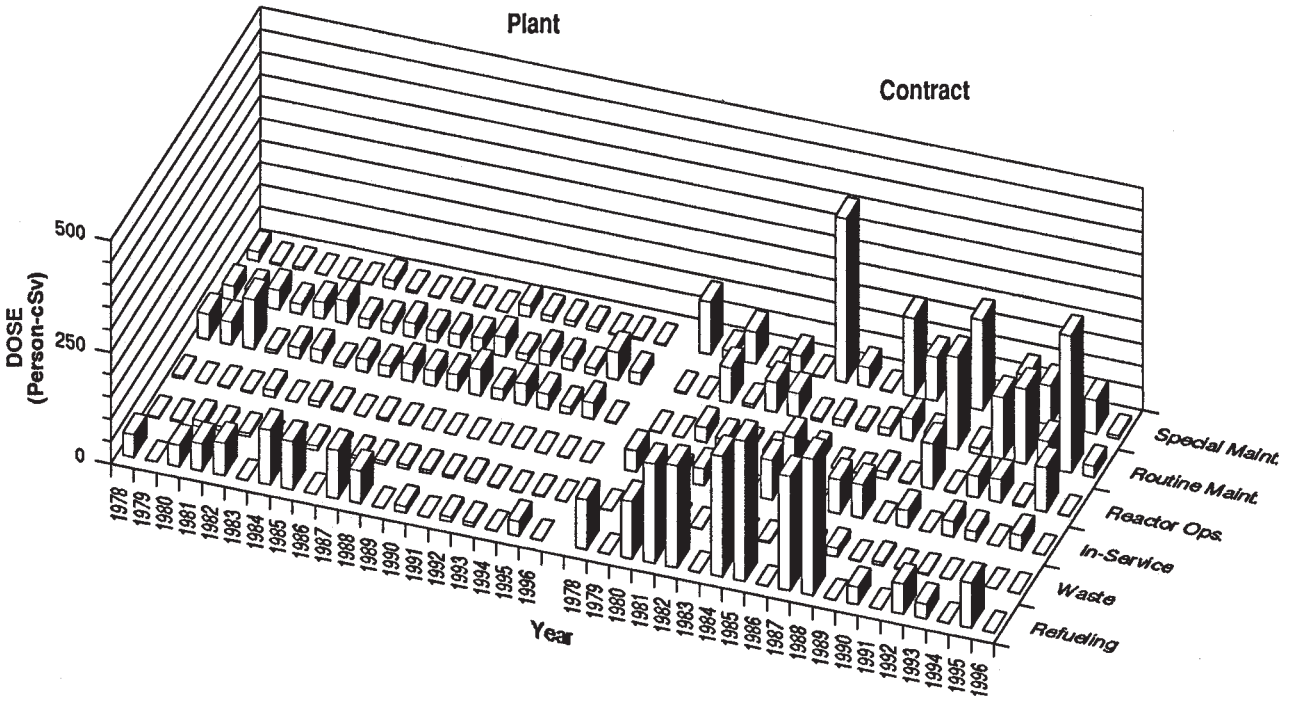
APPENDIX E (continued)

MAINE YANKEE

Dose-Performance Indicators



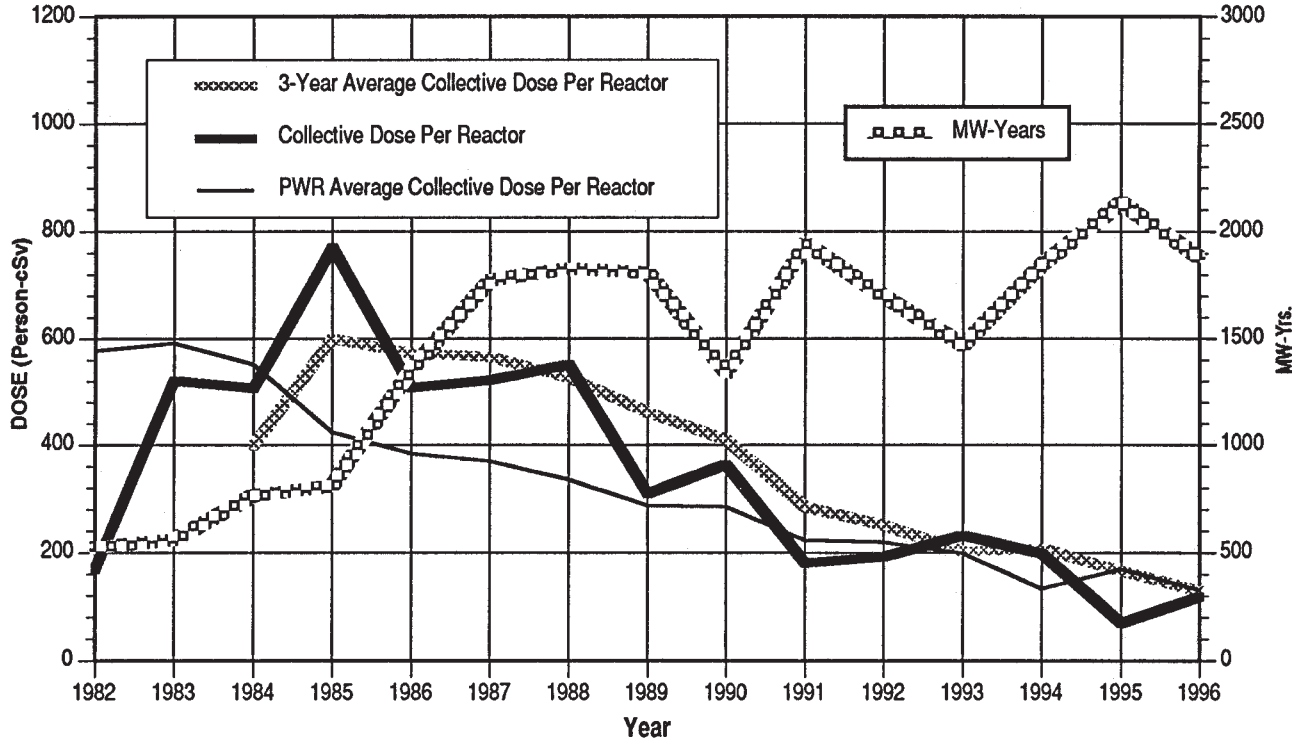
Breakdown by Job Function



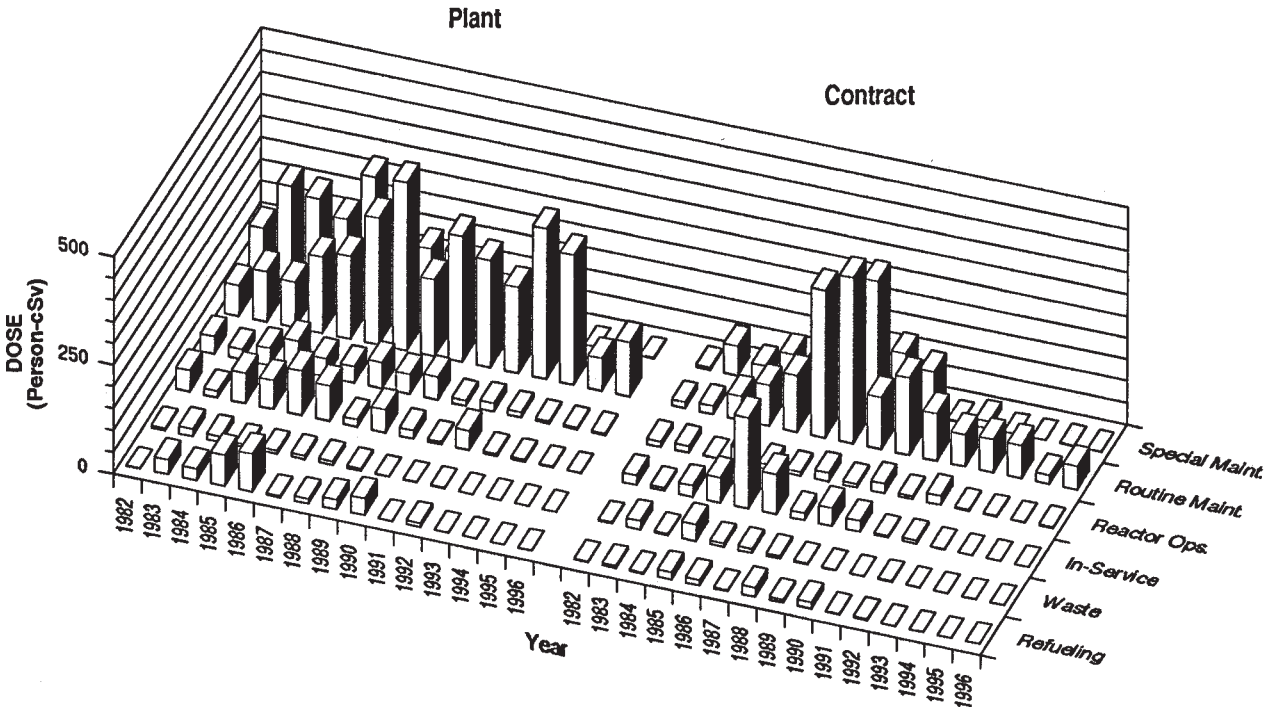
APPENDIX E (continued)

MCGUIRE 1, 2

Dose-Performance Indicators **PWR**



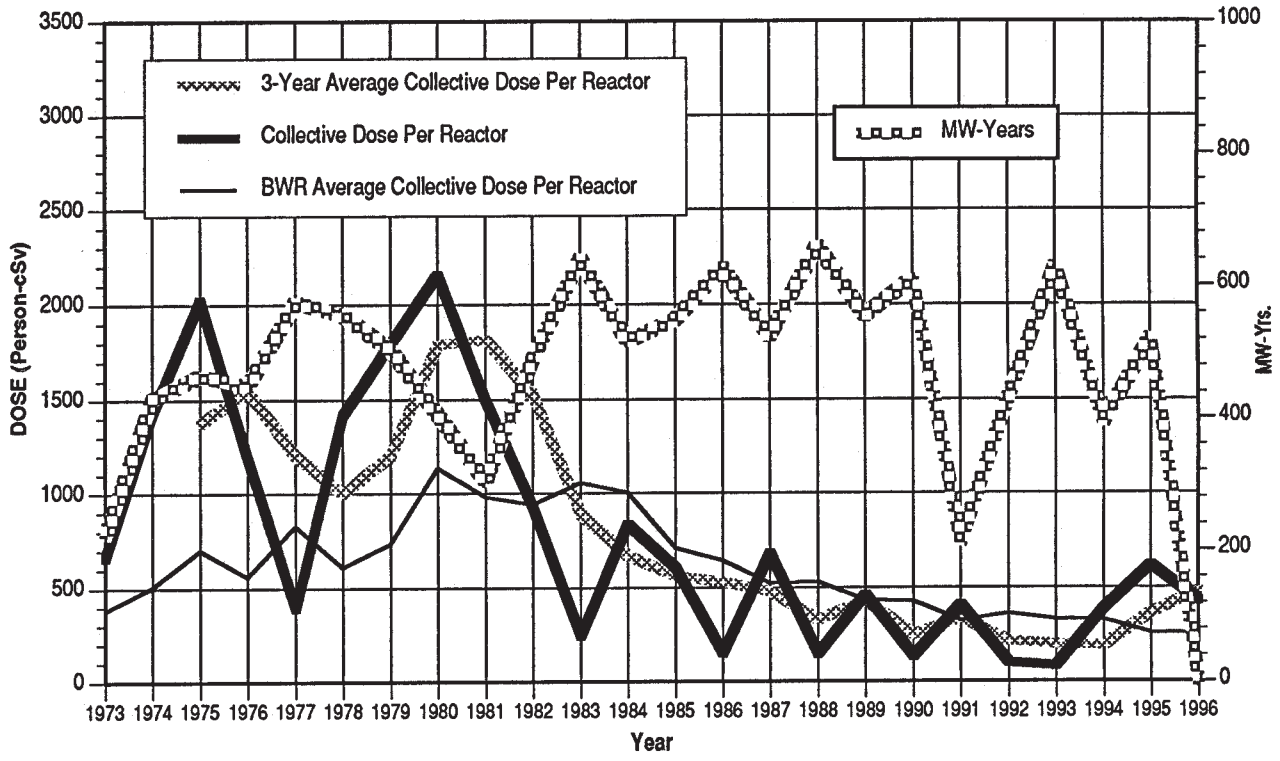
Breakdown by Job Function



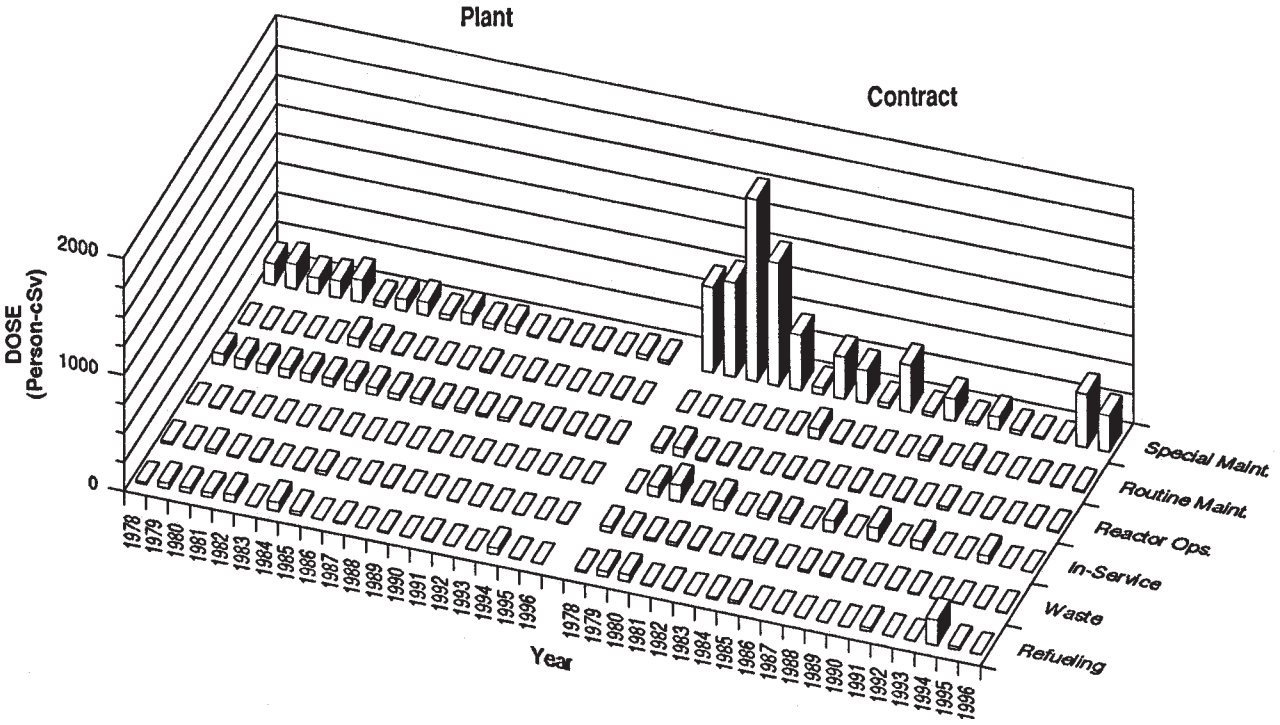
MILLSTONE POINT 1

Dose-Performance Indicators

BWR



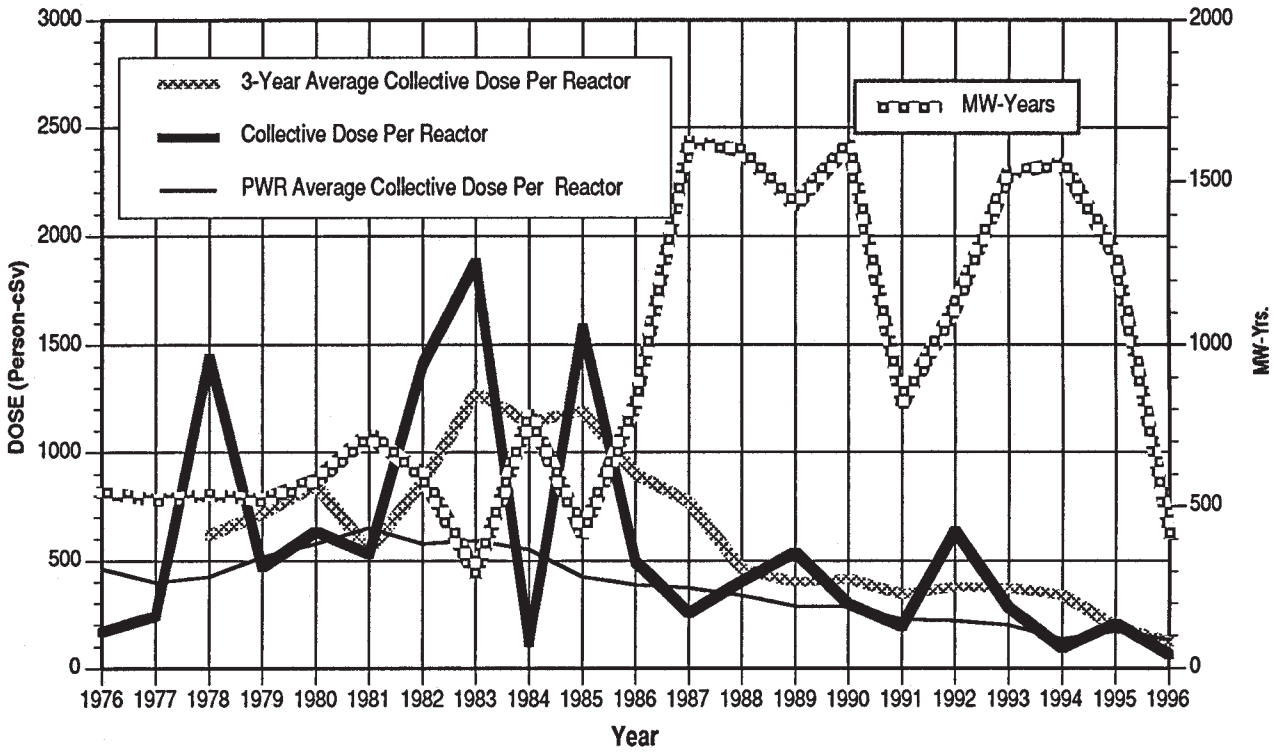
Breakdown by Job Function



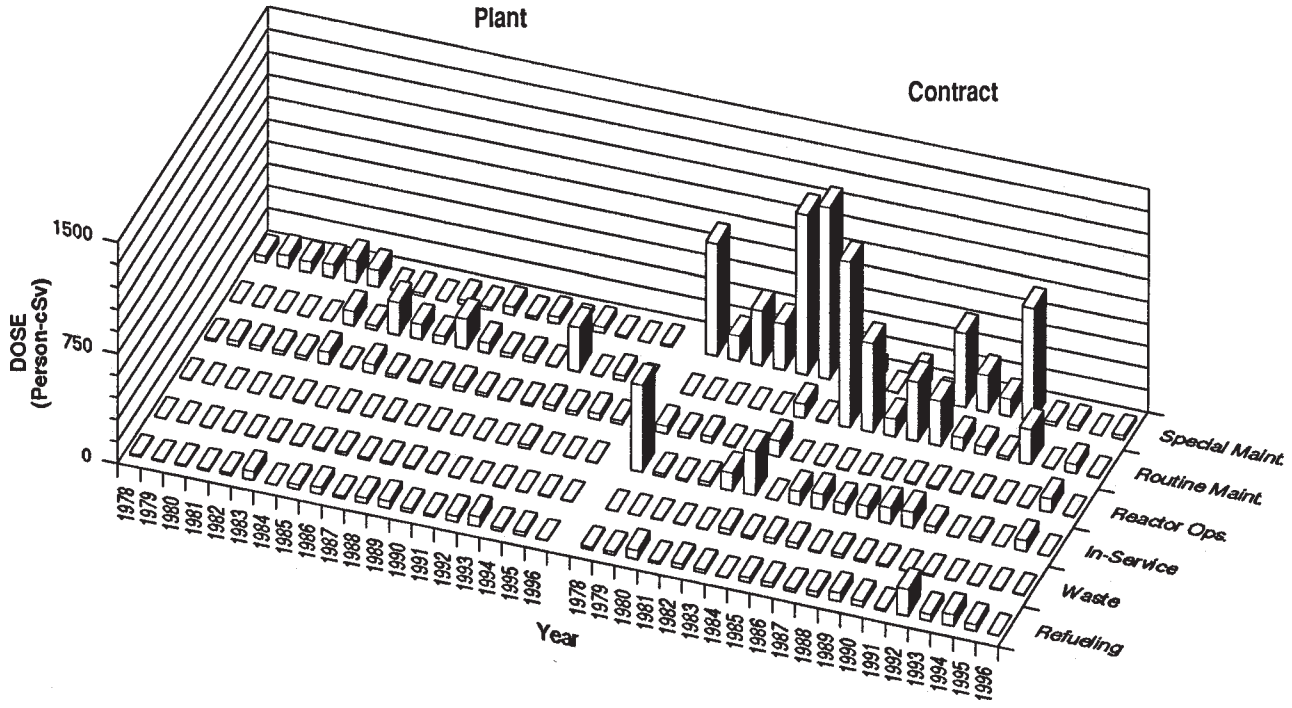
APPENDIX E (continued)

MILLSTONE POINT 2, 3

Dose-Performance Indicators **PWR**



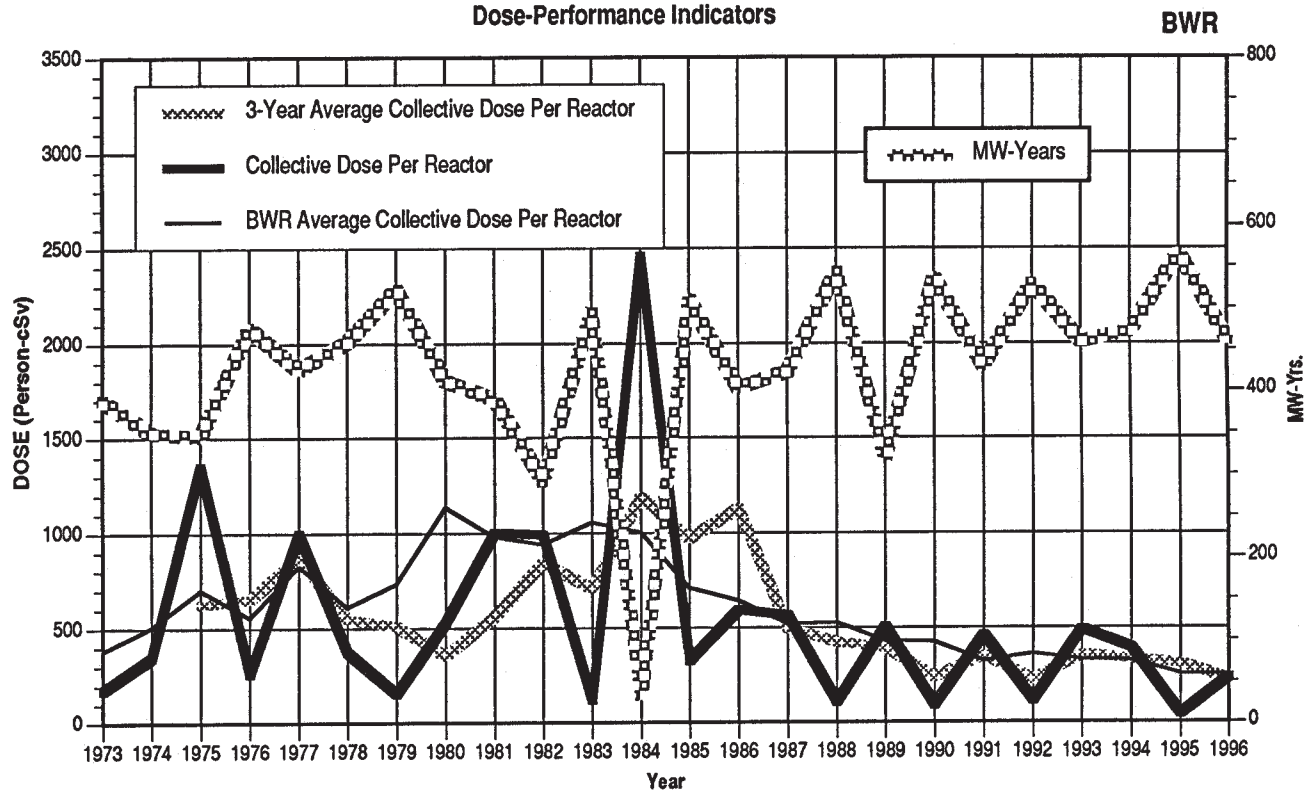
Breakdown by Job Function



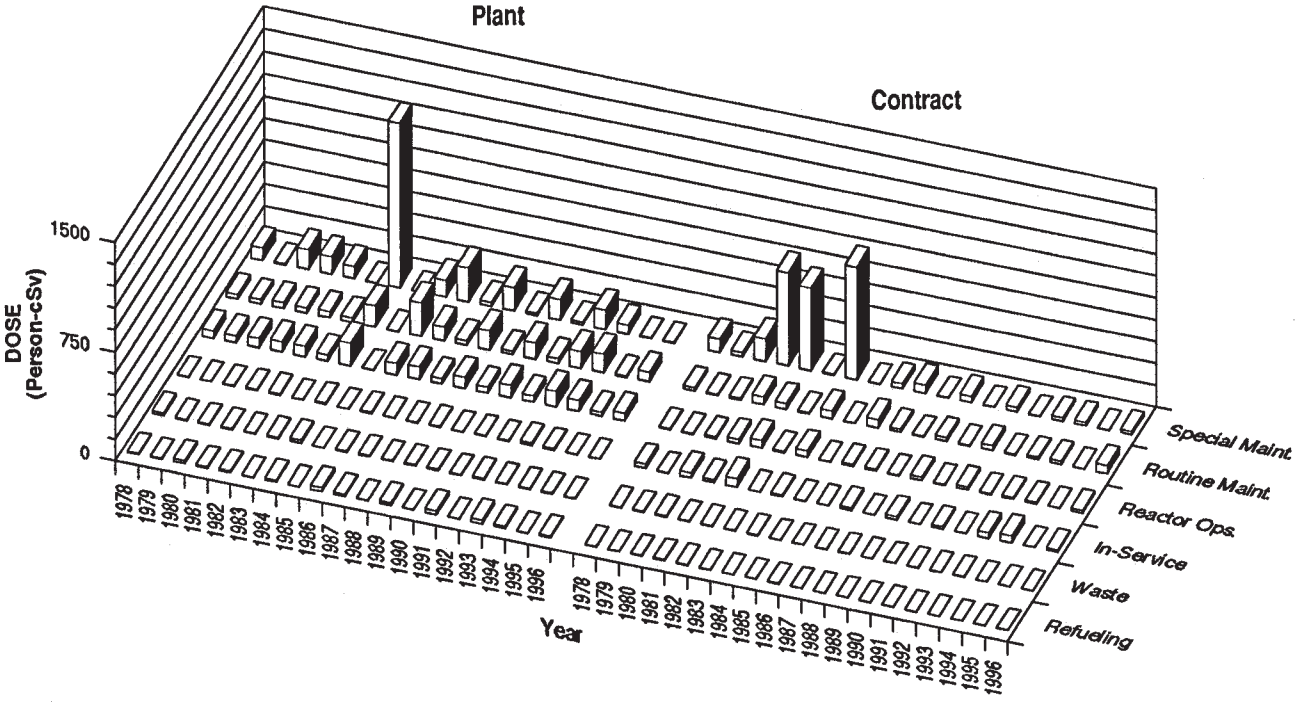
APPENDIX E (continued)

