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Occupational Radiation Exposure at Commercial Nuclear Power Reactors and other Facilities 1997

Thirtieth Annual Report

U.S. Nuclear Regulatory Commission

Office of Nuclear Regulatory Research

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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.

NUREG-0713 Occupational Radiation Exposure At Commercial Nuclear Power Reactors and Other Facilities 1996, Vol. 18, U.S. Nuclear Regulatory Commission, February 1998.

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 1997 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 1997 were received from a total of **296** NRC licensees, of which **109** were operators of nuclear power reactors in commercial operation. Compilations of the reports submitted by the 296 licensees indicated that **142,730** individuals were monitored, **75,291** of whom received a measurable dose (Table 3.1). The collective dose incurred by these individuals was **19,841** person-rem which represents a **9% decrease** from the 1996 value. The number of workers receiving a measurable dose also decreased, resulting in the average measurable dose of **0.26** rem for 1997. 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 1997, the annual collective dose per reactor for light water reactor licensees (LWRs) was **157** person-rem. This represents a 9% decrease from the value reported for 1996. The annual collective dose per reactor for boiling water reactors (BWRs) was **205** person-rem and, for pressurized water reactors (PWRs), it was **132** person-rem.

Analyses of transient worker data indicate that **31,065** 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 1997, the average measurable dose calculated from reported data was **0.22** rem. The corrected dose distribution resulted in an average measurable dose of **0.26** rem.

[1] Commercial nuclear power reactors; industrial radiographers; fuel processors (including uranium enrichment), 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.

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.

Comments should be directed to:

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TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF TABLES (Continued) Page

LIST OF FIGURES Page

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Foreword

NUREG-0713, Volume 19, summarizes the 1997 occupational radiation exposure data maintained in the U.S. Nuclear Regulatory Commission's Radiation Exposures Information Reporting System (REIRS). Certain classes of licensees are required to annually report individual exposures in accordance with 10 CFR 20.2206.

The occupational radiation exposure data contained in this volume of NUREG-0713 is a compilation of the annual reports received from 300 licensees required to submit annual reports. The annual collective dose decreased by 9% overall from 1996 to 1997. This decrease is partially a result of a decrease in the total number of workers who received a measurable dose. This decrease is shown in Table 3.1 of this NUREG.

John W. Craig, Director
Division of Regulatory Applications
Office of Nuclear Regulatory Research

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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.

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 the public.

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
Thirtieth Annual Report, 1997

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 (including uranium enrichment as of 1997), 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 fourth 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 rem, so 0.5 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, although the probability of their being exposed to measurable levels of radiation is extremely small. Licensees must report the dose records of those individuals for whom monitoring is required. Many licensees elect to report the doses for every individual for whom they provided monitoring. This practice tends to 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. Although 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 1997 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 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 and fabricators, 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.

All dose equivalent values in this report are given in units of rem in accordance with the general provisions for records, 10 CFR 20.2101(a). In order to convert rem into the SI unit of Sieverts (Sv), one should divide the value in rem by 100. Therefore 1 rem = 0.01 Sv. In order to convert rem into millisieverts (mSv), multiply the value in rem by 10. Therefore 1 rem = 10 mSv.

[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 12/31/97, there are 30 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[4] 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 revised 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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[4] Commercial nuclear power reactors; industrial radiographers; fuel processors (inclding uranium enrichment as of 1997), 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 Dose

Under the revised 10 CFR 20.2206, the number of workers with measurable dose includes any individual with a TEDE greater than zero 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-rem. 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 prior to the implementation of the revised dose reporting requirements of 10 CFR 20.2206 in 1994, the collective dose 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 1997 with the collective dose for years prior to 1994 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 1997 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.).

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 rem 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 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 rem 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 rem in the 1 to 2 rem range was calculated by assuming that half of the collective dose incurred by workers with doses between 1 and 2 rem was because of doses greater than 1.5 rem. 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
1988 - 1997

License Category* and Program Code	Calendar Year	Number of Licensees Reporting	Number of Monitored Individuals	Number of Workers With Measurable TEDE	Collective TEDE (person-rem)	Average TEDE (rem)	Average Measurable TEDE per Worker (rem)	CR**
Industrial	1997	143	3,436	2,454	1,291	0.38	0.53	0.38
Radiography	1996	144	3,631	2,537	1,385	0.38	0.55	0.42
03310	1995	139	3,530	2,465	1,338	0.38	0.54	0.40
03320	1994	139	3,230	2,351	1,415	0.44	0.60	0.51
	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
Manufacturing	1997	31	1,151	665	397	0.34	0.60	0.70
and	1996	36	2,628	1,239	556	0.21	0.45	0.53
Distribution	1995	36	2,666	1,222	595	0.22	0.49	0.58
	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
Low-Level	1997	2	185	50	5	0.03	0.11	0.00
Waste	1996	2	165	67	8	0.05	0.12	0.00
Disposal	1995	2	212	56	8	0.04	0.15	0.00
	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
Independent	1997	1	55	24	6	0.11	0.24	0.00
Spent Fuel	1996	1	97	53	54	0.56	1.02	0.73
Storage	1995	1	104	49	51	0.49	1.04	0.83
	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
Fuel	1997	10	11,214	3,910	1,006	0.09	0.26	0.18
Cycle	1996	8	4,369	3,061	878	0.20	0.29	0.19
Licenses -	1995	8	4,106	2,959	1,217	0.30	0.41	0.38
Fabrication	1994	8	3,596	2,847	1,147	0.32	0.40	0.40
Processing and	1993	8	9,649	2,611	339	0.04	0.13	0.08
Uranium Enrich.	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
21210	1990	11	14,505	3,871	422	0.03	0.11	0.01
21200	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
Commercial	1997	109	126,689	68,188	17,136	0.14	0.25	0.04
Light Water	1996	109	127,420	68,182	18,874	0.15	0.28	0.04
Reactors***	1995	109	133,066	70,986	21,674	0.16	0.31	0.06
	1994	109	142,707	73,780	21,695	0.15	0.29	0.08
41111	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
Grand Totals	1997	296	142,730	75,291	19,841	0.14	0.26	0.09
and Averages	1996	300	138,310	75,139	21,755	0.16	0.29	0.09
	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

* 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 rem 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 - 1997 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 rem 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 1997. Using the previous methodology, the CR value would have been calculated to be 0.08 for 1997. One of the contributing factors for this difference is the administrative controls imposed at nuclear power facilities for individuals who exceed 1 rem. This causes the dose distribution to drop off sharply above 1 rem with fewer exposures exceeding 1.5 rem. Therefore, the actual CR is significantly less than the value that is calculated by assuming a uniform dose distribution.

The Manufacturing and Distribution licensees have experienced an increase 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 1997. However, the overall average CR for all licensees remained well below 0.50, primarily because of the low CR values at power reactor licensees. The overall average CR remained at a value of 0.09 in 1997.

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 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 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 rem between 1968 and 1984. For the past 12 years the percentage of workers with <2 rem has been ≥98%. The number of workers receiving an annual exposure in excess of 5 rem had been <0.01% since 1985. 1997 is the first year recorded where no individual received a TEDE or whole body dose in excess of 5 rem.

TABLE 3.2
DISTRIBUTION OF ANNUAL COLLECTIVE TEDE BY LICENSE CATEGORY
1997

LICENSE CATEGORY (Number of sites reporting)	*Number of Individuals with TEDE in the Ranges (rem)													TOTAL NUMBER MONITORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE DOSE (TEDE) (person-rem)
	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)	212	55	14	11	4										296	84	10
Multiple Location (116)	770	655	466	403	252	183	302	82	25	2					3,140	2,370	1,281
Total (143)	982	710	480	414	256	183	302	82	25	2					3,436	2,454	1,291
MANUFACTURING AND DISTRIBUTION																	
"A" - Broad (5)	110	124	48	50	22	18	43	42	35	4					496	386	364
Limited (26)	376	193	41	32	9	2	2								655	279	33
Total (31)	486	317	89	82	31	20	45	42	35	4					1,151	665	397
LOW-LEVEL WASTE DISPOSAL																	
Total (2)	135	31	12	6	1										185	50	5
INDEPENDENT SPENT FUEL STORAGE																	
Total (1)	31	7	9	4	2	2									55	24	6
FUEL CYCLE LICENSES**																	
Total (10)	7,304	2,159	646	430	248	161	223	43							11,214	3,910	1,006
COMMERCIAL POWER REACTORS**																	
Boiling Water (37)	29,284	16,261	7,546	5,422	2,533	1,110	930	40	3						63,129	33,845	7,597
Pressurized Water (72)	50,879	25,498	12,405	7,974	2,861	1,130	741	19	-						101,507	50,628	9,539
Total (109)	80,163	41,759	19,951	13,396	5,394	2,240	1,671	59	3						164,636	84,473	17,136
GRAND TOTALS	89,101	44,983	21,187	14,332	5,932	2,606	2,241	226	63	6					180,677	91,576	19,841

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

** Includes fabrication, processing and uranium enrichment plants (see Section 3.3.5).

*** Includes all reactors in commercial operation for a full year during 1997.
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	Percent of Individuals With Doses	Number of Individuals With Doses
	Reported Number	Corrected Number	< 2 cSv**	< 5 cSv**	>12 cSv**
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	137,968	99.5%	>99.99% (1)	0
1997	180,677	128,466	99.5%	100% (0)	0

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

** Data for 1977-1997 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 rem is shown in parentheses from 1985-1997.

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 143 radiography licensees in 1997. Table 3.4 summarizes the reported data for the two types of radiography licenses for 1997 and for the previous 2 years for comparison purposes.

The average measurable dose for workers performing radiography at a single location ranges from 20 to 30% 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. 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 1997 is presented in Appendix A.

TABLE 3.4
ANNUAL EXPOSURE INFORMATION FOR INDUSTRIAL RADIOGRAPHERS
1995 - 1997

Year	Type of License	Number of Licenses	Number of Monitored Workers	Workers with Measurable Dose	Collective Dose (person-rem)	Average Measurable Dose (rem)
	Single Location	27	296	84	10	0.12
1997	Multiple Locations	116	3,140	2,370	1,281	0.54
	Total	143	3,436	2,454	1,291	0.53
	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

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 1997.

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

Manufacturing and Distribution 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 1997 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 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.

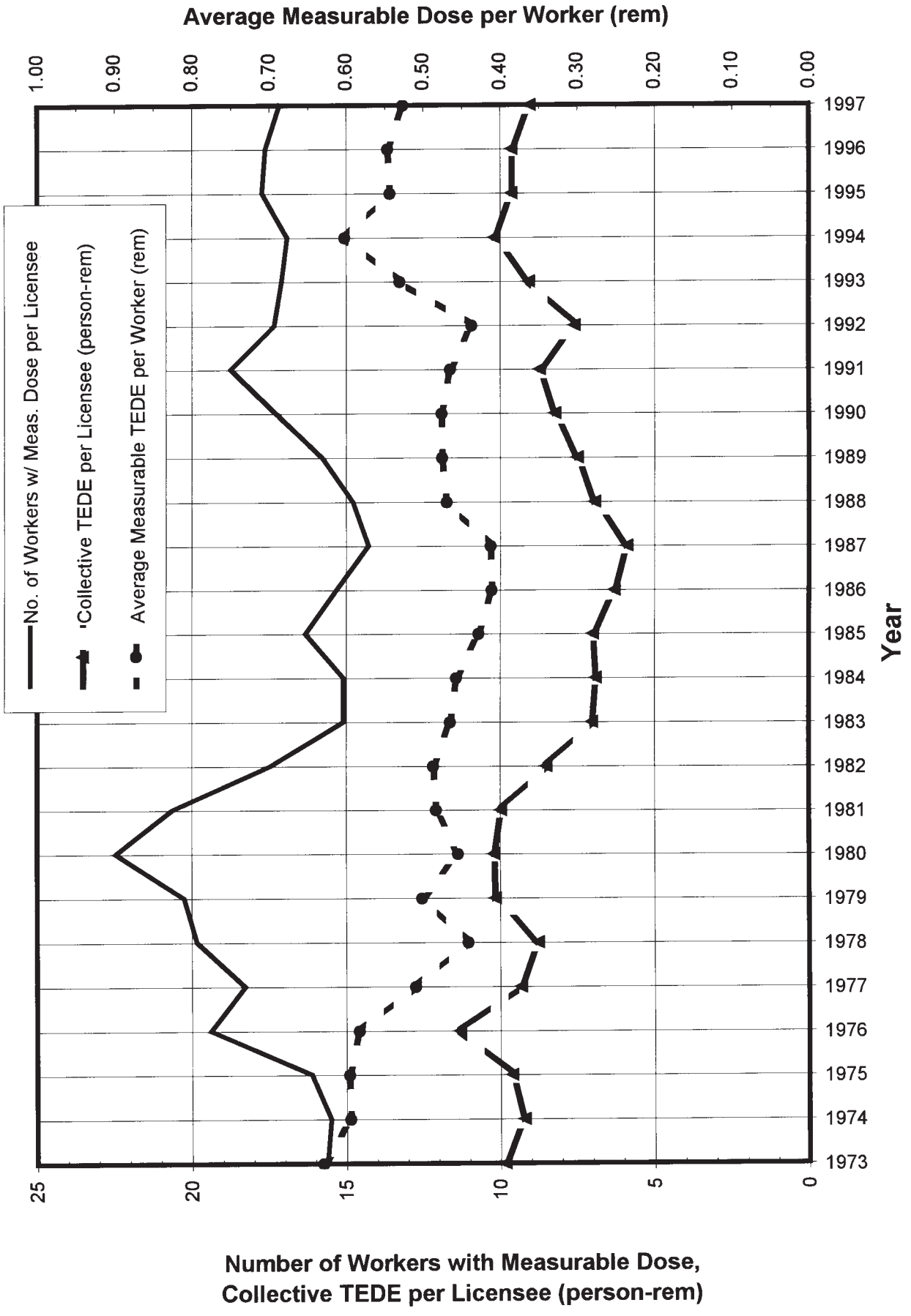


FIGURE 3.1
Average Annual Values at Industrial Radiography Facilities 1973 - 1997

TABLE 3.5

ANNUAL EXPOSURE INFORMATION FOR MANUFACTURERS AND DISTRIBUTORS

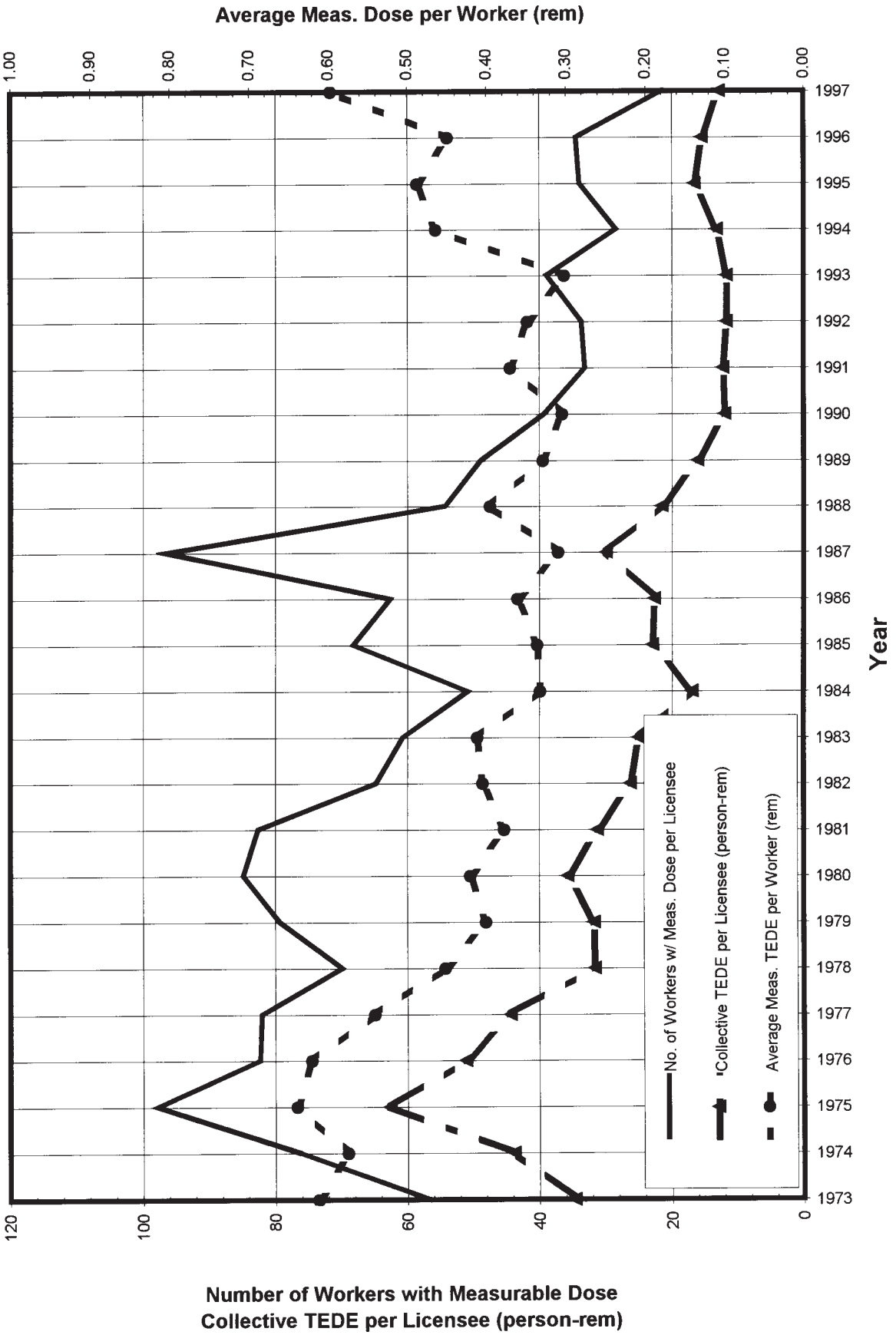
1995 - 1997

Year	Type of License	Number of Licenses	Number of Monitored Workers	Workers with Measurable Dose	Collective Dose (person-rem)	Average Measurable Dose (rem)
	M & D-"A"-Broad	5	496	386	364	0.94
1997	M & D-Limited	26	655	279	33	0.12
	Total	31	1,151	665	397	0.60
	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

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. The average measurable dose for Type "A" Broad licensees increased by 77% from 1996 to 1997 primarily due to the increase in average measurable dose at Mallinckrodt Medical, Inc.. In addition, three Type "A" Broad licensees that have reported significant dose in prior years, were transferred to Agreement State licensees in the Commonwealth of Massachusetts.

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 for 1997.

FIGURE 3.2
Average Annual Values at Manufacturing and Distribution Facilities 1973 - 1997



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 and two licensees in this category from 1984 to 1997. Table 3.1 summarizes the data reported for 1988 through 1997. Appendix A summarizes the exposure information reported by this licensee in 1997.

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 1997. Because only two licensees have been involved in this activity over the past 10 years, the numbers have remained fairly stable from 1984 through 1997 with the exception of the average measurable TEDE, which peaked in 1992 and has decreased by 75% since then.

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 1997. Appendix A summarizes the exposure information reported by this installation.

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

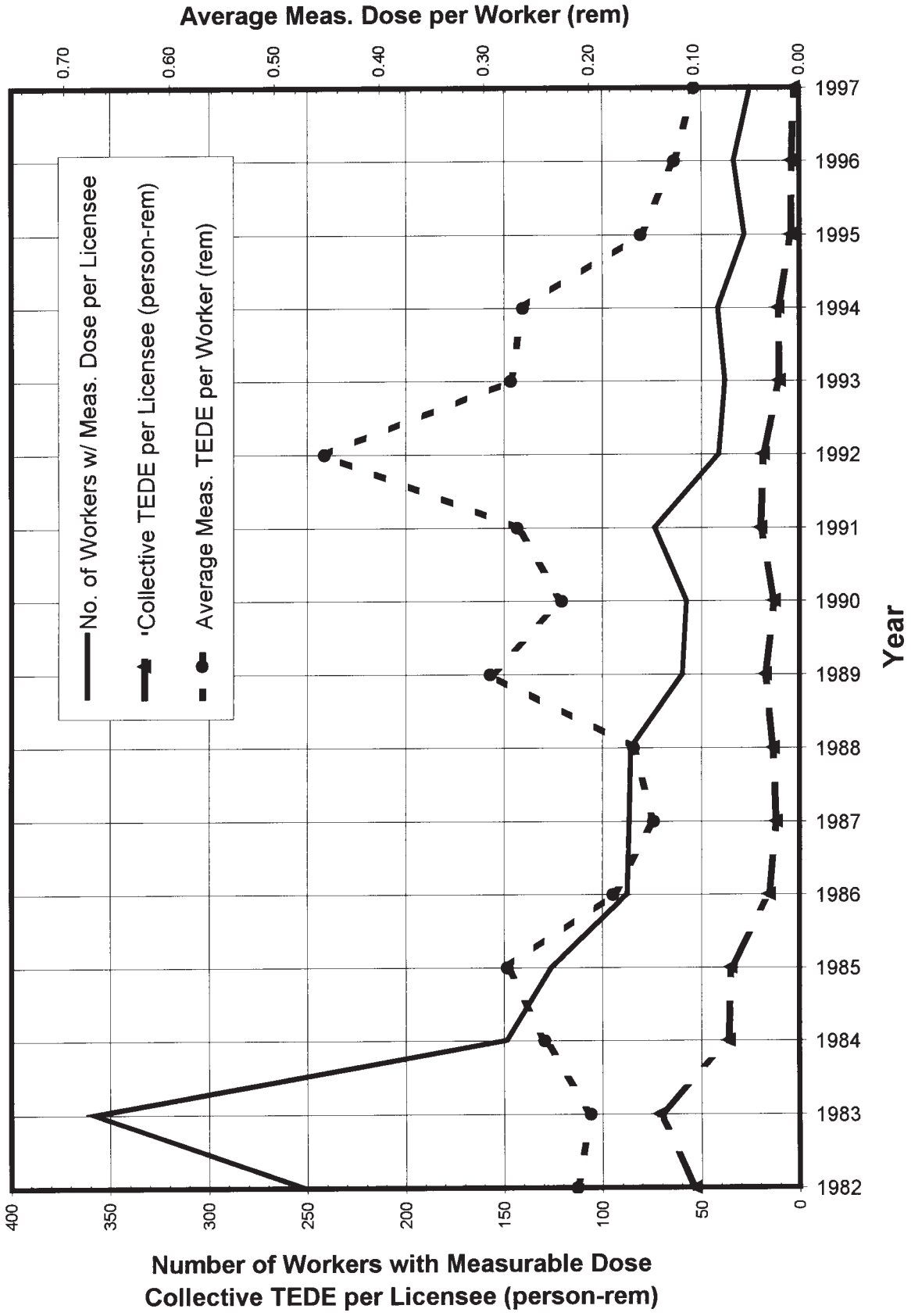


FIGURE 3.3
Average Annual Values at Low-Level Waste Disposal Facilities
1982 - 1997

workers per licensee in 1994 was mainly because only one licensee reported separately for 1994 through 1997, rather than the two licensees that reported in prior years. All parameters have decreased significantly from 1996 to 1997.

3.3.5 Fuel Cycle Licenses

Fuel cycle licenses are issued to allow the processing, enrichment, and fabrication of reactor fuels. In most uranium facilities where light water reactor fuels are fabricated enriched uranium hexafluoride 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 prior to disposal of these materials. For 1997, this category also includes the two uranium enrichment facilities at Portsmouth, Ohio, and Paducah, Kentucky. The regulatory oversight for these facilities was transferred from the U. S. Department of Energy to the NRC in 1997.

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 Cycle 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. Both doses are shown since the CEDE is a significant contribution to the TEDE for Fuel Fabrication facilities.

Appendix A lists each of the licensees reporting in 1997, with the number of workers monitored, the number of workers receiving measurable external doses, and the collective dose for each licensee. Table 3.6 shows that there were 10 licensed Fuel Cycle (Fabrication and Enrichment) facilities in 1997.

TABLE 3.6

ANNUAL EXPOSURE INFORMATION FOR FUEL CYCLE LICENSES

1995 - 1997

Year	Type of License	Number of Licenses	Number of Monitored Workers	Workers with Meas. TEDE	Collective TEDE (person-rem)	Average Meas. TEDE (rem)	Collective DDE (person-rem)	Average Meas. DDE (rem)	Collective CEDE (person-rem)	Average Meas. CEDE (rem)
1997	Fuel Cycle	10	11,214	3,910	1,006	0.26	197	0.08	800	0.30
1996	Fuel Cycle	8	4,369	3,061	878	0.29	161	0.08	711	0.32
1995	Fuel Cycle	8	4,106	2,959	1,217	0.41	131	0.10	990	0.33

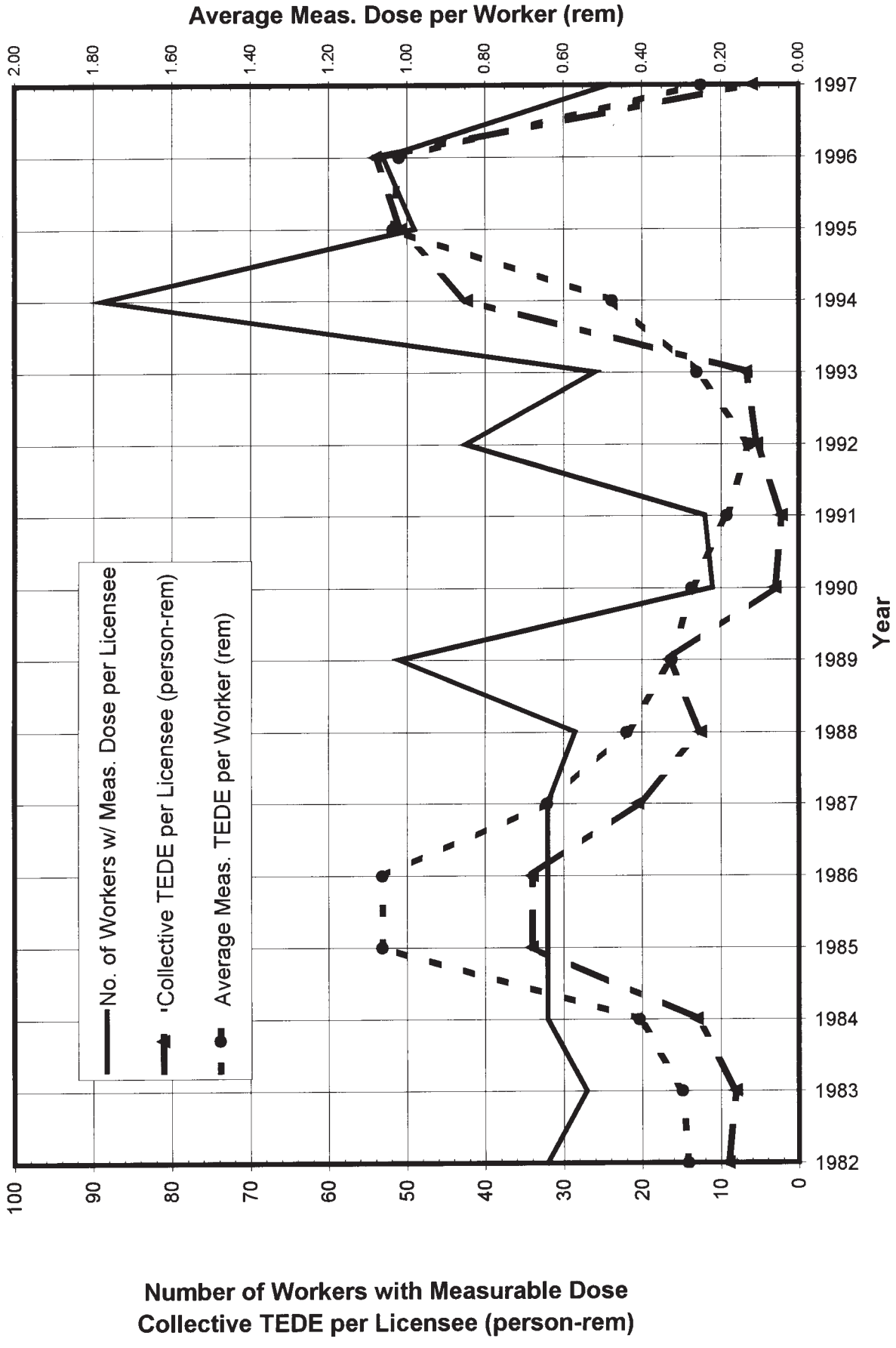


FIGURE 3.4
Average Annual Values at Independent Spent Fuel Storage Facilities
1982 - 1997

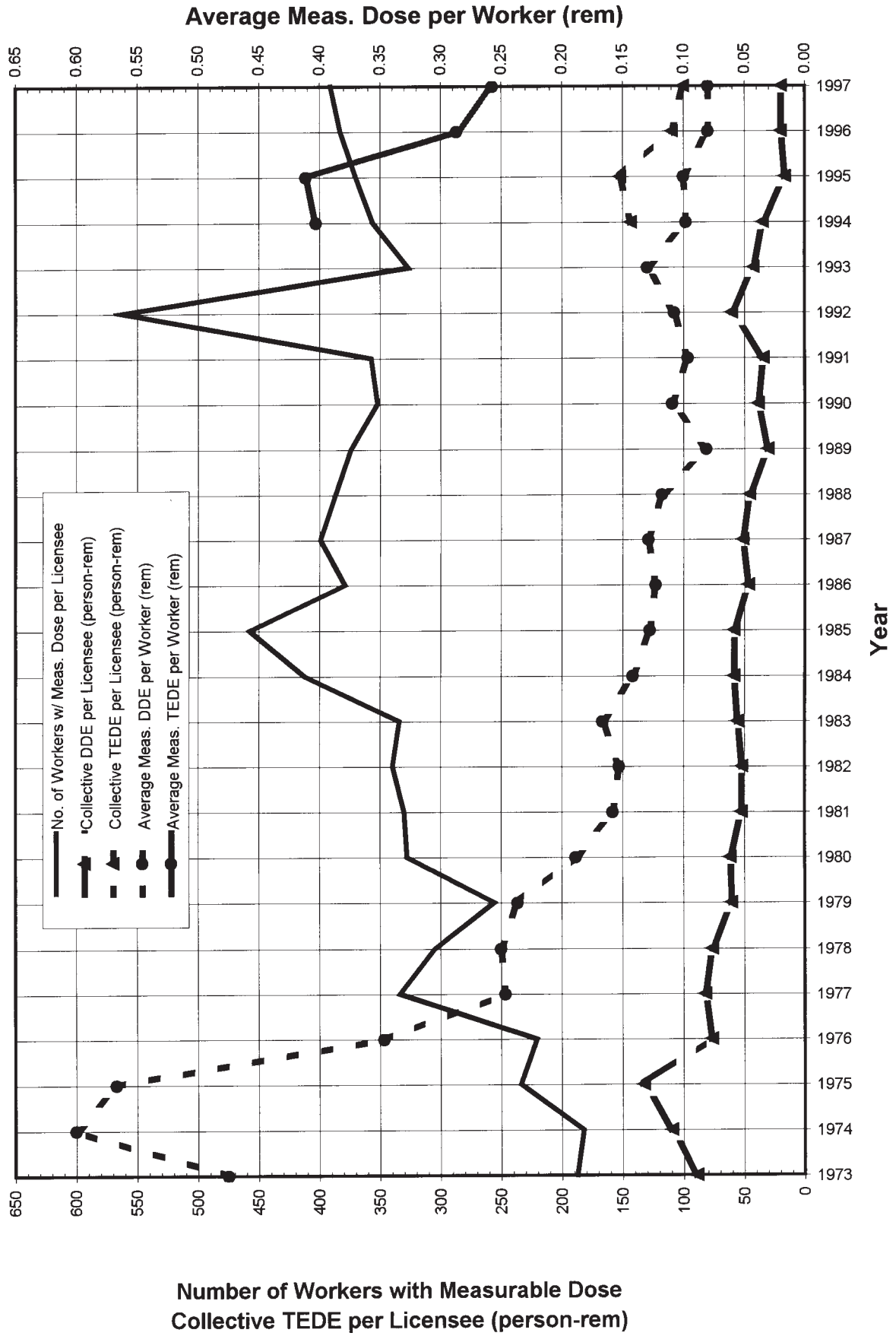


FIGURE 3.5
Average Annual Values at Fuel Cycle Licenses
1973 - 1997

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 1988 through 1997. This table includes reactors that may not have been in commercial operation for a full year. Data for 1988 includes all reactors that reported, even though some of them were shut down. Data for 1989 through 1997 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.

3.4 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 3.7 and 3.8 summarize the intake data reported to the NRC during 1997. The data are categorized by licensee type and are listed in order of radionuclide and pulmonary clearance class. Table 3.7 lists the intakes where the mode of intake into the body was recorded as ingestion. In 1997, one record was reported as an 'absorption' of tritium and is included in Table 3.7. Table 3.8 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 3.7
INTAKE BY LICENSEE TYPE AND RADIONUCLIDE
MODE OF INTAKE - ***INGESTION***
1997

Licensee Type	Program Code	Radionuclide	Number of Intake Records*	Intake in microcuries	Intake in microcuries (sci. notation)
Power Reactors	41111	H-3 (Absorption)	1	1.120	1.12E+00
	41111	AM-241	2	0.000	1.15E-05
	41111	CE-144	1	0.019	1.90E-02
	41111	CM-242	1	0.000	4.33E-06
	41111	CM-244	2	0.000	9.97E-06
	41111	CO-58	14	90.254	9.03E+01
	41111	CO-60	**42**	**1,081.675**	**1.08E+03**
	41111	CR-51	9	1.395	1.40E+00
	41111	CS-134	2	0.050	5.00E-02
	41111	CS-137	1	0.070	7.00E-02
	41111	FE-55	4	0.479	4.79E-01
	41111	FE-59	4	1.027	1.03E+00
	41111	IN-113M	1	0.003	2.52E-03
	41111	MN-54	10	0.508	5.08E-01
	41111	NB-95	3	0.199	1.99E-01
	41111	PU-238	2	0.000	8.06E-06
	41111	PU-239	2	0.000	5.83E-06
	41111	PU-241	1	0.000	2.27E-04
	41111	SB-125	1	0.355	3.55E-01
	41111	SN-113	1	0.003	2.52E-03
	41111	SR-90	1	0.000	2.81E-05
	41111	UNKNOWN	5	16.500	1.65E+01
	41111	ZN-65	4	0.996	9.96E-01
	41111	ZR-95	3	0.173	1.73E-01

*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 3.8
INTAKE BY LICENSEE TYPE AND RADIONUCLIDE
MODE OF INTAKE - ***INHALATION***
1997

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	21	7.968	7.97E+00
Manufacturing and Distribution	03211	CO-60	Y	**7**	**2.473**	**2.47E+00**
	03211	I-123	D	2	0.603	6.03E-01
	03211	I-131	D	7	2.137	2.14E+00
Uranium Enrichment	21200	TH-230	W	29	0.001	5.33E-04
	21200	U-234	D	**62**	**0.049**	**4.92E-02**
	21200	U-234	Y	4	0.000	3.95E-05
Fuel Fabrication	21210	CO-60	Y	545	0.456	4.56E-01
	21210	CS-137	D	5	0.000	3.01E-05
	21210	EU-152	W	16	0.000	5.89E-05
	21210	NP-237	W	1	0.000	1.04E-07
	21210	PA-234	W	1	0.000	2.19E-06
	21210	PU-238	W	5	0.000	3.92E-05
	21210	PU-239	W	84	2.581	2.58E+00
	21210	PU-239	Y	7	0.003	2.98E-03
	21210	SR-90	D	4	0.000	1.50E-04
	21210	SR-90	Y	29	0.000	1.40E-04
	21210	TC-99	D	1	0.000	8.61E-06
	21210	TH-228	W	1	0.000	1.00E-08
	21210	TH-228	Y	294	0.001	1.02E-03
	21210	TH-230	W	1	0.000	4.38E-07
	21210	TH-230	Y	294	0.000	4.74E-04
	21210	TH-232	W	1	0.000	2.00E-08
	21210	TH-232	Y	294	5.864	5.86E+00
	21210	TH-234	Y	1	0.000	8.64E-07
	21210	U-234	D	550	2.927	2.93E+00
	21210	U-234	W	325	0.083	8.26E-02
	21210	U-234	Y	**2,341**	**7.801**	**7.80E+00**
	21210	U-235	Y	1,086	0.121	1.21E-01
	21210	U-236	Y	243	0.004	4.03E-03
	21210	U-237	Y	4	0.000	1.42E-04
	21210	U-238	D	224	0.218	2.18E-01
	21210	U-238	Y	2,126	0.722	7.22E-01
Power Reactors	41111	AG-110M	Y	6	0.138	1.38E-01
	41111	AM-241	W	128	0.012	1.22E-02
	41111	C-14	O	2	0.015	1.50E-02
	41111	C0-60	Y	2	0.323	3.23E-01
	41111	CE-141	W	1	0.008	7.58E-03
	41111	CE-141	Y	1	0.086	8.60E-02
	41111	CE-144	W	2	0.010	1.00E-02
	41111	CE-144	Y	6	0.004	3.80E-03
	41111	CM-242	W	29	0.002	1.63E-03
	41111	CM-243	W	30	0.033	3.26E-02
	41111	CO-57	Y	1	0.001	9.09E-04
	41111	CO-58	Y	186	394.108	3.94E+02

TABLE 3.8
INTAKE BY LICENSEE TYPE AND RADIONUCLIDE
MODE OF INTAKE - ***INHALATION***
1997

Licensee Type	Program Code	Radionuclide	Pulmonary Clearance Class	Number of Intake Records*	Intake in microcuries	Intake in microcuries (sci. notation)
Power Reactors	41111	CO-60	Y	**234**	**1,276.151**	**1.28E+03**
	41111	CR-51	W	1	0.020	2.00E-02
	41111	CR-51	Y	4	1.635	1.64E+00
	41111	CS-134	D	14	0.321	3.21E-01
	41111	CS-136	D	2	0.038	3.80E-02
	41111	CS-137	D	81	14.309	1.43E+01
	41111	CS-137	Y	4	0.183	1.83E-01
	41111	FE-55	W	6	0.621	6.21E-01
	41111	FE-59	D	3	0.149	1.49E-01
	41111	FE-59	W	5	0.545	5.45E-01
	41111	H-3	V	6	21.510	2.15E+01
	41111	H-3	Y	1	17.280	1.73E+01
	41111	I-131	D	24	102.240	1.02E+02
	41111	I-133	D	1	0.170	1.70E-01
	41111	MIXTURE	W	144	6.336	6.34E+00
	41111	MN-54	W	48	186.318	1.86E+02
	41111	MN-54	Y	1	0.009	9.00E-03
	41111	MN-56	W	1	0.033	3.30E-02
	41111	NB-95	W	3	0.387	3.87E-01
	41111	NB-95	Y	7	0.423	4.23E-01
	41111	NI-63	W	6	0.206	2.06E-01
	41111	NP-237	W	10	0.001	7.20E-04
	41111	PU-238	Y	30	0.035	3.50E-02
	41111	PU-239	Y	18	0.000	3.15E-05
	41111	PU-240	Y	12	0.006	6.39E-03
	41111	PU-241	Y	111	2.167	2.17E+00
	41111	SB-125	W	1	0.010	9.75E-03
	41111	SN-113	W	1	0.003	2.67E-03
	41111	SR-89	D	1	0.000	1.14E-04
	41111	SR-90	D	1	0.000	1.10E-05
	41111	SR-90	Y	3	0.000	4.98E-04
	41111	UNKNOWN	W	1	1.600	1.60E+00
	41111	UNKNOWN	Y	1	2.700	2.70E+00
	41111	ZN-65	Y	6	0.199	1.99E-01
	41111	ZR-95	D	9	1.015	1.02E+00
	41111	ZR-95	W	3	0.386	3.86E-01
	41111	ZR-95	Y	7	0.155	1.55E-01
	41111	ZRNB-95	W	1	0.034	3.40E-02
	41111	ZRNB-95	Y	1	0.090	9.00E-02

*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 lists the number of individuals with measurable CEDE, the collective CEDE and the average measurable CEDE in descending order of the number with measurable CEDE. Fuel fabrication facilities have the majority of internal dose (99%) and the highest average CEDE per individual. This is due to the worker's exposure to uranium during the processing and fabrication of the uranium fuel.

Table 3.10 shows the distribution of internal dose (CEDE) from 1994 to 1997 for licensees required to report under 10 CFR 20.2206. For the purposes of this table, the definition of a 'measurable CEDE' is any reported value greater than zero. As noted above, the vast majority of the internal doses are received by individuals working at fuel fabrication facilities. The table shows that the number with measurable CEDE remained at nearly 3,000 from 1994 to 1996, and then increased to 3,739 in 1997. However, the average measurable CEDE has decreased 31% in the past four years, from 0.316 rem in 1994 to 0.217 rem in 1997.

TABLE 3.9
COLLECTIVE AND AVERAGE CEDE BY LICENSEE
1997

Licensee Type	Licensee Name	License Number	Number with Meas. CEDE	Collective CEDE (person-rem)	Average Meas. CEDE (rem)
Nuclear Pharmacies 02500	NORTHERN VIRGINIA ISOTOPES, INC.	45-25221-01MD	13	0.088	0.007
	SYNCOR INTERNATIONAL CORPORATION	04-26507-01MD	9	0.188	0.021
		Total	**22**	**0.276**	**0.013**
Manufactuing and Distribution 03211	MALLINCKRODT MEDICAL INC.	24-04206-01	5	0.070	0.014
	ADVANCED MEDICAL SYS., INC.	34-19089-01	3	0.076	0.025
		Total	**8**	**0.146**	**0.018**
Uranium Enrichment 21200	USEC - PADUCAH	GDP-1	19	0.023	0.001
	USEC - PORTSMOUTH	GDP-2	17	0.291	0.017
		Total	**36**	**0.314**	**0.009**
Fuel Fabrication 21210	GE NUCLEAR ENERGY	SNM-1097	1,062	223.255	0.210
	SIEMENS POWER CORP. NUCLEAR DIVISION	SNM-1227	396	100.826	0.255
	NUCLEAR FUEL SERVICES, INC.	SNM-0124	375	30.736	0.082
	WESTINGHOUSE ELECTRIC COMPANY	SNM-1107	286	159.151	0.556
	BWX TECHNOLOGIES, INC.	SNM-0042	241	180.063	0.747
	COMBUSTION ENGINEERING INC.	SNM-0033	165	95.562	0.579
	FRAMATOME COGEMA FUELS	SNM-1168	114	10.567	0.093
		Total	**2,639**	**800.160**	**0.303**
Reactors 41111	SUSQUEHANNA	NPF-14	208	0.322	0.002
	THREE MILE ISLAND 1	DPR-50	148	0.899	0.006
	ST. LUCIE	DPR-67	101	0.994	0.010
	TURKEY POINT	DPR-31	98	0.248	0.003
	PILGRIM	DPR-35	59	1.311	0.022
	HUMBOLDT BAY	DPR-07	43	0.275	0.006
	WOLF CREEK	NPF-42	38	0.211	0.006
	RIVER BEND	NPF-47	32	0.546	0.017
	COOK	DPR-58	30	0.231	0.008
	VOGTLE	NPF-68	30	0.435	0.015
	WASHINGTON NUCLEAR	NPF-21	25	0.316	0.013
	NINE MILE POINT	DPR-63	20	0.411	0.021
	OYSTER CREEK	DPR-16	19	0.088	0.005
	OCONEE	DPR-38	13	0.254	0.020
	CALLAWAY	NPF-30	12	0.076	0.006
	INDIAN POINT 1,2	DPR-05	12	0.470	0.039
	COOPER	DPR-46	11	0.032	0.003
	SAN ONOFRE	DPR-13	11	0.074	0.007
	SEQUOYAH	DPR-77	11	0.664	0.060
	BRUNSWICK	DPR-62	10	0.067	0.007
	HARRIS	NPF-63	10	0.083	0.008
	MONTICELLO	DPR-22	10	0.227	0.023
	MAINE YANKEE	DPR-36	9	0.042	0.005
	ARKANSAS	DPR-51	6	0.192	0.032
	CATAWBA	NPF-35	6	0.094	0.016
	DRESDEN	DPR-19	6	0.288	0.048
	HATCH	DPR-57	6	0.112	0.019
	BROWNS FERRY	DPR-33	5	0.261	0.052
	LIMERICK	NPF-39	5	0.045	0.009
	VERMONT YANKEE	DPR-28	5	0.023	0.005
	PEACH BOTTOM	DPR-44	4	0.073	0.018
	CALVERT CLIFFS	DPR-53	3	0.290	0.097
	DIABLO CANYON	DPR-80	3	0.723	0.241
	POINT BEACH	DPR-24	3	0.039	0.013
	SUMMER	NPF-12	3	0.124	0.041
	YANKEE ROWE	DPR-03	3	0.063	0.021
	BIG ROCK POINT	DPR-06	2	0.023	0.012
	FARLEY	NPF-02	2	0.035	0.018
	INDIAN POINT 3	DPR-64	2	0.031	0.016
	NORTH ANNA	NPF-04	2	0.008	0.004
	SURRY	DPR-32	2	0.006	0.003
	BEAVER VALLEY	DPR-66	1	0.022	0.022
	CLINTON	NPF-62	1	0.023	0.023
	KEWAUNEE	DPR-43	1	0.017	0.017
	LASALLE	NPF-11	1	0.029	0.029
	PALISADES	DPR-20	1	0.010	0.010
	QUAD CITIES	DPR-29	1	0.186	0.186
		Total	**1,034**	**10.993**	**0.011**
Grand Totals			**3,739**	**811.889**	**0.217**

TABLE 3.10
INTERNAL DOSE (CEDE) DISTRIBUTION, 1994 - 1997

Year	Number of Individuals with CEDE in the Ranges (rem)										Total with Meas. CEDE	Collective CEDE (person-rem)	Average Meas. CEDE (rem)
	Meas. - 0.020	0.020 - 0.100	0.100 - 0.250	0.250- 0.500	0.500 - 0.750	0.750 - 1.000	1-2	2-3	3-4	4-5			
1994	1,382	526	286	352	196	138	293	69	2	-	3,244	1,024.851	0.316
1995	1,372	464	295	315	180	112	192	18	-	-	2,948	709.012	0.241
1996	1,345	557	303	317	190	121	185	22	2	-	3,042	722.160	0.237
1997	1,711	692	381	366	241	149	169	30	-	-	3,739	811.889	0.217

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.

In 1997, Haddam Neck (a PWR) was removed from the count of operating reactors and Watts Bar Unit 1 (also a PWR) was added to the count, keeping the total count of operating reactors at 109. Three sites permanently ceased operation during 1997. These plants were kept in the count of operating reactors for 1997 even though they were not in commercial operation for the entire year. These plants are Maine Yankee (a PWR shut down 8/97), Big Rock Point (a BWR shut down 9/97) and Zion 1,2 (two PWRs shut down 12/97). Maine Yankee and Zion 2 produced no power during all of 1997 and Zion 1 generated only 12% of the unit's maximum dependable capacity. Big Rock Point is a relatively small plant, and only generated 45% of the unit's maximum dependable capacity prior to shut down. Therefore, the inclusion of these plants in the count of operating reactors for 1997 resulted in a decrease in the overall average electricity generated per reactor and an increase in the collective dose per megawatt-year for PWRs.

TABLE 4.1

SUMMARY OF INFORMATION REPORTED BY COMMERCIAL BOILING WATER REACTORS

1973 - 1997

Year	Number of Reactors Included*	Annual Collective Dose (person-rem)	No. of Workers With Measurable Dose**	Electricity Generated*** (MW-yrs)	Average Measurable Dose Per Worker (rem)**	Average Collective Dose Per Reactor (person-rem)	Average No. Personnel With Measurable Doses Per Reactor**	Average Collective Dose per MW-yr (person-rem /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%
1997	37	7,597	33,845	22,866.1	0.22	205	915	0.33	618	845	73%

* 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.
*** Electricity Generated reflects the gross electricity generated for the years 1973 - 1996. Beginning in 1997, it reflects the net electricity generated.

10/22/98

TABLE 4.2

SUMMARY OF INFORMATION REPORTED BY COMMERCIAL PRESSURIZED WATER REACTORS

1973 - 1997

Year	Number of Reactors Included*	Annual Collective Dose (person-rem)	No. of Workers With Measurable Dose**	Electricity Generated*** (MW-yrs)	Average Measurable Dose Per Worker (rem)**	Average Collective Dose Per Reactor (person-rem)	Average No. Personnel With Measurable Doses Per Reactor**	Average Collective Dose per MW-yr (person-rem /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%
1997	72	9,539	50,628	48,985.3	0.19	132	703	0.19	680	943	72%

* 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.
*** Electricity Generated reflects the gross electricity generated for the years 1973 - 1996. Beginning in 1997, it reflects the net electricity generated.

10/22/98

TABLE 4.3

SUMMARY OF INFORMATION REPORTED BY COMMERCIAL LIGHT WATER REACTORS

1973 - 1997

Year	Number of Reactors Included*	Annual Collective Dose (person-rem)	No. of Workers With Measurable Dose**	Electricity Generated*** (MW-yrs)	Average Measurable Dose Per Worker (rem)**	Average Collective Dose Per Reactor (person-rem)	Average No. Personnel With Measurable Doses Per Reactor**	Average Collective Dose per MW-yr (person-rem /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%
1997	109	17,136	84,473	71,851.4	0.20	157	775	0.24	659	910	72%

* 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.
*** Electricity Generated reflects the gross electricity generated for the years 1973 - 1996. Beginning in 1997, it reflects the net electricity generated.

10/22/98

4.2.2 Electric Energy Generated

The electric energy generated in 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 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. For the years 1973 to 1996, the electricity generated is the gross electricity output of the reactor. In 1997, the number reflects the net electricity produced which is the gross electricity minus the amount the plant uses for operations. This change is the result of a change in the NRC power generation reporting requirements. The 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 megawatt-hours of electricity produced each year was found in Reference 14.

As shown in Table 4.3, there was an 11% decrease in the electricity generated in 1997. Approximately 4% of this decrease is due to the change in reporting requirements from the gross electricity generated to the net electricity generated. The remaining 7% of the decrease is due to reductions in the power generated. Three BWR sites (Clinton, Lasalle 1 and 2, and Millstone Point 1) and four PWR sites (Crystal River, Maine Yankee, Millstone Point 2 and 3, and Zion 1 and 2) generated little or no power in 1997. Reasons for the outages at these sites included maintenance, refueling, and regulatory restrictions.

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-rem by the electric energy generated in megawatt-years and is a measure of the dose incurred by workers at power plants in relation to the electric energy produced. For the years 1973 to 1996, the electricity generated is the gross electricity output of the reactor. In 1997, the number reflects the net electricity 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. For 1997, the number dropped down to 72% due to the change from measuring the gross electricity generated to the net electricity generated, and a decrease in the electricity generated due to outages for maintenance, refueling, and regulatory restrictions (see Section 4.2.2).

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 1997. This distribution is the sum of the annual dose distributions reported by each licensed LWR each year. As previously noted, the distribution reported by each LWR site for 1997 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 9% to a value of 17,136 person-rem in 1997. The value of CR decreased to a value of 0.04. 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. CR is defined to be the ratio of the annual collective dose. CR is 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. Once 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 rem. For the years 1994 to 1997, 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 thirteenth consecutive year that the value of CR has been <0.50.

TABLE 4.4

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

1977 - 1997

Year	Number of Individuals with Whole Body Doses in the Ranges (rem)																	Total Number Monitored	Number with Measurable Exposure	Collective Dose** (person-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
1997	58,501	31,832	14,875	10,910	5,246	2,407	2,575	299	44									126,689	68,188	17,136	0.04

*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 rem to the total annual collective dose. For 1994 - 1997, CR was determined directly from individual dose records submitted under 10 CFR 20.2206.

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 1997, the average collective dose per reactor dropped by 79%. In 1997, the collective dose per reactor for PWRs increased by 1% to 132 person-rem. The collective dose per reactor for BWRs decreased by 20% to 205 person-rem in 1997. The overall collective dose per reactor for LWRs decreased by 9% to 157 person-rem in 1997. The number of workers with measurable dose per reactor decreased to 915 for BWRs but increased to 703 for PWRs in 1997. However, 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.

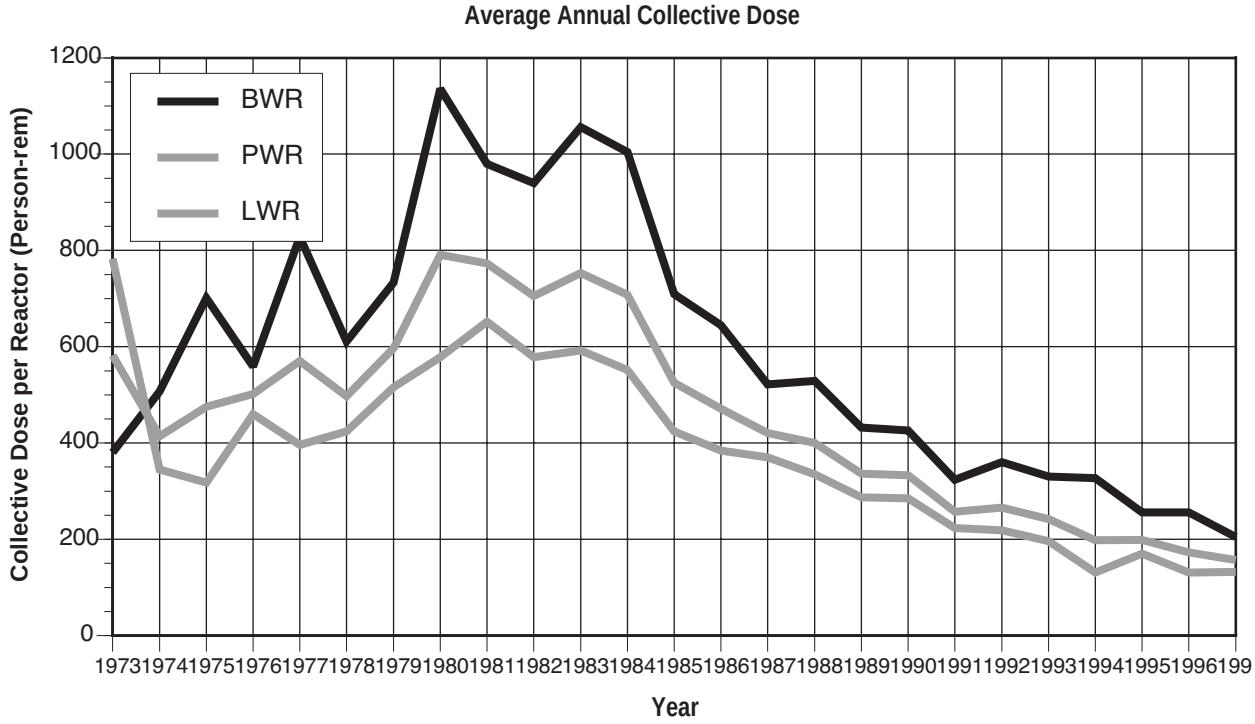
Figures 4.2 and 4.3 are plots of most of the other information that is given in Tables 4.1, 4.2, and 4.3. The value for the total collective dose for all LWRs decreased by 9% from a value of 18,874 person-rem in 1996 to 17,136 person-rem in 1997. Together with the slight increase in the number of workers with measurable dose, this resulted in the average measurable dose per worker decreasing to 0.20 rem in 1997. Figure 4.2 shows that in 1997 the net electricity generated was 71,851 megawatt-years.

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[5] values of the collective dose per reactor for BWRs and for PWRs for the years 1973 through 1997. 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

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

Figure 4.1
Average Collective Dose and Number of Workers per Reactor 1973 – 1997



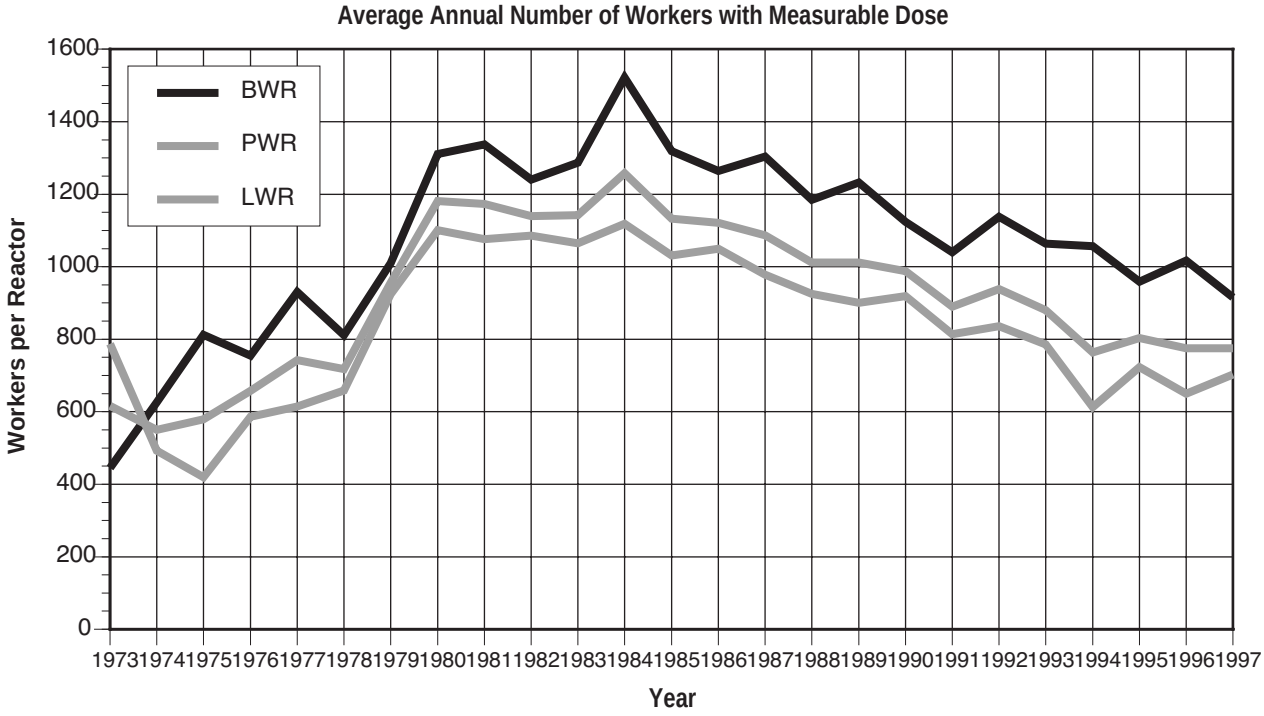
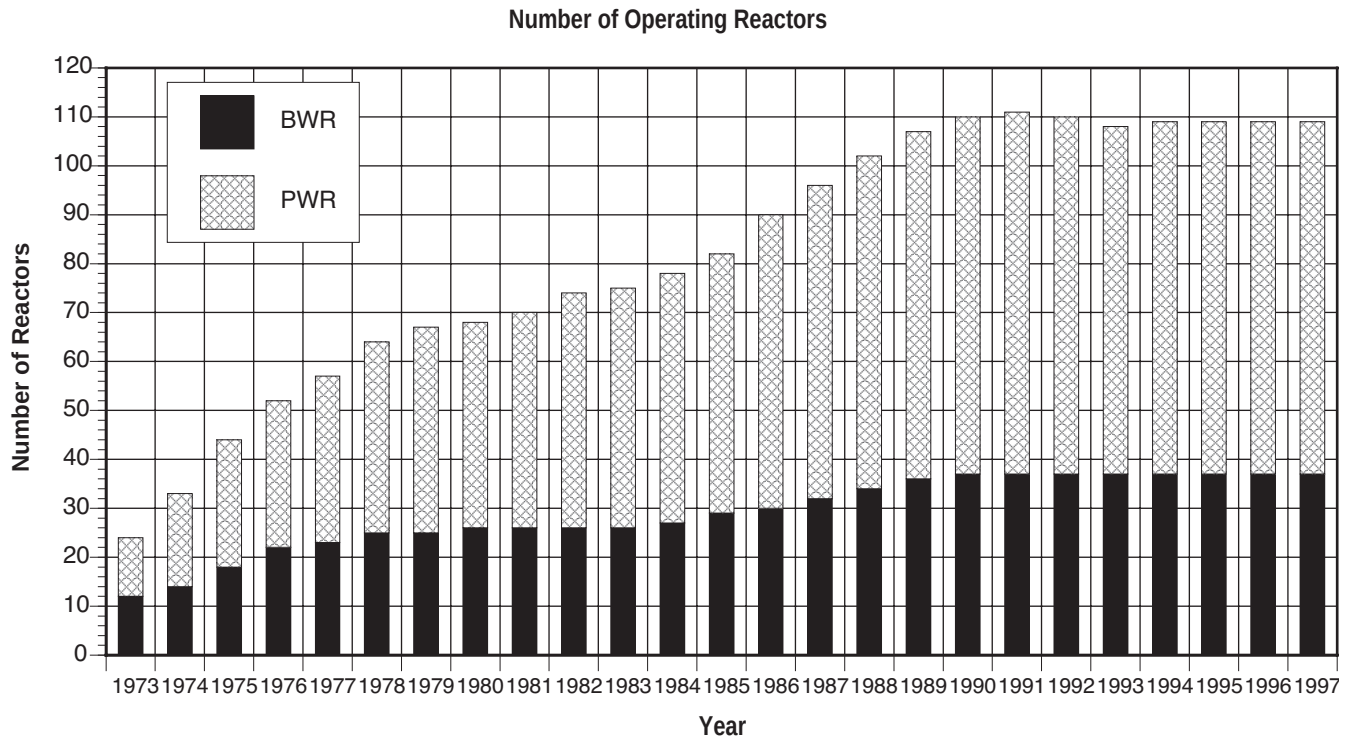
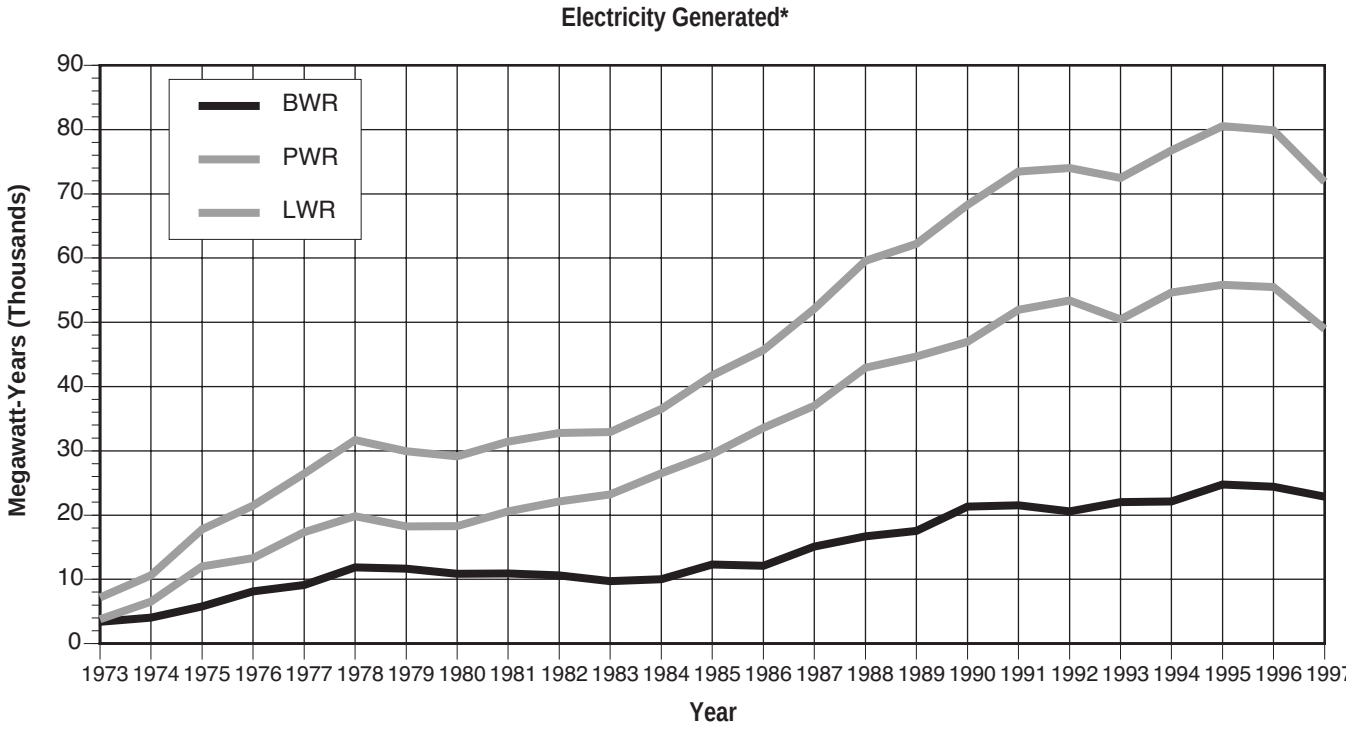


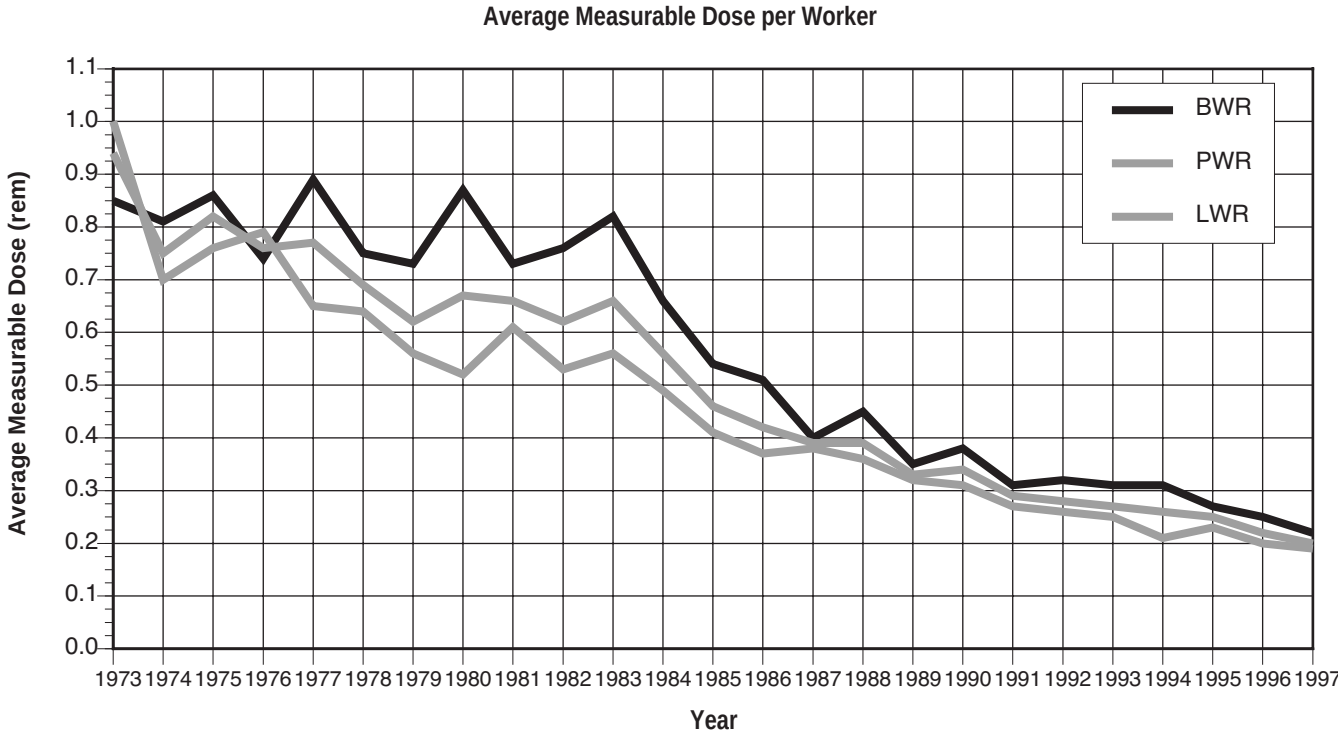
Figure 4.2
Number of Operating Reactors and Gross Electricity Generated 1973 – 1997

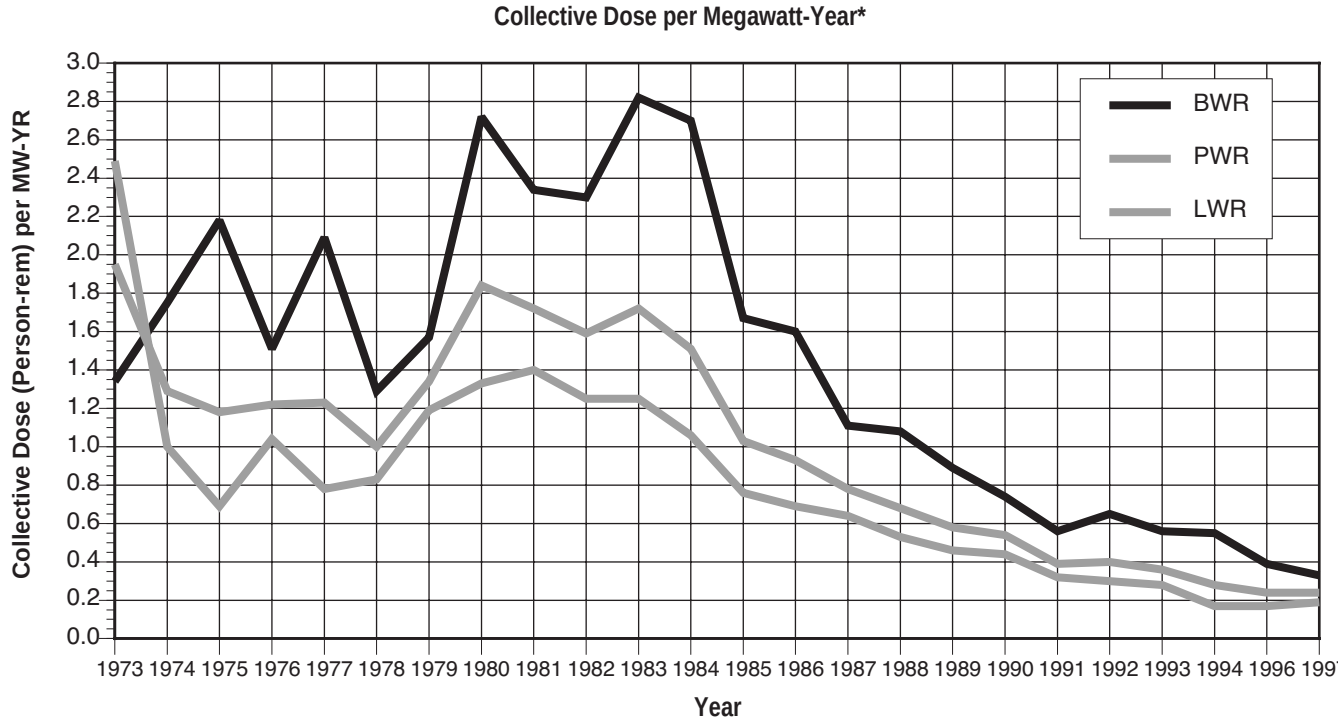




*Gross electricity 1973-1996, Net electricity for 1997.

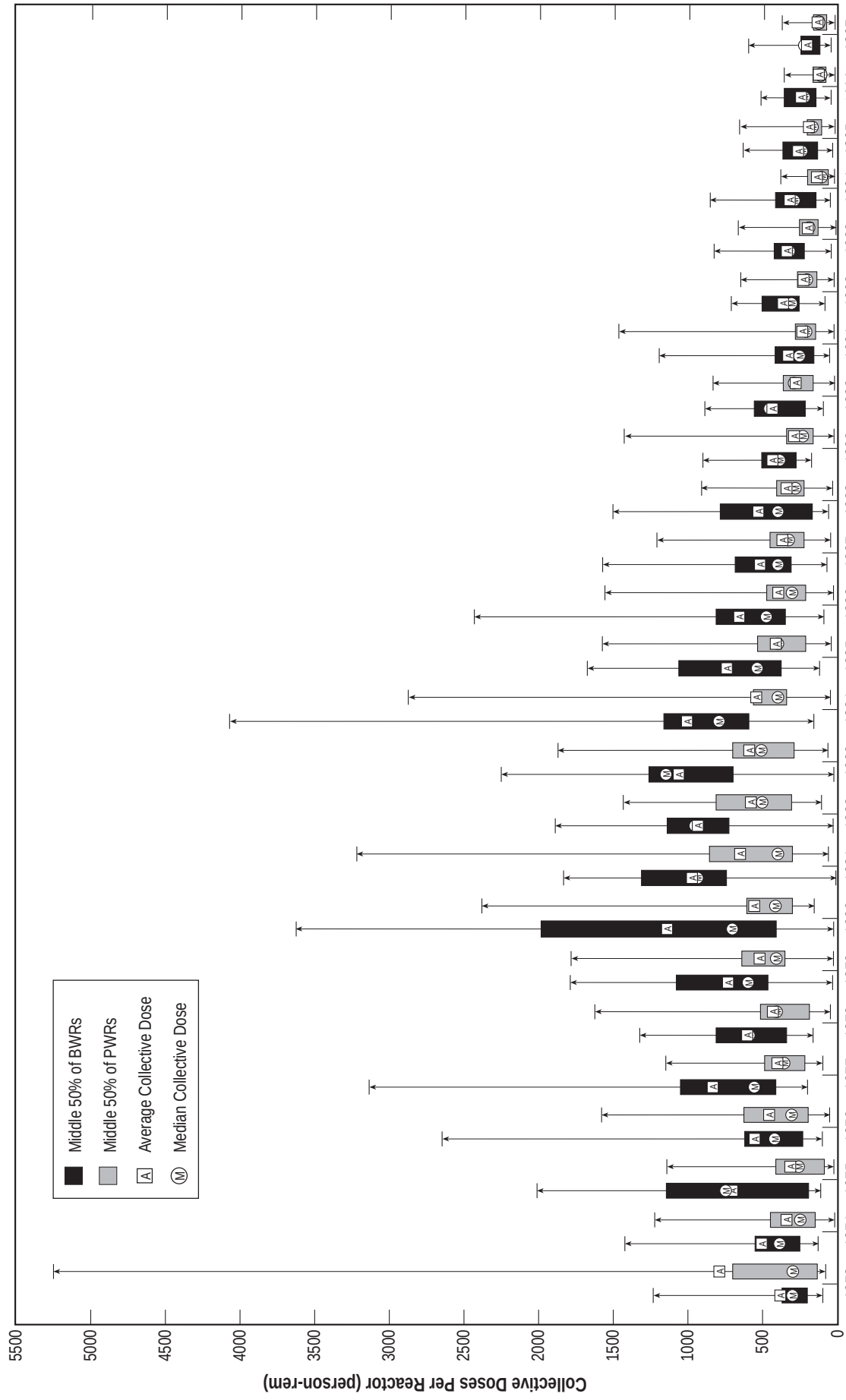
Figure 4.3
Average Measurable Dose per Worker and Collective Dose per Megawatt-Year 1973 – 1997





*Gross electricity 1973-1996, Net electricity for 1997.

Figure 4.4
Average, Median, and Extreme Values of the Collective Dose Per Reactor 1973 – 1997



experienced a slight increase from 120 person-rem in 1996 to 121 person-rem in 1997. At BWRs, the median fluctuates more from year to year, and in 1997 the median collective dose decreased to 206 person-rem. Figure 4.4 also shows that, in 1997, 50% of the PWRs reported collective doses between 74 and 163 person-rem while 50% of the BWRs reported collective doses between 117 and 245 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).

4.5 Plant Rankings by Collective Dose per Reactor

Because the number of reactors from which data have been collected is 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 1993 through 1997. The total collective dose per site is listed in the tables even though the dose per reactor was used for the 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 rem to the total annual collective dose. The value of CR has continued to decline for most plants, and in 1997, the CR for all the U.S. LWRs fell to 0.04 which is the first time that the CR has been below the 0.05 to 0.50 range recommended by the UNSCEAR [Ref. 10]. Note that for 1994 through 1997, 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).

Tables 4.7a and b list the sites that had been in commercial operation for at least 5 years as of December 31, 1997, 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 275 person-rem, the average measurable dose per worker was 0.27 rem, and the average collective dose per megawatt-year was 0.4.

Based on the 345 reactor-years of operation at the 69 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 153 person-rem, 0.22 rem, and 0.2 person-rem/MW-yr, respectively. All of these values, at both types of facilities, are lower than those found for the 5 year period ending in 1996, with the exception of the average collective dose per megawatt-year at PWRs, which remained the same.

TABLE 4.5
BOILING WATER REACTORS LISTED IN ASCENDING ORDER OF COLLECTIVE DOSE PER REACTOR***
1993 - 1997

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

1997

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
FERMI 2	49	0.08	0.1	0.00
OYSTER CREEK	50	0.10	0.1	0.00
BIG ROCK POINT	55	0.21	2.5	0.00
VERMONT YANKEE	57	0.22	0.1	0.00
DUANE ARNOLD	63	0.18	0.1	0.00
FITZPATRICK	91	0.14	0.1	0.00
GRAND GULF	105	0.20	0.1	0.12
MONTICELLO	106	0.27	0.3	0.00
LIMERICK 1,2	234	0.16	0.1	0.06
LASALLE 1,2	316	0.19	---	0.02
BROWNS FERRY 1,2,3	516	0.25	0.3	0.05
CLINTON	172	0.23	---	0.00
COOPER STATION	174	0.16	0.3	0.00
MILLSTONE POINT 1	195	0.19	---	0.02
BRUNSWICK 1,2	411	0.19	0.3	0.00
NINE MILE POINT 1,2	429	0.30	0.3	0.04
SUSQUEHANNA 1,2	433	0.26	0.2	0.10
DRESDEN 2,3	467	0.17	0.4	0.01
PEACH BOTTOM 2,3	490	0.26	0.3	0.09
WASHINGTON NUCLEAR 2	251	0.21	0.4	0.01
PERRY	272	0.18	0.3	0.00
QUAD CITIES 1,2	654	0.26	0.7	0.01
RIVER BEND 1	347	0.21	0.5	0.04
HOPE CREEK 1	350	0.20	0.5	0.00
HATCH 1,2	722	0.37	0.5	0.20
PILGRIM	588	0.36	1.2	0.06

* 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 rem to the collective dose. For '94 - '97 data, the CR value was determined from the individual Form 5 submittals.

*** All doses are in rem.

TABLE 4.6
PRESSURIZED WATER REACTORS LISTED IN ASCENDING ORDER OF COLLECTIVE DOSE PER REACTOR***
1993 - 1997

1993

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Y	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-Yr	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-Yr	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-Y	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

1997

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
DAVIS-BESSE	10	0.05	0.0	0.0
CALLAWAY 1	12	0.05	0.0	0.0
ROBINSON 2	13	0.04	0.0	0.0
FORT CALHOUN	41	0.16	0.1	0.0
POINT BEACH 1,2	92	0.14	0.5	0.0
PALISADES	48	0.14	0.1	0.0
NORTH ANNA 1,2	103	0.12	0.1	0.0
KEWAUNEE	56	0.20	0.2	0.0
ARKANSAS 1,2	119	0.10	0.1	0.0
ZION 1,2	119	0.13	1.0	0.0
COMANCHE PEAK 1,2	146	0.17	0.1	0.0
OCONEE 1,2,3	223	0.16	0.1	0.0
VOGTLE 1,2	158	0.16	0.1	0.0
GINNA	81	0.15	0.2	0.0
PALO VERDE 1,2,3	246	0.16	0.1	0.0
PRAIRIE ISLAND 1,2	174	0.23	0.2	0.0
SALEM 1,2	175	0.20	0.6	0.1
DIABLO CANYON 1,2	219	0.17	0.1	0.0
WATTS BAR 1	112	0.11	0.13	0.0
CALVERT CLIFFS 1,2	229	0.21	0.2	0.0
BYRON 1,2	241	0.16	0.1	0.0
MILLSTONE POINT 2,3	253	0.18	—	0.0
CATAWBA 1,2	268	0.17	0.1	0.0
SOUTH TEXAS 1,2	273	0.17	0.1	0.0
FARLEY 1,2	278	0.25	0.2	0.2
WATERFORD 3	148	0.13	0.2	0.0
HARRIS	149	0.13	0.2	0.0
BEAVER VALLEY 1,2	306	0.22	0.3	0.0
MAINE YANKEE	153	0.15	—	0.0
SURRY 1,2	320	0.24	0.2	0.0
BRAIDWOOD 1,2	321	0.19	0.2	0.0
SUMMER 1	163	0.20	0.2	0.0
SAN ONOFRE 2,3	341	0.21	0.2	0.0
CRYSTAL RIVER 3	179	0.18	—	0.0
SEABROOK	186	0.12	0.2	0.0
THREE MILE ISLAND 1	204	0.19	0.3	0.0
SEQUOYAH 1,2	414	0.21	0.2	0.0
TURKEY POINT 3,4	414	0.26	0.3	0.1
INDIAN POINT 3	234	0.15	0.5	0.0
MCGUIRE 1,2	492	0.22	0.3	0.1
WOLF CREEK 1	265	0.27	0.3	0.0
COOK 1,2	550	0.30	0.5	0.1
ST. LUCIE 1,2	646	0.28	0.5	0.1
INDIAN POINT 2	367	0.27	1.0	0.0

* 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 rem to the collective dose. For '94 - '97 data, the CR value was determined from the individual Form 5 submittals.

*** All doses are in rem.

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

1993 - 1997

Site Name*	Number of Reactor Years	Annual Collective Dose per Reactor	Total Coll. Dose per Site (rem)	Workers with Meas. Doses	Avg. Meas. Dose (rem)	Total MW-yrs	Average Collective Dose per MW-yr
FERMI 2	5	96	482	3,905	0.12	2,815.5	0.2
BIG ROCK POINT	5	118	588	1,539	0.38	229.1	2.6
LIMERICK 1,2	10	122	1,220	7,528	0.16	9,837.1	0.1
VERMONT YANKEE	5	145	725	3,001	0.24	2,318.8	0.3
COOPER STATION	5	184	920	4,151	0.22	2,547.6	0.4
SUSQUEHANNA 1,2	10	198	1,975	7,917	0.25	9,179.4	0.2
BROWNS FERRY 1,2,3	15	202	3,034	13,274	0.23	6,597.3	0.5
HOPE CREEK 1	5	226	1,128	6,854	0.16	4,282.2	0.3
NINE MILE POINT 1,2	10	226	2,260	8,477	0.27	7,267.8	0.3
PEACH BOTTOM 2,3	10	230	2,301	9,359	0.25	9,500.5	0.2
GRAND GULF	5	238	1,192	5,929	0.20	5,360.6	0.2
DUANE ARNOLD	5	243	1,217	4,110	0.30	2,294.4	0.5
MONTICELLO	5	256	1,279	3,098	0.41	2,371.8	0.5
FITZPATRICK	5	266	1,329	6,317	0.21	3,095.6	0.4
CLINTON	5	280	1,399	4,780	0.29	2,948.8	0.5
HATCH 1,2	10	318	3,184	8,874	0.36	6,745.0	0.5
RIVER BEND 1	5	321	1,604	7,487	0.21	3,815.4	0.4
PERRY	5	322	1,612	7,066	0.23	3,944.7	0.4
LASALLE 1,2	10	323	3,227	9,579	0.34	5,869.5	0.5
MILLSTONE POINT 1	5	344	1,718	4,336	0.40	1,539.6	1.1
PILGRIM	5	364	1,821	5,552	0.33	2,620.7	0.7
BRUNSWICK 1,2	10	368	3,681	13,623	0.27	5,881.7	0.6
OYSTER CREEK	5	370	1,849	8,045	0.23	2,691.7	0.7
DRESDEN 2,3	10	429	4,286	12,104	0.35	4,000.5	1.1
QUAD CITIES 1,2	10	439	4,392	11,076	0.40	4,468.4	1.0
WASHINGTON NUCLEAR 2	5	483	2,415	7,622	0.32	3,836.2	0.6
Grand Totals and Averages	185		50,838	185,603	0.27	116,059.9	0.4
Averages Per Reactor-Year			275	1,003		627.4	

* Sites where not all reactors had completed 5 full years of commercial operation as of 12/31/97 are not included.

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

1993 - 1997

Site Name*	Number of Reactor Years	Annual Collective Dose per Reactor	Total Coll. Dose per Site (rem)	Workers with Meas. Doses	Avg. Meas. Dose (rem)	Total MW-yrs	Average Collective Dose per MW-yr
PRAIRIE ISLAND 1,2	10	61	608	2,820	0.22	4,805.4	0.1
SEABROOK	5	83	417	3,539	0.12	4,875.8	0.1
INDIAN POINT 3	5	88	441	3,542	0.12	1,503.8	0.3
POINT BEACH 1,2	10	91	914	3,354	0.27	3,700.0	0.2
KEWAUNEE	5	94	469	1,967	0.24	2,037.5	0.2
SOUTH TEXAS 1,2	10	100	999	6,012	0.17	8,882.1	0.1
OCONEE 1,2,3	15	104	1,558	7,866	0.20	10,316.1	0.2
WATERFORD 3	5	107	534	3,982	0.13	4,793.9	0.1
ARKANSAS 1,2	10	115	1,148	8,237	0.14	7,879.3	0.1
FORT CALHOUN	5	117	586	2,549	0.23	2,075.1	0.3
HARRIS	5	119	593	4,059	0.15	3,916.8	0.2
SALEM 1,2	10	129	1,289	8,269	0.16	3,571.1	0.4
DAVIS-BESSE	5	135	676	3,523	0.19	4,012.0	0.2
THREE MILE ISLAND 1	5	136	679	4,805	0.14	3,824.4	0.2
CALLAWAY 1	5	137	686	3,607	0.19	5,274.2	0.1
PALO VERDE 1,2,3	15	139	2,084	9,349	0.22	15,612.3	0.1
VOGTLE 1,2	10	139	1,393	5,728	0.24	10,688.2	0.1
GINNA	5	143	716	3,782	0.19	2,053.5	0.3
BRAIDWOOD 1,2	10	146	1,462	6,463	0.23	9,193.2	0.2
COOK 1,2	10	149	1,490	6,623	0.22	7,812.2	0.2
MILLSTONE POINT 2,3	10	154	1,540	7,423	0.21	4,767.5	0.3
DIABLO CANYON 1,2	10	155	1,552	8,233	0.19	9,738.3	0.2
CALVERT CLIFFS 1,2	10	156	1,562	6,405	0.24	7,281.2	0.2
FARLEY 1,2	10	156	1,556	6,155	0.25	7,348.6	0.2
TURKEY POINT 3,4	10	157	1,567	6,640	0.24	6,263.2	0.3
ROBINSON 2	5	159	795	4,034	0.20	3,042.2	0.3
CATAWBA 1,2	10	163	1,633	7,873	0.21	9,915.4	0.2
CRYSTAL RIVER 3	5	166	828	4,136	0.20	2,590.7	0.3
SEQUOYAH 1,2	10	170	1,701	8,240	0.21	7,638.6	0.2
SURRY 1,2	10	170	1,696	7,133	0.24	6,875.9	0.2
BYRON 1,2	10	171	1,714	6,595	0.26	9,249.8	0.2
SAN ONOFRE 2,3	10	172	1,724	7,559	0.23	9,296.4	0.2
MCGUIRE 1,2	10	173	1,728	8,396	0.21	8,885.6	0.2
WOLF CREEK 1	5	174	868	4,274	0.20	5,097.9	0.2
NORTH ANNA 1,2	10	186	1,862	7,414	0.25	8,088.7	0.2
BEAVER VALLEY 1,2	10	187	1,873	7,189	0.26	6,486.6	0.3
SUMMER 1	5	189	944	4,448	0.21	3,842.6	0.2
ZION 1,2	10	230	2,302	7,246	0.32	5,812.1	0.4
PALISADES	5	235	1,177	3,982	0.30	2,848.6	0.4
ST. LUCIE 1,2	10	244	2,441	8,603	0.28	6,823.0	0.4
MAINE YANKEE	5	265	1,323	3,879	0.34	2,082.5	0.6
INDIAN POINT 2	5	338	1,692	5,313	0.32	3,474.1	0.5
Grand Totals and Averages	345		52,820	241,246	0.22	254,276.4	0.2
Averages Per Reactor-Year			153	699		737.0	

* Sites where not all reactors had completed 5 full years of commercial operation as of 12/31/97 are not included. San Onofre is included in the compilation even though Unit 1 is no longer in operation.

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.

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.

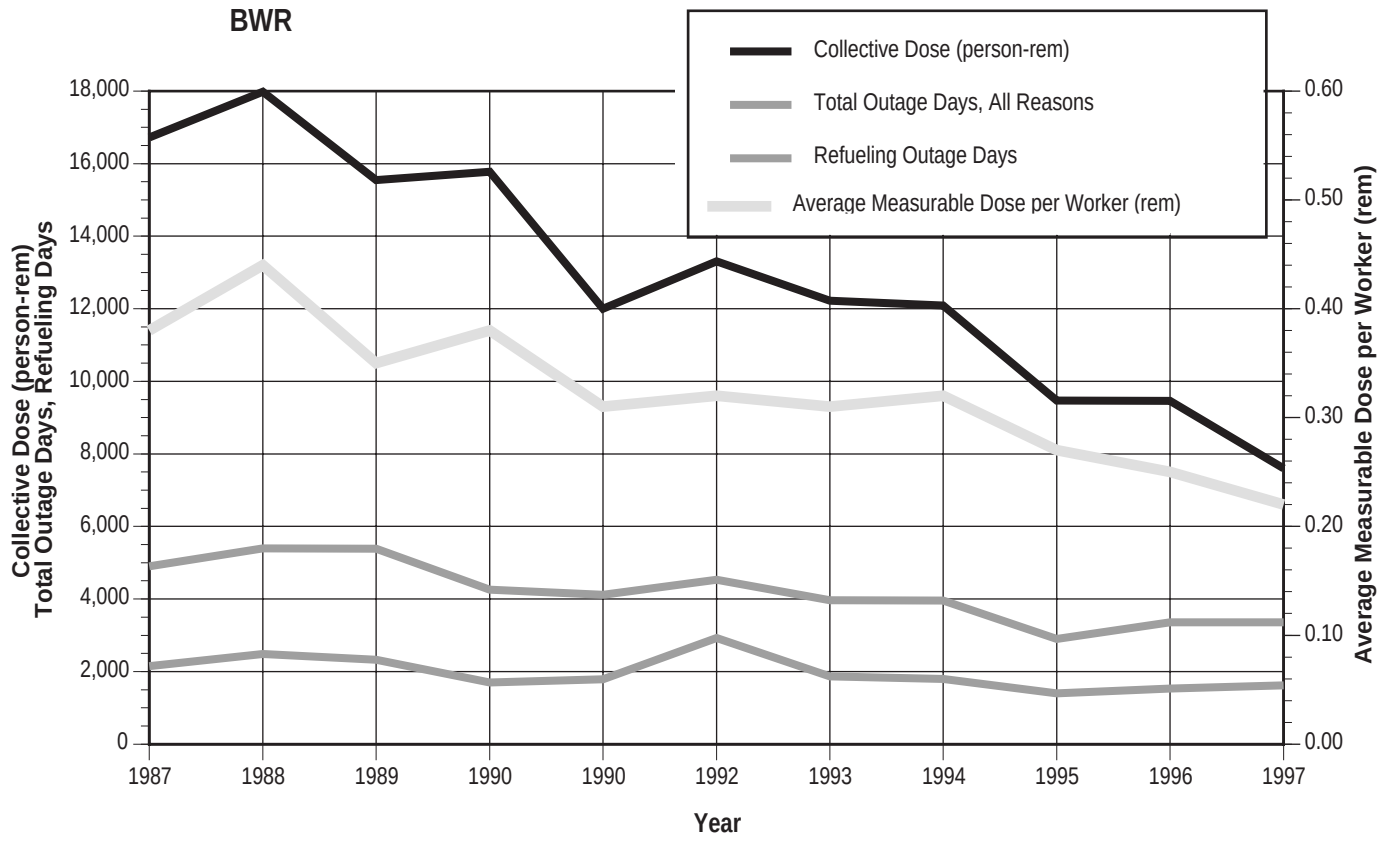
4.6 Collective Dose by Work Function and Employee Type

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 4.8 through 4.13 summarize the 1997 data for BWRs, PWRs, and LWRs. Table 4.8 shows that, at both BWRs and PWRs, about 67% 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 4.9 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 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

Figure 4.5
Outage Days, Average Dose, and Collective Dose



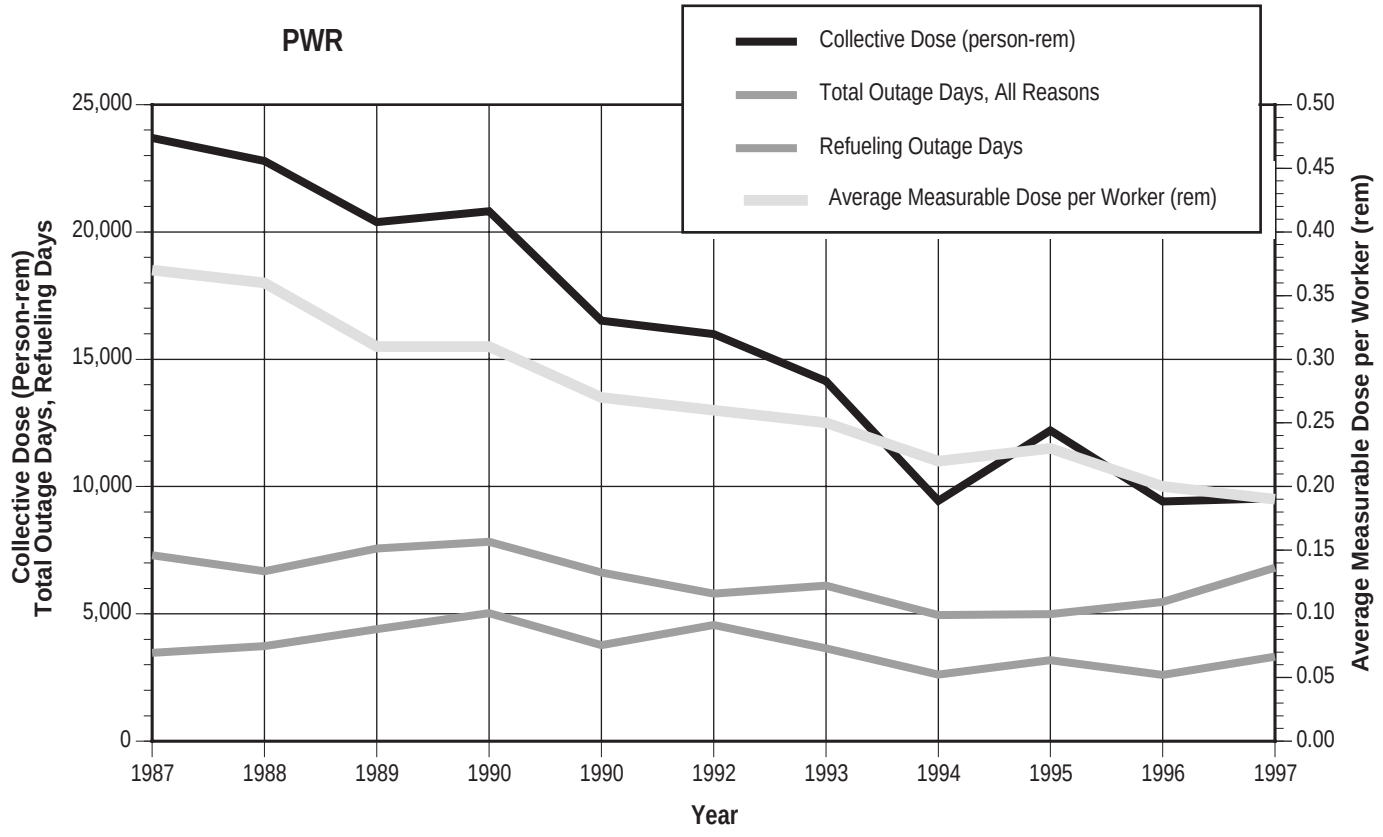


TABLE 4.8

ANNUAL COLLECTIVE DOSE

BY WORK FUNCTION AND PERSONNEL TYPE

1997

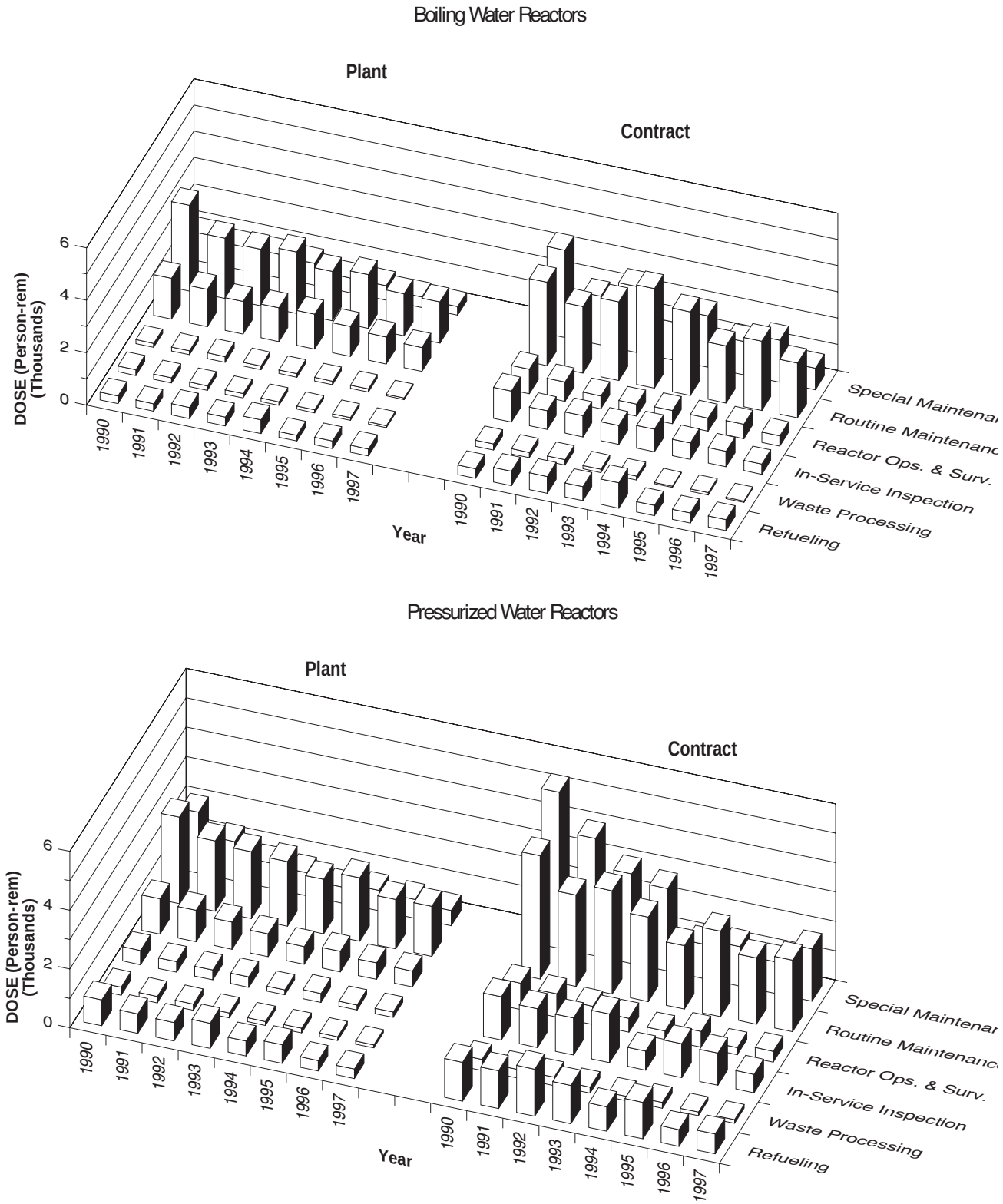
WORK AND JOB FUNCTION	STATION EMPLOYEES PERSON-REM	% OF TOTAL	UTILITY EMPLOYEES PERSON-REM	% OF TOTAL	CONTRACT WORKERS PERSON-REM	% OF TOTAL	TOTAL PER WORK FUNCTION PERSON-REM	% OF TOTAL
BOILING WATER REACTORS								
REACTOR OPS & SURV	835	11.3%	79	1.1%	394	5.3%	1,308	17.7%
ROUTINE MAINTENANCE	1,470	19.9%	106	1.4%	2,094	28.3%	3,671	49.6%
IN-SERVICE INSPECTION	54	0.7%	8	0.1%	392	5.3%	454	6.1%
SPECIAL MAINTENANCE	265	3.6%	62	0.8%	820	11.1%	1,148	15.5%
WASTE PROCESSING	76	1.0%	5	0.1%	52	0.7%	133	1.8%
REFUELING	161	2.2%	105	1.4%	417	5.6%	682	9.2%
TOTAL	2,861	38.7%	365	4.9%	4,170	56.4%	7,396	100.0%
PRESSURIZED WATER REACTORS								
REACTOR OPS & SURV	513	5.5%	23	0.2%	374	4.0%	909	9.8%
ROUTINE MAINTENANCE	1,377	14.8%	296	3.2%	2,407	25.9%	4,080	43.9%
IN-SERVICE INSPECTION	83	0.9%	100	1.1%	626	6.7%	808	8.7%
SPECIAL MAINTENANCE	367	4.0%	152	1.6%	1,749	18.8%	2,268	24.4%
WASTE PROCESSING	104	1.1%	3	0.0%	123	1.3%	229	2.5%
REFUELING	280	3.0%	42	0.5%	671	7.2%	994	10.7%
TOTAL	2,723	29.3%	616	6.6%	5,950	64.1%	9,289	100.0%
ALL LIGHT WATER REACTORS								
REACTOR OPS & SURV	1,348	8.1%	102	0.6%	768	4.6%	2,217	13.3%
ROUTINE MAINTENANCE	2,847	17.1%	402	2.4%	4,502	27.0%	7,751	46.5%
IN-SERVICE INSPECTION	136	0.8%	108	0.6%	1,018	6.1%	1,262	7.6%
SPECIAL MAINTENANCE	632	3.8%	214	1.3%	2,569	15.4%	3,416	20.5%
WASTE PROCESSING	180	1.1%	8	0.0%	175	1.0%	363	2.2%
REFUELING	441	2.6%	147	0.9%	1,088	6.5%	1,676	10.0%
TOTAL	5,585	33.5%	981	5.9%	10,119	60.7%	16,685	100.0%

TABLE 4.9

PERCENTAGES OF ANNUAL COLLECTIVE
DOSE AT LWRs BY WORK FUNCTION
1986 - 1997

WORK FUNCTION	PERCENTAGE OF COLLECTIVE DOSE EACH YEAR											
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
REACTOR OPERATIONS AND SURVEILLANCE	12.8%	11.9%	11.0%	12.2%	12.3%	14.0%	11.6%	11.2%	12.8%	13.5%	13.0%	13.3%
ROUTINE MAINTENANCE	33.2%	35.0%	37.7%	36.2%	36.5%	36.1%	38.7%	42.0%	42.7%	43.5%	44.6%	46.5%
IN-SERVICE INSPECTION	8.3%	8.0%	8.7%	9.5%	8.8%	8.9%	9.2%	10.8%	8.5%	10.4%	10.8%	7.6%
SPECIAL MAINTENANCE	35.5%	33.2%	30.1%	31.3%	31.6%	28.2%	25.8%	22.0%	19.9%	18.5%	20.3%	20.5%
WASTE PROCESSING	4.0%	3.9%	3.6%	3.4%	3.0%	3.1%	3.1%	2.5%	2.7%	2.4%	2.4%	2.2%
REFUELING	6.2%	8.1%	8.8%	7.3%	7.7%	9.7%	11.5%	11.4%	13.3%	11.7%	8.7%	10.0%

Figure 4.6
Collective Dose by Work Function and Personnel Type 1990 – 1997



dose by work function and type of personnel for the years 1990 through 1997 for BWRs and PWRs separately. The general decrease in collective dose is also apparent among most of these activities.

Table 4.10 presents the distribution of the collective dose for 1997 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 1996. The collective doses shown in Tables 4.8 and 4.10 do not equal those shown in other tables in the report because they are the sum of the doses taken from the type of annual reports shown in Appendix D rather than the collective dose that was 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.

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

TABLE 4.10
ANNUAL COLLECTIVE DOSE
BY OCCUPATION AND PERSONNEL TYPE
1997

OCCUPATION	STATION EMPLOYEES PERSON-REM	% OF TOTAL	UTILITY EMPLOYEES PERSON-REM	% OF TOTAL	CONTRACT WORKERS PERSON-REM	% OF TOTAL	TOTAL PER WORK FUNCTION PERSON-REM	% OF TOTAL
BOILING WATER REACTORS								
MAINTENANCE	1,523	20.6%	279	3.8%	3,102	41.9%	4,904	66.3%
OPERATIONS	589	8.0%	30	0.4%	251	3.4%	870	11.8%
HEALTH PHYSICS	453	6.1%	20	0.3%	299	4.0%	772	10.4%
SUPERVISORY	159	2.1%	8	0.1%	65	0.9%	232	3.1%
ENGINEERING	138	1.9%	29	0.4%	453	6.1%	619	8.4%
TOTAL	2,861	38.7%	365	4.9%	4,170	56.4%	7,396	100.0%
PRESSURIZED WATER REACTORS								
MAINTENANCE	1,381	14.9%	519	5.6%	3,999	43.0%	5,899	63.5%
OPERATIONS	515	5.5%	27	0.3%	270	2.9%	812	8.7%
HEALTH PHYSICS	512	5.5%	16	0.2%	771	8.3%	1,299	14.0%
SUPERVISORY	171	1.8%	14	0.2%	346	3.7%	531	5.7%
ENGINEERING	144	1.6%	39	0.4%	564	6.1%	747	8.0%
TOTAL	2,723	29.3%	616	6.6%	5,950	64.1%	9,289	100.0%
ALL LIGHT WATER REACTORS								
MAINTENANCE	2,904	17.4%	798	4.8%	7,101	42.6%	10,803	64.7%
OPERATIONS	1,104	6.6%	57	0.3%	521	3.1%	1,682	10.1%
HEALTH PHYSICS	965	5.8%	36	0.2%	1,070	6.4%	2,071	12.4%
SUPERVISORY	330	2.0%	22	0.1%	411	2.5%	763	4.6%
ENGINEERING	282	1.7%	67	0.4%	1,017	6.1%	1,366	8.2%
TOTAL	5,585	33.5%	981	5.9%	10,119	60.7%	16,685	100.0%

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 4.11 and 4.12 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 51% of the personnel performed routine or special maintenance functions, 28% were involved with reactor operations and surveillance, and the remaining 21% were divided among the other three work functions.

Table 4.12 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 health physics personnel for 1997. Health physics personnel at PWRs received about twice the percentage of the collective dose than for BWRs. Overall, 54% of the personnel were contractors, 38% were station employees, and 8% were utility employees in 1997.

Table 4.13 presents the average annual dose incurred by workers in the five occupational categories in 1997. 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 4.12. It shows that, in most instances, the maintenance personnel incur the highest average doses. Examination of the values of the averages given in Table 4.13 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 4.13; (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 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 4.11

NUMBER OF PERSONNEL*

BY WORK FUNCTION AND PERSONNEL TYPE

1997

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	6,452	12.9%	1,337	2.7%	4,927	9.9%	12,716	25.5%
ROUTINE MAINTENANCE	7,092	14.2%	1,585	3.2%	12,827	25.7%	21,504	43.0%
IN-SERVICE INSPECTION	637	1.3%	125	0.3%	2,123	4.2%	2,885	5.8%
SPECIAL MAINTENANCE	1,839	3.7%	486	1.0%	3,916	7.8%	6,241	12.5%
WASTE PROCESSING	1,034	2.1%	144	0.3%	926	1.9%	2,104	4.2%
REFUELING	1,407	2.8%	720	1.4%	2,384	4.8%	4,511	9.0%
TOTAL	18,461	37.0%	4,397	8.8%	27,103	54.2%	49,961	100.0%
PRESSURIZED WATER REACTORS								
REACTOR OPS & SURV	13,225	17.5%	2,244	3.0%	7,168	9.5%	22,637	29.9%
ROUTINE MAINTENANCE	8,792	11.6%	2,667	3.5%	12,984	17.2%	24,443	32.3%
IN-SERVICE INSPECTION	932	1.2%	798	1.1%	3,947	5.2%	5,677	7.5%
SPECIAL MAINTENANCE	2,820	3.7%	1,080	1.4%	8,458	11.2%	12,358	16.3%
WASTE PROCESSING	1,283	1.7%	96	0.1%	2,946	3.9%	4,325	5.7%
REFUELING	1,965	2.6%	473	0.6%	3,829	5.1%	6,267	8.3%
TOTAL	29,017	38.3%	7,358	9.7%	39,332	52.0%	75,707	100.0%
ALL LIGHT WATER REACTORS								
REACTOR OPS & SURV	19,677	15.7%	3,581	2.8%	12,095	9.6%	35,353	28.1%
ROUTINE MAINTENANCE	15,884	12.6%	4,252	3.4%	25,811	20.5%	45,947	36.6%
IN-SERVICE INSPECTION	1,569	1.2%	923	0.7%	6,070	4.8%	8,562	6.8%
SPECIAL MAINTENANCE	4,659	3.7%	1,566	1.2%	12,374	9.8%	18,599	14.8%
WASTE PROCESSING	2,317	1.8%	240	0.2%	3,872	3.1%	6,429	5.1%
REFUELING	3,372	2.7%	1,193	0.9%	6,213	4.9%	10,778	8.6%
TOTAL	47,478	37.8%	11,755	9.4%	66,435	52.9%	125,668	100.0%

* Workers may be counted in more than one category. The number of personnel in Table 4.11 should be considered to be more accurate than the number of personnel in Table 4.10, 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 4.12

NUMBER OF PERSONNEL*

BY OCCUPATION AND PERSONNEL TYPE

1997

OCCUPATION	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								
MAINTENANCE	6,664	14.0%	2,073	4.3%	17,588	36.9%	26,325	55.2%
OPERATIONS	3,800	8.0%	412	0.9%	1,765	3.7%	5,977	12.5%
HEALTH PHYSICS	2,312	4.8%	722	1.5%	1,702	3.6%	4,736	9.9%
SUPERVISORY	2,164	4.5%	154	0.3%	1,534	3.2%	3,852	8.1%
ENGINEERING	2,455	5.1%	696	1.5%	3,664	7.7%	6,815	14.3%
TOTAL	17,395	36.5%	4,057	8.5%	26,253	55.0%	47,705	100.0%
PRESSURIZED WATER REACTORS								
MAINTENANCE	10,154	15.1%	2,842	4.2%	21,040	31.3%	34,036	50.7%
OPERATIONS	7,144	10.6%	911	1.4%	2,405	3.6%	10,460	15.6%
HEALTH PHYSICS	5,258	7.8%	501	0.7%	6,869	10.2%	12,628	18.8%
SUPERVISORY	1,688	2.5%	304	0.5%	1,651	2.5%	3,643	5.4%
ENGINEERING	1,854	2.8%	999	1.5%	3,523	5.2%	6,376	9.5%
TOTAL	26,098	38.9%	5,557	8.3%	35,488	52.9%	67,143	100.0%
ALL LIGHT WATER REACTORS								
MAINTENANCE	16,818	14.6%	4,915	4.3%	38,628	33.6%	60,361	52.6%
OPERATIONS	10,944	9.5%	1,323	1.2%	4,170	3.6%	16,437	14.3%
HEALTH PHYSICS	7,570	6.6%	1,223	1.1%	8,571	7.5%	17,364	15.1%
SUPERVISORY	3,852	3.4%	458	0.4%	3,185	2.8%	7,495	6.5%
ENGINEERING	4,309	3.8%	1,695	1.5%	7,187	6.3%	13,191	11.5%
TOTAL	43,493	37.9%	9,614	8.4%	61,741	53.8%	114,848	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 4.10 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 4.13
AVERAGE DOSES BY OCCUPATION AND PERSONNEL TYPE*
1997

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	1,523	6,664	0.23	279	2,073	0.13	3,102	17,588	0.18	4,904	26,325	0.19
OPERATIONS	589	3,800	0.15	30	412	0.07	251	1,765	0.14	870	5,977	0.15
HEALTH PHYSICS	453	2,312	0.20	20	722	0.03	299	1,702	0.18	772	4,736	0.16
SUPERVISORY	159	2,164	0.07	8	154	0.05	65	1,534	0.04	232	3,852	0.06
ENGINEERING	138	2,455	0.06	29	696	0.04	453	3,664	0.12	619	6,815	0.09
TOTAL	2,861	17,395	0.16	365	4,057	0.09	4,170	26,253	0.16	7,396	47,705	0.16
PRESSURIZED WATER REACTORS												
MAINTENANCE	1,381	10,154	0.14	519	2,842	0.18	3,999	21,040	0.19	5,899	34,036	0.17
OPERATIONS	515	7,144	0.07	27	911	0.03	270	2,405	0.11	812	10,460	0.08
HEALTH PHYSICS	512	5,258	0.10	16	501	0.03	771	6,869	0.11	1,299	12,628	0.10
SUPERVISORY	171	1,688	0.10	14	304	0.05	346	1,651	0.21	531	3,643	0.15
ENGINEERING	144	1,854	0.08	39	999	0.04	564	3,523	0.16	747	6,376	0.12
TOTAL	2,723	26,098	0.10	616	5,557	0.11	5,950	35,488	0.17	9,289	67,143	0.14
ALL LIGHT WATER REACTORS												
MAINTENANCE	2,904	16,818	0.17	798	4,915	0.16	7,101	38,628	0.18	10,803	60,361	0.18
OPERATIONS	1,104	10,944	0.10	57	1,323	0.04	521	4,170	0.12	1,682	16,437	0.10
HEALTH PHYSICS	965	7,570	0.13	36	1,223	0.03	1,070	8,571	0.12	2,071	17,364	0.12
SUPERVISORY	330	3,852	0.09	22	458	0.05	411	3,185	0.13	763	7,495	0.10
ENGINEERING	282	4,309	0.07	67	1,695	0.04	1,017	7,187	0.14	1,366	13,191	0.10
TOTAL	5,585	43,493	0.13	981	9,614	0.10	10,119	61,741	0.16	16,685	114,848	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 1997, and the other indicates the collective dose by job function for 1978 through 1997. The dose and performance indicators shown in the top graph illustrate the history of the collective dose per reactor for the site, the rolling 3-year average collective dose per reactor, and the electricity generated at the site. These data are plotted, beginning with the plant's first full year of commercial operation, and continuing through 1997. Data for years when the plant was not in commercial operation have been included when available. 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. 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. The annual average collective dose per reactor for all reactors of the same type is also shown on the graph.

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 1997. 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.

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

1997

License Category	Number of Individuals with TEDE in the Ranges (rem)											Total Number Monitored	Number with Measurable Exposure	Collective TEDE (person-rem)	Average TEDE (rem)	Average Meas. TEDE (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	80,163	41,759	19,951	13,396	5,394	2,240	1,671	59	3			164,636	84,473	17,136	0.10	0.20
TRANSIENTS - AS REPORTED	30,558	17,143	9,355	6,492	2,525	1,167	900	74	27			68,241	37,683	8,484	0.12	0.23
TRANSIENTS- ACTUAL ③	8,896	7,216	4,279	4,006	2,377	1,334	1,804	314	68			30,294	21,398	8,484	0.28	0.40
CORRECTED DISTRIBUTION (1-(2-3))	**58,501**	**31,832**	**14,875**	**10,910**	**5,246**	**2,407**	**2,575**	**299**	**44**			**126,689**	**68,188**	**17,136**	**0.14**	**0.25**
ALL LICENSEES																
FORM 5 SUMMATION ①	89,101	44,983	21,187	14,332	5,932	2,606	2,241	226	63	6		180,677	91,576	19,841	0.11	0.22
TRANSIENTS - AS REPORTED	40,265	20,837	10,506	7,015	2,727	1,105	795	24	2			83,276	43,011	8,722	0.10	0.20
TRANSIENTS- ACTUAL ③	9,237	7,322	4,338	4,101	2,439	1,364	1,867	325	71	1		31,065	21,828	8,722	0.28	0.40
CORRECTED DISTRIBUTION (1-(2-3))	**58,073**	**31,468**	**15,019**	**11,418**	**5,644**	**2,865**	**3,313**	**527**	**132**	**7**		**128,466**	**70,393**	**19,841**	**0.15**	**0.26**

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 account for only 2% of the transient workforce.

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 represents how 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 1997. 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 1997, Table 5.1 shows that the summation of annual reports for reactor licensees indicated that 62 individuals received doses greater than 2 rem. After accounting for those individuals who were reported more than once, the corrected distribution indicated that there were really 343 workers who received doses greater than 2 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 31% of the workforce that receives measurable dose and increases the average measurable dose for all licensees by 18% from 0.22 rem to 0.26 rem. It should be noted that this analysis of transient workers does not include workers who may have been exposed at facilities that are not required to report to the NRC REIRS database (see Section 1), Agreement State licensees, or Department of Energy facilities.

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 rem per year regulatory limit would be identified in Table 5.1 in one of the dose ranges >5 rem. In 1997, 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 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 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 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 of 25 rem or more; an eye dose equivalent of 75 rem or more; or a shallow-dose equivalent to the skin or extremities of 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 of 5 rem or more; an eye dose equivalent of 15 rem or more; or a shallow-dose equivalent to the skin or extremities of 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 or Department of Energy facilities
- 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 1997. 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 1997, two workers received doses that exceeded the regulatory limit for extremity dose. There were no occurrences where an individual exceeded the regulatory limit for TEDE. One of the exposures in excess of the extremity limit was a "Category A" occurrence, and was reported immediately to the NRC upon discovery as required. There were no occurrences in which individuals received a "Category B" exposure.

The largest of the extremity exposures in excess of the regulatory limit occurred in May of 1997. A “Type A” Broad radiopharmaceutical licensee reported that an employee went home without properly frisking himself for radioactive contamination. When he returned to work the next day, he performed a contamination survey of himself and detected significant levels of contamination on his left thumb. The isotope was determined to be Re-186. The licensee believes that the employee became contaminated while handling contaminated materials with a faulty glove. The licensee reported that the individual received a shallow dose of 534 rem to the palm side of the thumb. This dose is based on the licensee’s measurement and calculation of 4.3 uCi. Lower levels of contamination were found on the back of his right hand and fingers. The root cause was attributed to a failure to follow procedure.

The second extremity exposure in excess of the regulatory limit was reported by a reactor license and occurred in October of 1997. The reactor licensee reported an extremity dose of 51.090 rem from a hot particle. The report stated that the dose was received from licensed activities off-site. The NRC is following up on this report to determine the nature of this exposure occurrence.

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.

As can be seen from Table 6.3, few exposures exceed half of the NRC occupational annual limits. The only doses to come within 5% of the limit were the two extremity exposures that exceeded the limit.

TABLE 6.1
OCCUPATIONAL EXPOSURES IN EXCESS OF REGULATORY LIMITS
1994 - 1997

YEAR	LICENSE CATEGORY	PERSONS AND DOSES (REM)	TYPES OF EXPOSURES AND DOSES								
			TEDE (rem)			Lens of the Eye (rem)			Skin/Extremity (rem)		
			<5	5-25	>25	<15	15-75	>75	<50	50-250	>250 rad
1997	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS									
		SUM OF DOSES									
	POWER REACTORS	NO. OF PERSONS								1[a]	
		SUM OF DOSES								51.1	
	MEDICAL FACILITIES	NO. OF PERSONS									
		SUM OF DOSES									
	MARKETING & MANUFACT.	NO. OF PERSONS									1
		SUM OF DOSES									533.9
	OTHER	NO. OF PERSONS									
		SUM OF DOSES									
1996	INDUSTRIAL RADIOGRAPHY	NO. OF PERSONS		1							
		SUM OF DOSES		8.3							
	POWER REACTORS	NO. OF PERSONS								1[b]	
		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[c]	
		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									
	MARKETING & MANUFACT.	NO. OF PERSONS								1[d]	
		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] This exposure was from a hot particle to a localized area of the skin.
[c] These two exposures (230 rem and 342 rem) were the result of hot particles.
[d] 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
1997

Exposure Category	Annual Dose Limit 10CFR20*	Maximum Exposure Reported (rem)	Max Dose Percent of the Limit	Number of Individuals with Measurable 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	533.870	> limit	60,967	96	31	9	2 (>limit)
SDE-WB	50 rem	42.000	84%	75,008	5	2	1	0
LDE	15 rem	10.509	70%	74,323	12	1	0	0
CEDE		2.881		4,105				
CDE		29.648		3,376				
DDE		4.465		75,561				
TEDE	5 rem	4.481	90%	77,094	2,238	280	12	0
TODE	50 rem	29.648	59%	62,984	99	4	0	0

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

7 REFERENCES

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17. *Health Effects Models for Nuclear Power Plant Accident Consequence Analysis, Part II: Scientific Basis for Health Effects Models,* USNRC Report NUREG/CR-4214, May 1989.

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APPENDIX A

Listing of Annual Exposure Data Compiled for Certain NRC Licensees

1997

* 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 1997

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-rem)	AVERAGE MEAS. TEDE (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	6.00-12.00	>12.0				
NUCLEAR PHARMACIES - 02500																		
CAPITAL PHARMACY INC.	21-26597-01	7	2	-	1	-	-	-	-	-	-	-	-	-	10	3	0.380	0.127
MALLINCKRODT INC.	24-04206-00	1	1	5	7	-	1	-	-	-	-	-	-	-	15	14	**4.090**	**0.292**
MALLINCKRODT MEDICAL, INC.	24-04206-01	3	5	2	2	-	-	-	-	-	-	-	-	-	12	9	1.190	0.132
MALLINCKRODT, INC.	24-04206-08	6	10	2	-	-	-	-	-	-	-	-	-	-	18	12	0.620	0.052
MALLINCKRODT, INC.	24-04206-12	5	10	2	2	-	-	1	-	-	-	-	-	-	20	15	2.660	0.177
MALLINCKRODT MEDICAL INC.	24-04206-14	3	4	3	3	-	-	-	-	-	-	-	-	-	13	10	1.670	0.167
MALLINCKRODT MEDICAL, INC.	24-04206-15	5	8	2	-	3	-	-	-	-	-	-	-	-	18	13	2.240	0.172
MALLINCKRODT MEDICAL, INC.	24-04206-17	-	1	2	-	-	-	-	-	-	-	-	-	-	3	3	0.370	0.123
MID-AMERICA ISOTOPES, INC.	24-26241-01	8	12	1	-	-	-	-	-	-	-	-	-	-	21	13	0.320	0.025
NORTHERN VIRGINIA ISOTOPES, INC.	45-25221-01	5	15	3	2	-	-	-	-	-	-	-	-	-	25	20	1.688	0.084
OKLAHOMA, UNIVERSITY OF	35-03176-04	10	9	-	1	-	-	-	-	-	-	-	-	-	20	10	0.560	0.056
SPECTRUM PHARMACY INC.	13-26367-01	20	19	-	-	2	1	-	-	-	-	-	-	-	42	22	2.570	0.117
SYNCOR INTERNATIONAL CORP.	04-26507-01	51	20	3	1	-	-	-	-	-	-	-	-	-	**75**	**24**	1.308	0.055
Total	**13**	**124**	**116**	**25**	**19**	**5**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**292**	**168**	**19.666**	**0.117**
MANUFACTURING AND DISTRIBUTION - TYPE A BROAD - 03211																		
ABB INDUSTRIAL SYSTEMS INC.	34-00255-03	1	1	1	-	-	-	-	-	-	-	-	-	-	3	2	0.110	0.055
ADVANCED MEDICAL SYS., INC.	34-19089-01	7	1	1	1	1	-	2	-	-	-	-	-	-	13	6	4.266	0.711
BRISTOL-MEYER SQ	29-00139-02	65	45	6	6	2	3	1	-	-	-	-	-	-	128	63	9.320	0.148
MALLINCKRODT MEDICAL INC.	24-04206-01	15	69	40	43	19	15	40	42	35	4	-	-	-	**322**	**307**	**350.275**	**1.141**
NUCLEAR RESEARCH CORP.	29-04236-01	22	8	-	-	-	-	-	-	-	-	-	-	-	30	8	0.120	0.015
Total	**5**	**110**	**124**	**48**	**50**	**22**	**18**	**43**	**42**	**35**	**4**	**-**	**-**	**-**	**496**	**386**	**364.091**	**0.943**

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1997

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-rem)	AVERAGE MEAS. TEDE (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	6.00-12.00	>12.0				
MANUFACTURING AND DISTRIBUTION - TYPE B BROAD - 03212																		
BEST INDUSTRIES, INC.	45-19757-01	42	7	1	4	2	-	-	-	-	-	-	-	-	56	14	3.291	**0.235**
OHMART CORP.	34-00639-01	58	25	6	5	2	-	-	-	-	-	-	-	-	**96**	**38**	**4.890**	0.129
Total	**2**	**100**	**32**	**7**	**9**	**4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**152**	**52**	**8.181**	**0.157**
MANUFACTURING AND DISTRIBUTION - OTHER - 03214																		
ADVANZ MEASUREMENT & CONTROL	34-26683-01	5	5	-	-	-	-	-	-	-	-	-	-	-	10	5	0.090	0.018
BERTHOLD SYSTEMS, INC.	37-21226-01	-	9	3	1	-	-	1	-	-	-	-	-	-	14	**14**	**2.430**	0.174
DU PONT MERCK PHARMACEUTICAL CO.	20-00320-19	1	-	4	1	-	-	-	-	-	-	-	-	-	6	5	0.930	0.186
ELIAS USA, INC.	48-26355-01	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
HALLIBURTON CO.	35-00502-03	-	-	-	2	-	-	-	-	-	-	-	-	-	2	2	0.640	**0.320**
HARRIS SEMICONDUCTORS	37-24841-02	22	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-
INTERGRATED INDUSTRIAL SYS., INC.	06-21253-01	34	1	-	-	-	-	-	-	-	-	-	-	-	35	1	0.010	0.010
LIFECODES CORPORATION	06-28766-01	14	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-
NUCLEAR RESEARCH CORPORATION	37-02401-01	23	13	1	-	-	-	-	-	-	-	-	-	-	37	**14**	0.440	0.031
SAINT-GOBAIN/NORTON	34-06558-05	41	10	-	-	-	-	-	-	-	-	-	-	-	**51**	10	0.220	0.022
THERATRONICS INTERNATIONAL LTD.	54-28315-01	10	7	1	-	-	-	-	-	-	-	-	-	-	18	8	0.370	0.046
Total	**11**	**152**	**45**	**9**	**4**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**211**	**59**	**5.130**	**0.087**
LOW LEVEL WASTE DISPOSAL FACILITIES - 03231																		
CHEM-NUCLEAR SYSTEMS, INC.	12-13536-01	131	24	7	6	1	-	-	-	-	-	-	-	-	**169**	**38**	**4.228**	**0.111**
U.S. ECOLOGY	16-19204-01	4	7	5	-	-	-	-	-	-	-	-	-	-	16	12	1.147	0.096
Total	**2**	**135**	**31**	**12**	**6**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**185**	**50**	**5.375**	**0.108**

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1997

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-rem)	AVERAGE MEAS. TEDE (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	6.00-12.00	>12.0				
INDUSTRIAL RADIOGRAPHY - SINGLE LOCATION - 03310																		
ARMY, DEPARTMENT OF THE	13-18235-01	51	9	-	-	-	-	-	-	-	-	-	-	-	60	9	0.096	0.011
ARMY, DEPARTMENT OF THE	29-00047-06	-	1	-	-	-	-	-	-	-	-	-	-	-	1	1	0.019	0.019
ARROW TANK & ENGINEERING CO.	22-13253-01	1	3	-	-	2	-	-	-	-	-	-	-	-	6	5	1.210	0.242
BUCKEYE STEEL CASTINGS	34-06627-01	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
BWX TECHNOLOGIES, INC.	34-02160-03	11	8	-	-	-	-	-	-	-	-	-	-	-	19	8	0.120	0.015
CARONDELET FOUNDRY COMPANY	24-26136-01	5	3	-	-	-	-	-	-	-	-	-	-	-	8	3	0.230	0.077
CONNEX PIPE SYSTEMS INC.	45-26591-01	3	2	-	-	-	-	-	-	-	-	-	-	-	5	2	0.002	0.001
COPES-VULCAN	37-19530-01	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
DURALOY	37-02279-02	1	2	-	1	-	-	-	-	-	-	-	-	-	4	3	0.620	0.207
GENERAL MOTORS CORP.	21-08678-05	3	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
GENERAL MOTORS CORPORATION	34-15315-02	6	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-
GREDE-PRYOR, INC.	35-18099-01	1	1	-	-	-	-	-	-	-	-	-	-	-	2	1	0.020	0.020
HARRISON STEEL CASTINGS CO.	13-02141-01	4	3	-	-	-	-	-	-	-	-	-	-	-	7	3	0.060	0.020
HIGH STEEL STRUCTURES, INC.	37-17534-01	4	8	1	1	-	-	-	-	-	-	-	-	-	14	**10**	0.640	0.064
IRONTON IRON, INC.	34-24800-02	2	2	-	-	-	-	-	-	-	-	-	-	-	4	2	0.030	0.015
LUCIUS PITKIN, INC.	29-27816-01	2	3	2	2	-	-	-	-	-	-	-	-	-	9	7	1.525	0.218
LYNCHBURG FOUNDRY COMPANY	45-17464-01	6	1	-	-	-	-	-	-	-	-	-	-	-	7	1	0.030	0.030
MANOIR - ELECTRO ALLOYS, INC.	34-24346-01	3	1	5	-	-	-	-	-	-	-	-	-	-	9	6	0.780	0.130
MINNESOTA VALLEY ENGINEERING	22-24393-01	1	2	1	5	-	-	-	-	-	-	-	-	-	9	8	2.020	0.253
MISSOURI STEEL CASTINGS	24-15152-01	5	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-
NILES STEEL TANK CO.	21-04741-01	4	1	-	-	-	-	-	-	-	-	-	-	-	5	1	0.010	0.010
PELTON CASTEEL, INC.	48-02669-02	4	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-
THE DURIRON COMPANY, INC.	34-06398-01	2	1	1	-	-	-	-	-	-	-	-	-	-	4	2	0.220	0.110
THE WILLIAM POWELL CO.	34-02963-01	2	1	-	-	-	-	-	-	-	-	-	-	-	3	1	0.013	0.013
TRANS WORLD AIRLINES, INC.	24-05151-05	85	-	-	-	-	-	-	-	-	-	-	-	-	**85**	-	-	-
WAUKESHA FOUNDRY DIVISION	48-13776-01	3	1	-	1	-	-	-	-	-	-	-	-	-	5	2	0.320	0.160
WISCONSIN CENTRIFUGAL, INC.	48-11641-01	-	2	4	1	2	-	-	-	-	-	-	-	-	9	9	**2.320**	**0.258**
Total	**27**	**212**	**55**	**14**	**11**	**4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**296**	**84**	**10.285**	**0.122**

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1997

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-rem)	AVERAGE MEAS. TEDE (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	6.00-12.00	>12.0				
INDUSTRIAL RADIOGRAPHY - MULTIPLE LOCATION - 03320																		
ACCURATE TECHNOLOGIES, INC.	29-28358-01	-	5	4	2	2	-	3	1	1	-	-	-	-	18	18	12.320	0.684
ADAMS INDUSTRIAL SERVICES, INC.	45-25355-01	-	3	-	1	-	-	1	-	-	-	-	-	-	5	5	2.450	0.490
ADVEX CORPORATION	45-16452-01	3	1	2	1	2	-	1	-	-	-	-	-	-	10	7	3.390	0.484
AKRON INDUSTRIAL SERV., INC.	34-24673-01	-	-	-	1	-	-	1	-	-	-	-	-	-	2	2	2.170	1.085
ALASKA INDUSTRIAL X-RAY	50-16084-01	1	2	-	1	1	-	3	-	-	-	-	-	-	8	7	5.470	0.781
ALLEGHENY LABORATORIES	37-20734-01	3	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
ALLIED INSPECTION SERV., INC.	21-18428-01	-	-	2	2	-	1	-	-	-	-	-	-	-	5	5	2.080	0.416
ALONSO & CARUS IRON WORKS, INC.	52-21350-01	2	5	-	-	-	-	-	-	-	-	-	-	-	7	5	0.180	0.036
AMERICAN AIRLINES, INC.	35-13964-01	26	8	-	-	1	-	-	-	-	-	-	-	-	35	9	0.830	0.092
AMERICAN FOUNDRY GROUP,INC.	35-26893-01	1	1	-	-	-	-	-	-	-	-	-	-	-	2	1	0.020	0.020
ANVIL CORPORATION	46-23236-03	2	2	16	11	7	4	3	-	-	-	-	-	-	45	43	18.802	0.437
ARCTIC SLOPE INSP. SERVICES, INC.	50-29015-01	8	4	8	1	1	-	-	-	-	-	-	-	-	22	14	2.200	0.157
ARMY, DEPARTMENT OF THE	30-02405-05	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
ASTROTECH, INC.	37-09928-01	7	3	-	-	1	1	-	-	-	-	-	-	-	12	5	1.632	0.326
BARNETT INDUSTRIAL X-RAY	35-26953-01	2	3	3	4	6	1	3	-	-	-	-	-	-	22	20	11.085	0.554
BIG STATE X-RAY, INC.	35-21144-01	-	4	15	6	3	5	8	-	-	-	-	-	-	41	41	22.155	0.540
BILL MILLER, INC.	35-19048-01	-	5	9	14	5	3	-	-	-	-	-	-	-	36	36	12.785	0.355
BRANCH RADIOGRAPHIC LABS., INC.	29-03405-02	4	6	1	7	3	1	-	-	-	-	-	-	-	22	18	5.716	0.318
BRAUN INTERTEC CORPORATION	22-16537-02	2	5	8	7	3	1	5	-	-	-	-	-	-	31	29	11.995	0.414
CALUMET TESTING SERV., INC.	13-16347-01	4	4	3	1	1	-	4	3	-	1	-	-	-	21	17	18.650	1.097
CAPITAL X-RAY SERV., INC.	35-11114-01	-	3	1	10	2	1	4	4	2	-	-	-	-	27	27	29.980	1.110
CENTURY INSPECTION, INC.	42-08456-02	11	36	24	30	23	9	11	-	-	-	-	-	-	144	133	52.532	0.395
CHICAGO BRIDGE AND IRON CO.	42-13553-02	24	29	2	2	-	-	-	-	-	-	-	-	-	57	33	1.660	0.050
COLBY & THIELMEIER TESTING CO.	24-13737-01	2	3	2	-	1	1	3	-	-	-	-	-	-	12	10	6.100	0.610
COMO TECH INSPECTION	15-26978-01	-	-	-	1	1	1	4	-	-	-	-	-	-	7	7	6.664	0.952
CONAM INSPECTION	12-16559-01	26	26	19	14	9	11	7	1	-	-	-	-	-	113	87	36.280	0.417
CONNELL LIMITED PARTNERSHIP	35-13735-01	1	1	-	-	1	-	-	-	-	-	-	-	-	3	2	0.570	0.285
CONSUMERS ENERGY - NDT	21-08606-03	5	5	7	2	-	-	-	-	-	-	-	-	-	19	14	1.946	0.139
CRAMER & LINDELL ENGINEERS, INC.	06-20794-01	12	11	11	1	-	-	-	-	-	-	-	-	-	35	23	2.530	0.110

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1997

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-rem)	AVERAGE MEAS. TEDE (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	6.00-12.00	>12.0				
INDUSTRIAL RADIOGRAPHY - MULTIPLE LOCATION - 03320 Continued																		
CTI ALASKA, INC.	50-19202-01	27	20	26	25	18	10	10	-	-	-	-	-	-	136	109	47.355	0.434
DAYTON X-RAY CO.	34-06943-01	7	9	9	8	2	1	4	1	1	-	-	-	-	42	35	19.047	0.544
DIAMOND H TESTING COMPANY	11-27316-01	3	3	3	3	1	3	2	-	-	-	-	-	-	18	15	7.587	0.506
EASTERN TESTING & INSPECTION, INC.	29-09814-01	2	1	4	-	-	-	-	-	-	-	-	-	-	7	5	0.640	0.128
EDWARDS PIPELINE TESTING, INC.	35-23193-01	9	20	20	29	17	11	5	-	-	-	-	-	-	111	102	40.620	0.398
EG&G FLORIDA, INC.	FL-1219-1	23	12	-	-	-	-	-	-	-	-	-	-	-	35	12	0.310	0.026
ELECTRIC BOAT CORPORATION	06-01781-08	-	7	8	1	-	-	-	-	-	-	-	-	-	16	16	1.839	0.115
ETT X-RAY, INC.	46-03414-03	-	6	2	2	3	3	1	-	-	-	-	-	-	17	17	7.090	0.417
FROEHLING & ROBERTSON, INC.	45-08890-01	14	7	1	1	1	-	1	-	-	-	-	-	-	25	11	2.700	0.245
G.E. INSPECTION SERVICES, INC.	39-24888-01	3	6	4	-	6	2	5	-	-	-	-	-	-	26	23	11.740	0.510
GENERAL TESTING & INSP. CO.	34-09037-01	1	-	3	1	1	-	-	-	-	-	-	-	-	6	5	1.400	0.280
GLITSCH FIELD SERVICES/NDE,INC.	34-14071-01	16	13	5	8	2	2	1	-	-	-	-	-	-	47	31	8.660	0.279
GLOBE X-RAY SERV., INC.	35-15194-01	8	5	3	3	4	3	6	4	4	-	-	-	-	40	32	39.460	1.233
GREAT LAKES TESTING, INC.	48-26484-01	2	3	3	3	3	-	2	-	-	-	-	-	-	16	14	6.770	0.484
GRINNELL CORPORATION	38-28750-01	4	1	2	-	-	-	-	-	-	-	-	-	-	7	3	0.380	0.127
H & H X-RAY SERV., INC.	17-19236-01	-	-	-	-	-	-	3	-	-	-	-	-	-	3	3	3.840	1.280
H&G INSP. CO., INC.	42-26838-01	3	1	3	-	3	2	3	-	-	-	-	-	-	15	12	8.030	0.669
H. R. INSPECTION SERV., INC.	15-06209-01	-	-	2	-	2	-	4	-	-	-	-	-	-	8	8	7.480	0.935
HIGH MOUNTAIN INSPECTION SERV.	49-26808-02	-	6	8	2	4	2	11	4	-	-	-	-	-	37	37	34.448	0.931
HUNTINGTON TESTING & TECH.	47-23076-01	-	2	7	5	1	5	4	2	-	-	-	-	-	26	26	19.450	0.748
HUTCHINSON TECHNICAL COLLEGE	22-15554-01	70	6	-	-	-	-	-	-	-	-	-	-	-	76	6	0.080	0.013
INDUSTRIAL NDT SERVICES DIVISION	13-06147-04	7	10	2	-	1	-	1	-	-	-	-	-	-	21	14	2.460	0.176
INSPECTION MANAGEMENT CORP.	35-26824-01	1	-	-	-	2	-	2	2	1	-	-	-	-	8	7	11.780	1.683
INTEGRATED TECH	06-30317-01	4	5	-	2	-	-	-	-	-	-	-	-	-	11	7	0.860	0.123
INTERMOUNTAIN TESTING CO.	05-07872-01	-	-	2	2	1	-	6	3	4	-	-	-	-	18	18	31.954	1.775
ITT INSPECTION-TECH TECHNICIAN	24-26628-01	1	-	1	-	-	-	-	-	-	-	-	-	-	2	1	0.130	0.130
JAN X-RAY SERVICES, INC	21-16560-01	-	8	3	12	7	9	6	1	-	1	-	-	-	47	47	32.570	0.693
LONGVIEW INSPECTION - ATG, INC.	48-17480-01	9	11	14	10	7	7	12	1	-	-	-	-	-	71	62	36.395	0.587
LONGVIEW INSPECTION, INC.	45-25279-01	1	3	-	-	1	3	2	2	-	-	-	-	-	12	11	10.725	0.975

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1997

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-rem)	AVERAGE MEAS. TEDE (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	6.00-12.00	>12.0				
INDUSTRIAL RADIOGRAPHY - MULTIPLE LOCATION - 03320 Continued																		
MARYLAND Q.C. LABORATORIES	19-28683-01	5	10	4	3	1	-	-	-	-	-	-	-	-	23	18	2.881	0.160
MASSACHUSETTS MATERIALS RES.	07-01173-03	5	1	1	1	-	-	1	-	-	-	-	-	-	9	4	1.560	0.390
MATERIAL TESTING LABS, INC.	45-17151-01	3	3	1	1	-	-	1	-	-	-	-	-	-	9	6	1.840	0.307
MATTINGLY TESTING SERVICES, INC.	25-21479-01	-	-	3	3	3	2	2	-	-	-	-	-	-	13	13	8.500	0.654
MAXIM TECHNOLOGIES, INC.	22-01376-02	2	2	7	1	2	5	6	3	-	-	-	-	-	28	26	22.600	0.869
MET-CHEM TESTING LABS., INC.	43-27362-01	3	4	2	2	-	1	-	-	-	-	-	-	-	12	9	2.207	0.245
MID AMERICAN INSPECTION SERV, INC	21-26060-01	-	-	2	1	3	2	2	-	-	-	-	-	-	10	10	6.970	0.697
MIDWEST INDUSTRIAL X-RAY, INC.	33-27427-01	1	4	2	2	1	-	5	3	-	-	-	-	-	18	17	15.790	0.929
MIDWEST INSPECTION SERVICES	35-27005-01	-	3	3	9	1	4	5	5	4	-	-	-	-	34	34	41.680	1.226
MONTANA X-RAY, INC.	25-21134-01	-	-	-	-	-	1	-	-	-	-	-	-	-	1	1	0.760	0.760
MQS INSPECTION, INC.	12-00622-07	76	56	34	45	18	14	30	6	-	-	-	-	-	**279**	**203**	**102.470**	0.505
NDT SERVICES, INC.	52-19438-01	-	4	-	1	2	1	-	-	-	-	-	-	-	8	8	2.460	0.308
NDT SPECIALISTS, INC.	48-25917-01	-	1	-	1	1	-	2	-	-	-	-	-	-	5	5	3.710	0.742
NEWPORT NEWS SHIPBUILDING	45-09428-02	-	18	7	3	-	-	-	-	-	-	-	-	-	28	28	2.531	0.090
NOOTER CORP.	24-03783-01	7	12	1	-	-	-	-	-	-	-	-	-	-	20	13	0.540	0.042
NORFOLK SHIPBUILDING CO.	45-12042-01	4	9	1	-	-	-	-	-	-	-	-	-	-	14	10	0.470	0.047
NORTHWEST INSP. & TESTING SERV. INC	11-27394-01	-	1	-	-	-	-	1	-	-	-	-	-	-	2	2	1.852	0.926
NOVA DATA TESTING LABS, INC.	45-24872-01	2	2	5	-	2	-	-	-	-	-	-	-	-	11	9	2.200	0.244
PITT-DES MOINES, INC.	37-27878-01	10	7	2	4	-	1	1	-	-	-	-	-	-	25	15	4.070	0.271
PRECISION COMPONENTS CORP.	37-16280-01	47	5	2	1	-	-	-	-	-	-	-	-	-	55	8	0.990	0.124
PRIME NDT SERVICES, INC.	37-23370-01	1	4	4	2	4	4	5	1	-	-	-	-	-	25	24	16.900	0.704
PROFESSIONAL SERVICE INDUSTRIES	12-16941-03	3	5	4	7	2	4	-	-	-	-	-	-	-	25	22	8.050	0.366
PROFESSIONAL WELDING ASSOC.,INC.	48-25806-01	-	3	1	-	-	-	-	-	-	-	-	-	-	4	4	0.350	0.088
PROGRESS SERV., INC.	34-19592-01	7	3	-	-	-	-	-	-	-	-	-	-	-	10	3	0.150	0.050
PSI ENERGY, INC.	13-15544-06	-	3	1	-	-	-	-	-	-	-	-	-	-	4	4	0.200	0.050
Q. C. LABS., INC.	09-11579-03	2	5	8	1	-	3	1	-	-	-	-	-	-	20	18	5.320	0.296
QSL INSPECTION, INC.	37-28085-01	4	10	5	10	4	6	12	4	1	-	-	-	-	56	52	44.401	0.854
QUALITY ENERGY SERV. & TESTS CORP.	35-26815-01	1	2	-	-	-	-	1	7	1	-	-	-	-	12	11	21.968	**1.997**
QUALITY INSPECTION & TESTING	50-29038-01	-	1	1	-	-	1	1	-	-	-	-	-	-	4	4	2.200	0.550
RAYTHEON ENGINEERS & CONST.	42-30336-01	-	-	3	1	2	-	-	-	-	-	-	-	-	6	6	2.010	0.335

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1997

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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	6.00-12.00	>12.0				
INDUSTRIAL RADIOGRAPHY - MULTIPLE LOCATION - 03320 Continued																		
RIVEST TESTING USA, INC.	35-27438-01	-	2	6	1	1	-	-	-	-	-	-	-	-	10	10	1.670	0.167
S. K. MCBRYDE, INC.	32-25137-01	2	1	3	-	-	-	-	-	-	-	-	-	-	6	4	0.630	0.158
SAM-SON INSP. & TECH.SERV.INC.	34-25898-01	3	2	2	1	1	1	1	1	-	-	-	-	-	12	9	5.790	0.643
SGS INDUSTRIAL SERVICES	04-29067-02	16	24	10	8	7	3	3	-	-	-	-	-	-	71	55	16.196	0.294
SIERRA TESTING, INC.	35-26950-01	-	3	7	9	1	1	3	3	-	-	-	-	-	27	27	18.437	0.683
SOUTHWEST X-RAY CORPORATION	49-27434-01	2	1	4	-	2	3	8	2	2	-	-	-	-	24	22	25.800	1.173
SPEC CONSULTANTS, INC.	37-27891-01	3	11	-	4	2	1	-	-	-	-	-	-	-	21	18	3.760	0.209
ST. LOUIS TESTING LABS., INC.	24-00188-02	4	3	2	2	1	1	3	-	-	-	-	-	-	16	12	6.990	0.583
TECHNICAL WELDING LAB, INC.	42-25214-01	4	-	4	5	-	-	5	1	-	-	-	-	-	19	15	12.230	0.815
TEI ANALYTICAL SERVICES, INC.	37-28004-01	8	10	6	4	7	5	7	3	-	-	-	-	-	50	42	28.890	0.688
TENNESSEE GAS PIPELINE	42-09073-02	13	2	-	-	-	-	-	-	-	-	-	-	-	15	2	0.010	0.005
TENNESSEE VALLEY AUTHORITY	41-06832-06	6	7	3	4	-	-	-	-	-	-	-	-	-	20	14	2.310	0.165
TESTING INST. OF AK, INC.	50-17446-01	2	7	-	1	-	1	1	1	-	-	-	-	-	13	11	6.250	0.568
TESTING TECHNOLOGIES, INC.	45-25007-01	4	6	4	4	6	3	4	-	-	-	-	-	-	31	27	13.980	0.518
TESTMASTER INSPECTION CO.,INC.	34-24872-01	-	1	2	3	1	2	1	-	-	-	-	-	-	10	10	5.170	0.517
THERMAL ENGINEERING, INT'L.	24-19500-01	4	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-
TRI STATE INSPECTION	37-19640-01	1	6	1	-	1	-	1	-	-	-	-	-	-	10	9	2.250	0.250
TULSA GAMMA RAY, INC.	35-17178-01	3	15	12	12	4	4	15	8	1	-	-	-	-	74	71	58.075	0.818
TWIN PORTS TESTING, INC.	48-23476-01	5	7	5	-	4	-	1	-	-	-	-	-	-	22	17	4.805	0.283
VALLEY INDUSTRIAL X-RAY	04-29076-01	9	4	4	4	5	2	5	5	-	-	-	-	-	38	29	27.345	0.943
VALLEY INSPECTION SERVICE, INC.	37-28385-01	2	-	-	-	2	-	3	-	-	-	-	-	-	7	5	5.810	1.162
VOITH HYDRO, INC.	37-16280-03	7	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-
WALASHEK ENTERPRISES, INC.	53-23225-01	4	1	-	-	-	-	-	-	-	-	-	-	-	5	1	0.020	0.020
WESTERN IND. X-RAY INSPECTION CO.	49-27356-01	4	2	3	-	1	2	1	-	1	-	-	-	-	14	10	7.310	0.731
WESTERN X-RAY COMPANY	35-19993-01	-	-	2	2	-	1	10	-	2	-	-	-	-	17	17	23.735	1.396
WESTINGHOUSE ELECTRIC CORP.	37-05809-02	3	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
WOS TESTING COMPANY, INC.	48-26385-01	3	1	1	1	-	1	1	-	-	-	-	-	-	8	5	3.480	0.696
X-R-I TESTING	21-05472-01	112	21	9	3	-	-	1	-	-	-	-	-	-	146	34	4.295	0.126
Total	**116**	**770**	**655**	**466**	**403**	**252**	**183**	**302**	**82**	**25**	**2**				**3,140**	**2,370**	**1,280.860**	**0.540**

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1997

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-rem)	AVERAGE MEAS. TEDE (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	6.00-12.00	>12.0				
FUEL FABRICATION FACILITIES - 21210																		
BWX TECHNOLOGIES, INC.	SNM-0042	47	43	46	67	40	29	57	13	-	-	-	-	-	342	295	193.303	**0.655**
COMBUSTION ENGINEERING INC.	SNM-0033	38	62	29	29	18	13	38	10	-	-	-	-	-	237	199	116.172	0.584
FRAMATOME COGEMA FUELS	SNM-1168	352	163	41	19	3	3	5	-	-	-	-	-	-	586	234	29.578	0.126
GE NUCLEAR ENERGY	SNM-1097	272	593	205	147	91	58	37	1	-	-	-	-	-	**1,404**	**1,132**	**254.545**	0.225
GENERAL ATOMICS	SNM-0696	456	48	14	8	2	-	-	-	-	-	-	-	-	528	72	7.708	0.107
NUCLEAR FUEL SERVICES, INC.	SNM-0124	180	323	36	27	8	-	4	-	-	-	-	-	-	578	398	33.656	0.085
SIEMENS POWER CORP. NUCLEAR DIV.	SNM-1227	174	305	96	55	49	34	27	-	-	-	-	-	-	740	566	136.786	0.242
WESTINGHOUSE ELECTRIC COMPANY	SNM-1107	80	141	80	67	37	24	55	19	-	-	-	-	-	503	423	204.282	0.483
Total	**8**	**1,599**	**1,678**	**547**	**419**	**248**	**161**	**223**	**43**	**-**	**-**	**-**	**-**	**-**	**4,918**	**3,319**	**976.030**	**0.294**
URANIUM ENRICHMENT PLANTS - 21200																		
USEC - Paducah	GDP-1	2494	310	50	9	-	-	-	-	-	-	-	-	-	2,863	**369**	**16.739**	0.045
USEC - Portsmouth	GDP-2	3211	171	49	2	-	-	-	-	-	-	-	-	-	**3,433**	222	13.264	**0.060**
Total	**2**	**5,705**	**481**	**99**	**11**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**6,296**	**591**	**30.003**	**0.051**
INDEPENDENT SPENT FUEL STORAGE INSTALLATION - 23200																		
GENERAL ELECTRIC - MORRIS OPS	SNM-2500	31	7	9	4	2	2	-	-	-	-	-	-	-	55	24	5.860	0.244
Total	**1**	**31**	**7**	**9**	**4**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**55**	**24**	**5.860**	**0.244**

APPENDIX B

Annual Whole Body Doses at Licensed Nuclear Power Facilities

1997

APPENDIX B
ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES
CY 1997

PLANT NAME	TYPE	Number of Individuals with Whole Body Doses in the Ranges (rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-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	1,608	822	272	78	21	2									2,803	1,195	119
BEAVER VALLEY 1,2	PWR	1,028	586	369	257	118	48	13								2,419	1,391	306
BIG ROCK POINT	BWR	264	139	44	35	24	12	4								522	258	55
BRAIDWOOD 1,2	PWR	1,476	787	451	322	78	35	20								3,169	1,693	321
BROWNS FERRY 1,2,3	BWR	1,503	908	512	361	165	67	78	1							3,595	2,092	516
BRUNSWICK 1,2	BWR	1,366	1,208	455	313	134	66	36								3,578	2,212	411
BYRON 1,2	PWR	1,747	760	440	291	46	7	2								3,293	1,546	241
CALLAWAY 1	PWR	798	204	44												1,046	248	12
CALVERT CLIFFS 1,2	PWR	1,639	480	285	192	90	33	11								2,730	1,091	229
CATAWBA 1,2	PWR	1,859	743	440	273	86	16	3								3,420	1,561	266
CLINTON	BWR	1,222	334	159	125	72	35	13								1,960	738	172
COMANCHE PEAK 1,2	PWR	1,405	439	220	155	44	8	4								2,275	870	146
COOK 1,2	PWR	1,075	754	385	346	159	112	107	1							2,939	1,864	550
COOPER STATION	BWR	668	631	239	184	47	19	5								1,793	1,125	174
CRYSTAL RIVER 3	PWR	1,422	502	235	145	50	24	17								2,395	973	179
DAVIS-BESSE	PWR	595	189	23	1											808	213	10
DIABLO CANYON 1,2	PWR	1,763	753	302	173	60	19	24								3,094	1,331	219
DRESDEN 2,3	BWR	1,674	1,366	715	451	176	33	6								4,421	2,747	467
DUANE ARNOLD	BWR	728	174	92	61	18	2	5								1,080	352	63
FARLEY 1,2	PWR	764	469	302	176	91	24	39	4							1,869	1,105	278
FERMI 2	BWR	1,479	457	128	37	1										2,102	623	49
FITZPATRICK	BWR	712	426	102	94	31	5	4								1,374	662	91
FORT CALHOUN	PWR	530	139	57	46	16										788	258	41
GINNA	PWR	689	261	164	90	13	1	4								1,222	533	81
GRAND GULF	BWR	983	285	130	45	15	10	29								1,497	514	105
HARRIS	PWR	746	696	234	146	43	11	1								1,877	1,131	149
HATCH 1,2	BWR	819	748	385	313	186	115	168	27	3						2,764	1,945	722
HOPE CREEK 1	BWR	2,145	963	344	220	122	52	46								3,892	1,747	350
INDIAN POINT 2	PWR	996	491	311	303	138	51	45	1							2,336	1,340	367
INDIAN POINT 3	PWR	1,088	953	345	218	66	18	8								2,696	1,608	234
KEWAUNEE	PWR	251	152	54	28	24	16	4								529	278	56
LASALLE 1,2	BWR	1,796	883	333	276	98	32	39								3,457	1,661	316
LIMERICK 1,2	BWR	2,202	847	355	143	77	23	17	1							3,665	1,463	234
MAINE YANKEE	PWR	1,131	595	205	119	40	21	11								2,122	991	153
MCGUIRE 1,2	PWR	1,798	935	610	378	143	75	52								3,991	2,193	492
MILLSTONE POINT 1	BWR	1,076	587	225	140	57	23	21								2,129	1,053	195
MILLSTONE POINT 2,3	PWR	1,468	800	306	192	77	31	29								2,903	1,435	253
MONTICELLO	BWR	552	117	128	88	42	18	6								951	399	106

APPENDIX B (Continued)
ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES
CY 1997

PLANT NAME	TYPE	Number of Individuals with Whole Body Doses in the Ranges (rems)														TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-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			
NINE MILE POINT 1,2	BWR	1,284	520	315	284	157	81	67	1							2,709	1,425	429
NORTH ANNA 1,2	PWR	1,387	517	232	88	13	2	4								2,243	856	103
OCONEE 1,2,3	PWR	2,042	665	409	237	55	12	1								3,421	1,379	223
OYSTER CREEK	BWR	530	333	119	51	6										1,039	509	50
PALISADES	PWR	644	193	81	47	14	1	2								982	338	48
PALO VERDE 1,2,3	PWR	1,266	925	327	201	91	34	7								2,851	1,585	246
PEACH BOTTOM 2,3	BWR	1,315	817	431	312	147	86	73	6							3,187	1,872	490
PERRY	BWR	1,206	642	480	316	77	6	3								2,730	1,524	272
PILGRIM	BWR	462	542	307	342	221	139	100	4							2,117	1,655	588
POINT BEACH 1,2	PWR	575	418	130	80	25	16	1								1,245	670	92
PRAIRIE ISLAND 1,2	PWR	451	290	230	129	58	33	13								1,204	753	174
QUAD CITIES 1,2	BWR	906	1,076	486	438	243	147	84								3,380	2,474	654
RIVER BEND 1	BWR	924	818	397	259	103	58	36								2,595	1,671	347
ROBINSON 2	PWR	471	259	43	2											775	304	13
SALEM 1,2	PWR	1,095	492	176	113	63	26	24								1,989	894	175
SAN ONOFRE 2,3	PWR	3,117	797	369	293	118	54	21								4,769	1,652	341
SEABROOK	PWR	631	1,075	259	139	79	15	4								2,202	1,571	186
SEQUOYAH 1,2	PWR	1,294	876	493	341	136	49	36	1							3,226	1,932	414
SOUTH TEXAS 1,2	PWR	1,413	834	376	247	82	25	19								2,996	1,583	273
ST. LUCIE 1,2	PWR	1,318	845	564	533	200	74	88	10							3,632	2,314	646
SUMMER 1	PWR	795	335	237	178	48	22									1,615	820	163
SURRY 1,2	PWR	1,445	558	333	260	104	45	34	1							2,780	1,335	320
SUSQUEHANNA 1,2	BWR	1,539	724	357	280	163	42	80								3,185	1,646	433
THREE MILE ISLAND 1	PWR	500	565	257	150	54	14	9								1,549	1,049	204
TURKEY POINT 3,4	PWR	1,039	550	467	308	143	67	45	1							2,620	1,581	414
VERMONT YANKEE	BWR	986	95	75	62	26	2									1,246	260	57
VOGTLE 1,2	PWR	863	507	276	158	39	13	1								1,857	994	158
WASHINGTON NUCLEAR 2	BWR	943	621	233	192	125	37	10								2,161	1,218	251
WATERFORD 3	PWR	1,382	692	338	120	24	7	5								2,568	1,186	148
WATTS BAR 1	PWR	1,253	698	256	105	9	2	1								2,324	1,071	112
WOLF CREEK 1	PWR	873	378	244	190	81	64	32								1,862	989	265
ZION 1,2	PWR	1,149	519	254	126	22	3									2,073	924	119
TOTALS: 37 BWRS		29,284	16,261	7,546	5,422	2,533	1,110	930	40	3	-	-	-	-	-	63,129	33,845	7,597
TOTALS: 72 PWRs		50,879	25,498	12,405	7,974	2,861	1,130	741	19	-	-	-	-	-	-	101,507	50,628	9,539
TOTALS: 109 LWRs		80,163	41,759	19,951	13,396	5,394	2,240	1,671	59	3	-	-	-	-	-	164,636	84,473	17,136

APPENDIX B (Continued)
ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES
FACILITIES NOT IN OPERATION OR IN OPERATION LESS THAN ONE YEAR
CY 1997

PLANT NAME	TYPE	Number of Individuals with Whole Body Doses in the Ranges (rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-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			
REACTORS NOT YET IN COMMERCIAL OPERATION																		
WATTS BAR 2	PWR	Reported with Watts Bar 1																
REACTORS NO LONGER IN COMMERCIAL OPERATION																		
HADDAM NECK	PWR	658	193	22	4											877	219	11
HUMBOLDT BAY	BWR	212	63	21	9	11	1									317	105	16
LACROSSE	BWR	45	17	6												68	23	2
RANCHO SECO	PWR	218	16													234	16	-
THREE MILE ISLAND 2	PWR	110	125	57	33	12	3	2								342	231	1
TROJAN	PWR	349	100	66	44	13	4									576	227	41
YANKEE-ROWE	PWR	651	181	59	40	21	13	9								974	323	65
REACTORS NO LONGER IN COMMERCIAL OPERATION, REPORTED WITH OTHER UNITS																		
BROWNS FERRY 1	BWR	Reported with Browns Ferry 2,3 and is still included in the count of operating reactors, although Unit 1 has been on Administrative Hold since June, 1985.																
DRESDEN 1	BWR	Reported with Dresden 2,3																
INDIAN POINT 1	PWR	Reported with Indian Point 2																
SAN ONOFRE 1	PWR	Reported with San Onofre 2,3																
TOTAL REPORTING: 7		2,243	695	231	130	57	21	11	-	-	-	-	-	-	-	3,388	1,144	136

APPENDIX C*

Personnel, Dose, and Power Generation Summary

1969-1997

* 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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	1,621.9	95.9	1,195	119	31	88	68	51	0.10	0.07
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-rems					Average Measurable Dose (rems)	Person-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
	1997	1,159.3	72.1	1,391	306	32	274	224	82	0.22	0.26
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
	1997	22.4	54.1	258	55	16	39	13	42	0.21	2.46

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	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
	1997	1,863.3	85.4	1,693	321	23	298	224	97	0.19	0.17
BROWNS FERRY 1[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
	1997	1,928.8	90.2	2,092	516	59	457	306	210	0.25	0.27
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

[1] Browns Ferry 1 remains in the count of operating reactors, but was placed on Administrative Hold in June of 1985.