MONTICELLO

Dose-Performance Indicators



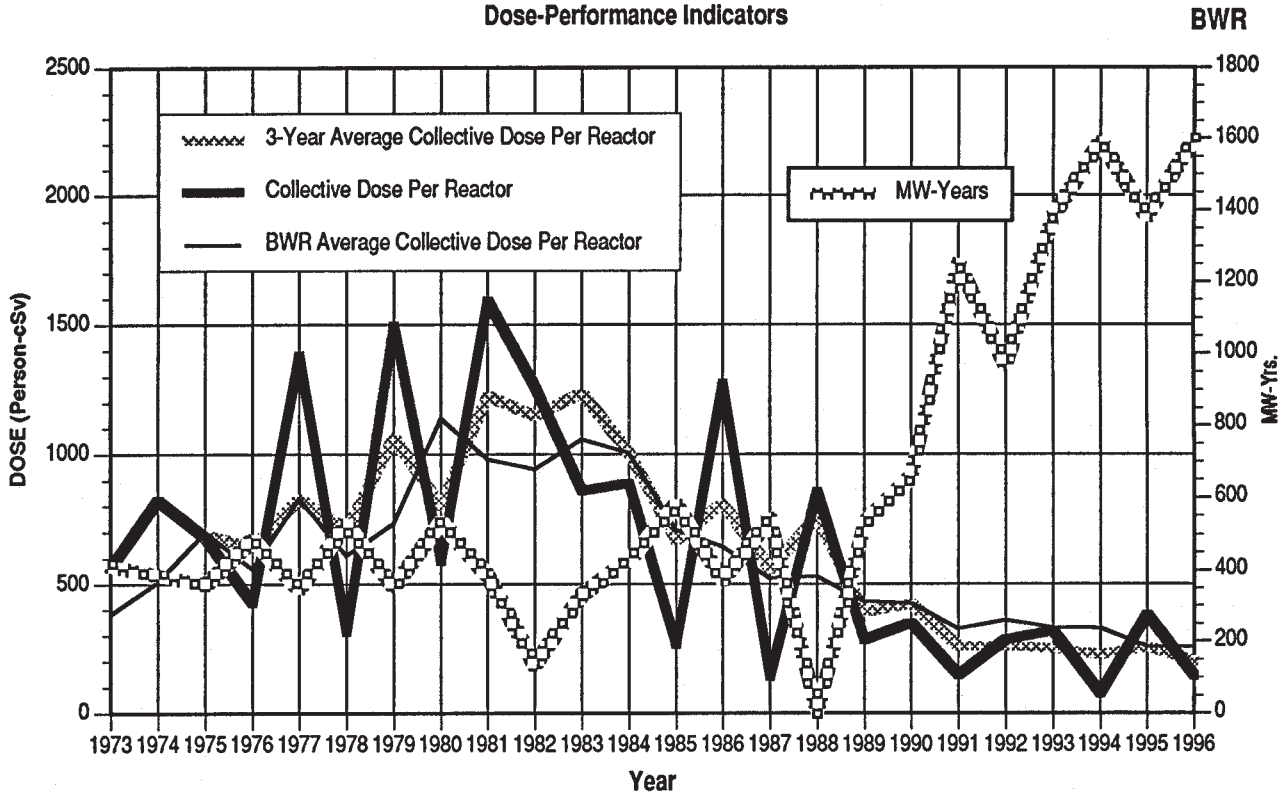
Breakdown by Job Function



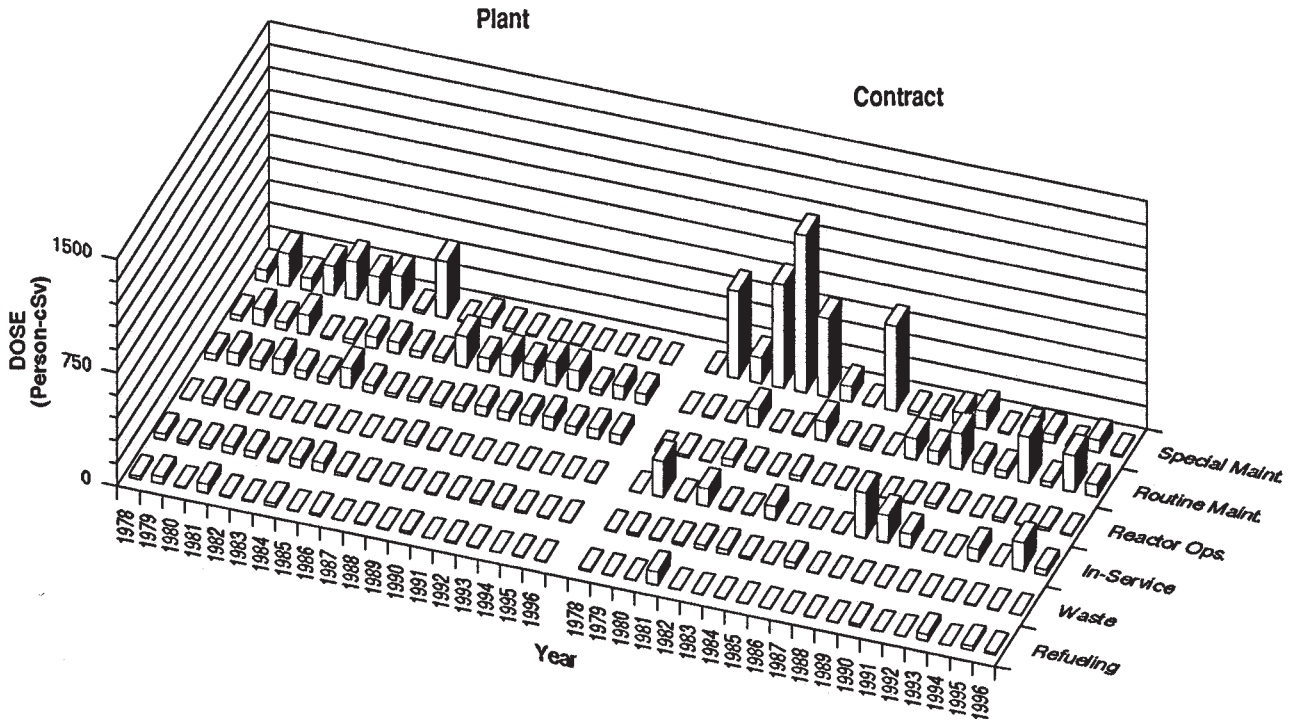
APPENDIX E (continued)

NINE MILE POINT 1, 2

Dose-Performance Indicators



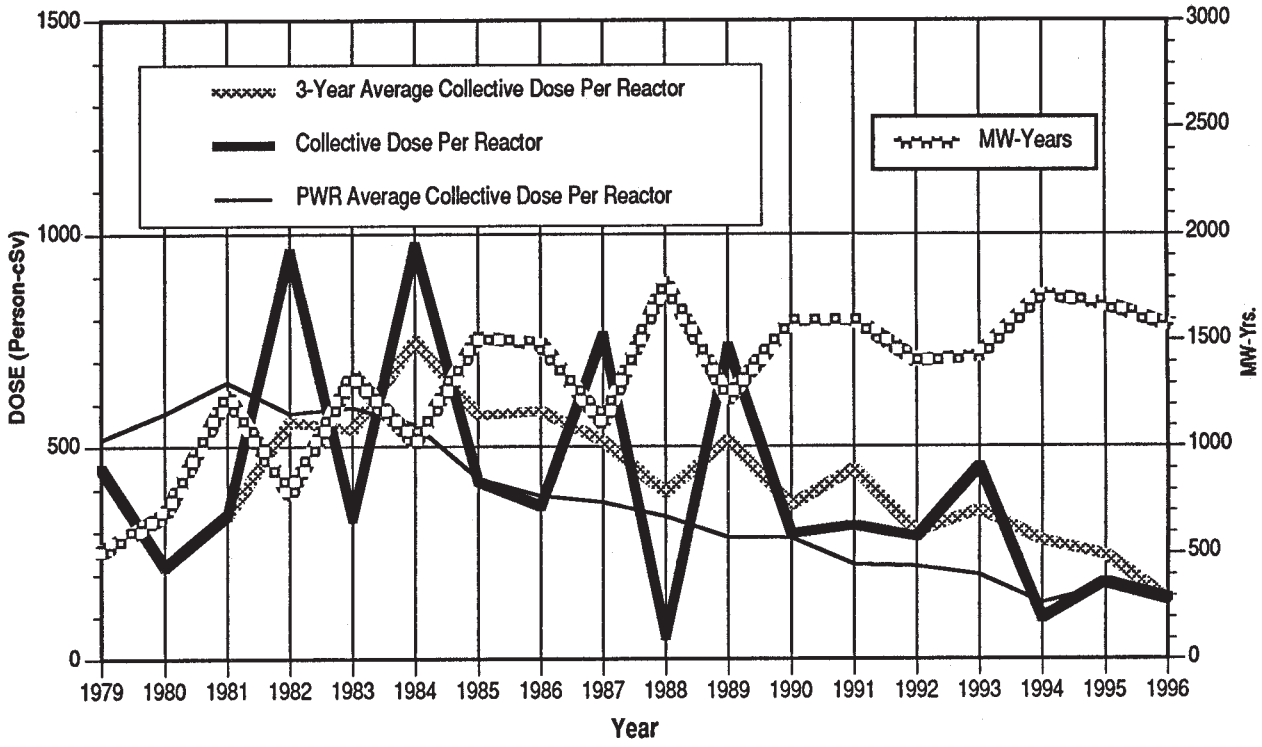
Breakdown by Job Function



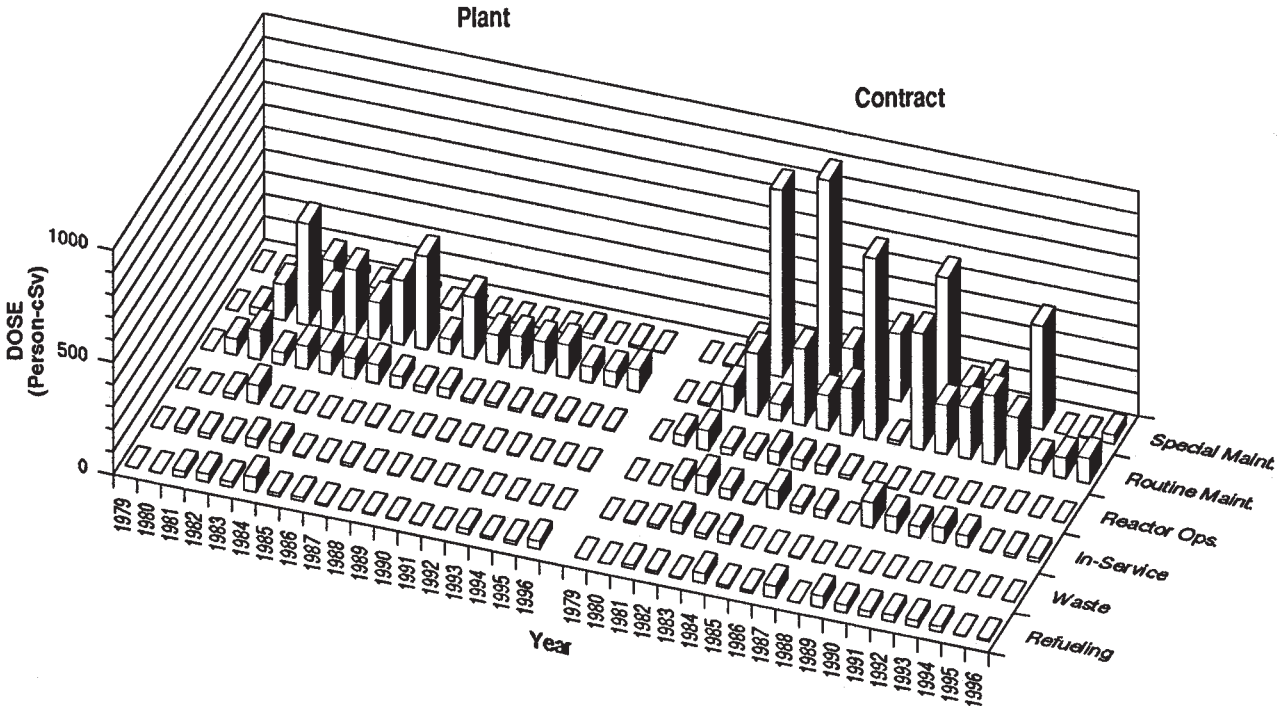
NORTH ANNA 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

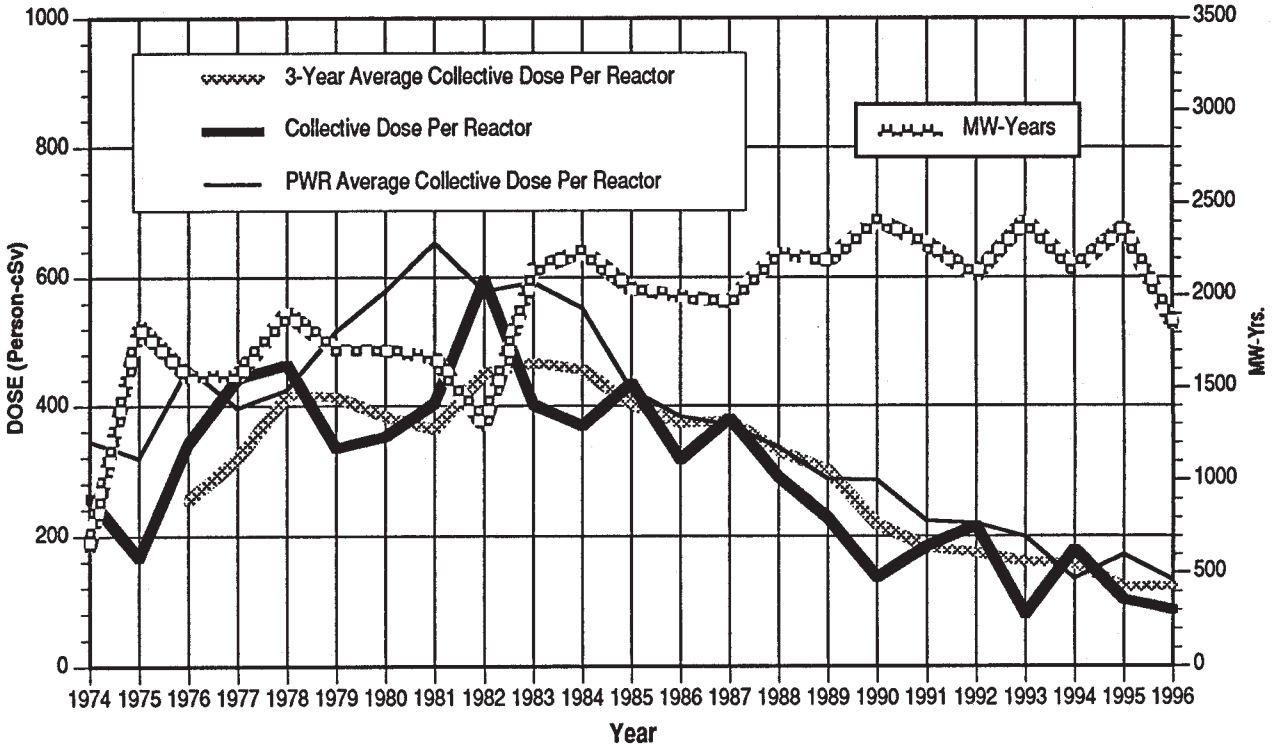


APPENDIX E (continued)

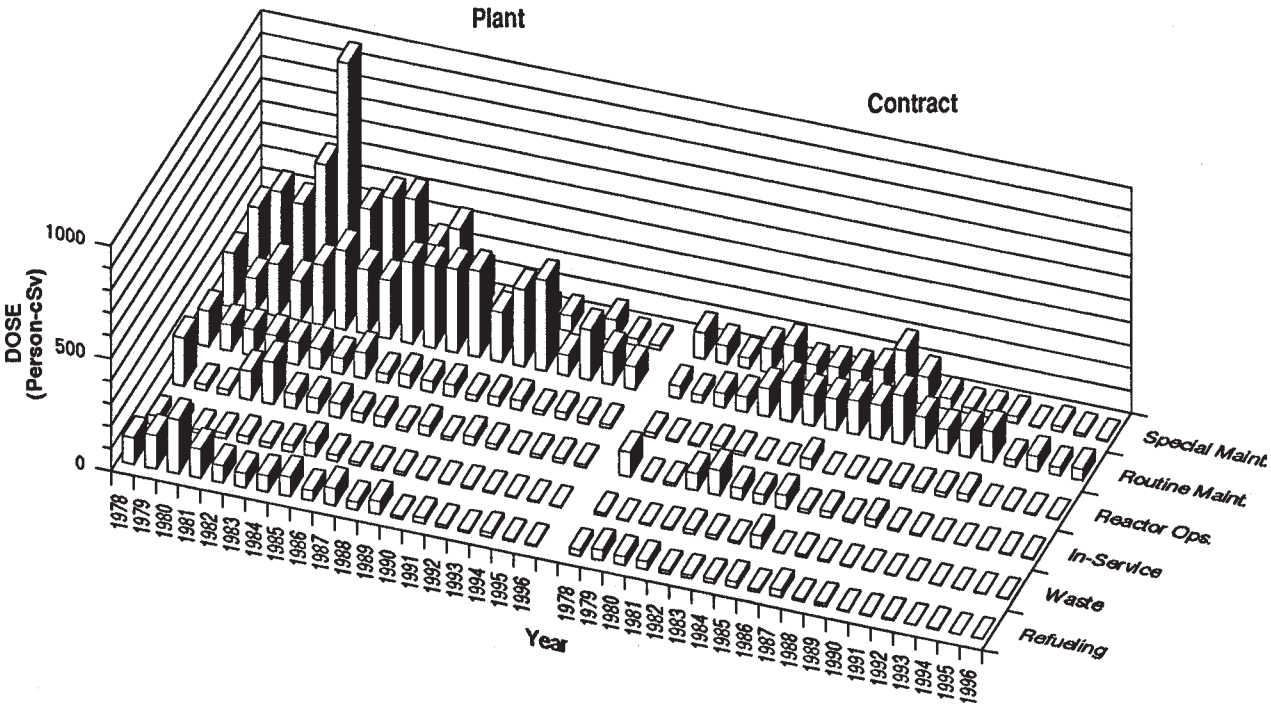
OCONEE 1, 2, 3

Dose-Performance Indicators

PWR



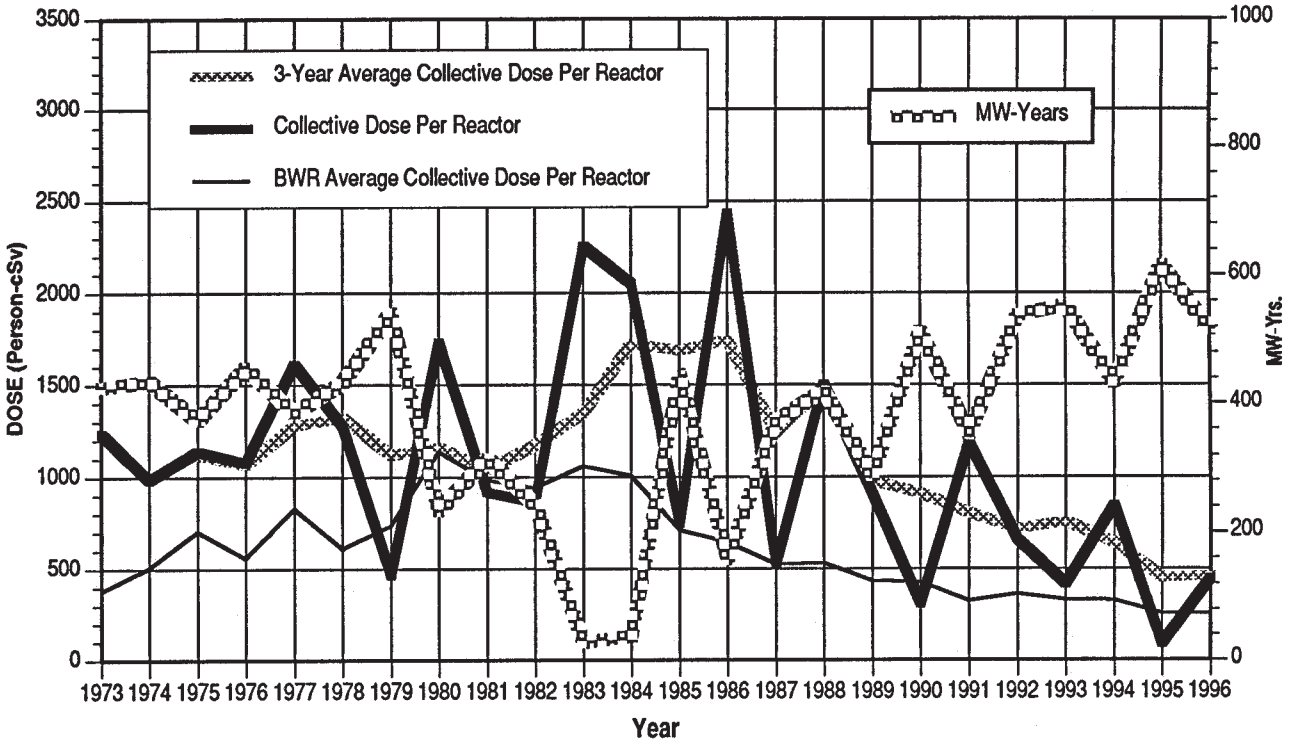
Breakdown by Job Function



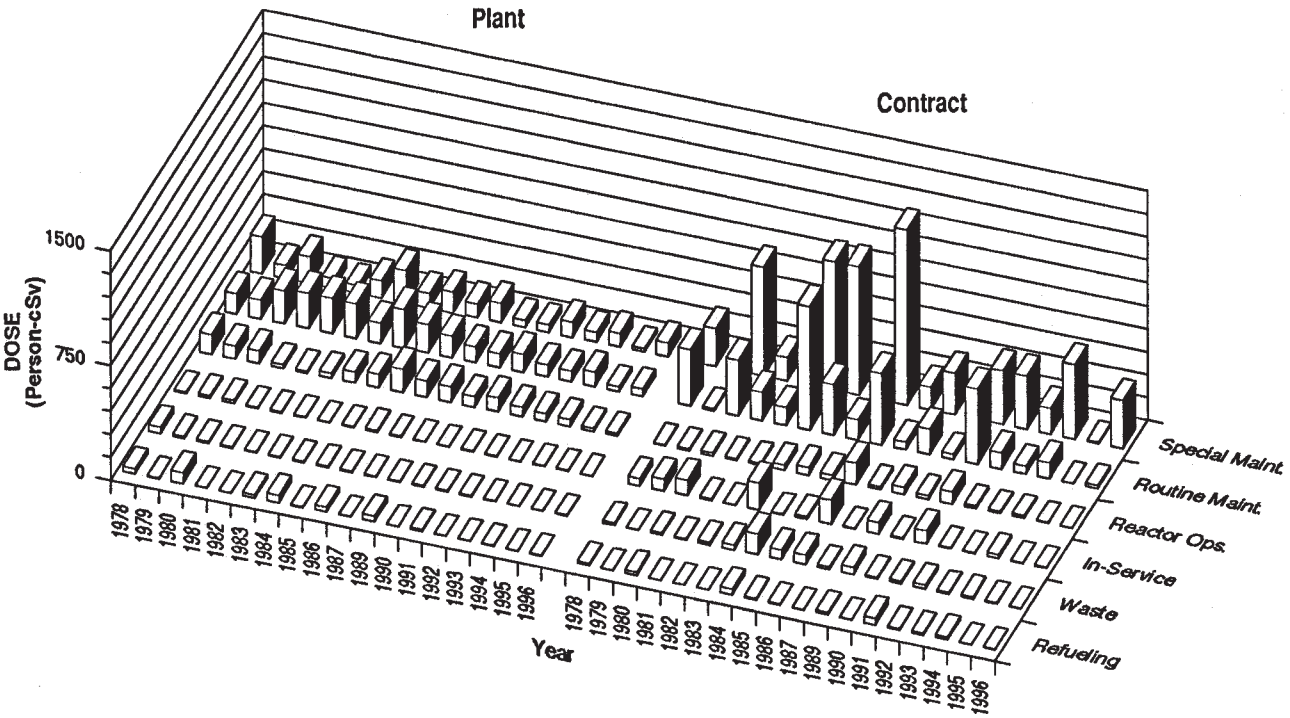
APPENDIX E (continued)

OYSTER CREEK

Dose-Performance Indicators BWR



Breakdown by Job Function

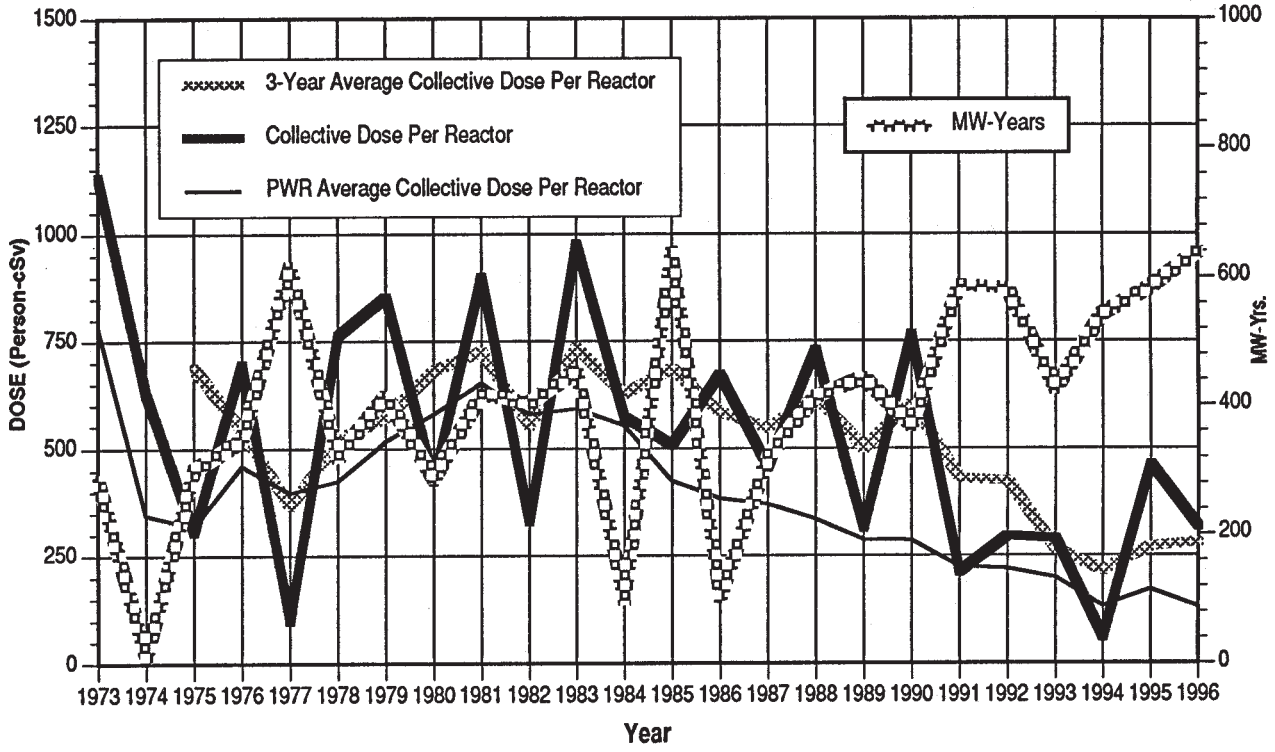


APPENDIX E (continued)

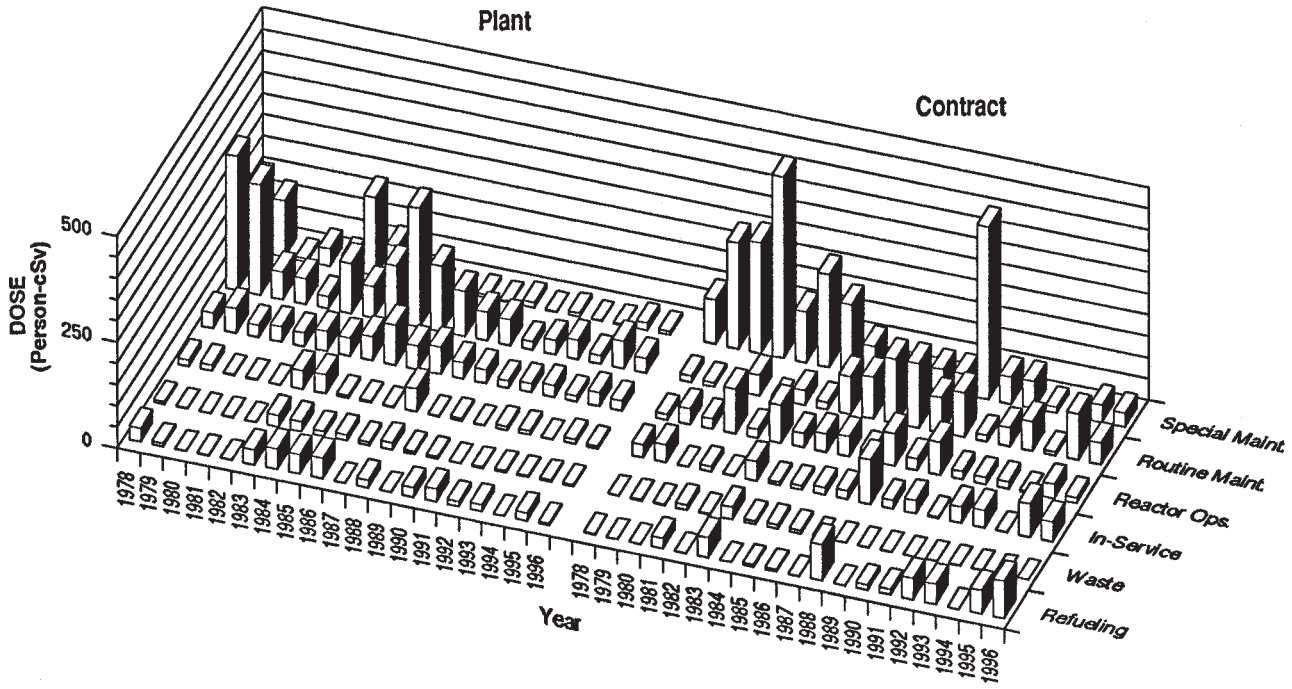
PALISADES

Dose-Performance Indicators

PWR



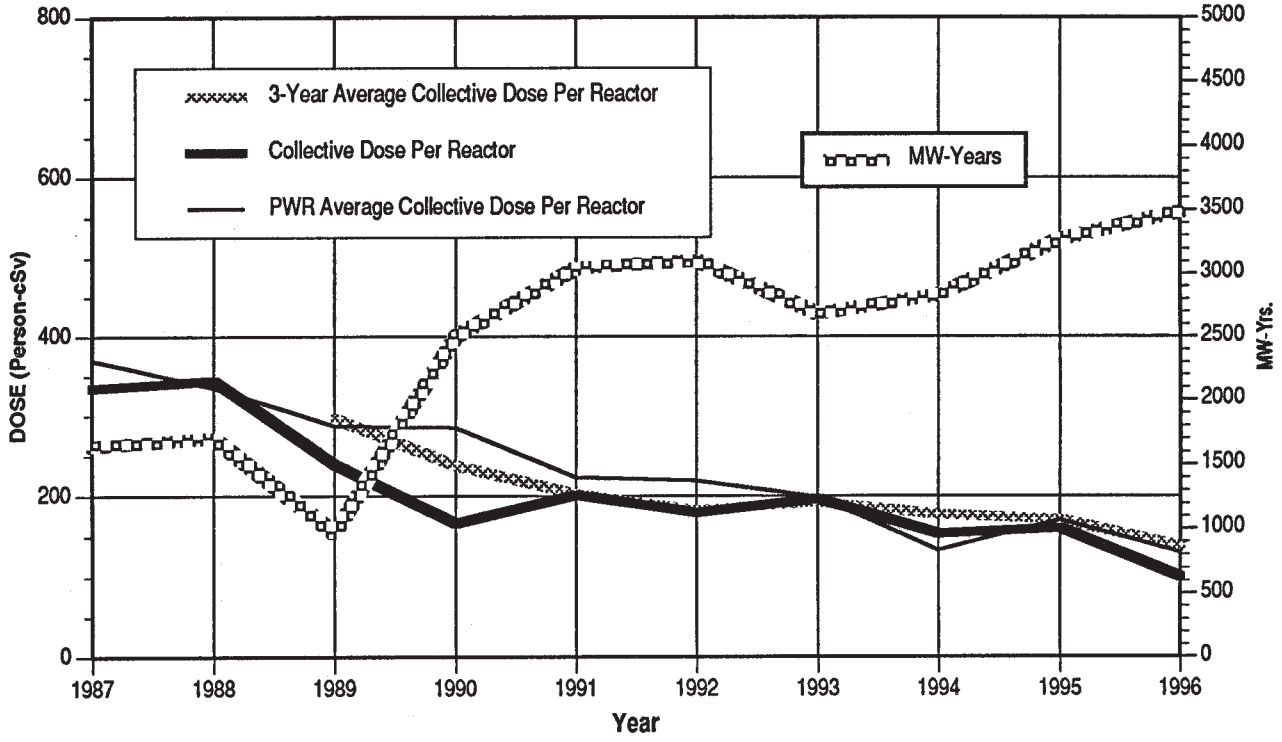
Breakdown by Job Function



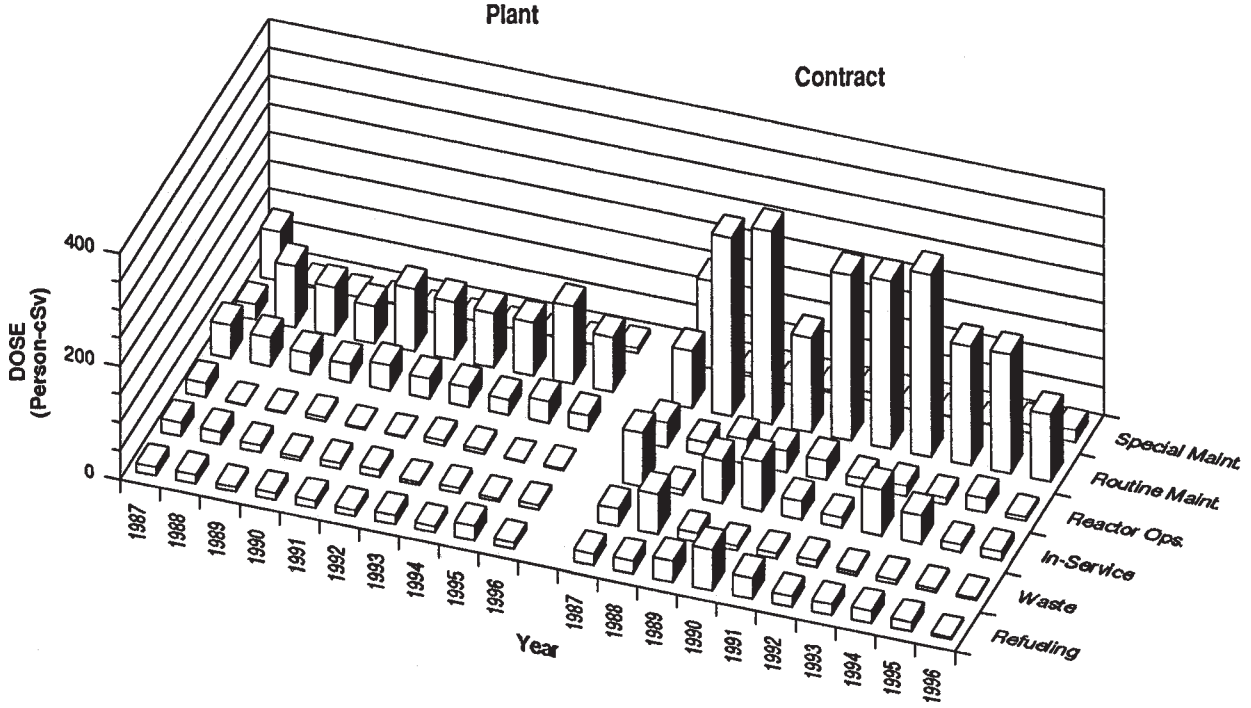
APPENDIX E (continued)