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
BRUNSWICK 1,2 (continued)	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
	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
	1997	1,474.0	94.1	2,212	411	81	330	214	197	0.19	0.28
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
	1997	1,856.7	86.6	1,546	241	3	238	184	57	0.16	0.13
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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
CALLAWAY 1 (continued)	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
	1997	1,022.2	100.0	248	12	7	5	0	12	0.05	0.01
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
	1997	1,499.6	89.1	1,091	229	13	216	151	78	0.21	0.15
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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
CATAWBA 1,2 (continued)	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
	1997	2028.2	89.3	1,561	266	40	226	98	168	0.17	0.13
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
	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
	1997	0.0	0.0	738	172	38	134	75	97	0.23	—-
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
	1997	2,002.4	93.4	870	146	19	127	124	22	0.17	0.07
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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
COOK 1,2 (continued)	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
	1997	1,189.7	59.7	1,864	550	57	493	456	94	0.30	0.46
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
	1997	622.8	84.4	1,125	174	22	152	96	78	0.16	0.28
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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
CRYSTAL RIVER 3 (continued)											
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
	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
	1997	0.0	0.0	973	179	4	175	87	92	0.18	—-
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
	1997	820.0	94.0	213	10	1	9	1	9	0.05	0.01

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-rems: Collective Dose	Person-rems: Per Work Function: Operations	Person-rems: Per Work Function: Maint & Others	Person-rems: Per Personnel Type: Contractor	Person-rems: Per Personnel Type: Station & Utility	Average Measurable Dose (rems)	Person-rems/ MW-yr
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
	1997	1,948.7	92.7	1,331	219	2	217	155	64	0.17	0.11
DRESDEN 1[2],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

[2] 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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
DRESDEN 1[2],2,3 (continued)	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
	1997	1,096.2	79.5	2,747	467	85	382	316	151	0.17	0.43
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
	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
	1997	474.4	94.4	352	63	19	44	6	57	0.18	0.13

[2] 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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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 - 822, 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
	1997	1,449.7	89.0	1,105	278	34	244	195	83	0.25	0.19
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 - 1098 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
	1997	637.0	66.6	623	49	32	17	19	30	0.08	0.08
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 - 799 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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
FITZPATRICK (continued)	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
	1997	756.2	95.9	662	91	17	74	10	81	0.14	0.12
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
	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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
FORT CALHOUN (continued)	1996	374.9	79.5	740	226	26	200	105	121	0.31	0.6
	1997	435.9	93.6	258	41	11	30	6	35	0.16	0.09
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 - 480 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
	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
	1997	444.6	91.8	533	81	18	63	50	31	0.15	0.18
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 - 1200 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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
GRAND GULF (continued)	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
	1997	1,234.9	100.0	514	105	0	105	66	39	0.20	0.09
HADDAM NECK[3]	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
	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
	1997	(1.3)	0.0	219	11	4	7	5	6	0.05	-8.46

[3] Haddam Neck was shutdown 12/4/96 and is no longer included in the count of operating 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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	673.6	80.4	1,131	149	4	145	93	56	0.13	0.22
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 - 809, 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
	1997	1,374.7	88.1	1,945	722	100	622	432	290	0.37	0.53
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

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-rems: Collective Dose	Person-rems: Per Work Function: Operations	Person-rems: Per Work Function: Maint & Others	Person-rems: Per Personnel Type: Contractor	Person-rems: Per Personnel Type: Station & Utility	Average Measurable Dose (rems)	Person-rems/ MW-yr
HOPE CREEK 1 (continued)											
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
	1997	731.8	77.8	1,747	350	31	319	229	121	0.20	0.48
HUMBOLDT BAY[4]	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	---
	1997	0.0	0.0	105	16	---	---	---	---	0.15	---

[4] 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-rems: Collective Dose	Person-rems: Per Work Function: Operations	Person-rems: Per Work Function: Maint & Others	Person-rems: Per Personnel Type: Contractor	Person-rems: Per Personnel Type: Station & Utility	Average Measurable Dose (rems)	Person-rems/ MW-yr
INDIAN POINT 1[5],2,3[6]	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 - 931 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

[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.

[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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	360.6	45.1	1,340	367	62	305	245	122	0.27	1.02
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
	1997	495.1	54.9	1,608	234	112	122	195	39	0.15	0.47
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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	269.8	56.0	278	56	0	56	31	25	0.20	0.21
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	---
	1997	0.0	0.0	23	2	---	---	---	---	0.09	---

[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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	0.0	0.0	1,661	316	30	286	177	139	0.19	—-
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
	1997	2,001.7	95.8	1,463	234	181	53	105	129	0.16	0.12
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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
MAINE YANKEE (continued)	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
	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
	1997	0.0	0.0	991	153	1	152	110	43	0.15	—-
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
	1997	1,558.2	73.0	2,193	492	18	474	275	217	0.22	0.32
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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
MILLSTONE POINT 1 (continued)	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
	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	—
	1997	(2.9)	0.0	1,053	195	26	169	170	25	0.19	-67.24
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
	1997	(9.4)	0.0	1,435	253	5	248	161	92	0.18	-26.91

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	417.4	75.9	399	106	38	68	51	55	0.27	0.25
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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
NINE MILE POINT 1,2 (continued)	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
	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
	1997	1,321.5	74.8	1,425	429	49	380	221	208	0.30	0.32
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
	1997	1,711.5	96.2	856	103	4	99	48	55	0.12	0.06

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	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
	1997	1,563.7	67.7	1,379	223	28	195	78	145	0.16	0.14
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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
OYSTER CREEK (continued)	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
	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
	1997	579.1	94.3	509	50	9	41	2	48	0.10	0.09
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
	1997	662.5	89.9	338	48	19	29	5	43	0.14	0.07

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-rems: Collective Dose	Person-rems: Per Work Function: Operations	Person-rems: Per Work Function: Maint & Others	Person-rems: Per Personnel Type: Contractor	Person-rems: Per Personnel Type: Station & Utility	Average Measurable Dose (rems)	Person-rems/ MW-yr
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 - 1243, 1243, 1247 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	
	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
	1997	3,369.2	92.2	1,585	246	31	215	117	129	0.16	0.07
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
	1997	1,956.3	95.0	1,872	490	158	332	251	239	0.26	0.25

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	930.6	84.7	1,524	272	39	233	179	93	0.18	0.29
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
	1997	492.1	80.7	1,655	588	46	542	387	201	0.36	1.19

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
POINT BEACH 1,2	1971	393.4			164						0.4
Docket 50-266, 50-301; DPR-24, -27	1972	378.3			580						1.5
1st commercial operation 12/70, 10/72	1973	693.7		501	588	72	516			1.17	0.8
Type - 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
	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
	1997	186.8	21.8	670	92	28	64	47	45	0.14	0.49
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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
PRAIRIE ISLAND 1,2 (continued)	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
	1997	817.6	81.4	753	174	15	159	68	106	0.23	0.21
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
	1997	935.3	66.5	2,474	654	96	558	420	234	0.26	0.70

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-rems: Collective Dose	Person-rems: Per Work Function: Operations	Person-rems: Per Work Function: Maint & Others	Person-rems: Per Personnel Type: Contractor	Person-rems: Per Personnel Type: Station & Utility	Average Measurable Dose (rems)	Person-rems/ MW-yr
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	---
	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	---
	1997	0.0	0.0	16	0	0	0	0	0	0.00	---
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
	1997	778.8	86.3	1,671	347	54	293	185	162	0.21	0.45

[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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	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
	1997	707.5	99.0	304	13	9	4	1	12	0.04	0.02
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

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-rems: Collective Dose	Person-rems: Per Work Function: Opera-tions	Person-rems: Per Work Function: Maint & Others	Person-rems: Per Personnel Type: Con-tractor	Person-rems: Per Personnel Type: Station & Utility	Average Measurable Dose (rems)	Person-rems/ MW-yr
SALEM 1,2 (continued)	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	—-
	1997	279.3	17.8	894	175	1	174	155	20	0.20	.63
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
	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
	1997	1,533.9	72.9	1,652	341	0	341	217	124	0.21	0.22

[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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	907.0	79.8	1,571	186	9	177	144	42	0.12	0.21
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
	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
	1997	1,946.1	89.0	1,932	414	32	382	288	126	0.21	0.21
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
	1997	2,265.5	93.6	1,583	273	26	247	196	77	0.17	0.12

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	1,394.6	83.6	2,314	646	3	643	472	174	0.28	0.46
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 - 954 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
	1997	829.7	89.8	820	163	21	142	120	43	0.20	0.20

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
SURRY 1,2	1973	420.6		936	152					0.16	0.4
Docket 50-280, 50-281; DPR-32, -37	1974	717.4	49.8	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
	1997	1,380.3	87.1	1,335	320	49	271	168	152	0.24	0.23
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
	1997	1,918.9	89.6	1,646	433	53	380	167	266	0.26	0.23

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	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
	1997	675.7	84.3	1,049	204	31	173	121	83	0.19	0.30
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	---

[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.

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
THREE MILE ISLAND 2[11] (continued)	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	---
	1997	0.0	0.0	232	1	1	0	0	1	0.00	---
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
	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	---
	1997	0.0	0.0	227	41	---	---	---	---	0.18	---

[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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	1,220.9	88.6	1,581	414	0	414	205	209	0.26	0.34
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
	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

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
VERMONT YANKEE (continued)	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
	1997	487.1	96.0	260	57	39	18	37	20	0.22	0.12
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
	1997	2,121.1	91.4	994	158	14	144	89	69	0.16	0.07
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
	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
	1997	697.0	72.7	1,218	251	31	220	125	126	0.21	0.36

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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
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
	1997	767.2	71.2	1,186	148	43	105	97	51	0.13	0.19
WATTS BAR 1	1997	867.6	83.8	1,071	112	8	104	88	24	0.11	0.13
Docket 50-390											
1st commercial operation 5/96											
Type - PWR											
Capacity - 1117 MWe											
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
	1997	964.3	83.8	989	265	51	214	189	76	0.27	0.27

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-rems: Collective Dose	Person-rems: Per Work Function: Opera-tions	Person-rems: Per Work Function: Maint & Others	Person-rems: Per Personnel Type: Con-tractor	Person-rems: Per Personnel Type: Station & Utility	Average Measurable Dose (rems)	Person-rems/ MW-yr
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
	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	---
	1997	0.0	0.0	323	65	2	63	63	2	0.20	---
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

[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-rems					Average Measurable Dose (rems)	Person-rems/ MW-yr
					Collective Dose	Per Work Function		Per Personnel Type			
						Opera-tions	Maint & Others	Con-tractor	Station & Utility		
ZION 1,2 (continued)	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
	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
	1997	123.2	7.1	924	119	27	92	66	53	0.13	0.97

APPENDIX D

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

1997

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

1997

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	7	0	6	13	0.923	0.000	1.057	1.980
OPERATIONS PERSONNEL	11	0	0	11	1.413	0.000	0.000	1.413
HEALTH PHYSICS PERSONNEL	36	0	29	65	7.796	0.000	5.299	13.095
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.136	0.136
ENGINEERING PERSONNEL	1	0	0	1	0.201	0.000	0.000	0.201
TOTAL	55	0	36	91	10.333	0.000	6.492	16.825
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	18	2	9	29	2.811	0.329	1.139	4.279
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	0.383	0.383
HEALTH PHYSICS PERSONNEL	0	0	2	2	0.000	0.000	0.560	0.560
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	0	1	0.251	0.000	0.000	0.251
TOTAL	19	2	12	33	3.062	0.329	2.082	5.473
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	0	42	44	0.552	0.000	17.919	18.471
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	4	0	3	7	0.577	0.000	0.850	1.427
SUPERVISORY PERSONNEL	3	0	1	4	0.510	0.000	0.301	0.811
ENGINEERING PERSONNEL	4	1	9	14	0.743	0.205	4.074	5.022
TOTAL	13	1	55	69	2.382	0.205	23.144	25.731
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	1	14	20	0.796	0.142	1.939	2.877
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.101	0.000	0.000	0.101
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.103	0.103
TOTAL	6	1	15	22	0.897	0.142	2.042	3.081
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	2	0	1	3	0.279	0.000	0.125	0.404
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	1	3	0.279	0.000	0.125	0.404
REFUELING								
MAINTENANCE PERSONNEL	11	0	13	24	3.614	0.000	2.492	6.106
OPERATIONS PERSONNEL	10	0	1	11	3.345	0.000	0.369	3.714
HEALTH PHYSICS PERSONNEL	6	0	0	6	1.235	0.000	0.000	1.235
SUPERVISORY PERSONNEL	4	0	0	4	1.540	0.000	0.000	1.540
ENGINEERING PERSONNEL	1	0	2	3	0.253	0.000	0.574	0.827
TOTAL	32	0	16	48	9.987	0.000	3.435	13.422
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	43	3	84	130	8.696	0.471	24.546	33.713
OPERATIONS PERSONNEL	21	0	2	23	4.758	0.000	0.752	5.510
HEALTH PHYSICS PERSONNEL	49	0	35	84	9.988	0.000	6.834	16.822
SUPERVISORY PERSONNEL	7	0	2	9	2.050	0.000	0.437	2.487
ENGINEERING PERSONNEL	7	1	12	20	1.448	0.205	4.751	6.404
GRAND TOTALS	127	4	135	266	26.940	0.676	37.320	64.936

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***BEAVER VALLEY 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	9	0	10	19	2.456	0.000	4.772	7.228
OPERATIONS PERSONNEL	38	0	0	38	6.721	0.000	0.000	6.721
HEALTH PHYSICS PERSONNEL	23	0	23	46	5.628	0.000	9.173	14.801
SUPERVISORY PERSONNEL	7	0	1	8	1.924	0.000	0.235	2.159
ENGINEERING PERSONNEL	6	0	0	6	1.217	0.000	0.003	1.220
TOTAL	83	0	34	117	17.946	0.000	14.183	32.129
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	135	0	287	422	44.144	0.000	113.681	157.825
OPERATIONS PERSONNEL	0	0	1	1	0.107	0.000	0.485	0.592
HEALTH PHYSICS PERSONNEL	9	0	9	18	2.490	0.000	2.727	5.217
SUPERVISORY PERSONNEL	16	0	8	24	7.996	0.000	2.701	10.697
ENGINEERING PERSONNEL	10	0	2	12	2.406	0.000	1.578	3.984
TOTAL	170	0	307	477	57.143	0.000	121.172	178.315
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	109	109	0.165	0.000	53.453	53.618
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.340	0.340
HEALTH PHYSICS PERSONNEL	0	0	15	15	0.050	0.000	4.322	4.372
SUPERVISORY PERSONNEL	5	0	7	12	2.045	0.000	3.712	5.757
ENGINEERING PERSONNEL	0	0	2	2	0.000	0.000	0.015	0.015
TOTAL	5	0	133	138	2.260	0.000	61.842	64.102
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	17	17	0.157	0.000	6.470	6.627
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.014	0.000	0.017	0.031
SUPERVISORY PERSONNEL	1	0	1	2	0.396	0.000	0.256	0.652
ENGINEERING PERSONNEL	0	0	0	0	0.005	0.000	0.082	0.087
TOTAL	1	0	18	19	0.572	0.000	6.825	7.397
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.230	0.000	0.054	0.284
OPERATIONS PERSONNEL	2	0	0	2	0.365	0.000	0.000	0.365
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.423	0.000	0.168	0.591
SUPERVISORY PERSONNEL	1	0	0	1	0.162	0.000	0.000	0.162
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	5	0	1	6	1.180	0.000	0.222	1.402
REFUELING								
MAINTENANCE PERSONNEL	4	0	38	42	0.801	0.000	17.039	17.840
OPERATIONS PERSONNEL	1	0	0	1	0.245	0.000	0.000	0.245
HEALTH PHYSICS PERSONNEL	0	0	8	8	0.024	0.000	2.744	2.768
SUPERVISORY PERSONNEL	5	0	1	6	2.048	0.000	0.369	2.417
ENGINEERING PERSONNEL	1	0	3	4	0.104	0.000	1.928	2.032
TOTAL	11	0	50	61	3.222	0.000	22.080	25.302
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	149	0	461	610	47.953	0.000	195.469	243.422
OPERATIONS PERSONNEL	41	0	1	42	7.438	0.000	0.825	8.263
HEALTH PHYSICS PERSONNEL	33	0	56	89	8.629	0.000	19.151	27.780
SUPERVISORY PERSONNEL	35	0	18	53	14.571	0.000	7.273	21.844
ENGINEERING PERSONNEL	17	0	7	24	3.732	0.000	3.606	7.338
GRAND TOTALS	275	0	543	818	82.323	0.000	226.324	308.647

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***BELLEFONTE** 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	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	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
GRAND TOTALS	0	0	0	0	0.000	0.000	0.000	0.000

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	1	0	2	0.323	0.307	0.030	0.660
OPERATIONS PERSONNEL	19	0	0	19	8.780	0.002	0.002	8.784
HEALTH PHYSICS PERSONNEL	9	0	8	17	2.983	0.011	2.237	5.231
SUPERVISORY PERSONNEL	1	0	0	1	0.436	0.018	0.241	0.695
ENGINEERING PERSONNEL	0	0	0	0	0.329	0.003	0.180	0.512
TOTAL	30	1	8	39	12.851	0.341	2.690	15.882
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	17	2	2	21	4.883	1.518	0.872	7.273
OPERATIONS PERSONNEL	4	0	0	4	0.568	0.000	0.000	0.568
HEALTH PHYSICS PERSONNEL	3	0	2	5	0.860	0.004	1.097	1.961
SUPERVISORY PERSONNEL	0	1	2	3	0.060	0.159	0.762	0.981
ENGINEERING PERSONNEL	1	0	2	3	0.310	0.044	0.396	0.750
TOTAL	25	3	8	36	6.681	1.725	3.127	11.533
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.030	0.000	0.000	0.030
OPERATIONS PERSONNEL	0	0	0	0	0.026	0.000	0.000	0.026
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.002	0.000	0.000	0.002
SUPERVISORY PERSONNEL	0	0	0	0	0.005	0.000	0.000	0.005
ENGINEERING PERSONNEL	0	0	0	0	0.008	0.000	0.000	0.008
TOTAL	0	0	0	0	0.071	0.000	0.000	0.071
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	5	0	7	0.696	2.637	0.071	3.404
OPERATIONS PERSONNEL	0	0	0	0	0.218	0.000	0.000	0.218
HEALTH PHYSICS PERSONNEL	0	0	5	5	0.119	0.009	1.451	1.579
SUPERVISORY PERSONNEL	0	0	2	2	0.082	0.001	0.760	0.843
ENGINEERING PERSONNEL	0	0	1	1	0.032	0.000	0.134	0.166
TOTAL	2	5	8	15	1.147	2.647	2.416	6.210
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.250	0.196	0.000	0.446
OPERATIONS PERSONNEL	0	0	0	0	0.040	0.000	0.000	0.040
HEALTH PHYSICS PERSONNEL	6	3	3	12	4.499	0.511	0.855	5.865
SUPERVISORY PERSONNEL	1	0	0	1	0.121	0.001	0.001	0.123
ENGINEERING PERSONNEL	0	0	0	0	0.002	0.000	0.000	0.002
TOTAL	8	3	3	14	4.912	0.708	0.856	6.476
REFUELING								
MAINTENANCE PERSONNEL	4	7	0	11	1.466	2.099	0.019	3.584
OPERATIONS PERSONNEL	23	0	0	23	5.644	0.000	0.000	5.644
HEALTH PHYSICS PERSONNEL	3	0	6	9	0.501	0.001	1.695	2.197
SUPERVISORY PERSONNEL	2	0	4	6	0.535	0.010	1.906	2.451
ENGINEERING PERSONNEL	0	0	4	4	0.018	0.000	0.458	0.476
TOTAL	32	7	14	53	8.164	2.110	4.078	14.352
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	25	15	2	42	7.648	6.757	0.992	15.397
OPERATIONS PERSONNEL	46	0	0	46	15.276	0.002	0.002	15.280
HEALTH PHYSICS PERSONNEL	21	3	24	48	8.964	0.536	7.335	16.835
SUPERVISORY PERSONNEL	4	1	8	13	1.239	0.189	3.670	5.098
ENGINEERING PERSONNEL	1	0	7	8	0.699	0.047	1.168	1.914
GRAND TOTALS	97	19	41	157	33.826	7.531	13.167	54.524

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	7	1	4	12	1.305	0.013	0.535	1.853
OPERATIONS PERSONNEL	76	3	23	102	7.864	0.085	0.292	8.241
HEALTH PHYSICS PERSONNEL	37	6	5	48	9.757	0.039	1.203	10.999
SUPERVISORY PERSONNEL	28	8	16	52	0.929	0.013	0.254	1.196
ENGINEERING PERSONNEL	33	2	6	41	0.937	0.001	0.033	0.971
TOTAL	181	20	54	255	20.792	0.151	2.317	23.260
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	155	17	1041	1213	28.709	0.211	142.514	171.434
OPERATIONS PERSONNEL	82	137	37	256	8.502	3.505	0.466	12.473
HEALTH PHYSICS PERSONNEL	33	100	143	276	8.540	0.693	32.423	41.656
SUPERVISORY PERSONNEL	200	0	52	252	6.574	0.000	0.835	7.409
ENGINEERING PERSONNEL	109	20	33	162	3.066	0.010	0.174	3.250
TOTAL	579	274	1306	2159	55.391	4.419	176.412	236.222
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	3	0	280	283	0.471	0.006	38.338	38.815
OPERATIONS PERSONNEL	3	0	0	3	0.363	0.001	0.000	0.364
HEALTH PHYSICS PERSONNEL	2	1	4	7	0.580	0.007	0.795	1.382
SUPERVISORY PERSONNEL	3	0	46	49	0.084	0.000	0.735	0.819
ENGINEERING PERSONNEL	20	0	0	20	0.563	0.000	0.000	0.563
TOTAL	31	1	330	362	2.061	0.014	39.868	41.943
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	6	0	16	22	1.068	0.000	2.255	3.323
OPERATIONS PERSONNEL	3	1	0	4	0.307	0.029	0.000	0.336
HEALTH PHYSICS PERSONNEL	3	7	0	10	0.711	0.047	0.025	0.783
SUPERVISORY PERSONNEL	4	0	0	4	0.143	0.000	0.000	0.143
ENGINEERING PERSONNEL	0	0	12	12	0.010	0.000	0.059	0.069
TOTAL	16	8	28	52	2.239	0.076	2.339	4.654
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	4	4	0.000	0.000	0.559	0.559
OPERATIONS PERSONNEL	1	0	155	156	0.076	0.000	1.981	2.057
HEALTH PHYSICS PERSONNEL	3	0	0	3	0.988	0.000	0.003	0.991
SUPERVISORY PERSONNEL	7	0	1	8	0.220	0.000	0.003	0.223
ENGINEERING PERSONNEL	0	0	0	0	0.007	0.000	0.000	0.007
TOTAL	11	0	160	171	1.291	0.000	2.546	3.837
REFUELING								
MAINTENANCE PERSONNEL	36	0	18	54	6.693	0.000	2.480	9.173
OPERATIONS PERSONNEL	11	12	0	23	1.186	0.311	0.000	1.497
HEALTH PHYSICS PERSONNEL	3	35	0	38	0.706	0.245	0.088	1.039
SUPERVISORY PERSONNEL	48	9	0	57	1.575	0.012	0.005	1.592
ENGINEERING PERSONNEL	1	0	0	1	0.027	0.000	0.000	0.027
TOTAL	99	56	18	173	10.187	0.568	2.573	13.328
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	207	18	1363	1588	38.246	0.230	186.681	225.157
OPERATIONS PERSONNEL	176	153	215	544	18.298	3.931	2.739	24.968
HEALTH PHYSICS PERSONNEL	81	149	152	382	21.282	1.031	34.537	56.850
SUPERVISORY PERSONNEL	290	17	115	422	9.525	0.025	1.832	11.382
ENGINEERING PERSONNEL	163	22	51	236	4.610	0.011	0.266	4.887
GRAND TOTALS	917	359	1896	3172	91.961	5.228	226.055	323.244

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***BROWNS FERRY 1,2,3** 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	71	10	91	172	0.951	0.299	0.761	2.011
OPERATIONS PERSONNEL	115	1	26	142	28.082	0.269	6.886	35.237
HEALTH PHYSICS PERSONNEL	36	8	18	62	14.606	1.372	4.215	20.193
SUPERVISORY PERSONNEL	42	5	6	53	5.039	0.108	0.234	5.381
ENGINEERING PERSONNEL	48	5	18	71	3.275	0.042	0.300	3.617
TOTAL	312	29	159	500	51.953	2.090	12.396	66.439
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	215	22	572	809	90.410	8.944	207.073	306.427
OPERATIONS PERSONNEL	135	2	54	191	27.266	0.286	10.631	38.183
HEALTH PHYSICS PERSONNEL	39	9	14	62	8.156	1.091	1.392	10.639
SUPERVISORY PERSONNEL	54	6	24	84	8.726	1.497	4.317	14.540
ENGINEERING PERSONNEL	52	10	84	146	12.078	1.445	58.831	72.354
TOTAL	495	49	748	1292	146.636	13.263	282.244	442.143
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	6	0	87	93	0.033	0.000	2.237	2.270
OPERATIONS PERSONNEL	2	0	0	2	0.189	0.000	0.000	0.189
HEALTH PHYSICS PERSONNEL	7	1	0	8	0.033	0.090	0.000	0.123
SUPERVISORY PERSONNEL	2	2	0	4	0.016	0.095	0.000	0.111
ENGINEERING PERSONNEL	8	2	6	16	0.090	0.128	0.151	0.369
TOTAL	25	5	93	123	0.361	0.313	2.388	3.062
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	32	3	131	166	0.938	0.057	8.227	9.222
OPERATIONS PERSONNEL	17	1	10	28	0.041	0.007	1.437	1.485
HEALTH PHYSICS PERSONNEL	18	5	2	25	1.119	0.470	0.492	2.081
SUPERVISORY PERSONNEL	11	1	5	17	0.468	0.296	0.123	0.887
ENGINEERING PERSONNEL	4	2	4	10	0.076	0.393	0.802	1.271
TOTAL	82	12	152	246	2.642	1.223	11.081	14.946
WASTE PROCESSING								
MAINTENANCE PERSONNEL	39	4	87	130	0.591	0.007	2.664	3.262
OPERATIONS PERSONNEL	28	0	31	59	5.319	0.000	2.209	7.528
HEALTH PHYSICS PERSONNEL	27	3	4	34	1.035	0.008	0.014	1.057
SUPERVISORY PERSONNEL	11	1	2	14	0.961	0.001	0.000	0.962
ENGINEERING PERSONNEL	0	1	0	1	0.000	0.001	0.000	0.001
TOTAL	105	9	124	238	7.906	0.017	4.887	12.810
REFUELING								
MAINTENANCE PERSONNEL	46	4	147	197	1.596	0.034	24.398	26.028
OPERATIONS PERSONNEL	19	1	31	51	3.140	0.520	1.362	5.022
HEALTH PHYSICS PERSONNEL	9	3	3	15	1.329	0.505	0.178	2.012
SUPERVISORY PERSONNEL	11	1	6	18	0.351	0.235	0.631	1.217
ENGINEERING PERSONNEL	15	2	35	52	0.495	0.062	3.320	3.877
TOTAL	100	11	222	333	6.911	1.356	29.889	38.156
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	409	43	1115	1567	94.519	9.341	245.360	349.220
OPERATIONS PERSONNEL	316	5	152	473	64.037	1.082	22.525	87.644
HEALTH PHYSICS PERSONNEL	136	29	41	206	26.278	3.536	6.291	36.105
SUPERVISORY PERSONNEL	131	16	43	190	15.561	2.232	5.305	23.098
ENGINEERING PERSONNEL	127	22	147	296	16.014	2.071	63.404	81.489
GRAND TOTALS	1119	115	1498	2732	216.409	18.262	342.885	577.556

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	7	0	2	9	1.077	0.000	0.974	2.051
OPERATIONS PERSONNEL	65	0	42	107	17.680	0.000	7.340	25.020
HEALTH PHYSICS PERSONNEL	65	0	15	80	22.548	0.000	5.242	27.790
SUPERVISORY PERSONNEL	5	0	0	5	0.981	0.000	0.000	0.981
ENGINEERING PERSONNEL	10	0	2	12	1.759	0.000	0.271	2.030
TOTAL	152	0	61	213	44.045	0.000	13.827	57.872
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	161	9	235	405	56.658	1.477	78.124	136.259
OPERATIONS PERSONNEL	3	0	0	3	0.908	0.000	0.000	0.908
HEALTH PHYSICS PERSONNEL	14	1	10	25	3.430	0.149	3.662	7.241
SUPERVISORY PERSONNEL	7	0	1	8	1.398	0.000	1.119	2.517
ENGINEERING PERSONNEL	26	0	92	118	7.092	0.000	40.528	47.620
TOTAL	211	10	338	559	69.486	1.626	123.433	194.545
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	4	0	4	8	0.814	0.000	0.580	1.394
OPERATIONS PERSONNEL	3	0	0	3	0.836	0.000	0.000	0.836
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	4	0	7	11	0.512	0.000	2.283	2.795
TOTAL	11	0	11	22	2.162	0.000	2.863	5.025
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	28	0	16	44	6.009	0.000	3.860	9.869
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	11	0	9	20	2.085	0.000	1.692	3.777
SUPERVISORY PERSONNEL	1	0	0	1	0.141	0.000	0.000	0.141
ENGINEERING PERSONNEL	2	0	7	9	0.275	0.000	1.016	1.291
TOTAL	42	0	32	74	8.510	0.000	6.568	15.078
WASTE PROCESSING								
MAINTENANCE PERSONNEL	5	0	0	5	0.775	0.000	0.000	0.775
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	5	0	0	5	0.775	0.000	0.000	0.775
REFUELING								
MAINTENANCE PERSONNEL	32	1	21	54	10.345	0.273	5.181	15.799
OPERATIONS PERSONNEL	1	0	0	1	0.149	0.000	0.000	0.149
HEALTH PHYSICS PERSONNEL	0	0	3	3	0.000	0.000	0.424	0.424
SUPERVISORY PERSONNEL	6	0	0	6	1.933	0.000	0.000	1.933
ENGINEERING PERSONNEL	7	0	8	15	1.979	0.000	1.504	3.483
TOTAL	46	1	32	79	14.406	0.273	7.109	21.788
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	237	10	278	525	75.678	1.750	88.719	166.147
OPERATIONS PERSONNEL	72	0	42	114	19.573	0.000	7.340	26.913
HEALTH PHYSICS PERSONNEL	90	1	37	128	28.063	0.149	11.020	39.232
SUPERVISORY PERSONNEL	19	0	1	20	4.453	0.000	1.119	5.572
ENGINEERING PERSONNEL	49	0	116	165	11.617	0.000	45.602	57.219
GRAND TOTALS	467	11	474	952	139.384	1.899	153.800	295.083

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	4	0	3	7	0.565	0.000	0.330	0.895
OPERATIONS PERSONNEL	8	0	7	15	0.260	0.000	0.103	0.363
HEALTH PHYSICS PERSONNEL	4	10	0	14	0.417	0.027	0.038	0.482
SUPERVISORY PERSONNEL	2	1	2	5	0.053	0.027	0.098	0.178
ENGINEERING PERSONNEL	78	0	7	85	1.453	0.000	0.128	1.581
TOTAL	96	11	19	126	2.748	0.054	0.697	3.499
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	173	27	153	353	26.459	0.450	16.114	43.023
OPERATIONS PERSONNEL	205	108	21	334	6.694	1.623	0.309	8.626
HEALTH PHYSICS PERSONNEL	73	57	138	268	8.384	0.160	16.303	24.847
SUPERVISORY PERSONNEL	233	10	24	267	5.381	0.271	1.242	6.894
ENGINEERING PERSONNEL	80	0	20	100	1.490	0.000	0.380	1.870
TOTAL	764	202	356	1322	48.408	2.504	34.348	85.260
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	112	112	0.005	0.000	11.757	11.762
OPERATIONS PERSONNEL	10	3	0	13	0.321	0.050	0.000	0.371
HEALTH PHYSICS PERSONNEL	1	1	1	3	0.150	0.004	0.060	0.214
SUPERVISORY PERSONNEL	10	0	0	10	0.232	0.000	0.002	0.234
ENGINEERING PERSONNEL	24	0	9	33	0.437	0.000	0.198	0.635
TOTAL	45	4	122	171	1.145	0.054	12.017	13.216
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	0	1166	1171	0.806	0.001	122.684	123.491
OPERATIONS PERSONNEL	7	17	77	101	0.219	0.261	1.157	1.637
HEALTH PHYSICS PERSONNEL	2	6	1	9	0.230	0.016	0.110	0.356
SUPERVISORY PERSONNEL	14	2	225	241	0.320	0.043	11.453	11.816
ENGINEERING PERSONNEL	11	0	13	24	0.209	0.000	0.247	0.456
TOTAL	39	25	1482	1546	1.784	0.321	135.651	137.756
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	7	7	0.000	0.000	0.711	0.711
OPERATIONS PERSONNEL	0	0	94	94	0.000	0.000	1.398	1.398
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	0.001	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	101	101	0.000	0.000	2.110	2.110
REFUELING								
MAINTENANCE PERSONNEL	2	0	5	7	0.293	0.000	0.523	0.816
OPERATIONS PERSONNEL	4	5	0	9	0.139	0.077	0.000	0.216
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	9	0	0	9	0.215	0.000	0.002	0.217
ENGINEERING PERSONNEL	2	0	0	2	0.029	0.000	0.001	0.030
TOTAL	17	5	5	27	0.676	0.077	0.526	1.279
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	184	27	1446	1657	28.128	0.451	152.119	180.698
OPERATIONS PERSONNEL	234	133	199	566	7.633	2.011	2.967	12.611
HEALTH PHYSICS PERSONNEL	80	74	140	294	9.181	0.207	16.511	25.899
SUPERVISORY PERSONNEL	268	13	251	532	6.201	0.341	12.798	19.340
ENGINEERING PERSONNEL	195	0	49	244	3.618	0.000	0.954	4.572
GRAND TOTALS	961	247	2085	3293	54.761	3.010	185.349	243.120

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	0.150	0.000	0.012	0.162
OPERATIONS PERSONNEL	2	0	0	2	1.828	0.000	0.011	1.839
HEALTH PHYSICS PERSONNEL	22	0	0	22	4.703	0.000	0.000	4.703
SUPERVISORY PERSONNEL	0	0	0	0	0.255	0.000	0.051	0.306
ENGINEERING PERSONNEL	0	0	0	0	0.249	0.000	0.012	0.261
TOTAL	24	0	0	24	7.185	0.000	0.086	7.271
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	7	0	0	7	2.753	0.000	0.004	2.757
OPERATIONS PERSONNEL	0	0	0	0	0.199	0.000	0.000	0.199
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.412	0.000	0.000	0.412
SUPERVISORY PERSONNEL	0	0	0	0	0.016	0.000	0.006	0.022
ENGINEERING PERSONNEL	0	0	0	0	0.100	0.000	0.015	0.115
TOTAL	7	0	0	7	3.480	0.000	0.025	3.505
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	0.002	0.000	0.000	0.002
ENGINEERING PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
TOTAL	0	0	0	0	0.003	0.000	0.000	0.003
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.039	0.000	0.077	0.116
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	0.006	0.000	0.000	0.006
TOTAL	0	0	0	0	0.045	0.000	0.077	0.122
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.002	0.000	0.000	0.002
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	6	0	0	6	1.399	0.000	0.000	1.399
SUPERVISORY PERSONNEL	0	0	0	0	0.023	0.000	0.000	0.023
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	6	0	0	6	1.424	0.000	0.000	1.424
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	7	0	0	7	2.944	0.000	0.093	3.037
OPERATIONS PERSONNEL	2	0	0	2	2.027	0.000	0.011	2.038
HEALTH PHYSICS PERSONNEL	28	0	0	28	6.514	0.000	0.000	6.514
SUPERVISORY PERSONNEL	0	0	0	0	0.296	0.000	0.057	0.353
ENGINEERING PERSONNEL	0	0	0	0	0.356	0.000	0.027	0.383
GRAND TOTALS	37	0	0	37	12.137	0.000	0.188	12.325

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***CALVERT CLIFFS 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		1		2			0.101	0.000	0.153	0.254
OPERATIONS PERSONNEL	31	0		0		31			4.664	0.000	0.000	4.664
HEALTH PHYSICS PERSONNEL	16	0		15		31			2.251	0.000	2.854	5.105
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	48	0		16		64			7.016	0.000	3.007	10.023
ROUTINE MAINTENANCE												
MAINTENANCE PERSONNEL	6	0		0		6			0.756	0.000	0.000	0.756
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	6	0		0		6			0.756	0.000	0.000	0.756
IN-SERVICE INSPECTION												
MAINTENANCE PERSONNEL	2	0		5		7			0.213	0.000	0.956	1.169
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		1		1			0.000	0.000	0.116	0.116
TOTAL	2	0		6		8			0.213	0.000	1.072	1.285
SPECIAL MAINTENANCE												
MAINTENANCE PERSONNEL	59	27		169		255			16.863	16.350	49.876	83.089
OPERATIONS PERSONNEL	5	0		3		8			0.977	0.000	0.804	1.781
HEALTH PHYSICS PERSONNEL	29	0		65		94			6.980	0.000	16.657	23.637
SUPERVISORY PERSONNEL	0	0		2		2			0.000	0.000	0.818	0.818
ENGINEERING PERSONNEL	3	0		9		12			0.493	0.000	2.953	3.446
TOTAL	96	27		248		371			25.313	16.350	71.108	112.771
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	7	0		2		9			1.236	0.000	0.273	1.509
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		2		9			1.236	0.000	0.273	1.509
REFUELING												
MAINTENANCE PERSONNEL	22	0		76		98			4.401	0.000	27.412	31.813
OPERATIONS PERSONNEL	4	0		1		5			0.513	0.000	0.422	0.935
HEALTH PHYSICS PERSONNEL	13	0		40		53			4.121	0.000	11.237	15.358
SUPERVISORY PERSONNEL	0	0		3		3			0.000	0.000	1.671	1.671
ENGINEERING PERSONNEL	0	0		2		2			0.000	0.000	0.676	0.676
TOTAL	39	0		122		161			9.035	0.000	41.418	50.453
TOTAL BY JOB FUNCTION												
MAINTENANCE PERSONNEL	90	(97)	27	(27)	251	(238)	368	(362)	22.334	16.350	78.397	117.081
OPERATIONS PERSONNEL	40	(41)	0	(0)	4	(4)	44	(45)	6.154	0.000	1.226	7.380
HEALTH PHYSICS PERSONNEL	65	(44)	0	(0)	122	(103)	187	(147)	14.588	0.000	31.021	45.609
SUPERVISORY PERSONNEL	0	(1)	0	(0)	5	(5)	5	(6)	0.000	0.000	2.489	2.489
ENGINEERING PERSONNEL	3	(8)	0	(0)	12	(12)	15	(20)	0.493	0.000	3.745	4.238
GRAND TOTALS	198	(191)	27	(27)	394	(362)	619	(580)	43.569	16.350	116.878	176.797

*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

1997

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	119	235	263	617	3.921	3.131	3.855	10.907
OPERATIONS PERSONNEL	80	0	28	108	16.671	0.000	0.912	17.583
HEALTH PHYSICS PERSONNEL	19	0	65	84	3.000	0.000	4.343	7.343
SUPERVISORY PERSONNEL	6	1	2	9	0.064	0.000	0.000	0.064
ENGINEERING PERSONNEL	5	0	5	10	0.126	0.000	0.006	0.132
TOTAL	229	236	363	828	23.782	3.131	9.116	36.029
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	119	174	228	521	20.899	15.606	26.535	63.040
OPERATIONS PERSONNEL	63	0	28	91	0.738	0.000	3.352	4.090
HEALTH PHYSICS PERSONNEL	18	0	54	72	2.245	0.000	1.656	3.901
SUPERVISORY PERSONNEL	3	1	2	6	0.298	0.000	0.007	0.305
ENGINEERING PERSONNEL	5	0	2	7	0.512	0.000	0.207	0.719
TOTAL	208	175	314	697	24.692	15.606	31.757	72.055
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	92	235	263	590	5.556	34.178	17.247	56.981
OPERATIONS PERSONNEL	55	0	28	83	2.134	0.000	0.309	2.443
HEALTH PHYSICS PERSONNEL	19	0	65	84	1.348	0.000	4.200	5.548
SUPERVISORY PERSONNEL	6	1	2	9	0.000	0.168	0.009	0.177
ENGINEERING PERSONNEL	5	0	5	10	0.000	0.000	0.040	0.040
TOTAL	177	236	363	776	9.038	34.346	21.805	65.189
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	111	206	230	547	5.465	25.292	13.140	43.897
OPERATIONS PERSONNEL	76	0	28	104	0.560	0.000	2.160	2.720
HEALTH PHYSICS PERSONNEL	14	0	55	69	0.333	0.000	3.219	3.552
SUPERVISORY PERSONNEL	5	1	2	8	0.552	0.230	0.318	1.100
ENGINEERING PERSONNEL	5	0	4	9	0.285	0.000	0.729	1.014
TOTAL	211	207	319	737	7.195	25.522	19.566	52.283
WASTE PROCESSING								
MAINTENANCE PERSONNEL	9	9	7	25	0.001	0.000	0.001	0.002
OPERATIONS PERSONNEL	2	0	21	23	0.136	0.000	0.397	0.533
HEALTH PHYSICS PERSONNEL	13	0	19	32	1.092	0.000	1.191	2.283
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	24	9	47	80	1.229	0.000	1.589	2.818
REFUELING								
MAINTENANCE PERSONNEL	63	102	92	257	1.920	5.465	4.107	11.492
OPERATIONS PERSONNEL	23	0	8	31	0.214	0.000	0.062	0.276
HEALTH PHYSICS PERSONNEL	5	0	24	29	0.056	0.000	0.461	0.517
SUPERVISORY PERSONNEL	2	0	0	2	0.038	0.000	0.000	0.038
ENGINEERING PERSONNEL	1	0	5	6	0.028	0.000	0.248	0.276
TOTAL	94	102	129	325	2.256	5.465	4.878	12.599
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	513 (119)	961 (235)	1083 (266)	2557 (620)	37.762	83.672	64.885	186.319
OPERATIONS PERSONNEL	299 (80)	0 (0)	141 (28)	440 (108)	20.453	0.000	7.192	27.645
HEALTH PHYSICS PERSONNEL	88 (19)	0 (0)	282 (66)	370 (85)	8.074	0.000	15.070	23.144
SUPERVISORY PERSONNEL	22 (6)	4 (1)	8 (2)	34 (9)	0.952	0.398	0.334	1.684
ENGINEERING PERSONNEL	21 (5)	0 (0)	21 (5)	42 (10)	0.951	0.000	1.230	2.181
GRAND TOTALS	943 (229)	965 (236)	1535 (367)	3443 (832)	68.192	84.070	88.711	240.973

*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

1997

PLANT: *CLINTON 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	119	0	154	273	7.193	0.000	11.343	18.536
OPERATIONS PERSONNEL	47	0	3	50	7.620	0.000	0.407	8.027
HEALTH PHYSICS PERSONNEL	35	0	7	42	5.794	0.000	1.224	7.018
SUPERVISORY PERSONNEL	8	0	1	9	1.022	0.000	0.000	1.022
ENGINEERING PERSONNEL	11	0	3	14	0.689	0.000	0.101	0.790
TOTAL	220	0	168	388	22.318	0.000	13.075	35.393
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	117	0	146	263	40.513	0.000	46.804	87.317
OPERATIONS PERSONNEL	47	0	0	47	6.300	0.000	0.000	6.300
HEALTH PHYSICS PERSONNEL	33	0	7	40	7.328	0.000	1.004	8.332
SUPERVISORY PERSONNEL	8	0	1	9	3.380	0.000	0.176	3.556
ENGINEERING PERSONNEL	10	0	3	13	1.584	0.000	0.461	2.045
TOTAL	215	0	157	372	59.105	0.000	48.445	107.550
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	15	0	7	22	0.120	0.000	0.138	0.258
OPERATIONS PERSONNEL	10	0	0	10	0.113	0.000	0.000	0.113
HEALTH PHYSICS PERSONNEL	12	0	1	13	0.196	0.000	0.030	0.226
SUPERVISORY PERSONNEL	1	0	0	1	0.024	0.000	0.000	0.024
ENGINEERING PERSONNEL	3	0	0	3	0.138	0.000	0.000	0.138
TOTAL	41	0	8	49	0.591	0.000	0.168	0.759
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	43	0	1	44	3.400	0.000	0.062	3.462
OPERATIONS PERSONNEL	3	0	0	3	0.037	0.000	0.000	0.037
HEALTH PHYSICS PERSONNEL	15	0	0	15	0.253	0.000	0.000	0.253
SUPERVISORY PERSONNEL	5	0	0	5	0.236	0.000	0.000	0.236
ENGINEERING PERSONNEL	2	0	0	2	0.033	0.000	0.000	0.033
TOTAL	68	0	1	69	3.959	0.000	0.062	4.021
WASTE PROCESSING								
MAINTENANCE PERSONNEL	35	0	36	71	0.651	0.000	0.606	1.257
OPERATIONS PERSONNEL	22	0	1	23	0.103	0.000	0.000	0.103
HEALTH PHYSICS PERSONNEL	30	0	6	36	0.334	0.000	0.063	0.397
SUPERVISORY PERSONNEL	6	0	0	6	0.061	0.000	0.000	0.061
ENGINEERING PERSONNEL	1	0	0	1	0.002	0.000	0.000	0.002
TOTAL	94	0	43	137	1.151	0.000	0.669	1.820
REFUELING								
MAINTENANCE PERSONNEL	31	0	50	81	1.966	0.000	6.807	8.773
OPERATIONS PERSONNEL	1	0	0	1	0.001	0.000	0.000	0.001
HEALTH PHYSICS PERSONNEL	14	0	1	15	0.958	0.000	0.145	1.103
SUPERVISORY PERSONNEL	5	0	0	5	0.060	0.000	0.000	0.060
ENGINEERING PERSONNEL	2	0	0	2	0.008	0.000	0.000	0.008
TOTAL	53	0	51	104	2.993	0.000	6.952	9.945
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	360	0	394	754	53.843	0.000	65.760	119.603
OPERATIONS PERSONNEL	130	0	4	134	14.174	0.000	0.407	14.581
HEALTH PHYSICS PERSONNEL	139	0	22	161	14.863	0.000	2.466	17.329
SUPERVISORY PERSONNEL	33	0	2	35	4.783	0.000	0.176	4.959
ENGINEERING PERSONNEL	29	0	6	35	2.454	0.000	0.562	3.016
GRAND TOTALS	691	0	428	1119	90.117	0.000	69.371	159.488

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***COMANCHE PEAK 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	8	8	0.061	0.000	2.656	2.717
OPERATIONS PERSONNEL	11	0	0	11	4.279	0.000	0.149	4.428
HEALTH PHYSICS PERSONNEL	9	1	31	41	2.758	0.144	8.010	10.912
SUPERVISORY PERSONNEL	0	0	0	0	0.096	0.000	0.000	0.096
ENGINEERING PERSONNEL	1	0	0	1	0.422	0.000	0.122	0.544
TOTAL	21	1	39	61	7.616	0.144	10.937	18.697
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	11	0	148	159	5.179	0.000	44.734	49.913
OPERATIONS PERSONNEL	3	0	1	4	1.460	0.000	0.448	1.908
HEALTH PHYSICS PERSONNEL	5	0	3	8	1.459	0.050	1.715	3.224
SUPERVISORY PERSONNEL	0	0	0	0	0.052	0.000	0.080	0.132
ENGINEERING PERSONNEL	0	0	0	0	0.512	0.000	0.378	0.890
TOTAL	19	0	152	171	8.662	0.050	47.355	56.067
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	67	67	0.088	0.000	24.679	24.767
OPERATIONS PERSONNEL	2	0	0	2	0.466	0.000	0.000	0.466
HEALTH PHYSICS PERSONNEL	2	0	15	17	0.684	0.000	4.302	4.986
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	4	4	0.129	0.000	1.063	1.192
TOTAL	4	0	86	90	1.367	0.000	30.044	31.411
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	31	31	0.017	0.000	9.103	9.120
OPERATIONS PERSONNEL	0	0	2	2	0.030	0.000	0.619	0.649
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.018	0.000	0.056	0.074
SUPERVISORY PERSONNEL	0	0	0	0	0.018	0.000	0.000	0.018
ENGINEERING PERSONNEL	0	0	0	0	0.135	0.000	0.239	0.374
TOTAL	0	0	33	33	0.218	0.000	10.017	10.235
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	3	3	0.045	0.000	1.098	1.143
OPERATIONS PERSONNEL	0	0	1	1	0.401	0.000	0.234	0.635
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.502	0.070	0.180	0.752
SUPERVISORY PERSONNEL	0	0	0	0	0.007	0.000	0.000	0.007
ENGINEERING PERSONNEL	0	0	0	0	0.026	0.000	0.041	0.067
TOTAL	1	0	4	5	0.981	0.070	1.553	2.604
REFUELING								
MAINTENANCE PERSONNEL	0	0	50	50	0.161	0.000	21.481	21.642
OPERATIONS PERSONNEL	5	0	0	5	1.271	0.000	0.059	1.330
HEALTH PHYSICS PERSONNEL	5	0	7	12	1.145	0.000	2.220	3.365
SUPERVISORY PERSONNEL	0	0	0	0	0.006	0.000	0.005	0.011
ENGINEERING PERSONNEL	0	0	1	1	0.191	0.000	0.240	0.431
TOTAL	10	0	58	68	2.774	0.000	24.005	26.779
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	11 (14)	0 (0)	307 (293)	318 (307)	5.551	0.000	103.751	109.302
OPERATIONS PERSONNEL	21 (23)	0 (0)	4 (5)	25 (28)	7.907	0.000	1.509	9.416
HEALTH PHYSICS PERSONNEL	22 (23)	1 (1)	56 (56)	79 (80)	6.566	0.264	16.483	23.313
SUPERVISORY PERSONNEL	0 (0)	0 (0)	0 (0)	0 (0)	0.179	0.000	0.085	0.264
ENGINEERING PERSONNEL	1 (2)	0 (0)	5 (9)	6 (11)	1.415	0.000	2.083	3.498
GRAND TOTALS	55 (62)	1 (1)	372 (363)	428 (426)	21.618	0.264	123.911	145.793

*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

1997

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	2	0	79	81	3.076	0.054	25.007	28.137
OPERATIONS PERSONNEL	39	0	2	41	11.179	0.158	1.921	13.258
HEALTH PHYSICS PERSONNEL	33	0	19	52	9.188	0.013	7.464	16.665
SUPERVISORY PERSONNEL	1	0	0	1	0.552	0.002	0.298	0.852
ENGINEERING PERSONNEL	3	0	0	3	1.432	0.225	1.267	2.924
TOTAL	78	0	100	178	25.427	0.452	35.957	61.836
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	94	2	570	666	28.841	0.243	303.264	332.348
OPERATIONS PERSONNEL	20	1	28	49	6.557	0.124	14.166	20.847
HEALTH PHYSICS PERSONNEL	38	0	65	103	18.206	0.005	26.659	44.870
SUPERVISORY PERSONNEL	2	0	1	3	0.789	0.007	0.472	1.268
ENGINEERING PERSONNEL	13	1	10	24	3.957	0.431	5.497	9.885
TOTAL	167	4	674	845	58.350	0.810	350.058	409.218
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	24	24	0.390	0.000	12.140	12.530
OPERATIONS PERSONNEL	6	0	3	9	2.683	0.000	1.751	4.434
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.032	0.000	0.095	0.127
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.003	0.003
ENGINEERING PERSONNEL	0	0	1	1	0.049	0.001	0.262	0.312
TOTAL	6	0	28	34	3.154	0.001	14.251	17.406
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	0	146	151	2.516	0.000	70.111	72.627
OPERATIONS PERSONNEL	5	0	2	7	2.107	0.002	0.489	2.598
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.526	0.000	0.022	0.548
SUPERVISORY PERSONNEL	0	0	0	0	0.006	0.000	0.002	0.008
ENGINEERING PERSONNEL	0	0	0	0	0.159	0.052	0.050	0.261
TOTAL	12	0	148	160	5.314	0.054	70.674	76.042
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.006	0.000	0.025	0.031
OPERATIONS PERSONNEL	0	0	0	0	0.007	0.000	0.000	0.007
HEALTH PHYSICS PERSONNEL	0	0	2	2	0.238	0.000	0.359	0.597
SUPERVISORY PERSONNEL	0	0	0	0	0.004	0.000	0.000	0.004
ENGINEERING PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
TOTAL	0	0	2	2	0.256	0.000	0.384	0.640
REFUELING								
MAINTENANCE PERSONNEL	3	0	22	25	2.479	0.000	8.175	10.654
OPERATIONS PERSONNEL	8	0	38	46	3.506	0.033	13.032	16.571
HEALTH PHYSICS PERSONNEL	7	0	6	13	1.867	0.000	1.513	3.380
SUPERVISORY PERSONNEL	0	0	0	0	0.013	0.000	0.001	0.014
ENGINEERING PERSONNEL	1	0	1	2	0.674	0.006	0.249	0.929
TOTAL	19	0	67	86	8.539	0.039	22.970	31.548
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	104 (108)	2 (2)	841 (703)	947 (813)	37.308	0.297	418.722	456.327
OPERATIONS PERSONNEL	78 (65)	1 (1)	73 (72)	152 (138)	26.039	0.317	31.359	57.715
HEALTH PHYSICS PERSONNEL	80 (45)	0 (0)	92 (90)	172 (135)	30.057	0.018	36.112	66.187
SUPERVISORY PERSONNEL	3 (3)	0 (0)	1 (2)	4 (5)	1.364	0.009	0.776	2.149
ENGINEERING PERSONNEL	17 (18)	1 (1)	12 (16)	30 (35)	6.272	0.715	7.325	14.312
GRAND TOTALS	282 (239)	4 (4)	1019 (883)	1305 (1126)	101.040	1.356	494.294	596.690

*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

1997

PLANT: ***COOPER STATION** 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	80	5	75	160	0.713	0.005	0.204	0.922
OPERATIONS PERSONNEL	88	0	1	89	9.441	0.000	0.006	9.447
HEALTH PHYSICS PERSONNEL	61	2	68	131	6.649	0.010	2.483	9.142
SUPERVISORY PERSONNEL	181	8	55	244	1.665	0.021	0.153	1.839
ENGINEERING PERSONNEL	130	6	134	270	1.760	0.098	0.713	2.571
TOTAL	540	21	333	894	20.228	0.134	3.559	23.921
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	144	5	419	568	35.015	0.053	47.047	82.115
OPERATIONS PERSONNEL	64	0	0	64	5.975	0.000	0.000	5.975
HEALTH PHYSICS PERSONNEL	42	1	76	119	6.189	0.001	9.266	15.456
SUPERVISORY PERSONNEL	89	4	14	107	3.658	0.163	0.407	4.228
ENGINEERING PERSONNEL	70	3	208	281	5.530	0.955	17.571	24.056
TOTAL	409	13	717	1139	56.367	1.172	74.291	131.830
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	14	0	113	127	1.637	0.000	11.466	13.103
OPERATIONS PERSONNEL	7	0	0	7	0.026	0.000	0.000	0.026
HEALTH PHYSICS PERSONNEL	6	0	11	17	0.120	0.000	0.155	0.275
SUPERVISORY PERSONNEL	0	0	2	2	0.000	0.000	0.051	0.051
ENGINEERING PERSONNEL	11	0	75	86	0.382	0.000	7.214	7.596
TOTAL	38	0	201	239	2.165	0.000	18.886	21.051
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	51	0	1	52	1.035	0.000	0.048	1.083
OPERATIONS PERSONNEL	10	0	0	10	0.094	0.000	0.000	0.094
HEALTH PHYSICS PERSONNEL	23	1	4	28	0.891	0.001	0.084	0.976
SUPERVISORY PERSONNEL	5	0	2	7	0.195	0.000	0.030	0.225
ENGINEERING PERSONNEL	7	0	1	8	0.017	0.000	0.002	0.019
TOTAL	96	1	8	105	2.232	0.001	0.164	2.397
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	3	0	0	3	0.262	0.000	0.000	0.262
HEALTH PHYSICS PERSONNEL	8	0	2	10	0.199	0.000	0.022	0.221
SUPERVISORY PERSONNEL	1	0	0	1	0.054	0.000	0.000	0.054
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	13	0	2	15	0.515	0.000	0.022	0.537
REFUELING								
MAINTENANCE PERSONNEL	45	0	41	86	0.786	0.000	3.148	3.934
OPERATIONS PERSONNEL	23	0	0	23	0.582	0.000	0.000	0.582
HEALTH PHYSICS PERSONNEL	20	0	32	52	1.114	0.000	1.442	2.556
SUPERVISORY PERSONNEL	15	0	4	19	0.206	0.000	0.077	0.283
ENGINEERING PERSONNEL	16	2	46	64	0.282	0.002	4.137	4.421
TOTAL	119	2	123	244	2.970	0.002	8.804	11.776
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	335	10	649	994	39.186	0.058	61.913	101.157
OPERATIONS PERSONNEL	195	0	1	196	16.380	0.000	0.006	16.386
HEALTH PHYSICS PERSONNEL	160	4	193	357	15.162	0.012	13.452	28.626
SUPERVISORY PERSONNEL	291	12	77	380	5.778	0.184	0.718	6.680
ENGINEERING PERSONNEL	234	11	464	709	7.971	1.055	29.637	38.663
GRAND TOTALS	1215	37	1384	2636	84.477	1.309	105.726	191.512

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	0.104	0.000	0.000	0.104
OPERATIONS PERSONNEL	15	0	0	15	3.569	0.000	0.000	3.569
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.012	0.000	0.000	0.012
SUPERVISORY PERSONNEL	0	0	0	0	0.068	0.000	0.000	0.068
ENGINEERING PERSONNEL	1	0	0	1	0.257	0.049	0.000	0.306
TOTAL	16	0	0	16	4.010	0.049	0.000	4.059
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	40	75	50	165	11.328	53.535	20.923	85.786
OPERATIONS PERSONNEL	28	50	64	142	9.735	0.000	25.467	35.202
HEALTH PHYSICS PERSONNEL	22	0	30	52	6.590	0.000	10.914	17.504
SUPERVISORY PERSONNEL	3	8	29	40	0.879	3.166	10.760	14.805
ENGINEERING PERSONNEL	0	2	3	5	0.052	0.570	1.567	2.189
TOTAL	93	135	176	404	28.584	57.271	69.631	155.486
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	13	13	0.171	0.030	4.716	4.917
OPERATIONS PERSONNEL	2	0	24	26	0.300	0.000	9.857	10.157
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.061	0.061
SUPERVISORY PERSONNEL	0	0	4	4	0.009	0.006	1.484	1.499
ENGINEERING PERSONNEL	0	0	1	1	0.008	0.065	0.260	0.333
TOTAL	2	0	42	44	0.488	0.101	16.378	16.967
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	2	2	0.354	0.074	0.274	0.702
OPERATIONS PERSONNEL	1	0	0	1	0.686	0.000	0.090	0.776
HEALTH PHYSICS PERSONNEL	0	0	4	4	0.182	0.000	1.012	1.194
SUPERVISORY PERSONNEL	0	0	0	0	0.097	0.000	0.000	0.097
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	1	0	6	7	1.319	0.074	1.376	2.769
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	40	75	65	180	11.957	53.639	25.913	91.509
OPERATIONS PERSONNEL	46	50	88	184	14.290	0.000	35.414	49.704
HEALTH PHYSICS PERSONNEL	22	0	34	56	6.784	0.000	11.987	18.771
SUPERVISORY PERSONNEL	3	8	33	44	1.053	3.172	12.244	16.469
ENGINEERING PERSONNEL	1	2	4	7	0.317	0.684	1.827	2.828
GRAND TOTALS	112	135	224	471	34.401	57.495	87.385	179.281

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	0.014	0.000	0.009	0.023
OPERATIONS PERSONNEL	0	0	0	0	0.515	0.000	0.001	0.516
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.440	0.000	0.000	0.440
SUPERVISORY PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.068	0.000	0.000	0.068
TOTAL	0	0	0	0	1.038	0.000	0.010	1.048
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.554	0.001	0.013	0.568
OPERATIONS PERSONNEL	0	0	0	0	0.003	0.000	0.000	0.003
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	0.101	0.000	0.000	0.101
TOTAL	0	0	0	0	0.670	0.001	0.013	0.684
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.006	0.000	0.000	0.006
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	0.006	0.000	0.000	0.006
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	6	0	3	9	3.721	0.109	1.192	5.022
OPERATIONS PERSONNEL	0	0	0	0	0.726	0.000	0.005	0.731
HEALTH PHYSICS PERSONNEL	2	0	0	2	1.124	0.000	0.000	1.124
SUPERVISORY PERSONNEL	0	0	0	0	0.067	0.000	0.000	0.067
ENGINEERING PERSONNEL	2	0	1	3	1.083	0.000	0.170	1.253
TOTAL	10	0	4	14	6.721	0.109	1.367	8.197
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.044	0.000	0.000	0.044
OPERATIONS PERSONNEL	0	0	0	0	0.012	0.000	0.000	0.012
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.236	0.000	0.000	0.236
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.007	0.000	0.000	0.007
TOTAL	0	0	0	0	0.299	0.000	0.000	0.299
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	6	0	3	9	4.339	0.110	1.214	5.663
OPERATIONS PERSONNEL	0	0	0	0	1.256	0.000	0.006	1.262
HEALTH PHYSICS PERSONNEL	2	0	0	2	1.812	0.000	0.000	1.812
SUPERVISORY PERSONNEL	0	0	0	0	0.068	0.000	0.000	0.068
ENGINEERING PERSONNEL	2	0	1	3	1.259	0.000	0.170	1.429
GRAND TOTALS	10	0	4	14	8.734	0.110	1.390	10.234

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	2	0	0	2	0.002	0.000	0.000	0.002
OPERATIONS PERSONNEL	24	1	0	25	1.095	0.032	0.000	1.127
HEALTH PHYSICS PERSONNEL	34	3	1	38	0.767	0.028	0.001	0.796
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	0	1	0.004	0.000	0.000	0.004
TOTAL	61	4	1	66	1.868	0.060	0.001	1.929
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	41	12	117	170	1.747	0.639	3.525	5.911
OPERATIONS PERSONNEL	7	3	2	12	0.073	0.258	0.132	0.463
HEALTH PHYSICS PERSONNEL	45	3	36	84	3.733	0.174	1.274	5.181
SUPERVISORY PERSONNEL	1	0	0	1	0.022	0.000	0.000	0.022
ENGINEERING PERSONNEL	5	3	9	17	0.387	0.022	0.143	0.552
TOTAL	99	21	164	284	5.962	1.093	5.074	12.129
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	8	24	33	0.008	1.535	2.932	4.475
OPERATIONS PERSONNEL	4	0	2	6	0.685	0.000	0.510	1.195
HEALTH PHYSICS PERSONNEL	2	0	3	5	0.101	0.000	0.281	0.382
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	7	7	0.000	0.000	2.864	2.864
TOTAL	7	8	36	51	0.794	1.535	6.587	8.916
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	38	11	198	247	4.967	0.380	43.844	49.191
OPERATIONS PERSONNEL	8	2	2	12	1.592	1.893	0.059	3.544
HEALTH PHYSICS PERSONNEL	28	4	58	90	3.328	0.231	18.720	22.279
SUPERVISORY PERSONNEL	2	0	0	2	1.533	0.000	0.000	1.533
ENGINEERING PERSONNEL	3	3	11	17	0.197	1.448	0.677	2.322
TOTAL	79	20	269	368	11.617	3.952	63.300	78.869
WASTE PROCESSING								
MAINTENANCE PERSONNEL	14	0	12	26	0.234	0.000	0.657	0.891
OPERATIONS PERSONNEL	13	1	0	14	0.226	0.029	0.000	0.255
HEALTH PHYSICS PERSONNEL	36	2	3	41	5.603	0.009	1.072	6.684
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	0	1	0.001	0.000	0.000	0.001
TOTAL	64	3	15	82	6.064	0.038	1.729	7.831
REFUELING								
MAINTENANCE PERSONNEL	41	14	239	294	11.217	2.106	48.767	62.090
OPERATIONS PERSONNEL	32	2	3	37	3.674	0.382	0.480	4.536
HEALTH PHYSICS PERSONNEL	39	4	60	103	3.643	0.368	8.340	12.351
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	6	2	13	21	0.716	0.229	1.059	2.004
TOTAL	118	22	315	455	19.250	3.085	58.646	80.981
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	137	45	590	772	18.175	4.660	99.725	122.560
OPERATIONS PERSONNEL	88	9	9	106	7.345	2.594	1.181	11.120
HEALTH PHYSICS PERSONNEL	184	16	161	361	17.175	0.810	29.688	47.673
SUPERVISORY PERSONNEL	3	0	0	3	1.555	0.000	0.000	1.555
ENGINEERING PERSONNEL	16	8	40	64	1.305	1.699	4.743	7.747
GRAND TOTALS	428	78	800	1306	45.555	9.763	135.337	190.655

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	39	2	87	128	14.537	0.063	8.232	22.832
OPERATIONS PERSONNEL	140	0	75	215	16.083	0.000	3.787	19.870
HEALTH PHYSICS PERSONNEL	85	63	39	187	19.437	0.510	6.463	26.410
SUPERVISORY PERSONNEL	147	0	43	190	5.462	0.000	0.400	5.862
ENGINEERING PERSONNEL	104	0	47	151	4.064	0.000	5.405	9.469
TOTAL	515	65	291	871	59.583	0.573	24.287	84.443
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	146	27	1001	1174	53.738	0.761	94.333	148.832
OPERATIONS PERSONNEL	65	0	4	69	7.536	0.000	0.179	7.715
HEALTH PHYSICS PERSONNEL	43	190	127	360	9.964	1.547	21.007	32.518
SUPERVISORY PERSONNEL	135	0	36	171	4.995	0.000	0.340	5.335
ENGINEERING PERSONNEL	104	0	1225	1329	4.076	0.000	141.361	145.437
TOTAL	493	217	2393	3103	80.309	2.308	257.220	339.837
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	5	5	0.000	0.000	0.444	0.444
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	3	0	3	0.000	0.023	0.000	0.023
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	6	7	0.037	0.000	0.719	0.756
TOTAL	1	3	11	15	0.037	0.023	1.163	1.223
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	2	87	90	0.426	0.041	8.219	8.686
OPERATIONS PERSONNEL	0	0	0	0	0.054	0.000	0.000	0.054
HEALTH PHYSICS PERSONNEL	2	5	9	16	0.467	0.039	1.482	1.988
SUPERVISORY PERSONNEL	1	0	0	1	0.024	0.000	0.000	0.024
ENGINEERING PERSONNEL	0	0	96	96	0.003	0.000	11.119	11.122
TOTAL	4	7	192	203	0.974	0.080	20.820	21.874
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	3	3	0.000	0.000	0.314	0.314
OPERATIONS PERSONNEL	15	0	87	102	1.776	0.000	4.419	6.195
HEALTH PHYSICS PERSONNEL	14	0	1	15	3.192	0.001	0.119	3.312
SUPERVISORY PERSONNEL	19	0	0	19	0.692	0.000	0.000	0.692
ENGINEERING PERSONNEL	0	0	5	5	0.006	0.000	0.533	0.539
TOTAL	48	0	96	144	5.666	0.001	5.385	11.052
REFUELING								
MAINTENANCE PERSONNEL	0	0	18	18	0.008	0.000	1.728	1.736
OPERATIONS PERSONNEL	6	0	0	6	0.580	0.000	0.000	0.580
HEALTH PHYSICS PERSONNEL	1	4	1	6	0.215	0.032	0.089	0.336
SUPERVISORY PERSONNEL	7	0	0	7	0.273	0.000	0.000	0.273
ENGINEERING PERSONNEL	3	0	44	47	0.132	0.000	5.124	5.256
TOTAL	17	4	63	84	1.208	0.032	6.941	8.181
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	186	31	1201	1418	68.709	0.865	113.270	182.844
OPERATIONS PERSONNEL	226	0	166	392	26.029	0.000	8.385	34.414
HEALTH PHYSICS PERSONNEL	145	265	177	587	33.275	2.152	29.160	64.587
SUPERVISORY PERSONNEL	309	0	79	388	11.446	0.000	0.740	12.186
ENGINEERING PERSONNEL	212	0	1423	1635	8.318	0.000	164.261	172.579
GRAND TOTALS	1078	296	3046	4420	147.777	3.017	315.816	466.610

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	14	0	0	14	2.588	0.000	0.000	2.588
OPERATIONS PERSONNEL	35	0	0	35	9.593	0.000	0.000	9.593
HEALTH PHYSICS PERSONNEL	7	0	0	7	1.718	0.000	0.000	1.718
SUPERVISORY PERSONNEL	3	0	1	4	1.104	0.000	0.136	1.240
ENGINEERING PERSONNEL	1	0	1	2	0.402	0.000	0.194	0.596
TOTAL	60	0	2	62	15.405	0.000	0.330	15.735
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	70	0	9	79	22.787	0.000	4.225	27.012
OPERATIONS PERSONNEL	1	0	0	1	0.206	0.000	0.000	0.206
HEALTH PHYSICS PERSONNEL	5	0	0	5	2.127	0.000	0.000	2.127
SUPERVISORY PERSONNEL	5	0	0	5	1.315	0.000	0.000	1.315
ENGINEERING PERSONNEL	10	0	1	11	2.154	0.000	0.136	2.290
TOTAL	91	0	10	101	28.589	0.000	4.361	32.950
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	3	0	2	5	0.568	0.000	0.322	0.890
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	3	0	2	5	0.568	0.000	0.322	0.890
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.170	0.000	0.000	0.170
OPERATIONS PERSONNEL	7	0	0	7	1.058	0.000	0.000	1.058
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	1	0	0	1	0.128	0.000	0.000	0.128
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	9	0	0	9	1.356	0.000	0.000	1.356
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	88	0	11	99	26.113	0.000	4.547	30.660
OPERATIONS PERSONNEL	43	0	0	43	10.857	0.000	0.000	10.857
HEALTH PHYSICS PERSONNEL	12	0	0	12	3.845	0.000	0.000	3.845
SUPERVISORY PERSONNEL	9	0	1	10	2.547	0.000	0.136	2.683
ENGINEERING PERSONNEL	11	0	2	13	2.556	0.000	0.330	2.886
GRAND TOTALS	163	0	14	177	45.918	0.000	5.013	50.931

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	1	0	1	0.068	0.255	0.111	0.434
OPERATIONS PERSONNEL	42	0	0	42	11.029	0.008	0.000	11.037
HEALTH PHYSICS PERSONNEL	25	1	37	63	7.755	0.485	12.143	20.383
SUPERVISORY PERSONNEL	1	0	0	1	0.679	0.092	0.288	1.059
ENGINEERING PERSONNEL	0	0	0	0	0.493	0.052	0.253	0.798
TOTAL	68	2	37	107	20.024	0.892	12.795	33.711
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	10	0	0	10	5.827	0.024	1.620	7.471
OPERATIONS PERSONNEL	0	0	0	0	0.124	0.000	0.000	0.124
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.128	0.000	0.116	0.244
SUPERVISORY PERSONNEL	0	0	0	0	0.058	0.000	0.001	0.059
ENGINEERING PERSONNEL	0	0	0	0	0.060	0.001	0.024	0.085
TOTAL	10	0	0	10	6.197	0.025	1.761	7.983
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	1	40	41	0.000	0.129	30.117	30.246
OPERATIONS PERSONNEL	4	0	1	5	0.966	0.000	0.232	1.198
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.068	0.000	0.233	0.301
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.012	0.022	0.034
ENGINEERING PERSONNEL	3	3	56	62	0.954	0.663	52.073	53.690
TOTAL	7	4	98	109	1.988	0.804	82.677	85.469
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	80	0	205	285	31.336	0.038	77.208	108.582
OPERATIONS PERSONNEL	5	0	8	13	1.648	0.000	1.653	3.301
HEALTH PHYSICS PERSONNEL	39	0	3	42	10.330	0.018	1.674	12.022
SUPERVISORY PERSONNEL	0	0	0	0	0.339	0.039	0.012	0.390
ENGINEERING PERSONNEL	2	0	28	30	0.655	0.011	14.231	14.897
TOTAL	126	0	244	370	44.308	0.106	94.778	139.192
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	3	5	0.297	0.000	1.477	1.774
OPERATIONS PERSONNEL	3	0	0	3	0.592	0.000	0.021	0.613
HEALTH PHYSICS PERSONNEL	27	0	2	29	6.804	0.000	0.644	7.448
SUPERVISORY PERSONNEL	0	0	0	0	0.016	0.000	0.000	0.016
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	32	0	5	37	7.709	0.000	2.142	9.851
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.094	0.000	0.079	0.173
OPERATIONS PERSONNEL	1	0	2	3	0.423	0.000	0.915	1.338
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.072	0.000	0.005	0.077
ENGINEERING PERSONNEL	0	0	0	0	0.008	0.012	0.107	0.127
TOTAL	1	0	2	3	0.597	0.012	1.106	1.715
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	92	2	248	342	37.622	0.446	110.612	148.680
OPERATIONS PERSONNEL	55	0	11	66	14.782	0.008	2.821	17.611
HEALTH PHYSICS PERSONNEL	91	1	43	135	25.085	0.503	14.810	40.398
SUPERVISORY PERSONNEL	1	0	0	1	1.164	0.143	0.328	1.635
ENGINEERING PERSONNEL	5	3	84	92	2.170	0.739	66.688	69.597
GRAND TOTALS	244	6	386	636	80.823	1.839	195.259	277.921

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***FERMI 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	134	2	42	178	7.963	0.001	1.417	9.381
OPERATIONS PERSONNEL	72	0	24	96	2.558	0.000	3.413	5.971
HEALTH PHYSICS PERSONNEL	37	0	1	38	4.592	0.000	0.143	4.735
SUPERVISORY PERSONNEL	156	26	214	396	6.345	0.246	2.317	8.908
ENGINEERING PERSONNEL	82	5	2	89	1.203	0.002	0.000	1.205
TOTAL	481	33	283	797	22.661	0.249	7.290	30.200
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	6	0	2	8	1.105	0.000	0.006	1.111
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	1	0	5	6	0.055	0.000	0.012	0.067
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	0	7	14	1.160	0.000	0.018	1.178
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	1	0	0	1	0.273	0.000	0.000	0.273
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	0.273	0.000	0.000	0.273
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	21	3	109	133	2.362	0.002	5.845	8.209
OPERATIONS PERSONNEL	10	1	1	12	0.265	0.000	0.000	0.265
HEALTH PHYSICS PERSONNEL	4	0	2	6	0.183	0.000	0.035	0.218
SUPERVISORY PERSONNEL	22	16	117	155	0.440	0.035	2.957	3.432
ENGINEERING PERSONNEL	16	0	5	21	0.154	0.000	0.209	0.363
TOTAL	73	20	234	327	3.404	0.037	9.046	12.487
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	0.295	0.295
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	1	1	0.000	0.000	0.295	0.295
REFUELING								
MAINTENANCE PERSONNEL	2	0	0	2	0.281	0.000	0.000	0.281
OPERATIONS PERSONNEL	2	0	2	4	0.069	0.000	0.045	0.114
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.010	0.000	0.000	0.010
SUPERVISORY PERSONNEL	1	0	31	32	0.000	0.000	1.833	1.833
ENGINEERING PERSONNEL	4	0	0	4	0.058	0.000	0.000	0.058
TOTAL	10	0	34	44	0.418	0.000	1.878	2.296
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	163	5	153	321	11.711	0.003	7.268	18.982
OPERATIONS PERSONNEL	84	1	28	113	2.892	0.000	3.753	6.645
HEALTH PHYSICS PERSONNEL	43	0	4	47	5.058	0.000	0.178	5.236
SUPERVISORY PERSONNEL	180	42	367	589	6.840	0.281	7.119	14.240
ENGINEERING PERSONNEL	102	5	7	114	1.415	0.002	0.209	1.626
GRAND TOTALS	572	53	559	1184	27.916	0.286	18.527	46.729

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	1	5	0.232	0.000	0.000	0.232
OPERATIONS PERSONNEL	47	0	1	48	16.271	0.000	0.001	16.272
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.082	0.000	0.000	0.082
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.010	0.000	0.010
TOTAL	51	0	2	53	16.585	0.010	0.001	16.596
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	89	1	22	112	30.009	0.436	4.672	35.117
OPERATIONS PERSONNEL	48	0	0	48	4.867	0.059	0.024	4.950
HEALTH PHYSICS PERSONNEL	46	0	0	46	10.351	0.000	0.206	10.557
SUPERVISORY PERSONNEL	6	0	1	7	1.875	0.000	0.361	2.236
ENGINEERING PERSONNEL	5	0	2	7	1.543	0.035	0.885	2.463
TOTAL	194	1	25	220	48.645	0.530	6.148	55.323
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	78	0	9	87	2.278	0.000	0.160	2.438
OPERATIONS PERSONNEL	39	0	0	39	1.797	0.000	0.000	1.797
HEALTH PHYSICS PERSONNEL	21	0	0	21	0.674	0.000	0.000	0.674
SUPERVISORY PERSONNEL	5	0	1	6	0.188	0.000	0.035	0.223
ENGINEERING PERSONNEL	4	0	2	6	1.049	0.011	0.094	1.154
TOTAL	147	0	12	159	5.986	0.011	0.289	6.286
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	19	1	22	42	0.574	0.042	2.455	3.071
OPERATIONS PERSONNEL	8	0	0	8	0.110	0.000	0.000	0.110
HEALTH PHYSICS PERSONNEL	17	0	0	17	0.211	0.000	0.000	0.211
SUPERVISORY PERSONNEL	2	0	0	2	0.037	0.000	0.000	0.037
ENGINEERING PERSONNEL	0	0	3	3	0.000	0.011	0.352	0.363
TOTAL	46	1	25	72	0.932	0.053	2.807	3.792
WASTE PROCESSING								
MAINTENANCE PERSONNEL	25	1	0	26	3.130	0.000	0.015	3.145
OPERATIONS PERSONNEL	10	0	1	11	1.350	0.000	0.289	1.639
HEALTH PHYSICS PERSONNEL	15	0	0	15	1.093	0.000	0.184	1.277
SUPERVISORY PERSONNEL	0	0	0	0	0.019	0.000	0.000	0.019
ENGINEERING PERSONNEL	0	0	0	0	0.002	0.000	0.000	0.002
TOTAL	50	1	1	52	5.594	0.000	0.488	6.082
REFUELING								
MAINTENANCE PERSONNEL	1	0	0	1	0.004	0.000	0.018	0.022
OPERATIONS PERSONNEL	6	0	0	6	0.132	0.000	0.000	0.132
HEALTH PHYSICS PERSONNEL	8	0	0	8	0.033	0.000	0.000	0.033
SUPERVISORY PERSONNEL	0	0	0	0	0.008	0.000	0.000	0.008
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	15	0	0	15	0.177	0.000	0.018	0.195
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	216 (90)	3 (1)	54 (27)	273 (118)	36.227	0.478	7.320	44.025
OPERATIONS PERSONNEL	158 (58)	0 (0)	2 (1)	160 (59)	24.527	0.059	0.314	24.900
HEALTH PHYSICS PERSONNEL	107 (46)	0 (0)	0 (0)	107 (46)	12.362	0.000	0.390	12.752
SUPERVISORY PERSONNEL	13 (6)	0 (0)	2 (1)	15 (7)	2.209	0.000	0.396	2.605
ENGINEERING PERSONNEL	9 (5)	0 (0)	7 (3)	16 (8)	2.594	0.067	1.331	3.992
GRAND TOTALS	503 (205)	3 (1)	65 (32)	571 (238)	77.919	0.604	9.751	88.274

*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

1997

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	4	0	0	4	0.827	0.000	0.006	0.833
OPERATIONS PERSONNEL	22	0	0	22	4.800	0.000	0.000	4.800
HEALTH PHYSICS PERSONNEL	10	0	0	10	4.304	0.000	0.000	4.304
SUPERVISORY PERSONNEL	2	0	0	2	0.331	0.000	0.000	0.331
ENGINEERING PERSONNEL	1	0	0	1	0.123	0.000	0.000	0.123
TOTAL	39	0	0	39	10.385	0.000	0.006	10.391
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	34	0	9	43	11.168	0.000	2.964	14.132
OPERATIONS PERSONNEL	1	0	0	1	0.317	0.000	0.000	0.317
HEALTH PHYSICS PERSONNEL	10	0	0	10	4.155	0.000	0.000	4.155
SUPERVISORY PERSONNEL	4	0	0	4	1.156	0.000	0.000	1.156
ENGINEERING PERSONNEL	1	0	0	1	0.353	0.000	0.000	0.353
TOTAL	50	0	9	59	17.149	0.000	2.964	20.113
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	2	0	7	9	0.617	0.000	1.947	2.564
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.181	0.000	0.000	0.181
SUPERVISORY PERSONNEL	0	0	0	0	0.061	0.000	0.000	0.061
ENGINEERING PERSONNEL	1	0	0	1	0.081	0.000	0.000	0.081
TOTAL	3	0	7	10	0.940	0.000	1.947	2.887
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.019	0.000	0.000	0.019
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	7	0	1	8	3.378	0.000	0.234	3.612
SUPERVISORY PERSONNEL	0	0	0	0	0.041	0.000	0.000	0.041
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	0	1	8	3.438	0.000	0.234	3.672
REFUELING								
MAINTENANCE PERSONNEL	1	0	0	1	0.380	0.000	0.000	0.380
OPERATIONS PERSONNEL	0	0	0	0	0.030	0.000	0.000	0.030
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	0.410	0.000	0.000	0.410
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	41	0	16	57	13.011	0.000	4.917	17.928
OPERATIONS PERSONNEL	23	0	0	23	5.147	0.000	0.000	5.147
HEALTH PHYSICS PERSONNEL	27	0	1	28	12.018	0.000	0.234	12.252
SUPERVISORY PERSONNEL	6	0	0	6	1.589	0.000	0.000	1.589
ENGINEERING PERSONNEL	3	0	0	3	0.557	0.000	0.000	0.557
GRAND TOTALS	100	0	17	117	32.322	0.000	5.151	37.473

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***FORT ST. VRAIN** TYPE: **HTGR**

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	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	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
GRAND TOTALS	0	0	0	0	0.000	0.000	0.000	0.000

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***GINNA** 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	3084	461	1454	4999	1.271	0.164	0.413	1.848
OPERATIONS PERSONNEL	3535	6	116	3657	2.845	0.001	0.094	2.940
HEALTH PHYSICS PERSONNEL	1954	65	1386	3405	3.036	0.326	6.453	9.815
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	296	324	496	1116	0.218	0.555	0.523	1.296
TOTAL	8869	856	3452	13177	7.370	1.046	7.483	15.899
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	928	392	801	2121	4.084	2.294	4.493	10.871
OPERATIONS PERSONNEL	132	30	0	162	0.644	0.051	0.000	0.695
HEALTH PHYSICS PERSONNEL	599	0	142	741	0.631	0.000	0.425	1.056
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	60	85	352	497	0.447	0.523	2.913	3.883
TOTAL	1719	507	1295	3521	5.806	2.868	7.831	16.505
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	35	26	818	879	0.336	0.073	4.931	5.340
OPERATIONS PERSONNEL	75	0	0	75	0.295	0.000	0.000	0.295
HEALTH PHYSICS PERSONNEL	11	0	0	11	0.003	0.000	0.000	0.003
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	3	222	245	470	0.000	1.056	2.298	3.354
TOTAL	124	248	1063	1435	0.634	1.129	7.229	8.992
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	279	200	249	728	2.229	1.342	1.702	5.273
OPERATIONS PERSONNEL	45	0	5	50	0.440	0.000	0.000	0.440
HEALTH PHYSICS PERSONNEL	20	0	55	75	0.383	0.000	1.179	1.562
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	31	19	205	255	0.351	0.309	3.937	4.597
TOTAL	375	219	514	1108	3.403	1.651	6.818	11.872
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	2	13	15	0.000	0.002	0.010	0.012
OPERATIONS PERSONNEL	0	0	2	2	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	261	0	1807	2068	0.211	0.000	3.825	4.036
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	23	1	25	0.000	0.002	0.000	0.002
TOTAL	262	25	1823	2110	0.211	0.004	3.835	4.050
REFUELING								
MAINTENANCE PERSONNEL	33	42	45	120	0.670	0.418	0.475	1.563
OPERATIONS PERSONNEL	97	6	650	753	1.018	0.055	9.173	10.246
HEALTH PHYSICS PERSONNEL	0	0	82	82	0.000	0.000	0.498	0.498
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	59	23	171	253	0.271	0.259	0.754	1.284
TOTAL	189	71	948	1208	1.959	0.732	10.900	13.591
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	4359	1123	3380	8862	8.590	4.293	12.024	24.907
OPERATIONS PERSONNEL	3884	42	773	4699	5.242	0.107	9.267	14.616
HEALTH PHYSICS PERSONNEL	2845	65	3472	6382	4.264	0.326	12.380	16.970
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	450	696	1470	2616	1.287	2.704	10.425	14.416
GRAND TOTALS	11538	1926	9095	22559	19.383	7.430	44.096	70.909

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: *GRAND GULF 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	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	0.001	0.000	0.000	0.001
SUPERVISORY PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.002	0.000	0.000	0.002
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	64	0	13	77	15.689	0.002	4.720	20.411
OPERATIONS PERSONNEL	34	0	2	36	8.941	0.002	3.146	12.089
HEALTH PHYSICS PERSONNEL	21	0	4	25	5.952	0.004	1.187	7.143
SUPERVISORY PERSONNEL	0	0	3	3	0.603	0.011	1.785	2.399
ENGINEERING PERSONNEL	0	0	0	0	1.102	0.000	0.053	1.155
TOTAL	119	0	22	141	32.287	0.019	10.891	43.197
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	10	0	69	79	4.290	0.000	56.095	60.385
OPERATIONS PERSONNEL	1	0	0	1	0.711	0.000	0.986	1.697
HEALTH PHYSICS PERSONNEL	7	0	0	7	2.033	0.000	0.076	2.109
SUPERVISORY PERSONNEL	0	0	0	0	0.036	0.000	0.183	0.219
ENGINEERING PERSONNEL	0	0	0	0	0.168	0.000	0.005	0.173
TOTAL	18	0	69	87	7.238	0.000	57.345	64.583
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.376	0.000	0.003	0.379
OPERATIONS PERSONNEL	0	0	0	0	0.155	0.000	0.000	0.155
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.312	0.000	0.141	0.453
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	3	3	0.053	0.000	1.245	1.298
TOTAL	1	0	4	5	0.896	0.000	1.389	2.285
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	74	0	82	156	20.355	0.002	60.818	81.175
OPERATIONS PERSONNEL	35	0	2	37	9.807	0.002	4.132	13.941
HEALTH PHYSICS PERSONNEL	29	0	5	34	8.298	0.004	1.404	9.706
SUPERVISORY PERSONNEL	0	0	3	3	0.640	0.011	1.968	2.619
ENGINEERING PERSONNEL	0	0	3	3	1.323	0.000	1.303	2.626
GRAND TOTALS	138	0	95	233	40.423	0.019	69.625	110.067

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	52	27	55	134	0.105	0.006	0.027	0.138
OPERATIONS PERSONNEL	55	2	22	79	0.868	0.008	0.071	0.947
HEALTH PHYSICS PERSONNEL	22	4	42	68	0.951	0.005	0.603	1.559
SUPERVISORY PERSONNEL	7	9	29	45	0.003	0.040	0.032	0.075
ENGINEERING PERSONNEL	27	19	67	113	0.026	0.028	0.091	0.145
TOTAL	163	61	215	439	1.953	0.087	0.824	2.864
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	73	31	116	220	0.601	0.044	0.208	0.853
OPERATIONS PERSONNEL	19	0	25	44	0.023	0.000	0.031	0.054
HEALTH PHYSICS PERSONNEL	21	8	59	88	0.058	0.001	0.116	0.175
SUPERVISORY PERSONNEL	12	15	96	123	0.003	0.007	0.036	0.046
ENGINEERING PERSONNEL	27	21	98	146	0.021	0.004	0.032	0.057
TOTAL	152	75	394	621	0.706	0.056	0.423	1.185
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	21	3	7	31	0.030	0.000	0.099	0.129
OPERATIONS PERSONNEL	4	0	1	5	0.010	0.000	0.000	0.010
HEALTH PHYSICS PERSONNEL	7	0	7	14	0.019	0.000	0.023	0.042
SUPERVISORY PERSONNEL	0	1	0	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	6	2	15	23	0.006	0.000	0.232	0.238
TOTAL	38	6	30	74	0.065	0.000	0.354	0.419
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	27	19	45	91	0.211	0.477	0.733	1.421
OPERATIONS PERSONNEL	22	0	9	31	0.167	0.000	0.074	0.241
HEALTH PHYSICS PERSONNEL	17	1	27	45	0.355	0.022	0.687	1.064
SUPERVISORY PERSONNEL	3	6	15	24	0.029	0.125	0.086	0.240
ENGINEERING PERSONNEL	13	11	44	68	0.126	0.036	0.574	0.736
TOTAL	82	37	140	259	0.888	0.660	2.154	3.702
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	2	4	8	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	9	1	9	19	0.276	0.001	0.160	0.437
SUPERVISORY PERSONNEL	0	1	0	1	0.000	0.002	0.000	0.002
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	11	4	13	28	0.382	0.003	0.160	0.545
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	175	82	227	484	1.053	0.527	1.067	2.647
OPERATIONS PERSONNEL	100	2	57	159	1.068	0.008	0.176	1.252
HEALTH PHYSICS PERSONNEL	76	14	144	234	1.659	0.029	1.589	3.277
SUPERVISORY PERSONNEL	22	32	140	194	0.035	0.174	0.154	0.363
ENGINEERING PERSONNEL	73	53	224	350	0.179	0.068	0.929	1.176
GRAND TOTALS	446	183	792	1421	3.994	0.806	3.915	8.715

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***HARRIS** 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	1	1	0.000	0.000	0.108	0.108
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	12	0	12	24	1.631	0.000	1.666	3.297
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	12	0	13	25	1.631	0.000	1.774	3.405
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	2	2	0.000	0.000	0.240	0.240
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	2	2	0.000	0.000	0.240	0.240
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	6	0	7	13	0.852	0.000	0.956	1.808
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	0	3	0.631	0.000	0.000	0.631
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	9	0	7	16	1.483	0.000	0.956	2.439
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	2	0	0	2	0.426	0.000	0.000	0.426
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	0	2	0.426	0.000	0.000	0.426
REFUELING								
MAINTENANCE PERSONNEL	63	5	125	193	18.366	1.108	35.133	54.607
OPERATIONS PERSONNEL	26	0	1	27	5.151	0.000	0.163	5.314
HEALTH PHYSICS PERSONNEL	23	0	15	38	7.754	0.000	3.412	11.166
SUPERVISORY PERSONNEL	5	1	2	8	1.833	0.127	0.554	2.514
ENGINEERING PERSONNEL	21	1	84	106	5.025	0.106	28.760	33.891
TOTAL	138	7	227	372	38.129	1.341	68.022	107.492
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	69	5	135	209	19.218	1.108	36.437	56.763
OPERATIONS PERSONNEL	26	0	1	27	5.151	0.000	0.163	5.314
HEALTH PHYSICS PERSONNEL	40	0	27	67	10.442	0.000	5.078	15.520
SUPERVISORY PERSONNEL	5	1	2	8	1.833	0.127	0.554	2.514
ENGINEERING PERSONNEL	21	1	84	106	5.025	0.106	28.760	33.891
GRAND TOTALS	161	7	249	417	41.669	1.341	70.992	114.002

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	0	0	4	4	0.037	0.039	2.145	2.221
OPERATIONS PERSONNEL	77	0	0	77	43.441	0.013	0.002	43.456
HEALTH PHYSICS PERSONNEL	57	5	59	121	27.986	1.484	26.405	55.875
SUPERVISORY PERSONNEL	2	0	0	2	0.780	0.013	0.027	0.820
ENGINEERING PERSONNEL	2	0	0	2	0.435	0.000	0.125	0.560
TOTAL	138	5	63	206	72.679	1.549	28.704	102.932
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	194	14	347	555	102.267	3.833	173.569	279.669
OPERATIONS PERSONNEL	24	0	0	24	7.110	0.004	0.004	7.118
HEALTH PHYSICS PERSONNEL	18	0	18	36	6.396	0.053	7.899	14.348
SUPERVISORY PERSONNEL	20	0	4	24	10.854	0.141	1.608	12.603
ENGINEERING PERSONNEL	14	2	9	25	5.848	0.567	2.957	9.372
TOTAL	270	16	378	664	132.475	4.598	186.037	323.110
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	8	1	30	39	3.479	0.225	15.486	19.190
OPERATIONS PERSONNEL	0	0	0	0	0.108	0.000	0.000	0.108
HEALTH PHYSICS PERSONNEL	4	0	1	5	2.080	0.000	0.403	2.483
SUPERVISORY PERSONNEL	2	0	0	2	1.456	0.045	0.162	1.663
ENGINEERING PERSONNEL	1	0	53	54	0.259	0.161	43.217	43.637
TOTAL	15	1	84	100	7.382	0.431	59.268	67.081
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	136	8	282	426	56.585	2.460	120.953	179.998
OPERATIONS PERSONNEL	7	0	0	7	2.682	0.007	0.000	2.689
HEALTH PHYSICS PERSONNEL	1	1	7	9	0.800	0.219	1.994	3.013
SUPERVISORY PERSONNEL	16	0	4	20	6.177	0.092	1.704	7.973
ENGINEERING PERSONNEL	10	4	2	16	2.665	0.881	1.464	5.010
TOTAL	170	13	295	478	68.909	3.659	126.115	198.683
WASTE PROCESSING								
MAINTENANCE PERSONNEL	3	0	4	7	2.340	0.007	1.118	3.465
OPERATIONS PERSONNEL	0	0	0	0	0.005	0.000	0.000	0.005
HEALTH PHYSICS PERSONNEL	3	0	16	19	1.668	0.000	7.624	9.292
SUPERVISORY PERSONNEL	0	0	0	0	0.079	0.000	0.006	0.085
ENGINEERING PERSONNEL	0	0	0	0	0.007	0.000	0.003	0.010
TOTAL	6	0	20	26	4.099	0.007	8.751	12.857
REFUELING								
MAINTENANCE PERSONNEL	4	0	78	82	1.434	0.019	34.088	35.541
OPERATIONS PERSONNEL	4	0	0	4	1.161	0.000	0.000	1.161
HEALTH PHYSICS PERSONNEL	0	0	3	3	0.087	0.000	0.736	0.823
SUPERVISORY PERSONNEL	2	0	0	2	0.587	0.101	0.059	0.747
ENGINEERING PERSONNEL	0	0	6	6	0.218	0.003	2.312	2.533
TOTAL	10	0	87	97	3.487	0.123	37.195	40.805
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	345	23	745	1113	166.142	6.583	347.359	520.084
OPERATIONS PERSONNEL	112	0	0	112	54.507	0.024	0.006	54.537
HEALTH PHYSICS PERSONNEL	83	6	104	193	39.017	1.756	45.061	85.834
SUPERVISORY PERSONNEL	42	0	8	50	19.933	0.392	3.566	23.891
ENGINEERING PERSONNEL	27	6	70	103	9.432	1.612	50.078	61.122
GRAND TOTALS	609	35	927	1571	289.031	10.367	446.070	745.468

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	8	0	3	11	3.488	4.024	2.916	10.428
OPERATIONS PERSONNEL	28	5	1	34	7.367	2.381	2.332	12.080
HEALTH PHYSICS PERSONNEL	22	0	7	29	4.768	0.021	2.352	7.141
SUPERVISORY PERSONNEL	0	0	0	0	0.025	0.006	0.039	0.070
ENGINEERING PERSONNEL	1	0	0	1	0.334	0.382	0.072	0.788
TOTAL	59	5	11	75	15.982	6.814	7.711	30.507
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	15	29	18	62	4.278	9.337	6.345	19.960
OPERATIONS PERSONNEL	5	10	50	65	1.932	3.565	18.537	24.034
HEALTH PHYSICS PERSONNEL	14	0	15	29	4.726	0.024	5.594	10.344
SUPERVISORY PERSONNEL	0	0	0	0	0.085	0.000	0.000	0.085
ENGINEERING PERSONNEL	0	2	1	3	0.053	0.816	0.377	1.246
TOTAL	34	41	84	159	11.074	13.742	30.853	55.669
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.008	0.005	0.000	0.013
OPERATIONS PERSONNEL	0	0	0	0	0.008	0.006	0.000	0.014
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.010	0.000	0.000	0.010
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.002	0.000	0.002
TOTAL	0	0	0	0	0.026	0.013	0.000	0.039
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	31	23	41	95	12.947	9.049	28.038	50.034
OPERATIONS PERSONNEL	11	15	42	68	3.837	3.790	29.996	37.623
HEALTH PHYSICS PERSONNEL	14	0	5	19	3.046	0.031	1.448	4.525
SUPERVISORY PERSONNEL	0	0	0	0	0.065	0.004	0.169	0.238
ENGINEERING PERSONNEL	0	3	1	4	0.181	0.726	0.154	1.061
TOTAL	56	41	89	186	20.076	13.600	59.805	93.481
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	1	1	0.000	0.000	0.125	0.125
OPERATIONS PERSONNEL	0	0	2	2	0.008	0.000	0.243	0.251
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.415	0.002	0.116	0.533
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.019	0.000	0.019
TOTAL	2	0	3	5	0.423	0.021	0.484	0.928
REFUELING								
MAINTENANCE PERSONNEL	14	26	92	132	4.267	11.076	46.601	61.944
OPERATIONS PERSONNEL	29	20	117	166	7.973	5.321	66.398	79.692
HEALTH PHYSICS PERSONNEL	19	0	31	50	5.642	0.043	11.314	16.999
SUPERVISORY PERSONNEL	1	0	0	1	0.351	0.007	0.045	0.403
ENGINEERING PERSONNEL	2	3	0	5	0.514	1.023	0.049	1.586
TOTAL	65	49	240	354	18.747	17.470	124.407	160.624
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	68	78	155	301	24.988	33.491	84.025	142.504
OPERATIONS PERSONNEL	73	50	212	335	21.125	15.063	117.506	153.694
HEALTH PHYSICS PERSONNEL	71	0	58	129	18.607	0.121	20.824	39.552
SUPERVISORY PERSONNEL	1	0	0	1	0.526	0.017	0.253	0.796
ENGINEERING PERSONNEL	3	8	2	13	1.082	2.968	0.652	4.702
GRAND TOTALS	216	136	427	779	66.328	51.660	223.260	341.248

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***HUMBOLDT BAY** 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	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	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	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
GRAND TOTALS	0	0	0	0	0.000	0.000	0.000	0.000

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***INDIAN POINT 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	2	1	8	11	0.250	0.331	1.428	2.009
OPERATIONS PERSONNEL	56	0	0	56	20.850	0.000	0.000	20.850
HEALTH PHYSICS PERSONNEL	18	3	69	90	5.956	1.113	29.641	36.710
SUPERVISORY PERSONNEL	4	5	0	9	0.968	0.808	0.000	1.776
ENGINEERING PERSONNEL	9	1	0	10	1.389	0.139	0.000	1.528
TOTAL	89	10	77	176	29.413	2.391	31.069	62.873
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	18	0	15	33	2.770	0.000	2.564	5.334
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	0.271	0.271
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	0.124	0.000	0.000	0.124
TOTAL	19	0	16	35	2.894	0.000	2.835	5.729
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	1	0	0	1	0.145	0.000	0.000	0.145
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	0.145	0.000	0.000	0.145
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	43	129	235	407	15.093	60.754	81.283	157.130
OPERATIONS PERSONNEL	1	0	2	3	0.221	0.000	1.111	1.332
HEALTH PHYSICS PERSONNEL	1	0	2	3	0.263	0.000	0.570	0.833
SUPERVISORY PERSONNEL	2	3	5	10	0.334	1.102	1.710	3.146
ENGINEERING PERSONNEL	6	4	13	23	2.027	1.121	3.651	6.799
TOTAL	53	136	257	446	17.938	62.977	88.325	169.240
WASTE PROCESSING								
MAINTENANCE PERSONNEL	3	1	43	47	0.852	0.696	23.041	24.589
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	1.522	1.522
SUPERVISORY PERSONNEL	2	0	1	3	1.649	0.000	0.192	1.841
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	5	1	45	51	2.501	0.696	24.755	27.952
REFUELING								
MAINTENANCE PERSONNEL	1	4	159	164	0.118	0.627	91.471	92.216
OPERATIONS PERSONNEL	4	0	0	4	0.630	0.000	0.000	0.630
HEALTH PHYSICS PERSONNEL	1	0	3	4	0.175	0.000	0.514	0.689
SUPERVISORY PERSONNEL	2	1	4	7	0.324	0.141	1.793	2.258
ENGINEERING PERSONNEL	5	1	11	17	1.682	0.234	6.471	8.387
TOTAL	13	6	177	196	2.929	1.002	100.249	104.180
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	67	135	460	662	19.083	62.408	199.787	281.278
OPERATIONS PERSONNEL	62	0	3	65	21.846	0.000	1.382	23.228
HEALTH PHYSICS PERSONNEL	20	3	75	98	6.394	1.113	32.247	39.754
SUPERVISORY PERSONNEL	10	9	10	29	3.275	2.051	3.695	9.021
ENGINEERING PERSONNEL	21	6	24	51	5.222	1.494	10.122	16.838
GRAND TOTALS	180	153	572	905	55.820	67.066	247.233	370.119

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	24	1	211	236	5.030	0.110	49.080	54.220
OPERATIONS PERSONNEL	41	2	14	57	8.540	0.210	2.740	11.490
HEALTH PHYSICS PERSONNEL	22	0	48	70	8.490	0.000	17.350	25.840
SUPERVISORY PERSONNEL	3	0	0	3	0.500	0.000	0.000	0.500
ENGINEERING PERSONNEL	3	1	4	8	1.130	0.140	0.760	2.030
TOTAL	93	4	277	374	23.690	0.460	69.930	94.080
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	6	0	121	127	1.090	0.000	31.230	32.320
OPERATIONS PERSONNEL	1	0	3	4	0.140	0.000	0.450	0.590
HEALTH PHYSICS PERSONNEL	3	0	2	5	0.570	0.000	0.300	0.870
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.230	0.230
TOTAL	10	0	127	137	1.800	0.000	32.210	34.010
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	29	29	0.000	0.000	7.320	7.320
OPERATIONS PERSONNEL	0	1	2	3	0.000	0.410	0.490	0.900
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	1	31	32	0.000	0.410	7.810	8.220
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	10	0	158	168	1.940	0.000	49.530	51.470
OPERATIONS PERSONNEL	2	0	6	8	0.270	0.000	1.200	1.470
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	3	0	0	3	0.860	0.000	0.000	0.860
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.610	0.610
TOTAL	15	0	165	180	3.070	0.000	51.340	54.410
WASTE PROCESSING								
MAINTENANCE PERSONNEL	3	0	1	4	0.440	0.000	0.150	0.590
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	3	0	1	4	0.440	0.000	0.150	0.590
REFUELING								
MAINTENANCE PERSONNEL	2	0	9	11	0.280	0.000	1.550	1.830
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	3	6	2.290	0.000	1.500	3.790
SUPERVISORY PERSONNEL	1	0	0	1	0.250	0.000	0.000	0.250
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	6	0	12	18	2.820	0.000	3.050	5.870
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	45	1	529	575	8.780	0.110	138.860	147.750
OPERATIONS PERSONNEL	44	3	25	72	8.950	0.620	4.880	14.450
HEALTH PHYSICS PERSONNEL	28	0	53	81	11.350	0.000	19.150	30.500
SUPERVISORY PERSONNEL	7	0	0	7	1.610	0.000	0.000	1.610
ENGINEERING PERSONNEL	3	1	6	10	1.130	0.140	1.600	2.870
GRAND TOTALS	127	5	613	745	31.820	0.870	164.490	197.180

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	3	0	0	3	0.317	0.000	0.000	0.317
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	3	0	0	3	0.317	0.000	0.000	0.317
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	3	0	7	10	0.681	0.000	4.723	5.404
OPERATIONS PERSONNEL	2	0	0	2	0.566	0.000	0.000	0.566
HEALTH PHYSICS PERSONNEL	16	0	6	22	5.054	0.000	2.272	7.326
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.072	0.000	0.000	0.072
TOTAL	21	0	13	34	6.373	0.000	6.995	13.368
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.031	0.000	0.000	0.031
OPERATIONS PERSONNEL	0	0	0	0	0.049	0.000	0.000	0.049
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	0.080	0.000	0.000	0.080
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	18	0	53	71	9.058	0.000	20.714	29.772
OPERATIONS PERSONNEL	5	0	0	5	2.768	0.000	0.000	2.768
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	1	0	0	1	0.220	0.000	0.000	0.220
ENGINEERING PERSONNEL	7	0	0	7	2.540	0.000	0.000	2.540
TOTAL	31	0	53	84	14.586	0.000	20.714	35.300
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.044	0.000	0.000	0.044
OPERATIONS PERSONNEL	1	0	0	1	0.780	0.000	0.000	0.780
HEALTH PHYSICS PERSONNEL	0	0	0	0	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	1	0	0	1	0.968	0.000	0.000	0.968
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	21	0	60	81	9.814	0.000	25.437	35.251
OPERATIONS PERSONNEL	11	0	0	11	4.480	0.000	0.000	4.480
HEALTH PHYSICS PERSONNEL	16	0	6	22	5.198	0.000	2.272	7.470
SUPERVISORY PERSONNEL	1	0	0	1	0.220	0.000	0.000	0.220
ENGINEERING PERSONNEL	7	0	0	7	2.612	0.000	0.000	2.612
GRAND TOTALS	56	0	66	122	22.324	0.000	27.709	50.033

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: *LACROSSE 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	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	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	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
GRAND TOTALS	0	0	0	0	0.000	0.000	0.000	0.000

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	0	16	26	3.057	0.016	1.871	4.944
OPERATIONS PERSONNEL	128	0	12	140	17.512	0.000	0.711	18.223
HEALTH PHYSICS PERSONNEL	4	17	0	21	1.092	0.132	0.001	1.225
SUPERVISORY PERSONNEL	61	0	42	103	1.984	0.000	0.763	2.747
ENGINEERING PERSONNEL	48	0	67	115	1.695	0.000	0.779	2.474
TOTAL	251	17	137	405	25.340	0.148	4.125	29.613
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	186	58	1203	1447	59.678	8.412	144.217	212.307
OPERATIONS PERSONNEL	44	0	1	45	5.969	0.000	0.030	5.999
HEALTH PHYSICS PERSONNEL	74	326	32	432	20.717	2.600	3.311	26.628
SUPERVISORY PERSONNEL	234	0	281	515	7.685	0.000	5.173	12.858
ENGINEERING PERSONNEL	153	0	176	329	5.401	0.000	2.046	7.447
TOTAL	691	384	1693	2768	99.450	11.012	154.777	265.239
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	3	0	10	13	0.963	0.000	1.224	2.187
OPERATIONS PERSONNEL	0	0	0	0	0.003	0.000	0.000	0.003
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.089	0.004	0.000	0.093
SUPERVISORY PERSONNEL	2	0	0	2	0.052	0.000	0.000	0.052
ENGINEERING PERSONNEL	0	0	0	0	0.013	0.000	0.000	0.013
TOTAL	5	0	10	15	1.120	0.004	1.224	2.348
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	1	43	44	0.070	0.133	5.161	5.364
OPERATIONS PERSONNEL	0	0	0	0	0.048	0.000	0.000	0.048
HEALTH PHYSICS PERSONNEL	0	2	5	7	0.009	0.013	0.570	0.592
SUPERVISORY PERSONNEL	0	0	4	4	0.001	0.000	0.065	0.066
ENGINEERING PERSONNEL	3	0	30	33	0.092	0.000	0.354	0.446
TOTAL	3	3	82	88	0.220	0.146	6.150	6.516
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	18	18	0.041	0.000	2.124	2.165
OPERATIONS PERSONNEL	4	0	134	138	0.507	0.000	7.809	8.316
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.228	0.002	0.000	0.230
SUPERVISORY PERSONNEL	6	0	0	6	0.193	0.000	0.005	0.198
ENGINEERING PERSONNEL	1	0	0	1	0.025	0.000	0.001	0.026
TOTAL	12	0	152	164	0.994	0.002	9.939	10.935
REFUELING								
MAINTENANCE PERSONNEL	0	0	9	9	0.050	0.000	1.073	1.123
OPERATIONS PERSONNEL	0	0	0	0	0.052	0.000	0.000	0.052
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.226	0.000	0.000	0.226
SUPERVISORY PERSONNEL	0	0	1	1	0.014	0.000	0.012	0.026
ENGINEERING PERSONNEL	0	0	6	6	0.003	0.000	0.068	0.071
TOTAL	1	0	16	17	0.345	0.000	1.153	1.498
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	199	59	1299	1557	63.859	8.561	155.670	228.090
OPERATIONS PERSONNEL	176	0	147	323	24.091	0.000	8.550	32.641
HEALTH PHYSICS PERSONNEL	80	345	37	462	22.361	2.751	3.882	28.994
SUPERVISORY PERSONNEL	303	0	328	631	9.929	0.000	6.018	15.947
ENGINEERING PERSONNEL	205	0	279	484	7.229	0.000	3.248	10.477
GRAND TOTALS	963	404	2090	3457	127.469	11.312	177.368	316.149

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***LIMERICK 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	364	313	964	1641	32.694	24.465	68.446	125.605
OPERATIONS PERSONNEL	196	40	135	371	16.499	1.953	12.731	31.183
HEALTH PHYSICS PERSONNEL	43	6	18	67	12.654	0.660	2.727	16.041
SUPERVISORY PERSONNEL	8	3	25	36	0.419	0.000	0.293	0.712
ENGINEERING PERSONNEL	122	85	25	232	4.873	1.874	0.356	7.103
TOTAL	733	447	1167	2347	67.139	28.952	84.553	180.644
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	7	67	8	82	0.049	0.511	0.054	0.614
OPERATIONS PERSONNEL	1	0	16	17	0.008	0.000	0.222	0.230
HEALTH PHYSICS PERSONNEL	4	0	2	6	0.009	0.000	0.037	0.046
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.005	0.005
ENGINEERING PERSONNEL	1	0	0	1	0.003	0.000	0.000	0.003
TOTAL	13	67	27	107	0.069	0.511	0.318	0.898
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	3	57	60	0.000	0.132	11.514	11.646
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	1	1	0.000	0.000	0.027	0.027
TOTAL	0	3	58	61	0.000	0.132	11.541	11.673
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	59	30	51	140	12.833	1.249	6.115	20.197
OPERATIONS PERSONNEL	18	2	4	24	1.976	0.082	0.247	2.305
HEALTH PHYSICS PERSONNEL	21	1	2	24	1.507	0.258	0.119	1.884
SUPERVISORY PERSONNEL	1	0	0	1	0.005	0.000	0.000	0.005
ENGINEERING PERSONNEL	6	4	1	11	0.275	0.999	0.047	1.321
TOTAL	105	37	58	200	16.596	2.588	6.528	25.712
WASTE PROCESSING								
MAINTENANCE PERSONNEL	48	12	11	71	4.983	1.065	0.167	6.215
OPERATIONS PERSONNEL	18	2	13	33	0.671	0.210	0.339	1.220
HEALTH PHYSICS PERSONNEL	25	0	2	27	1.190	0.000	0.028	1.218
SUPERVISORY PERSONNEL	2	0	0	2	0.002	0.000	0.000	0.002
ENGINEERING PERSONNEL	5	2	1	8	0.028	0.069	0.000	0.097
TOTAL	98	16	27	141	6.874	1.344	0.534	8.752
REFUELING								
MAINTENANCE PERSONNEL	24	90	57	171	0.421	3.475	0.744	4.640
OPERATIONS PERSONNEL	7	4	48	59	0.152	0.016	0.987	1.155
HEALTH PHYSICS PERSONNEL	9	0	3	12	0.121	0.000	0.040	0.161
SUPERVISORY PERSONNEL	1	0	1	2	0.018	0.000	0.001	0.019
ENGINEERING PERSONNEL	8	8	2	18	0.062	0.052	0.005	0.119
TOTAL	49	102	111	262	0.774	3.543	1.777	6.094
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	502	515	1148	2165	50.980	30.897	87.040	168.917
OPERATIONS PERSONNEL	240	48	216	504	19.306	2.261	14.526	36.093
HEALTH PHYSICS PERSONNEL	102	7	27	136	15.481	0.918	2.951	19.350
SUPERVISORY PERSONNEL	12	3	27	42	0.444	0.000	0.299	0.743
ENGINEERING PERSONNEL	142	99	30	271	5.241	2.994	0.435	8.670
GRAND TOTALS	998	672	1448	3118	91.452	37.070	105.251	233.773

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***MAINE YANKEE** 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	0.303	0.000	0.290	0.593
OPERATIONS PERSONNEL	0	0	0	0	0.003	0.000	0.064	0.067
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.089	0.000	0.005	0.094
SUPERVISORY PERSONNEL	0	0	1	1	0.009	0.000	0.247	0.256
ENGINEERING PERSONNEL	0	0	0	0	0.011	0.000	0.084	0.095
TOTAL	1	0	1	2	0.415	0.000	0.690	1.105
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	28	0	38	66	12.213	0.004	14.199	26.416
OPERATIONS PERSONNEL	32	0	9	41	8.937	0.001	2.190	11.128
HEALTH PHYSICS PERSONNEL	13	0	45	58	4.995	0.000	11.878	16.873
SUPERVISORY PERSONNEL	3	0	4	7	1.722	0.000	3.612	5.334
ENGINEERING PERSONNEL	10	0	10	20	3.005	0.000	4.281	7.286
TOTAL	86	0	106	192	30.872	0.005	36.160	67.037
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.056	0.000	0.072	0.128
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.016	0.000	0.000	0.016
SUPERVISORY PERSONNEL	0	0	0	0	0.009	0.000	0.000	0.009
ENGINEERING PERSONNEL	0	0	3	3	0.000	0.000	0.597	0.597
TOTAL	0	0	3	3	0.081	0.000	0.669	0.750
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	0	31	36	2.534	0.000	11.075	13.609
OPERATIONS PERSONNEL	1	0	6	7	0.508	0.000	3.041	3.549
HEALTH PHYSICS PERSONNEL	2	0	21	23	0.707	0.000	6.114	6.821
SUPERVISORY PERSONNEL	0	0	5	5	0.116	0.000	1.903	2.019
ENGINEERING PERSONNEL	1	0	81	82	0.929	0.000	35.781	36.710
TOTAL	9	0	144	153	4.794	0.000	57.914	62.708
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	9	0	12	21	2.665	0.000	4.709	7.374
OPERATIONS PERSONNEL	0	0	0	0	1.041	0.000	0.244	1.285
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.230	0.000	1.284	1.514
SUPERVISORY PERSONNEL	1	0	1	2	0.392	0.000	0.873	1.265
ENGINEERING PERSONNEL	1	0	2	3	0.317	0.022	2.363	2.702
TOTAL	12	0	16	28	4.645	0.022	9.473	14.140
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	43	0	81	124	17.715	0.004	30.273	47.992
OPERATIONS PERSONNEL	33	0	15	48	10.545	0.001	5.611	16.157
HEALTH PHYSICS PERSONNEL	16	0	67	83	6.037	0.000	19.281	25.318
SUPERVISORY PERSONNEL	4	0	11	15	2.248	0.000	6.635	8.883
ENGINEERING PERSONNEL	12	0	96	108	4.262	0.022	43.106	47.390
GRAND TOTALS	108	0	270	378	40.807	0.027	104.906	145.740

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***MCGUIRE 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	133	370	429	932	0.285	0.732	5.746	6.763
OPERATIONS PERSONNEL	48	0	38	86	1.262	0.000	0.151	1.413
HEALTH PHYSICS PERSONNEL	17	4	79	100	0.732	0.007	8.008	8.747
SUPERVISORY PERSONNEL	2	0	3	5	0.011	0.000	0.641	0.652
ENGINEERING PERSONNEL	10	13	76	99	0.104	0.027	0.006	0.137
TOTAL	210	387	625	1222	2.394	0.766	14.552	17.712
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	134	370	445	949	46.926	127.784	127.175	301.885
OPERATIONS PERSONNEL	50	0	45	95	7.378	0.000	10.300	17.678
HEALTH PHYSICS PERSONNEL	17	2	79	98	1.865	1.817	15.643	19.325
SUPERVISORY PERSONNEL	2	0	3	5	0.334	0.000	0.923	1.257
ENGINEERING PERSONNEL	10	13	80	103	2.331	4.512	59.522	66.365
TOTAL	213	385	652	1250	58.834	134.113	213.563	406.510
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	29	86	103	218	0.565	5.421	4.489	10.475
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	1	0	17	18	0.007	0.000	0.087	0.094
SUPERVISORY PERSONNEL	1	0	0	1	0.010	0.000	0.000	0.010
ENGINEERING PERSONNEL	1	3	3	7	0.005	0.240	0.037	0.282
TOTAL	32	89	123	244	0.587	5.661	4.613	10.861
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	56	69	33	158	1.051	3.694	0.804	5.549
OPERATIONS PERSONNEL	3	0	7	10	0.000	0.000	0.247	0.247
HEALTH PHYSICS PERSONNEL	9	4	62	75	0.438	1.025	31.133	32.596
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	2	0	3	0.013	0.079	0.000	0.092
TOTAL	69	75	102	246	1.502	4.798	32.184	38.484
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	2	2	6	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	17	17	0.000	0.000	0.024	0.024
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	2	19	23	0.000	0.000	0.024	0.024
REFUELING								
MAINTENANCE PERSONNEL	10	25	2	37	0.014	0.011	0.000	0.025
OPERATIONS PERSONNEL	1	0	2	3	0.002	0.000	0.045	0.047
HEALTH PHYSICS PERSONNEL	1	0	14	15	0.000	0.000	0.002	0.002
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	2	2	0.000	0.000	0.000	0.000
TOTAL	12	25	20	57	0.016	0.011	0.047	0.074
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	364	(134) 922	(372) 1014	(445) 2300	(951)	48.841	137.642	138.214	324.697
OPERATIONS PERSONNEL	102	(50) 0	(0) 109	(45) 211	(95)	8.642	0.000	10.767	19.409
HEALTH PHYSICS PERSONNEL	45	(17) 10	(6) 251	(112) 306	(135)	3.042	2.849	54.873	60.764
SUPERVISORY PERSONNEL	5	(2) 0	(0) 6	(3) 11	(5)	0.355	0.000	1.564	1.919
ENGINEERING PERSONNEL	22	(10) 31	(13) 161	(80) 214	(103)	2.453	4.858	59.565	66.876
GRAND TOTALS	538	(213) 963	(391) 1541	(685) 3042	(1289)	63.333	145.349	264.983	473.665

*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

1997

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	15	13	235	263	0.698	0.166	7.201	8.065
OPERATIONS PERSONNEL	43	3	4	50	3.902	0.271	0.335	4.508
HEALTH PHYSICS PERSONNEL	27	0	34	61	2.317	0.000	6.007	8.324
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	5	5	0.000	0.000	0.029	0.029
TOTAL	85	16	278	379	6.917	0.437	13.572	20.926
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	86	39	503	628	3.640	1.572	46.988	52.200
OPERATIONS PERSONNEL	19	0	4	23	0.316	0.000	0.084	0.400
HEALTH PHYSICS PERSONNEL	26	0	26	52	1.093	0.000	2.752	3.845
SUPERVISORY PERSONNEL	0	0	5	5	0.000	0.000	0.755	0.755
ENGINEERING PERSONNEL	8	5	47	60	0.240	0.555	4.069	4.864
TOTAL	139	44	585	768	5.289	2.127	54.648	62.064
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	29	15	345	389	0.845	0.543	58.131	59.519
OPERATIONS PERSONNEL	13	1	3	17	0.261	0.001	0.100	0.362
HEALTH PHYSICS PERSONNEL	17	0	23	40	0.663	0.000	2.799	3.462
SUPERVISORY PERSONNEL	0	0	3	3	0.000	0.000	0.180	0.180
ENGINEERING PERSONNEL	1	3	15	19	0.099	0.011	1.658	1.768
TOTAL	60	19	389	468	1.868	0.555	62.868	65.291
WASTE PROCESSING								
MAINTENANCE PERSONNEL	27	10	119	156	2.417	0.011	2.872	5.300
OPERATIONS PERSONNEL	4	1	1	6	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	24	0	23	47	0.486	0.000	1.535	2.021
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	1	5	6	0.000	0.000	0.000	0.000
TOTAL	55	12	148	215	2.903	0.011	4.407	7.321
REFUELING								
MAINTENANCE PERSONNEL	7	0	3	10	0.026	0.000	0.014	0.040
OPERATIONS PERSONNEL	2	0	0	2	0.010	0.000	0.000	0.010
HEALTH PHYSICS PERSONNEL	3	0	1	4	0.016	0.000	0.002	0.018
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	12	0	4	16	0.052	0.000	0.016	0.068
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	164	77	1205	1446	7.626	2.292	115.206	125.124
OPERATIONS PERSONNEL	81	5	12	98	4.489	0.272	0.519	5.280
HEALTH PHYSICS PERSONNEL	97	0	107	204	4.575	0.000	13.095	17.670
SUPERVISORY PERSONNEL	0	0	8	8	0.000	0.000	0.935	0.935
ENGINEERING PERSONNEL	9	9	72	90	0.339	0.566	5.756	6.661
GRAND TOTALS	351	91	1404	1846	17.029	3.130	135.511	155.670

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	39	11	120	170	0.145	0.002	0.048	0.195
OPERATIONS PERSONNEL	7	2	2	11	0.079	0.000	0.000	0.079
HEALTH PHYSICS PERSONNEL	37	0	37	74	0.958	0.000	2.854	3.812
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	3	1	11	15	0.000	0.017	0.007	0.024
TOTAL	86	14	171	271	1.182	0.019	2.909	4.110
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	47	42	229	318	2.313	0.742	3.249	6.304
OPERATIONS PERSONNEL	3	0	2	5	0.005	0.000	0.008	0.013
HEALTH PHYSICS PERSONNEL	12	0	18	30	0.181	0.000	0.253	0.434
SUPERVISORY PERSONNEL	0	0	2	2	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	2	16	20	0.001	0.006	0.226	0.233
TOTAL	64	44	267	375	2.500	0.748	3.736	6.984
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	1	103	106	0.005	0.000	1.233	1.238
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	1	4	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	3	3	0.000	0.000	0.002	0.002
TOTAL	5	1	107	113	0.017	0.000	1.235	1.252
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	150	90	839	1079	32.620	9.164	89.780	131.564
OPERATIONS PERSONNEL	60	1	8	69	12.423	1.045	1.026	14.494
HEALTH PHYSICS PERSONNEL	43	0	56	99	7.690	0.000	8.707	16.397
SUPERVISORY PERSONNEL	0	0	11	11	0.000	0.000	1.197	1.197
ENGINEERING PERSONNEL	14	7	87	108	1.704	0.620	11.991	14.315
TOTAL	267	98	1001	1366	54.437	10.829	112.701	177.967
WASTE PROCESSING								
MAINTENANCE PERSONNEL	39	10	92	141	1.386	0.000	1.864	3.250
OPERATIONS PERSONNEL	10	1	1	12	0.312	0.000	0.000	0.312
HEALTH PHYSICS PERSONNEL	23	0	18	41	0.502	0.000	0.754	1.256
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	1	4	6	0.000	0.000	0.000	0.000
TOTAL	73	12	115	200	2.200	0.000	2.618	4.818
REFUELING								
MAINTENANCE PERSONNEL	23	4	127	154	0.813	0.020	4.308	5.141
OPERATIONS PERSONNEL	9	0	0	9	0.658	0.000	0.000	0.658
HEALTH PHYSICS PERSONNEL	5	0	5	10	0.214	0.000	0.044	0.258
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.009	0.009
ENGINEERING PERSONNEL	0	2	16	18	0.000	0.038	0.777	0.815
TOTAL	37	6	149	192	1.685	0.058	5.138	6.881
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	300	158	1510	1968	37.282	9.928	100.482	147.692
OPERATIONS PERSONNEL	89	4	13	106	13.477	1.045	1.034	15.556
HEALTH PHYSICS PERSONNEL	123	0	135	258	9.557	0.000	12.612	22.169
SUPERVISORY PERSONNEL	0	0	15	15	0.000	0.000	1.206	1.206
ENGINEERING PERSONNEL	20	13	137	170	1.705	0.681	13.003	15.389
GRAND TOTALS	532	175	1810	2517	62.021	11.654	128.337	202.012

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***MONTICELLO** 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	23	2	23	48	5.108	0.673	7.122	12.903
OPERATIONS PERSONNEL	29	0	0	29	10.921	0.000	0.023	10.944
HEALTH PHYSICS PERSONNEL	23	1	1	25	7.089	0.235	0.335	7.659
SUPERVISORY PERSONNEL	12	0	2	14	3.610	0.150	0.726	4.486
ENGINEERING PERSONNEL	7	0	0	7	2.370	0.000	0.000	2.370
TOTAL	94	3	26	123	29.098	1.058	8.206	38.362
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	26	3	25	54	6.894	1.672	7.604	16.170
OPERATIONS PERSONNEL	0	0	0	0	0.338	0.000	0.000	0.338
HEALTH PHYSICS PERSONNEL	8	1	1	10	2.355	0.236	0.582	3.173
SUPERVISORY PERSONNEL	17	0	2	19	4.171	0.199	0.638	5.008
ENGINEERING PERSONNEL	4	0	0	4	0.729	0.000	0.000	0.729
TOTAL	55	4	28	87	14.487	2.107	8.824	25.418
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	10	10	0.000	0.057	2.234	2.291
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.009	0.000	0.011	0.020
SUPERVISORY PERSONNEL	0	0	2	2	0.002	0.019	0.350	0.371
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	12	12	0.011	0.076	2.595	2.682
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	19	85	104	0.066	4.744	30.322	35.132
OPERATIONS PERSONNEL	0	0	0	0	0.269	0.000	0.000	0.269
HEALTH PHYSICS PERSONNEL	2	0	1	3	0.665	0.000	0.267	0.932
SUPERVISORY PERSONNEL	3	3	4	10	1.018	0.968	1.053	3.039
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	5	22	90	117	2.018	5.712	31.642	39.372
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.143	0.000	0.040	0.183
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.009	0.000	0.011	0.020
SUPERVISORY PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.153	0.000	0.051	0.204
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	49	24	143	216	12.211	7.146	47.322	66.679
OPERATIONS PERSONNEL	29	0	0	29	11.528	0.000	0.023	11.551
HEALTH PHYSICS PERSONNEL	33	2	3	38	10.127	0.471	1.206	11.804
SUPERVISORY PERSONNEL	32	3	10	45	8.802	1.336	2.767	12.905
ENGINEERING PERSONNEL	11	0	0	11	3.099	0.000	0.000	3.099
GRAND TOTALS	154	29	156	339	45.767	8.953	51.318	106.038

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	154	0	137	291	5.394	0.000	0.728	6.122
OPERATIONS PERSONNEL	164	0	9	173	28.670	0.000	0.006	28.676
HEALTH PHYSICS PERSONNEL	154	0	57	211	11.382	0.000	1.080	12.462
SUPERVISORY PERSONNEL	59	0	18	77	1.335	0.000	0.046	1.381
ENGINEERING PERSONNEL	177	0	80	257	1.850	0.000	0.304	2.154
TOTAL	708	0	301	1009	48.631	0.000	2.164	50.795
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	408	0	513	921	105.481	0.000	89.339	194.820
OPERATIONS PERSONNEL	105	0	3	108	8.982	0.000	0.206	9.188
HEALTH PHYSICS PERSONNEL	97	0	41	138	15.491	0.000	9.184	24.675
SUPERVISORY PERSONNEL	70	0	22	92	6.455	0.000	1.817	8.272
ENGINEERING PERSONNEL	149	0	124	273	7.918	0.000	10.462	18.380
TOTAL	829	0	703	1532	144.327	0.000	111.008	255.335
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	6	0	186	192	1.177	0.000	57.132	58.309
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	0	3	0.009	0.000	0.000	0.009
SUPERVISORY PERSONNEL	1	0	4	5	0.010	0.000	1.298	1.308
ENGINEERING PERSONNEL	8	0	29	37	0.564	0.000	7.811	8.375
TOTAL	18	0	219	237	1.760	0.000	66.241	68.001
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	135	0	192	327	8.186	0.000	27.432	35.618
OPERATIONS PERSONNEL	12	0	1	13	0.082	0.000	0.060	0.142
HEALTH PHYSICS PERSONNEL	34	0	3	37	0.384	0.000	0.069	0.453
SUPERVISORY PERSONNEL	15	0	6	21	0.155	0.000	0.642	0.797
ENGINEERING PERSONNEL	52	0	26	78	1.521	0.000	1.349	2.870
TOTAL	248	0	228	476	10.328	0.000	29.552	39.880
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.002	0.000	0.000	0.002
OPERATIONS PERSONNEL	33	0	2	35	7.220	0.000	1.732	8.952
HEALTH PHYSICS PERSONNEL	15	0	0	15	0.331	0.000	0.000	0.331
SUPERVISORY PERSONNEL	6	0	0	6	0.050	0.000	0.000	0.050
ENGINEERING PERSONNEL	1	0	5	6	0.042	0.000	0.074	0.116
TOTAL	56	0	7	63	7.645	0.000	1.806	9.451
REFUELING								
MAINTENANCE PERSONNEL	43	0	94	137	0.627	0.000	13.889	14.516
OPERATIONS PERSONNEL	17	0	3	20	0.394	0.000	0.119	0.513
HEALTH PHYSICS PERSONNEL	32	0	18	50	1.823	0.000	0.671	2.494
SUPERVISORY PERSONNEL	8	0	1	9	0.093	0.000	0.002	0.095
ENGINEERING PERSONNEL	17	0	43	60	0.586	0.000	4.642	5.228
TOTAL	117	0	159	276	3.523	0.000	19.323	22.846
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	747	0	1122	1869	120.867	0.000	188.520	309.387
OPERATIONS PERSONNEL	331	0	18	349	45.348	0.000	2.123	47.471
HEALTH PHYSICS PERSONNEL	335	0	119	454	29.420	0.000	11.004	40.424
SUPERVISORY PERSONNEL	159	0	51	210	8.098	0.000	3.805	11.903
ENGINEERING PERSONNEL	404	0	307	711	12.481	0.000	24.642	37.123
GRAND TOTALS	1976	0	1617	3593	216.214	0.000	230.094	446.308

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***NORTH ANNA 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	29	2	2	33	0.834	0.007	0.032	0.873
OPERATIONS PERSONNEL	89	3	11	103	2.964	0.001	0.005	2.970
HEALTH PHYSICS PERSONNEL	22	0	11	33	0.269	0.000	0.031	0.300
SUPERVISORY PERSONNEL	25	6	3	34	0.058	0.037	0.023	0.118
ENGINEERING PERSONNEL	3	1	0	4	0.027	0.001	0.000	0.028
TOTAL	168	12	27	207	4.152	0.046	0.091	4.289
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	246	11	558	815	21.360	0.347	30.247	51.954
OPERATIONS PERSONNEL	169	163	67	399	5.242	0.208	0.373	5.823
HEALTH PHYSICS PERSONNEL	71	9	148	228	7.961	0.126	7.620	15.707
SUPERVISORY PERSONNEL	46	32	9	87	0.689	0.258	0.116	1.063
ENGINEERING PERSONNEL	84	26	33	143	1.678	0.040	0.533	2.251
TOTAL	616	241	815	1672	36.930	0.979	38.889	76.798
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	18	0	20	38	0.207	0.000	0.987	1.194
OPERATIONS PERSONNEL	13	0	1	14	0.796	0.000	0.027	0.823
HEALTH PHYSICS PERSONNEL	12	0	6	18	0.024	0.000	0.056	0.080
SUPERVISORY PERSONNEL	3	0	0	3	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	13	0	20	33	0.872	0.000	2.560	3.432
TOTAL	59	0	47	106	1.900	0.000	3.630	5.530
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	143	2	31	176	1.558	0.017	0.856	2.431
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	18	0	0	18	0.064	0.000	0.000	0.064
SUPERVISORY PERSONNEL	4	0	1	5	0.019	0.000	0.004	0.023
ENGINEERING PERSONNEL	10	0	3	13	0.020	0.000	0.005	0.025
TOTAL	175	2	35	212	1.661	0.017	0.865	2.543
WASTE PROCESSING								
MAINTENANCE PERSONNEL	51	2	4	57	0.113	0.001	0.002	0.116
OPERATIONS PERSONNEL	26	0	1	27	0.190	0.002	0.002	0.194
HEALTH PHYSICS PERSONNEL	31	0	2	33	0.321	0.006	0.000	0.327
SUPERVISORY PERSONNEL	2	1	0	3	0.026	0.008	0.000	0.034
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	110	3	7	120	0.650	0.017	0.004	0.671
REFUELING								
MAINTENANCE PERSONNEL	67	3	50	120	6.771	1.008	3.792	11.571
OPERATIONS PERSONNEL	41	10	5	56	1.147	0.083	0.128	1.358
HEALTH PHYSICS PERSONNEL	12	0	36	48	0.453	0.001	1.352	1.806
SUPERVISORY PERSONNEL	7	5	0	12	0.150	0.306	0.000	0.456
ENGINEERING PERSONNEL	3	0	4	7	0.219	0.000	0.150	0.369
TOTAL	130	18	95	243	8.740	1.398	5.422	15.560
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	554	20	665	1239	30.843	1.380	35.916	68.139
OPERATIONS PERSONNEL	338	176	85	599	10.339	0.294	0.535	11.168
HEALTH PHYSICS PERSONNEL	166	9	203	378	9.092	0.133	9.059	18.284
SUPERVISORY PERSONNEL	87	44	13	144	0.943	0.609	0.143	1.695
ENGINEERING PERSONNEL	113	27	60	200	2.816	0.041	3.248	6.105
GRAND TOTALS	1258	276	1026	2560	54.033	2.457	48.901	105.391

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	154	199	198	551	2.306	1.648	0.429	4.383
OPERATIONS PERSONNEL	69	0	28	97	12.326	0.000	0.526	12.852
HEALTH PHYSICS PERSONNEL	28	0	45	73	1.457	0.000	5.106	6.563
SUPERVISORY PERSONNEL	17	2	3	22	1.727	0.002	0.035	1.764
ENGINEERING PERSONNEL	5	0	8	13	0.883	0.000	0.050	0.933
TOTAL	273	201	282	756	18.699	1.650	6.146	26.495
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	155	201	198	554	39.515	29.119	33.487	102.121
OPERATIONS PERSONNEL	65	0	31	96	3.304	0.000	11.703	15.007
HEALTH PHYSICS PERSONNEL	28	0	45	73	3.382	0.000	5.556	8.938
SUPERVISORY PERSONNEL	14	2	3	19	1.319	0.253	0.776	2.348
ENGINEERING PERSONNEL	5	0	8	13	0.231	0.000	0.495	0.726
TOTAL	267	203	285	755	47.751	29.372	52.017	129.140
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	26	82	37	145	0.759	12.057	2.054	14.870
OPERATIONS PERSONNEL	1	0	6	7	0.000	0.000	0.421	0.421
HEALTH PHYSICS PERSONNEL	7	0	19	26	0.028	0.000	0.538	0.566
SUPERVISORY PERSONNEL	6	1	1	8	0.107	0.073	0.004	0.184
ENGINEERING PERSONNEL	3	0	4	7	0.013	0.000	0.268	0.281
TOTAL	43	83	67	193	0.907	12.130	3.285	16.322
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	91	120	117	328	2.959	11.411	7.719	22.089
OPERATIONS PERSONNEL	11	0	19	30	0.057	0.000	0.312	0.369
HEALTH PHYSICS PERSONNEL	14	0	22	36	0.315	0.000	0.789	1.104
SUPERVISORY PERSONNEL	10	0	3	13	0.433	0.000	0.032	0.465
ENGINEERING PERSONNEL	3	0	2	5	0.481	0.000	0.099	0.580
TOTAL	129	120	163	412	4.245	11.411	8.951	24.607
WASTE PROCESSING								
MAINTENANCE PERSONNEL	27	9	6	42	0.737	0.048	0.001	0.786
OPERATIONS PERSONNEL	17	0	29	46	0.591	0.000	0.398	0.989
HEALTH PHYSICS PERSONNEL	16	0	6	22	0.883	0.000	0.002	0.885
SUPERVISORY PERSONNEL	1	0	2	3	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	61	9	43	113	2.211	0.048	0.401	2.660
REFUELING								
MAINTENANCE PERSONNEL	20	45	34	99	1.064	5.440	0.269	6.773
OPERATIONS PERSONNEL	5	0	25	30	0.212	0.000	0.703	0.915
HEALTH PHYSICS PERSONNEL	11	0	21	32	0.010	0.000	0.275	0.285
SUPERVISORY PERSONNEL	2	0	0	2	0.013	0.000	0.000	0.013
ENGINEERING PERSONNEL	3	0	3	6	0.190	0.000	0.087	0.277
TOTAL	41	45	83	169	1.489	5.440	1.334	8.263
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	473	(155) 656 (201)	590	(199) 1719 (555)	47.340	59.723	43.959	151.022
OPERATIONS PERSONNEL	168	(69) 0 (0)	138	(31) 306 (100)	16.490	0.000	14.063	30.553
HEALTH PHYSICS PERSONNEL	104	(28) 0 (0)	158	(45) 262 (73)	6.075	0.000	12.266	18.341
SUPERVISORY PERSONNEL	50	(17) 5 (0)	12	(3) 67 (20)	3.599	0.328	0.847	4.774
ENGINEERING PERSONNEL	19	(5) 0 (0)	25	(8) 44 (13)	1.798	0.000	0.999	2.797
GRAND TOTALS	814	(274) 661 (201)	923	(286) 2398 (761)	75.302	60.051	72.134	207.487

*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

1997

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	68	1	2	71	1.901	0.001	0.004	1.906
OPERATIONS PERSONNEL	80	0	0	80	6.445	0.000	0.000	6.445
HEALTH PHYSICS PERSONNEL	23	0	0	23	0.772	0.000	0.000	0.772
SUPERVISORY PERSONNEL	5	0	0	5	0.568	0.000	0.000	0.568
ENGINEERING PERSONNEL	10	0	0	10	0.031	0.000	0.000	0.031
TOTAL	186	1	2	189	9.717	0.001	0.004	9.722
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	228	14	68	310	11.425	0.052	0.279	11.756
OPERATIONS PERSONNEL	152	3	11	166	2.279	0.000	0.020	2.299
HEALTH PHYSICS PERSONNEL	68	1	1	70	3.554	0.000	0.011	3.565
SUPERVISORY PERSONNEL	60	3	5	68	0.211	0.053	0.011	0.275
ENGINEERING PERSONNEL	143	3	13	159	1.858	0.002	0.061	1.921
TOTAL	651	24	98	773	19.327	0.107	0.382	19.816
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	24	0	0	24	0.127	0.000	0.000	0.127
OPERATIONS PERSONNEL	7	0	0	7	0.021	0.000	0.000	0.021
HEALTH PHYSICS PERSONNEL	3	0	0	3	0.002	0.000	0.000	0.002
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	8	0	0	8	0.095	0.000	0.000	0.095
TOTAL	42	0	0	42	0.245	0.000	0.000	0.245
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	123	7	22	152	12.112	0.821	1.257	14.190
OPERATIONS PERSONNEL	40	0	1	41	1.493	0.000	0.051	1.544
HEALTH PHYSICS PERSONNEL	41	0	0	41	2.376	0.000	0.000	2.376
SUPERVISORY PERSONNEL	6	0	0	6	0.011	0.000	0.000	0.011
ENGINEERING PERSONNEL	26	0	1	27	0.546	0.000	0.000	0.546
TOTAL	236	7	24	267	16.538	0.821	1.308	18.667
WASTE PROCESSING								
MAINTENANCE PERSONNEL	40	0	8	48	1.348	0.000	0.146	1.494
OPERATIONS PERSONNEL	43	0	2	45	2.118	0.000	0.006	2.124
HEALTH PHYSICS PERSONNEL	27	0	0	27	0.497	0.000	0.000	0.497
SUPERVISORY PERSONNEL	8	0	0	8	0.418	0.000	0.000	0.418
ENGINEERING PERSONNEL	3	0	1	4	0.293	0.000	0.001	0.294
TOTAL	121	0	11	132	4.674	0.000	0.153	4.827
REFUELING								
MAINTENANCE PERSONNEL	16	0	2	18	0.649	0.000	0.338	0.987
OPERATIONS PERSONNEL	15	0	1	16	0.282	0.000	0.271	0.553
HEALTH PHYSICS PERSONNEL	20	0	1	21	0.437	0.000	0.000	0.437
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	0	1	3	0.004	0.000	0.197	0.201
TOTAL	53	0	5	58	1.372	0.000	0.806	2.178
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	499 (249)	22 (16)	102 (77)	623 (342)	27.562	0.874	2.024	30.460
OPERATIONS PERSONNEL	337 (205)	3 (3)	15 (12)	355 (220)	12.638	0.000	0.348	12.986
HEALTH PHYSICS PERSONNEL	182 (76)	1 (1)	2 (1)	185 (78)	7.638	0.000	0.011	7.649
SUPERVISORY PERSONNEL	79 (61)	3 (3)	5 (5)	87 (69)	1.208	0.053	0.011	1.272
ENGINEERING PERSONNEL	192 (147)	3 (3)	16 (13)	211 (163)	2.827	0.002	0.259	3.088
GRAND TOTALS	1289 (738)	32 (26)	140 (108)	1461 (872)	51.873	0.929	2.653	55.455

*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

1997

PLANT: ***PALISADES** 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	1.477	0.056	0.108	1.641
OPERATIONS PERSONNEL	32	0	0	32	8.508	0.002	0.296	8.806
HEALTH PHYSICS PERSONNEL	22	0	4	26	4.527	0.000	1.251	5.778
SUPERVISORY PERSONNEL	1	0	0	1	0.603	0.000	0.016	0.619
ENGINEERING PERSONNEL	1	0	1	2	1.398	0.036	0.603	2.037
TOTAL	56	0	5	61	16.513	0.094	2.274	18.881
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	50	5	3	58	14.414	1.272	0.962	16.648
OPERATIONS PERSONNEL	2	0	0	2	0.441	0.000	0.005	0.446
HEALTH PHYSICS PERSONNEL	17	0	2	19	4.653	0.000	1.103	5.756
SUPERVISORY PERSONNEL	2	0	0	2	0.521	0.000	0.011	0.532
ENGINEERING PERSONNEL	0	0	0	0	0.607	0.207	0.098	0.912
TOTAL	71	5	5	81	20.636	1.479	2.179	24.294
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	1	1	0.059	0.001	0.142	0.202
OPERATIONS PERSONNEL	0	0	0	0	0.052	0.000	0.000	0.052
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.078	0.000	0.000	0.078
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.058	0.000	0.189	0.247
TOTAL	0	0	2	2	0.247	0.001	0.331	0.579
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.222	0.011	0.066	0.299
OPERATIONS PERSONNEL	1	0	0	1	0.285	0.000	0.004	0.289
HEALTH PHYSICS PERSONNEL	9	0	1	10	2.772	0.000	0.489	3.261
SUPERVISORY PERSONNEL	1	0	0	1	0.489	0.000	0.004	0.493
ENGINEERING PERSONNEL	0	0	0	0	0.054	0.000	0.004	0.058
TOTAL	11	0	1	12	3.822	0.011	0.567	4.400
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	50	5	4	59	16.172	1.340	1.278	18.790
OPERATIONS PERSONNEL	35	0	0	35	9.286	0.002	0.305	9.593
HEALTH PHYSICS PERSONNEL	48	0	7	55	12.030	0.000	2.843	14.873
SUPERVISORY PERSONNEL	4	0	0	4	1.613	0.000	0.031	1.644
ENGINEERING PERSONNEL	1	0	2	3	2.117	0.243	0.894	3.254
GRAND TOTALS	138	5	13	156	41.218	1.585	5.351	48.154

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	2	4	0.958	0.000	0.715	1.673
OPERATIONS PERSONNEL	11	0	0	11	6.185	0.000	0.170	6.355
HEALTH PHYSICS PERSONNEL	48	0	19	67	14.485	0.000	6.683	21.168
SUPERVISORY PERSONNEL	5	0	0	5	1.863	0.000	0.123	1.986
ENGINEERING PERSONNEL	1	0	0	1	1.032	0.000	0.010	1.042
TOTAL	67	0	21	88	24.523	0.000	7.701	32.224
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	111	0	212	323	40.343	0.000	71.303	111.646
OPERATIONS PERSONNEL	29	0	0	29	13.689	0.000	0.032	13.721
HEALTH PHYSICS PERSONNEL	46	0	61	107	16.418	0.000	19.231	35.649
SUPERVISORY PERSONNEL	27	0	2	29	10.108	0.000	0.847	10.955
ENGINEERING PERSONNEL	19	0	20	39	8.468	0.000	6.226	14.694
TOTAL	232	0	295	527	89.026	0.000	97.639	186.665
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	24	25	0.601	0.000	9.309	9.910
OPERATIONS PERSONNEL	2	0	1	3	1.048	0.000	0.500	1.548
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.570	0.000	0.461	1.031
SUPERVISORY PERSONNEL	0	0	0	0	0.106	0.000	0.000	0.106
ENGINEERING PERSONNEL	1	0	6	7	0.668	0.000	1.861	2.529
TOTAL	4	0	31	35	2.993	0.000	12.131	15.124
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.071	0.000	0.988	1.059
OPERATIONS PERSONNEL	0	0	0	0	0.008	0.000	0.010	0.018
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.013	0.000	0.331	0.344
SUPERVISORY PERSONNEL	0	0	0	0	0.015	0.000	0.003	0.018
ENGINEERING PERSONNEL	0	0	0	0	0.036	0.000	0.505	0.541
TOTAL	0	0	0	0	0.143	0.000	1.837	1.980
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	0	2	0.681	0.000	0.076	0.757
OPERATIONS PERSONNEL	1	0	0	1	0.418	0.000	0.000	0.418
HEALTH PHYSICS PERSONNEL	10	0	2	12	5.160	0.000	0.874	6.034
SUPERVISORY PERSONNEL	1	0	0	1	0.184	0.000	0.016	0.200
ENGINEERING PERSONNEL	0	0	0	0	0.027	0.000	0.003	0.030
TOTAL	14	0	2	16	6.470	0.000	0.969	7.439
REFUELING								
MAINTENANCE PERSONNEL	18	0	7	25	7.168	0.000	2.234	9.402
OPERATIONS PERSONNEL	5	0	0	5	1.804	0.000	0.000	1.804
HEALTH PHYSICS PERSONNEL	3	0	6	9	0.862	0.000	1.128	1.990
SUPERVISORY PERSONNEL	3	0	0	3	1.180	0.000	0.000	1.180
ENGINEERING PERSONNEL	6	0	0	6	1.651	0.000	0.076	1.727
TOTAL	35	0	13	48	12.665	0.000	3.438	16.103
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	134	0	245	379	49.822	0.000	84.625	134.447
OPERATIONS PERSONNEL	48	0	1	49	23.152	0.000	0.712	23.864
HEALTH PHYSICS PERSONNEL	107	0	88	195	37.508	0.000	28.708	66.216
SUPERVISORY PERSONNEL	36	0	2	38	13.456	0.000	0.989	14.445
ENGINEERING PERSONNEL	27	0	26	53	11.882	0.000	8.681	20.563
GRAND TOTALS	352	0	362	714	135.820	0.000	123.715	259.535

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	474	396	676	1546	56.910	25.683	60.520	143.113
OPERATIONS PERSONNEL	97	34	81	212	2.072	0.826	2.485	5.383
HEALTH PHYSICS PERSONNEL	38	8	11	57	4.196	0.218	1.479	5.893
SUPERVISORY PERSONNEL	10	11	23	44	0.049	0.051	0.232	0.332
ENGINEERING PERSONNEL	55	65	20	140	1.186	1.129	0.825	3.140
TOTAL	674	514	811	1999	64.413	27.907	65.541	157.861
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	14	10	74	98	0.651	0.403	1.670	2.724
OPERATIONS PERSONNEL	0	0	2	2	0.000	0.000	0.009	0.009
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.013	0.000	0.000	0.013
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	10	76	101	0.664	0.403	1.679	2.746
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	7	21	226	254	0.953	1.059	21.443	23.455
OPERATIONS PERSONNEL	3	1	9	13	1.126	0.005	0.949	2.080
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	1	1	3	0.044	0.008	0.161	0.213
TOTAL	11	23	236	270	2.123	1.072	22.553	25.748
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	111	136	335	582	11.531	16.377	53.256	81.164
OPERATIONS PERSONNEL	7	3	19	29	0.394	0.098	5.133	5.625
HEALTH PHYSICS PERSONNEL	4	1	1	6	0.153	0.003	0.046	0.202
SUPERVISORY PERSONNEL	2	1	1	4	0.045	0.007	0.045	0.097
ENGINEERING PERSONNEL	4	12	8	24	0.080	0.144	0.298	0.522
TOTAL	128	153	364	645	12.203	16.629	58.778	87.610
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	1	12	15	0.078	0.006	1.579	1.663
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	2	1	12	15	0.078	0.006	1.579	1.663
REFUELING								
MAINTENANCE PERSONNEL	280	350	642	1272	38.516	60.532	94.539	193.587
OPERATIONS PERSONNEL	42	24	30	96	4.452	1.762	4.229	10.443
HEALTH PHYSICS PERSONNEL	23	3	6	32	3.556	0.191	1.818	5.565
SUPERVISORY PERSONNEL	8	3	2	13	1.277	0.225	0.135	1.637
ENGINEERING PERSONNEL	32	34	12	78	1.331	1.310	0.807	3.448
TOTAL	385	414	692	1491	49.132	64.020	101.528	214.680
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	888	(608) 914 (514)	1965	(1148) 3767 (2270)	108.639	104.060	233.007	445.706
OPERATIONS PERSONNEL	149	(192) 62 (88)	141	(121) 352 (401)	8.044	2.691	12.805	23.540
HEALTH PHYSICS PERSONNEL	66	(44) 12 (10)	18	(11) 96 (65)	7.918	0.412	3.343	11.673
SUPERVISORY PERSONNEL	20	(20) 15 (14)	26	(65) 61 (99)	1.371	0.283	0.412	2.066
ENGINEERING PERSONNEL	92	(134) 112 (157)	41	(61) 245 (352)	2.641	2.591	2.091	7.323
GRAND TOTALS	1215	(998) 115 (783)	2191	(1406) 4521 (3187)	128.613	110.037	251.658	490.308

*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

1997

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	115	23	85	223	0.583	0.021	0.523	1.127
OPERATIONS PERSONNEL	156	32	8	196	20.233	0.654	0.122	21.009
HEALTH PHYSICS PERSONNEL	52	9	91	152	5.973	2.885	10.354	19.212
SUPERVISORY PERSONNEL	5	4	6	15	0.006	0.049	0.075	0.130
ENGINEERING PERSONNEL	26	70	15	111	0.679	0.989	0.165	1.833
TOTAL	354	138	205	697	27.474	4.598	11.239	43.311
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	215	116	1213	1544	26.029	8.989	102.649	137.667
OPERATIONS PERSONNEL	260	93	86	439	6.210	4.102	6.711	17.023
HEALTH PHYSICS PERSONNEL	56	12	76	144	6.478	0.684	5.993	13.155
SUPERVISORY PERSONNEL	19	18	63	100	0.241	0.510	0.815	1.566
ENGINEERING PERSONNEL	72	147	81	300	1.215	3.349	2.131	6.695
TOTAL	622	386	1519	2527	40.173	17.634	118.299	176.106
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	36	7	387	430	1.041	0.181	24.681	25.903
OPERATIONS PERSONNEL	16	8	14	38	0.075	0.570	1.603	2.248
HEALTH PHYSICS PERSONNEL	14	2	25	41	0.249	0.027	0.726	1.002
SUPERVISORY PERSONNEL	1	1	4	6	0.006	0.454	0.334	0.794
ENGINEERING PERSONNEL	11	28	22	61	0.066	1.915	2.190	4.171
TOTAL	78	46	452	576	1.437	3.147	29.534	34.118
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	47	28	359	434	0.820	0.156	18.185	19.161
OPERATIONS PERSONNEL	25	9	11	45	0.234	0.024	0.858	1.116
HEALTH PHYSICS PERSONNEL	27	2	21	50	0.932	0.004	1.220	2.156
SUPERVISORY PERSONNEL	1	2	10	13	0.000	0.000	0.189	0.189
ENGINEERING PERSONNEL	7	22	12	41	0.018	0.576	0.035	0.629
TOTAL	107	63	413	583	2.004	0.760	20.487	23.251
WASTE PROCESSING								
MAINTENANCE PERSONNEL	95	37	142	274	0.069	0.006	0.034	0.109
OPERATIONS PERSONNEL	84	39	42	165	2.179	1.341	0.493	4.013
HEALTH PHYSICS PERSONNEL	36	6	21	63	0.471	0.748	0.103	1.322
SUPERVISORY PERSONNEL	4	0	6	10	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	9	12	1	22	0.026	0.001	0.000	0.027
TOTAL	228	94	212	534	2.746	2.096	0.630	5.472
REFUELING								
MAINTENANCE PERSONNEL	28	12	186	226	0.166	0.048	17.096	17.310
OPERATIONS PERSONNEL	21	15	27	63	0.556	0.384	1.140	2.080
HEALTH PHYSICS PERSONNEL	26	2	20	48	0.213	0.002	0.925	1.140
SUPERVISORY PERSONNEL	4	2	4	10	0.001	0.002	0.083	0.086
ENGINEERING PERSONNEL	8	18	7	33	0.119	0.107	0.134	0.360
TOTAL	87	49	244	380	1.055	0.543	19.378	20.976
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	536	223	2372	3131	28.708	9.401	163.168	201.277
OPERATIONS PERSONNEL	562	196	188	946	29.487	7.075	10.927	47.489
HEALTH PHYSICS PERSONNEL	211	33	254	498	14.316	4.350	19.321	37.987
SUPERVISORY PERSONNEL	34	27	93	154	0.255	1.015	1.496	2.766
ENGINEERING PERSONNEL	133	297	138	568	2.123	6.937	4.655	13.715
GRAND TOTALS	1476	776	3045	5297	74.889	28.778	199.567	303.234