PALO VERDE 1, 2, 3

Dose-Performance Indicators **PWR**



Breakdown by Job Function

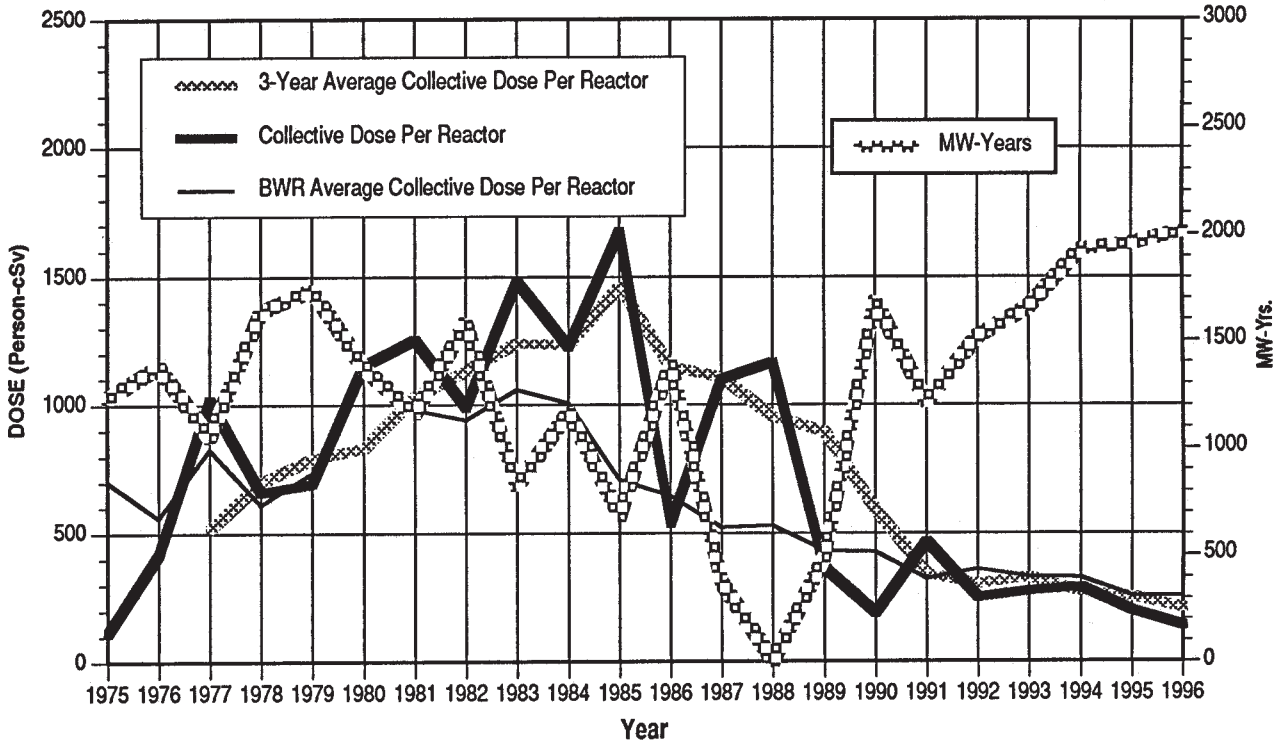


APPENDIX E (continued)

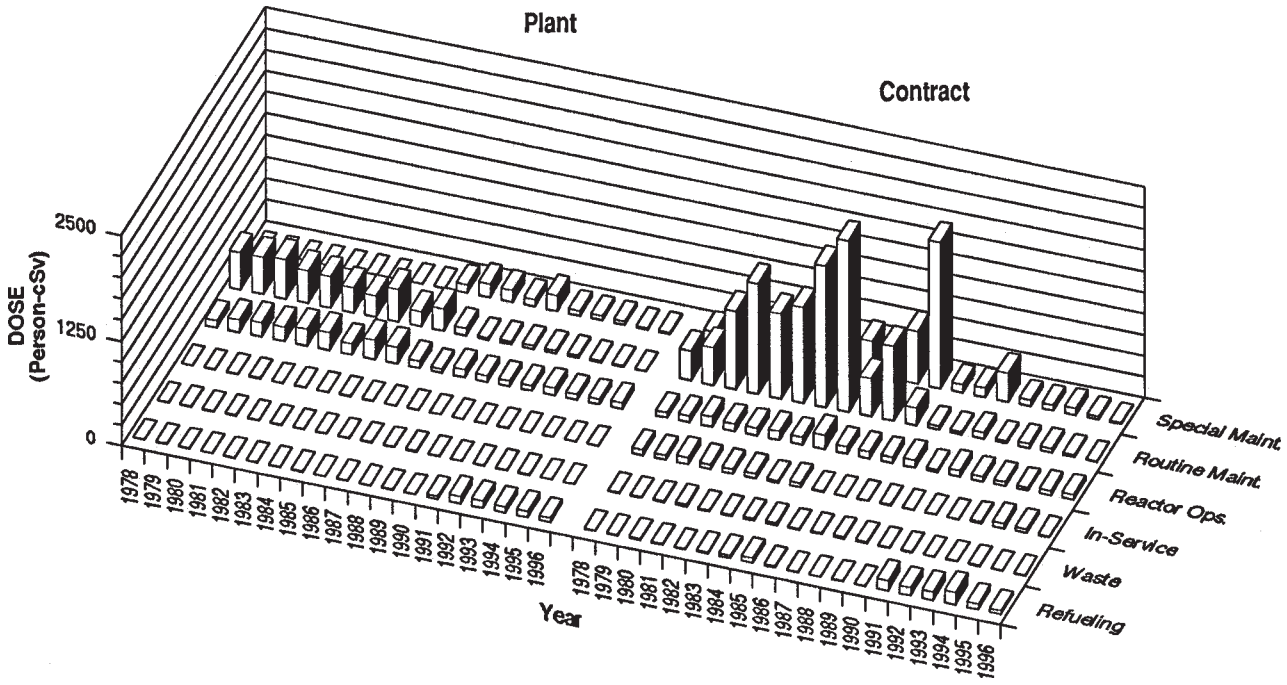
PEACH BOTTOM 2, 3

Dose-Performance Indicators

BWR



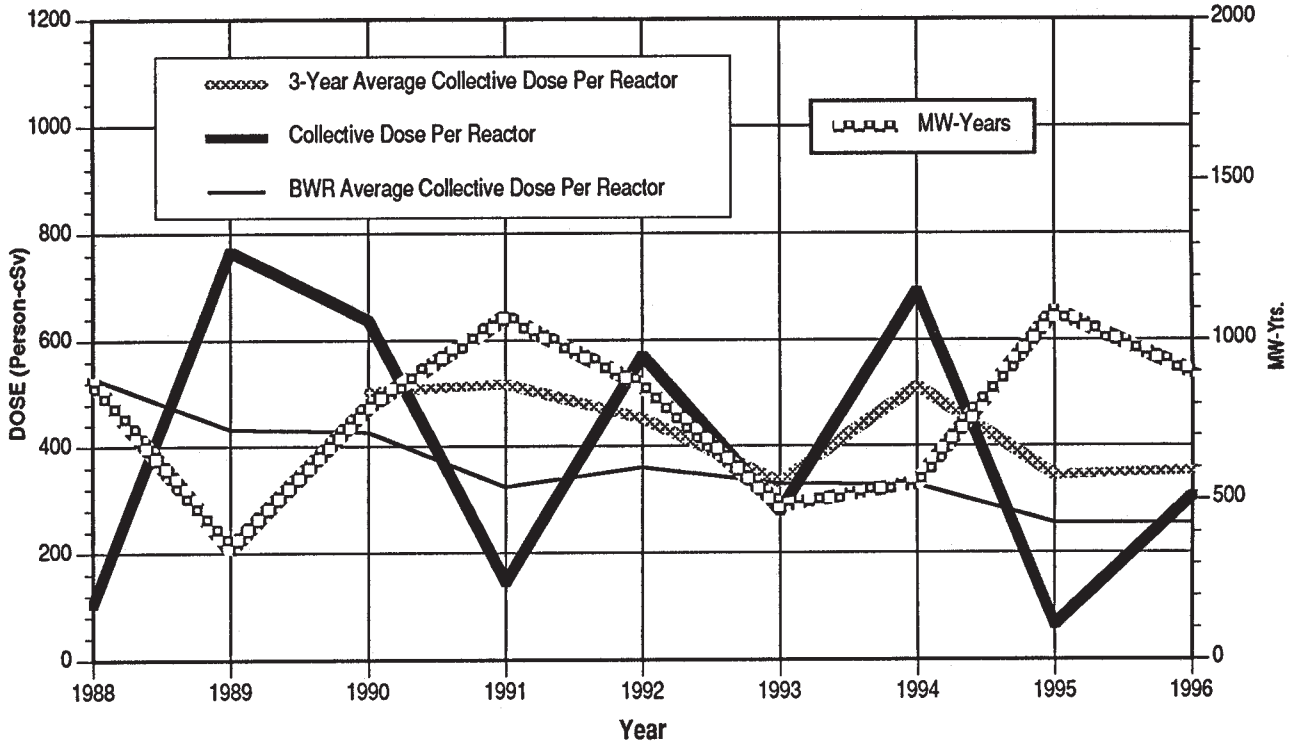
Breakdown by Job Function



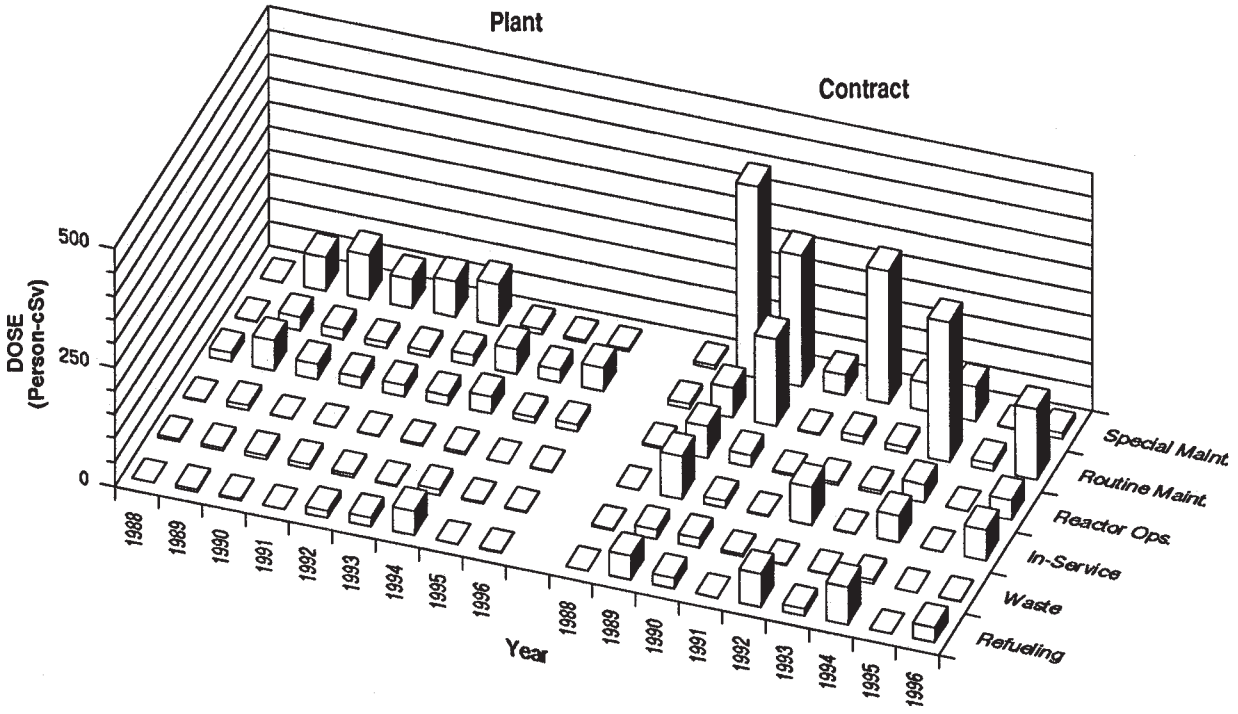
PERRY

Dose-Performance Indicators

BWR



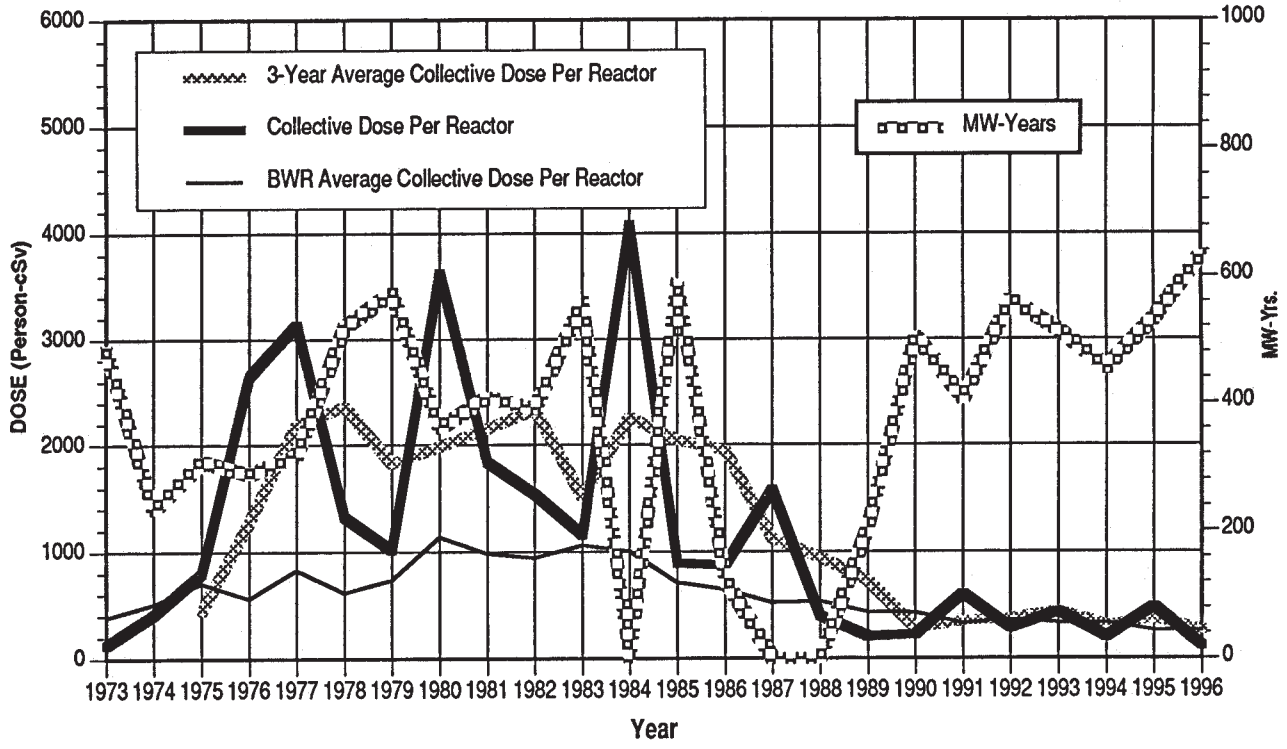
Breakdown by Job Function



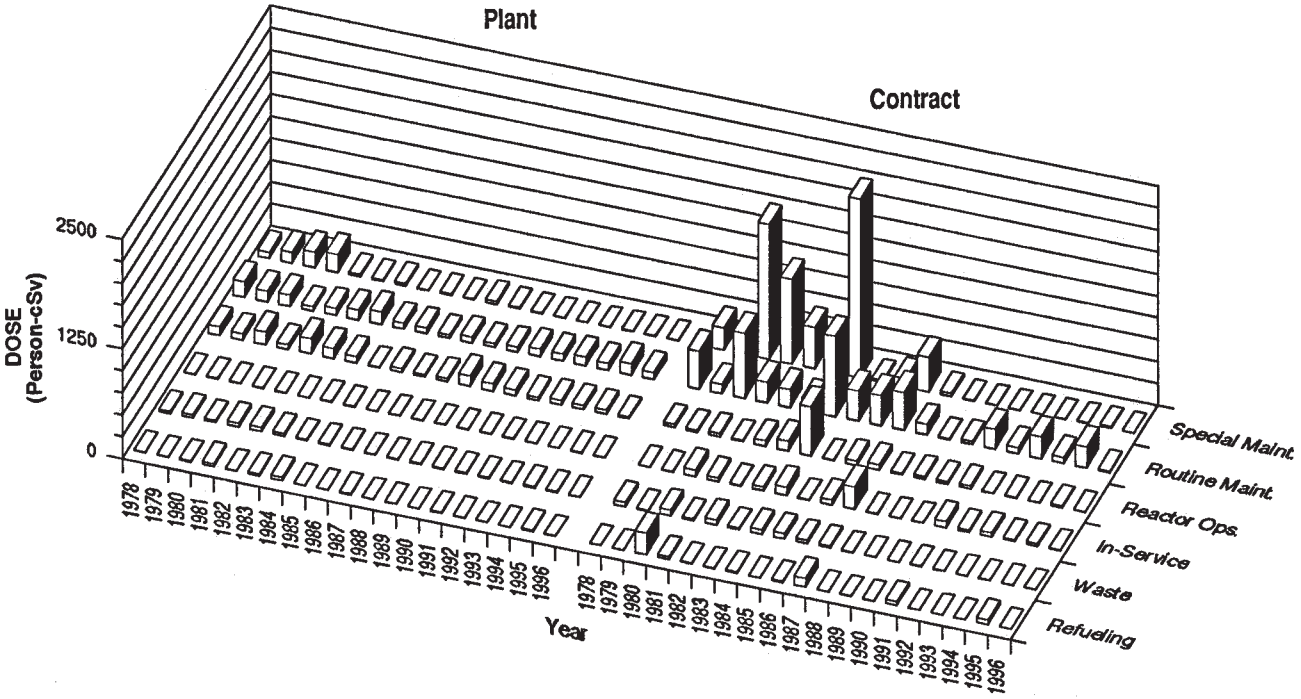
APPENDIX E (continued)

PILGRIM

Dose-Performance Indicators **BWR**



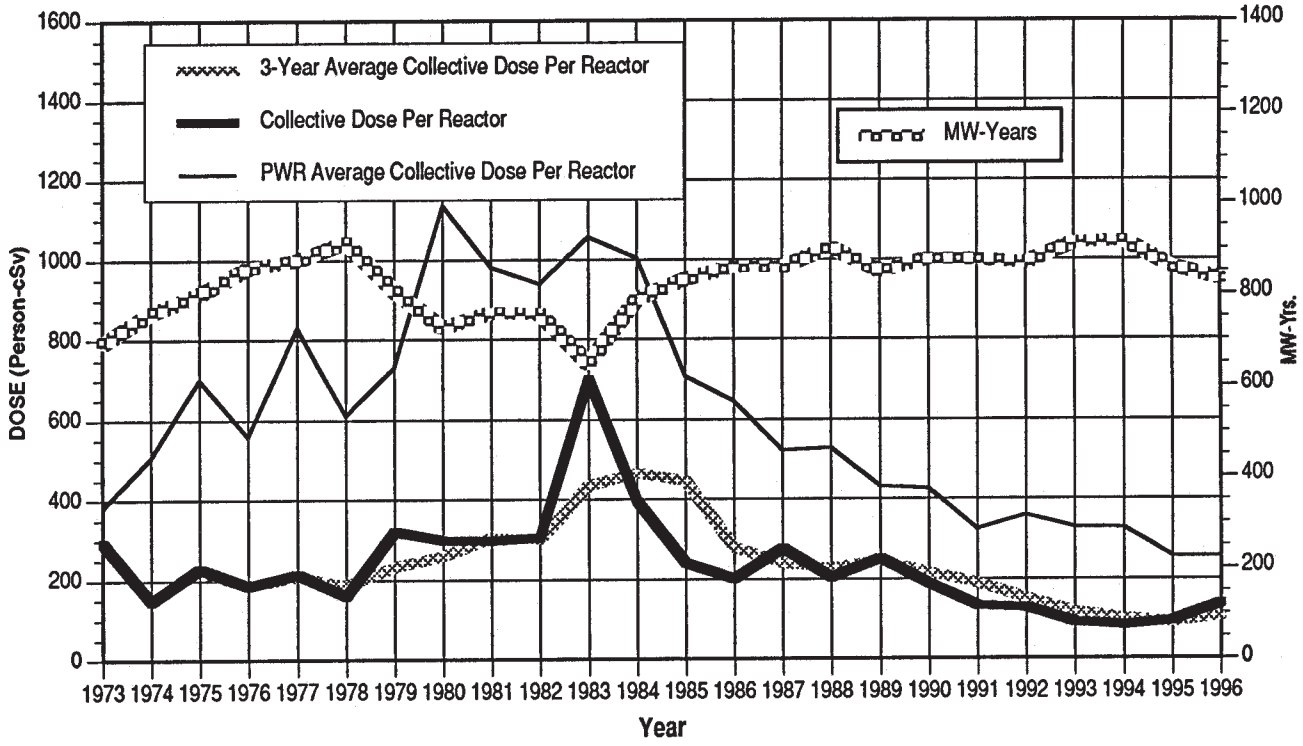
Breakdown by Job Function



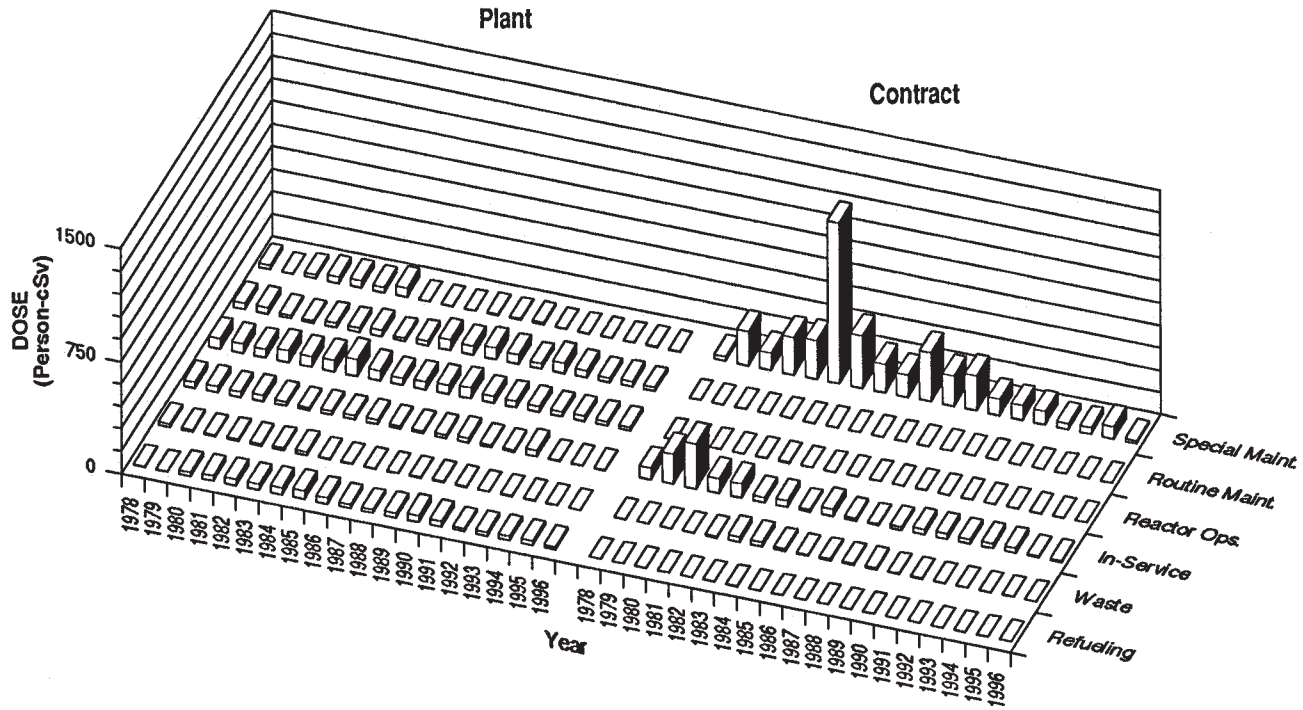
POINT BEACH 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

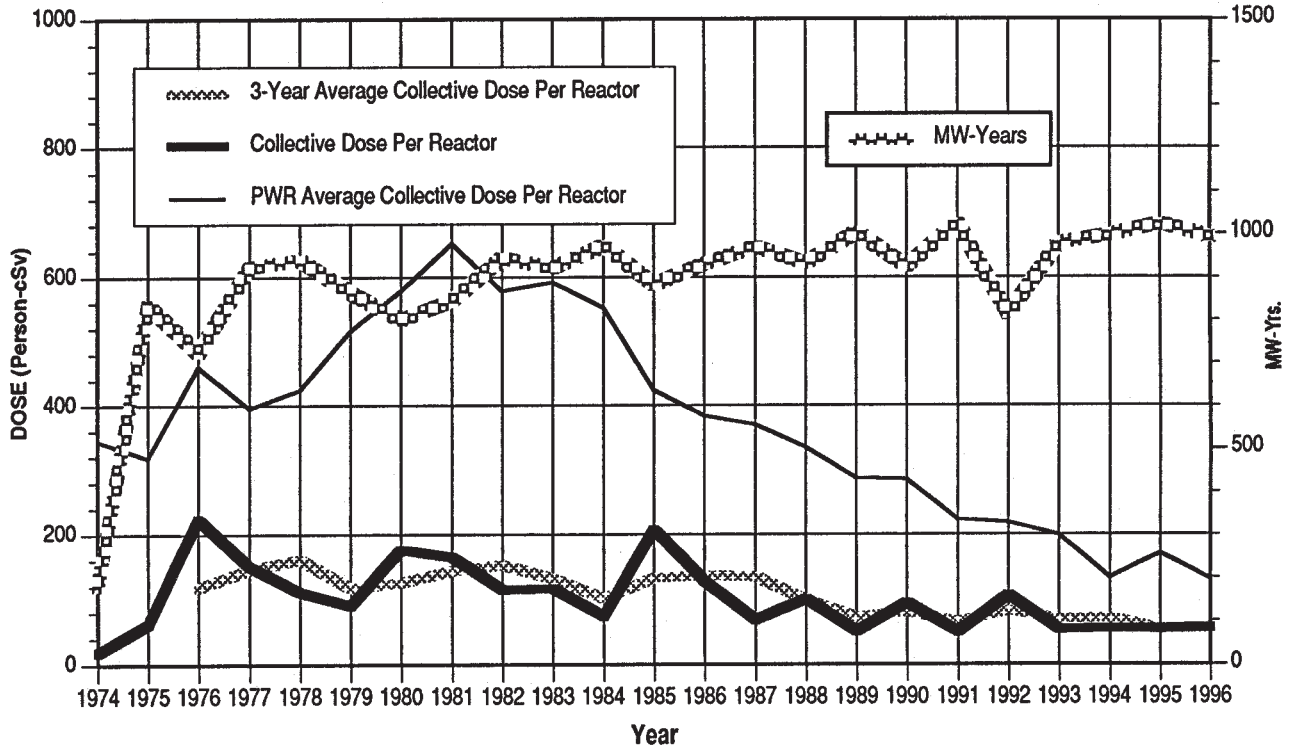


APPENDIX E (continued)

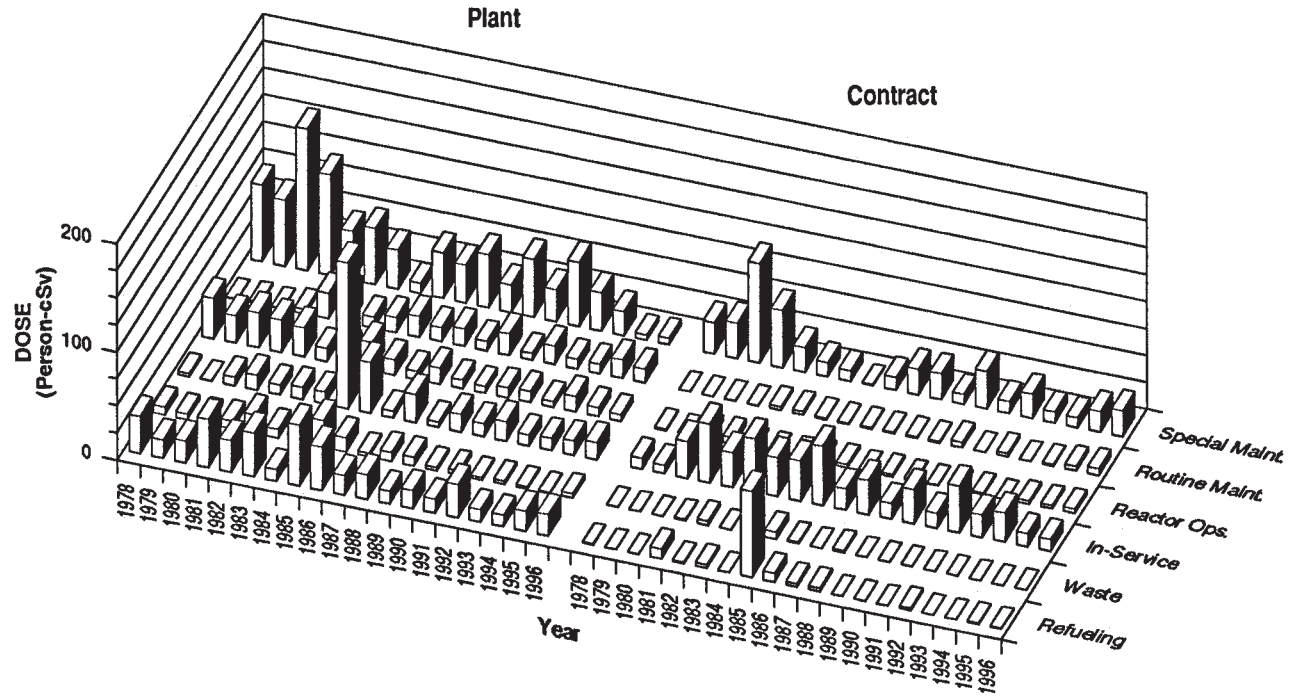
PRAIRIE ISLAND 1, 2

Dose-Performance Indicators

PWR

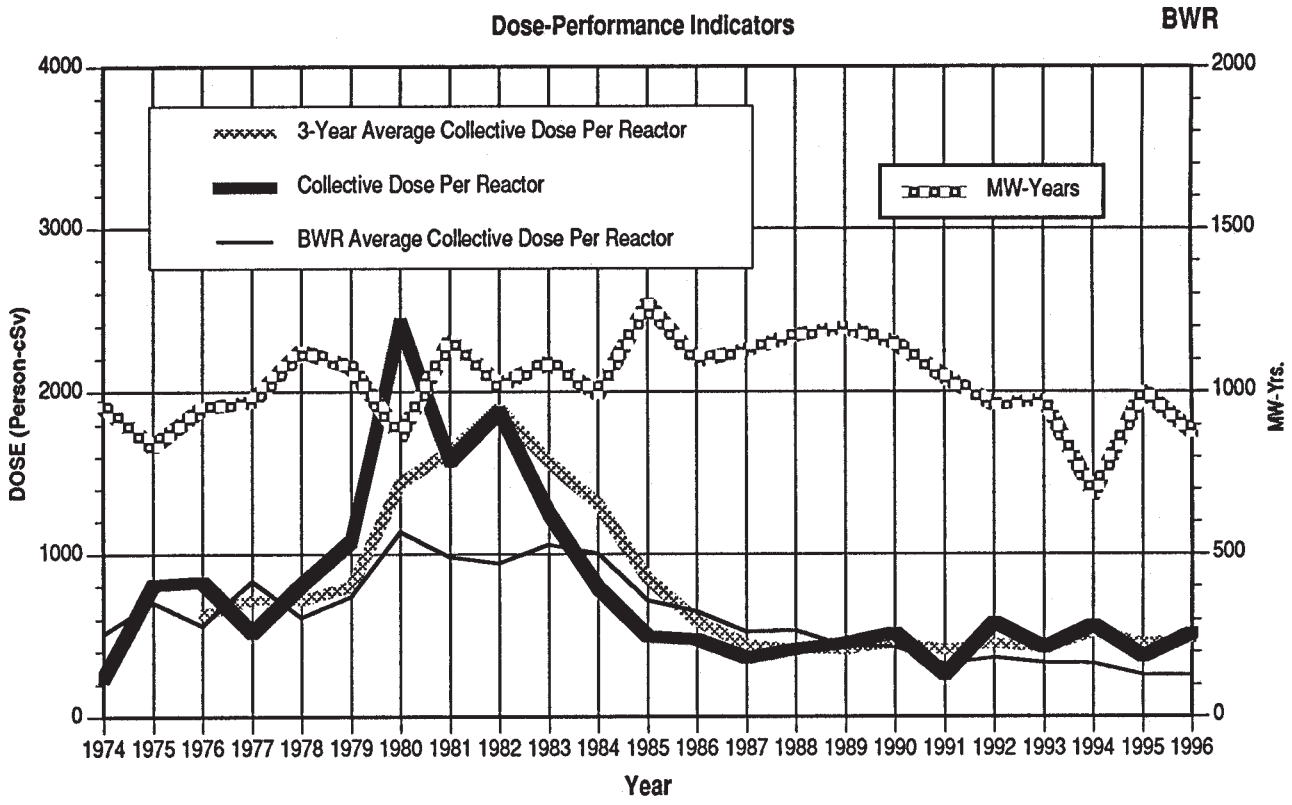


Breakdown by Job Function

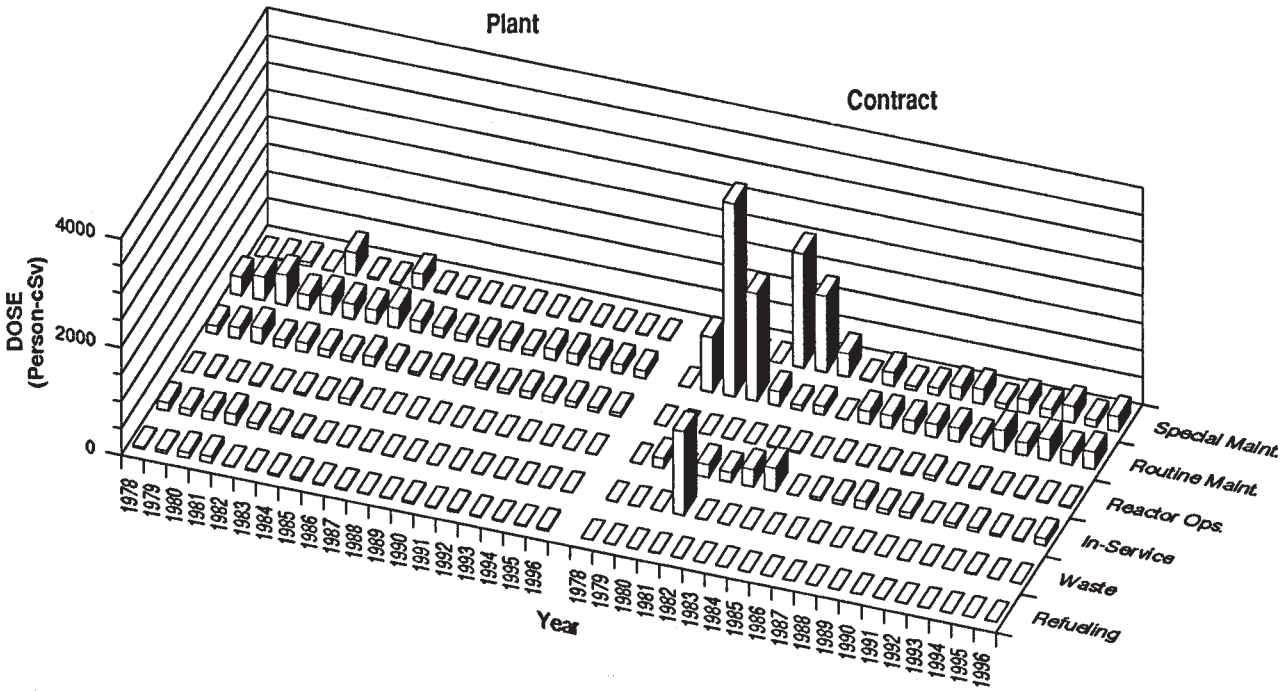


QUAD CITIES 1, 2

Dose-Performance Indicators

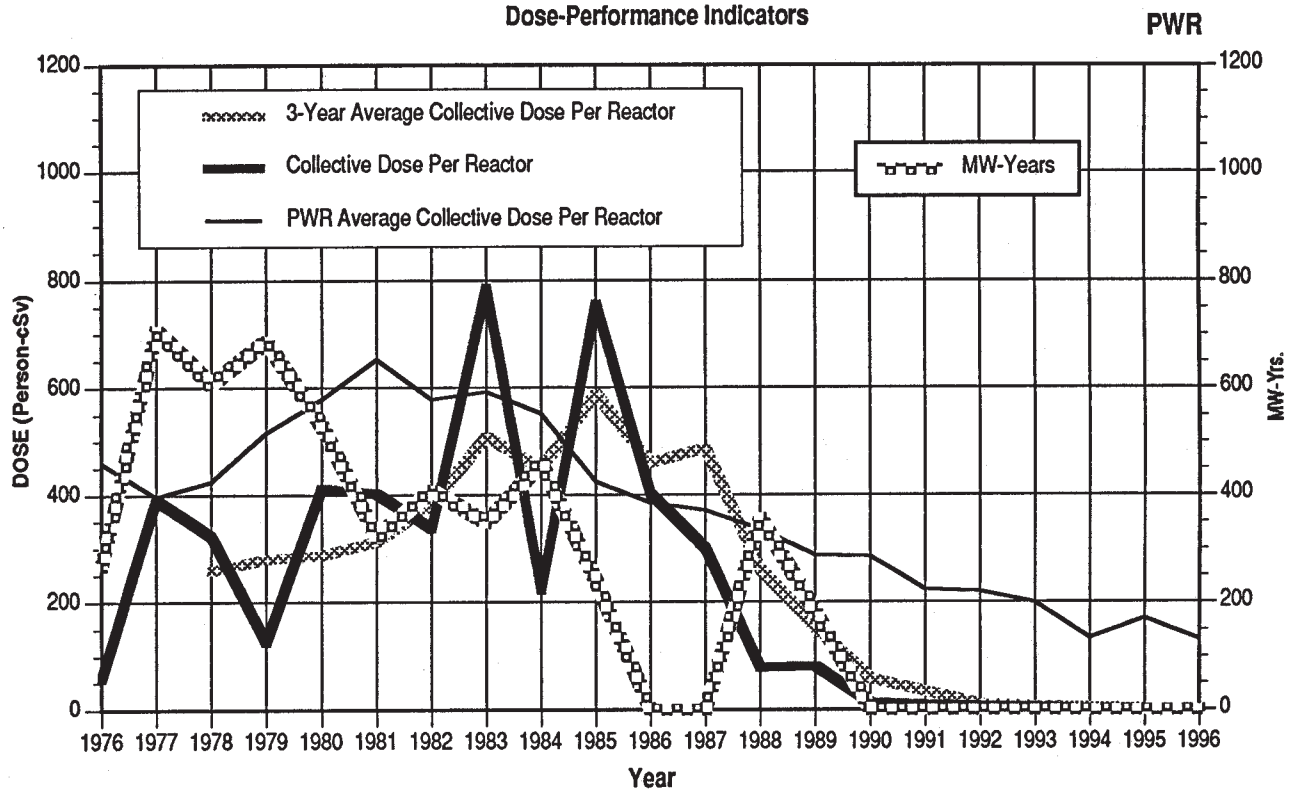


Breakdown by Job Function

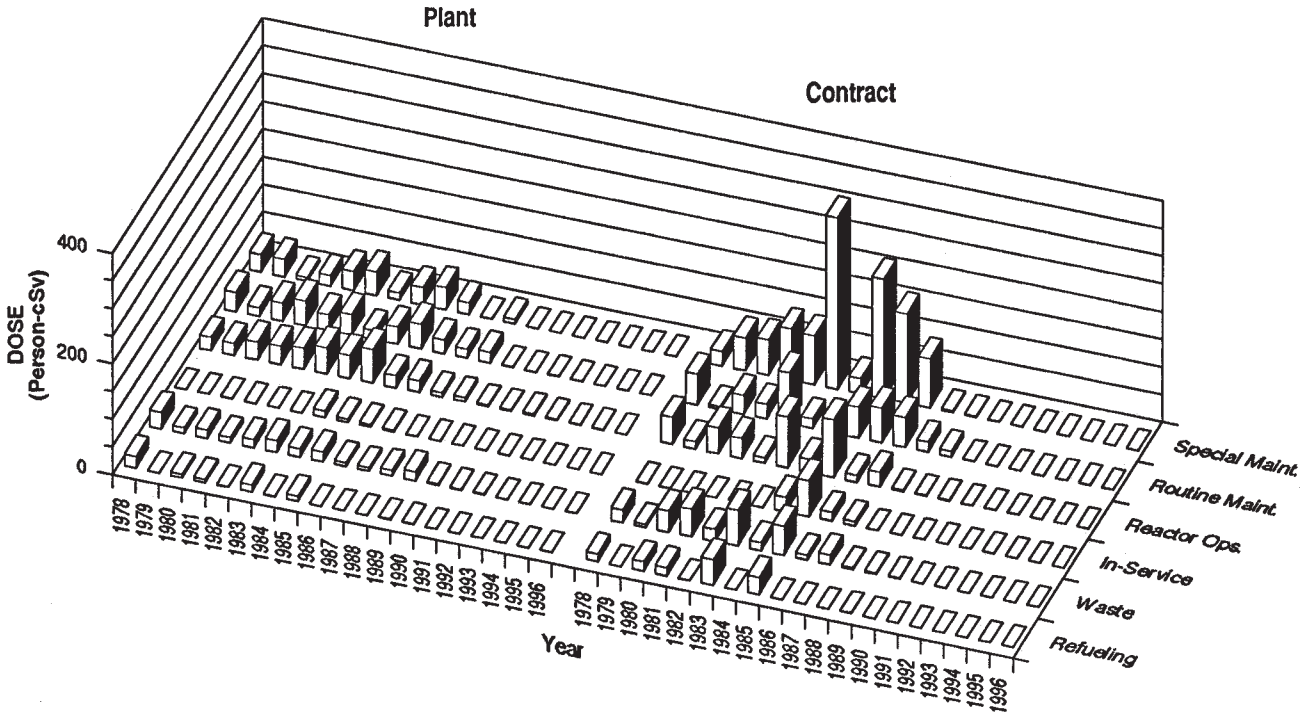


RANCHO SECO

Dose-Performance Indicators



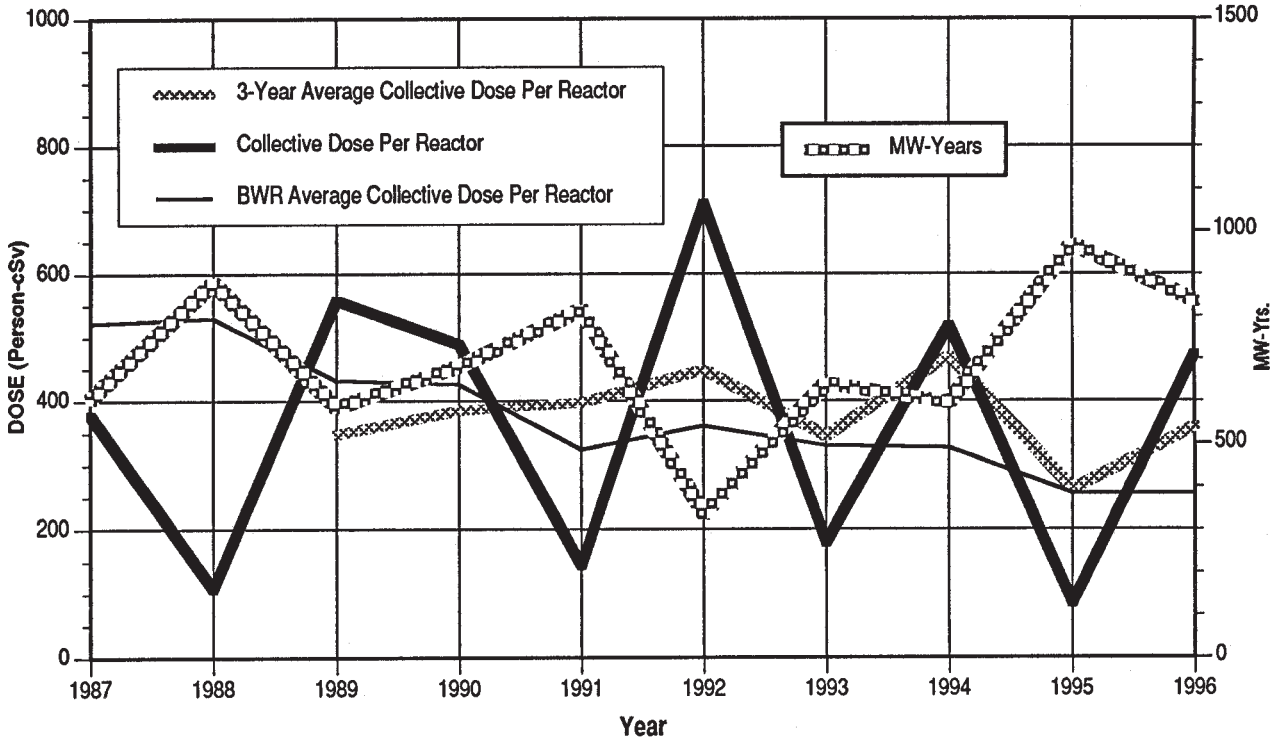
Breakdown by Job Function



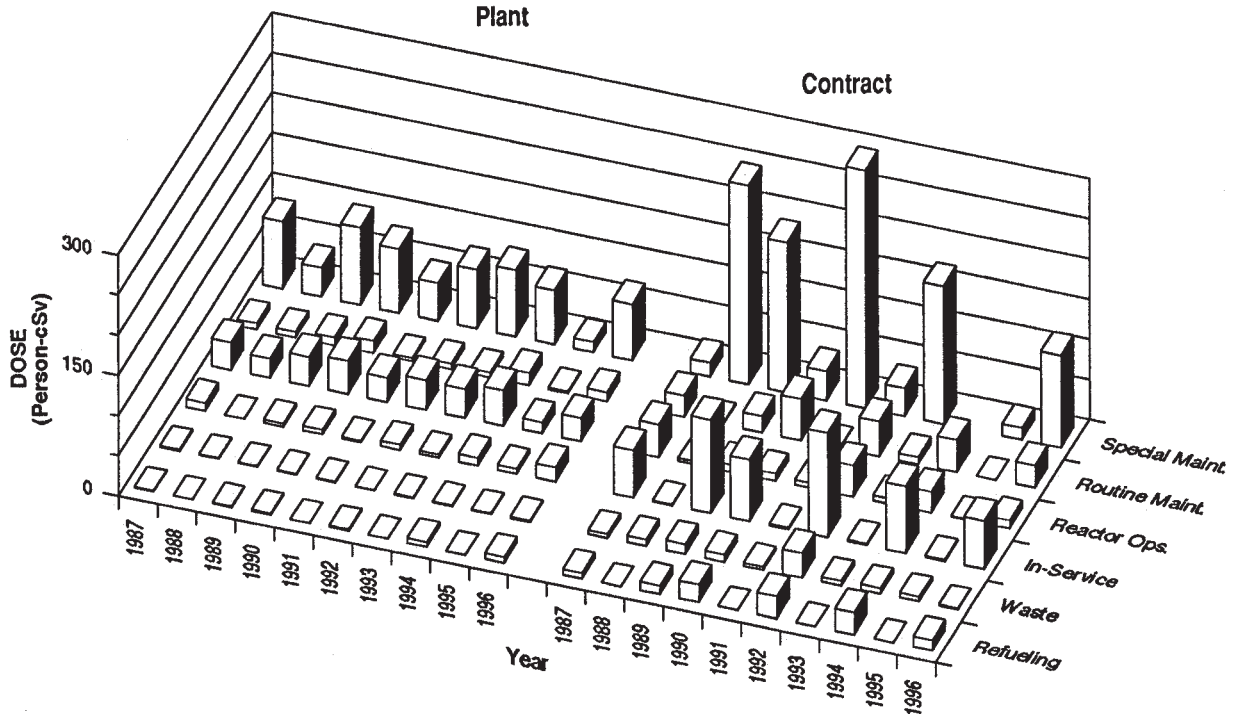
RIVER BEND 1

Dose-Performance Indicators

BWR



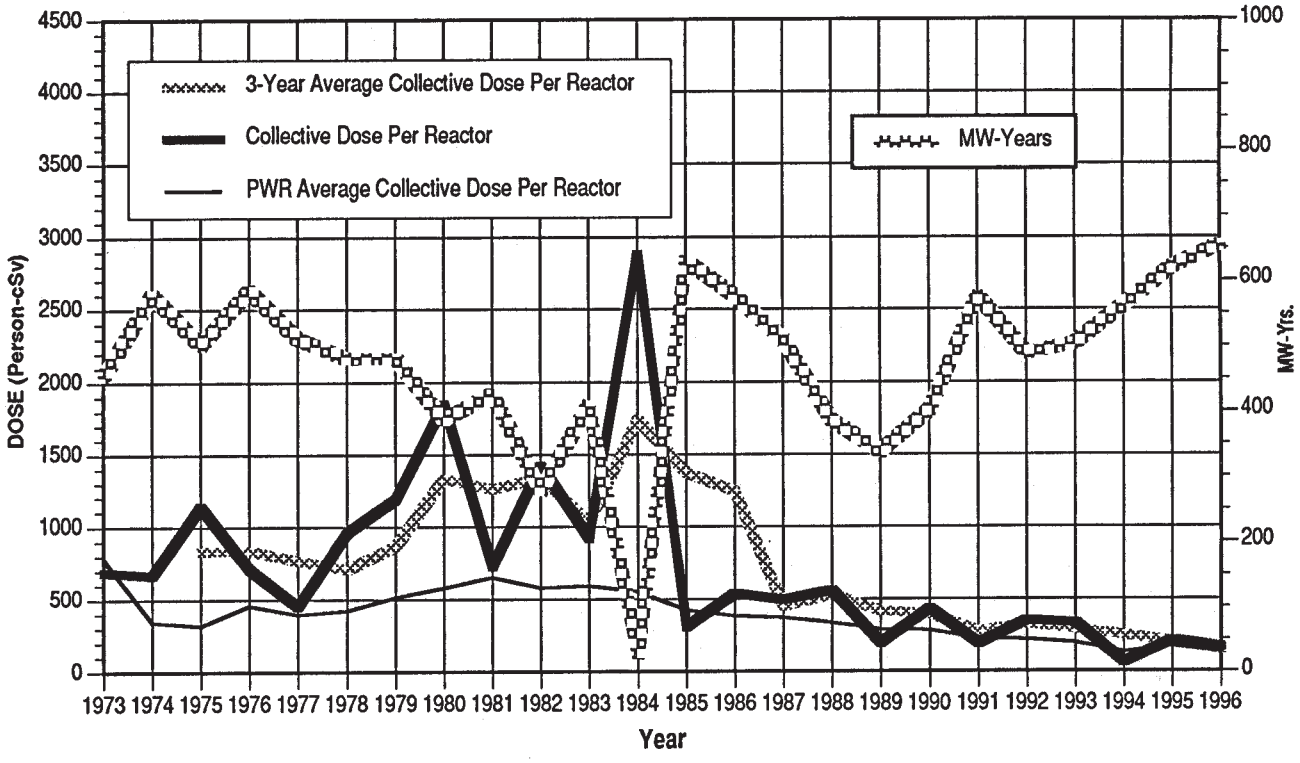
Breakdown by Job Function



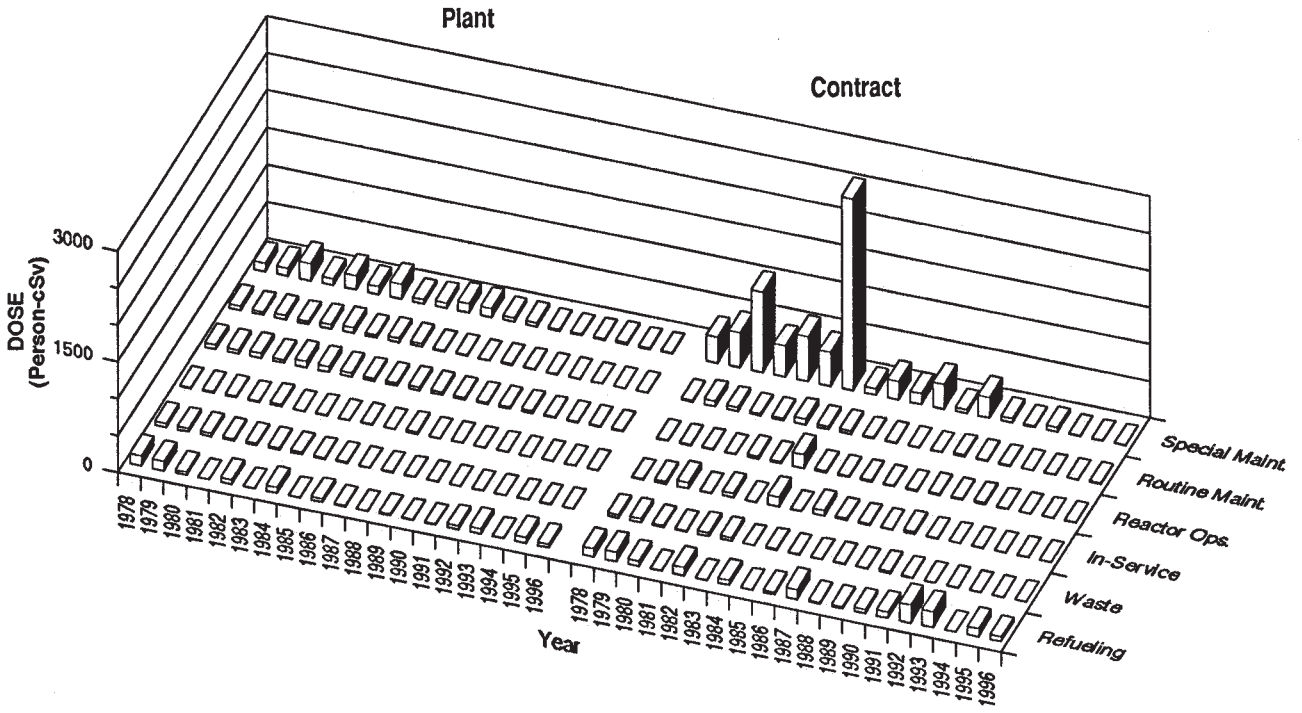
ROBINSON 2

Dose-Performance Indicators

PWR



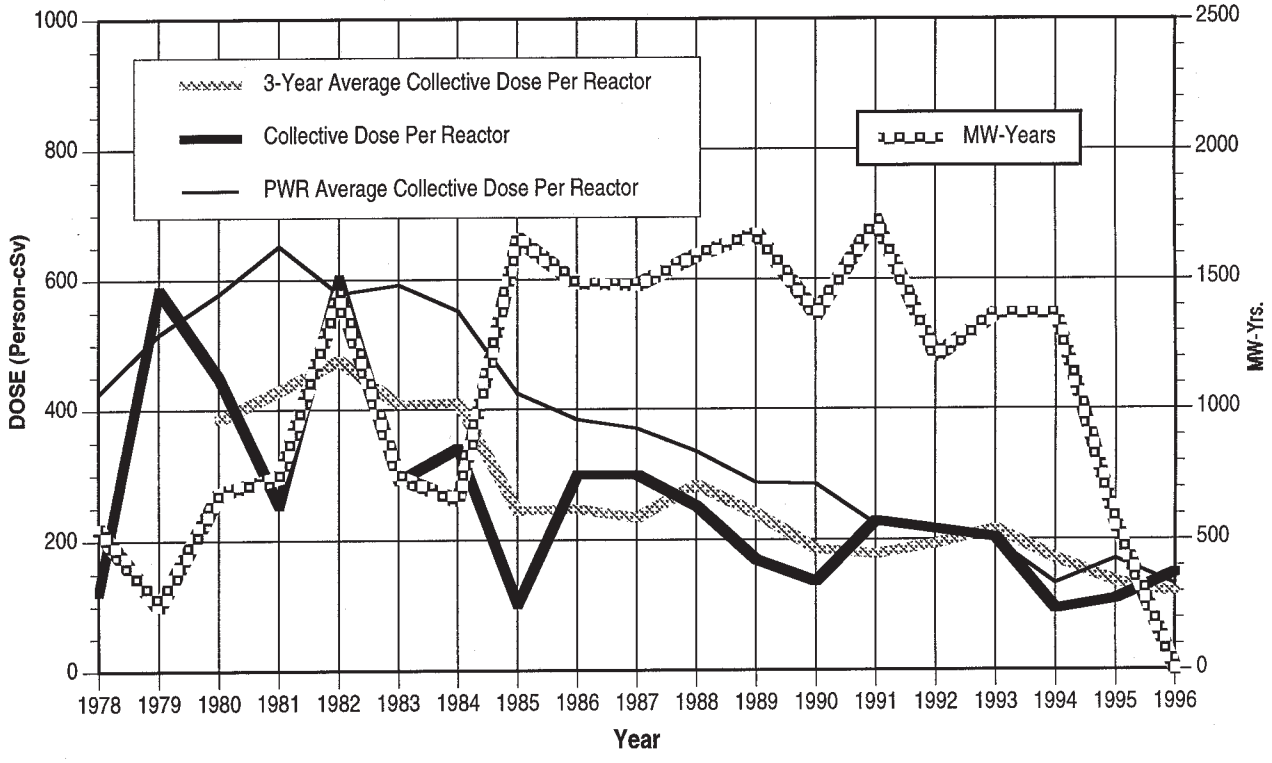
Breakdown by Job Function



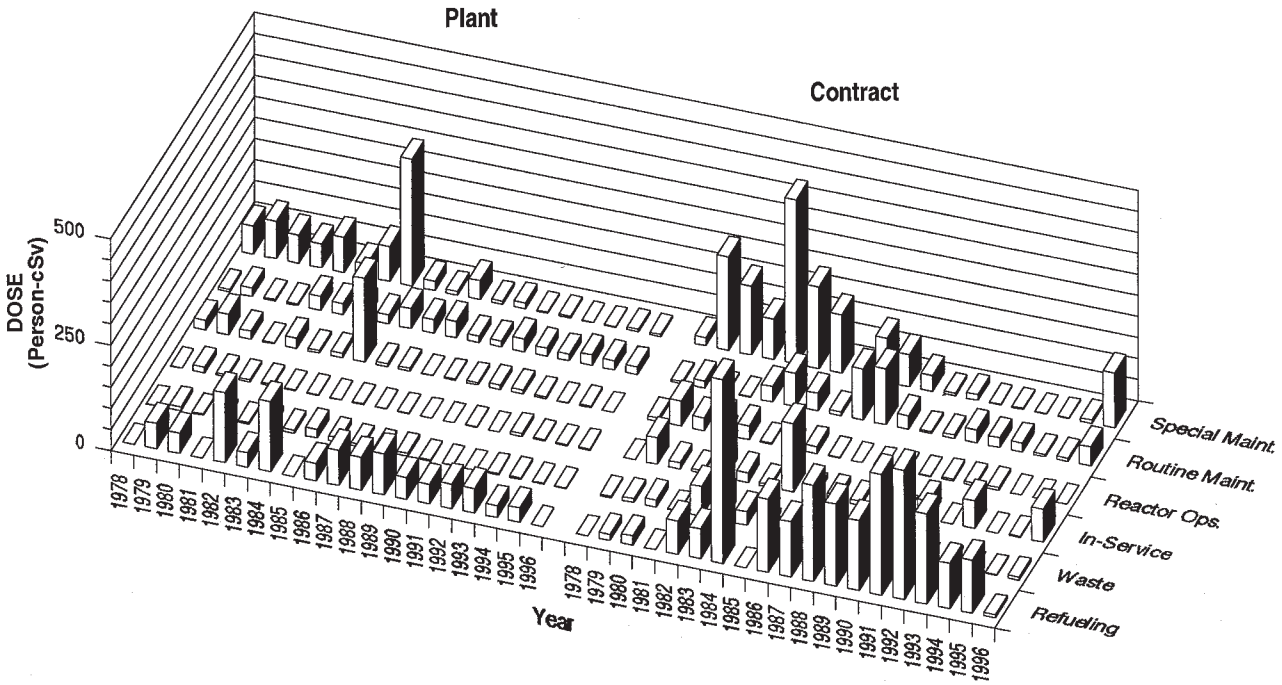
APPENDIX E (continued)