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	46	10	43	99	2.495	0.108	1.604	4.207
OPERATIONS PERSONNEL	69	2	74	145	33.327	0.370	2.574	36.271
HEALTH PHYSICS PERSONNEL	17	0	9	26	0.541	0.000	0.104	0.645
SUPERVISORY PERSONNEL	23	3	5	31	1.441	0.226	0.136	1.803
ENGINEERING PERSONNEL	18	1	5	24	1.995	0.051	0.348	2.394
TOTAL	173	16	136	325	39.799	0.755	4.766	45.320
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	168	58	914	1140	61.070	11.788	115.420	188.278
OPERATIONS PERSONNEL	100	7	125	232	11.485	0.041	6.426	17.952
HEALTH PHYSICS PERSONNEL	46	3	120	169	15.322	0.087	23.790	39.199
SUPERVISORY PERSONNEL	108	15	81	204	13.429	1.027	1.760	16.216
ENGINEERING PERSONNEL	114	27	120	261	6.072	0.931	8.049	15.052
TOTAL	536	110	1360	2006	107.378	13.874	155.445	276.697
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	42	7	291	340	3.036	0.226	53.175	56.437
OPERATIONS PERSONNEL	21	0	3	24	1.246	0.000	0.153	1.399
HEALTH PHYSICS PERSONNEL	10	0	9	19	0.799	0.000	0.306	1.105
SUPERVISORY PERSONNEL	9	4	7	20	0.232	0.038	1.423	1.693
ENGINEERING PERSONNEL	19	2	26	47	1.418	0.166	5.339	6.923
TOTAL	101	13	336	450	6.731	0.430	60.396	67.557
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	75	13	469	557	5.943	1.123	118.139	125.205
OPERATIONS PERSONNEL	23	1	13	37	0.594	0.002	0.263	0.859
HEALTH PHYSICS PERSONNEL	11	0	26	37	0.998	0.000	4.164	5.162
SUPERVISORY PERSONNEL	25	6	27	58	0.799	0.123	8.138	9.060
ENGINEERING PERSONNEL	29	8	36	73	1.151	0.253	7.920	9.324
TOTAL	163	28	571	762	9.485	1.501	138.624	149.610
WASTE PROCESSING								
MAINTENANCE PERSONNEL	28	6	13	47	0.230	0.024	0.090	0.344
OPERATIONS PERSONNEL	20	1	3	24	1.757	0.120	0.475	2.352
HEALTH PHYSICS PERSONNEL	18	0	8	26	0.266	0.000	0.073	0.339
SUPERVISORY PERSONNEL	1	0	0	1	0.145	0.000	0.000	0.145
ENGINEERING PERSONNEL	2	0	1	3	0.243	0.000	0.047	0.290
TOTAL	69	7	25	101	2.641	0.144	0.685	3.470
REFUELING								
MAINTENANCE PERSONNEL	53	35	126	214	3.408	9.034	14.011	26.453
OPERATIONS PERSONNEL	38	1	7	46	0.695	0.001	0.757	1.453
HEALTH PHYSICS PERSONNEL	10	0	34	44	0.791	0.000	5.435	6.226
SUPERVISORY PERSONNEL	23	3	9	35	1.289	0.002	0.426	1.717
ENGINEERING PERSONNEL	23	3	26	52	1.652	0.079	3.993	5.724
TOTAL	147	42	202	391	7.835	9.116	24.622	41.573
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	412	129	1856	2397	76.182	22.303	302.439	400.924
OPERATIONS PERSONNEL	271	12	225	508	49.104	0.534	10.648	60.286
HEALTH PHYSICS PERSONNEL	112	3	206	321	18.717	0.087	33.872	52.676
SUPERVISORY PERSONNEL	189	31	129	349	17.335	1.416	11.883	30.634
ENGINEERING PERSONNEL	205	41	214	460	12.531	1.480	25.696	39.707
GRAND TOTALS	1189	216	2630	4035	173.869	25.820	384.538	584.227

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	0.700	0.700
OPERATIONS PERSONNEL	41	0	0	41	9.180	0.000	7.986	17.166
HEALTH PHYSICS PERSONNEL	41	5	23	69	3.450	0.600	0.140	4.190
SUPERVISORY PERSONNEL	1	0	0	1	1.080	0.000	1.170	2.250
ENGINEERING PERSONNEL	5	3	1	9	2.210	1.063	0.000	3.273
TOTAL	88	8	24	120	15.920	1.663	9.996	27.579
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	46	20	5	71	16.090	6.040	0.800	22.930
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	0.700	0.000	0.000	0.700
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	48	20	5	73	16.790	6.040	0.800	23.630
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	1	5	6	0.000	0.600	5.540	6.140
TOTAL	0	1	5	6	0.000	0.600	5.540	6.140
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	69	69	0.000	0.000	26.670	26.670
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	0.390	0.390
SUPERVISORY PERSONNEL	0	0	4	4	0.000	0.000	2.080	2.080
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	74	74	0.000	0.000	29.140	29.140
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.430	0.430
OPERATIONS PERSONNEL	0	0	0	0	0.280	0.000	0.000	0.280
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.150	0.000	0.710	0.860
SUPERVISORY PERSONNEL	1	0	0	1	0.200	0.000	0.000	0.200
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	1	0	0	1	0.630	0.000	1.140	1.770
REFUELING								
MAINTENANCE PERSONNEL	18	0	0	18	2.550	0.000	0.000	2.550
OPERATIONS PERSONNEL	5	0	0	5	0.730	0.000	0.000	0.730
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.470	0.000	0.000	0.470
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	23	0	0	23	3.750	0.000	0.000	3.750
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	64	20	74	158	18.640	6.040	28.600	53.280
OPERATIONS PERSONNEL	46	0	0	46	10.190	0.000	7.986	18.176
HEALTH PHYSICS PERSONNEL	41	5	24	70	3.600	0.600	1.240	5.440
SUPERVISORY PERSONNEL	4	0	4	8	2.450	0.000	3.250	5.700
ENGINEERING PERSONNEL	5	4	6	15	2.210	1.663	5.540	9.413
GRAND TOTALS	160	29	108	297	37.090	8.303	46.616	92.009

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	0.287	0.075	0.047	0.409
OPERATIONS PERSONNEL	2	0	0	2	2.724	0.000	0.000	2.724
HEALTH PHYSICS PERSONNEL	11	0	19	30	2.956	0.000	5.304	8.260
SUPERVISORY PERSONNEL	5	0	0	5	2.008	0.023	0.161	2.192
ENGINEERING PERSONNEL	3	0	0	3	1.389	0.000	0.000	1.389
TOTAL	21	0	19	40	9.364	0.098	5.512	14.974
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	19	25	7	51	5.934	8.429	1.240	15.603
OPERATIONS PERSONNEL	0	0	0	0	0.020	0.000	0.000	0.020
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.168	0.000	0.205	0.373
SUPERVISORY PERSONNEL	2	0	4	6	0.782	0.046	0.914	1.742
ENGINEERING PERSONNEL	3	0	0	3	1.000	0.000	0.000	1.000
TOTAL	24	25	11	60	7.904	8.475	2.359	18.738
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	13	58	23	94	4.640	23.541	9.496	37.677
OPERATIONS PERSONNEL	0	0	0	0	0.216	0.000	0.000	0.216
HEALTH PHYSICS PERSONNEL	2	0	10	12	0.472	0.000	1.980	2.452
SUPERVISORY PERSONNEL	3	0	43	46	1.578	0.150	13.739	15.467
ENGINEERING PERSONNEL	0	0	0	0	0.099	0.000	0.084	0.183
TOTAL	18	58	76	152	7.005	23.691	25.299	55.995
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	10	11	10	31	2.707	4.821	3.179	10.707
OPERATIONS PERSONNEL	0	0	0	0	0.186	0.000	0.000	0.186
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.403	0.230	1.518	2.151
SUPERVISORY PERSONNEL	2	0	59	61	0.971	0.000	29.130	30.101
ENGINEERING PERSONNEL	2	0	0	2	0.252	0.000	0.000	0.252
TOTAL	14	11	70	95	4.519	5.051	33.827	43.397
WASTE PROCESSING								
MAINTENANCE PERSONNEL	6	0	1	7	2.816	0.229	0.331	3.376
OPERATIONS PERSONNEL	1	0	0	1	0.317	0.000	0.000	0.317
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.792	0.000	0.036	0.828
SUPERVISORY PERSONNEL	0	0	0	0	0.227	0.050	0.004	0.281
ENGINEERING PERSONNEL	0	0	0	0	0.018	0.000	0.000	0.018
TOTAL	9	0	1	10	4.170	0.279	0.371	4.820
REFUELING								
MAINTENANCE PERSONNEL	26	58	0	84	10.581	17.918	0.035	28.534
OPERATIONS PERSONNEL	15	0	0	15	4.355	0.000	0.000	4.355
HEALTH PHYSICS PERSONNEL	0	0	3	3	0.144	0.000	0.556	0.700
SUPERVISORY PERSONNEL	2	0	0	2	1.075	0.025	0.016	1.116
ENGINEERING PERSONNEL	1	0	0	1	0.124	0.000	0.000	0.124
TOTAL	44	58	3	105	16.279	17.943	0.607	34.829
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	74	152	41	267	26.965	55.013	14.328	96.306
OPERATIONS PERSONNEL	18	0	0	18	7.818	0.000	0.000	7.818
HEALTH PHYSICS PERSONNEL	15	0	33	48	4.935	0.230	9.599	14.764
SUPERVISORY PERSONNEL	14	0	106	120	6.641	0.294	43.964	50.899
ENGINEERING PERSONNEL	9	0	0	9	2.882	0.000	0.084	2.966
GRAND TOTALS	130	152	180	462	49.241	55.537	67.975	172.753

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***QUAD CITIES 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	7	6	14	27	4.438	0.306	3.554	8.298
OPERATIONS PERSONNEL	109	0	190	299	30.721	0.000	18.500	49.221
HEALTH PHYSICS PERSONNEL	47	0	43	90	18.029	0.000	7.097	25.126
SUPERVISORY PERSONNEL	111	0	35	146	10.192	0.000	1.577	11.769
ENGINEERING PERSONNEL	39	0	7	46	1.974	0.000	0.287	2.261
TOTAL	313	6	289	608	65.354	0.306	31.015	96.675
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	154	173	996	1323	92.063	8.332	247.436	347.831
OPERATIONS PERSONNEL	31	0	2	33	8.678	0.000	0.168	8.846
HEALTH PHYSICS PERSONNEL	32	0	70	102	12.179	0.000	11.668	23.847
SUPERVISORY PERSONNEL	156	0	154	310	14.190	0.000	6.936	21.126
ENGINEERING PERSONNEL	94	0	161	255	4.724	0.000	6.414	11.138
TOTAL	467	173	1383	2023	131.834	8.332	272.622	412.788
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	26	211	238	0.626	1.256	52.406	54.288
OPERATIONS PERSONNEL	1	0	0	1	0.251	0.000	0.000	0.251
HEALTH PHYSICS PERSONNEL	2	0	4	6	0.911	0.000	0.689	1.600
SUPERVISORY PERSONNEL	3	0	6	9	0.252	0.000	0.270	0.522
ENGINEERING PERSONNEL	59	0	34	93	2.961	0.000	1.346	4.307
TOTAL	66	26	255	347	5.001	1.256	54.711	60.968
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	3	21	230	254	1.689	1.008	57.113	59.810
OPERATIONS PERSONNEL	0	0	0	0	0.046	0.000	0.010	0.056
HEALTH PHYSICS PERSONNEL	1	0	5	6	0.433	0.000	0.839	1.272
SUPERVISORY PERSONNEL	4	0	17	21	0.375	0.000	0.748	1.123
ENGINEERING PERSONNEL	7	0	19	26	0.334	0.000	0.775	1.109
TOTAL	15	21	271	307	2.877	1.008	59.485	63.370
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	6	6	0.057	0.000	1.495	1.552
OPERATIONS PERSONNEL	11	0	11	22	3.198	0.000	1.039	4.237
HEALTH PHYSICS PERSONNEL	4	0	0	4	1.670	0.000	0.031	1.701
SUPERVISORY PERSONNEL	18	0	3	21	1.679	0.000	0.144	1.823
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	33	0	20	53	6.604	0.000	2.709	9.313
REFUELING								
MAINTENANCE PERSONNEL	14	5	2	21	8.386	0.260	0.598	9.244
OPERATIONS PERSONNEL	3	0	0	3	0.949	0.000	0.000	0.949
HEALTH PHYSICS PERSONNEL	3	0	0	3	1.075	0.000	0.000	1.075
SUPERVISORY PERSONNEL	9	0	0	9	0.836	0.000	0.000	0.836
ENGINEERING PERSONNEL	1	0	5	6	0.033	0.000	0.191	0.224
TOTAL	30	5	7	42	11.279	0.260	0.789	12.328
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	179	231	1459	1869	107.259	11.162	362.602	481.023
OPERATIONS PERSONNEL	155	0	203	358	43.843	0.000	19.717	63.560
HEALTH PHYSICS PERSONNEL	89	0	122	211	34.297	0.000	20.324	54.621
SUPERVISORY PERSONNEL	301	0	215	516	27.524	0.000	9.675	37.199
ENGINEERING PERSONNEL	200	0	226	426	10.026	0.000	9.013	19.039
GRAND TOTALS	924	231	2225	3380	222.949	11.162	421.331	655.442

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***RANCHO SECO** 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	4	0	3	7	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	48	0	3	51	0.105	0.000	0.000	0.105
HEALTH PHYSICS PERSONNEL	19	0	12	31	0.314	0.000	0.033	0.347
SUPERVISORY PERSONNEL	14	1	2	17	0.004	0.000	0.000	0.004
ENGINEERING PERSONNEL	18	2	29	49	0.004	0.000	0.008	0.012
TOTAL	103	3	49	155	0.427	0.000	0.041	0.468
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	22	1	25	48	0.100	0.001	0.110	0.211
OPERATIONS PERSONNEL	8	0	1	9	0.005	0.000	0.000	0.005
HEALTH PHYSICS PERSONNEL	9	1	5	15	0.000	0.000	0.005	0.005
SUPERVISORY PERSONNEL	5	0	1	6	0.002	0.000	0.000	0.002
ENGINEERING PERSONNEL	6	0	8	14	0.001	0.000	0.002	0.003
TOTAL	50	2	40	92	0.108	0.001	0.117	0.226
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	15	0	11	26	0.093	0.000	0.037	0.130
OPERATIONS PERSONNEL	5	0	0	5	0.001	0.000	0.000	0.001
HEALTH PHYSICS PERSONNEL	8	0	9	17	0.113	0.000	0.100	0.213
SUPERVISORY PERSONNEL	2	0	1	3	0.046	0.000	0.000	0.046
ENGINEERING PERSONNEL	5	0	4	9	0.004	0.000	0.005	0.009
TOTAL	35	0	25	60	0.257	0.000	0.142	0.399
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	41	1	39	81	0.193	0.001	0.147	0.341
OPERATIONS PERSONNEL	61	0	4	65	0.111	0.000	0.000	0.111
HEALTH PHYSICS PERSONNEL	36	1	26	63	0.427	0.000	0.138	0.565
SUPERVISORY PERSONNEL	21	1	4	26	0.052	0.000	0.000	0.052
ENGINEERING PERSONNEL	29	2	41	72	0.009	0.000	0.015	0.024
GRAND TOTALS	188	5	114	307	0.792	0.001	0.300	1.093

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***RIVER BEND 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	2	0	7	9	0.924	0.055	1.196	2.175
OPERATIONS PERSONNEL	49	2	0	51	17.988	0.193	0.000	18.181
HEALTH PHYSICS PERSONNEL	24	6	27	57	10.578	1.260	7.540	19.378
SUPERVISORY PERSONNEL	1	0	6	7	0.239	0.000	0.692	0.931
ENGINEERING PERSONNEL	12	2	2	16	1.880	0.226	0.160	2.266
TOTAL	88	10	42	140	31.609	1.734	9.588	42.931
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	25	15	59	99	10.665	4.749	17.838	33.252
OPERATIONS PERSONNEL	0	0	0	0	0.005	0.000	0.000	0.005
HEALTH PHYSICS PERSONNEL	1	0	3	4	0.647	0.000	1.503	2.150
SUPERVISORY PERSONNEL	0	0	0	0	0.001	0.000	0.001	0.002
ENGINEERING PERSONNEL	0	0	0	0	0.093	0.017	0.001	0.111
TOTAL	26	15	62	103	11.411	4.766	19.343	35.520
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	10	2	11	23	2.593	0.123	2.781	5.497
OPERATIONS PERSONNEL	1	0	0	1	1.047	0.090	0.000	1.137
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.257	0.019	0.076	0.352
SUPERVISORY PERSONNEL	1	0	1	2	0.263	0.000	0.101	0.364
ENGINEERING PERSONNEL	10	3	18	31	1.543	0.370	4.838	6.751
TOTAL	22	5	30	57	5.703	0.602	7.796	14.101
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	58	28	238	324	42.166	9.403	84.716	136.285
OPERATIONS PERSONNEL	1	0	12	13	1.443	0.000	4.171	5.614
HEALTH PHYSICS PERSONNEL	5	2	9	16	5.426	0.248	3.863	9.537
SUPERVISORY PERSONNEL	1	0	0	1	0.514	0.000	0.004	0.518
ENGINEERING PERSONNEL	4	1	5	10	1.715	0.209	1.638	3.562
TOTAL	69	31	264	364	51.264	9.860	94.392	155.516
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	2	2	0.033	0.000	0.995	1.028
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	1	0	4	1.942	0.140	0.126	2.208
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	2	6	1.975	0.140	1.121	3.236
REFUELING								
MAINTENANCE PERSONNEL	7	10	35	52	1.273	1.607	9.767	12.647
OPERATIONS PERSONNEL	5	0	0	5	0.935	0.000	0.000	0.935
HEALTH PHYSICS PERSONNEL	2	4	2	8	1.453	0.908	0.390	2.751
SUPERVISORY PERSONNEL	4	0	1	5	0.761	0.000	0.221	0.982
ENGINEERING PERSONNEL	11	9	18	38	1.830	1.429	4.703	7.962
TOTAL	29	23	56	108	6.252	3.944	15.081	25.277
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	102	55	352	509	57.654	15.937	117.293	190.884
OPERATIONS PERSONNEL	56	2	12	70	21.418	0.283	4.171	25.872
HEALTH PHYSICS PERSONNEL	35	13	41	89	20.303	2.575	13.498	36.376
SUPERVISORY PERSONNEL	7	0	8	15	1.778	0.000	1.019	2.797
ENGINEERING PERSONNEL	37	15	43	95	7.061	2.251	11.340	20.652
GRAND TOTALS	237	85	456	778	108.214	21.046	147.321	276.581

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	4	0	0	4	0.557	0.000	0.000	0.557
OPERATIONS PERSONNEL	6	0	0	6	0.775	0.000	0.000	0.775
HEALTH PHYSICS PERSONNEL	10	0	0	10	1.563	0.000	0.000	1.563
SUPERVISORY PERSONNEL	1	0	0	1	0.114	0.000	0.000	0.114
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	21	0	0	21	3.009	0.000	0.000	3.009
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	2	4	0.216	0.000	0.255	0.471
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	2	0	2	4	0.216	0.000	0.255	0.471
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	2	0	2	4	0.307	0.000	0.241	0.548
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	0	3	0.411	0.000	0.000	0.411
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	5	0	2	7	0.718	0.000	0.241	0.959
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	8	0	4	12	1.080	0.000	0.496	1.576
OPERATIONS PERSONNEL	6	0	0	6	0.775	0.000	0.000	0.775
HEALTH PHYSICS PERSONNEL	13	0	0	13	1.974	0.000	0.000	1.974
SUPERVISORY PERSONNEL	1	0	0	1	0.114	0.000	0.000	0.114
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
GRAND TOTALS	28	0	4	32	3.943	0.000	0.496	4.439

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	0.000	0.048	0.000	0.048
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.016	0.000	0.016
HEALTH PHYSICS PERSONNEL	0	2	0	2	0.012	0.372	0.072	0.456
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	2	0	2	0.012	0.436	0.072	0.520
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	7	1	28	36	4.353	2.663	18.538	25.554
OPERATIONS PERSONNEL	3	0	15	18	0.825	3.362	6.974	11.161
HEALTH PHYSICS PERSONNEL	1	0	12	13	1.660	0.093	4.023	5.776
SUPERVISORY PERSONNEL	0	0	0	0	0.055	0.145	0.013	0.213
ENGINEERING PERSONNEL	0	0	0	0	0.065	0.578	0.020	0.663
TOTAL	11	1	55	67	6.958	6.841	29.568	43.367
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	3	3	0.243	0.177	1.201	1.621
OPERATIONS PERSONNEL	0	0	3	3	0.045	0.411	1.216	1.672
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.103	0.000	0.155	0.258
SUPERVISORY PERSONNEL	0	0	0	0	0.012	0.002	0.037	0.051
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.099	0.054	0.153
TOTAL	0	0	6	6	0.403	0.689	2.663	3.755
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	216	217	0.370	0.387	81.444	82.201
OPERATIONS PERSONNEL	0	1	59	60	0.056	0.298	21.428	21.782
HEALTH PHYSICS PERSONNEL	0	0	5	5	0.342	0.005	2.605	2.952
SUPERVISORY PERSONNEL	0	0	0	0	0.013	0.001	0.277	0.291
ENGINEERING PERSONNEL	0	1	1	2	0.000	0.420	0.310	0.730
TOTAL	1	2	281	284	0.781	1.111	106.064	107.956
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	11	11	0.226	0.021	3.452	3.699
OPERATIONS PERSONNEL	0	0	0	0	0.216	0.052	0.288	0.556
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.398	0.026	0.287	0.711
SUPERVISORY PERSONNEL	0	0	0	0	0.012	0.000	0.000	0.012
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.018	0.000	0.018
TOTAL	0	0	11	11	0.852	0.117	4.027	4.996
REFUELING								
MAINTENANCE PERSONNEL	1	0	15	16	0.553	0.100	3.644	4.297
OPERATIONS PERSONNEL	0	0	10	10	0.229	0.178	3.583	3.990
HEALTH PHYSICS PERSONNEL	0	0	2	2	0.209	0.005	1.198	1.412
SUPERVISORY PERSONNEL	0	0	1	1	0.010	0.018	0.303	0.331
ENGINEERING PERSONNEL	0	0	0	0	0.002	0.036	0.000	0.038
TOTAL	1	0	28	29	1.003	0.337	8.728	10.068
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	9	1	273	283	5.745	3.396	108.279	117.420
OPERATIONS PERSONNEL	3	1	87	91	1.371	4.317	33.489	39.177
HEALTH PHYSICS PERSONNEL	1	2	19	22	2.724	0.501	8.340	11.565
SUPERVISORY PERSONNEL	0	0	1	1	0.102	0.166	0.630	0.898
ENGINEERING PERSONNEL	0	1	1	2	0.067	1.151	0.384	1.602
GRAND TOTALS	13	5	381	399	10.009	9.531	151.122	170.662

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	3	0	2	5	0.001	0.000	0.001	0.002
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	0.001	0.000	0.000	0.001
TOTAL	4	0	2	6	0.002	0.000	0.001	0.003
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	159	2	187	348	52.518	0.322	49.144	101.984
OPERATIONS PERSONNEL	59	0	0	59	10.123	0.000	0.000	10.123
HEALTH PHYSICS PERSONNEL	63	0	103	166	15.922	0.000	18.685	34.607
SUPERVISORY PERSONNEL	22	0	8	30	3.932	0.000	2.748	6.680
ENGINEERING PERSONNEL	41	0	248	289	11.588	0.000	94.372	105.960
TOTAL	344	2	546	892	94.083	0.322	164.949	259.354
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	10	10	0.000	0.000	0.793	0.793
OPERATIONS PERSONNEL	2	0	0	2	0.020	0.000	0.000	0.020
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.005	0.005
ENGINEERING PERSONNEL	0	0	15	15	0.000	0.000	0.106	0.106
TOTAL	2	0	26	28	0.020	0.000	0.904	0.924
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	1	0	0	1	0.278	0.000	0.000	0.278
OPERATIONS PERSONNEL	5	0	0	5	1.056	0.000	0.000	1.056
HEALTH PHYSICS PERSONNEL	23	0	57	80	5.165	0.000	15.734	20.899
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	5	6	0.550	0.000	0.151	0.701
TOTAL	30	0	63	93	7.049	0.000	15.885	22.934
REFUELING								
MAINTENANCE PERSONNEL	72	0	64	136	11.934	0.000	24.035	35.969
OPERATIONS PERSONNEL	13	0	0	13	0.105	0.000	0.000	0.105
HEALTH PHYSICS PERSONNEL	11	0	5	16	2.520	0.000	0.140	2.660
SUPERVISORY PERSONNEL	13	0	2	15	3.997	0.000	0.002	3.999
ENGINEERING PERSONNEL	15	0	30	45	1.682	0.000	7.319	9.001
TOTAL	124	0	101	225	20.238	0.000	31.496	51.734
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	235 (159)	2 (2)	263 (194)	500 (355)	64.731	0.322	73.973	139.026
OPERATIONS PERSONNEL	79 (59)	0 (0)	0 (0)	79 (59)	11.304	0.000	0.000	11.304
HEALTH PHYSICS PERSONNEL	97 (63)	0 (0)	165 (107)	262 (170)	23.607	0.000	34.559	58.166
SUPERVISORY PERSONNEL	35 (22)	0 (0)	12 (8)	47 (30)	7.929	0.000	2.755	10.684
ENGINEERING PERSONNEL	58 (41)	0 (0)	298 (249)	356 (290)	13.821	0.000	101.948	115.769
GRAND TOTALS	504 (344)	2 (2)	738 (558)	1244 (904)	121.392	0.322	213.235	334.949

*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

1997

PLANT: ***SEABROOK** 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	27	6	25	58	0.672	0.317	0.414	1.403
OPERATIONS PERSONNEL	36	6	1	43	4.349	0.375	0.018	4.742
HEALTH PHYSICS PERSONNEL	18	0	26	44	0.648	0.000	0.294	0.942
SUPERVISORY PERSONNEL	3	5	0	8	0.068	0.203	0.000	0.271
ENGINEERING PERSONNEL	0	6	1	7	0.000	0.539	0.002	0.541
TOTAL	84	23	53	160	5.737	1.434	0.728	7.899
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	43	7	181	231	6.337	0.989	25.053	32.379
OPERATIONS PERSONNEL	36	6	2	44	2.281	0.708	0.174	3.163
HEALTH PHYSICS PERSONNEL	18	0	71	89	6.167	0.000	17.825	23.992
SUPERVISORY PERSONNEL	3	5	0	8	0.174	0.730	0.000	0.904
ENGINEERING PERSONNEL	0	6	11	17	0.000	0.563	1.926	2.489
TOTAL	100	24	265	389	14.959	2.990	44.978	62.927
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	7	0	34	41	0.041	0.000	2.796	2.837
OPERATIONS PERSONNEL	10	0	2	12	0.074	0.000	0.210	0.284
HEALTH PHYSICS PERSONNEL	9	0	8	17	0.211	0.000	0.373	0.584
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	2	2	0.000	0.000	0.206	0.206
TOTAL	26	0	46	72	0.326	0.000	3.585	3.911
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	0	2	0.141	0.000	0.000	0.141
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.019	0.000	0.000	0.019
SUPERVISORY PERSONNEL	0	1	0	1	0.000	0.001	0.000	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	3	1	0	4	0.160	0.001	0.000	0.161
WASTE PROCESSING								
MAINTENANCE PERSONNEL	9	1	10	20	0.868	0.000	0.092	0.960
OPERATIONS PERSONNEL	11	0	1	12	0.251	0.000	0.114	0.365
HEALTH PHYSICS PERSONNEL	9	0	34	43	0.122	0.000	0.611	0.733
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	2	0	2	0.000	0.002	0.000	0.002
TOTAL	29	3	45	77	1.241	0.002	0.817	2.060
REFUELING								
MAINTENANCE PERSONNEL	27	7	176	210	4.894	0.743	51.964	57.601
OPERATIONS PERSONNEL	18	4	2	24	0.854	0.224	0.165	1.243
HEALTH PHYSICS PERSONNEL	8	0	65	73	0.897	0.000	15.539	16.436
SUPERVISORY PERSONNEL	2	3	0	5	0.205	0.273	0.000	0.478
ENGINEERING PERSONNEL	0	4	19	23	0.000	0.197	3.891	4.088
TOTAL	55	18	262	335	6.850	1.437	71.559	79.846
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	115	21	426	562	12.953	2.049	80.319	95.321
OPERATIONS PERSONNEL	111	16	8	135	7.809	1.307	0.681	9.797
HEALTH PHYSICS PERSONNEL	63	0	204	267	8.064	0.000	34.642	42.706
SUPERVISORY PERSONNEL	8	14	0	22	0.447	1.207	0.000	1.654
ENGINEERING PERSONNEL	0	18	33	51	0.000	1.301	6.025	7.326
GRAND TOTALS	297	69	671	1037	29.273	5.864	121.667	156.804

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	81	2	137	220	0.933	0.000	0.920	1.853
OPERATIONS PERSONNEL	47	4	3	54	9.355	0.549	0.001	9.905
HEALTH PHYSICS PERSONNEL	49	6	62	117	7.423	1.400	10.183	19.006
SUPERVISORY PERSONNEL	10	6	0	16	0.623	0.424	0.000	1.047
ENGINEERING PERSONNEL	34	13	17	64	1.745	0.562	0.106	2.413
TOTAL	221	31	219	471	20.079	2.935	11.210	34.224
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	125	6	457	588	27.580	0.778	79.102	107.460
OPERATIONS PERSONNEL	45	5	8	58	0.861	0.247	0.627	1.735
HEALTH PHYSICS PERSONNEL	57	5	70	132	18.670	0.277	10.348	29.295
SUPERVISORY PERSONNEL	14	8	0	22	0.806	0.555	0.000	1.361
ENGINEERING PERSONNEL	38	15	38	91	4.450	0.707	1.276	6.433
TOTAL	279	39	573	891	52.367	2.564	91.353	146.284
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	25	2	130	157	4.495	0.163	23.784	28.442
OPERATIONS PERSONNEL	6	2	8	16	0.234	0.028	0.400	0.662
HEALTH PHYSICS PERSONNEL	35	5	57	97	3.417	0.171	10.816	14.404
SUPERVISORY PERSONNEL	2	6	0	8	0.299	0.854	0.000	1.153
ENGINEERING PERSONNEL	17	27	147	191	2.140	14.916	62.246	79.302
TOTAL	85	42	342	469	10.585	16.132	97.246	123.963
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	67	2	287	356	11.620	0.228	65.301	77.149
OPERATIONS PERSONNEL	5	3	5	13	0.369	0.132	0.253	0.754
HEALTH PHYSICS PERSONNEL	32	3	21	56	2.209	0.074	2.604	4.887
SUPERVISORY PERSONNEL	8	1	0	9	0.853	0.137	0.000	0.990
ENGINEERING PERSONNEL	19	5	21	45	1.205	0.358	1.611	3.174
TOTAL	131	14	334	479	16.256	0.929	69.769	86.954
WASTE PROCESSING								
MAINTENANCE PERSONNEL	24	1	61	86	0.096	0.000	0.567	0.663
OPERATIONS PERSONNEL	2	0	1	3	0.003	0.000	0.000	0.003
HEALTH PHYSICS PERSONNEL	37	4	30	71	1.437	0.048	2.669	4.154
SUPERVISORY PERSONNEL	0	1	0	1	0.000	0.006	0.000	0.006
ENGINEERING PERSONNEL	0	1	2	3	0.000	0.000	0.008	0.008
TOTAL	63	7	94	164	1.536	0.054	3.244	4.834
REFUELING								
MAINTENANCE PERSONNEL	33	2	61	96	3.752	0.004	14.075	17.831
OPERATIONS PERSONNEL	12	3	3	18	0.145	0.185	0.970	1.300
HEALTH PHYSICS PERSONNEL	14	3	9	26	0.873	0.101	0.471	1.445
SUPERVISORY PERSONNEL	5	3	0	8	2.302	1.094	0.000	3.396
ENGINEERING PERSONNEL	6	1	22	29	0.643	0.023	15.680	16.346
TOTAL	70	12	95	177	7.715	1.407	31.196	40.318
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	355	15	1133	1503	48.476	1.173	183.749	233.398
OPERATIONS PERSONNEL	117	17	28	162	10.967	1.141	2.251	14.359
HEALTH PHYSICS PERSONNEL	224	26	249	499	34.029	2.071	37.091	73.191
SUPERVISORY PERSONNEL	39	25	0	64	4.883	3.070	0.000	7.953
ENGINEERING PERSONNEL	114	62	247	423	10.183	16.566	80.927	107.676
GRAND TOTALS	849	145	1657	2651	108.538	24.021	304.018	436.577

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***SHOREHAM** 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	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	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	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
GRAND TOTALS	0	0	0	0	0.000	0.000	0.000	0.000

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	3	0	12	15	1.466	0.000	2.878	4.344
OPERATIONS PERSONNEL	27	0	0	27	7.168	0.000	0.000	7.168
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	19	0	21	40	6.749	0.000	6.615	13.364
ENGINEERING PERSONNEL	1	0	0	1	1.113	0.000	0.000	1.113
TOTAL	50	0	33	83	16.496	0.000	9.493	25.989
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	38	0	18	56	12.992	0.000	6.456	19.448
OPERATIONS PERSONNEL	0	0	0	0	0.160	0.000	0.000	0.160
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	2	0	134	136	1.846	0.000	45.890	47.736
ENGINEERING PERSONNEL	2	0	0	2	0.606	0.000	0.008	0.614
TOTAL	42	0	152	194	15.604	0.000	52.354	67.958
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	13	0	8	21	4.627	0.000	3.253	7.880
OPERATIONS PERSONNEL	0	0	0	0	0.098	0.000	0.000	0.098
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	1	0	12	13	0.802	0.000	3.202	4.004
ENGINEERING PERSONNEL	11	0	1	12	3.075	0.000	0.778	3.853
TOTAL	25	0	21	46	8.602	0.000	7.233	15.835
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	24	0	25	49	8.665	0.000	6.197	14.862
OPERATIONS PERSONNEL	0	0	0	0	0.300	0.000	0.000	0.300
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	13	0	200	213	4.682	0.000	92.603	97.285
ENGINEERING PERSONNEL	1	0	0	1	0.428	0.000	0.000	0.428
TOTAL	38	0	225	263	14.075	0.000	98.800	112.875
WASTE PROCESSING								
MAINTENANCE PERSONNEL	4	0	0	4	2.139	0.000	0.087	2.226
OPERATIONS PERSONNEL	2	0	0	2	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	28	34	2.862	0.000	7.615	10.477
ENGINEERING PERSONNEL	0	0	0	0	0.016	0.000	0.000	0.016
TOTAL	12	0	28	40	5.631	0.000	7.702	13.333
REFUELING								
MAINTENANCE PERSONNEL	36	0	1	37	11.603	0.000	0.913	12.516
OPERATIONS PERSONNEL	1	0	0	1	0.270	0.000	0.000	0.270
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	11	0	64	75	3.617	0.000	17.963	21.580
ENGINEERING PERSONNEL	3	0	0	3	0.825	0.000	0.001	0.826
TOTAL	51	0	65	116	16.315	0.000	18.877	35.192
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	118	0	64	182	41.492	0.000	19.784	61.276
OPERATIONS PERSONNEL	30	0	0	30	8.610	0.000	0.000	8.610
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	52	0	459	511	20.558	0.000	173.888	194.446
ENGINEERING PERSONNEL	18	0	1	19	6.063	0.000	0.787	6.850
GRAND TOTALS	218	0	524	742	76.723	0.000	194.459	271.182

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***ST. LUCIE 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	2	2	0.252	0.000	0.736	0.988
OPERATIONS PERSONNEL	2	0	0	2	1.973	0.062	0.015	2.050
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.235	0.000	0.032	0.267
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.143	0.071	0.000	0.214
TOTAL	2	0	2	4	2.603	0.133	0.783	3.519
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	239	11	301	551	121.875	3.056	133.666	258.597
OPERATIONS PERSONNEL	53	11	78	142	19.115	5.155	34.846	59.116
HEALTH PHYSICS PERSONNEL	38	0	38	76	11.485	0.007	22.740	34.232
SUPERVISORY PERSONNEL	0	0	0	0	0.090	0.000	0.000	0.090
ENGINEERING PERSONNEL	3	1	5	9	1.111	1.429	1.988	4.528
TOTAL	333	23	422	778	153.676	9.647	193.240	356.563
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.106	0.000	0.017	0.123
OPERATIONS PERSONNEL	0	0	0	0	0.003	0.007	0.001	0.011
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.013	0.000	0.000	0.013
SUPERVISORY PERSONNEL	0	0	0	0	0.003	0.000	0.000	0.003
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.002	0.000	0.002
TOTAL	0	0	0	0	0.125	0.009	0.018	0.152
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	21	2	635	658	11.389	0.470	279.104	290.963
OPERATIONS PERSONNEL	4	1	12	17	1.961	0.510	7.416	9.887
HEALTH PHYSICS PERSONNEL	1	0	11	12	0.710	0.000	3.638	4.348
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.036	0.036	0.052	0.124
TOTAL	26	3	658	687	14.096	1.016	290.210	305.322
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	5	5	0.322	0.000	3.508	3.830
OPERATIONS PERSONNEL	0	0	2	2	0.052	0.006	1.004	1.062
HEALTH PHYSICS PERSONNEL	1	0	6	7	0.393	0.000	7.651	8.044
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	1	0	13	14	0.767	0.006	12.163	12.936
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.129	0.127	0.136	0.392
OPERATIONS PERSONNEL	0	0	0	0	0.333	0.002	0.000	0.335
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.093	0.000	0.048	0.141
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.022	0.000	0.000	0.022
TOTAL	0	0	0	0	0.577	0.129	0.184	0.890
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	260	13	943	1216	134.073	3.653	417.167	554.893
OPERATIONS PERSONNEL	59	12	92	163	23.437	5.742	43.282	72.461
HEALTH PHYSICS PERSONNEL	40	0	55	95	12.929	0.007	34.109	47.045
SUPERVISORY PERSONNEL	0	0	0	0	0.093	0.000	0.000	0.093
ENGINEERING PERSONNEL	3	1	5	9	1.312	1.538	2.040	4.890
GRAND TOTALS	362	26	1095	1483	171.844	10.940	496.598	679.382

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***SUMMER 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	3	0	11	14	1.569	0.000	4.307	5.876
OPERATIONS PERSONNEL	29	0	4	33	6.535	0.000	1.527	8.062
HEALTH PHYSICS PERSONNEL	9	0	22	31	3.063	0.000	5.890	8.953
SUPERVISORY PERSONNEL	0	0	0	0	0.303	0.000	0.027	0.330
ENGINEERING PERSONNEL	0	0	1	1	0.216	0.000	0.171	0.387
TOTAL	41	0	38	79	11.686	0.000	11.922	23.608
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	53	4	219	276	15.774	1.099	69.901	86.774
OPERATIONS PERSONNEL	18	0	32	50	4.599	0.000	8.587	13.186
HEALTH PHYSICS PERSONNEL	9	0	35	44	3.826	0.000	10.459	14.285
SUPERVISORY PERSONNEL	3	0	0	3	0.816	0.000	0.010	0.826
ENGINEERING PERSONNEL	3	0	9	12	1.024	0.000	3.048	4.072
TOTAL	86	4	295	385	26.039	1.099	92.005	119.143
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	0	36	38	0.452	0.000	12.682	13.134
OPERATIONS PERSONNEL	2	0	11	13	0.587	0.000	2.227	2.814
HEALTH PHYSICS PERSONNEL	0	0	2	2	0.015	0.000	0.422	0.437
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.008	0.000	0.324	0.332
TOTAL	4	0	50	54	1.062	0.000	15.655	16.717
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	2	8	11	1.194	0.228	3.946	5.368
OPERATIONS PERSONNEL	0	0	0	0	0.092	0.000	0.056	0.148
HEALTH PHYSICS PERSONNEL	0	0	2	2	0.177	0.000	0.484	0.661
SUPERVISORY PERSONNEL	1	0	0	1	0.932	0.000	0.000	0.932
ENGINEERING PERSONNEL	0	0	0	0	0.030	0.000	0.035	0.065
TOTAL	2	2	10	14	2.425	0.228	4.521	7.174
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	1	1	0.278	0.000	0.228	0.506
OPERATIONS PERSONNEL	0	0	0	0	0.015	0.000	0.025	0.040
HEALTH PHYSICS PERSONNEL	7	0	1	8	3.763	0.000	0.458	4.221
SUPERVISORY PERSONNEL	0	0	0	0	0.062	0.000	0.000	0.062
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	0	2	9	4.118	0.000	0.711	4.829
REFUELING								
MAINTENANCE PERSONNEL	6	0	20	26	1.638	0.000	6.702	8.340
OPERATIONS PERSONNEL	1	0	8	9	0.707	0.000	4.110	4.817
HEALTH PHYSICS PERSONNEL	0	0	4	4	0.110	0.000	1.228	1.338
SUPERVISORY PERSONNEL	0	0	0	0	0.052	0.000	0.000	0.052
ENGINEERING PERSONNEL	0	0	3	3	0.071	0.000	1.607	1.678
TOTAL	7	0	35	42	2.578	0.000	13.647	16.225
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	65	6	295	366	20.905	1.327	97.766	119.998
OPERATIONS PERSONNEL	50	0	55	105	12.535	0.000	16.532	29.067
HEALTH PHYSICS PERSONNEL	25	0	66	91	10.954	0.000	18.941	29.895
SUPERVISORY PERSONNEL	4	0	0	4	2.165	0.000	0.037	2.202
ENGINEERING PERSONNEL	3	0	14	17	1.349	0.000	5.185	6.534
GRAND TOTALS	147	6	430	583	47.908	1.327	138.461	187.696

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	118	1	107	226	1.626	0.001	0.231	1.858
OPERATIONS PERSONNEL	203	157	78	438	19.590	0.198	0.057	19.845
HEALTH PHYSICS PERSONNEL	82	11	145	238	10.785	0.048	16.120	26.953
SUPERVISORY PERSONNEL	79	32	13	124	2.348	0.180	0.104	2.632
ENGINEERING PERSONNEL	78	23	14	115	0.284	0.054	0.001	0.339
TOTAL	560	224	357	1141	34.633	0.481	16.513	51.627
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	236	5	912	1153	52.817	0.661	65.219	118.697
OPERATIONS PERSONNEL	193	96	69	358	5.657	0.287	1.145	7.089
HEALTH PHYSICS PERSONNEL	60	1	137	198	9.036	0.071	22.144	31.251
SUPERVISORY PERSONNEL	71	19	21	111	3.637	0.129	2.037	5.803
ENGINEERING PERSONNEL	64	21	19	104	2.366	0.282	0.600	3.248
TOTAL	624	142	1158	1924	73.513	1.430	91.145	166.088
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	22	0	78	100	1.032	0.000	6.990	8.022
OPERATIONS PERSONNEL	6	0	3	9	0.096	0.000	0.035	0.131
HEALTH PHYSICS PERSONNEL	2	1	7	10	0.003	0.043	0.126	0.172
SUPERVISORY PERSONNEL	4	0	5	9	0.074	0.000	0.417	0.491
ENGINEERING PERSONNEL	10	1	36	47	0.831	0.002	6.211	7.044
TOTAL	44	2	129	175	2.036	0.045	13.779	15.860
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	163	2	231	396	16.283	0.009	13.129	29.421
OPERATIONS PERSONNEL	36	5	15	56	1.510	0.037	0.091	1.638
HEALTH PHYSICS PERSONNEL	45	1	34	80	2.286	0.120	0.480	2.886
SUPERVISORY PERSONNEL	30	0	9	39	1.997	0.000	0.096	2.093
ENGINEERING PERSONNEL	13	2	4	19	0.423	0.110	0.140	0.673
TOTAL	287	10	293	590	22.499	0.276	13.936	36.711
WASTE PROCESSING								
MAINTENANCE PERSONNEL	85	0	91	176	1.001	0.000	2.055	3.056
OPERATIONS PERSONNEL	59	7	0	66	1.766	0.107	0.000	1.873
HEALTH PHYSICS PERSONNEL	39	1	22	62	2.720	0.007	0.831	3.558
SUPERVISORY PERSONNEL	23	1	4	28	1.180	0.257	0.282	1.719
ENGINEERING PERSONNEL	3	0	2	5	0.002	0.000	0.006	0.008
TOTAL	209	9	119	337	6.669	0.371	3.174	10.214
REFUELING								
MAINTENANCE PERSONNEL	60	0	257	317	12.906	0.080	36.320	49.306
OPERATIONS PERSONNEL	35	13	7	55	2.773	0.254	0.187	3.214
HEALTH PHYSICS PERSONNEL	10	0	44	54	0.785	0.000	1.650	2.435
SUPERVISORY PERSONNEL	17	1	4	22	1.978	0.001	1.032	3.011
ENGINEERING PERSONNEL	11	0	1	12	0.206	0.000	0.015	0.221
TOTAL	133	14	313	460	18.648	0.335	39.204	58.187
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	684	8	1676	2368	85.665	0.751	123.944	210.360
OPERATIONS PERSONNEL	532	278	172	982	31.392	0.883	1.515	33.790
HEALTH PHYSICS PERSONNEL	238	15	389	642	25.615	0.289	41.351	67.255
SUPERVISORY PERSONNEL	224	53	56	333	11.214	0.567	3.968	15.749
ENGINEERING PERSONNEL	179	47	76	302	4.112	0.448	6.973	11.533
GRAND TOTALS	1857	401	2369	4627	157.998	2.938	177.751	338.687

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	3	0	0	3	1.220	0.000	0.000	1.220
OPERATIONS PERSONNEL	51	2	0	53	13.250	0.435	0.000	13.685
HEALTH PHYSICS PERSONNEL	21	0	36	57	14.170	0.000	13.734	27.904
SUPERVISORY PERSONNEL	4	0	0	4	0.850	0.000	0.000	0.850
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	79	2	36	117	29.490	0.435	13.734	43.659
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	287	8	183	478	134.570	3.919	87.162	225.651
OPERATIONS PERSONNEL	9	0	0	9	4.670	0.000	0.000	4.670
HEALTH PHYSICS PERSONNEL	51	0	29	80	21.250	0.000	9.855	31.105
SUPERVISORY PERSONNEL	6	1	0	7	1.010	0.209	0.000	1.219
ENGINEERING PERSONNEL	9	2	6	17	1.580	0.305	1.272	3.157
TOTAL	362	11	218	591	163.080	4.433	98.289	265.802
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	9	0	53	62	2.380	0.000	21.266	23.646
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	5	5	0.000	0.000	2.469	2.469
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	9	0	58	67	2.380	0.000	23.735	26.115
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	28	1	26	55	12.640	0.889	0.000	13.529
OPERATIONS PERSONNEL	3	0	0	3	2.620	0.000	0.000	2.620
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	1	1	0.000	0.000	0.136	0.136
TOTAL	31	1	27	59	15.260	0.889	0.136	16.285
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.680	0.000	0.000	0.680
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	1.669	1.669
HEALTH PHYSICS PERSONNEL	3	0	1	4	1.820	0.000	0.300	2.120
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	2	6	2.500	0.000	1.969	4.469
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	3	0	0	3	0.320	0.000	0.000	0.320
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	3	0	0	3	0.320	0.000	0.000	0.320
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	328	9	262	599	151.490	4.808	108.428	264.726
OPERATIONS PERSONNEL	66	2	1	69	20.860	0.435	1.669	22.964
HEALTH PHYSICS PERSONNEL	75	0	71	146	37.240	0.000	26.358	63.598
SUPERVISORY PERSONNEL	10	1	0	11	1.860	0.209	0.000	2.069
ENGINEERING PERSONNEL	9	2	7	18	1.580	0.305	1.408	3.293
GRAND TOTALS	488	14	341	843	213.030	5.757	137.863	356.650

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	142	21	228	391	2.259	0.152	2.728	5.139
OPERATIONS PERSONNEL	102	3	0	105	11.692	0.002	0.000	11.694
HEALTH PHYSICS PERSONNEL	70	6	19	95	9.558	0.072	0.886	10.516
SUPERVISORY PERSONNEL	188	65	27	280	4.303	0.216	0.248	4.767
ENGINEERING PERSONNEL	83	16	15	114	1.724	0.036	0.218	1.978
TOTAL	585	111	289	985	29.536	0.478	4.080	34.094
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	146	8	341	495	9.347	0.110	21.626	31.083
OPERATIONS PERSONNEL	65	2	0	67	1.328	0.007	0.000	1.335
HEALTH PHYSICS PERSONNEL	40	0	5	45	0.361	0.000	0.031	0.392
SUPERVISORY PERSONNEL	72	3	20	95	0.830	0.019	0.530	1.379
ENGINEERING PERSONNEL	23	0	19	42	0.136	0.000	2.073	2.209
TOTAL	346	13	385	744	12.002	0.136	24.260	36.398
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	27	4	103	134	1.284	0.607	7.025	8.916
OPERATIONS PERSONNEL	4	1	0	5	0.245	0.074	0.000	0.319
HEALTH PHYSICS PERSONNEL	13	0	12	25	0.505	0.000	0.479	0.984
SUPERVISORY PERSONNEL	19	3	6	28	1.651	0.486	0.201	2.338
ENGINEERING PERSONNEL	11	1	1	13	1.012	0.030	0.138	1.180
TOTAL	74	9	122	205	4.697	1.197	7.843	13.737
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	150	18	534	702	11.547	0.123	68.109	79.779
OPERATIONS PERSONNEL	57	2	0	59	2.766	0.010	0.000	2.776
HEALTH PHYSICS PERSONNEL	36	1	14	51	4.908	0.000	2.344	7.252
SUPERVISORY PERSONNEL	81	18	27	126	3.288	0.035	2.377	5.700
ENGINEERING PERSONNEL	41	9	52	102	1.789	0.171	6.634	8.594
TOTAL	365	48	627	1040	24.298	0.339	79.464	104.101
WASTE PROCESSING								
MAINTENANCE PERSONNEL	62	1	65	128	1.935	0.001	3.660	5.596
OPERATIONS PERSONNEL	34	1	0	35	6.761	0.000	0.000	6.761
HEALTH PHYSICS PERSONNEL	30	0	2	32	1.160	0.000	0.181	1.341
SUPERVISORY PERSONNEL	29	4	8	41	0.278	0.001	0.185	0.464
ENGINEERING PERSONNEL	7	0	2	9	0.010	0.000	0.000	0.010
TOTAL	162	6	77	245	10.144	0.002	4.026	14.172
REFUELING								
MAINTENANCE PERSONNEL	88	2	59	149	2.219	0.017	11.927	14.163
OPERATIONS PERSONNEL	82	0	0	82	4.174	0.000	0.000	4.174
HEALTH PHYSICS PERSONNEL	12	0	2	14	0.772	0.000	0.176	0.948
SUPERVISORY PERSONNEL	62	1	7	70	2.060	0.002	0.513	2.575
ENGINEERING PERSONNEL	12	0	12	24	0.322	0.000	2.953	3.275
TOTAL	256	3	80	339	9.547	0.019	15.569	25.135
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	615 (170)	54 (37)	1330 (624)	1999 (831)	28.591	1.010	115.075	144.676
OPERATIONS PERSONNEL	344 (113)	9 (3)	0 (0)	353 (116)	26.966	0.093	0.000	27.059
HEALTH PHYSICS PERSONNEL	201 (72)	7 (7)	54 (22)	262 (101)	17.264	0.072	4.097	21.433
SUPERVISORY PERSONNEL	451 (208)	94 (85)	95 (49)	640 (342)	12.410	0.759	4.054	17.223
ENGINEERING PERSONNEL	177 (88)	26 (18)	101 (59)	304 (165)	4.993	0.237	12.016	17.246
GRAND TOTALS	1788 (651)	190 (150)	1580 (754)	3558 (1555)	90.224	2.171	135.242	227.637

*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

1997

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	21	3	10	34	0.056	0.001	0.021	0.078
OPERATIONS PERSONNEL	68	0	0	68	0.132	0.000	0.000	0.132
HEALTH PHYSICS PERSONNEL	31	0	6	37	0.126	0.000	0.023	0.149
SUPERVISORY PERSONNEL	46	7	6	59	0.069	0.014	0.002	0.085
ENGINEERING PERSONNEL	22	4	1	27	0.011	0.000	0.001	0.012
TOTAL	188	14	23	225	0.394	0.015	0.047	0.456
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	64	4	15	83	0.028	0.005	0.011	0.044
OPERATIONS PERSONNEL	16	0	0	16	0.006	0.000	0.000	0.006
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	6	0	1	7	0.005	0.000	0.000	0.005
ENGINEERING PERSONNEL	1	0	1	2	0.001	0.000	0.000	0.001
TOTAL	89	4	17	110	0.040	0.005	0.011	0.056
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	14	0	2	16	0.005	0.000	0.000	0.005
OPERATIONS PERSONNEL	17	0	0	17	0.002	0.000	0.000	0.002
HEALTH PHYSICS PERSONNEL	15	0	0	15	0.012	0.000	0.000	0.012
SUPERVISORY PERSONNEL	2	0	0	2	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
TOTAL	49	0	2	51	0.019	0.000	0.000	0.019
WASTE PROCESSING								
MAINTENANCE PERSONNEL	3	1	2	6	0.006	0.003	0.000	0.009
OPERATIONS PERSONNEL	19	0	0	19	0.125	0.000	0.000	0.125
HEALTH PHYSICS PERSONNEL	5	0	1	6	0.008	0.000	0.000	0.008
SUPERVISORY PERSONNEL	2	0	0	2	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	29	1	3	33	0.139	0.003	0.000	0.142
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 (83)	8 (8)	29 (28)	139 (119)	0.095	0.009	0.032	0.136
OPERATIONS PERSONNEL	120 (89)	0 (0)	0 (0)	120 (89)	0.265	0.000	0.000	0.265
HEALTH PHYSICS PERSONNEL	53 (35)	0 (0)	7 (6)	60 (41)	0.146	0.000	0.023	0.169
SUPERVISORY PERSONNEL	56 (52)	7 (7)	7 (7)	70 (66)	0.074	0.014	0.002	0.090
ENGINEERING PERSONNEL	24 (22)	4 (4)	2 (2)	30 (28)	0.012	0.000	0.001	0.013
GRAND TOTALS	355 (281)	19 (19)	45 (43)	419 (343)	0.592	0.023	0.058	0.673

*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

1997

PLANT: ***TROJAN** 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	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	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
GRAND TOTALS	0	0	0	0	0.000	0.000	0.000	0.000

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	340	0	252	592	157.769	0.095	108.848	266.712
OPERATIONS PERSONNEL	21	0	3	24	21.873	0.000	1.143	23.016
HEALTH PHYSICS PERSONNEL	18	0	85	103	16.022	0.001	30.204	46.227
SUPERVISORY PERSONNEL	11	1	74	86	6.881	0.426	27.015	34.322
ENGINEERING PERSONNEL	13	0	27	40	10.100	0.563	7.110	17.773
TOTAL	403	1	441	845	212.645	1.085	174.320	388.050
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	6	0	92	98	2.260	0.000	24.986	27.246
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	0.041	0.041
SUPERVISORY PERSONNEL	0	0	2	2	0.102	0.043	0.771	0.916
ENGINEERING PERSONNEL	1	0	11	12	0.298	0.097	3.001	3.396
TOTAL	7	0	105	112	2.660	0.140	28.799	31.599
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	36	37	1.723	0.000	15.007	16.730
OPERATIONS PERSONNEL	0	0	0	0	0.007	0.000	0.000	0.007
HEALTH PHYSICS PERSONNEL	2	0	3	5	0.636	0.000	1.139	1.775
SUPERVISORY PERSONNEL	0	0	1	1	0.369	0.037	0.611	1.017
ENGINEERING PERSONNEL	1	0	2	3	0.498	0.035	1.535	2.068
TOTAL	4	0	42	46	3.233	0.072	18.292	21.597
WASTE PROCESSING								
MAINTENANCE PERSONNEL	4	0	0	4	0.890	0.000	0.049	0.939
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.041	0.041
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.406	0.000	0.376	0.782
SUPERVISORY PERSONNEL	0	0	0	0	0.004	0.000	0.002	0.006
ENGINEERING PERSONNEL	0	0	0	0	0.005	0.000	0.000	0.005
TOTAL	5	0	1	6	1.305	0.000	0.468	1.773
REFUELING								
MAINTENANCE PERSONNEL	0	0	11	11	2.004	0.004	3.388	5.396
OPERATIONS PERSONNEL	8	0	2	10	6.050	0.000	0.444	6.494
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.044	0.000	0.303	0.347
SUPERVISORY PERSONNEL	2	0	1	3	0.798	0.021	0.314	1.133
ENGINEERING PERSONNEL	0	0	4	4	1.028	0.097	0.706	1.831
TOTAL	10	0	18	28	9.924	0.122	5.155	15.201
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	351	0	391	742	164.646	0.099	152.278	317.023
OPERATIONS PERSONNEL	29	0	5	34	27.930	0.000	1.628	29.558
HEALTH PHYSICS PERSONNEL	21	0	89	110	17.108	0.001	32.063	49.172
SUPERVISORY PERSONNEL	13	1	78	92	8.154	0.527	28.713	37.394
ENGINEERING PERSONNEL	15	0	44	59	11.929	0.792	12.352	25.073
GRAND TOTALS	429	1	607	1037	229.767	1.419	227.034	458.220

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	71	93	6.555	0.000	25.226	31.781
OPERATIONS PERSONNEL	14	0	0	14	3.387	0.000	0.023	3.410
HEALTH PHYSICS PERSONNEL	12	0	0	12	3.443	0.000	0.217	3.660
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.037	0.000	0.089	0.126
TOTAL	48	0	71	119	13.422	0.000	25.555	38.977
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	12	0	20	32	3.409	0.000	7.916	11.325
OPERATIONS PERSONNEL	0	0	0	0	0.402	0.000	0.000	0.402
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.336	0.000	0.091	0.427
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.001	0.001
TOTAL	13	0	20	33	4.147	0.000	8.008	12.155
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.016	0.000	0.039	0.055
OPERATIONS PERSONNEL	0	0	0	0	0.010	0.000	0.000	0.010
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.061	0.000	0.019	0.080
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	0.087	0.000	0.058	0.145
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	8	13	1.272	0.000	2.777	4.049
OPERATIONS PERSONNEL	1	0	0	1	0.208	0.000	0.000	0.208
HEALTH PHYSICS PERSONNEL	4	0	2	6	0.748	0.000	0.326	1.074
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.032	0.000	0.000	0.032
TOTAL	10	0	10	20	2.260	0.000	3.103	5.363
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.022	0.000	0.017	0.039
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	0.001	0.000	0.000	0.001
TOTAL	0	0	0	0	0.023	0.000	0.017	0.040
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	39	0	99	138	11.274	0.000	35.975	47.249
OPERATIONS PERSONNEL	15	0	0	15	4.007	0.000	0.023	4.030
HEALTH PHYSICS PERSONNEL	17	0	2	19	4.588	0.000	0.653	5.241
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.070	0.000	0.090	0.160
GRAND TOTALS	71	0	101	172	19.939	0.000	36.741	56.680

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***VOGTLE 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	3	0	0	3	0.848	0.018	0.254	1.120
OPERATIONS PERSONNEL	19	1	0	20	5.244	0.103	0.020	5.367
HEALTH PHYSICS PERSONNEL	9	3	12	24	2.686	0.722	2.736	6.144
SUPERVISORY PERSONNEL	2	0	0	2	0.771	0.026	0.369	1.166
ENGINEERING PERSONNEL	0	0	0	0	0.220	0.015	0.171	0.406
TOTAL	33	4	12	49	9.769	0.884	3.550	14.203
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	10	0	10	20	4.373	0.073	4.101	8.547
OPERATIONS PERSONNEL	8	0	0	8	3.334	0.001	0.004	3.339
HEALTH PHYSICS PERSONNEL	45	1	3	49	11.950	0.167	1.646	13.763
SUPERVISORY PERSONNEL	0	0	0	0	0.208	0.006	0.276	0.490
ENGINEERING PERSONNEL	0	0	0	0	0.396	0.020	0.189	0.605
TOTAL	63	1	13	77	20.261	0.267	6.216	26.744
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	3	30	34	0.107	0.740	12.921	13.768
OPERATIONS PERSONNEL	3	0	1	4	0.618	0.000	0.182	0.800
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.001	0.000	0.001	0.002
SUPERVISORY PERSONNEL	1	0	6	7	0.183	0.061	1.741	1.985
ENGINEERING PERSONNEL	0	0	4	4	0.088	0.024	0.640	0.752
TOTAL	5	3	41	49	0.997	0.825	15.485	17.307
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	54	9	147	210	17.022	2.441	44.726	64.189
OPERATIONS PERSONNEL	10	1	0	11	3.579	0.396	0.029	4.004
HEALTH PHYSICS PERSONNEL	2	2	3	7	1.388	0.763	1.106	3.257
SUPERVISORY PERSONNEL	1	0	7	8	0.661	0.011	2.381	3.053
ENGINEERING PERSONNEL	2	0	4	6	1.029	0.000	1.261	2.290
TOTAL	69	12	161	242	23.679	3.611	49.503	76.793
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.106	0.003	0.167	0.276
OPERATIONS PERSONNEL	3	0	0	3	1.756	0.000	0.038	1.794
HEALTH PHYSICS PERSONNEL	6	3	26	35	2.511	1.169	8.008	11.688
SUPERVISORY PERSONNEL	0	0	0	0	0.014	0.000	0.004	0.018
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	9	3	26	38	4.387	1.172	8.217	13.776
REFUELING								
MAINTENANCE PERSONNEL	8	0	14	22	2.376	0.046	4.542	6.964
OPERATIONS PERSONNEL	2	0	1	3	0.675	0.000	0.095	0.770
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.102	0.000	0.158	0.260
SUPERVISORY PERSONNEL	0	0	2	2	0.113	0.000	0.576	0.689
ENGINEERING PERSONNEL	0	0	0	0	0.094	0.000	0.092	0.186
TOTAL	10	0	17	27	3.360	0.046	5.463	8.869
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	76	12	201	289	24.832	3.321	66.711	94.864
OPERATIONS PERSONNEL	45	2	2	49	15.206	0.500	0.368	16.074
HEALTH PHYSICS PERSONNEL	62	9	44	115	18.638	2.821	13.655	35.114
SUPERVISORY PERSONNEL	4	0	15	19	1.950	0.104	5.347	7.401
ENGINEERING PERSONNEL	2	0	8	10	1.827	0.059	2.353	4.239
GRAND TOTALS	189	23	270	482	62.453	6.805	88.434	157.692

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***WASHINGTON NUCLEAR 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	60	3	37	100	9.945	0.405	4.483	14.833
OPERATIONS PERSONNEL	29	0	1	30	9.740	0.001	0.187	9.928
HEALTH PHYSICS PERSONNEL	6	0	1	7	0.988	0.000	0.102	1.090
SUPERVISORY PERSONNEL	5	0	1	6	0.453	0.021	0.138	0.612
ENGINEERING PERSONNEL	8	5	5	18	1.289	0.510	0.857	2.656
TOTAL	108	8	45	161	22.415	0.937	5.767	29.119
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	77	2	128	207	38.757	1.009	51.234	91.000
OPERATIONS PERSONNEL	2	0	0	2	4.114	0.000	0.201	4.315
HEALTH PHYSICS PERSONNEL	22	0	32	54	8.705	0.000	10.045	18.750
SUPERVISORY PERSONNEL	2	0	3	5	1.622	0.105	1.034	2.761
ENGINEERING PERSONNEL	7	5	5	17	2.666	0.967	1.204	4.837
TOTAL	110	7	168	285	55.864	2.081	63.718	121.663
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	5	0	30	35	5.345	0.340	23.902	29.587
OPERATIONS PERSONNEL	0	0	0	0	1.323	0.000	0.062	1.385
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.516	0.000	0.690	1.206
SUPERVISORY PERSONNEL	0	0	1	1	0.347	0.000	0.456	0.803
ENGINEERING PERSONNEL	1	0	5	6	0.538	0.259	1.841	2.638
TOTAL	6	0	37	43	8.069	0.599	26.951	35.619
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	0	28	33	2.231	0.147	13.546	15.924
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	1	0	0	1	1.044	0.000	0.104	1.148
SUPERVISORY PERSONNEL	0	0	0	0	0.266	0.000	0.032	0.298
ENGINEERING PERSONNEL	3	1	0	4	0.495	0.081	0.066	0.642
TOTAL	9	1	28	38	4.036	0.228	13.748	18.012
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	0	2	0.459	0.556	0.057	1.072
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	0.166	0.166
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.183	0.000	0.161	0.344
SUPERVISORY PERSONNEL	0	0	0	0	0.009	0.001	0.000	0.010
ENGINEERING PERSONNEL	0	0	0	0	0.039	0.014	0.000	0.053
TOTAL	2	0	1	3	0.690	0.571	0.384	1.645
REFUELING								
MAINTENANCE PERSONNEL	21	0	11	32	16.490	0.011	2.764	19.265
OPERATIONS PERSONNEL	0	0	0	0	0.319	0.000	0.000	0.319
HEALTH PHYSICS PERSONNEL	2	0	2	4	0.802	0.000	0.623	1.425
SUPERVISORY PERSONNEL	4	1	0	5	1.713	0.127	0.000	1.840
ENGINEERING PERSONNEL	0	10	9	19	0.021	1.770	1.602	3.393
TOTAL	27	11	22	60	19.345	1.908	4.989	26.242
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	170	5	234	409	73.227	2.468	95.986	171.681
OPERATIONS PERSONNEL	31	0	2	33	15.496	0.001	0.616	16.113
HEALTH PHYSICS PERSONNEL	31	0	36	67	12.238	0.000	11.725	23.963
SUPERVISORY PERSONNEL	11	1	5	17	4.410	0.254	1.660	6.324
ENGINEERING PERSONNEL	19	21	24	64	5.048	3.601	5.570	14.219
GRAND TOTALS	262	27	301	590	110.419	6.324	115.557	232.300

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***WATERFORD 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	3	0	16	19	4.079	0.276	14.099	18.454
OPERATIONS PERSONNEL	30	1	3	34	9.547	0.621	4.111	14.279
HEALTH PHYSICS PERSONNEL	11	6	18	35	4.223	1.123	4.386	9.732
SUPERVISORY PERSONNEL	1	0	0	1	0.602	0.003	0.077	0.682
ENGINEERING PERSONNEL	0	0	0	0	1.329	0.026	0.497	1.852
TOTAL	45	7	37	89	19.780	2.049	23.170	44.999
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	24	3	105	132	7.145	1.312	31.882	40.339
OPERATIONS PERSONNEL	2	0	30	32	1.187	0.453	9.473	11.113
HEALTH PHYSICS PERSONNEL	1	2	2	5	0.175	0.245	0.581	1.001
SUPERVISORY PERSONNEL	0	0	0	0	0.196	0.000	0.020	0.216
ENGINEERING PERSONNEL	0	0	1	1	0.113	0.000	0.455	0.568
TOTAL	27	5	138	170	8.816	2.010	42.411	53.237
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.119	0.000	0.433	0.552
OPERATIONS PERSONNEL	4	1	2	7	0.647	0.272	0.447	1.366
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.001	0.004	0.121	0.126
SUPERVISORY PERSONNEL	1	0	0	1	0.360	0.033	0.037	0.430
ENGINEERING PERSONNEL	0	0	0	0	0.048	0.000	0.056	0.104
TOTAL	5	1	2	8	1.175	0.309	1.094	2.578
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	17	0	25	42	5.638	0.004	6.438	12.080
OPERATIONS PERSONNEL	3	0	9	12	0.989	0.092	2.737	3.818
HEALTH PHYSICS PERSONNEL	0	1	1	2	0.207	0.362	0.288	0.857
SUPERVISORY PERSONNEL	5	0	23	28	1.647	0.000	9.046	10.693
ENGINEERING PERSONNEL	0	0	15	15	0.132	0.000	3.921	4.053
TOTAL	25	1	73	99	8.613	0.458	22.430	31.501
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.160	0.000	0.158	0.318
OPERATIONS PERSONNEL	0	0	1	1	0.031	0.000	0.311	0.342
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.077	0.001	0.052	0.130
SUPERVISORY PERSONNEL	0	0	0	0	0.002	0.000	0.000	0.002
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	1	1	0.270	0.001	0.521	0.792
REFUELING								
MAINTENANCE PERSONNEL	11	0	5	16	5.764	0.067	3.031	8.862
OPERATIONS PERSONNEL	7	2	14	23	1.983	0.606	6.043	8.632
HEALTH PHYSICS PERSONNEL	2	0	6	8	0.831	0.092	1.456	2.379
SUPERVISORY PERSONNEL	2	0	1	3	0.389	0.000	0.148	0.537
ENGINEERING PERSONNEL	1	0	6	7	0.378	0.001	1.059	1.438
TOTAL	23	2	32	57	9.345	0.766	11.737	21.848
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	55	3	151	209	22.905	1.659	56.041	80.605
OPERATIONS PERSONNEL	46	4	59	109	14.384	2.044	23.122	39.550
HEALTH PHYSICS PERSONNEL	14	9	27	50	5.514	1.827	6.884	14.225
SUPERVISORY PERSONNEL	9	0	24	33	3.196	0.036	9.328	12.560
ENGINEERING PERSONNEL	1	0	22	23	2.000	0.027	5.988	8.015
GRAND TOTALS	125	16	283	424	47.999	5.593	101.363	154.955

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	25	3	56	84	0.705	0.138	2.239	3.082
OPERATIONS PERSONNEL	16	1	0	17	1.090	0.020	0.000	1.110
HEALTH PHYSICS PERSONNEL	26	2	19	47	1.831	0.042	1.083	2.956
SUPERVISORY PERSONNEL	10	3	0	13	0.144	0.194	0.000	0.338
ENGINEERING PERSONNEL	6	0	6	12	0.020	0.000	0.002	0.022
TOTAL	83	9	81	173	3.790	0.394	3.324	7.508
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	26	3	222	251	3.244	0.324	18.681	22.249
OPERATIONS PERSONNEL	14	1	2	17	0.851	0.001	0.571	1.423
HEALTH PHYSICS PERSONNEL	25	2	20	47	1.963	0.153	1.329	3.445
SUPERVISORY PERSONNEL	12	2	0	14	0.389	0.119	0.000	0.508
ENGINEERING PERSONNEL	6	1	22	29	0.868	0.000	2.370	3.238
TOTAL	83	9	266	358	7.315	0.597	22.951	30.863
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	12	2	69	83	0.177	0.152	0.964	1.293
OPERATIONS PERSONNEL	7	1	0	8	0.040	0.080	0.000	0.120
HEALTH PHYSICS PERSONNEL	15	1	6	22	0.039	0.001	0.075	0.115
SUPERVISORY PERSONNEL	2	1	0	3	0.006	0.006	0.000	0.012
ENGINEERING PERSONNEL	2	1	6	9	0.119	0.154	0.304	0.577
TOTAL	38	6	81	125	0.381	0.393	1.343	2.117
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	29	1	187	217	2.104	0.003	26.246	28.353
OPERATIONS PERSONNEL	10	0	1	11	0.348	0.000	0.159	0.507
HEALTH PHYSICS PERSONNEL	22	2	12	36	1.417	0.026	0.984	2.427
SUPERVISORY PERSONNEL	5	1	0	6	0.105	0.029	0.000	0.134
ENGINEERING PERSONNEL	4	0	13	17	0.281	0.000	1.437	1.718
TOTAL	70	4	213	287	4.255	0.058	28.826	33.139
WASTE PROCESSING								
MAINTENANCE PERSONNEL	12	0	13	25	0.121	0.000	0.172	0.293
OPERATIONS PERSONNEL	5	0	0	5	0.256	0.000	0.000	0.256
HEALTH PHYSICS PERSONNEL	10	0	6	16	0.087	0.000	0.224	0.311
SUPERVISORY PERSONNEL	0	1	0	1	0.000	0.010	0.000	0.010
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	27	1	19	47	0.464	0.010	0.396	0.870
REFUELING								
MAINTENANCE PERSONNEL	10	0	137	147	0.428	0.000	17.112	17.540
OPERATIONS PERSONNEL	8	0	2	10	1.121	0.000	0.181	1.302
HEALTH PHYSICS PERSONNEL	8	1	11	20	1.047	0.041	1.431	2.519
SUPERVISORY PERSONNEL	9	0	0	9	1.715	0.000	0.000	1.715
ENGINEERING PERSONNEL	1	0	31	32	0.013	0.000	5.667	5.680
TOTAL	36	1	181	218	4.324	0.041	24.391	28.756
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	114	9	684	807	6.779	0.617	65.414	72.810
OPERATIONS PERSONNEL	60	3	5	68	3.706	0.101	0.911	4.718
HEALTH PHYSICS PERSONNEL	106	8	74	188	6.384	0.263	5.126	11.773
SUPERVISORY PERSONNEL	38	8	0	46	2.359	0.358	0.000	2.717
ENGINEERING PERSONNEL	19	2	78	99	1.301	0.154	9.780	11.235
GRAND TOTALS	337	30	841	1208	20.529	1.493	81.231	103.253

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***WOLF CREEK 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	1	0	4	5	0.821	0.000	1.855	2.676
OPERATIONS PERSONNEL	28	0	0	28	9.782	0.238	0.121	10.141
HEALTH PHYSICS PERSONNEL	13	0	57	70	5.482	0.032	22.380	27.894
SUPERVISORY PERSONNEL	14	0	6	20	4.126	0.000	2.226	6.352
ENGINEERING PERSONNEL	10	0	3	13	3.199	0.079	0.592	3.870
TOTAL	66	0	70	136	23.410	0.349	27.174	50.933
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	18	0	27	45	6.698	0.000	13.857	20.555
OPERATIONS PERSONNEL	2	0	0	2	0.778	0.001	0.023	0.802
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.834	0.014	0.399	1.247
SUPERVISORY PERSONNEL	6	0	0	6	2.495	0.002	0.377	2.874
ENGINEERING PERSONNEL	0	0	2	2	0.754	0.185	0.906	1.845
TOTAL	27	0	30	57	11.559	0.202	15.562	27.323
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	14	0	54	68	5.586	0.000	18.942	24.528
OPERATIONS PERSONNEL	0	0	3	3	0.358	0.002	0.758	1.118
HEALTH PHYSICS PERSONNEL	4	0	23	27	1.654	0.000	8.078	9.732
SUPERVISORY PERSONNEL	6	0	7	13	2.303	0.000	2.519	4.822
ENGINEERING PERSONNEL	0	0	53	53	0.418	0.062	18.401	18.881
TOTAL	24	0	140	164	10.319	0.064	48.698	59.081
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	28	0	134	162	10.076	0.000	50.192	60.268
OPERATIONS PERSONNEL	0	0	0	0	0.132	0.000	0.004	0.136
HEALTH PHYSICS PERSONNEL	6	0	5	11	2.632	0.000	1.977	4.609
SUPERVISORY PERSONNEL	6	0	7	13	3.174	0.000	2.070	5.244
ENGINEERING PERSONNEL	1	1	34	36	0.859	0.222	11.133	12.214
TOTAL	41	1	180	222	16.873	0.222	65.376	82.471
WASTE PROCESSING								
MAINTENANCE PERSONNEL	4	0	0	4	1.298	0.000	0.281	1.579
OPERATIONS PERSONNEL	1	0	2	3	0.437	0.000	0.602	1.039
HEALTH PHYSICS PERSONNEL	13	0	30	43	4.694	0.004	9.571	14.269
SUPERVISORY PERSONNEL	1	0	1	2	0.279	0.000	0.310	0.589
ENGINEERING PERSONNEL	0	0	0	0	0.023	0.000	0.021	0.044
TOTAL	19	0	33	52	6.731	0.004	10.785	17.520
REFUELING								
MAINTENANCE PERSONNEL	9	0	26	35	2.883	0.000	8.746	11.629
OPERATIONS PERSONNEL	3	0	0	3	0.560	0.000	0.000	0.560
HEALTH PHYSICS PERSONNEL	1	0	2	3	0.742	0.000	1.595	2.337
SUPERVISORY PERSONNEL	5	0	0	5	1.263	0.000	0.397	1.660
ENGINEERING PERSONNEL	2	0	38	40	0.666	0.000	10.648	11.314
TOTAL	20	0	66	86	6.114	0.000	21.386	27.500
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	74	0	245	319	27.362	0.000	93.873	121.235
OPERATIONS PERSONNEL	34	0	5	39	12.047	0.241	1.508	13.796
HEALTH PHYSICS PERSONNEL	38	0	118	156	16.038	0.050	44.000	60.088
SUPERVISORY PERSONNEL	38	0	21	59	13.640	0.002	7.899	21.541
ENGINEERING PERSONNEL	13	1	130	144	5.919	0.548	41.701	48.168
GRAND TOTALS	197	1	519	717	75.006	0.841	188.981	264.828

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

PLANT: ***YANKEE-ROWE** 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	0.025	0.005	0.990	1.020
OPERATIONS PERSONNEL	1	0	0	1	0.348	0.015	0.192	0.555
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.005	0.015	0.157	0.177
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.005	0.005
ENGINEERING PERSONNEL	0	0	0	0	0.010	0.045	0.101	0.156
TOTAL	1	0	0	1	0.388	0.080	1.445	1.913
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	1	1	85	87	0.162	0.313	42.408	42.883
OPERATIONS PERSONNEL	0	0	0	0	0.061	0.000	0.030	0.091
HEALTH PHYSICS PERSONNEL	1	1	34	36	0.192	0.374	12.810	13.376
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.005	0.000	0.005
ENGINEERING PERSONNEL	1	0	1	2	0.258	0.066	0.429	0.753
TOTAL	3	2	120	125	0.673	0.758	55.677	57.108
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	2	2	0.000	0.000	0.525	0.525
OPERATIONS PERSONNEL	0	0	1	1	0.010	0.000	0.353	0.363
HEALTH PHYSICS PERSONNEL	0	0	11	11	0.076	0.000	4.696	4.772
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.005	0.000	0.005
TOTAL	0	0	14	14	0.086	0.005	5.574	5.665
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	1	1	87	89	0.187	0.318	43.923	44.428
OPERATIONS PERSONNEL	1	0	1	2	0.419	0.015	0.575	1.009
HEALTH PHYSICS PERSONNEL	1	1	45	47	0.273	0.389	17.663	18.325
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.005	0.005	0.010
ENGINEERING PERSONNEL	1	0	1	2	0.268	0.116	0.530	0.914
GRAND TOTALS	4	2	134	140	1.147	0.843	62.696	64.686