SALEM 1, 2

Dose-Performance Indicators **PWR**



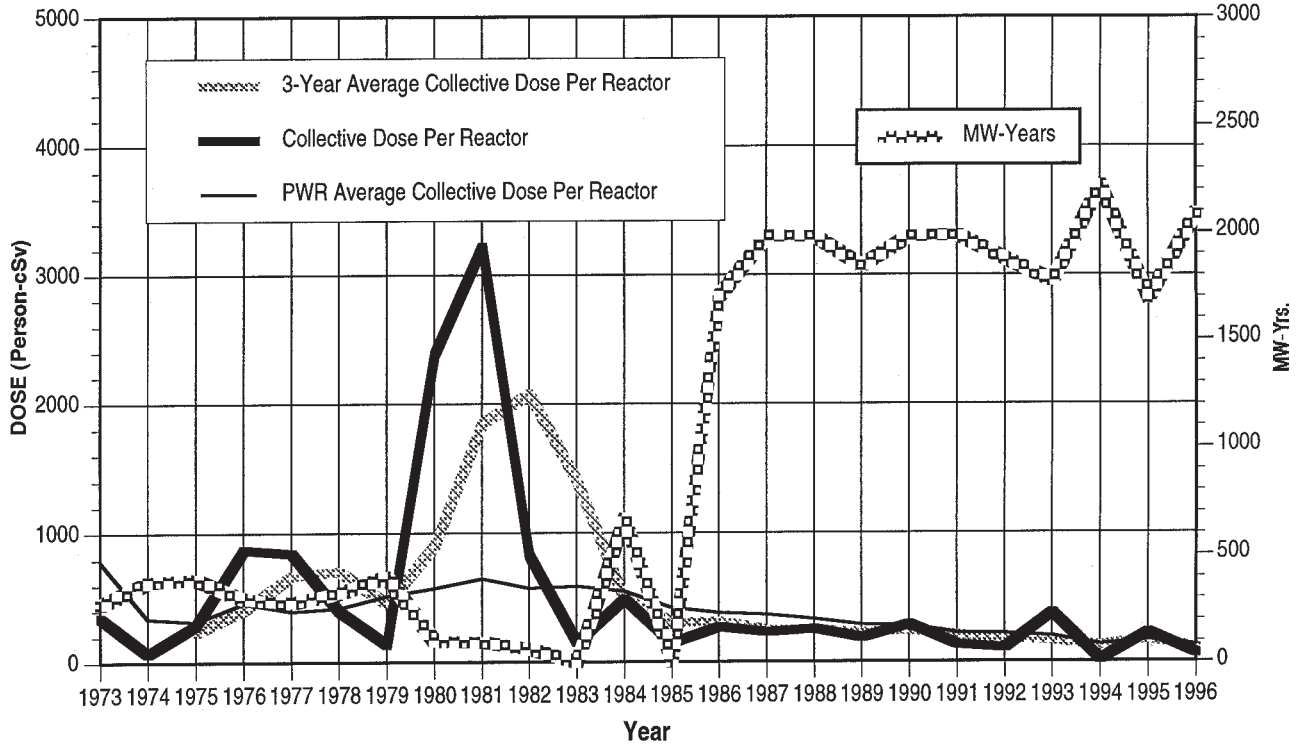
Breakdown by Job Function



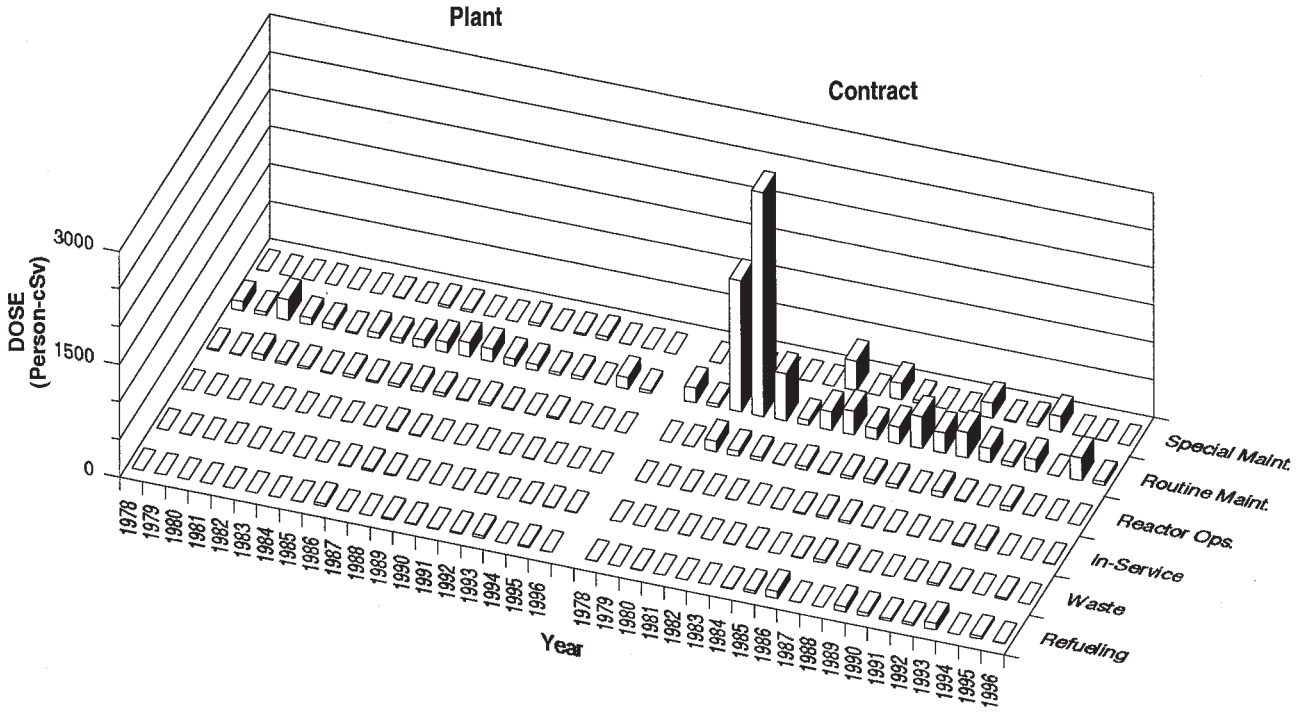
APPENDIX E (continued)

SAN ONOFRE 1, 2, 3

Dose-Performance Indicators **PWR**



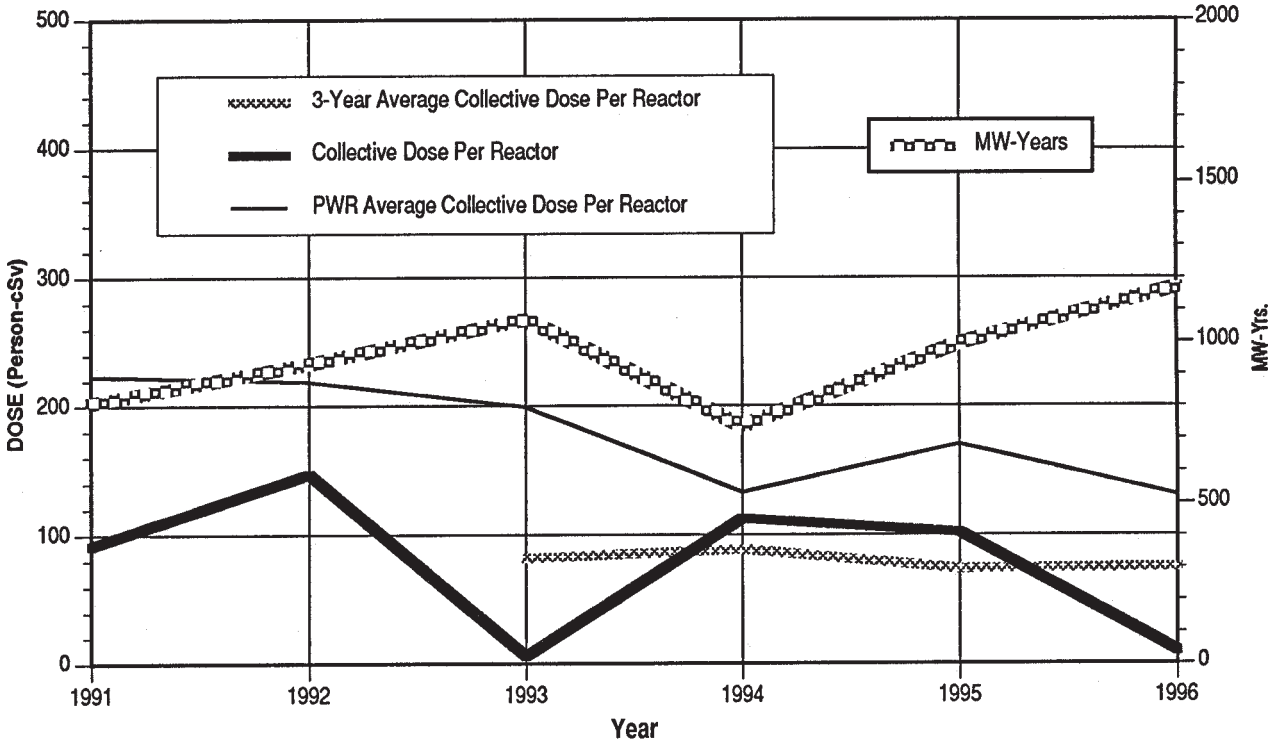
Breakdown by Job Function



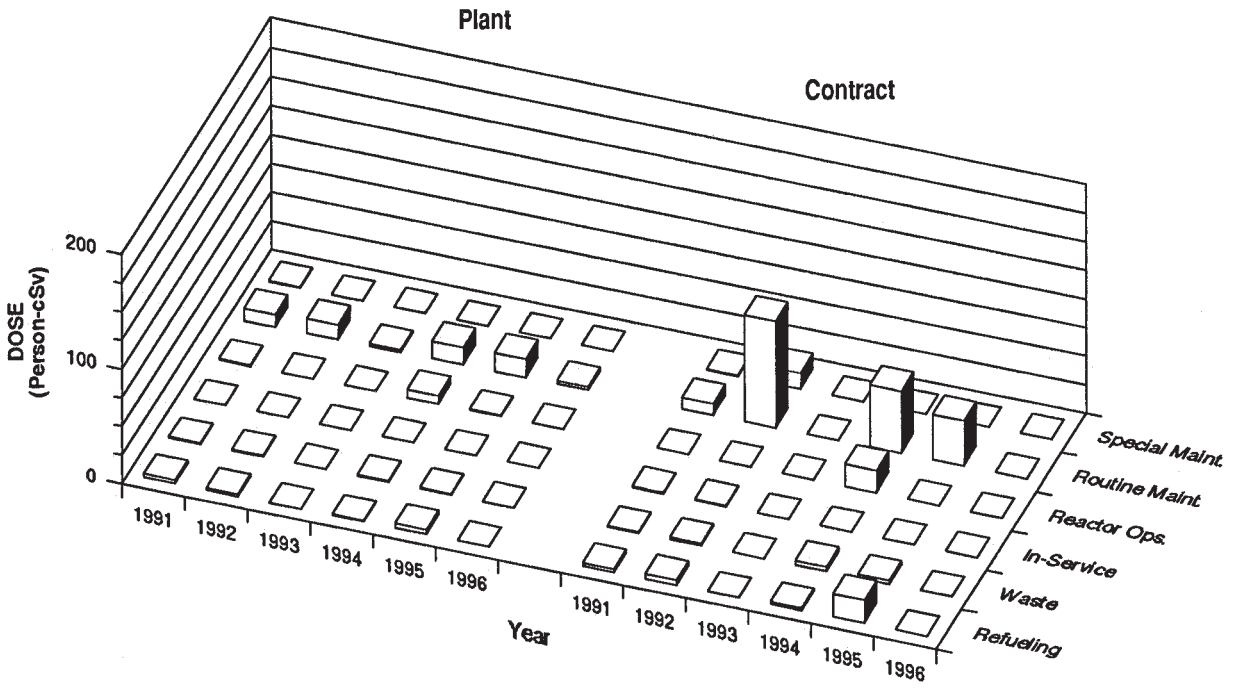
SEABROOK

Dose-Performance Indicators

PWR



Breakdown by Job Function

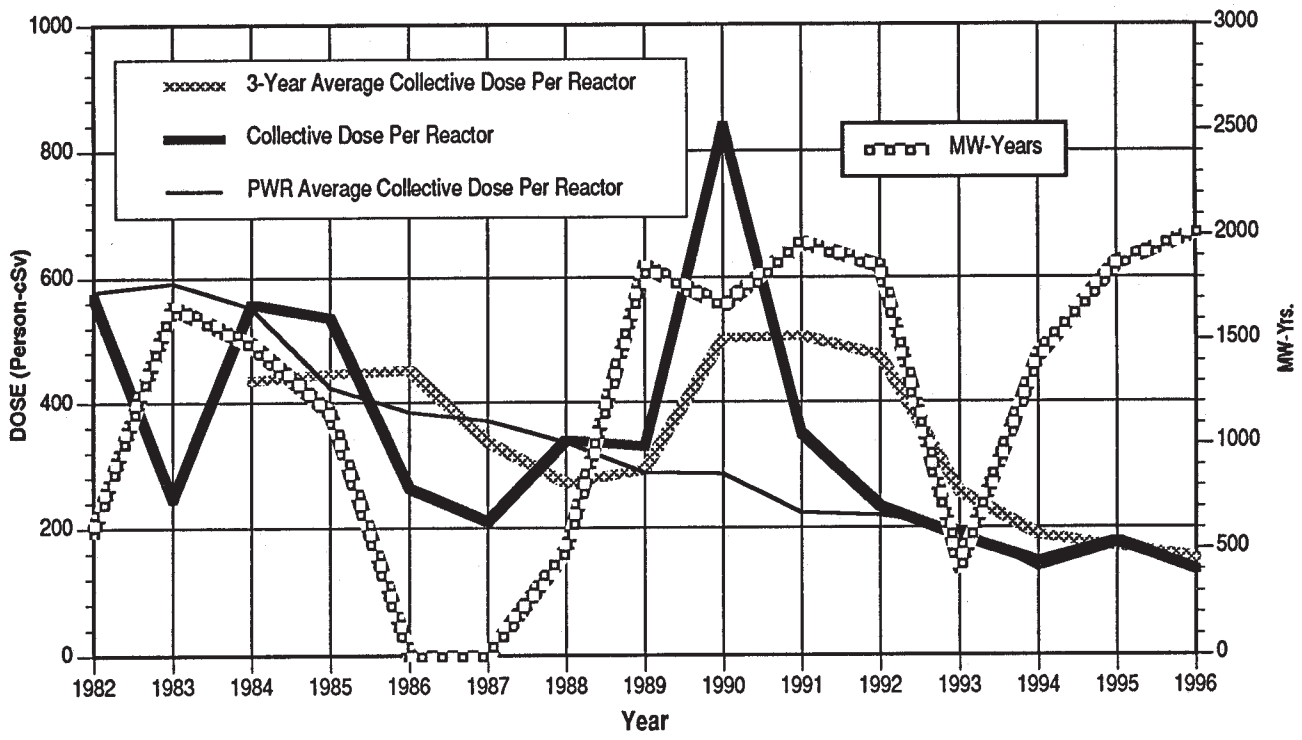


APPENDIX E (continued)

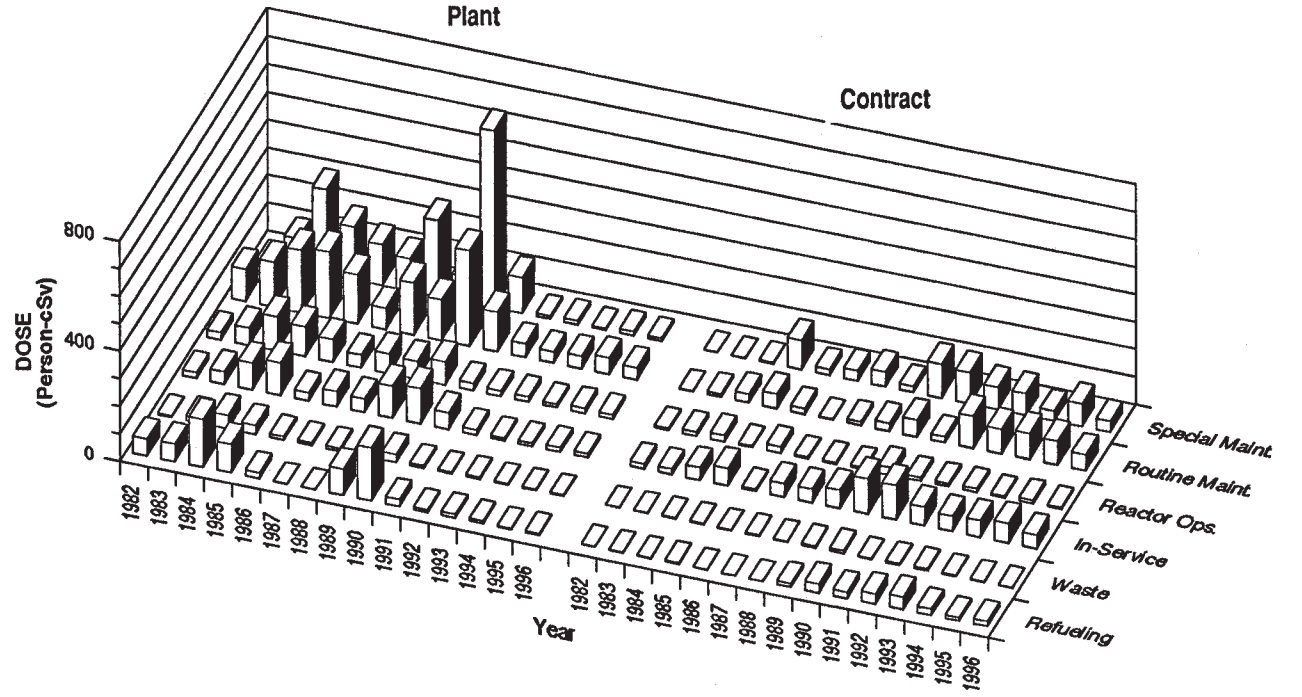
SEQUOYAH 1, 2

Dose-Performance Indicators

PWR



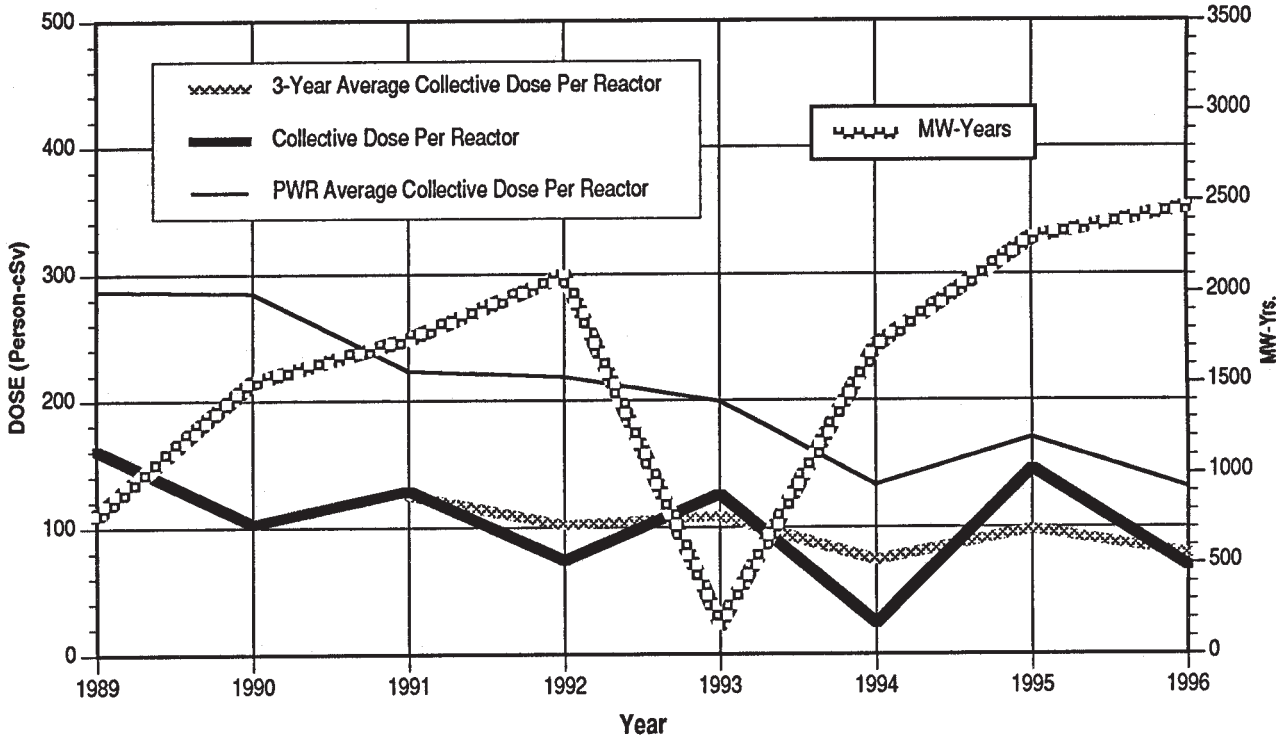
Breakdown by Job Function



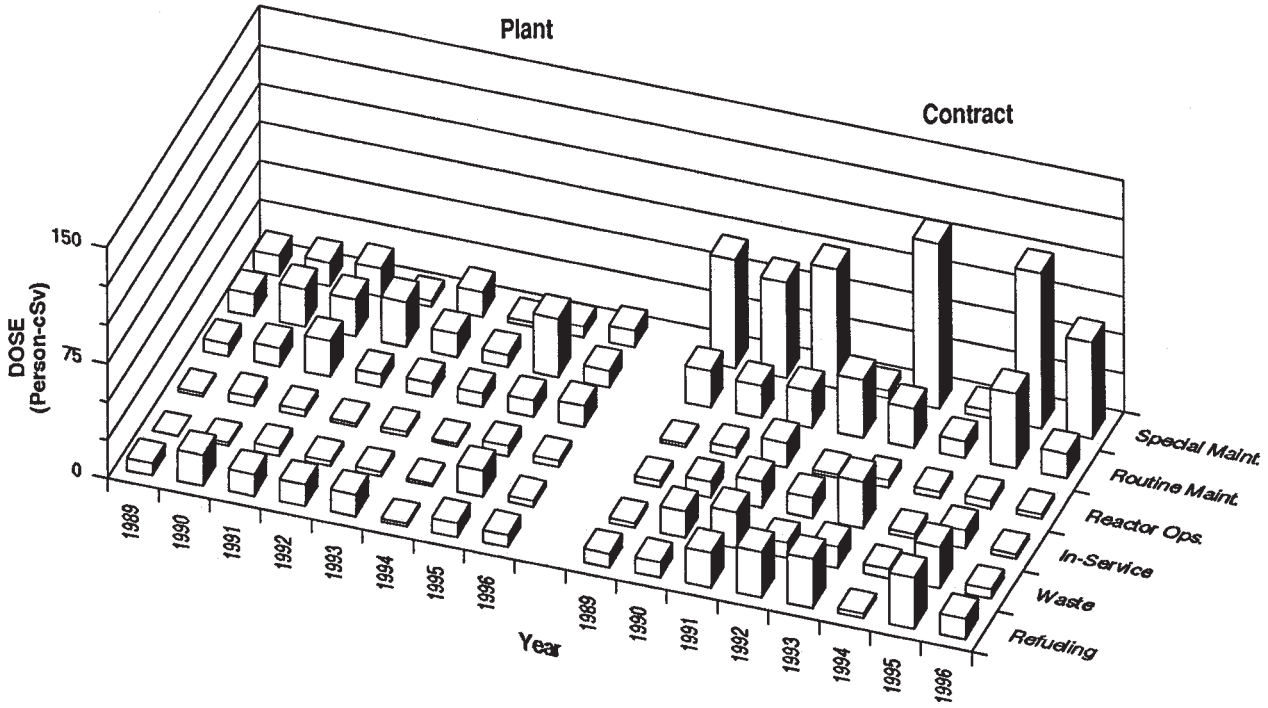
APPENDIX E (continued)

SOUTH TEXAS 1, 2

Dose-Performance Indicators **PWR**



Breakdown by Job Function

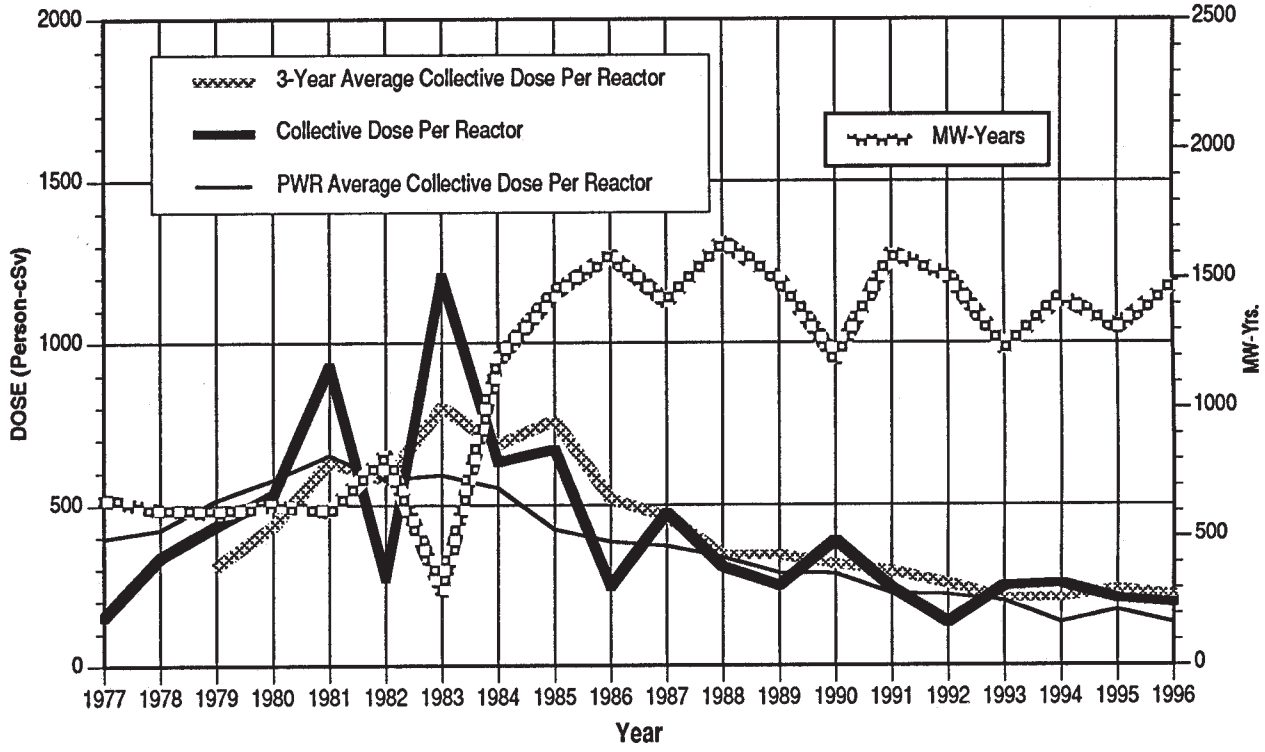


APPENDIX E (continued)

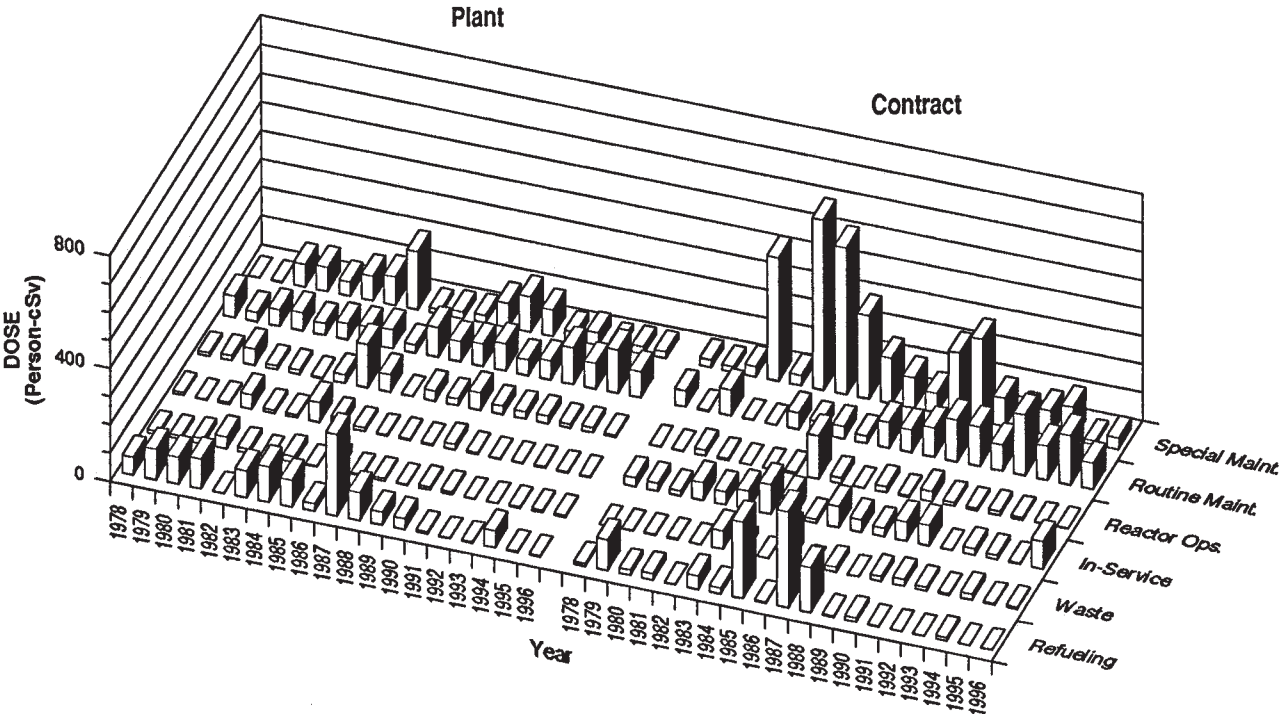
ST. LUCIE 1, 2

Dose-Performance Indicators

PWR

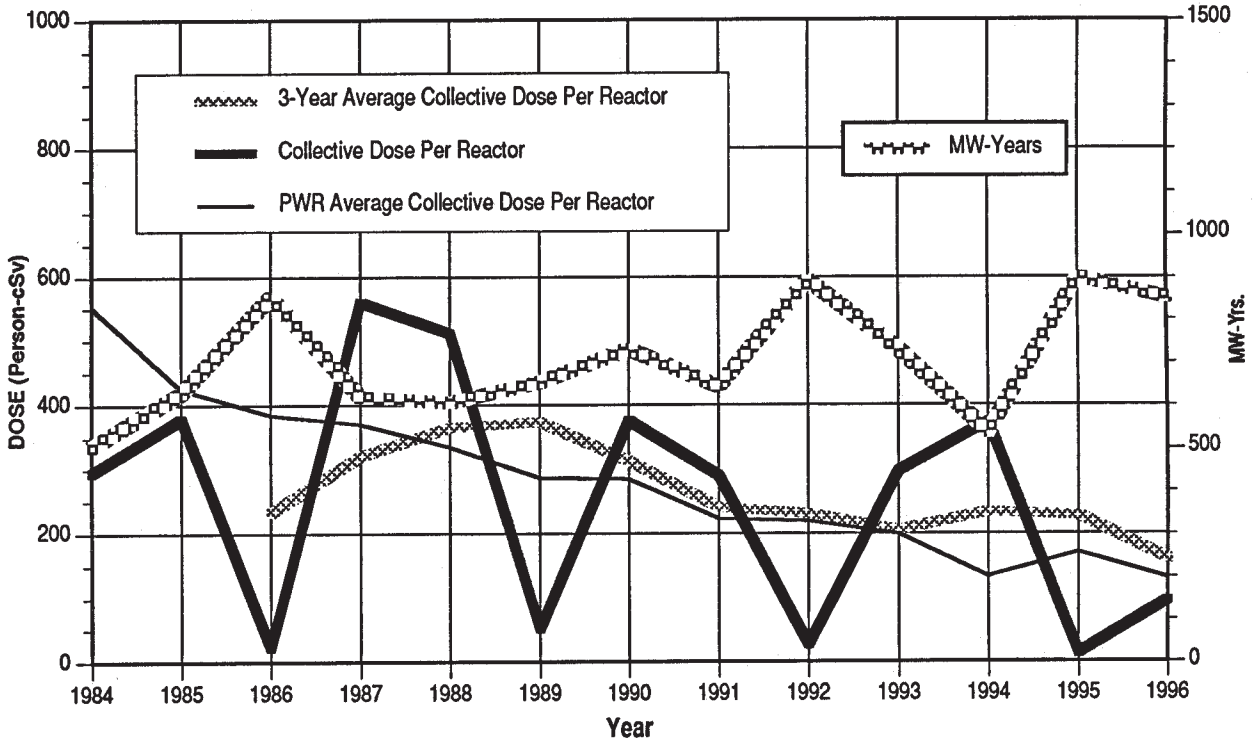


Breakdown by Job Function

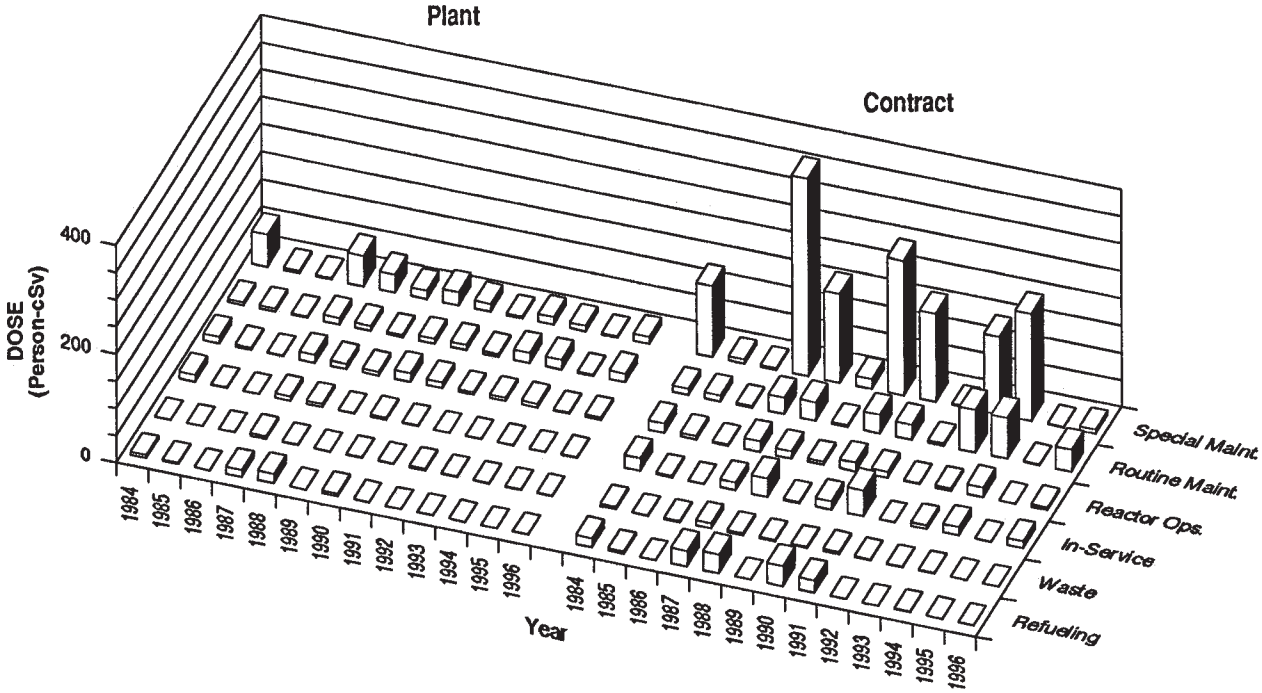


SUMMER 1

Dose-Performance Indicators PWR



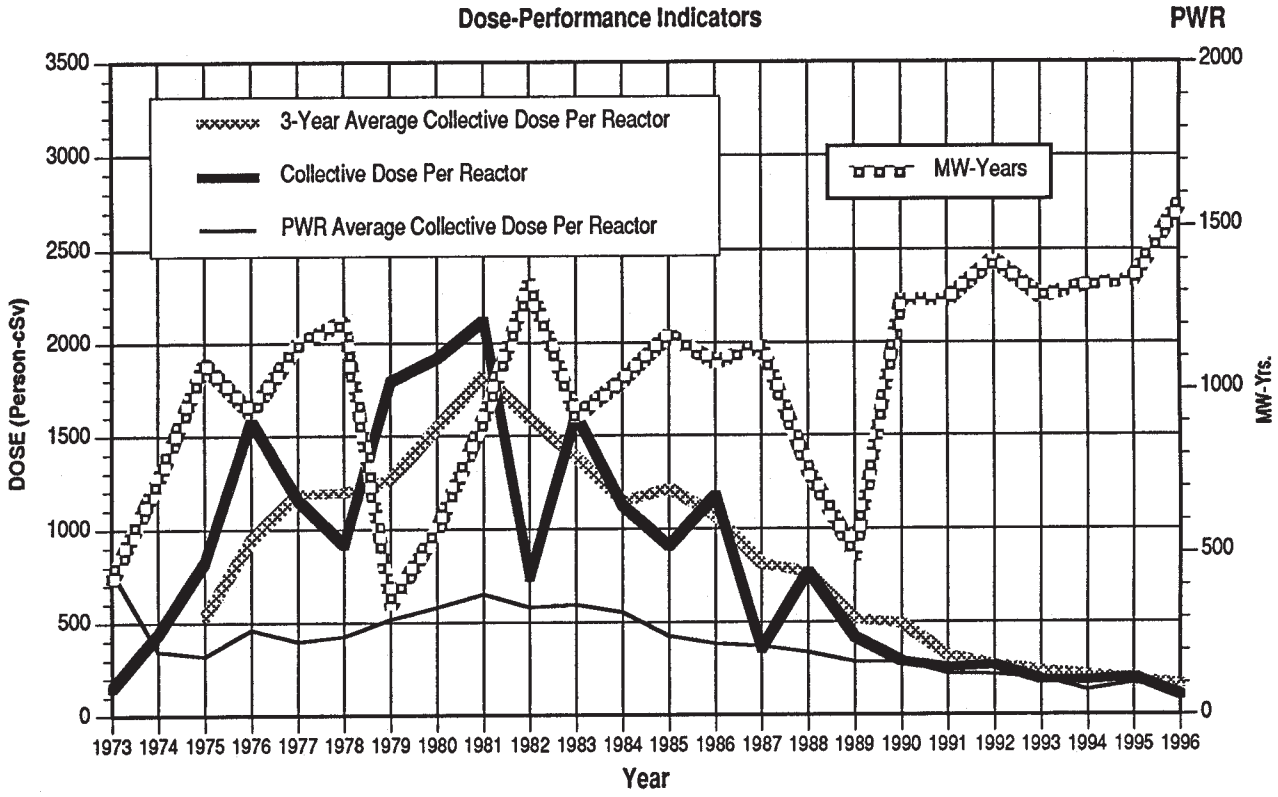
Breakdown by Job Function



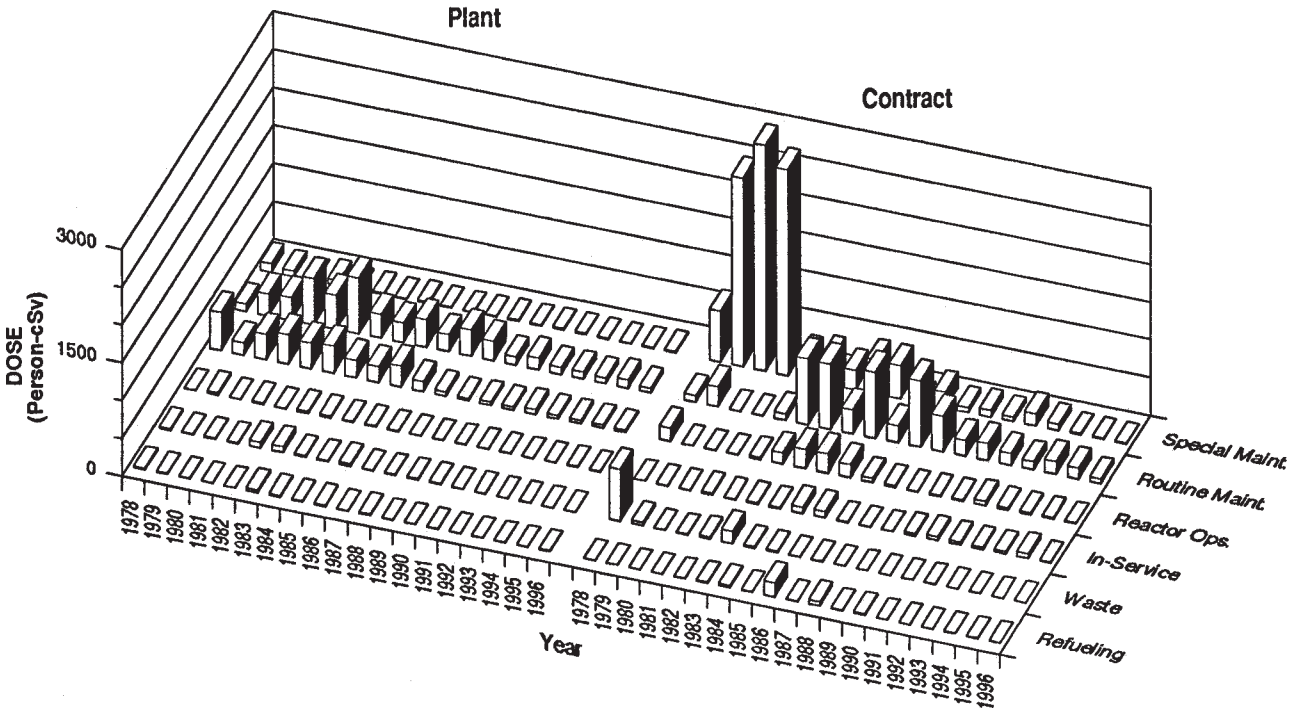
APPENDIX E (continued)

SURRY 1, 2

Dose-Performance Indicators



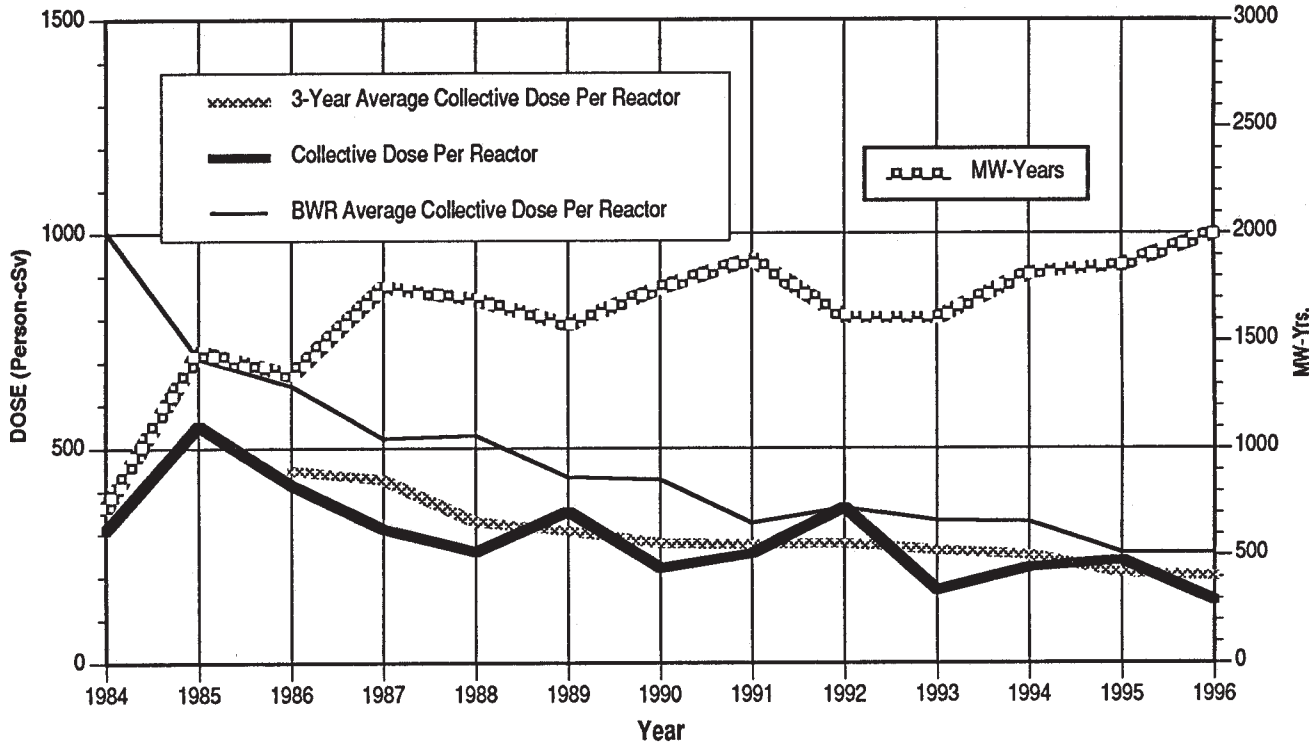
Breakdown by Job Function



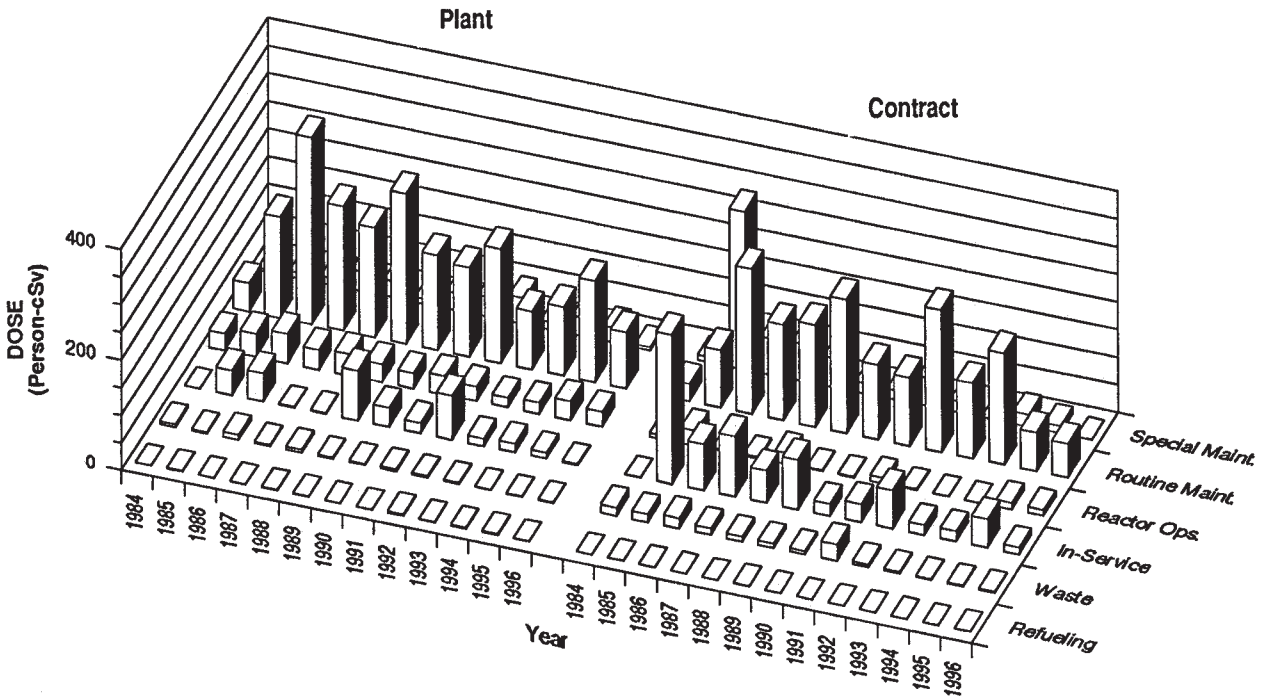
SUSQUEHANNA 1, 2

Dose-Performance Indicators

BWR

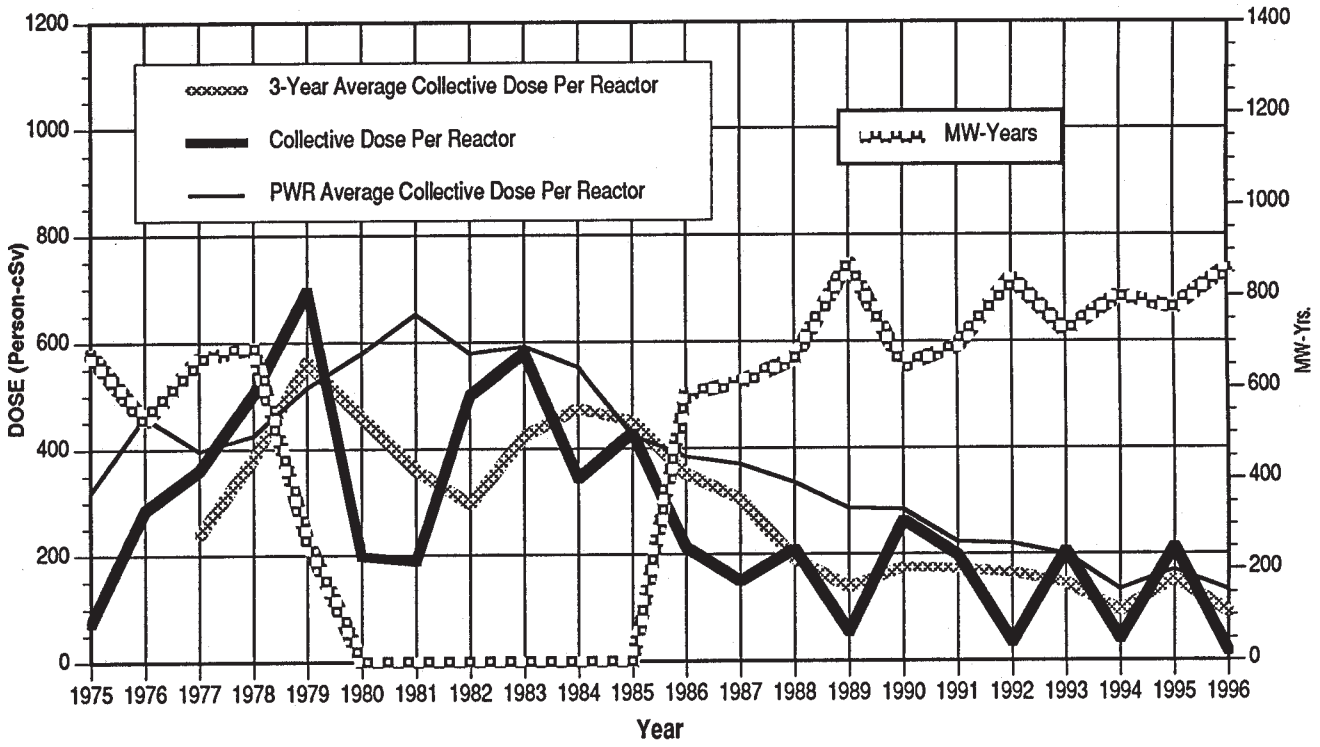


Breakdown by Job Function

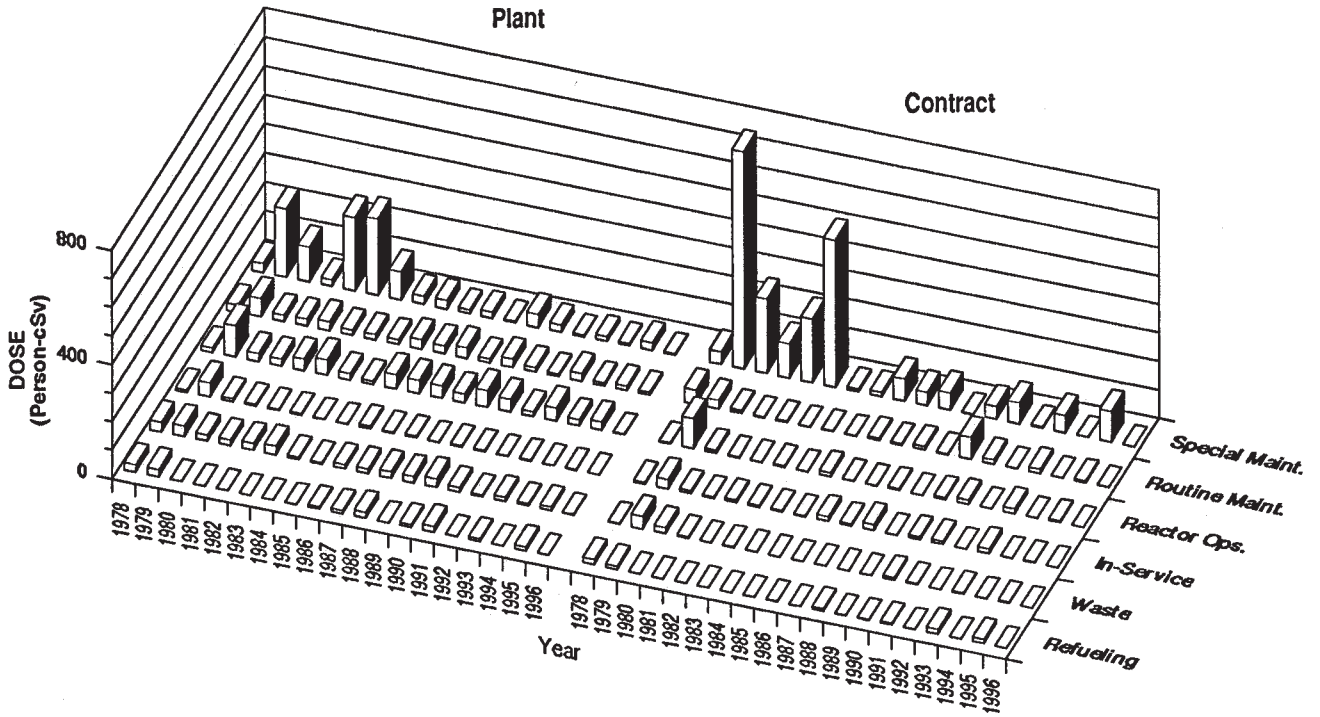


THREE MILE ISLAND 1

Dose-Performance Indicators PWR



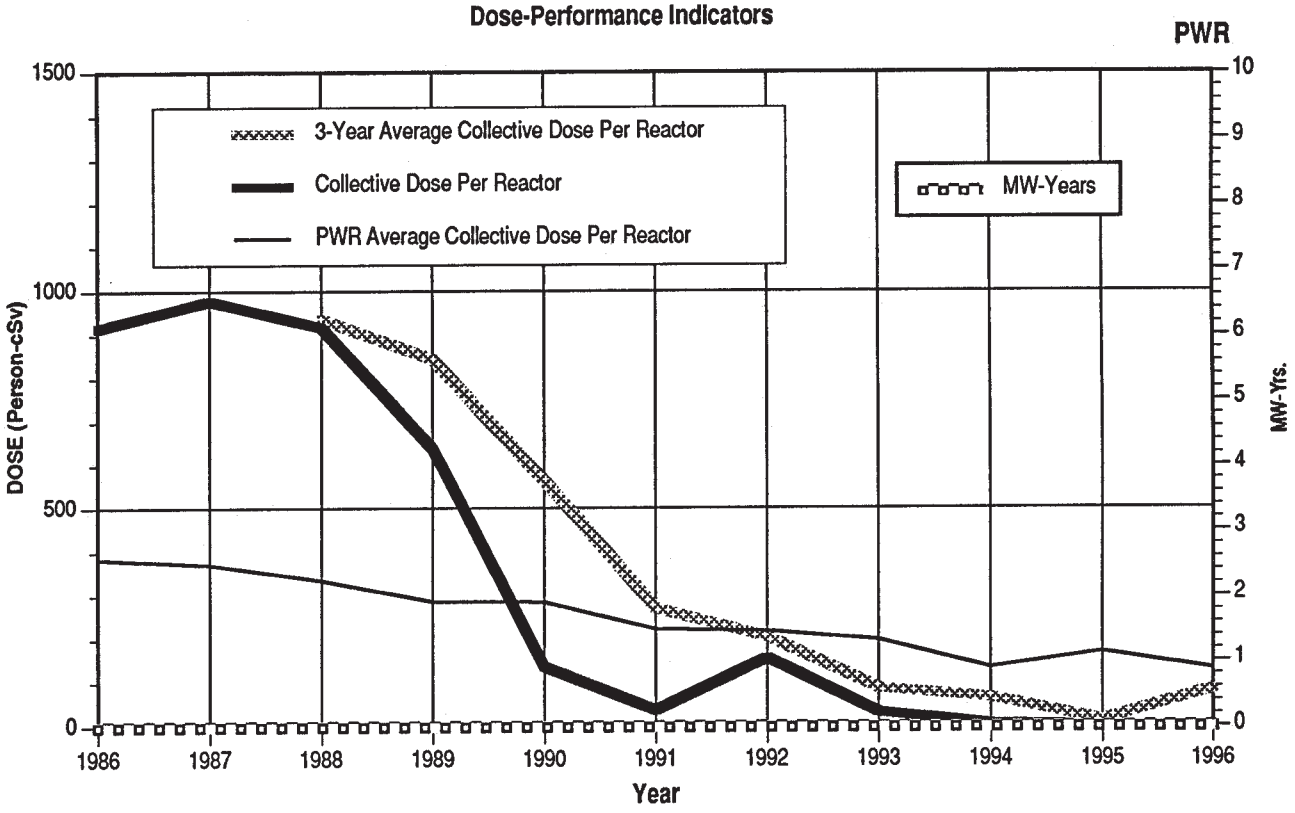
Breakdown by Job Function



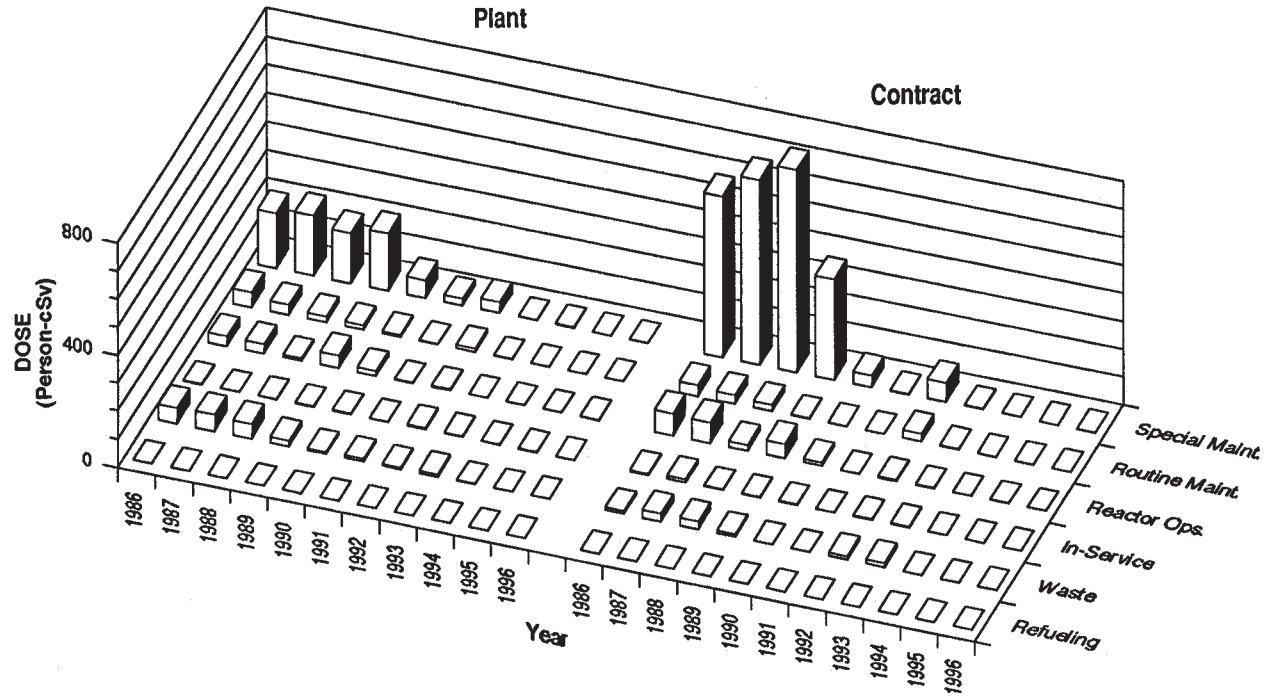
APPENDIX E (continued)