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1997

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	2	1	24	27	0.241	0.021	2.051	2.313
OPERATIONS PERSONNEL	133	0	0	133	8.200	0.000	0.000	8.200
HEALTH PHYSICS PERSONNEL	56	14	45	115	6.764	0.087	5.084	11.935
SUPERVISORY PERSONNEL	54	0	28	82	1.295	0.000	1.011	2.306
ENGINEERING PERSONNEL	70	0	51	121	2.037	0.000	0.539	2.576
TOTAL	315	15	148	478	18.537	0.108	8.685	27.330
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	137	13	476	626	19.236	0.458	41.127	60.821
OPERATIONS PERSONNEL	13	5	173	191	0.792	0.000	0.461	1.253
HEALTH PHYSICS PERSONNEL	9	75	3	87	1.010	0.469	0.335	1.814
SUPERVISORY PERSONNEL	134	1	48	183	3.243	0.000	1.735	4.978
ENGINEERING PERSONNEL	79	0	51	130	2.298	0.000	0.530	2.828
TOTAL	372	94	751	1217	26.579	0.927	44.188	71.694
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	5	5	0.009	0.000	0.395	0.404
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.054	0.000	0.068	0.122
SUPERVISORY PERSONNEL	1	0	11	12	0.019	0.000	0.411	0.430
ENGINEERING PERSONNEL	7	0	18	25	0.198	0.000	0.190	0.388
TOTAL	8	0	35	43	0.280	0.000	1.064	1.344
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	30	30	0.000	0.000	2.601	2.601
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	1	0	1	2	0.032	0.000	0.026	0.058
ENGINEERING PERSONNEL	0	0	1	1	0.012	0.000	0.011	0.023
TOTAL	1	0	32	33	0.044	0.000	2.638	2.682
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	13	13	0.033	0.000	1.123	1.156
OPERATIONS PERSONNEL	0	0	0	0	0.003	0.000	0.000	0.003
HEALTH PHYSICS PERSONNEL	4	0	3	7	0.489	0.000	0.312	0.801
SUPERVISORY PERSONNEL	3	0	0	3	0.068	0.000	0.001	0.069
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	0	16	23	0.593	0.000	1.436	2.029
REFUELING								
MAINTENANCE PERSONNEL	28	2	41	71	3.934	0.089	3.576	7.599
OPERATIONS PERSONNEL	16	0	36	52	0.987	0.000	0.095	1.082
HEALTH PHYSICS PERSONNEL	1	1	0	2	0.090	0.005	0.013	0.108
SUPERVISORY PERSONNEL	37	0	115	152	0.896	0.000	4.205	5.101
ENGINEERING PERSONNEL	2	0	0	2	0.049	0.000	0.002	0.051
TOTAL	84	3	192	279	5.956	0.094	7.891	13.941
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	167	16	589	772	23.453	0.568	50.873	74.894
OPERATIONS PERSONNEL	162	5	209	376	9.982	0.000	0.556	10.538
HEALTH PHYSICS PERSONNEL	70	90	52	212	8.407	0.561	5.812	14.780
SUPERVISORY PERSONNEL	230	1	203	434	5.553	0.000	7.389	12.942
ENGINEERING PERSONNEL	158	0	121	279	4.594	0.000	1.272	5.866
GRAND TOTALS	787	112	1174	2073	51.989	1.129	65.902	119.020

*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

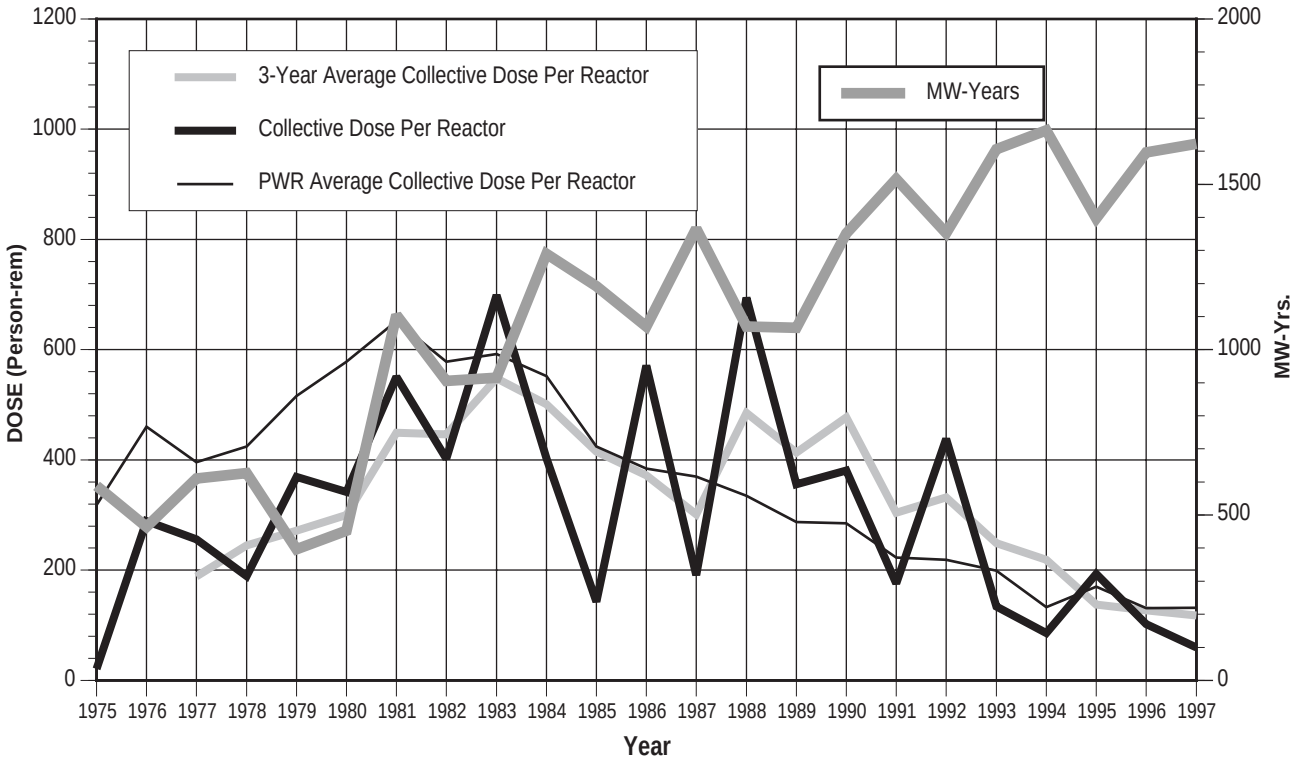
1973-1997

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

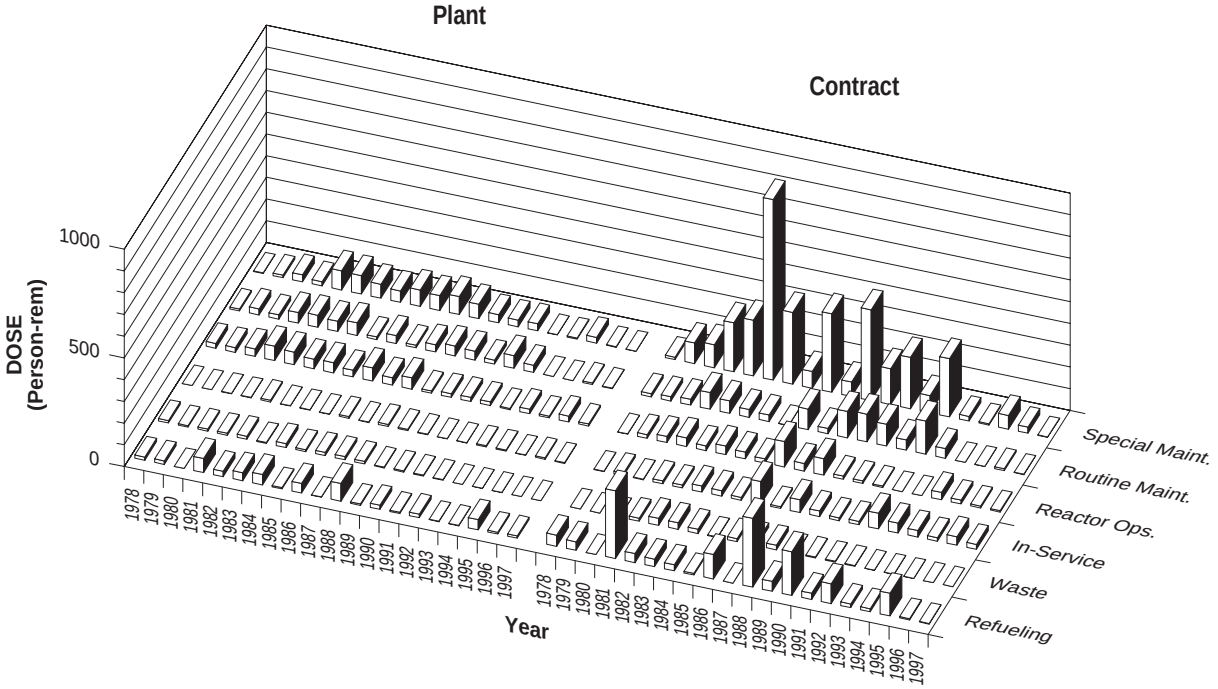
APPENDIX E

ARKANSAS 1, 2

Dose-Performance Indicators **PWR**



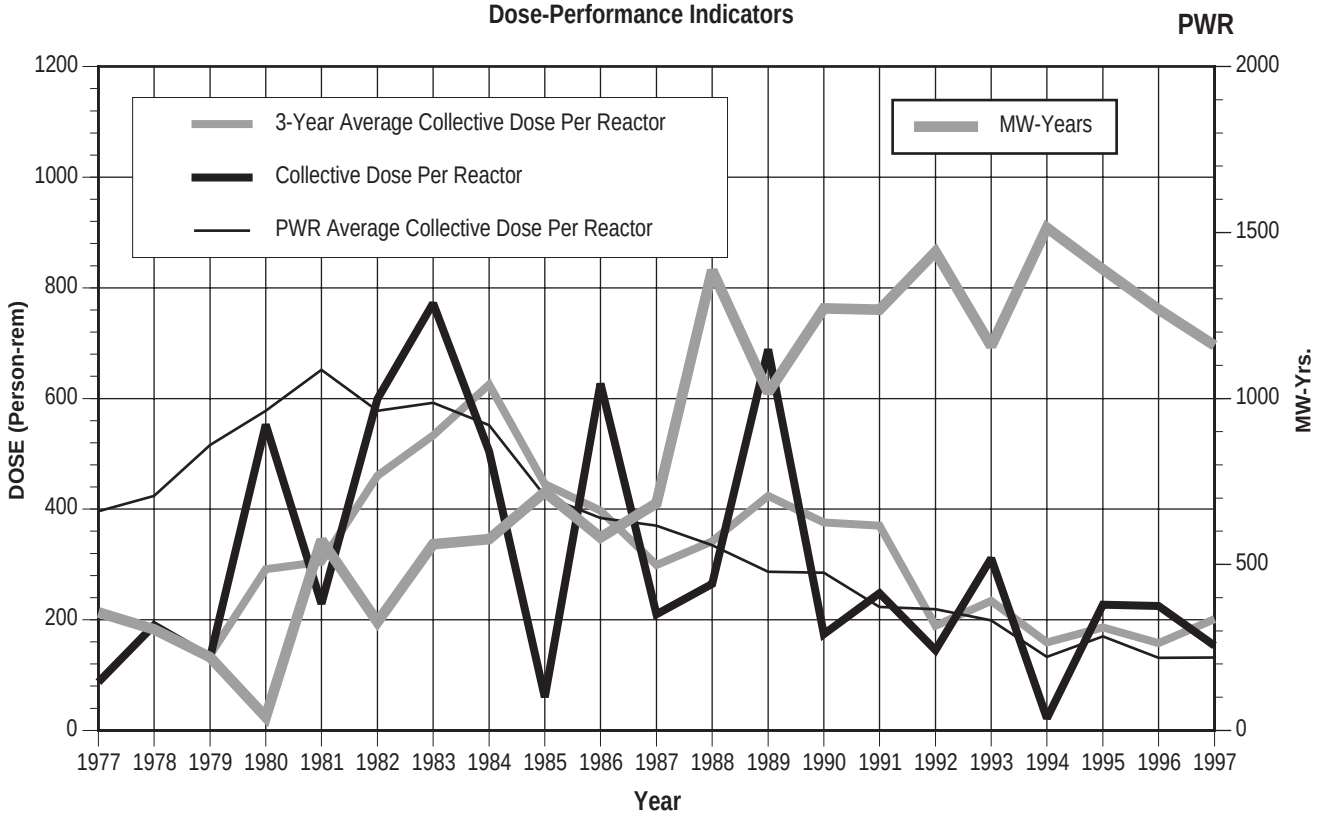
Breakdown by Job Function



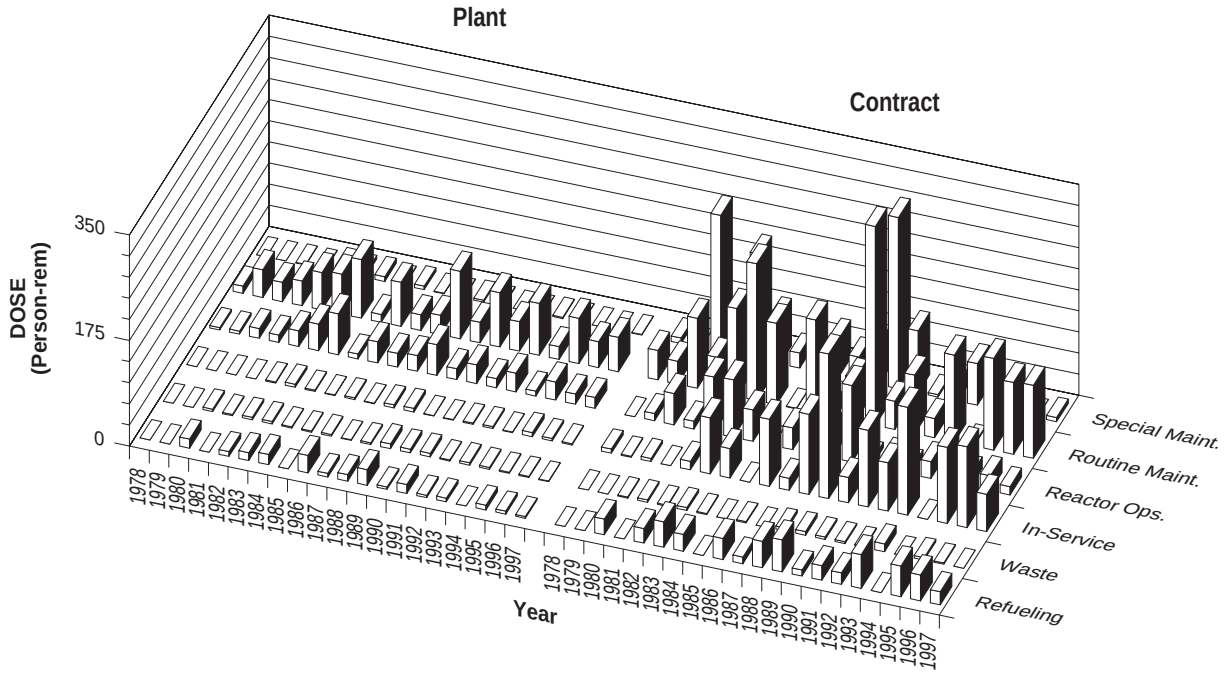
APPENDIX E (continued)

BEAVER VALLEY 1, 2

Dose-Performance Indicators

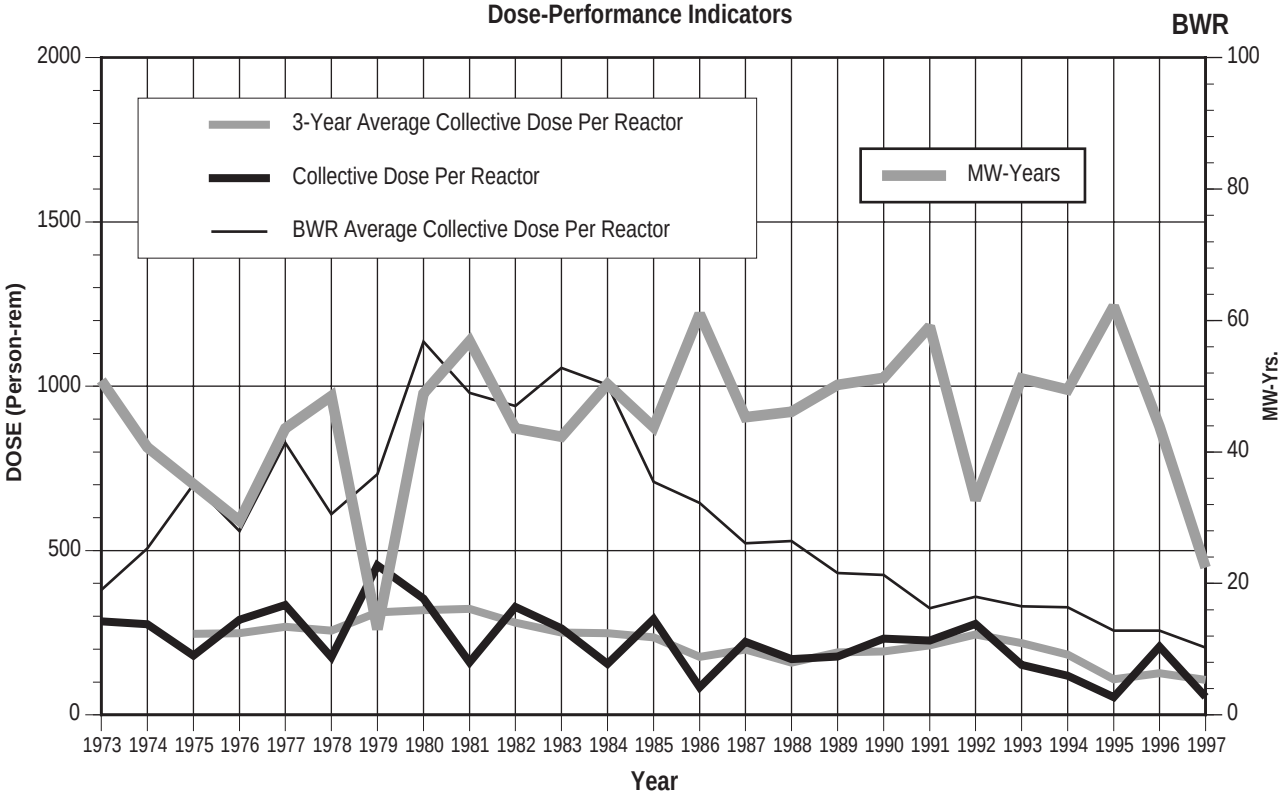


Breakdown by Job Function

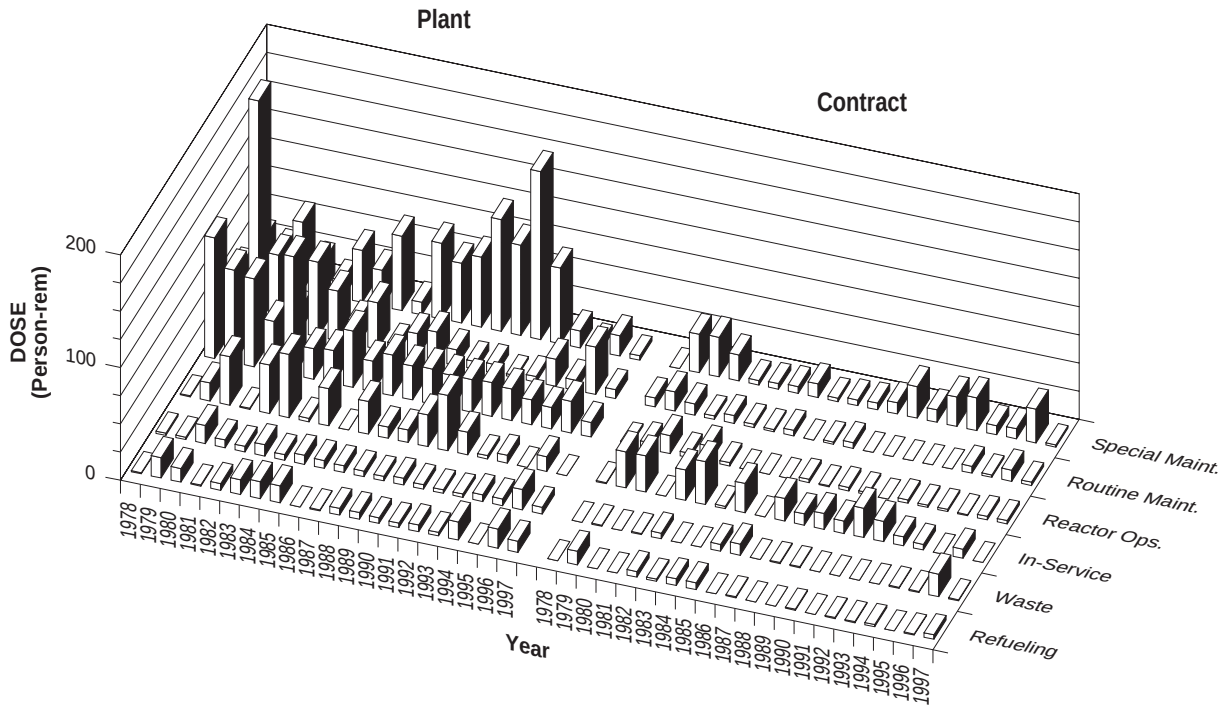


BIG ROCK POINT

Dose-Performance Indicators



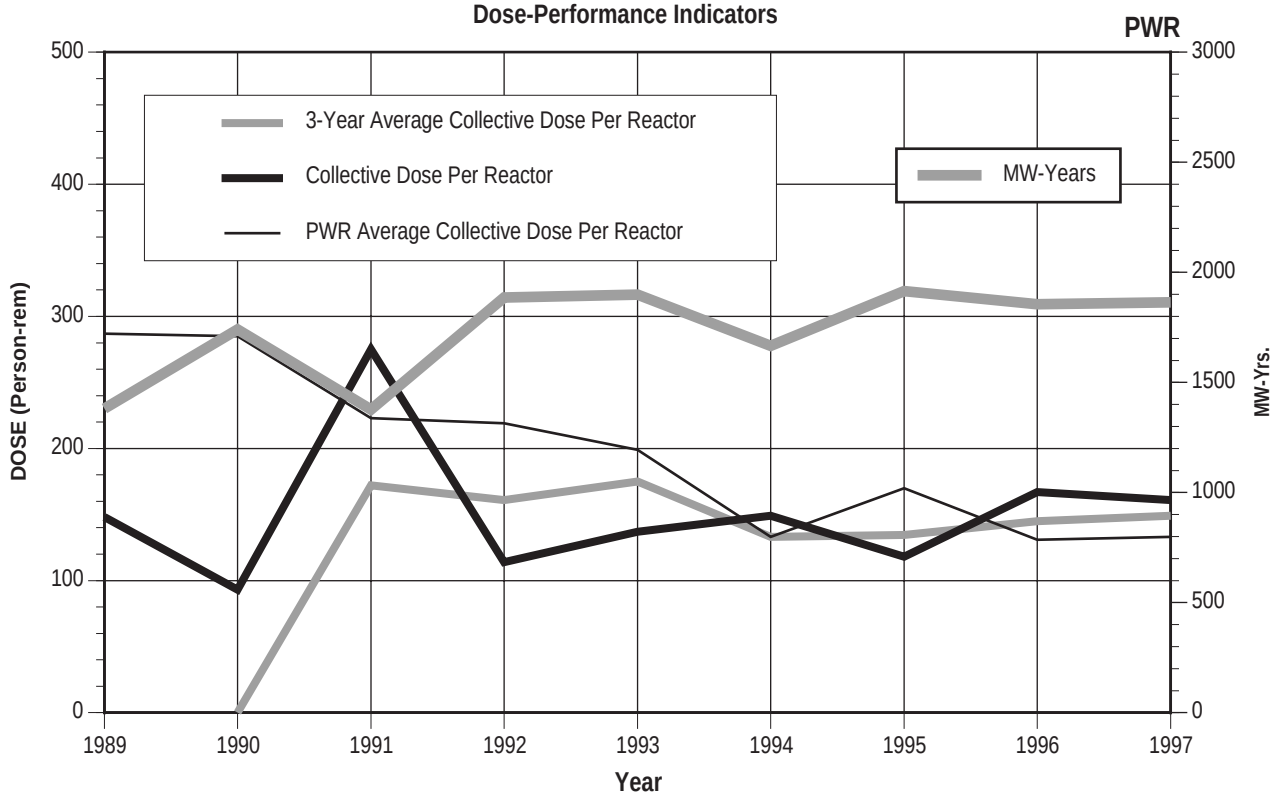
Breakdown by Job Function



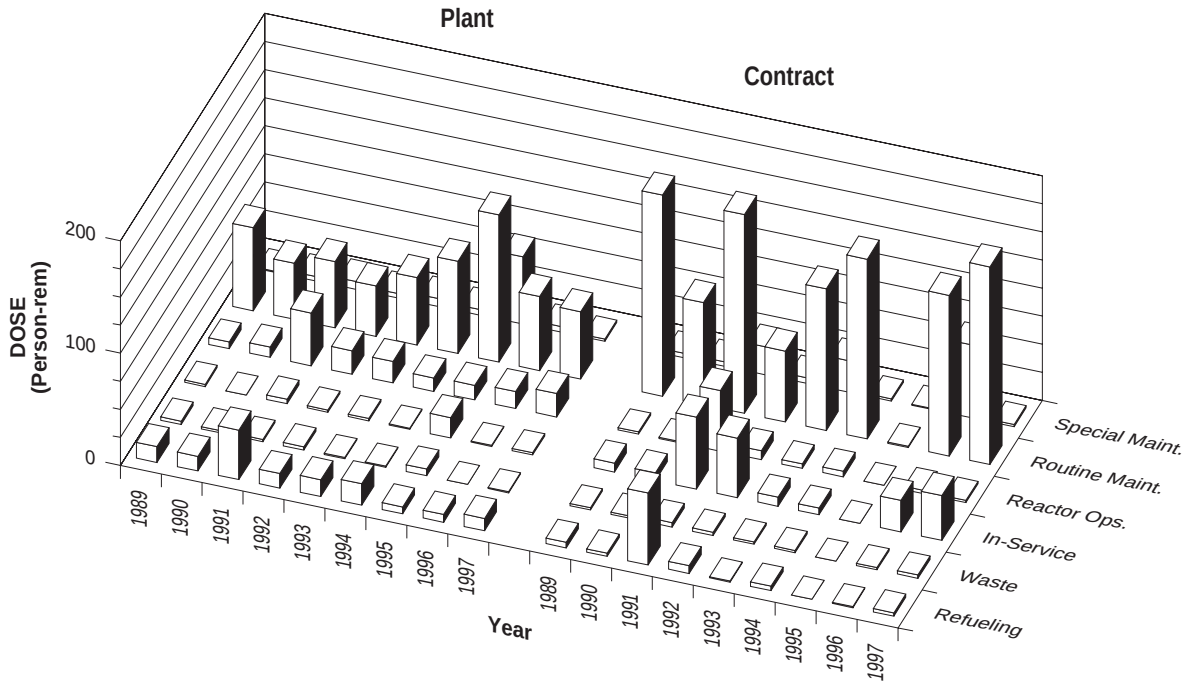
APPENDIX E (continued)

BRAIDWOOD 1, 2

Dose-Performance Indicators



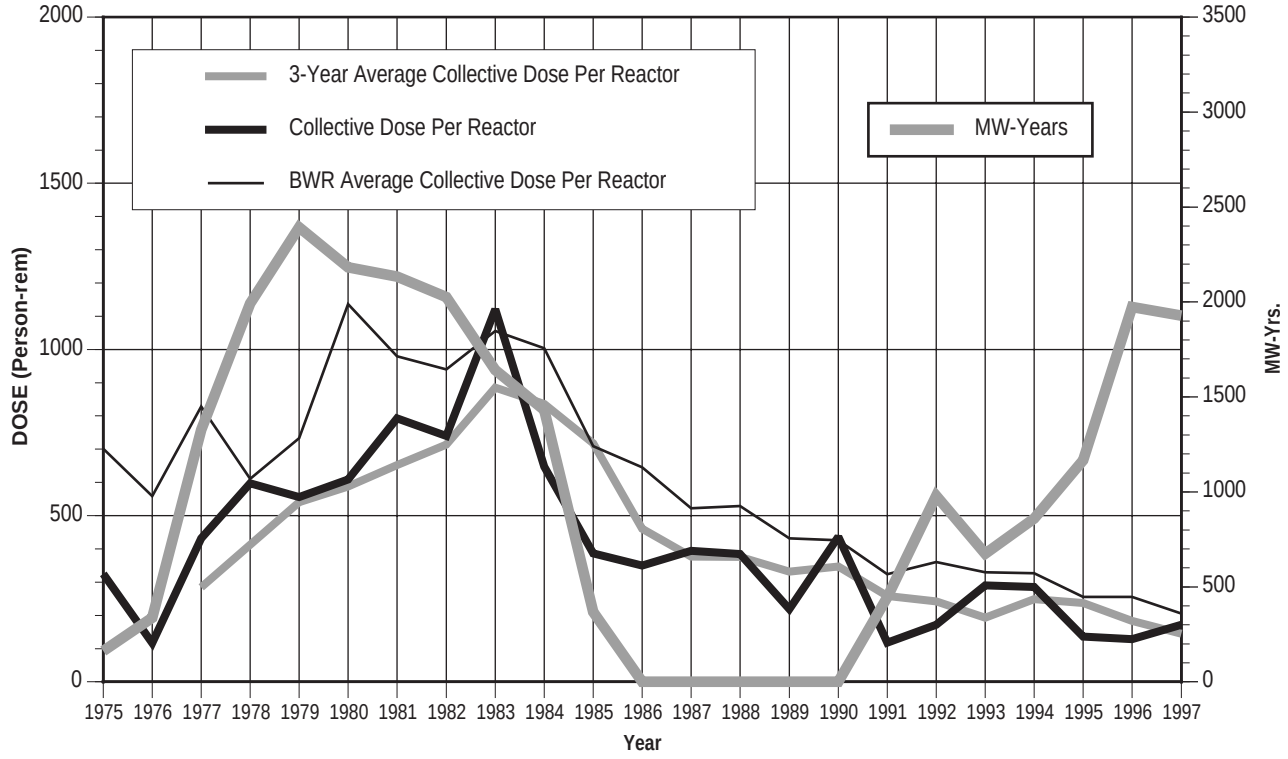
Breakdown by Job Function



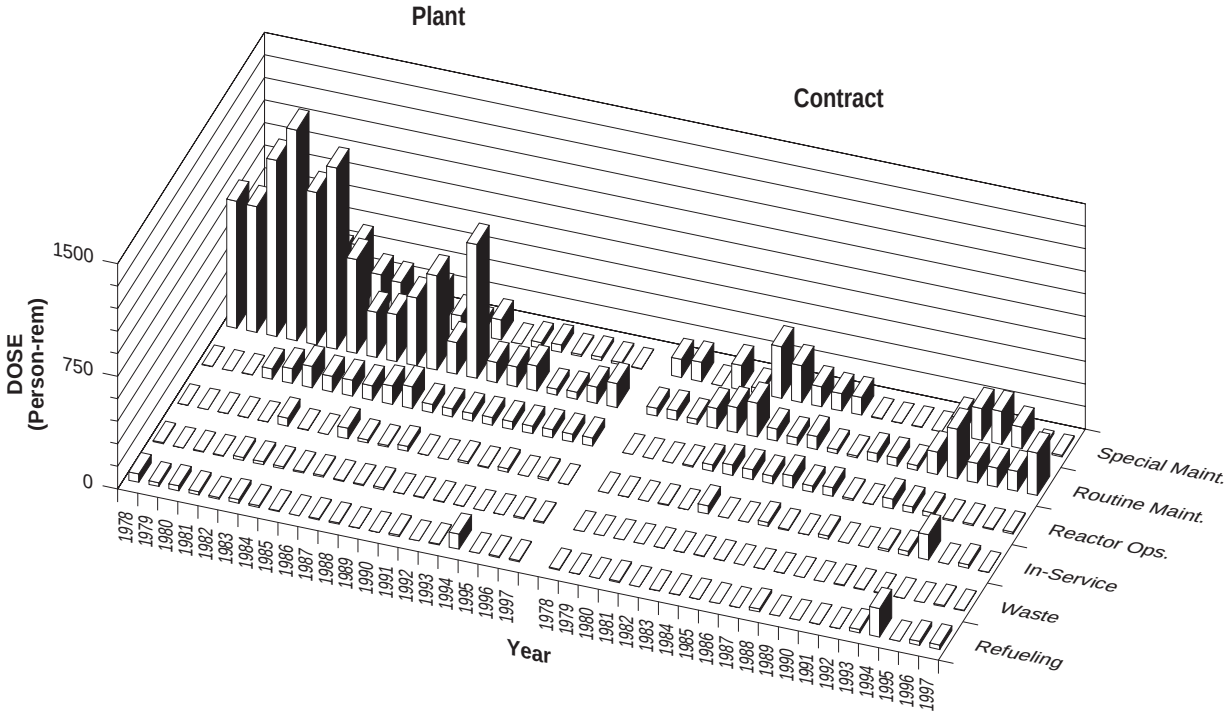
APPENDIX E (continued)

BROWNS FERRY 1, 2, 3

Dose-Performance Indicators **BWR**

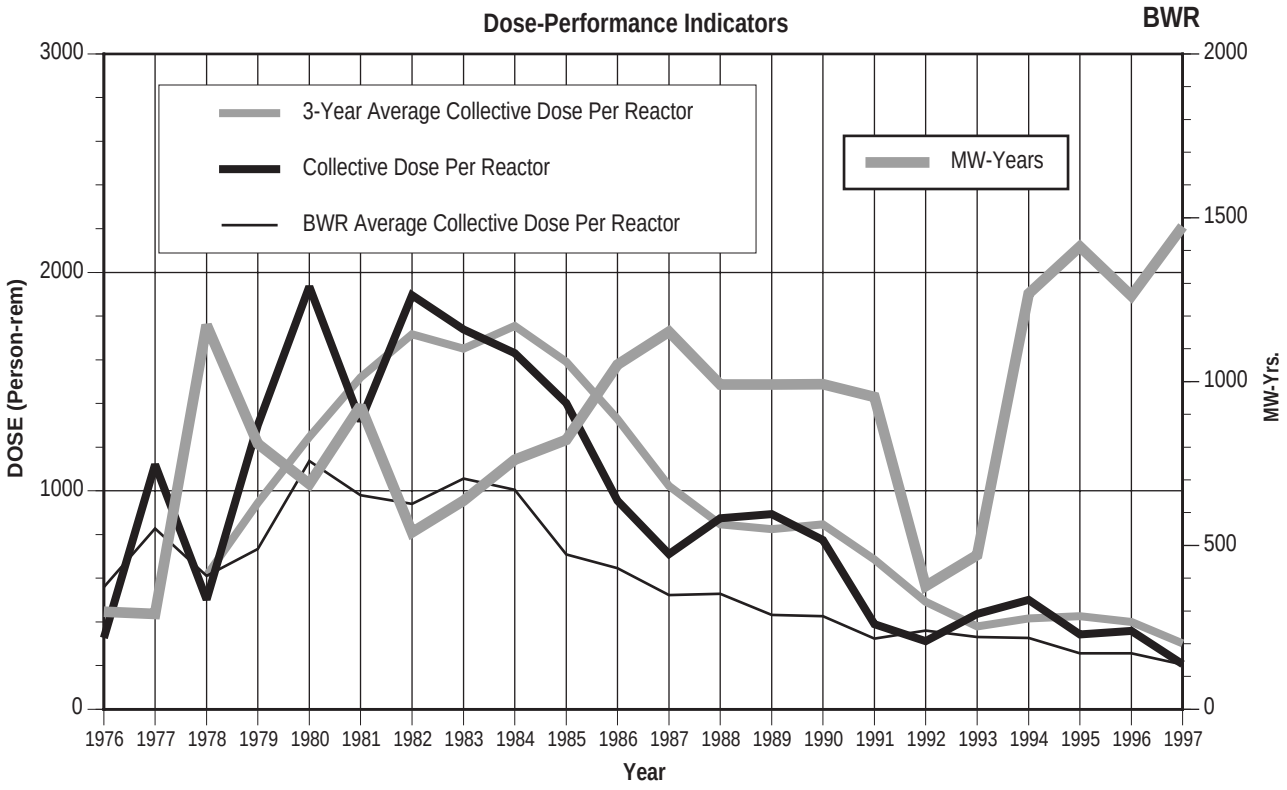


Breakdown by Job Function

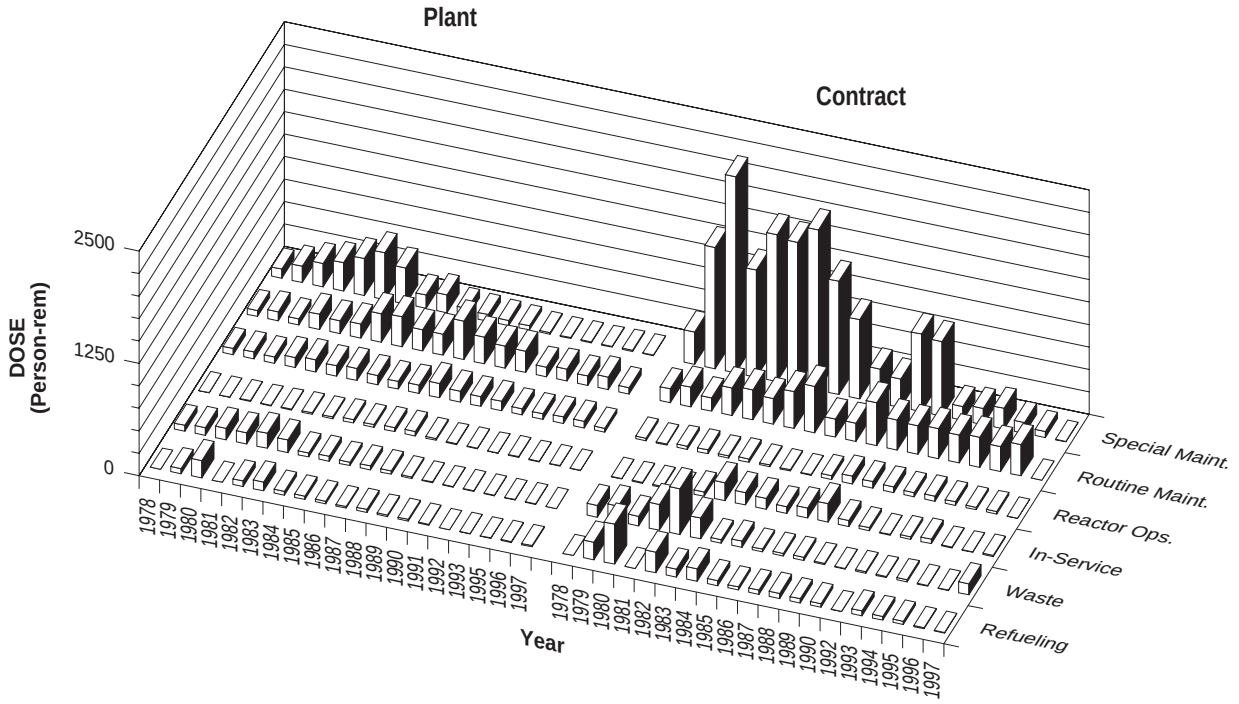


BRUNSWICK 1, 2

Dose-Performance Indicators



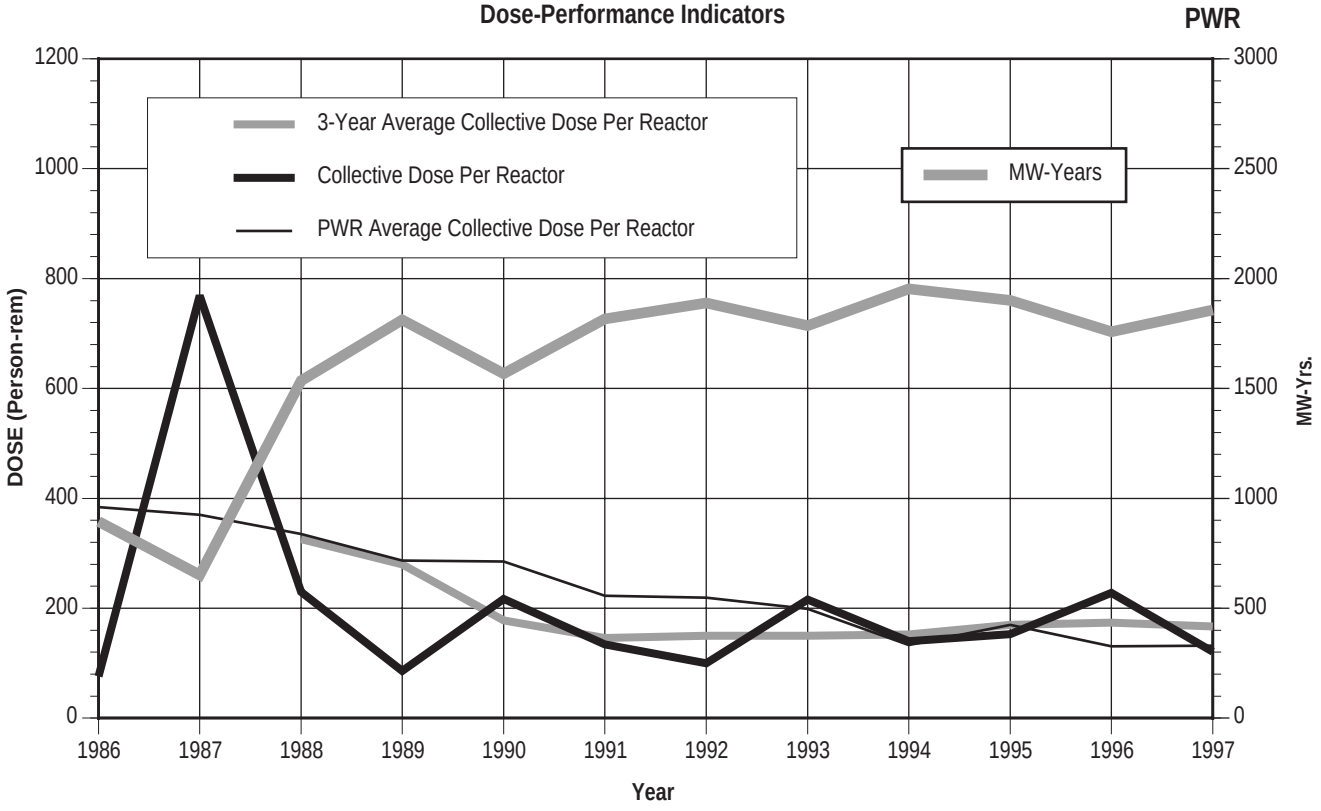
Breakdown by Job Function



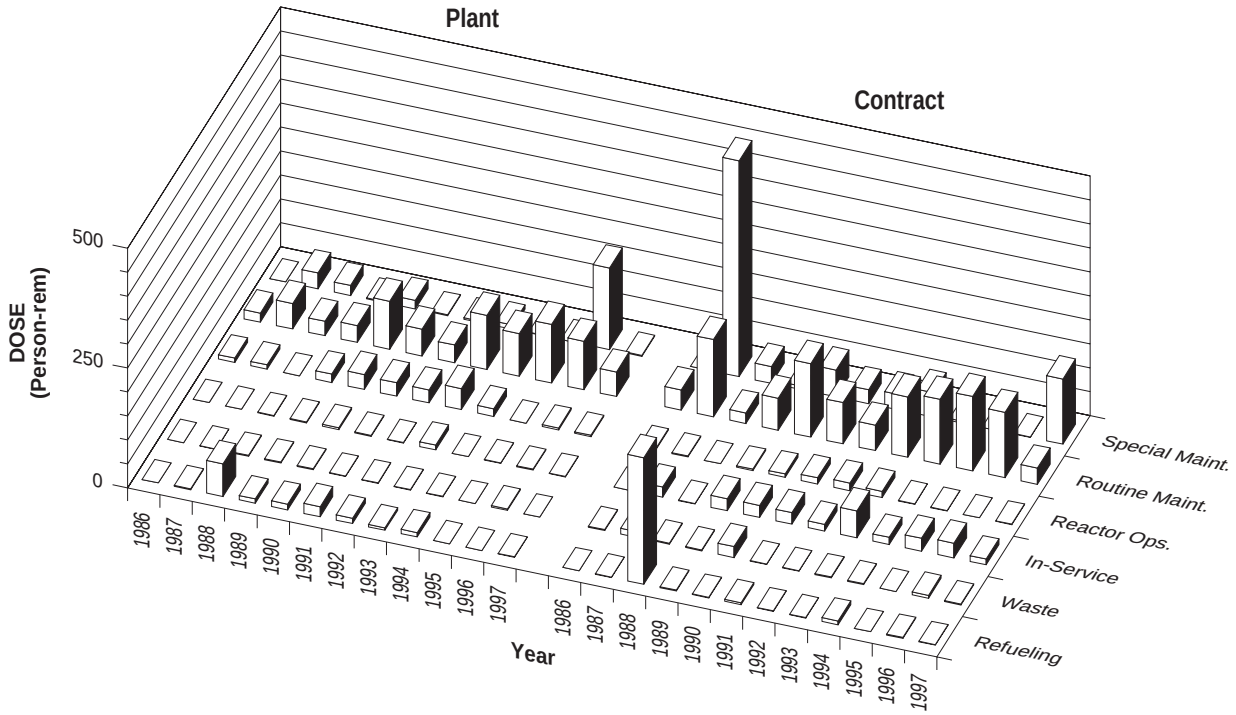
APPENDIX E (continued)

BYRON 1, 2

Dose-Performance Indicators



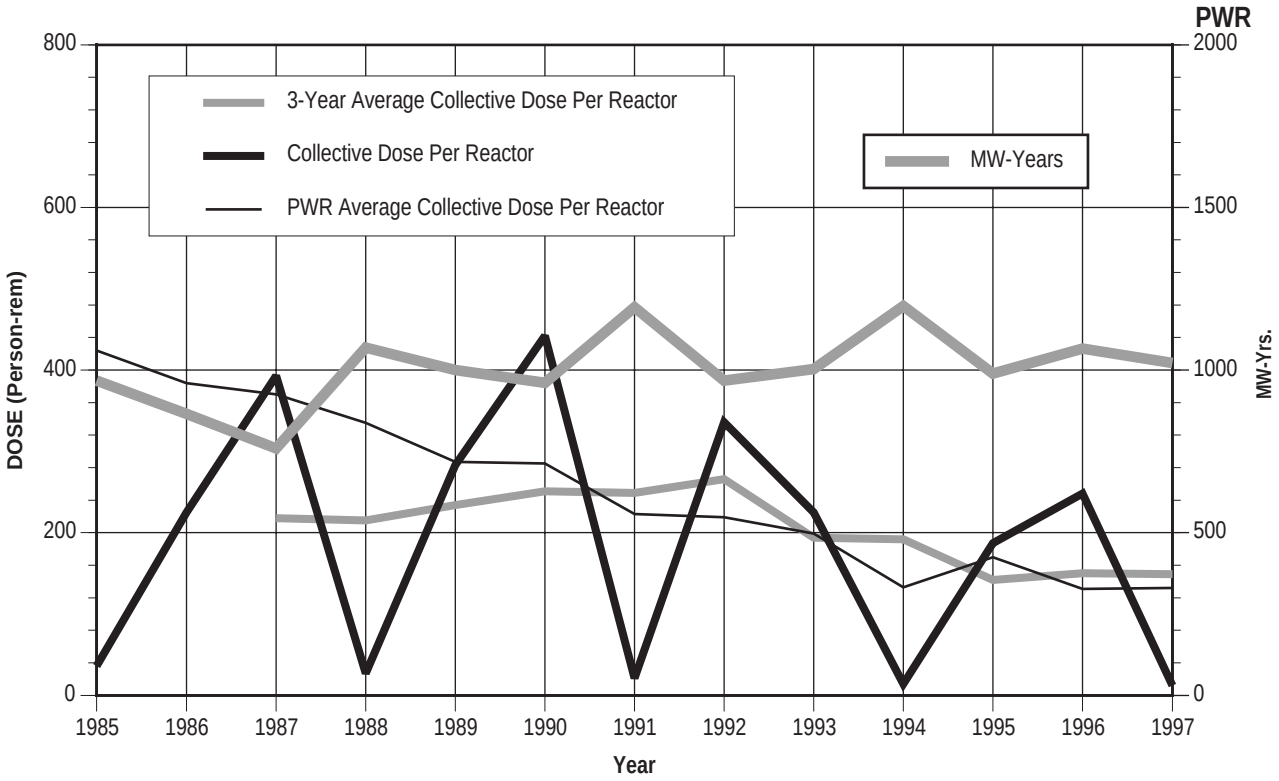
Breakdown by Job Function



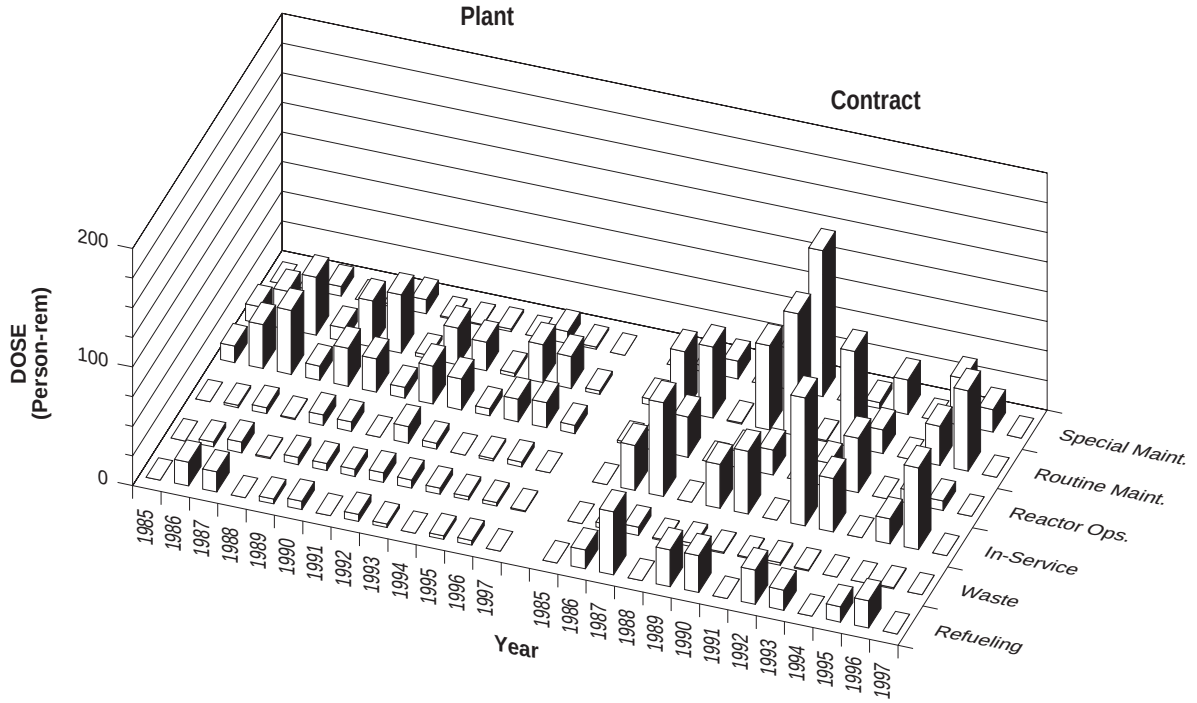
APPENDIX E (continued)

CALLAWAY 1

Dose-Performance Indicators



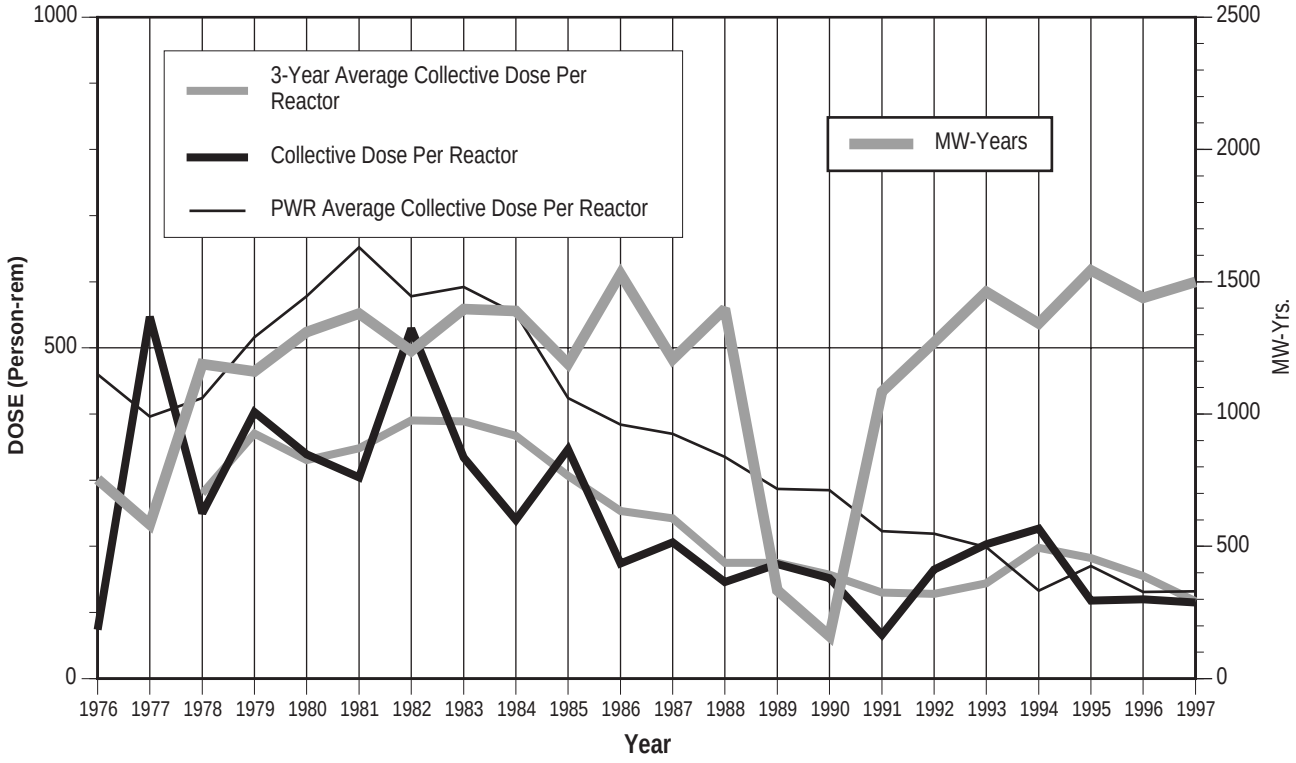
Breakdown by Job Function



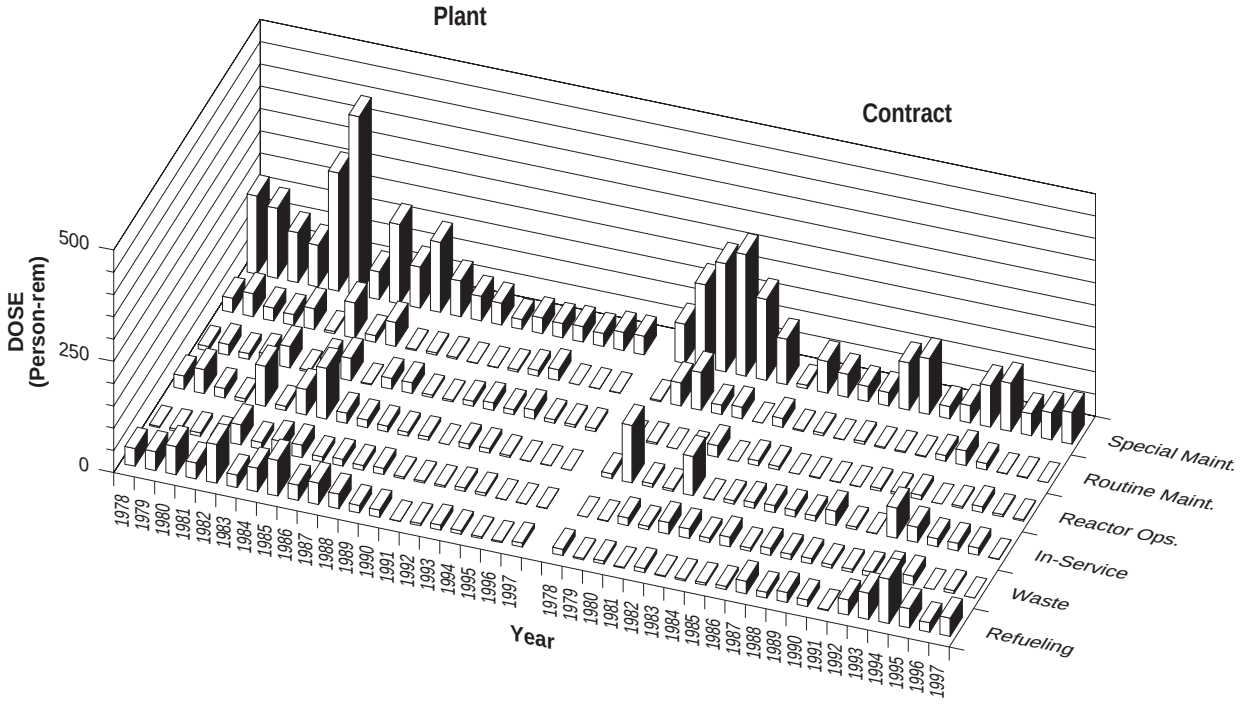
APPENDIX E (continued)

CALVERT CLIFFS 1, 2

Dose-Performance Indicators **PWR**



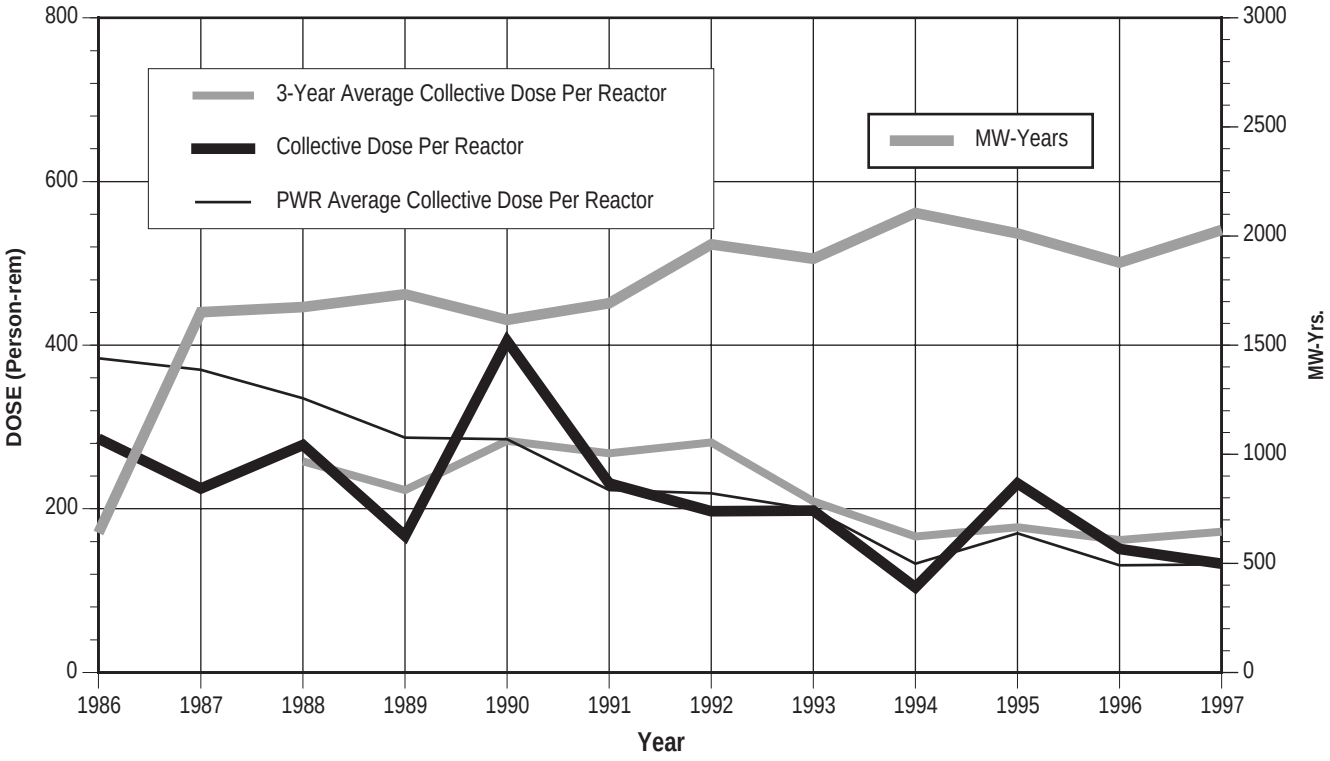
Breakdown by Job Function



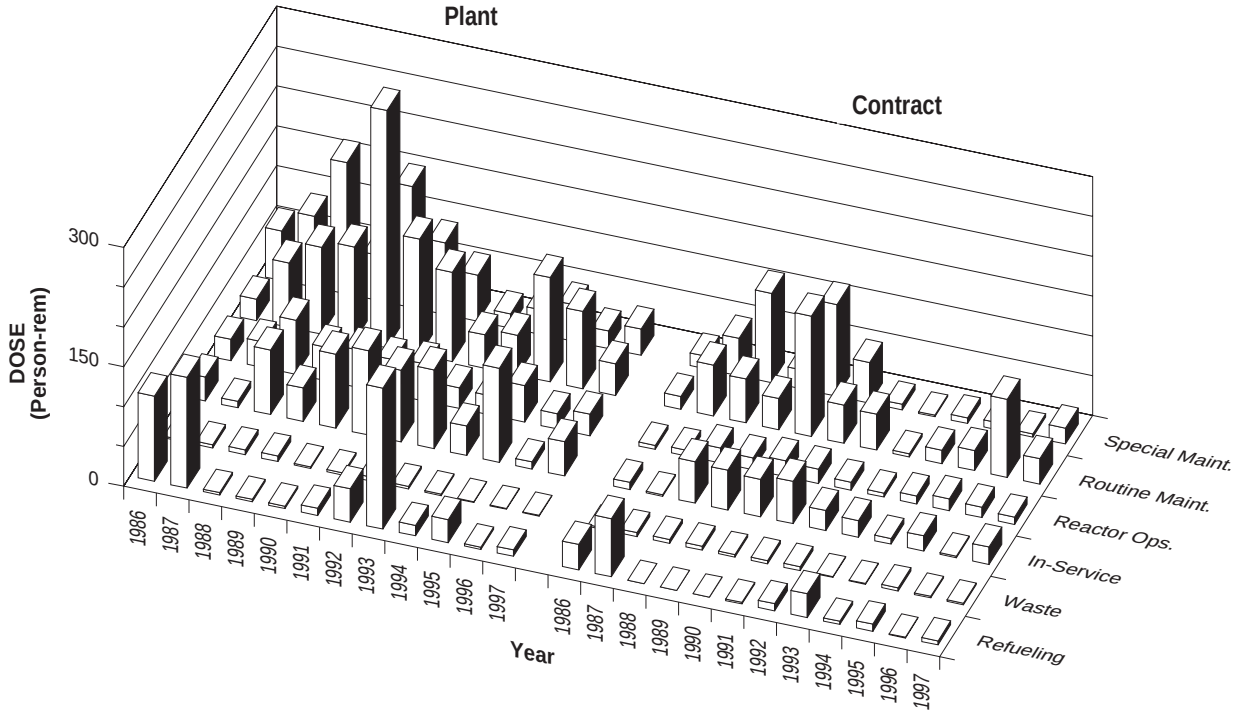
APPENDIX E (continued)

CATAWBA 1, 2

Dose-Performance Indicators **PWR**



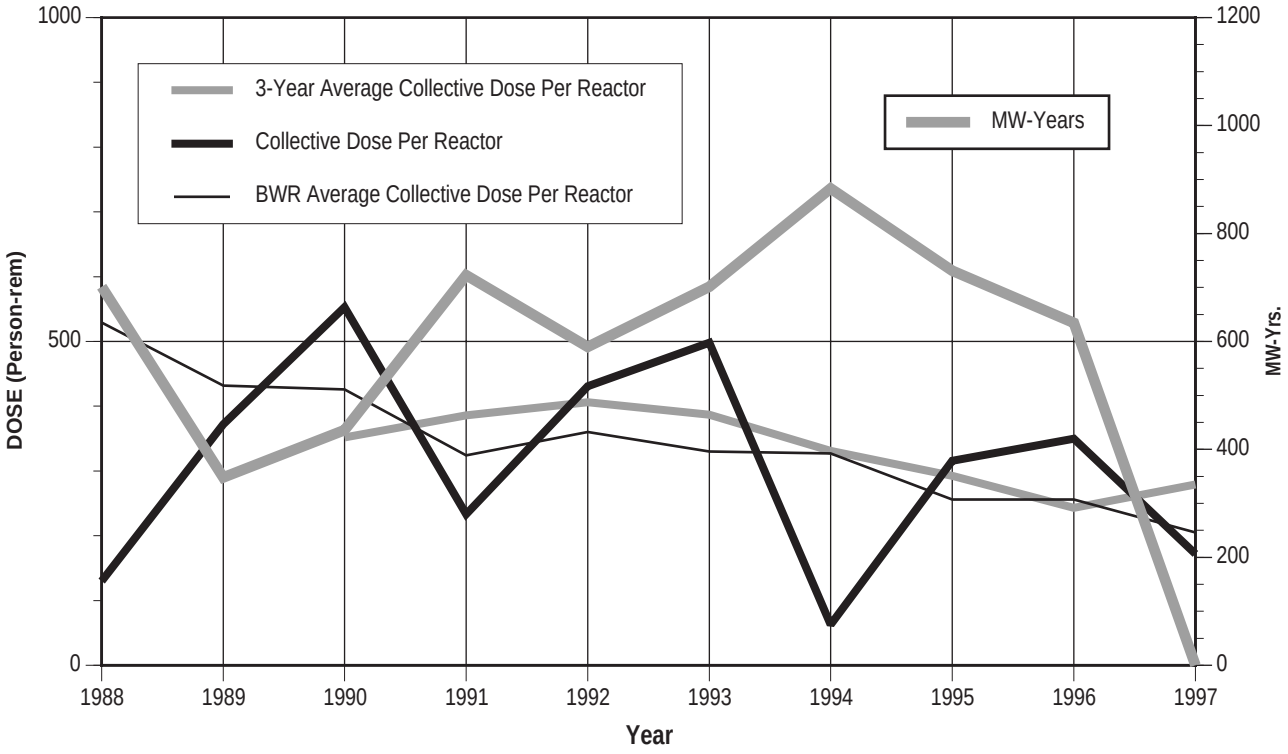
Breakdown by Job Function



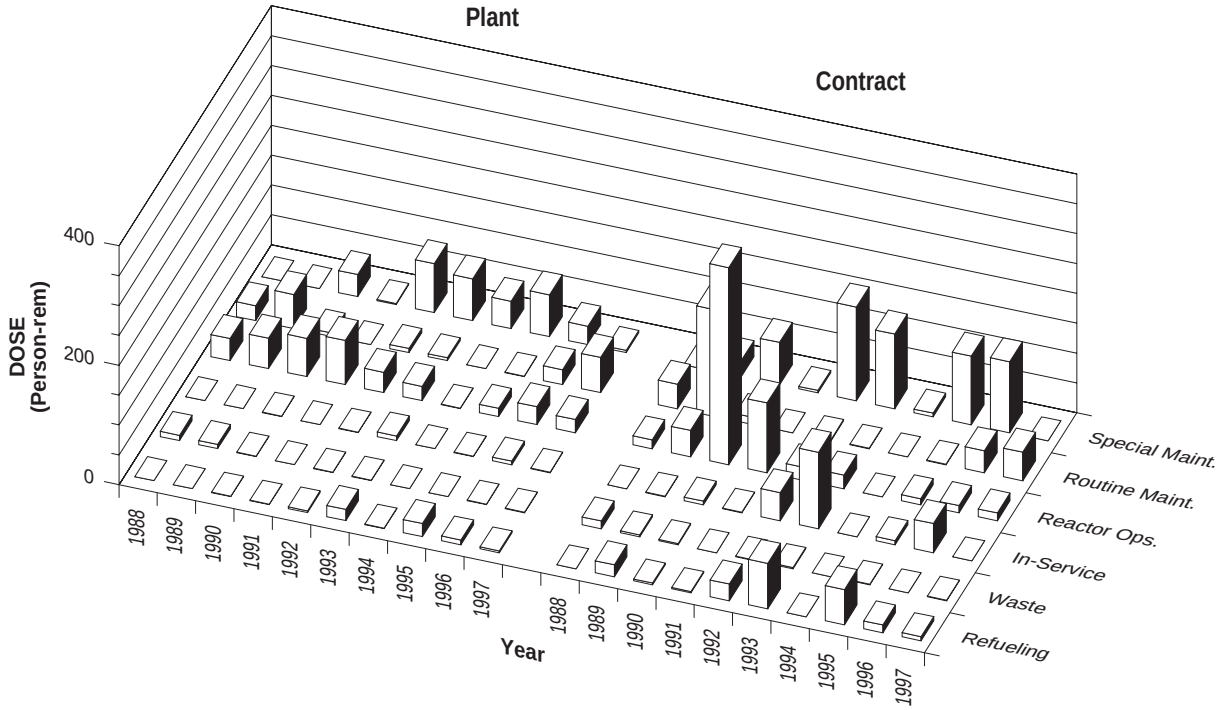
CLINTON

Dose-Performance Indicators

BWR



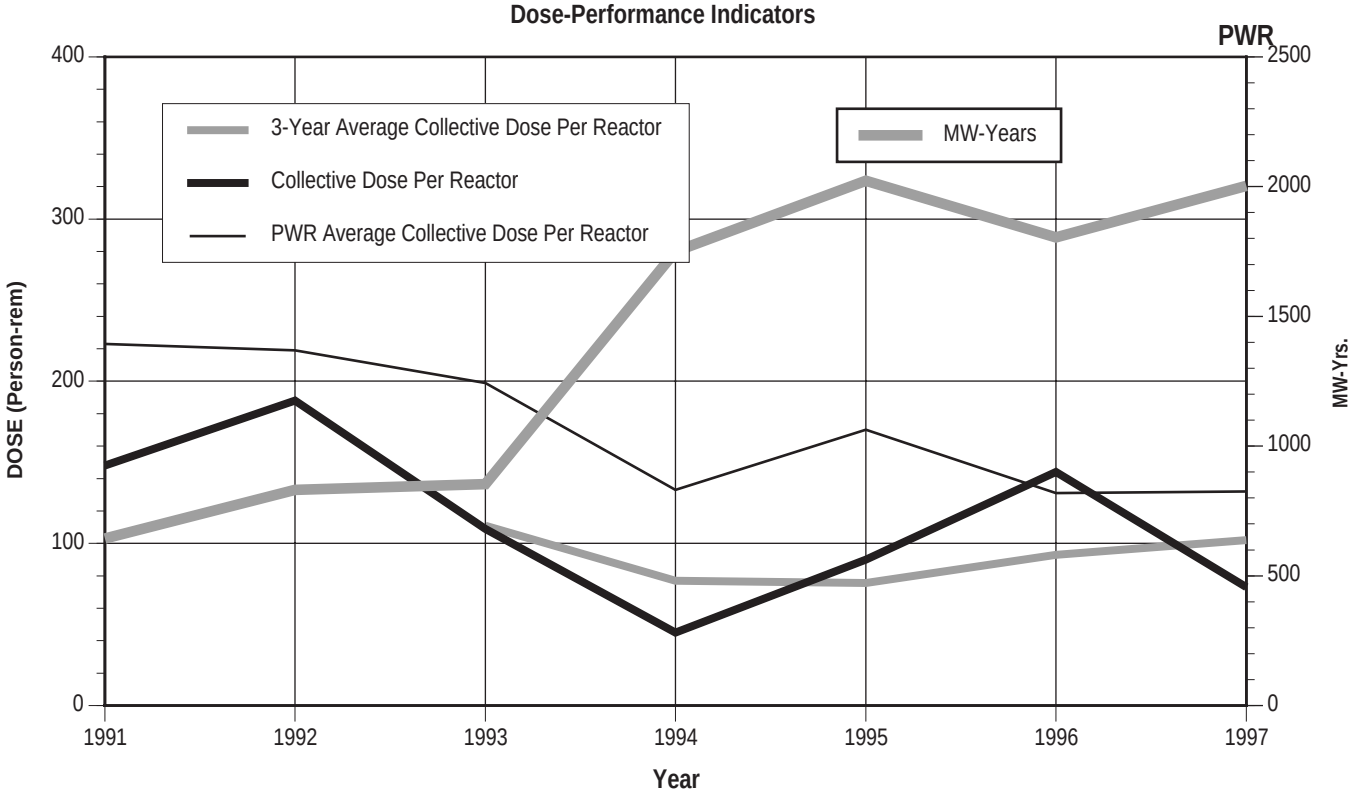
Breakdown by Job Function



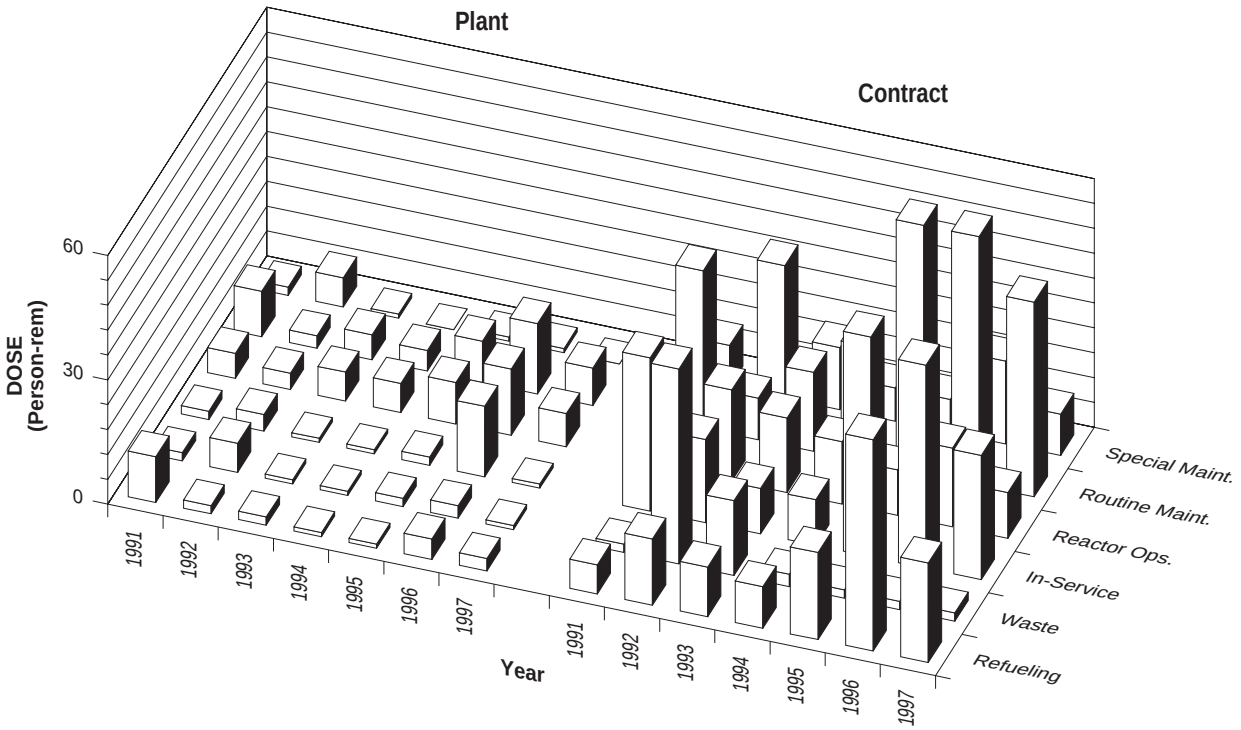
APPENDIX E (continued)