THREE MILE ISLAND 2

Dose-Performance Indicators



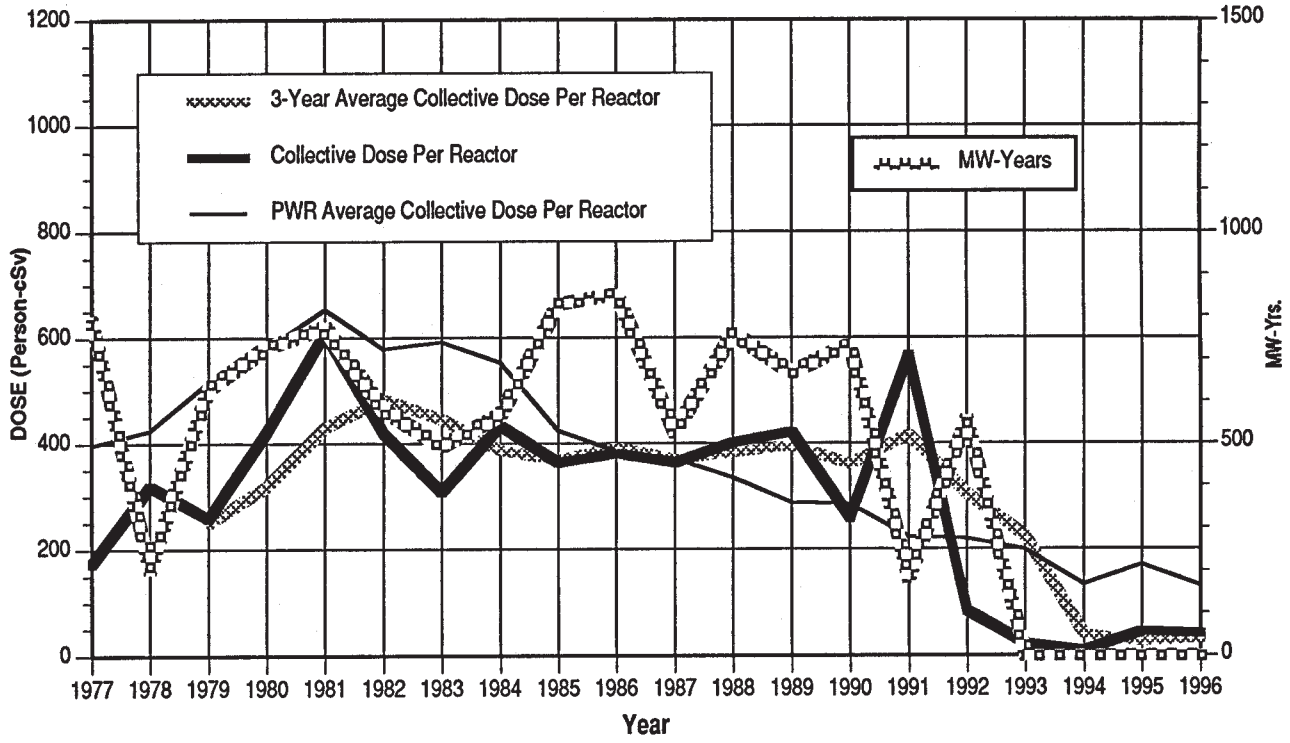
Breakdown by Job Function



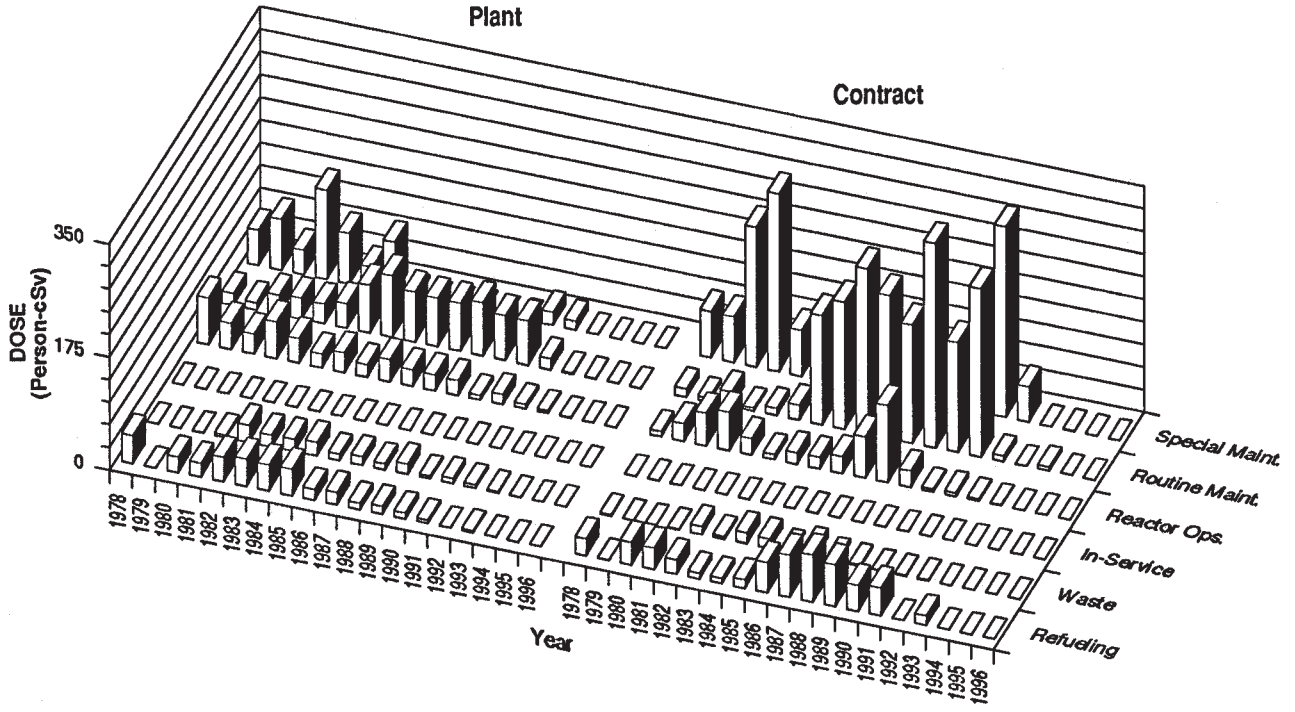
APPENDIX E (continued)

TROJAN

Dose-Performance Indicators **PWR**



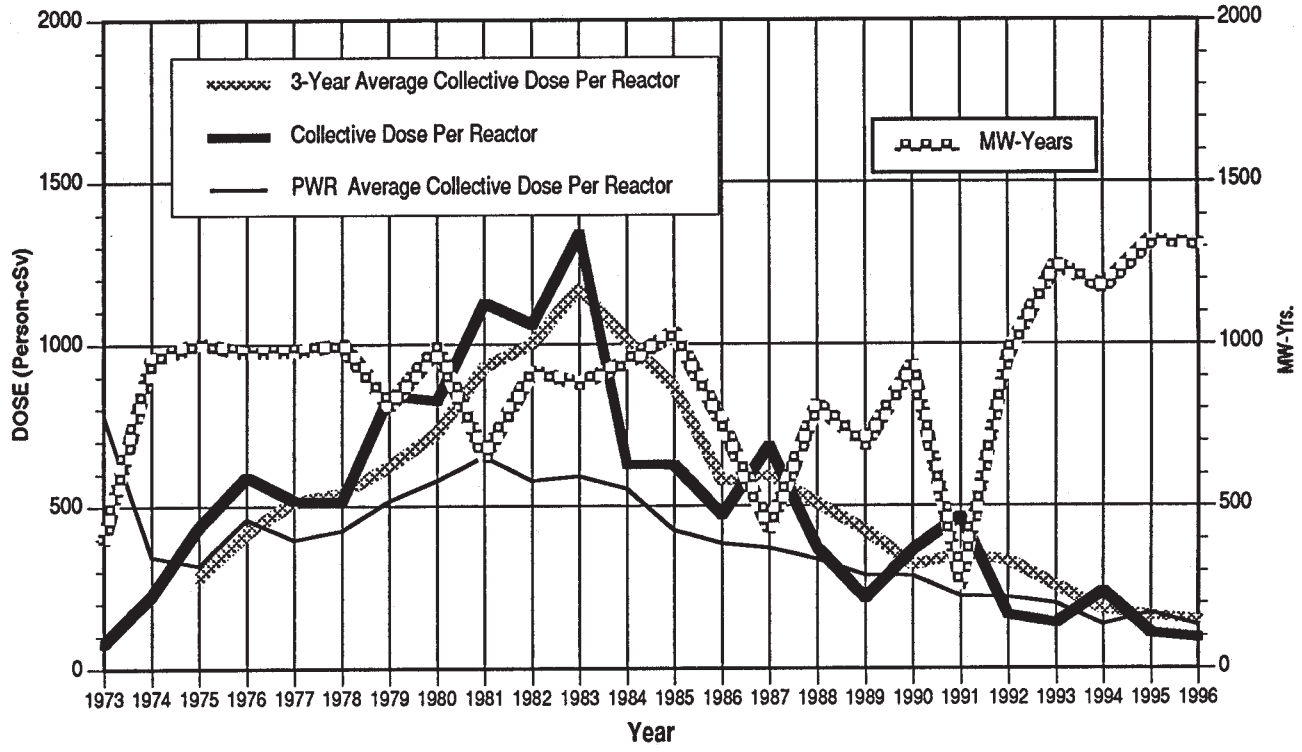
Breakdown by Job Function



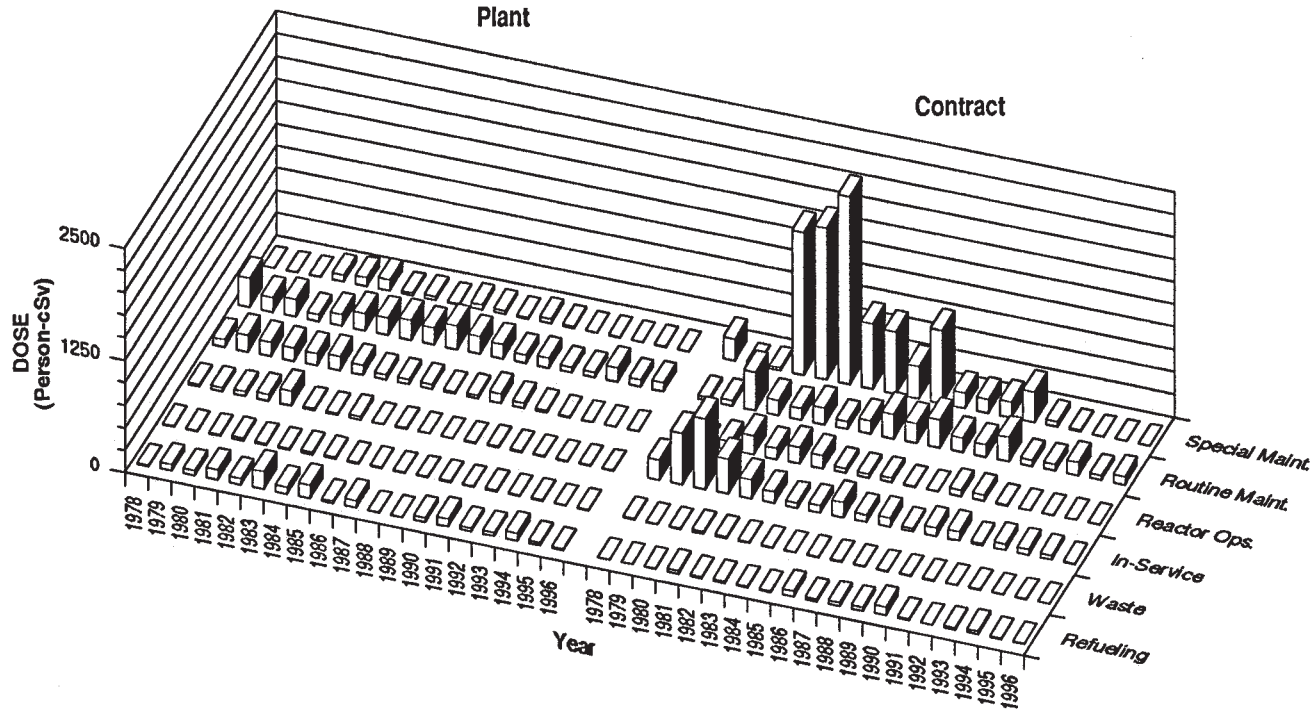
APPENDIX E (continued)

TURKEY POINT 3, 4

Dose-Performance Indicators **PWR**



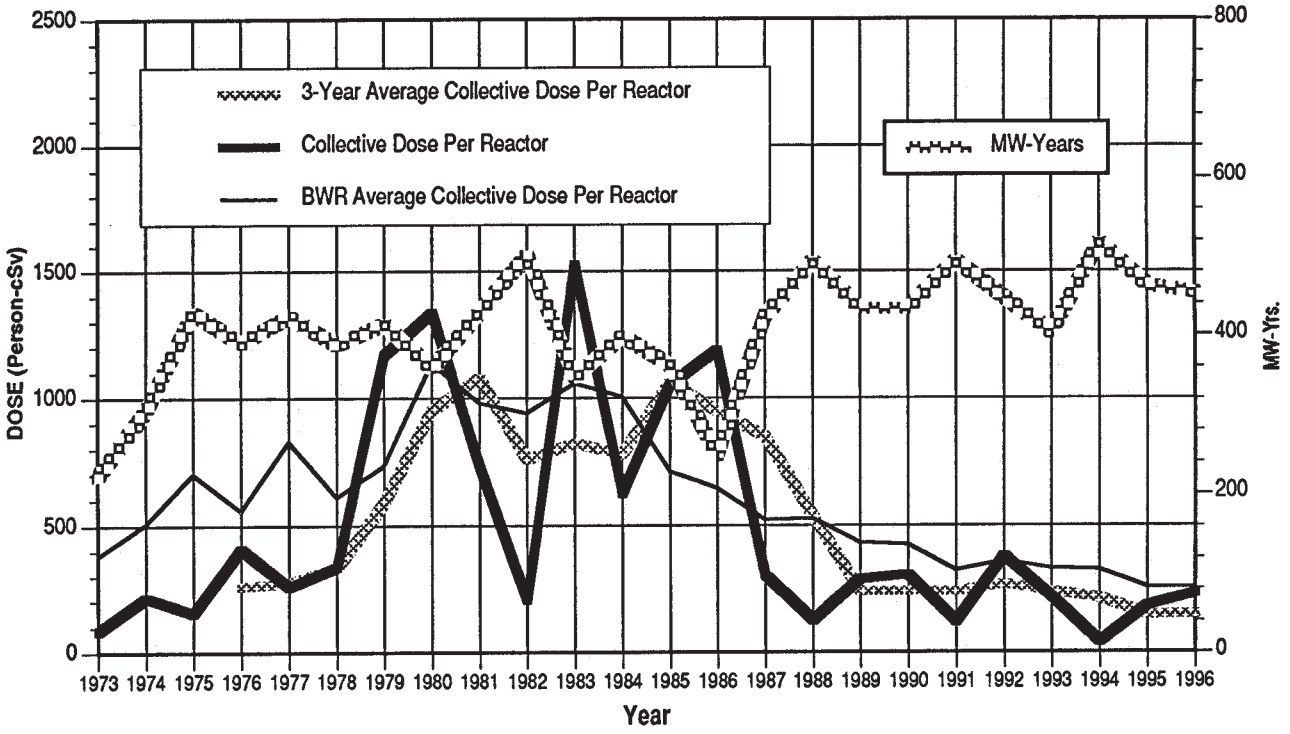
Breakdown by Job Function



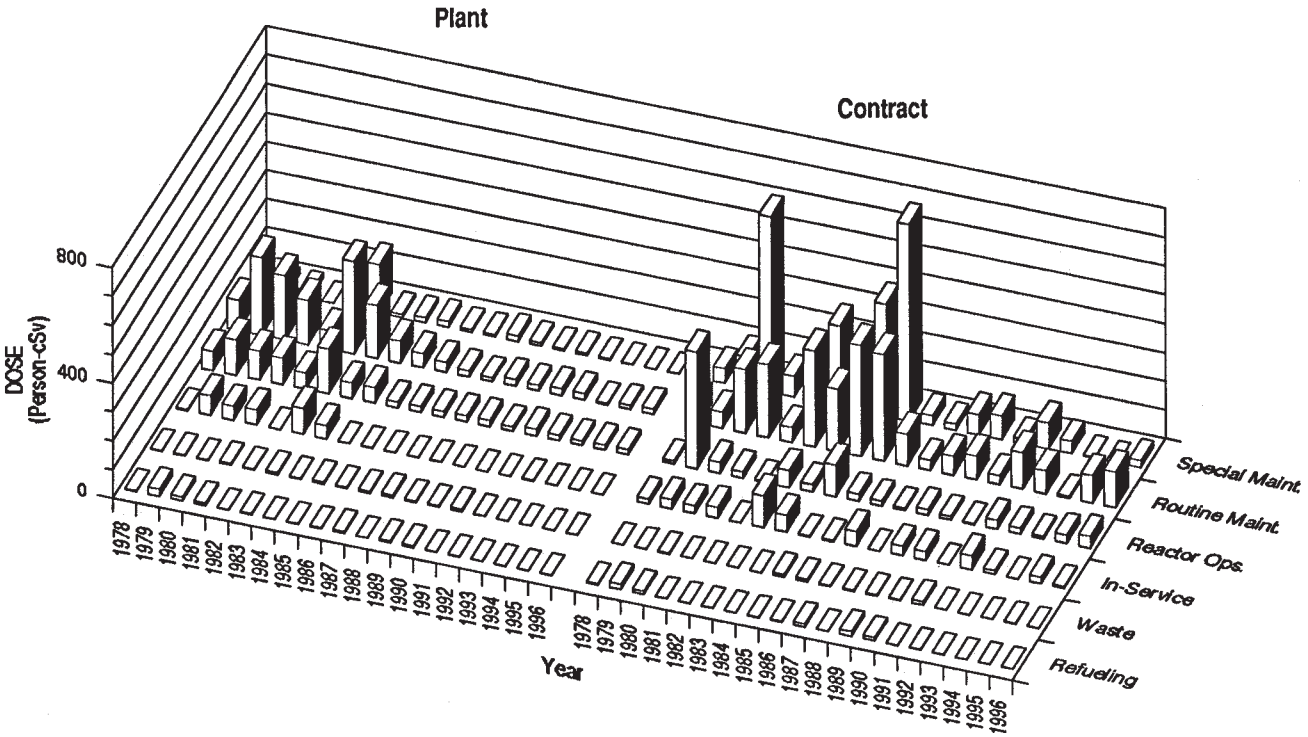
APPENDIX E (continued)

VERMONT YANKEE

Dose-Performance Indicators **BWR**



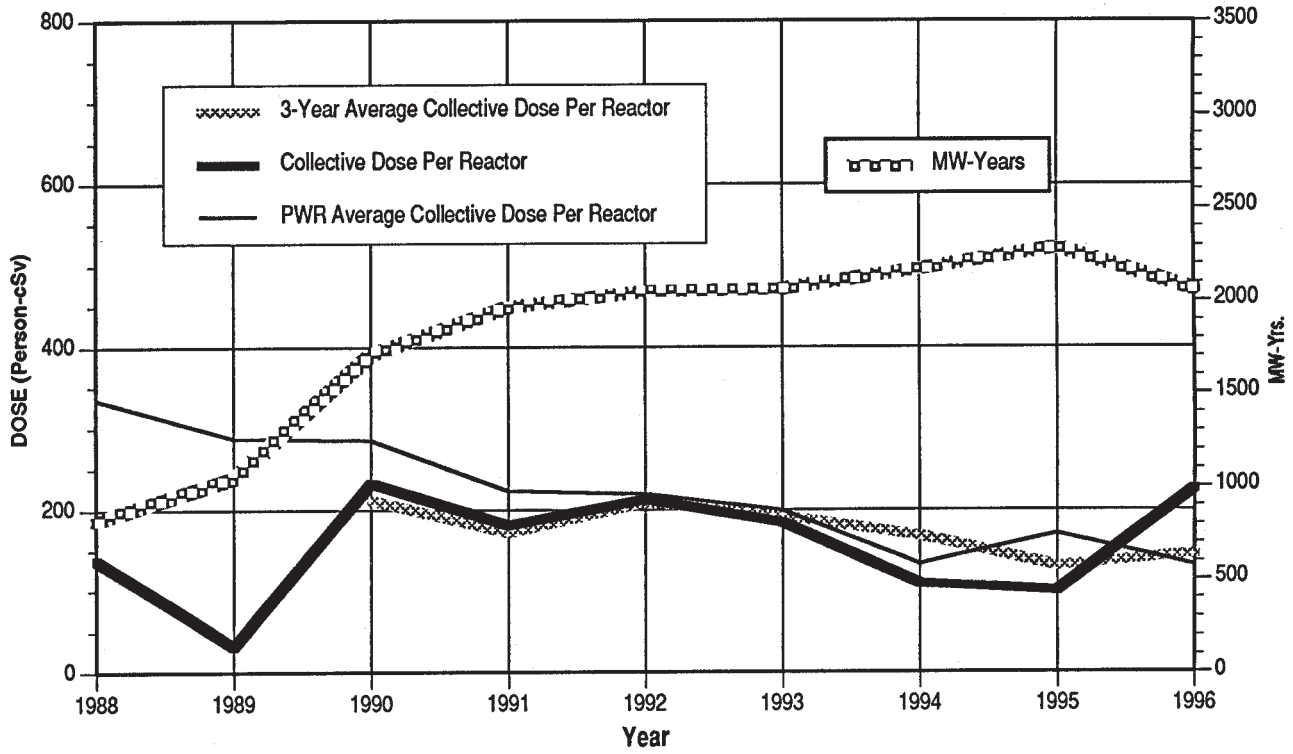
Breakdown by Job Function



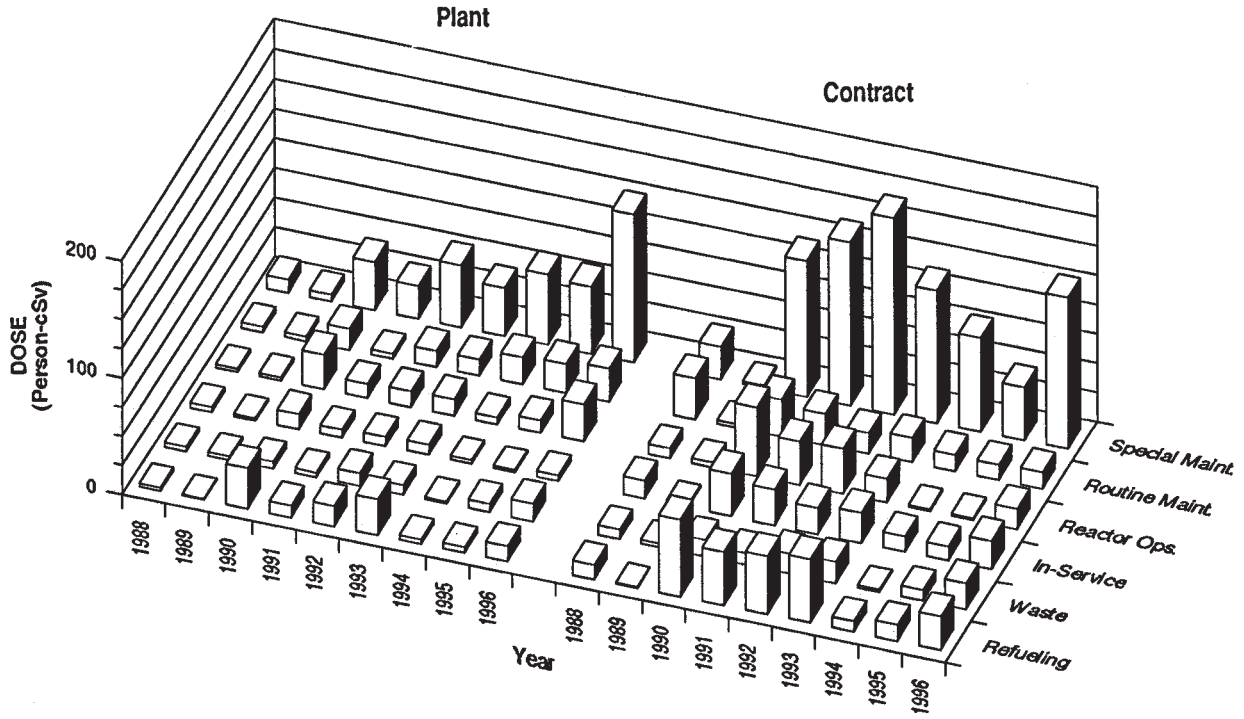
APPENDIX E (continued)

VOGTLE 1, 2

Dose-Performance Indicators **PWR**



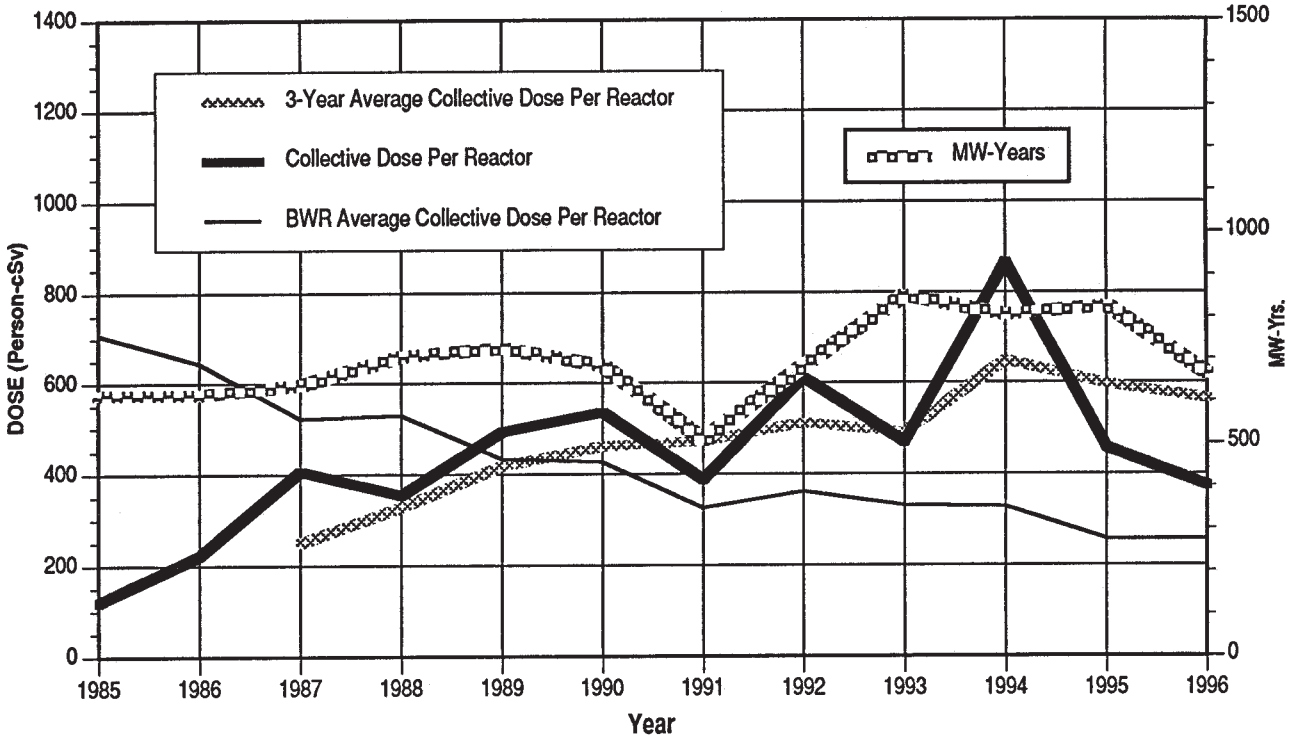
Breakdown by Job Function



APPENDIX E (continued)

WASHINGTON NUCLEAR 2

Dose-Performance Indicators **BWR**



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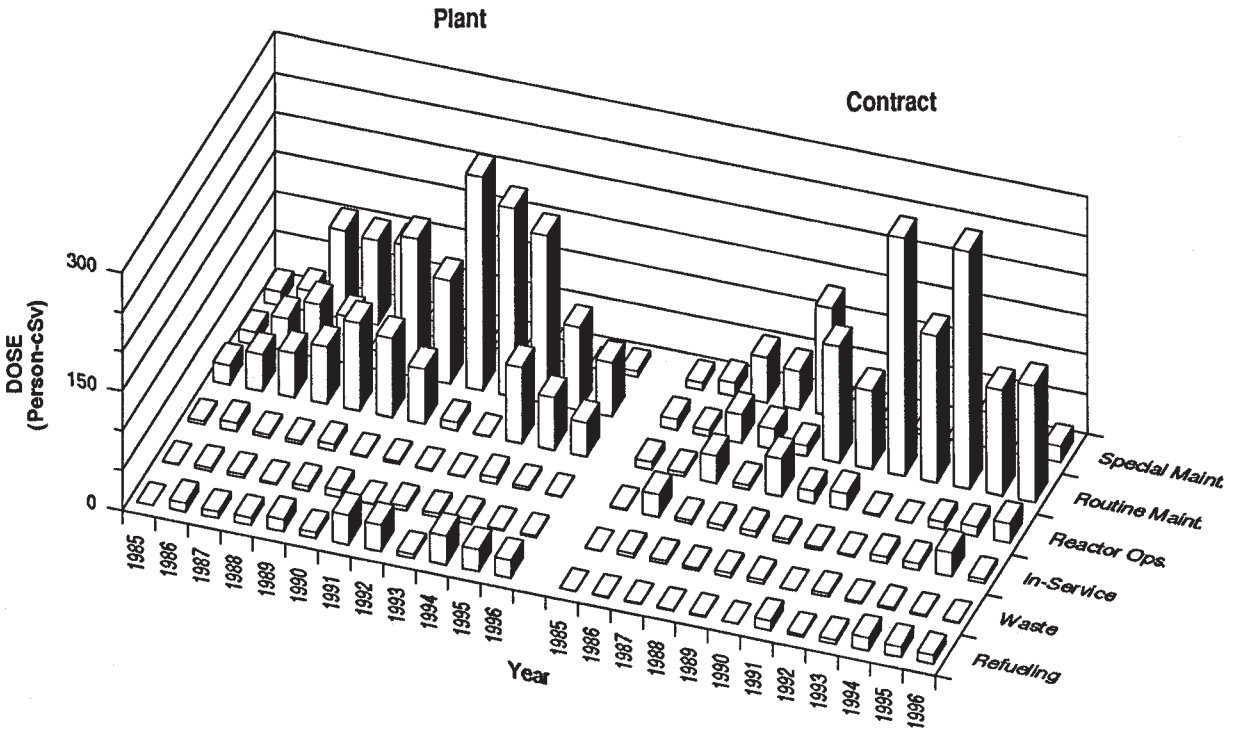
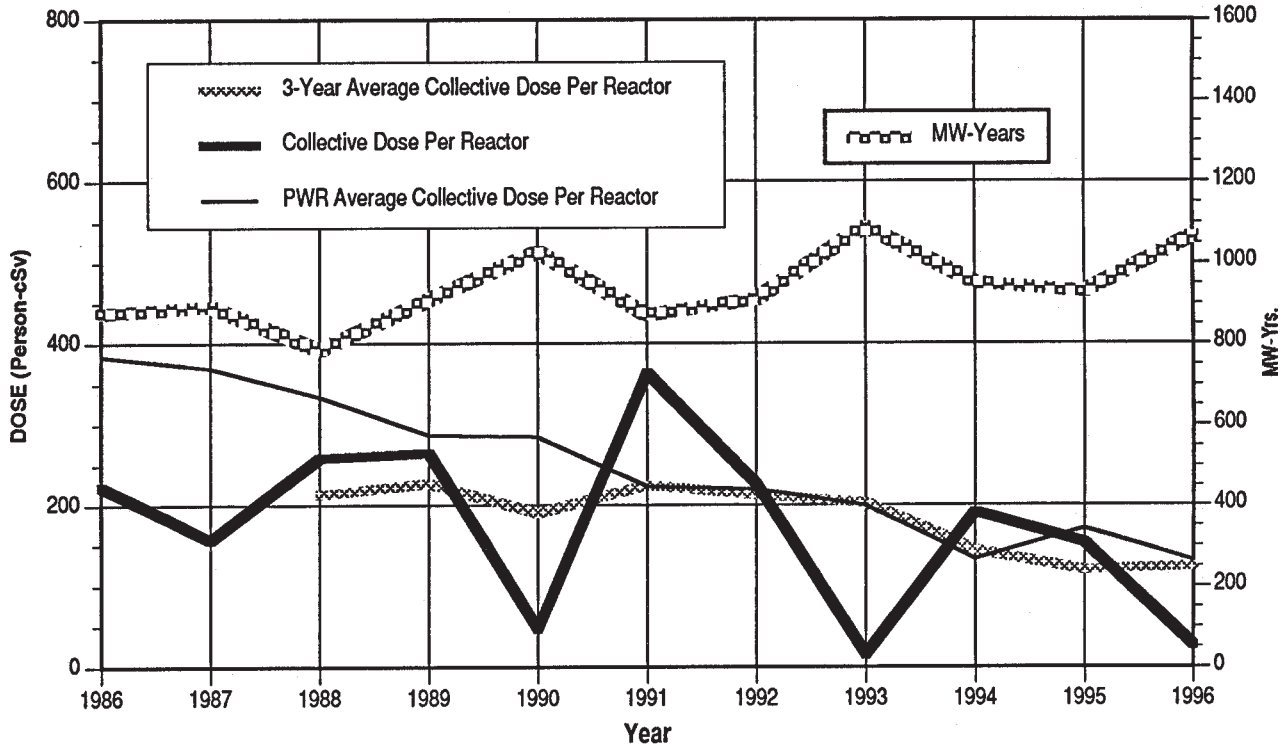


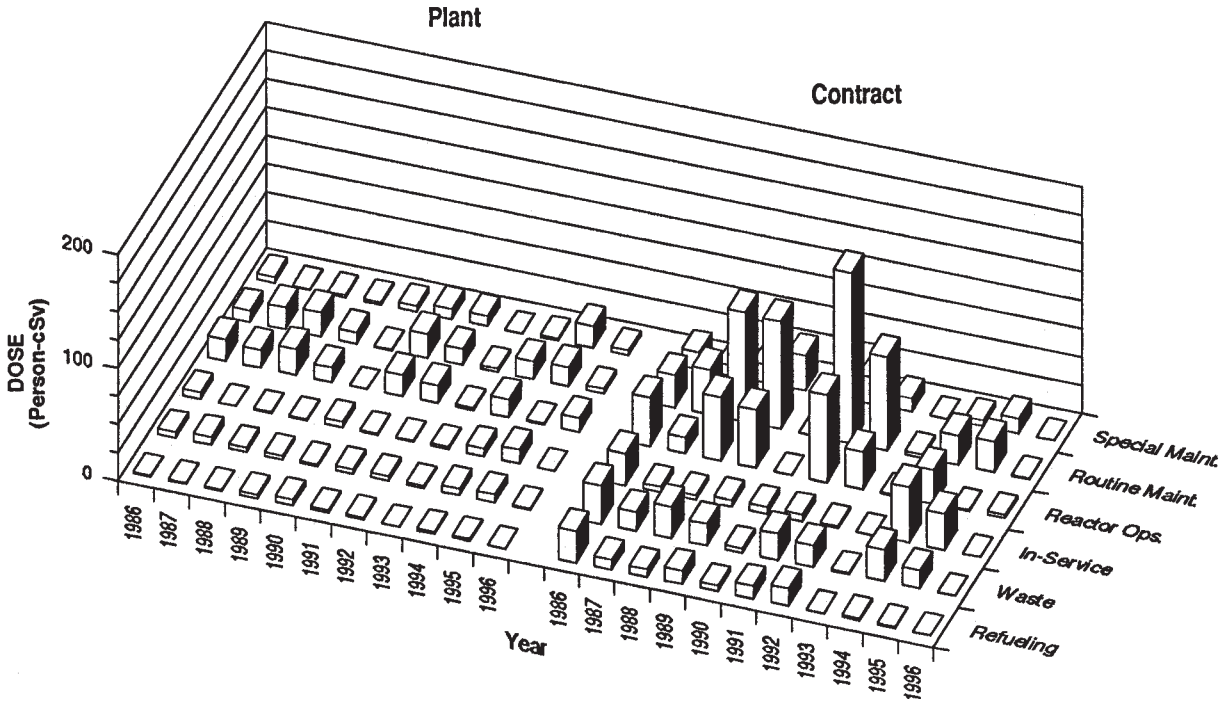
WATERFORD 3

Dose-Performance Indicators

PWR

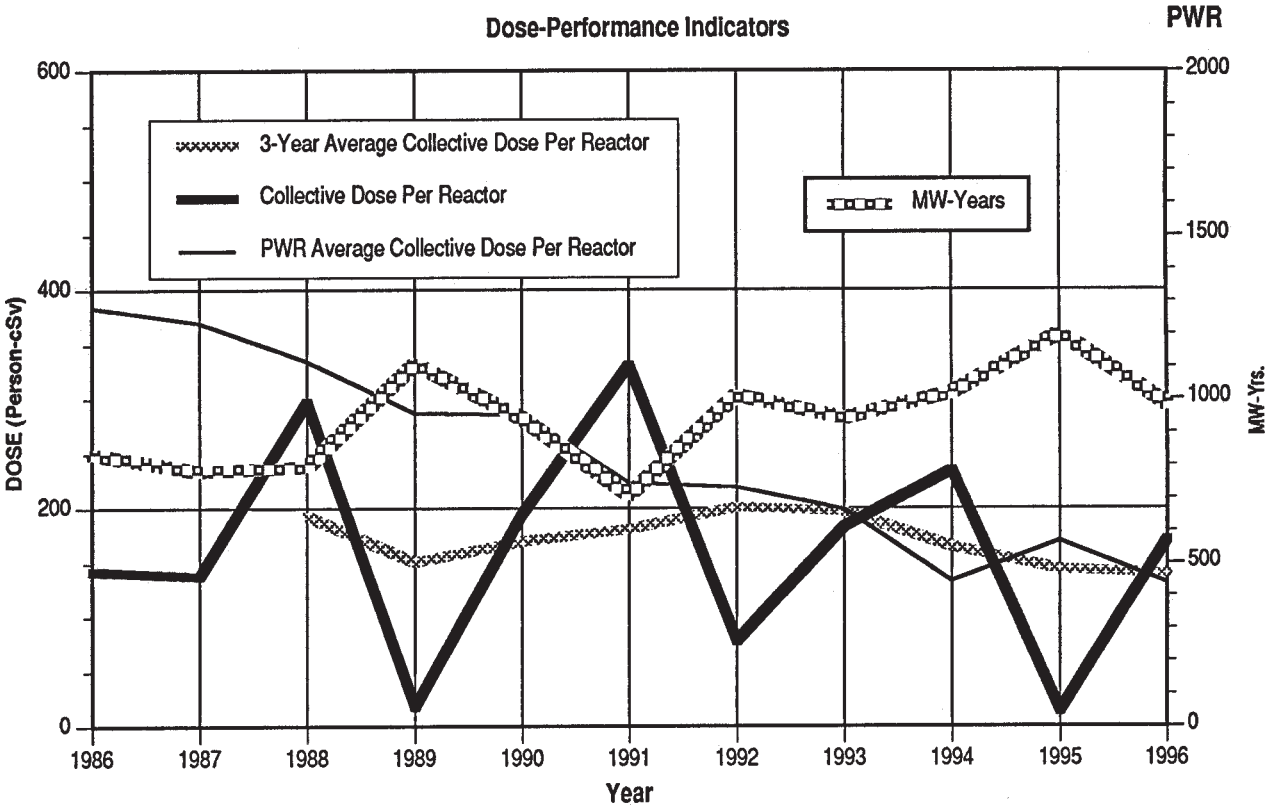


Breakdown by Job Function

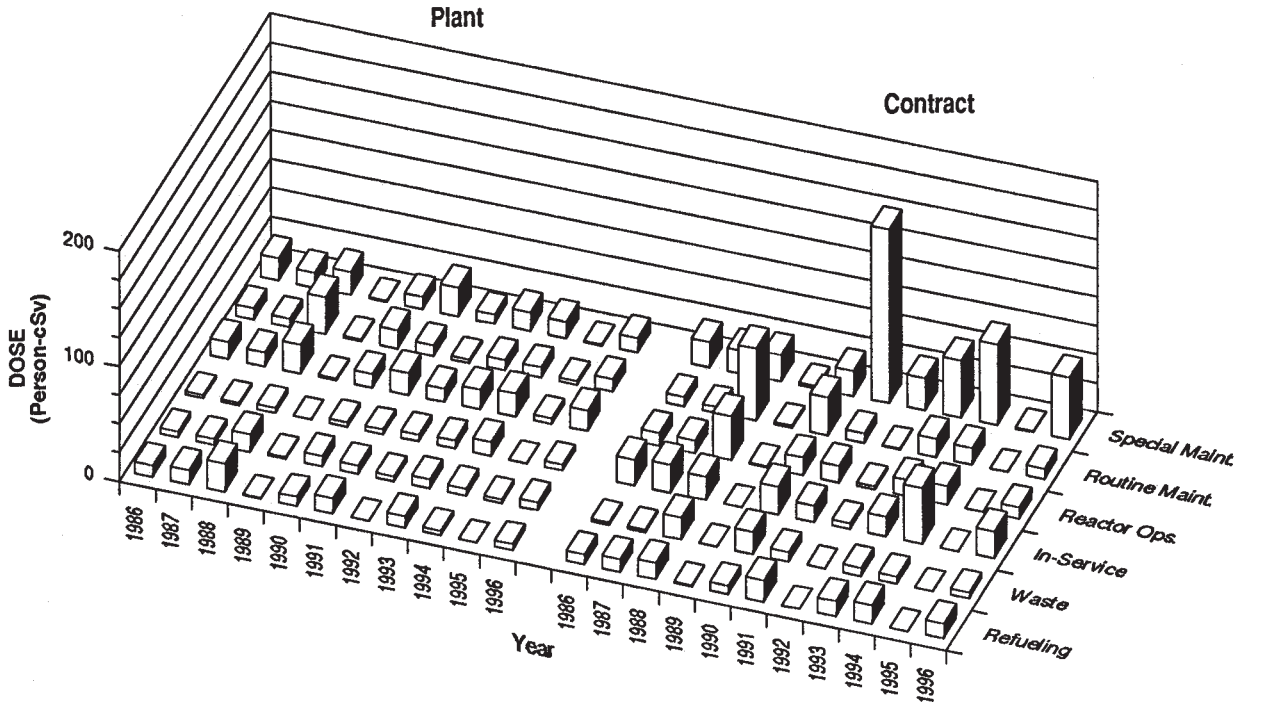


WOLF CREEK 1

Dose-Performance Indicators



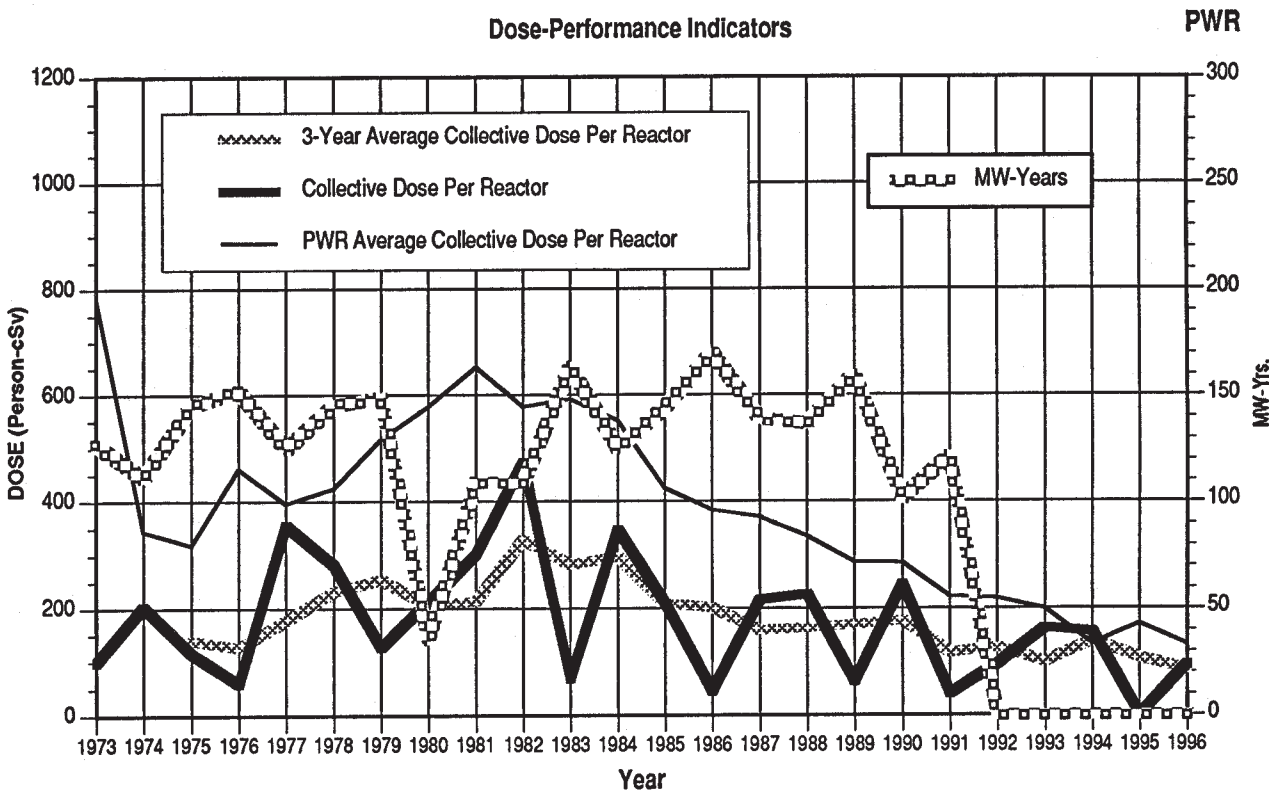
Breakdown by Job Function



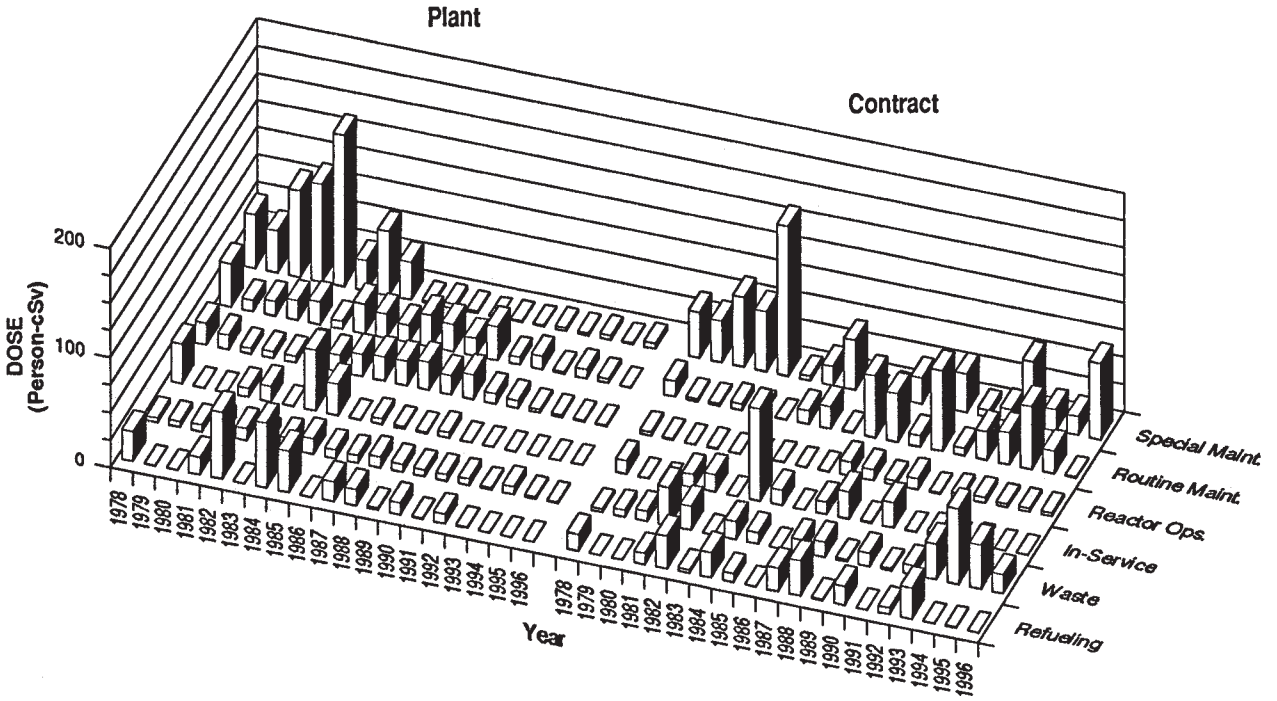
APPENDIX E (continued)

YANKEE-ROWE

Dose-Performance Indicators



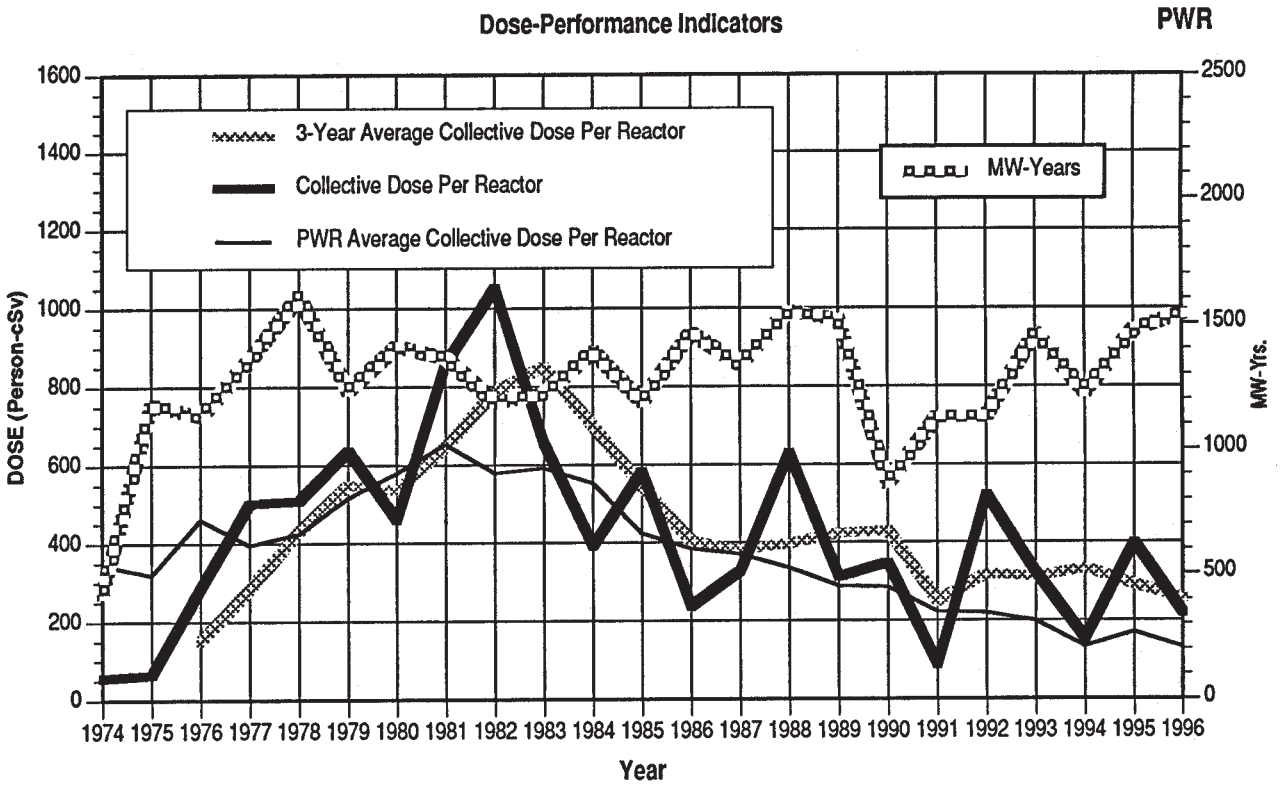
Breakdown by Job Function



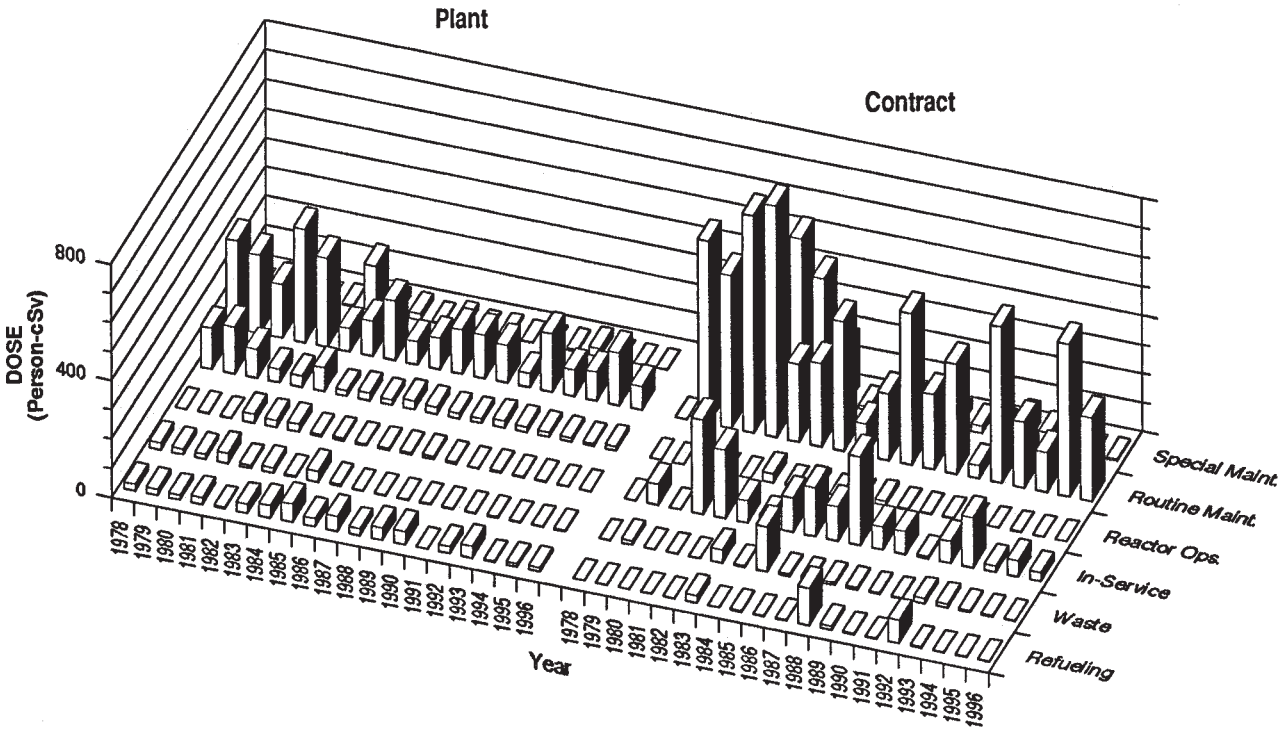
APPENDIX E (continued)

ZION 1, 2

Dose-Performance Indicators



Breakdown by Job Function



APPENDIX F

Summary of Annual Whole Body Dose Distributions by Year and Reactor Type

1988-1996

APPENDIX F*

SUMMARY OF ANNUAL WHOLE BODY DOSE DISTRIBUTIONS BY YEAR AND REACTOR TYPE

1988 - 1996

YEAR AND REACTOR TYPE	Number of Reac.	Number of Individuals with Whole Body Doses in the Ranges (rems or cSv)																	TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. EXPOSURE	TOTAL COLLECTIVE DOSE (Person-rem,cSv)
		No Meas urable	Meas. <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	5-6	6-7	7-8	8-9	9-10	10-11	11-12	>12			
1996 - PWR	72	48,864	22,441	11,620	7,745	2,800	1,196	968	42											95,676	46,812	9,413
1996 - BWR	37	29,333	16,985	8,335	6,456	3,009	1,452	1,374	26											66,970	37,637	9,461
1996 - LWR	109	78,197	39,426	19,955	14,201	5,809	2,648	2,342	68											162,646	84,449	18,874
1995 - PWR	72	49,697	23,311	12,259	8,947	3,767	1,769	1,717	93	4										101,564	51,867	12,207
1995 - BWR	37	31,335	15,264	7,986	6,332	3,117	1,567	1,360	32	1										66,994	35,659	9,467
1995 - LWR	109	81,032	38,575	20,245	15,279	6,884	3,336	3,077	125	5										168,558	87,526	21,674
1994 - PWR	72	55,008	20,863	10,774	7,599	3,132	1,347	1,034	17											99,774	44,766	9,603
1994 - BWR	37	30,322	15,898	8,036	6,754	3,719	2,191	2,306	198	6										69,430	39,108	12,092
1994 - LWR	109	85,330	36,761	18,810	14,353	6,851	3,538	3,340	215	6										169,204	83,874	21,695
1993 - PWR	71	57,216	25,579	12,348	9,665	4,636	2,224	2,052	83	1										113,804	56,588	14,142
1993 - BWR	37	35,779	16,340	7,845	6,400	3,728	2,224	2,662	151	1	1									75,131	39,352	12,221
1993 - LWR	108	92,995	41,919	20,193	16,065	8,364	4,448	4,714	234	2	1									188,935	95,940	26,363
1992 - PWR	73	56,859	28,220	12,503	10,259	4,926	2,287	2,602	245	6										117,907	61,048	15,985
1992 - BWR	37	39,594	17,740	8,094	6,883	3,955	2,339	2,866	204	11	3									81,689	42,095	13,309
1992 - LWR	110	96,453	45,960	20,597	17,142	8,881	4,626	5,468	449	17	3									199,596	103,143	29,294
1991 - PWR	74	57,815	28,514	11,876	9,387	4,657	2,462	2,972	371	30										118,084	60,269	16,510
1991 - BWR	37	37,527	17,384	7,076	5,732	3,409	1,975	2,602	299	14	1									76,019	38,492	12,005
1991 - LWR	111	95,342	45,898	18,952	15,119	8,066	4,437	5,574	670	44	1									194,103	98,761	28,515
1990 - PWR	73	53,935	29,669	12,957	10,591	5,601	3,267	4,363	590	43										121,016	67,081	20,812
1990 - BWR	37	39,102	17,210	7,336	5,992	3,717	2,493	4,162	625	41	1									80,679	41,577	15,780
1990 - LWR	110	93,037	46,879	20,293	16,583	9,318	5,760	8,525	1,215	84	1									201,695	108,658	36,592
1989 - PWR	71	51,701	29,419	11,591	9,336	5,061	2,997	4,739	674	66	11									115,595	63,894	20,381
1989 - BWR	36	40,951	19,343	7,887	6,323	3,753	2,544	3,962	515	33										85,311	44,360	15,549
1989 - LWR	107	92,652	48,762	19,478	15,659	8,814	5,541	8,701	1,189	99	11									200,906	108,254	35,930
1988 - PWR	68	47,866	27,177	11,014	9,260	5,563	3,541	5,405	829	127	4		1							110,787	62,921	22,786
1988 - BWR	34	47,679	16,044	6,736	5,609	3,311	2,397	4,859	1,129	215	5									87,984	40,305	17,983
1988 - LWR	102	95,545	43,221	17,750	14,869	8,874	5,938	10,264	1,958	342	9		1							198,771	103,226	40,769

* Figures contained herein are uncorrected for the multiple reporting of transient individuals, and include only those reactors that have completed a full year of commercial operation in each of the years ind