COMANCHE PEAK 1, 2

Dose-Performance Indicators



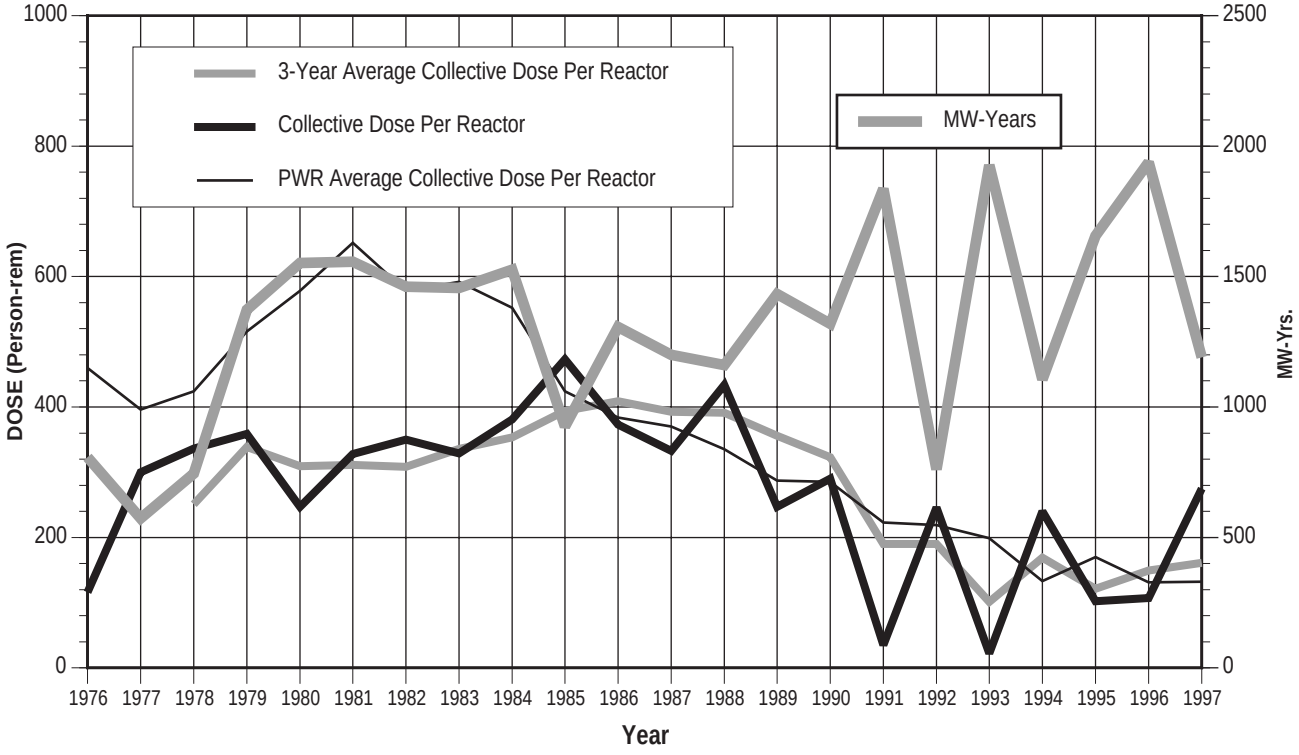
Breakdown by Job Function



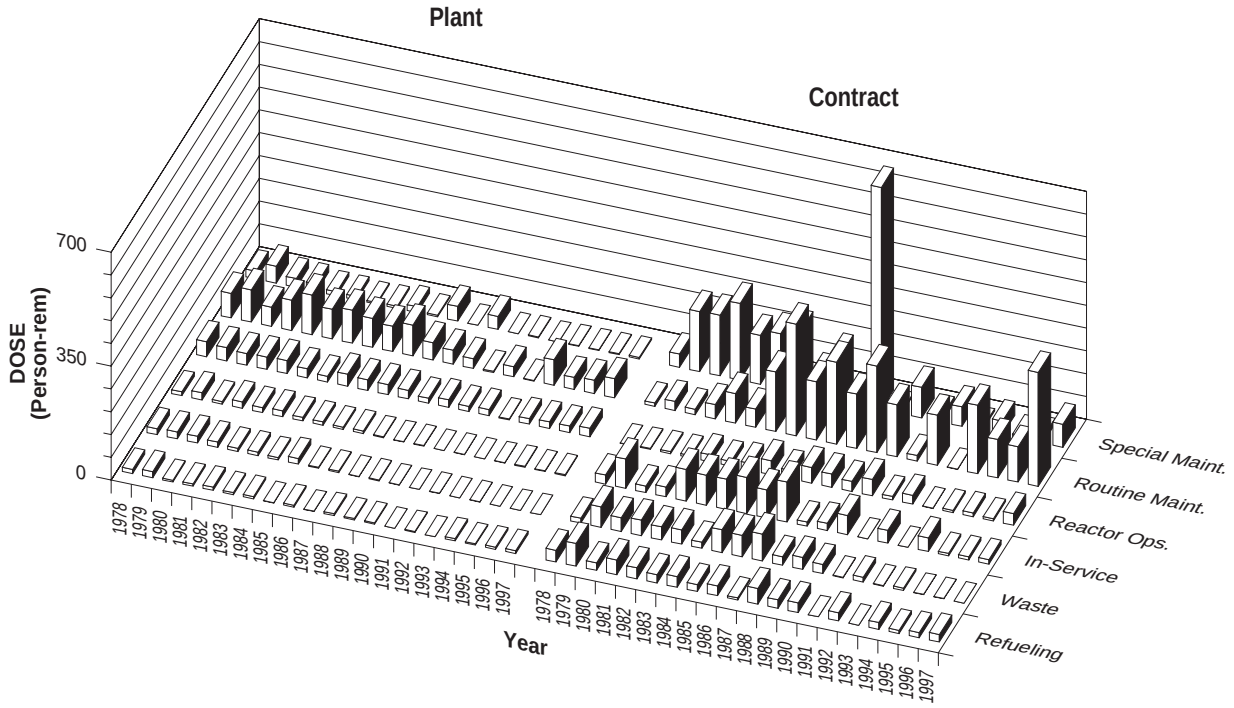
APPENDIX E (continued)

COOK 1, 2

Dose-Performance Indicators **PWR**

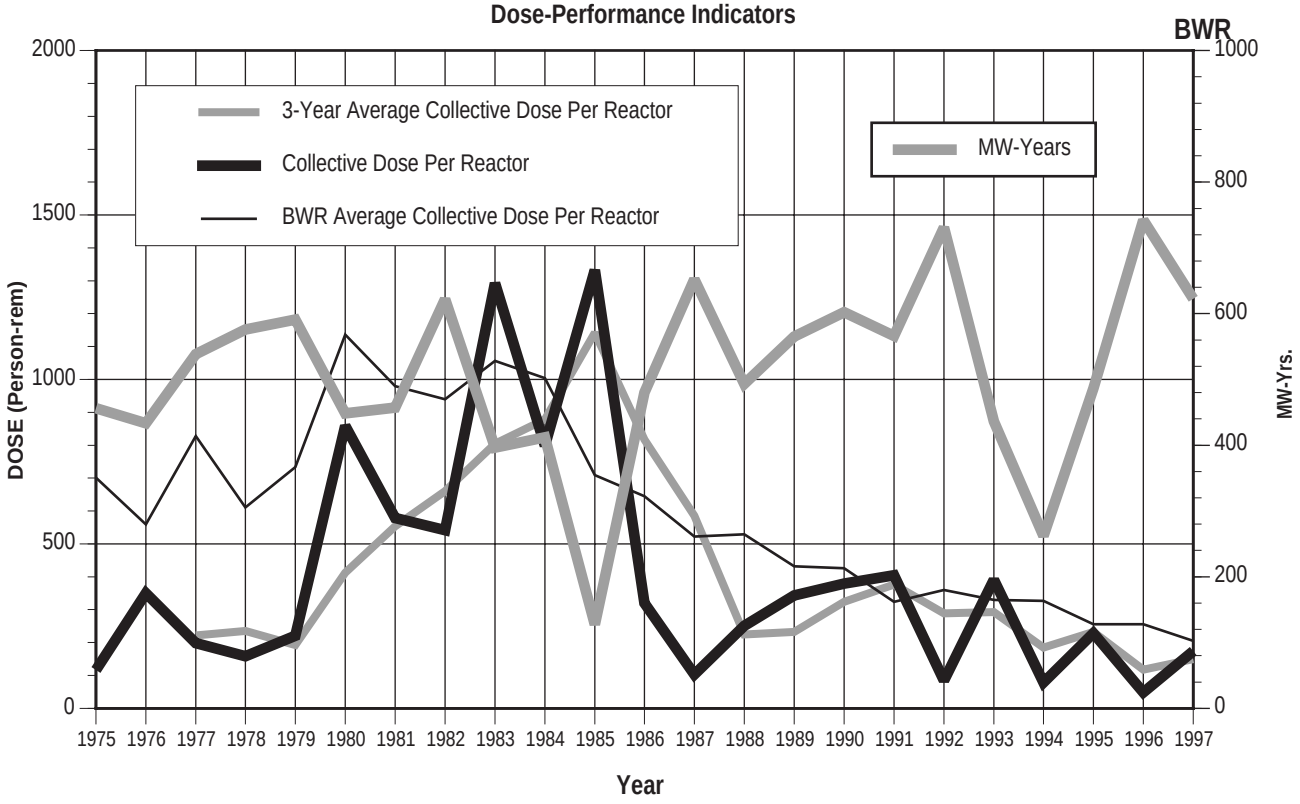


Breakdown by Job Function

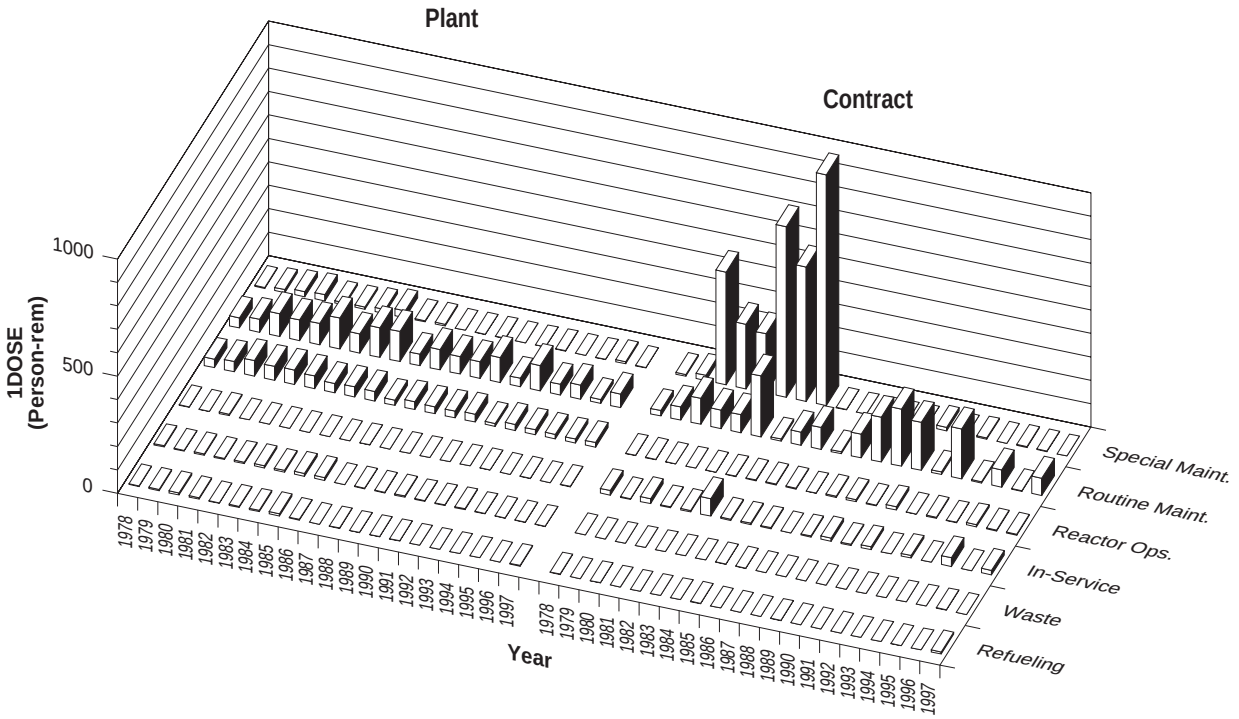


COOPER STATION

Dose-Performance Indicators



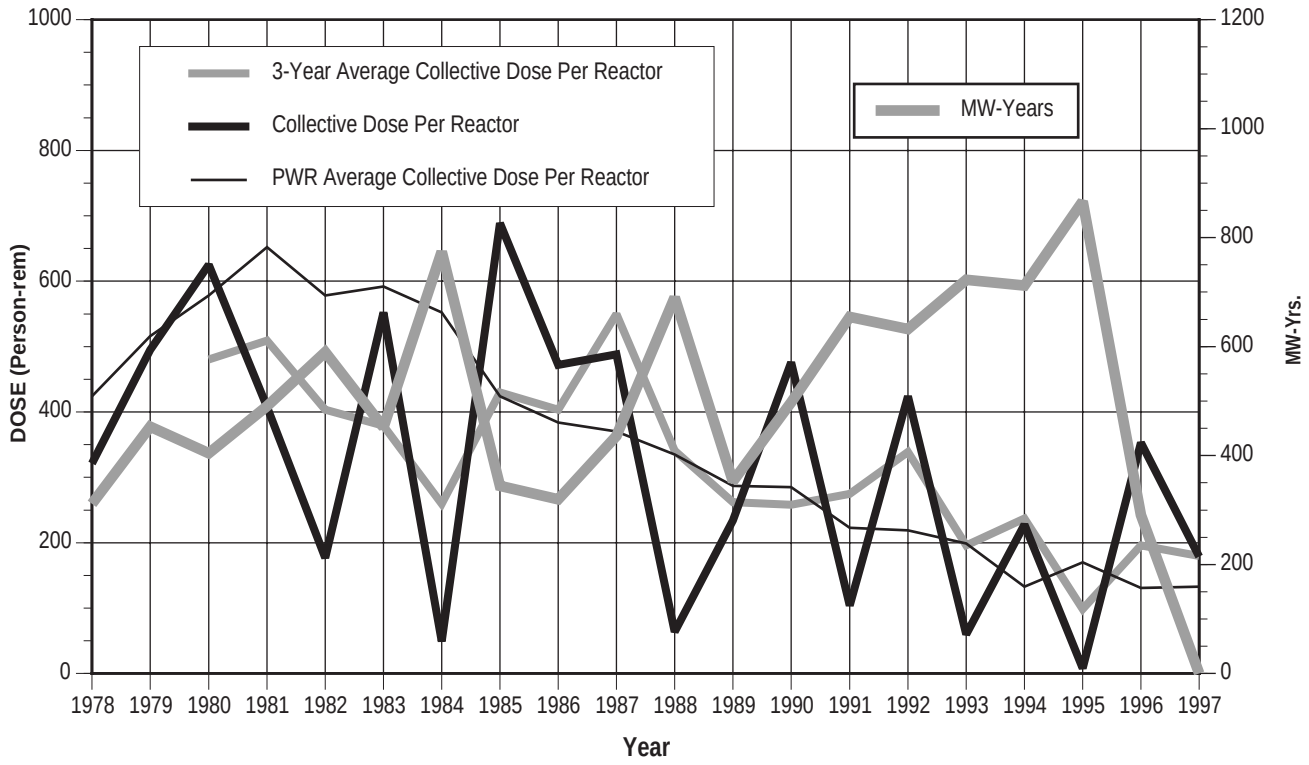
Breakdown by Job Function



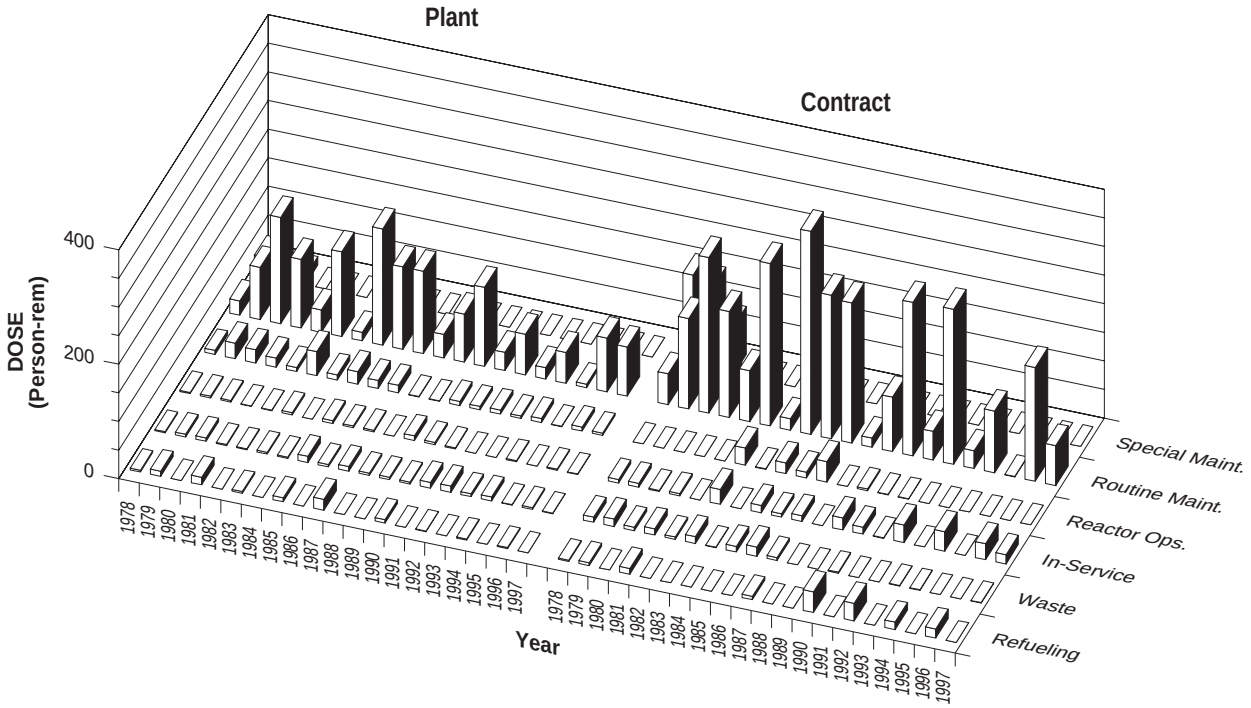
APPENDIX E (continued)

CRYSTAL RIVER 3

Dose-Performance Indicators **PWR**



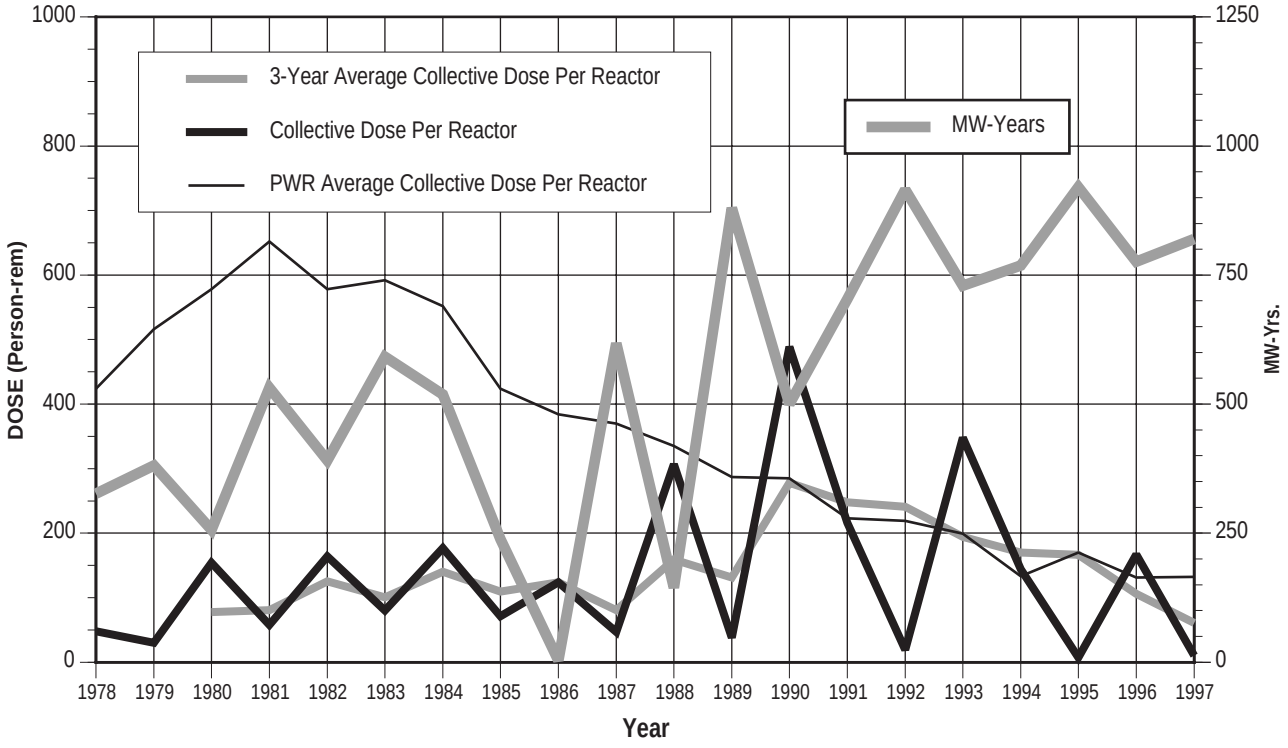
Breakdown by Job Function



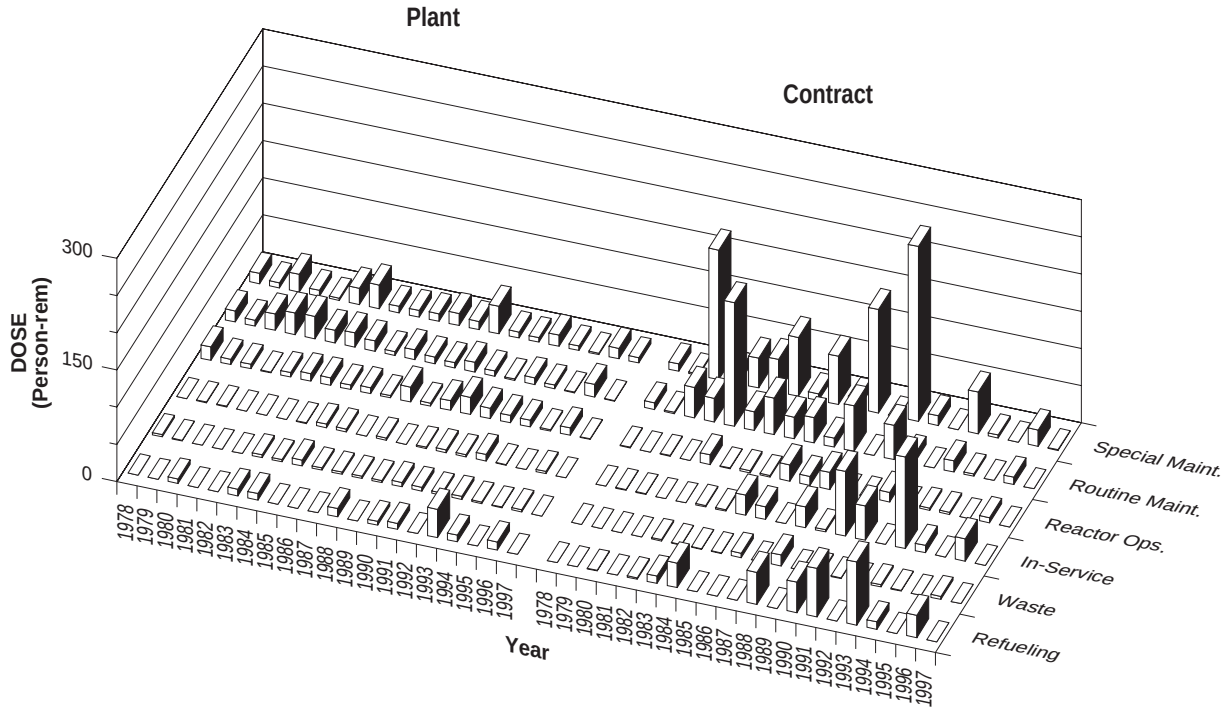
APPENDIX E (continued)

DAVIS-BESSE

Dose-Performance Indicators **PWR**



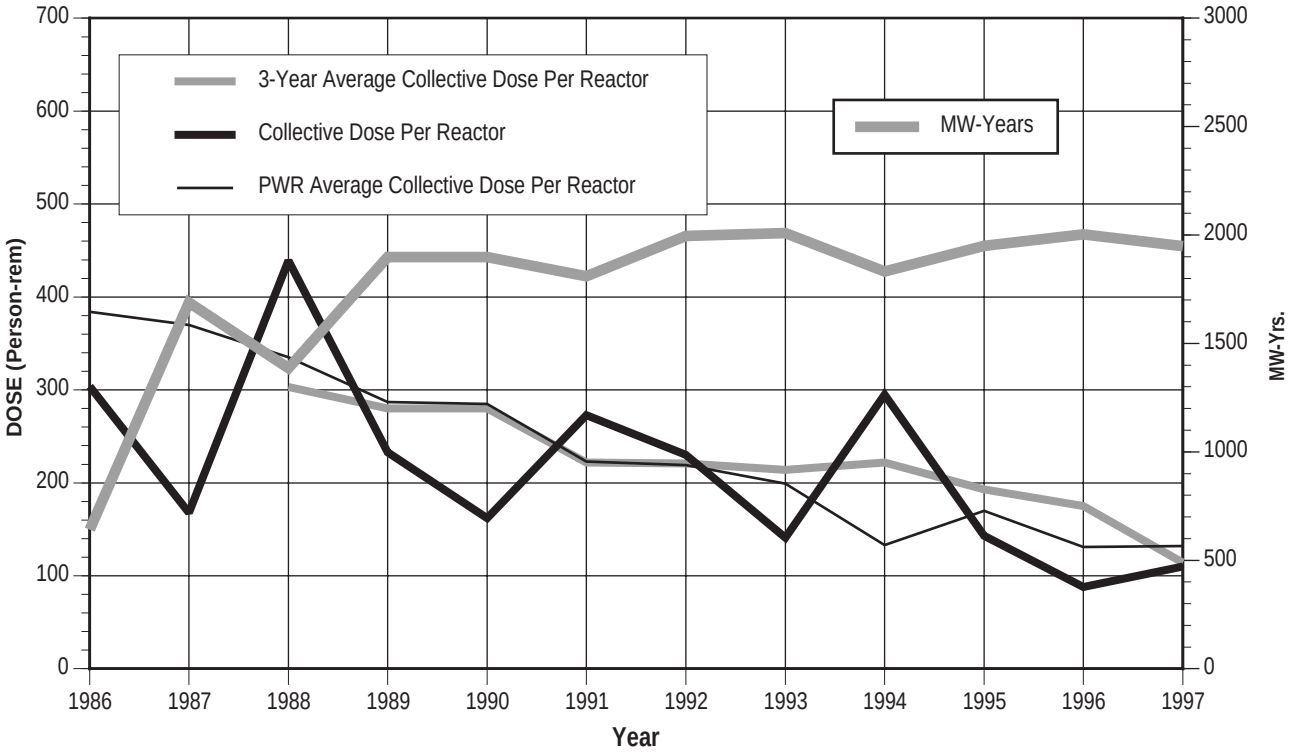
Breakdown by Job Function



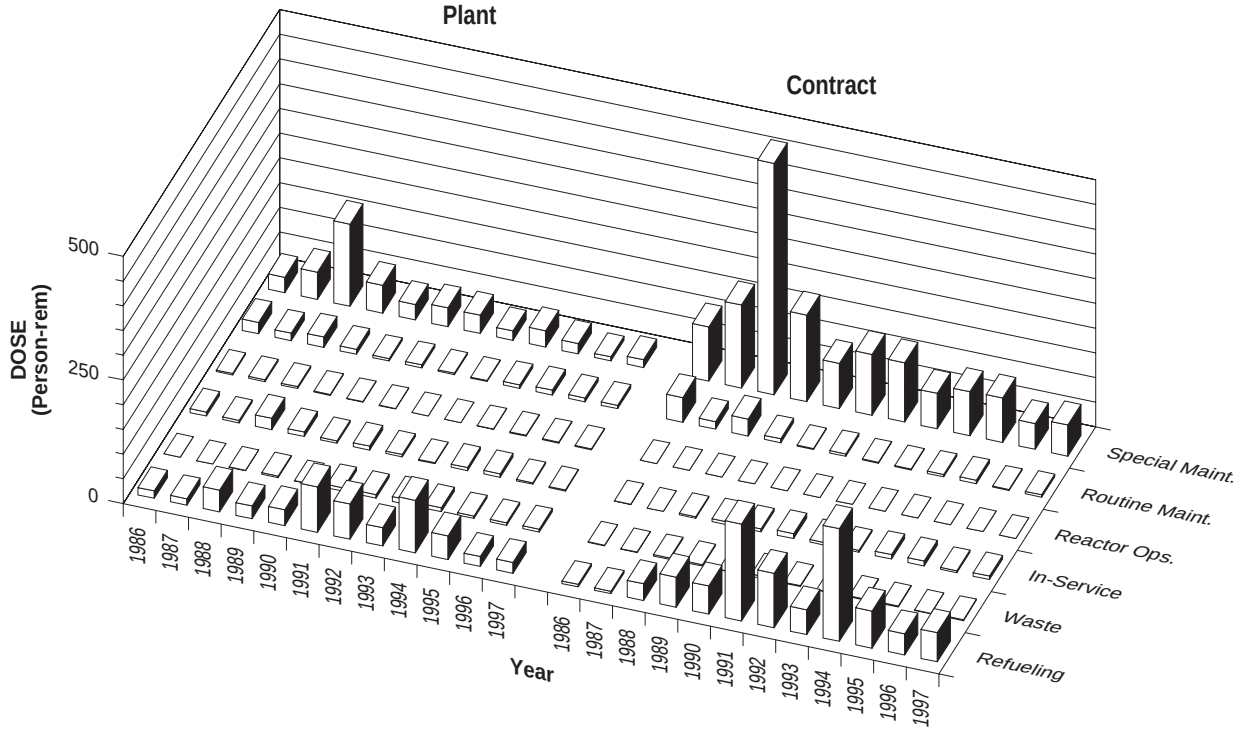
APPENDIX E (continued)

DIABLO CANYON 1, 2

Dose-Performance Indicators **PWR**



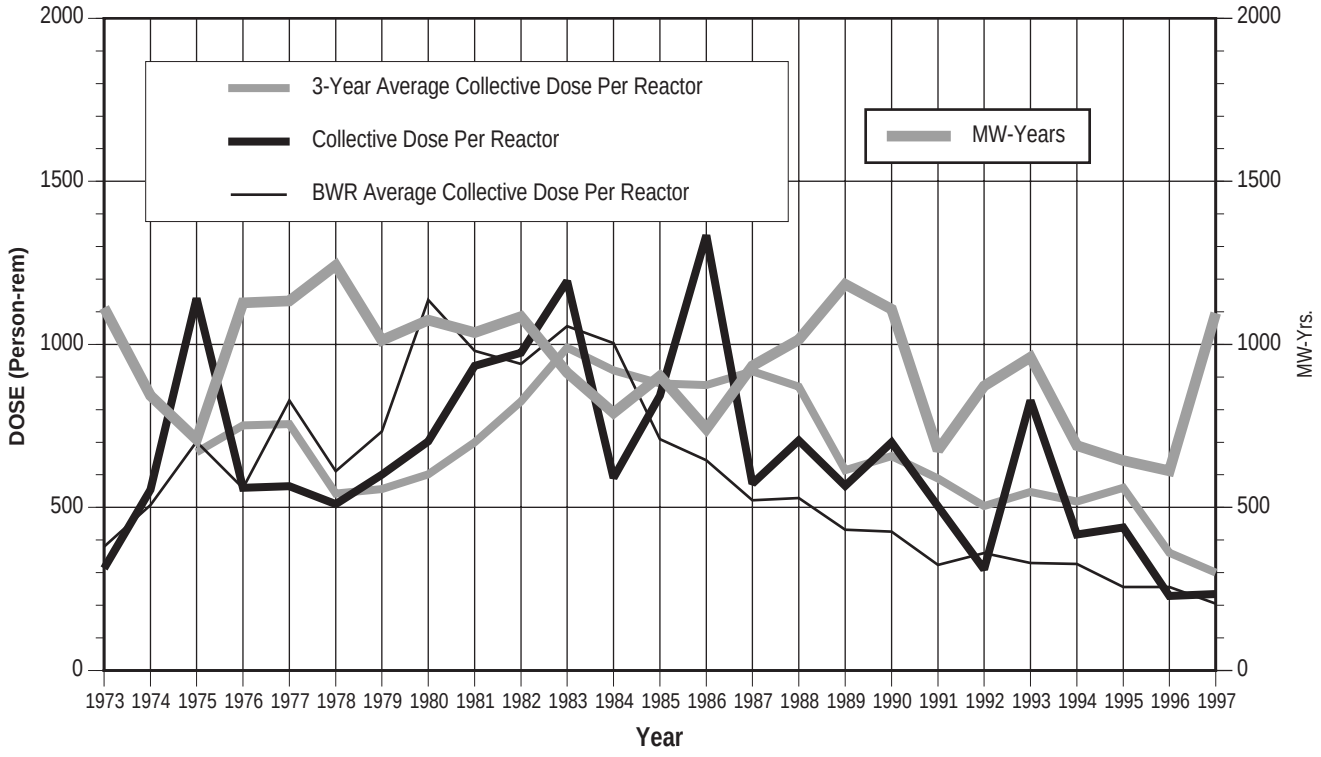
Breakdown by Job Function



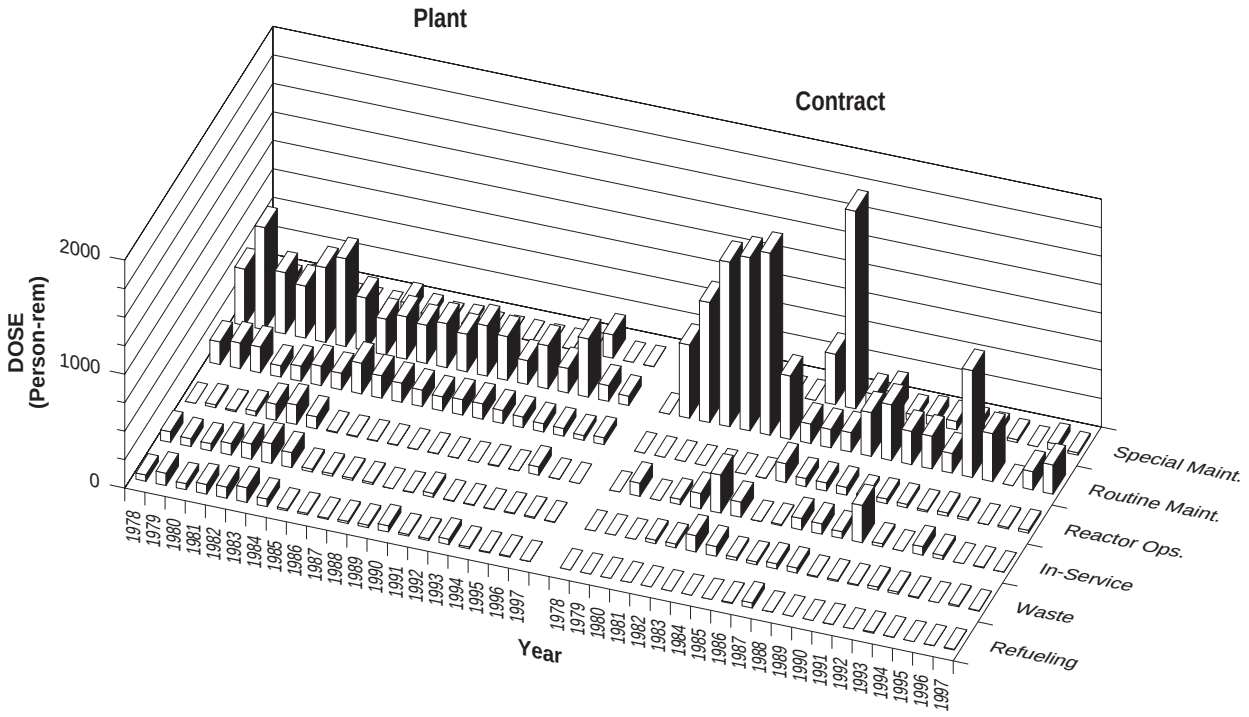
DRESDEN 2, 3

Dose-Performance Indicators

BWR

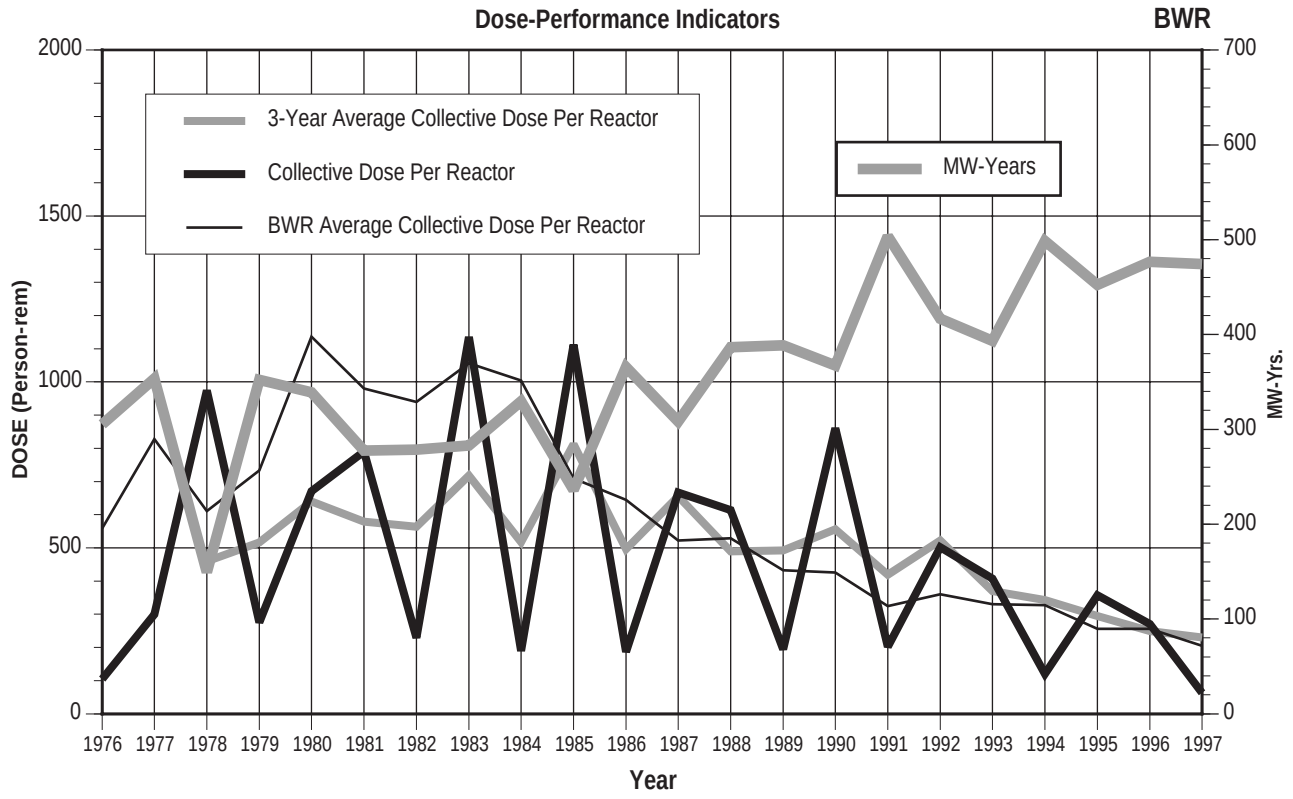


Breakdown by Job Function

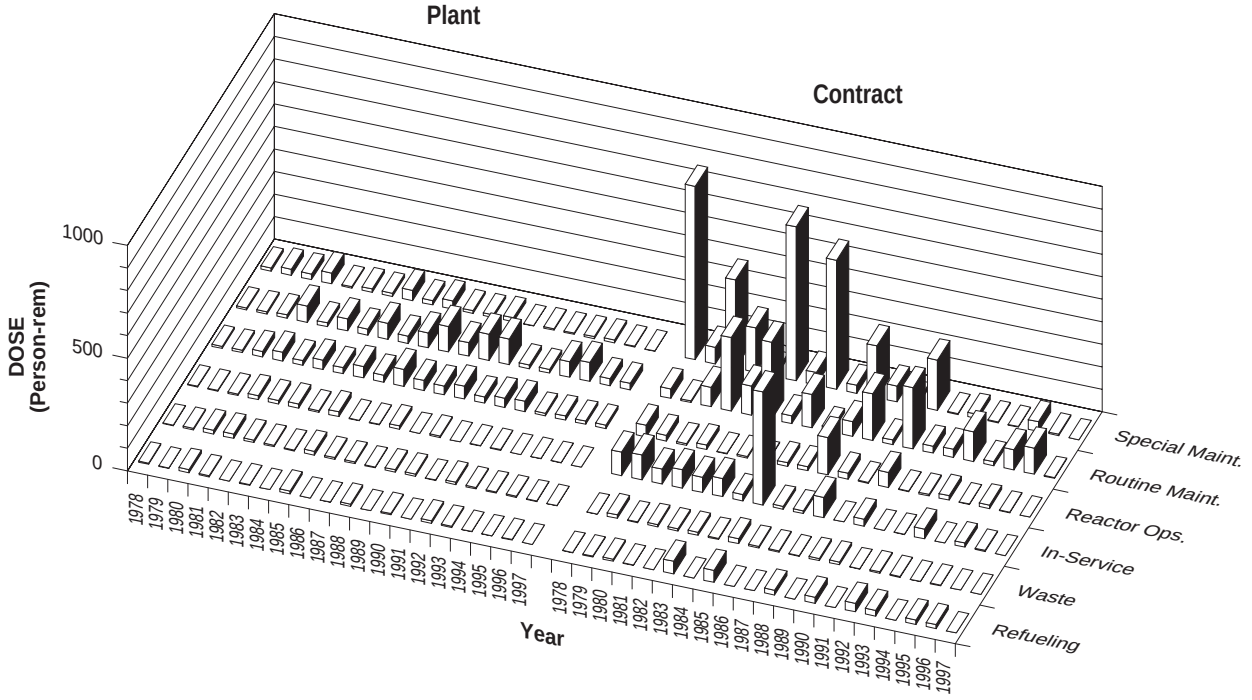


DUANE ARNOLD

Dose-Performance Indicators

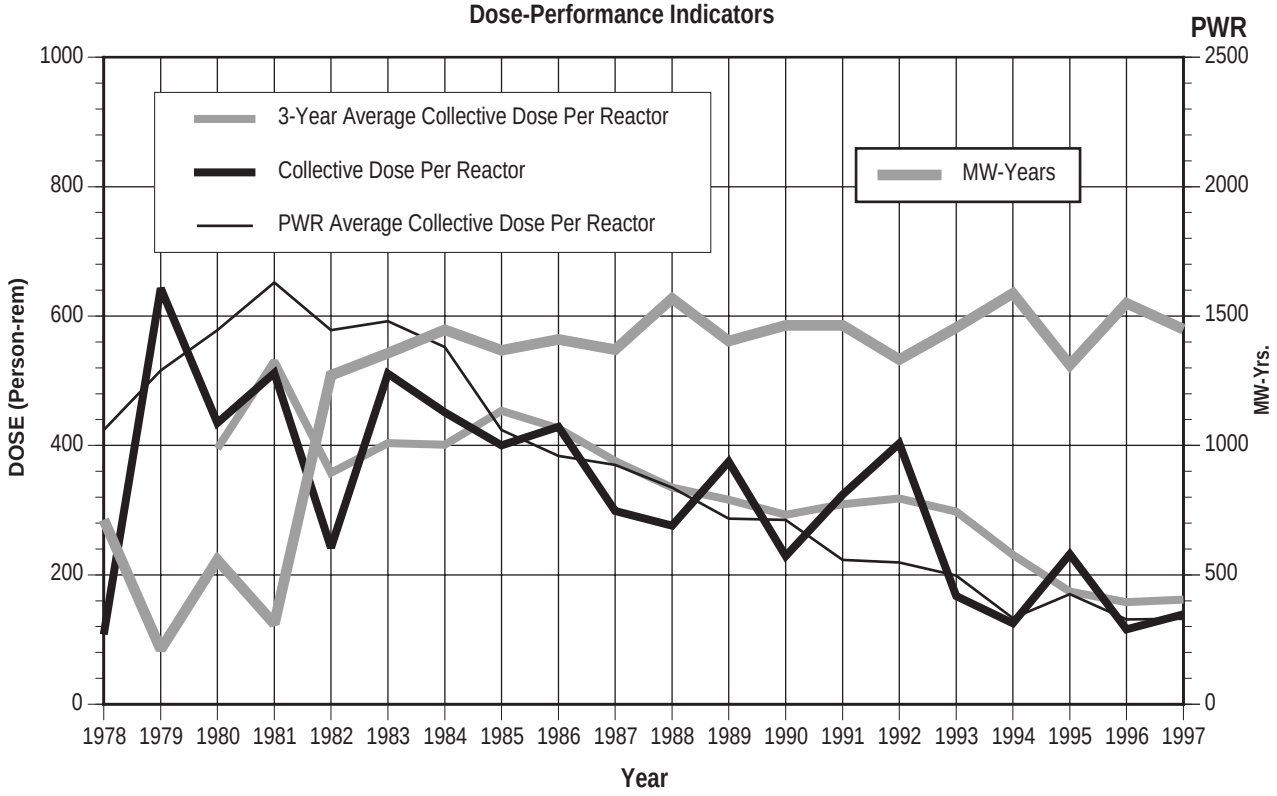


Breakdown by Job Function

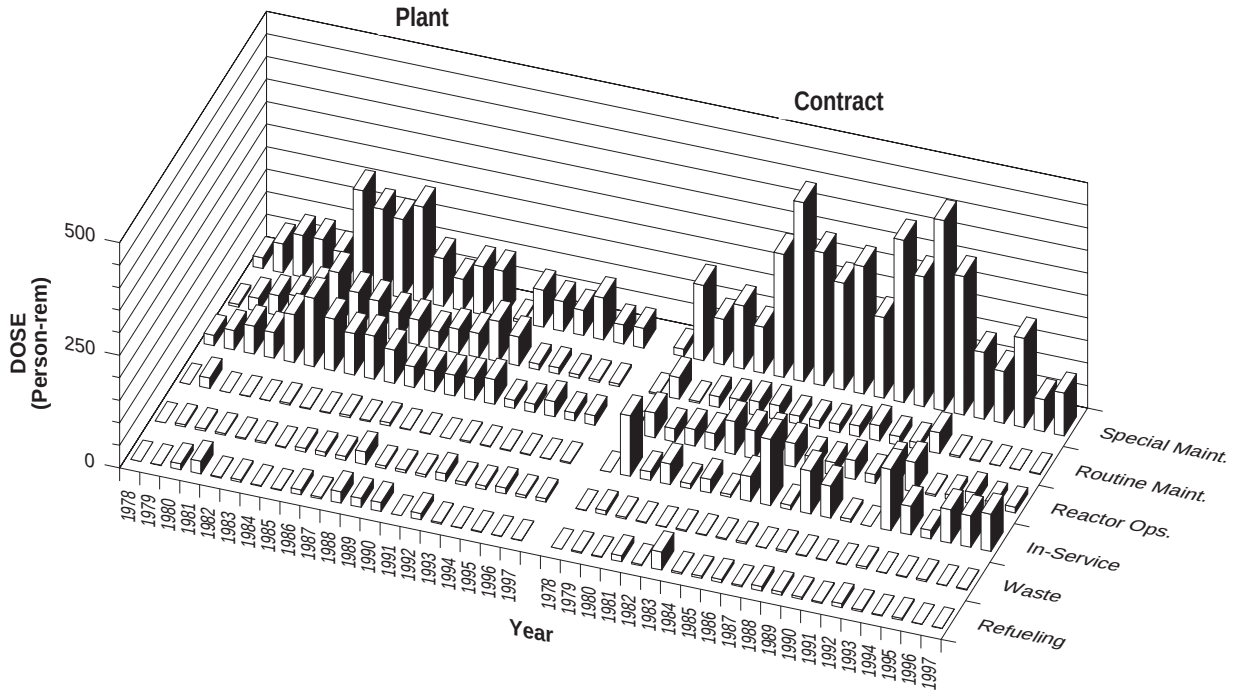


FARLEY 1, 2

Dose-Performance Indicators



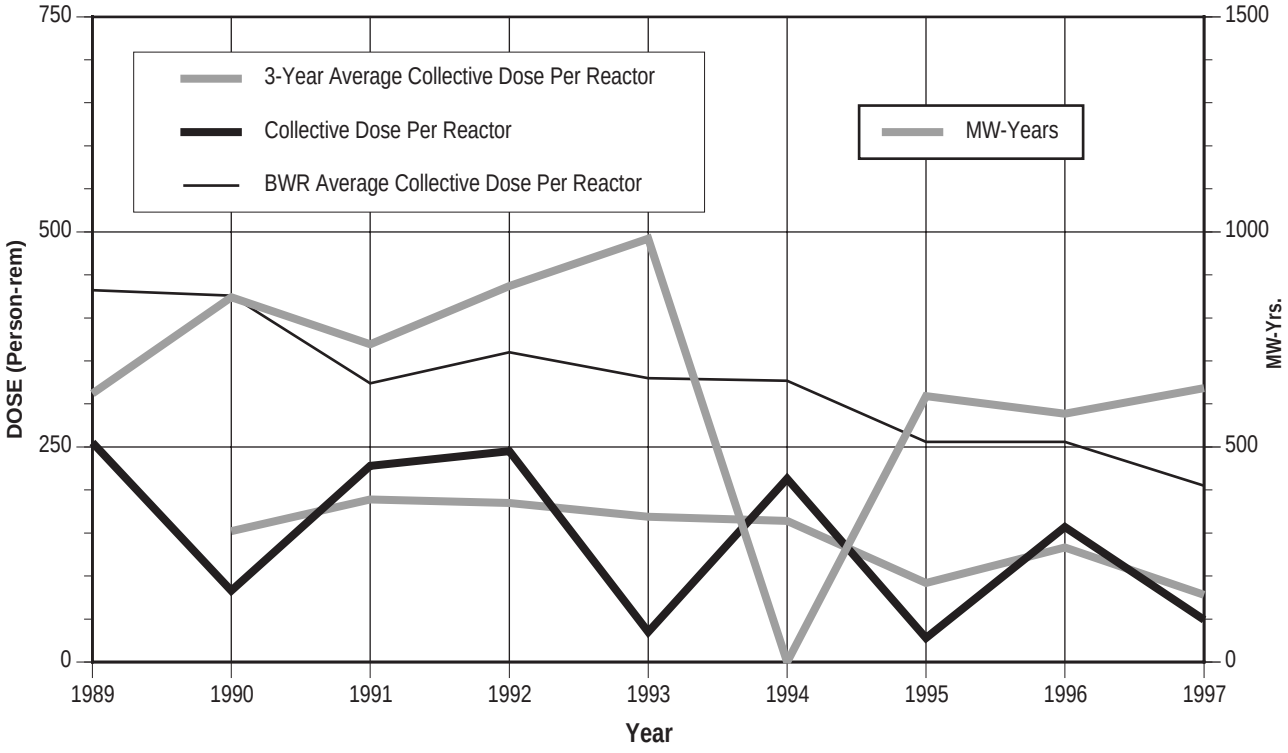
Breakdown by Job Function



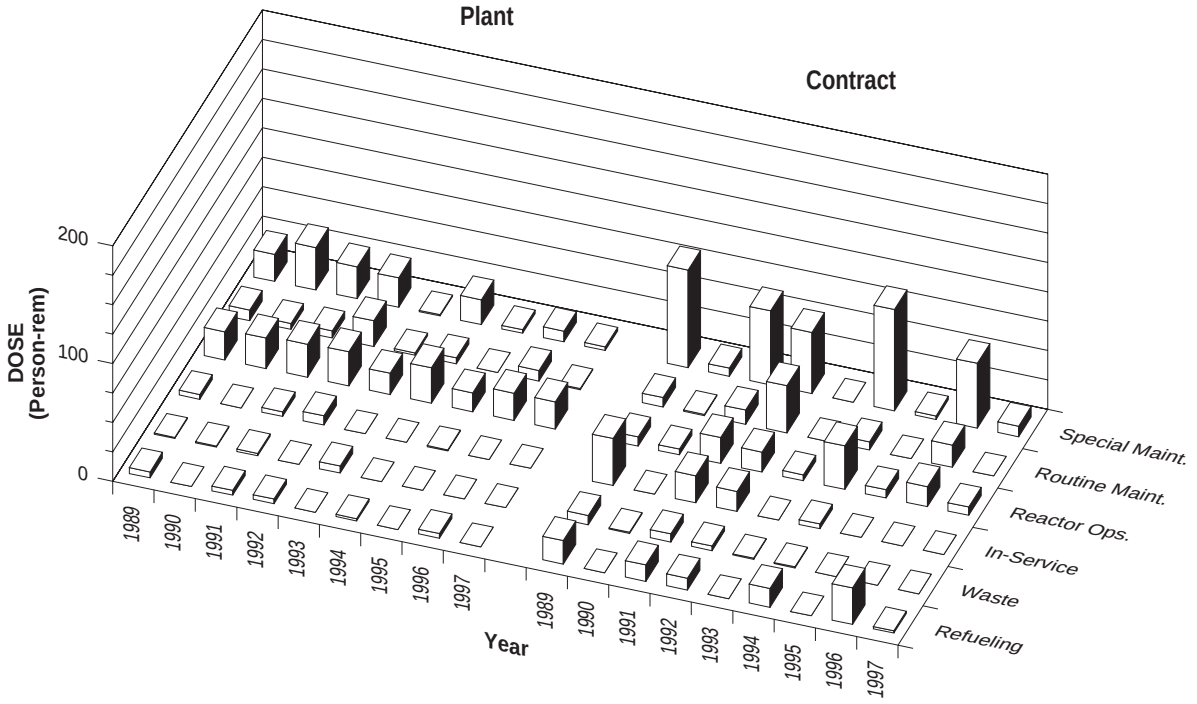
FERMI 2

Dose-Performance Indicators

BWR

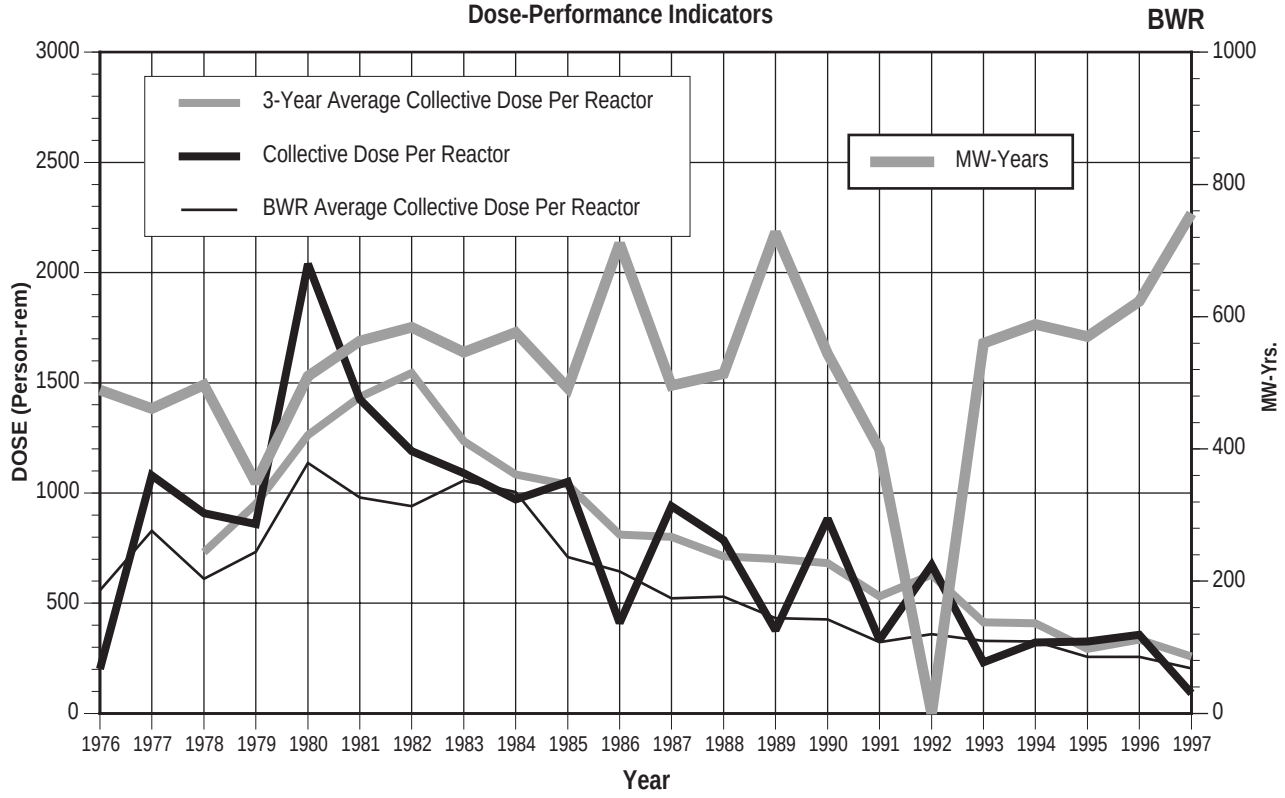


Breakdown by Job Function

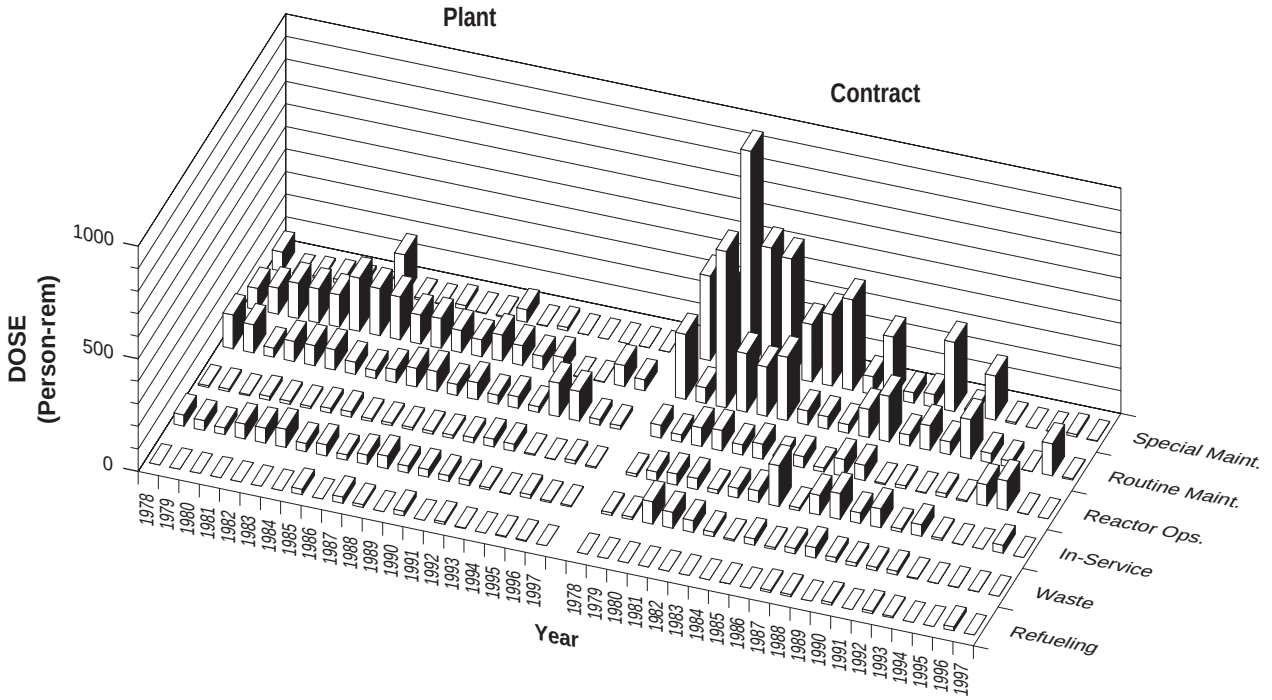


FITZPATRICK

Dose-Performance Indicators



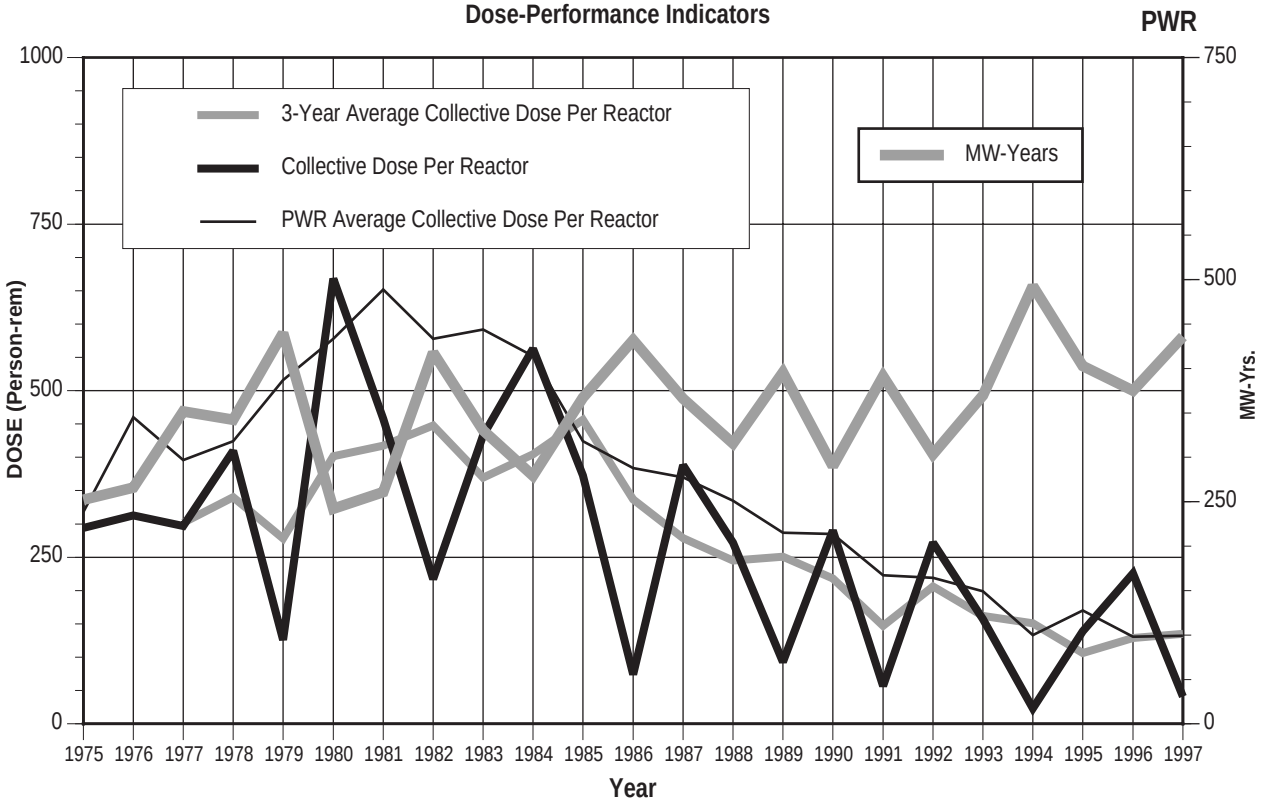
Breakdown by Job Function



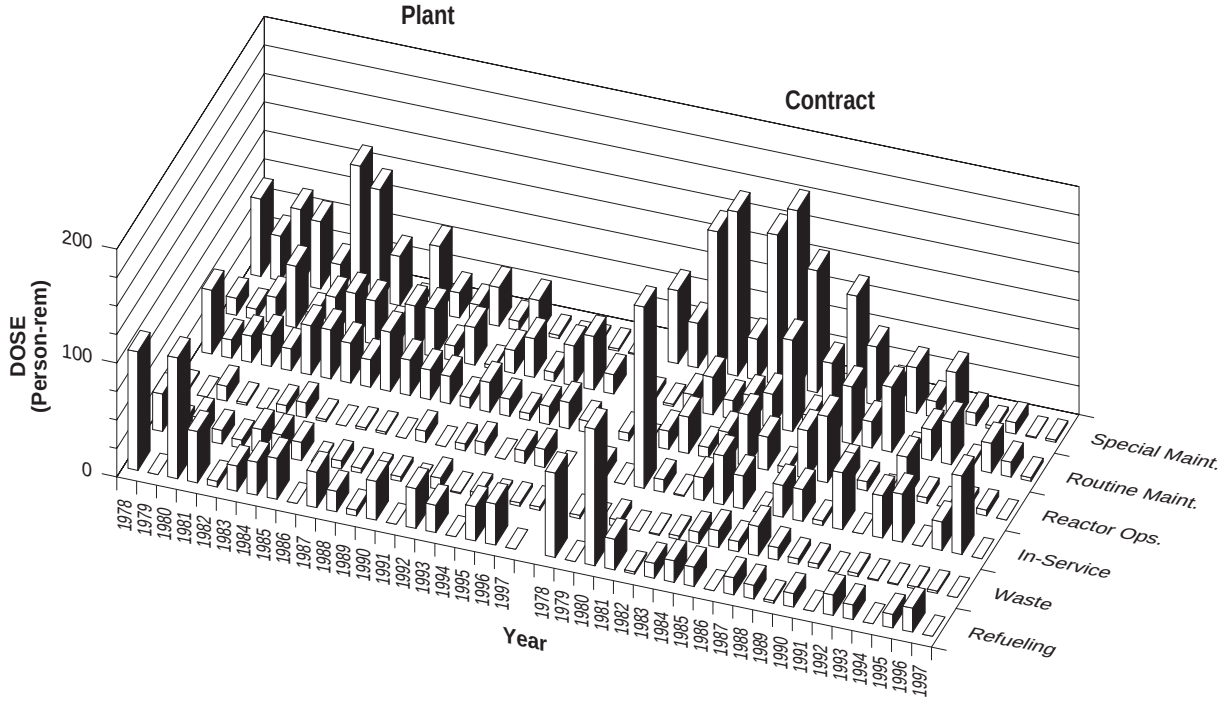
APPENDIX E (continued)

FORT CALHOUN

Dose-Performance Indicators



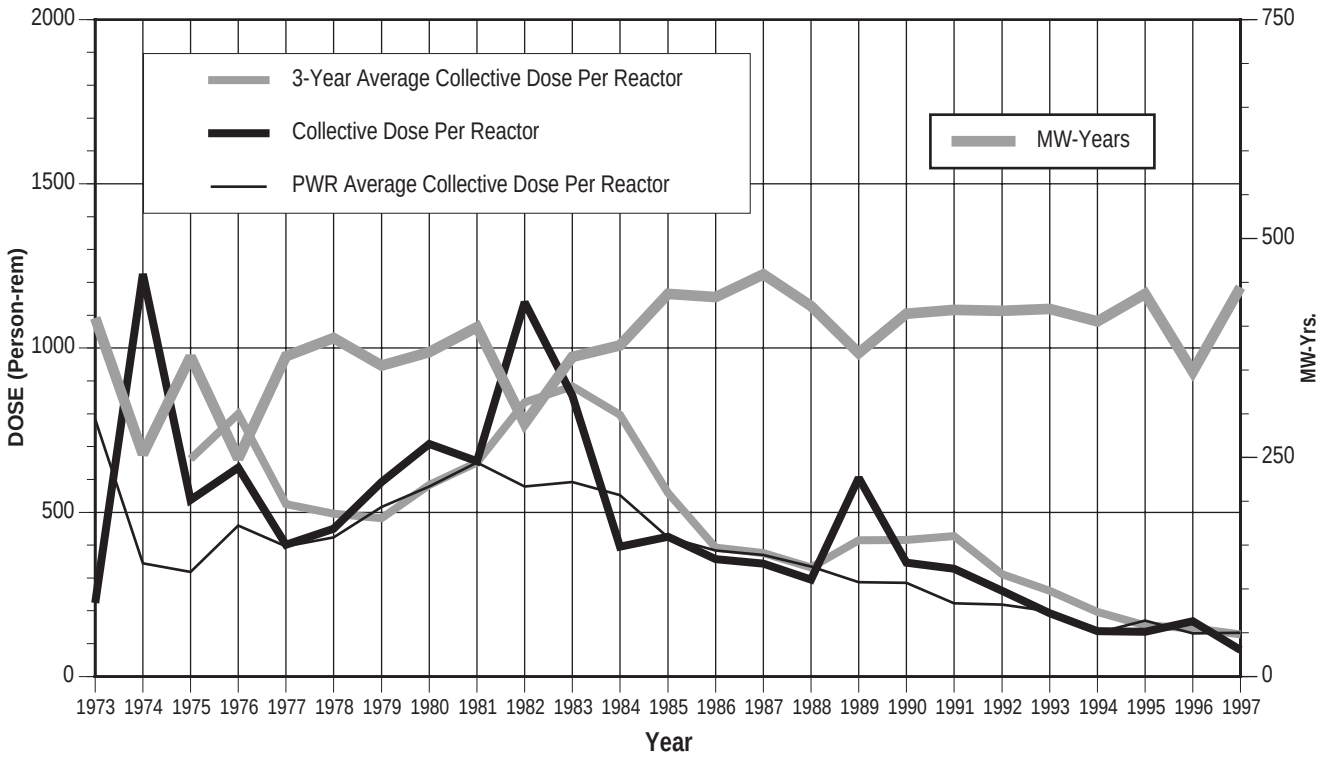
Breakdown by Job Function



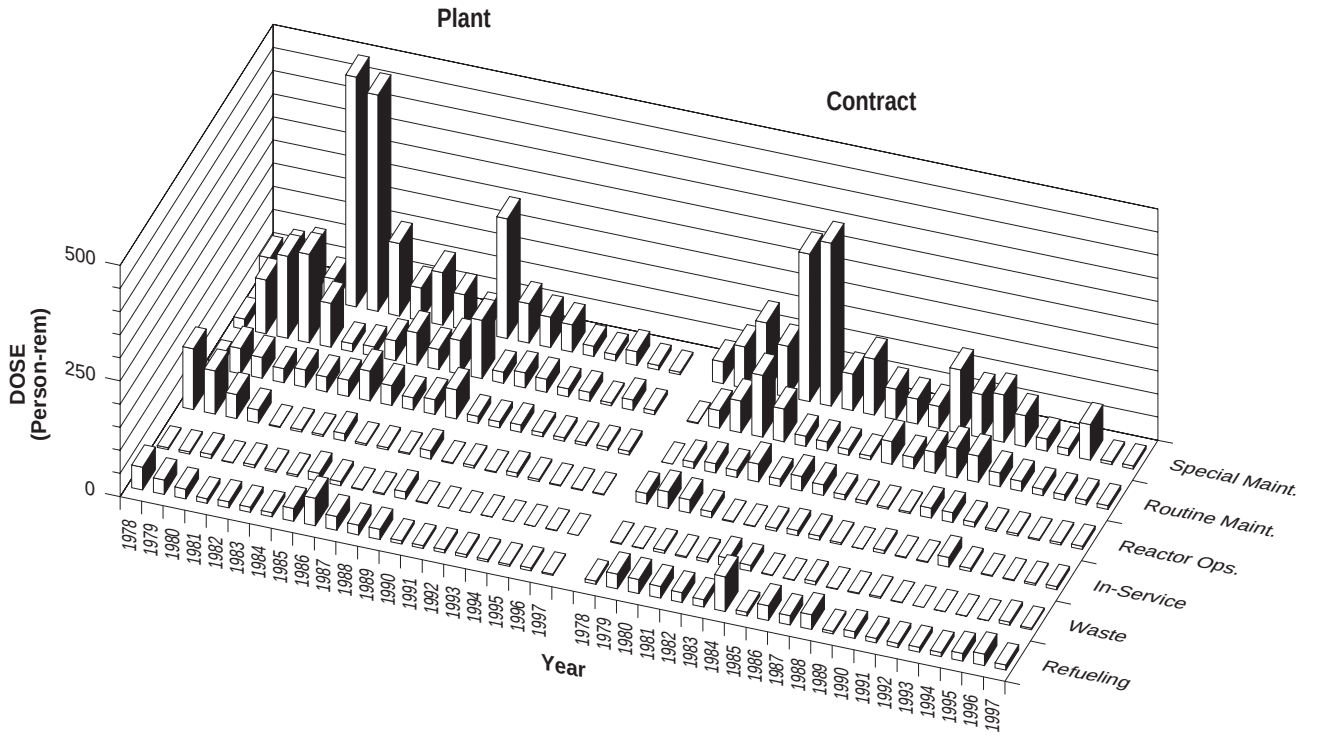
GINNA

Dose-Performance Indicators

PWR

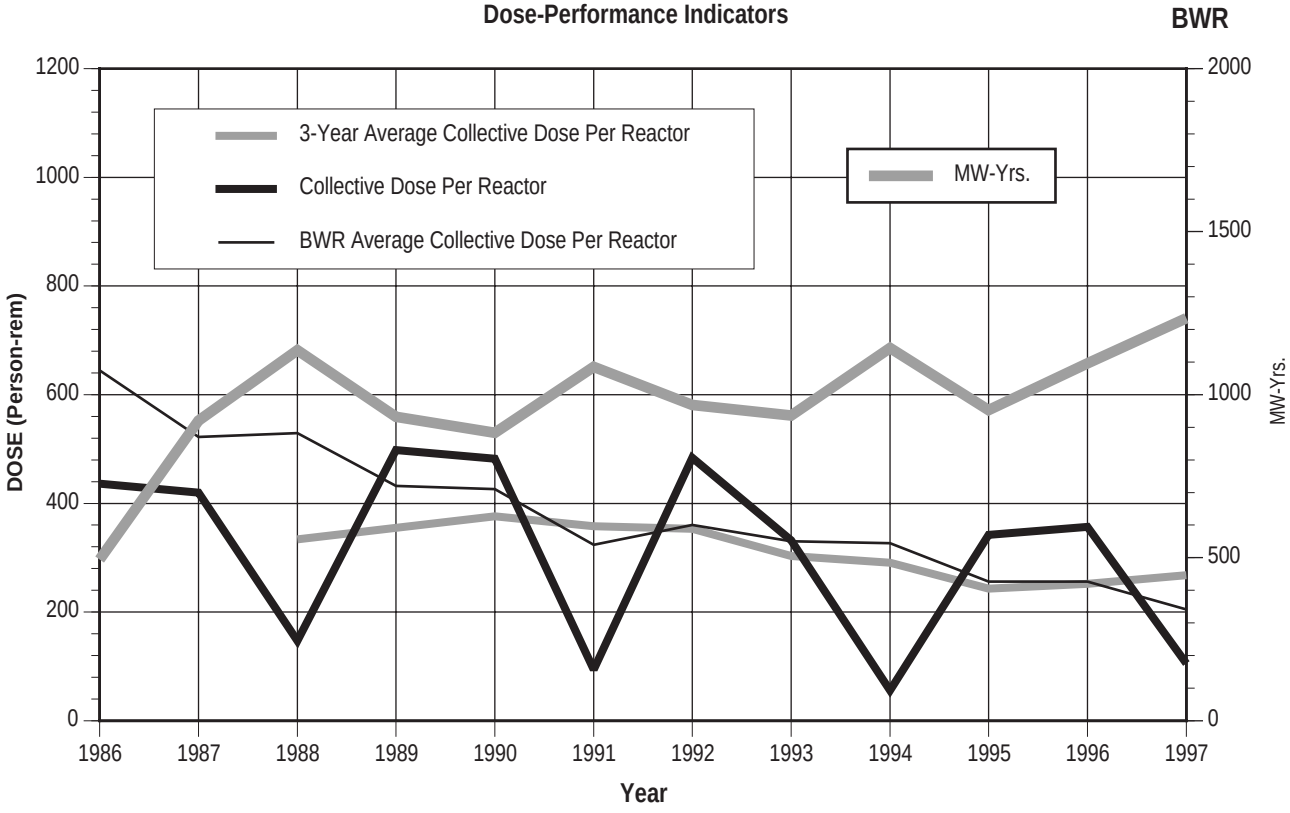


Breakdown by Job Function

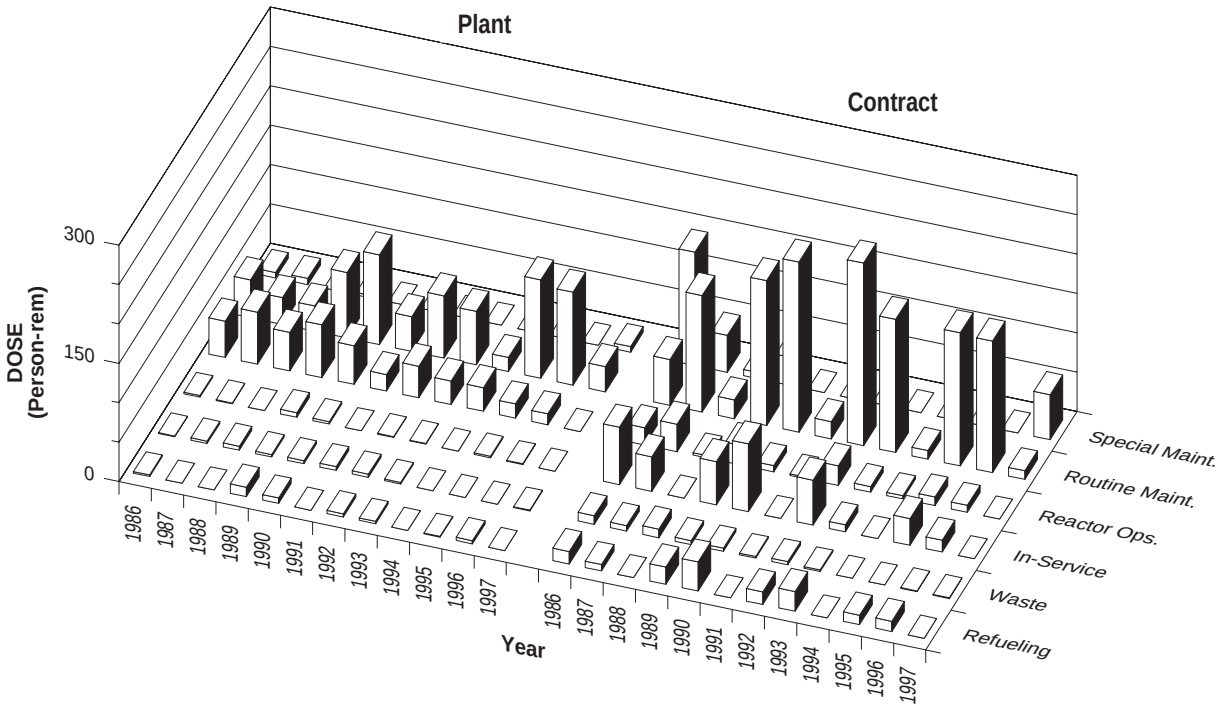


GRAND GULF

Dose-Performance Indicators

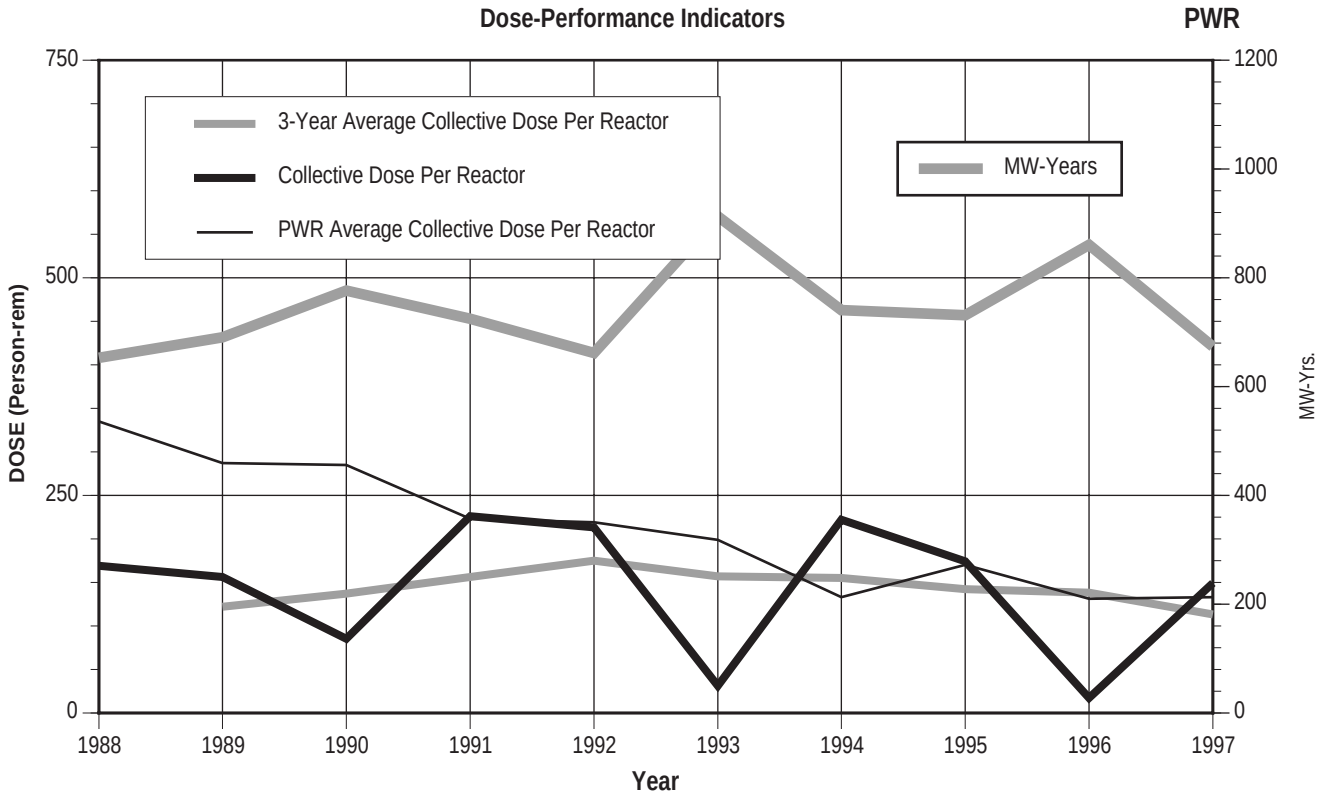


Breakdown by Job Function

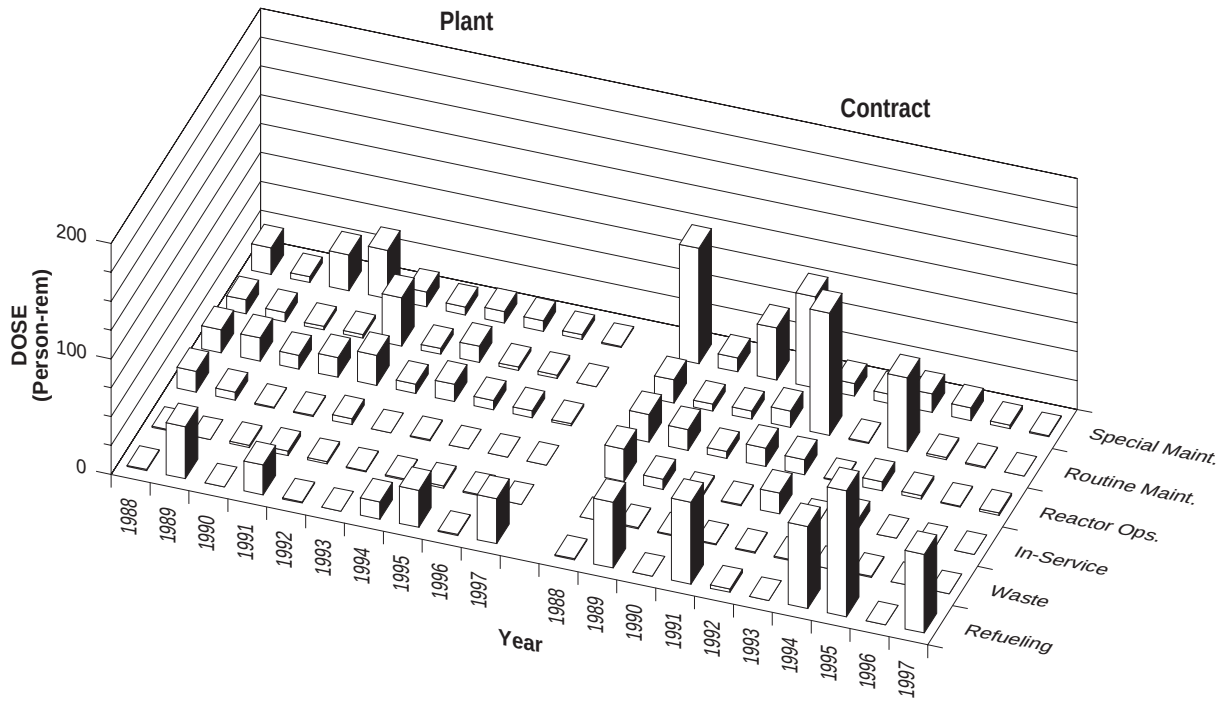


HARRIS

Dose-Performance Indicators



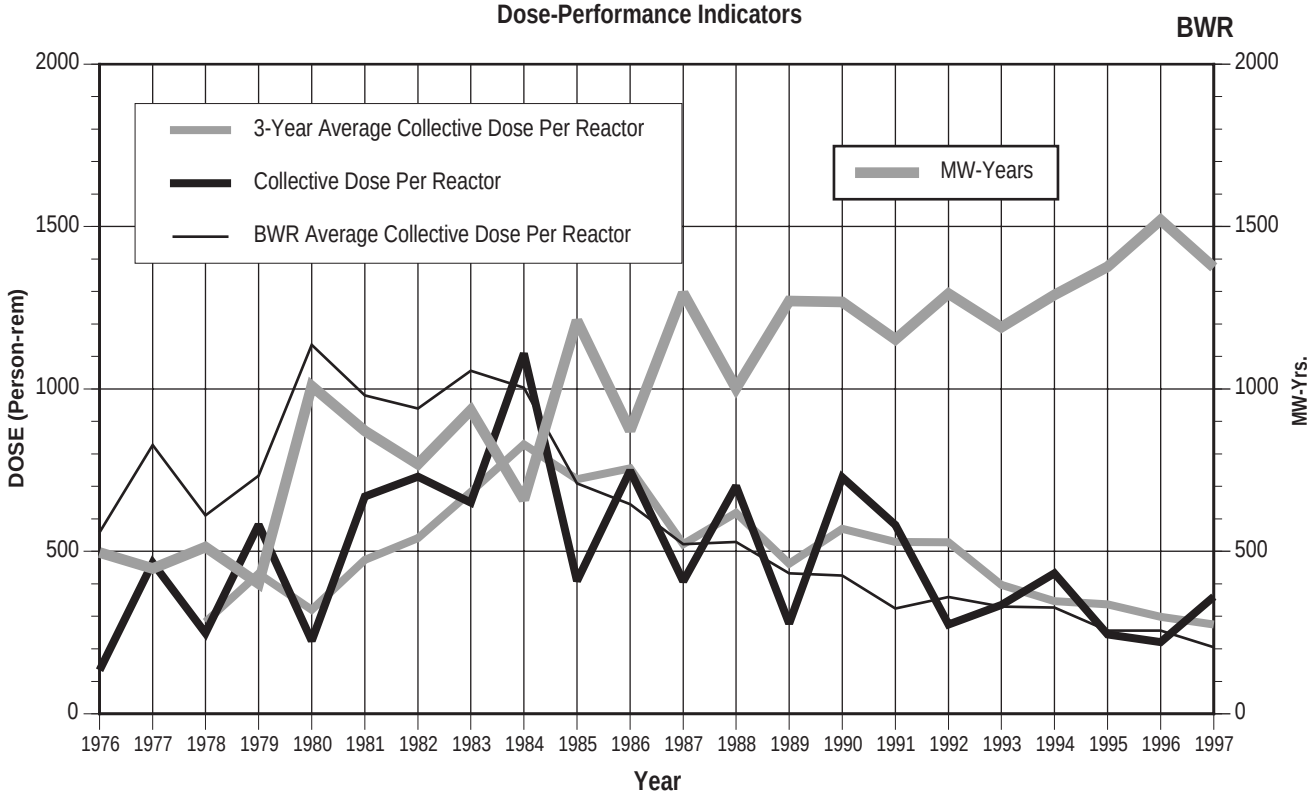
Breakdown by Job Function



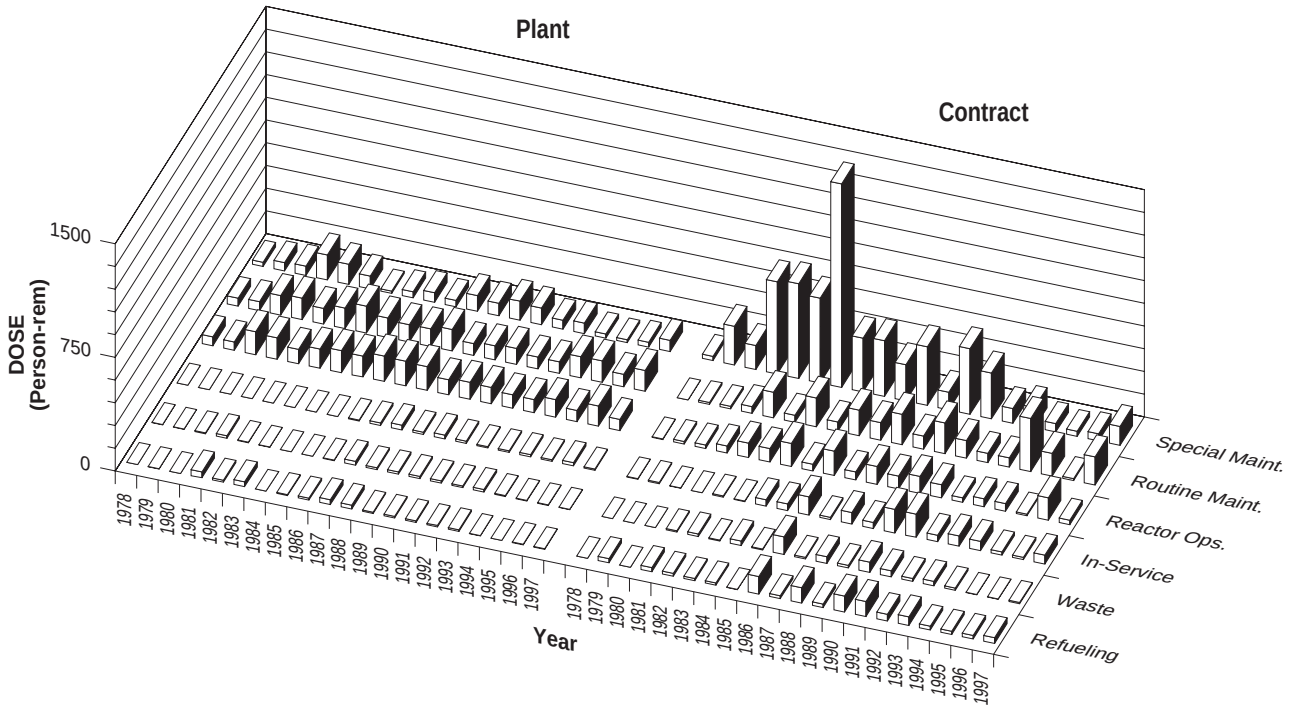
APPENDIX E (continued)

HATCH 1, 2

Dose-Performance Indicators



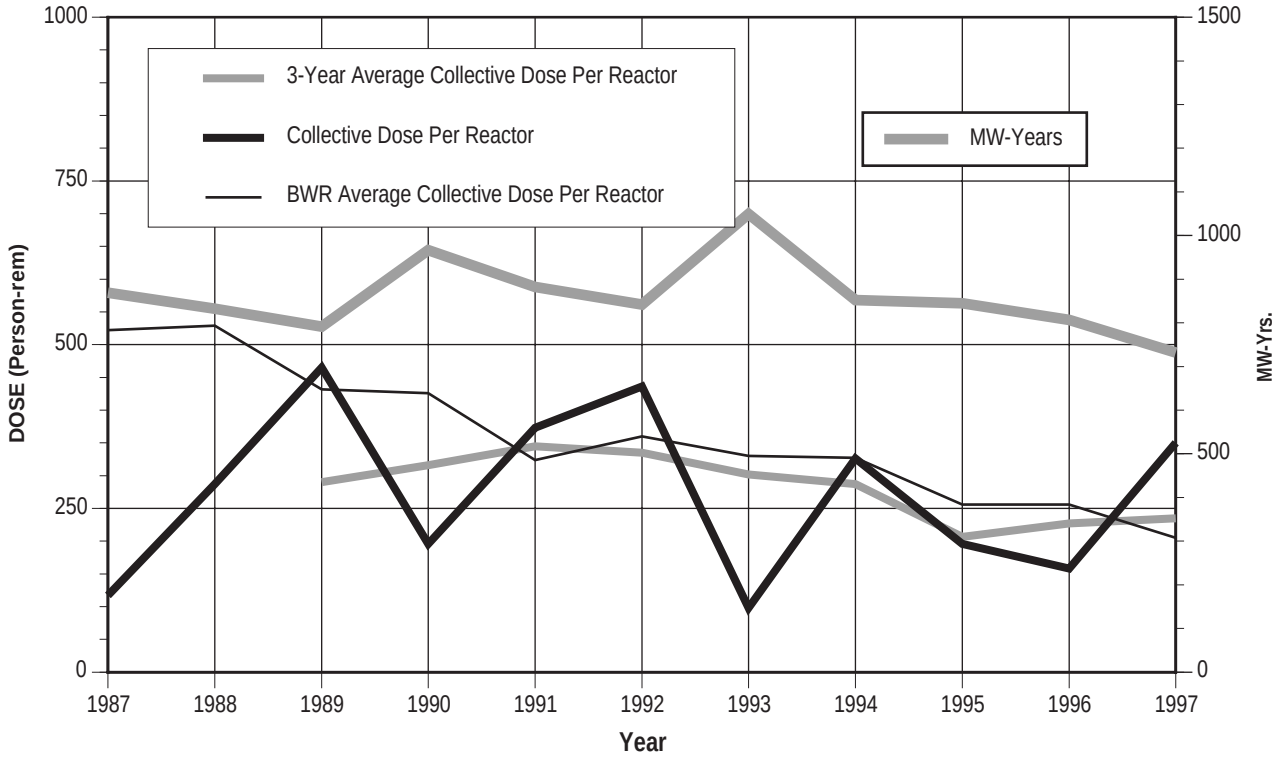
Breakdown by Job Function



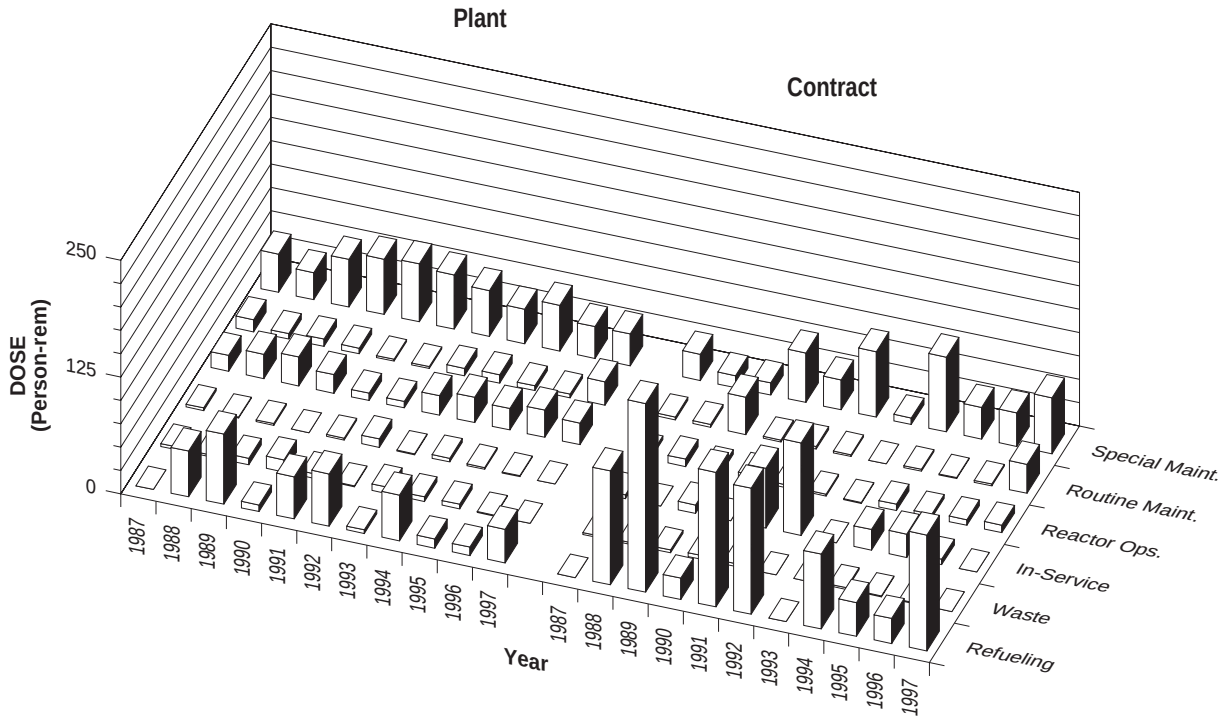
HOPE CREEK 1

Dose-Performance Indicators

BWR



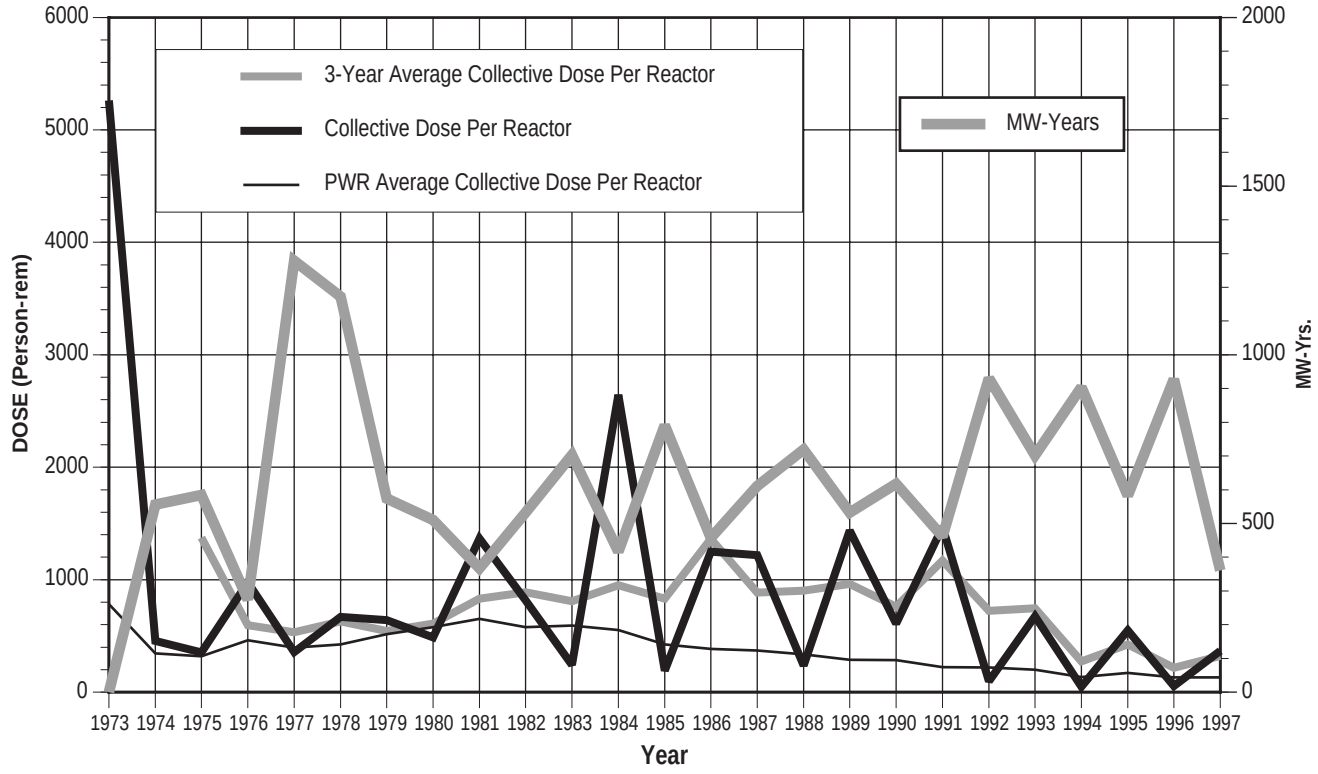
Breakdown by Job Function



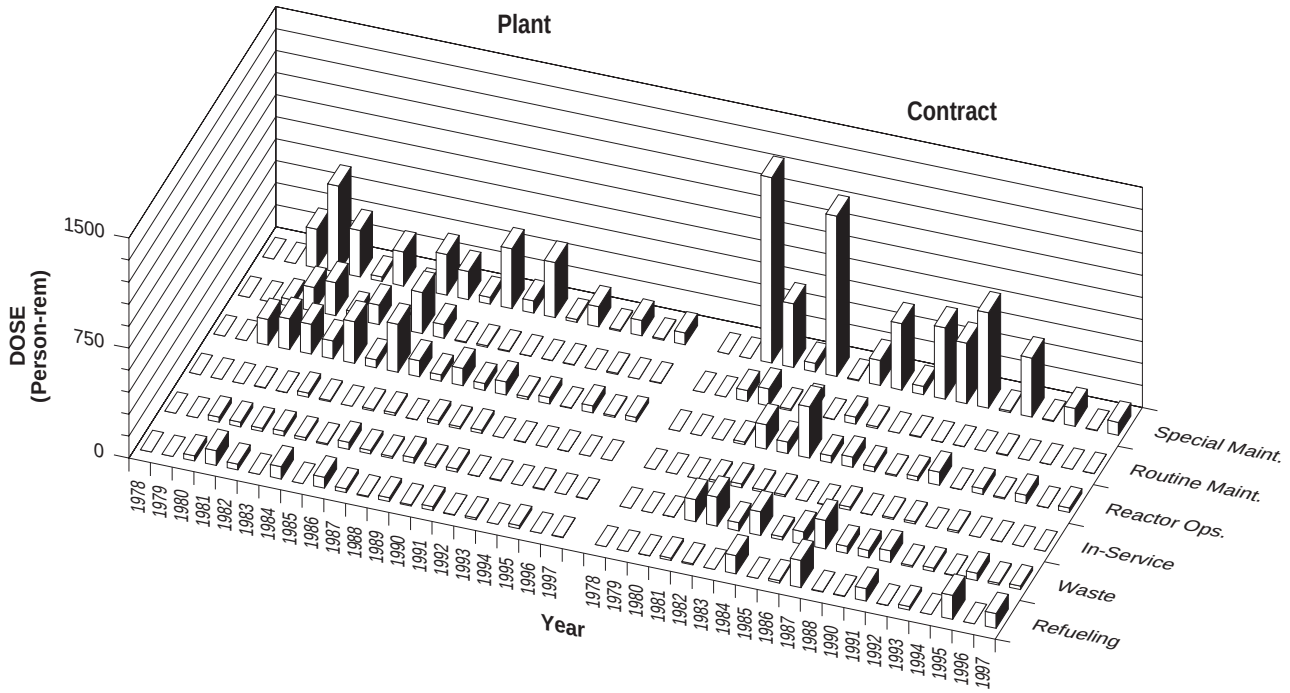
APPENDIX E (continued)

INDIAN POINT 2

Dose-Performance Indicators **PWR**



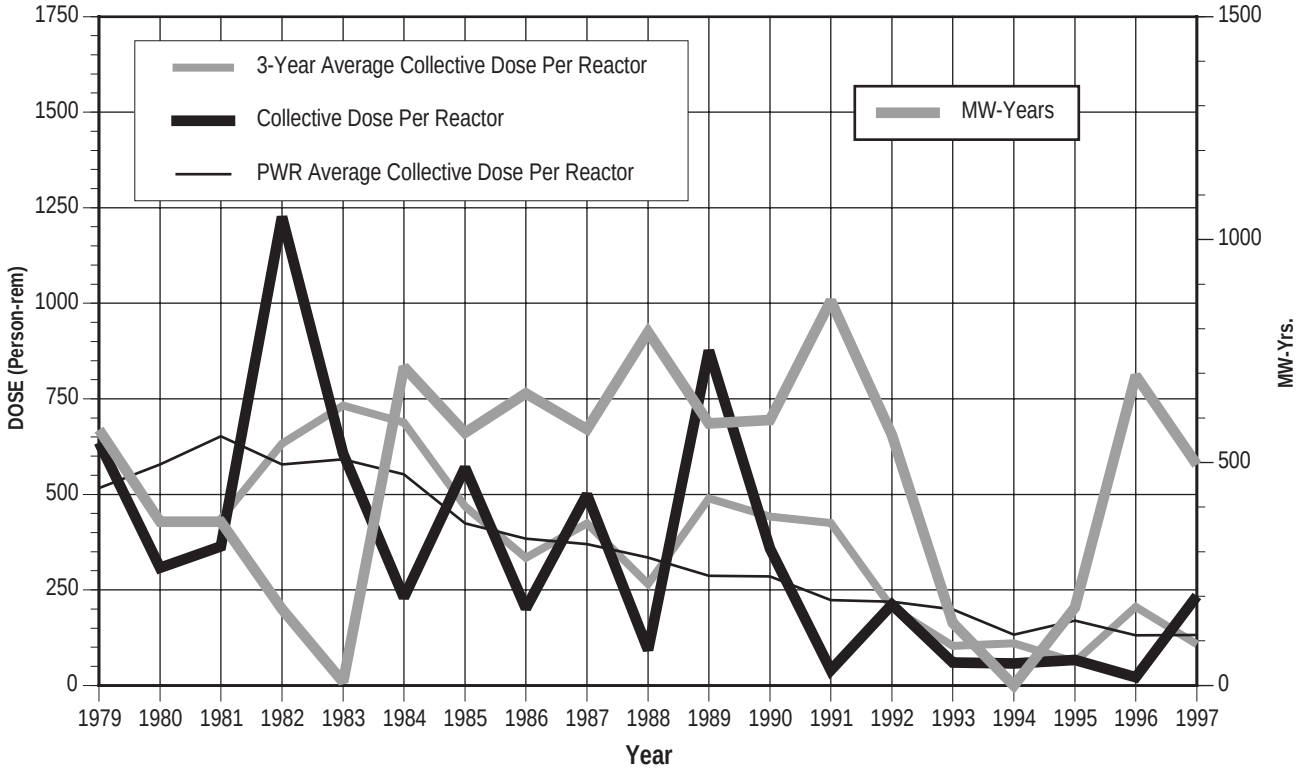
Breakdown by Job Function



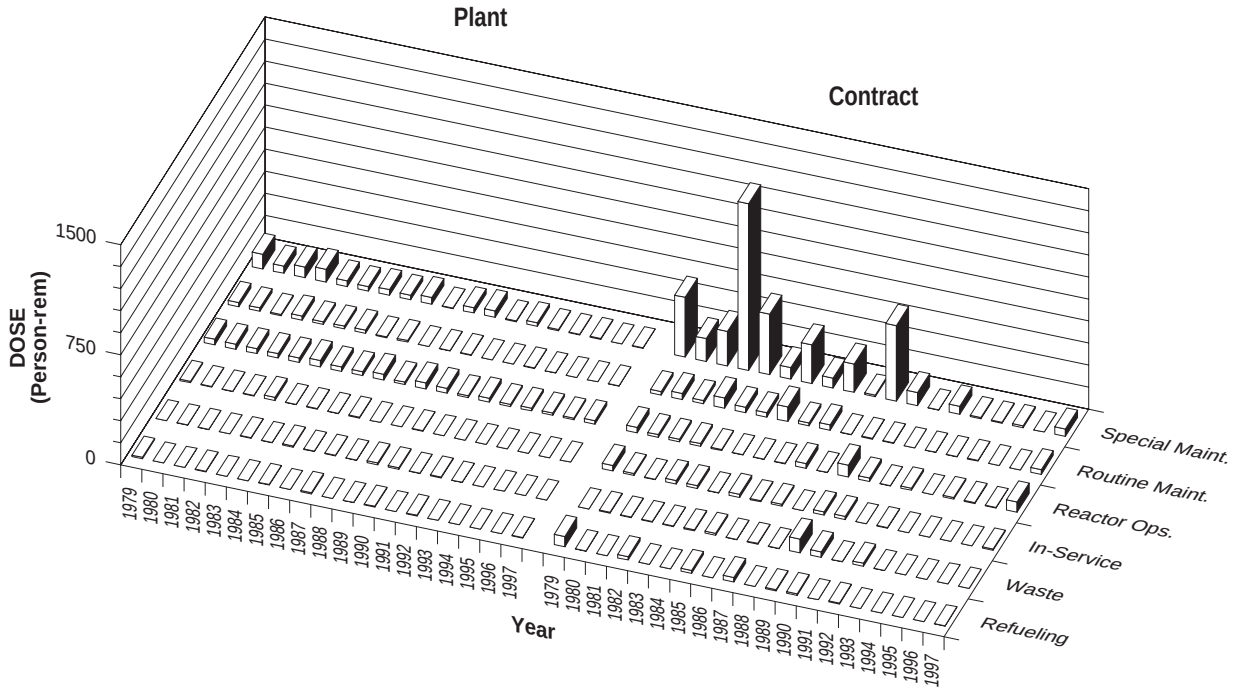
INDIAN POINT 3

Dose-Performance Indicators

PWR

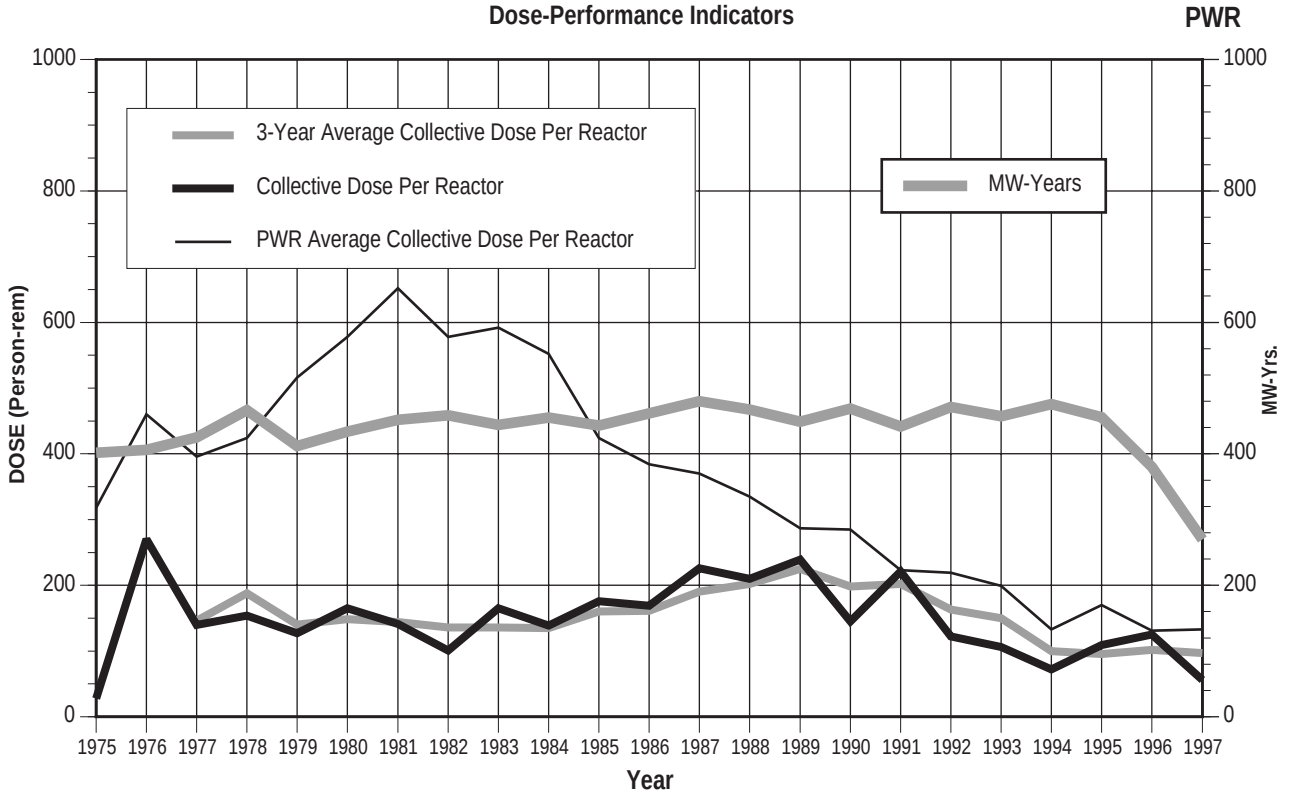


Breakdown by Job Function

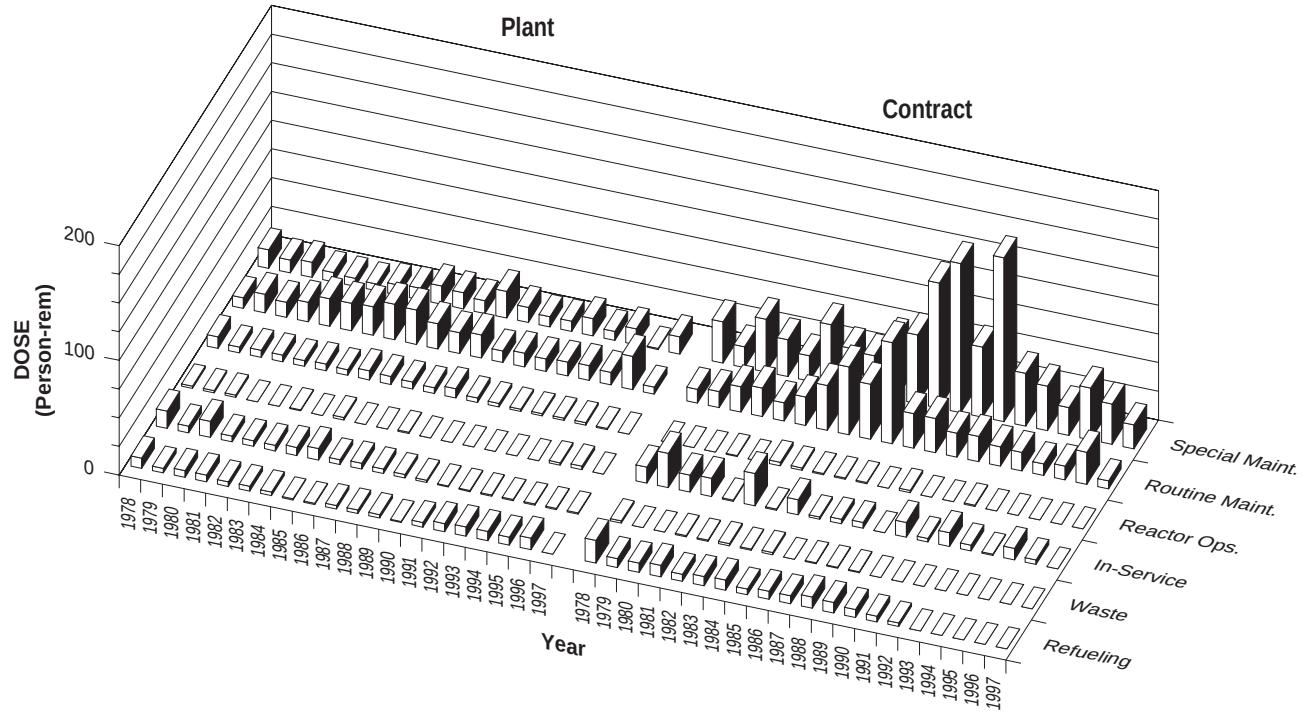


KEWAUNEE

Dose-Performance Indicators



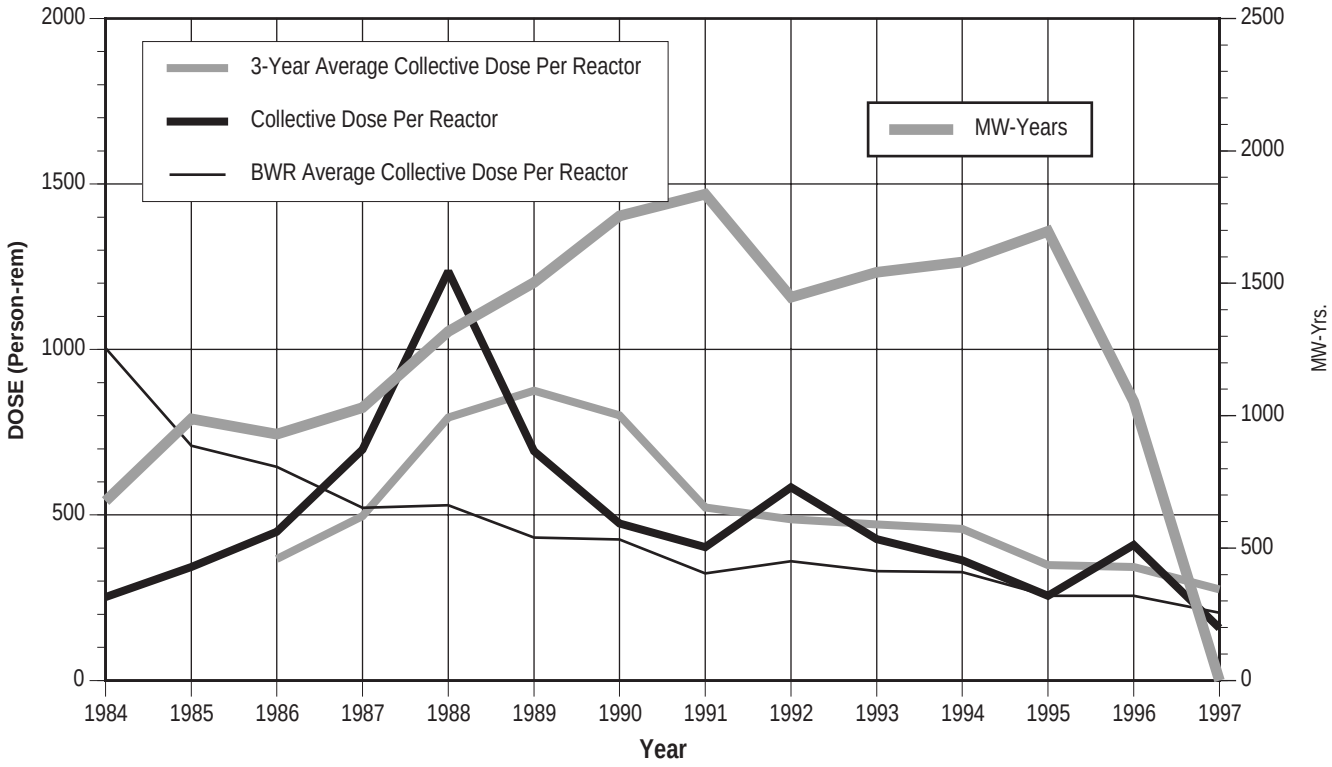
Breakdown by Job Function



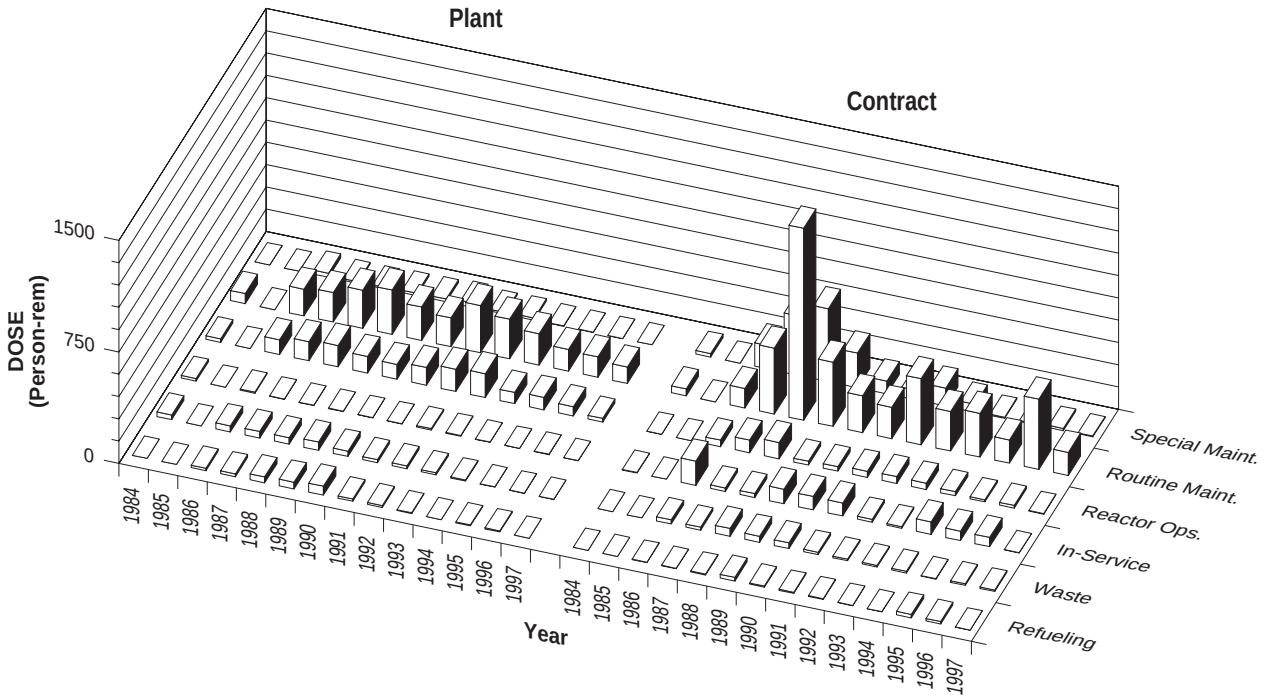
LASALLE 1, 2

Dose-Performance Indicators

BWR



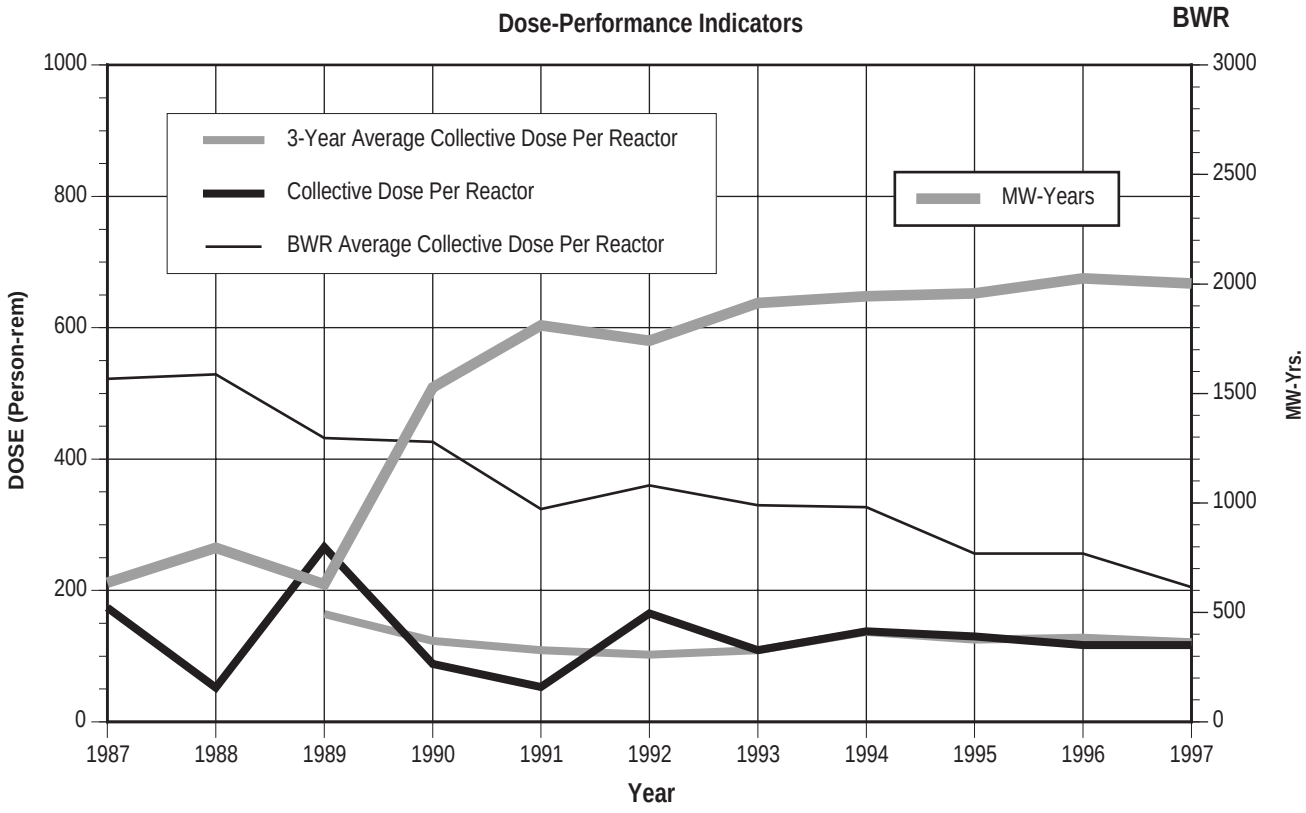
Breakdown by Job Function



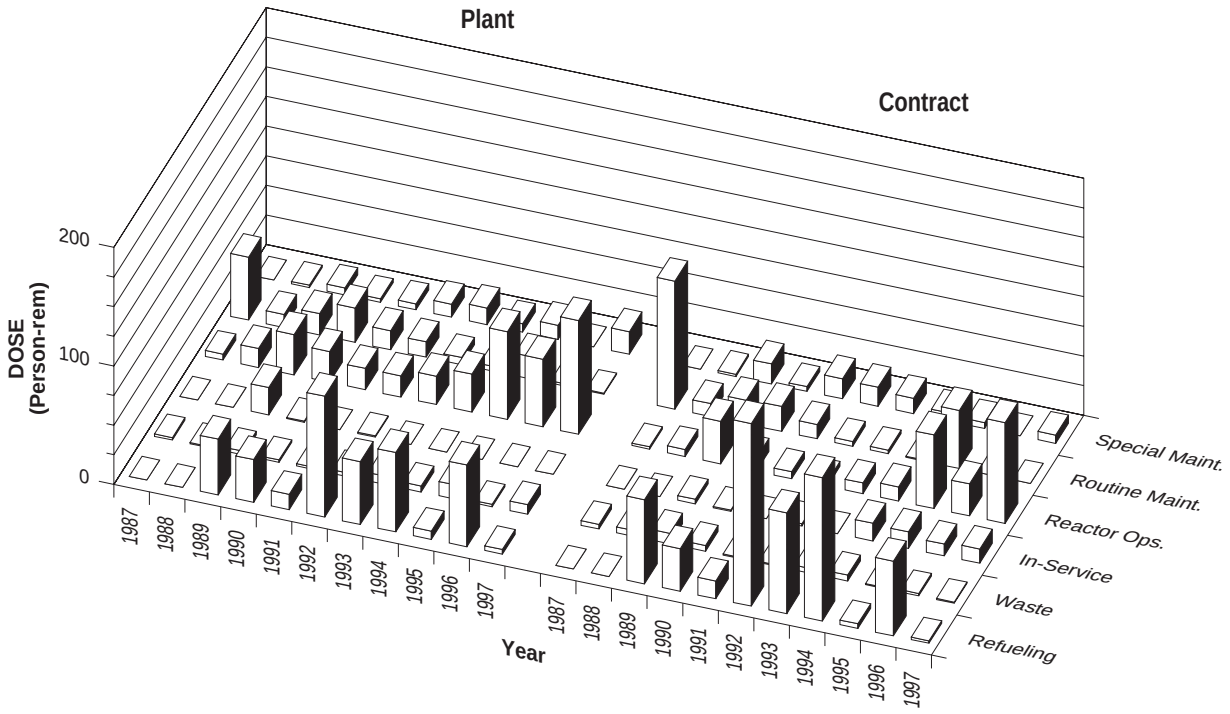
APPENDIX E (continued)

LIMERICK 1, 2

Dose-Performance Indicators



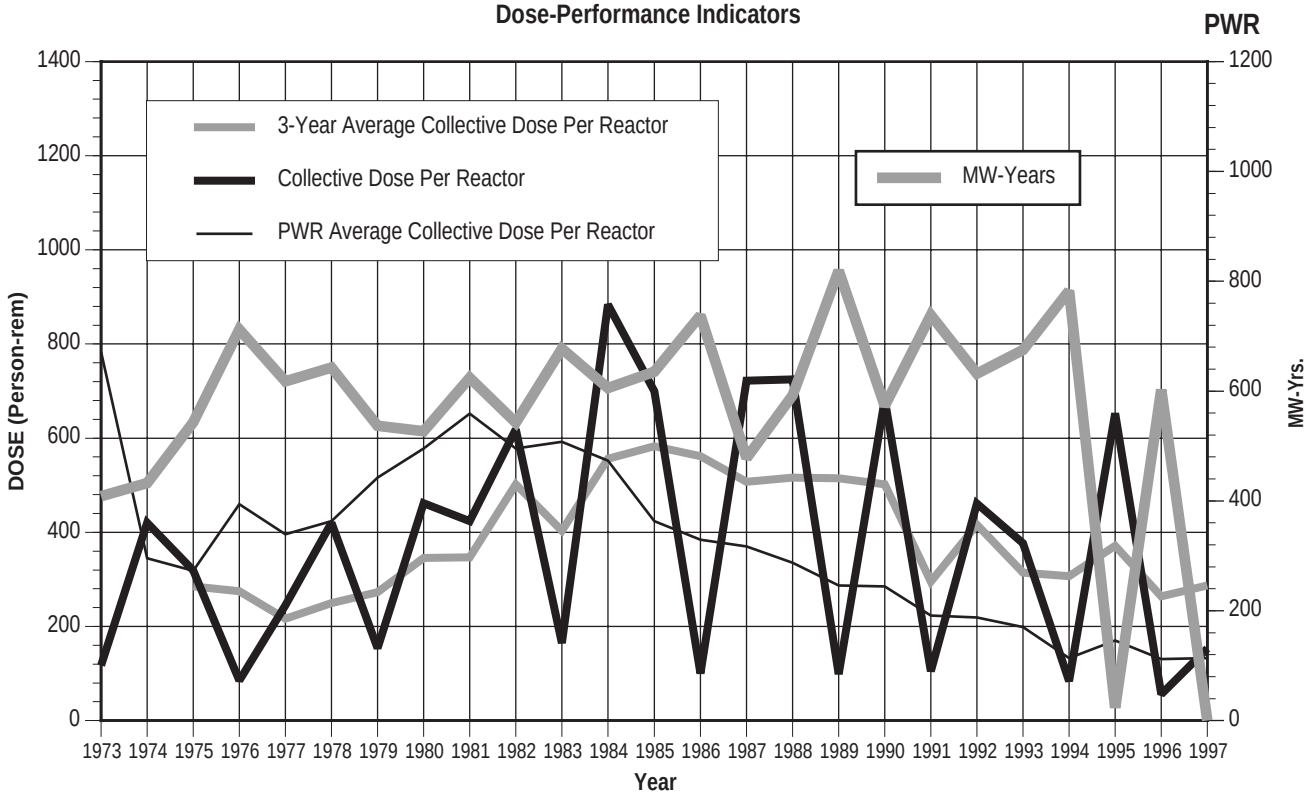
Breakdown by Job Function



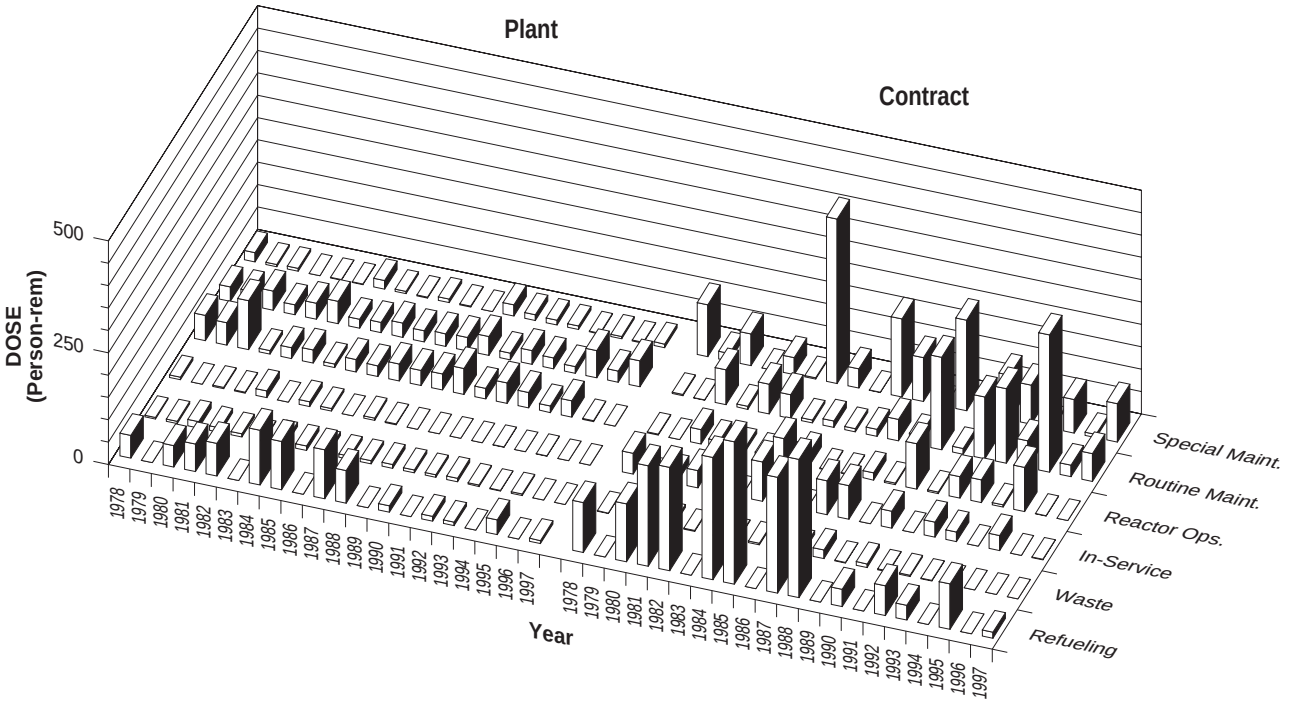
APPENDIX E (continued)

MAINE YANKEE

Dose-Performance Indicators



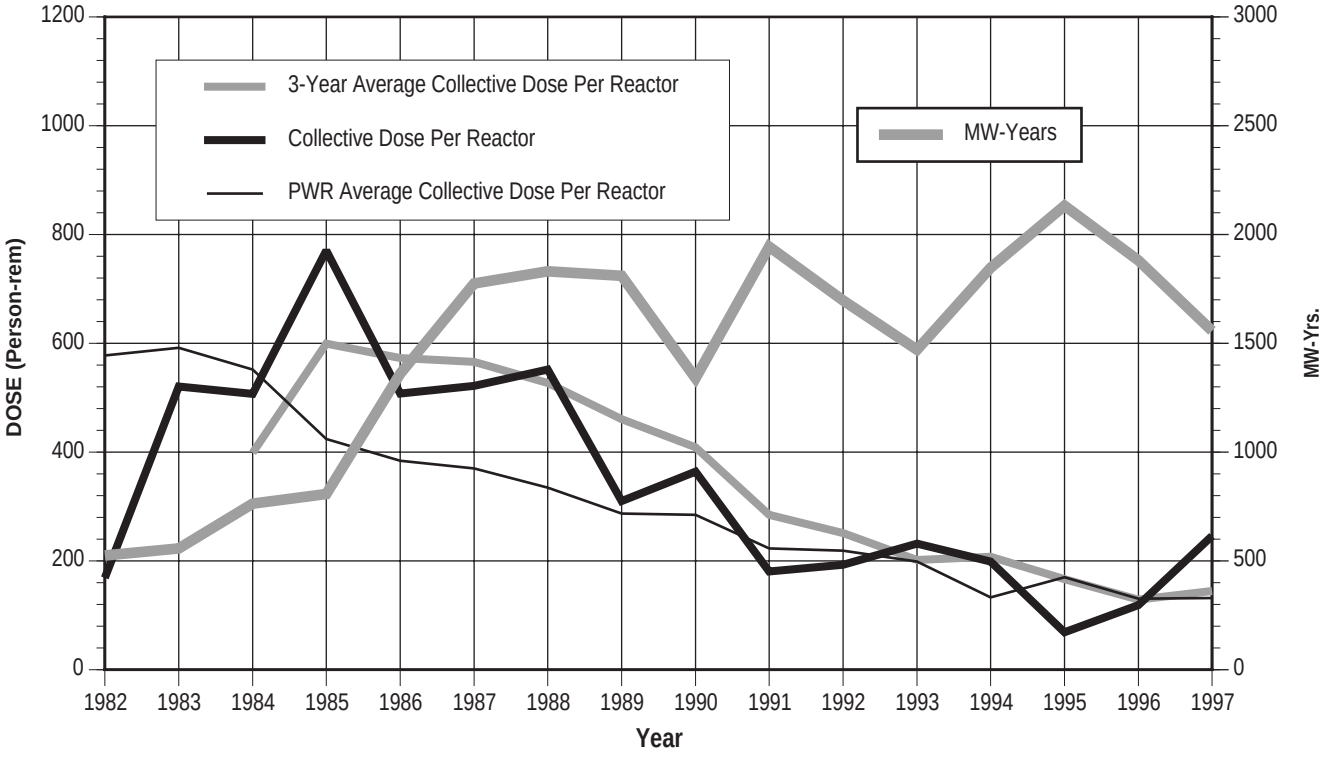
Breakdown by Job Function



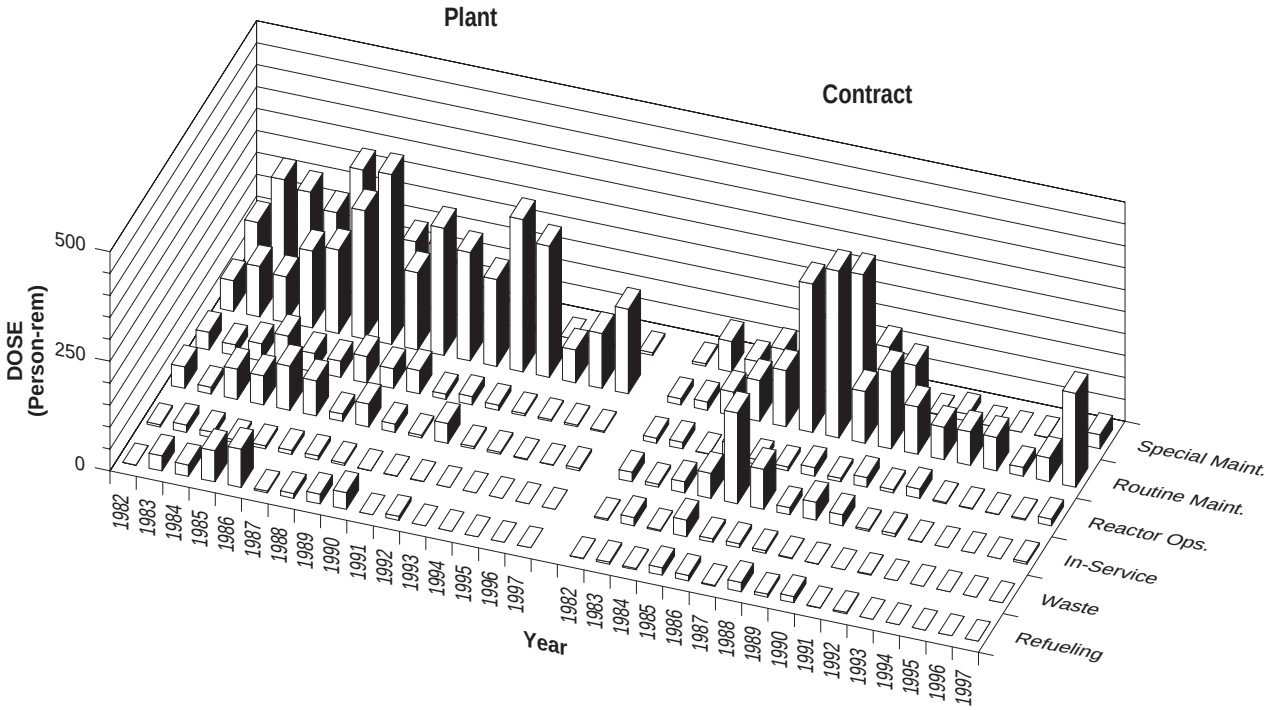
MCGUIRE 1, 2

Dose-Performance Indicators

PWR

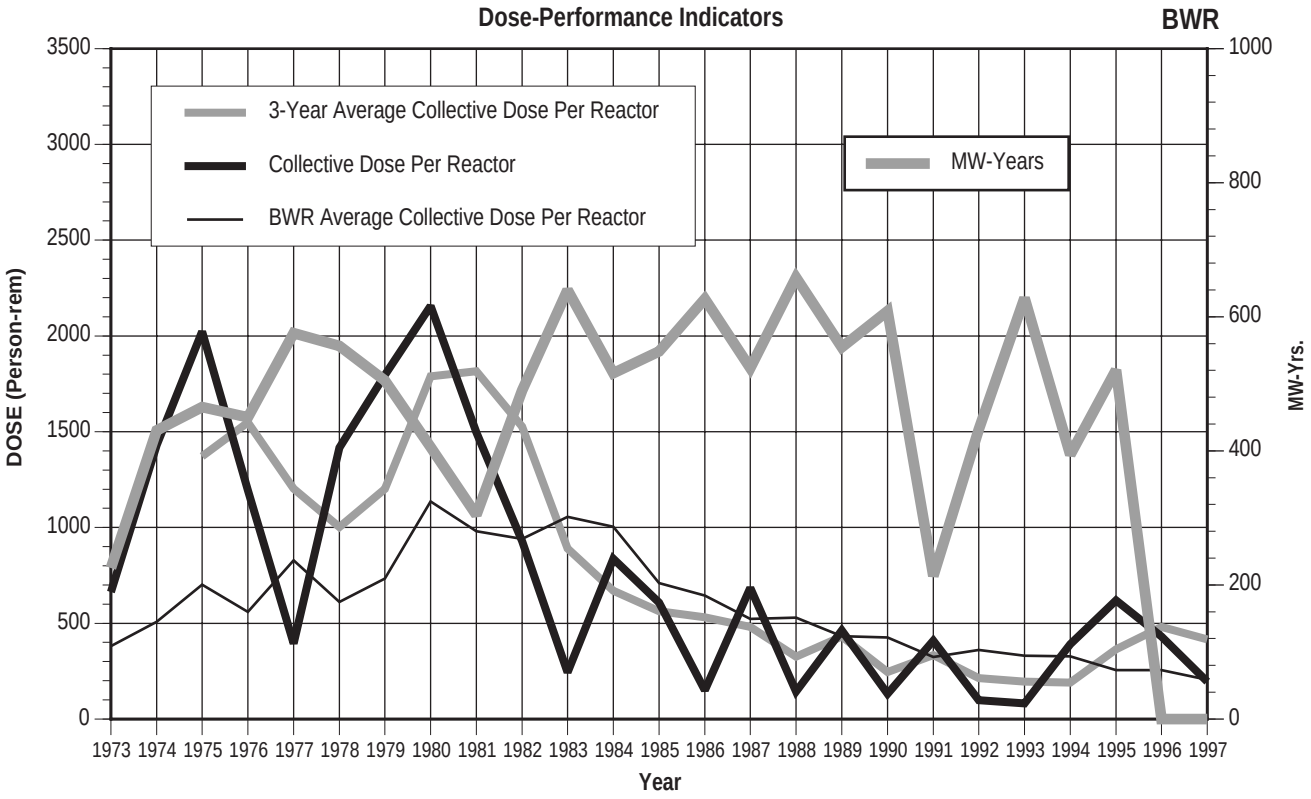


Breakdown by Job Function

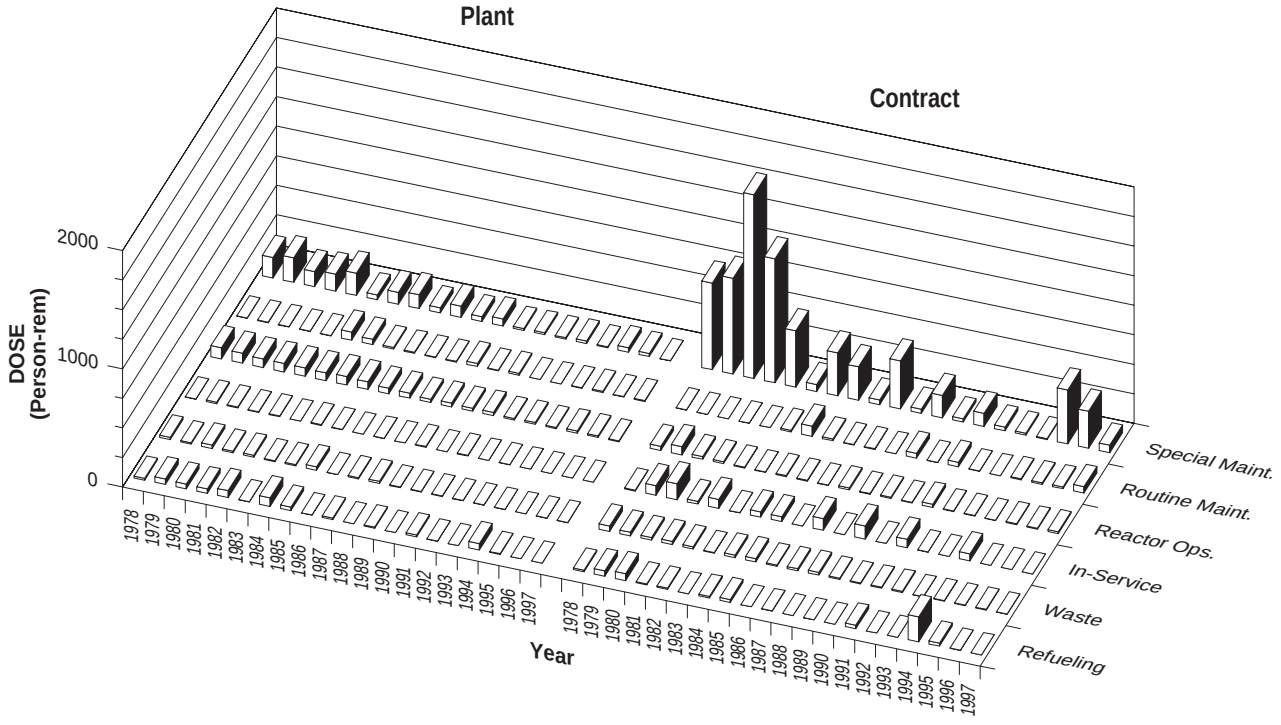


MILLSTONE POINT 1

Dose-Performance Indicators

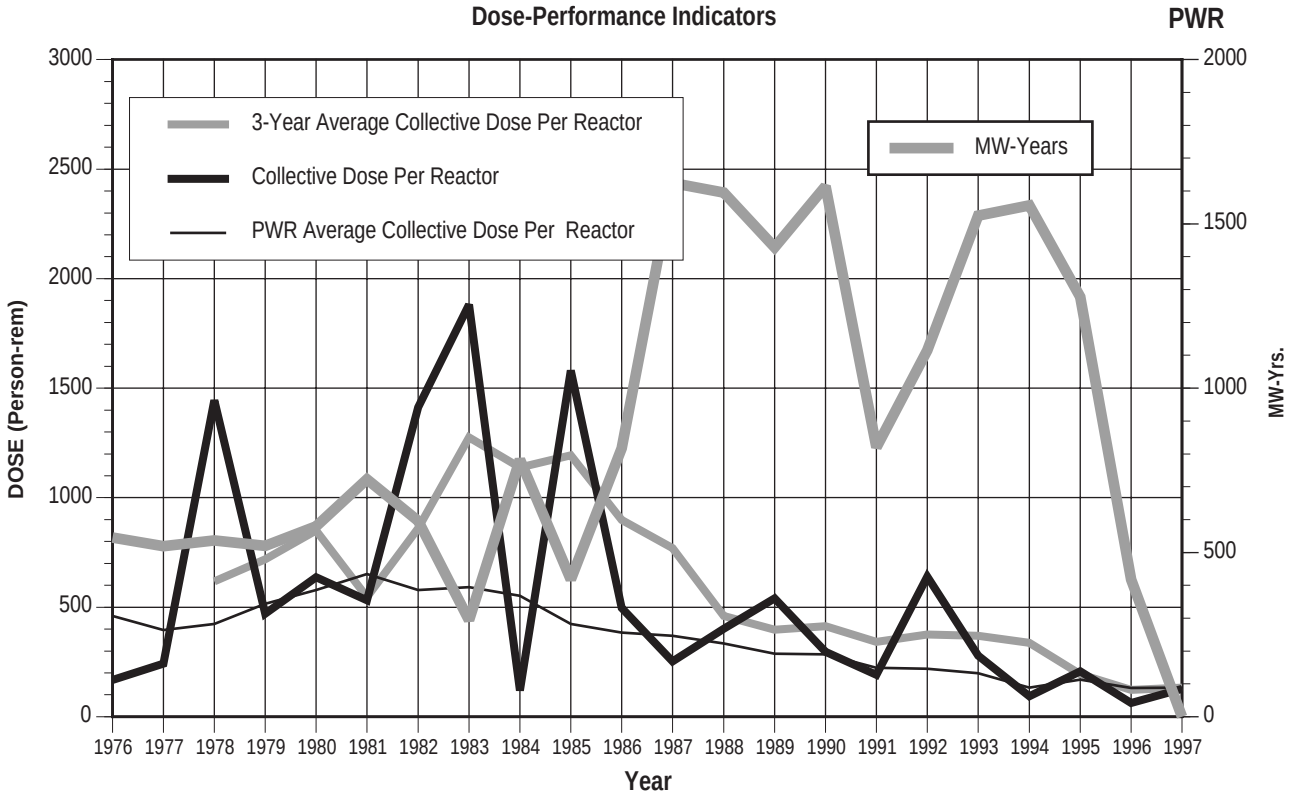


Breakdown by Job Function

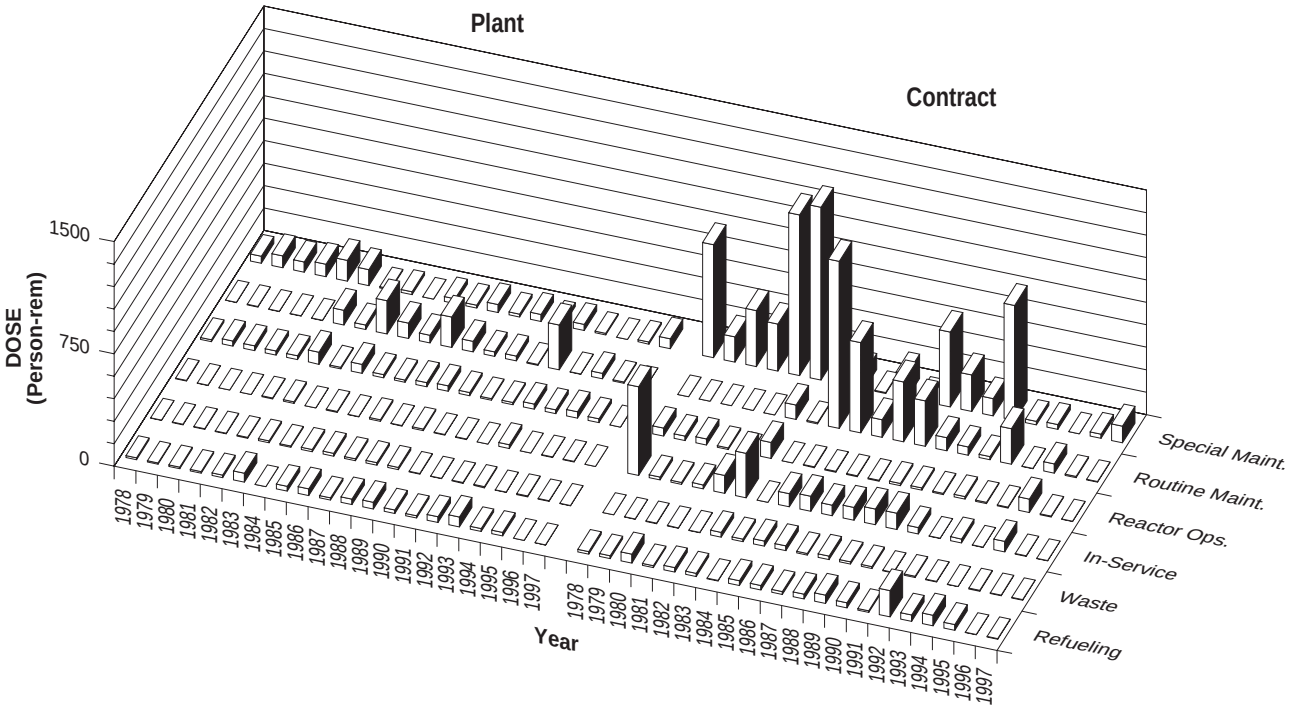


MILLSTONE POINT 2, 3

Dose-Performance Indicators

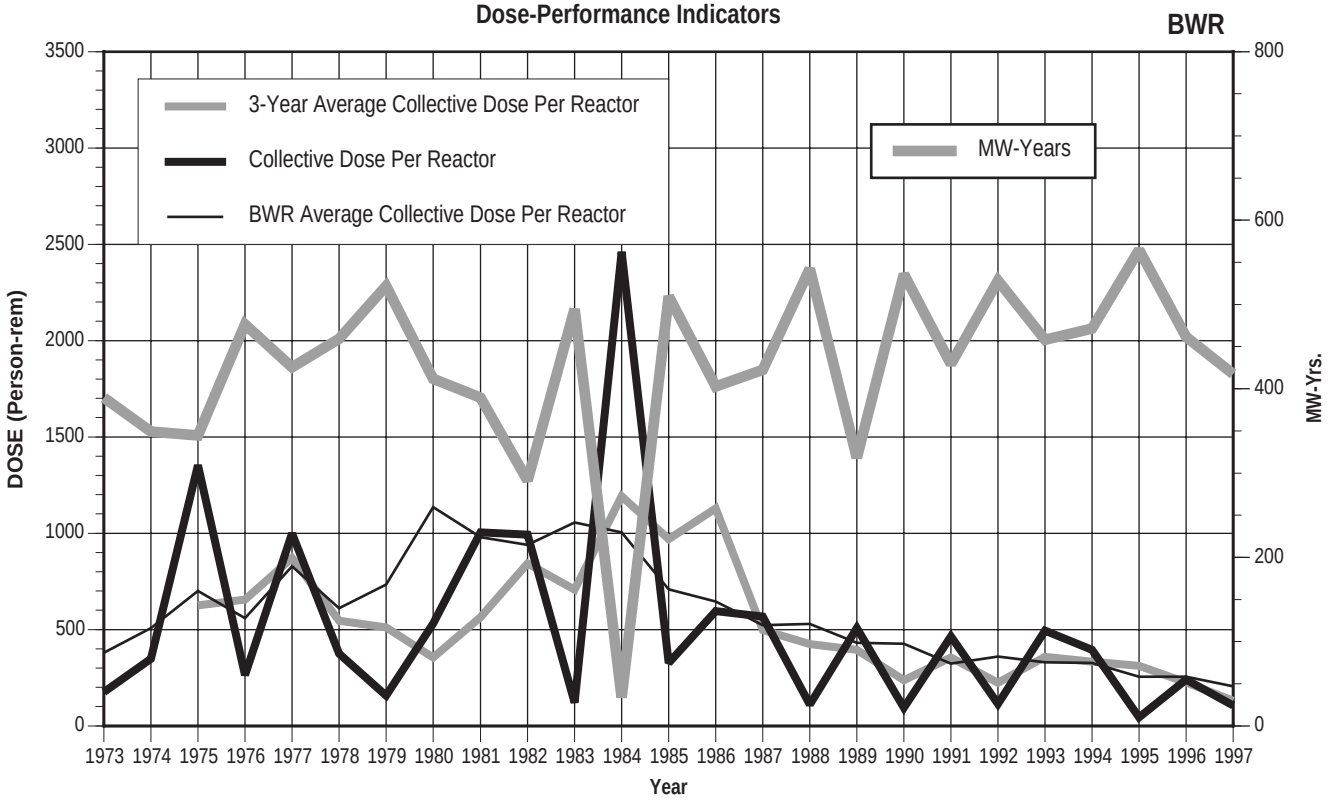


Breakdown by Job Function

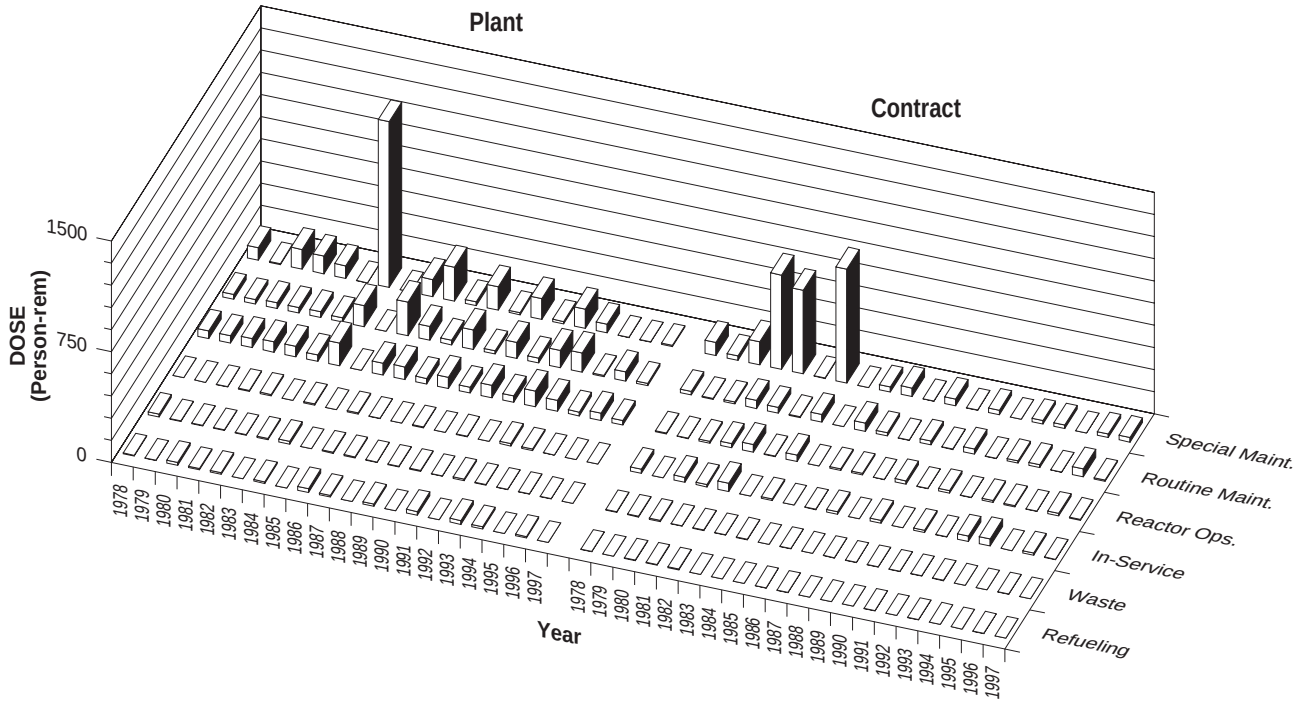


MONTICELLO

Dose-Performance Indicators



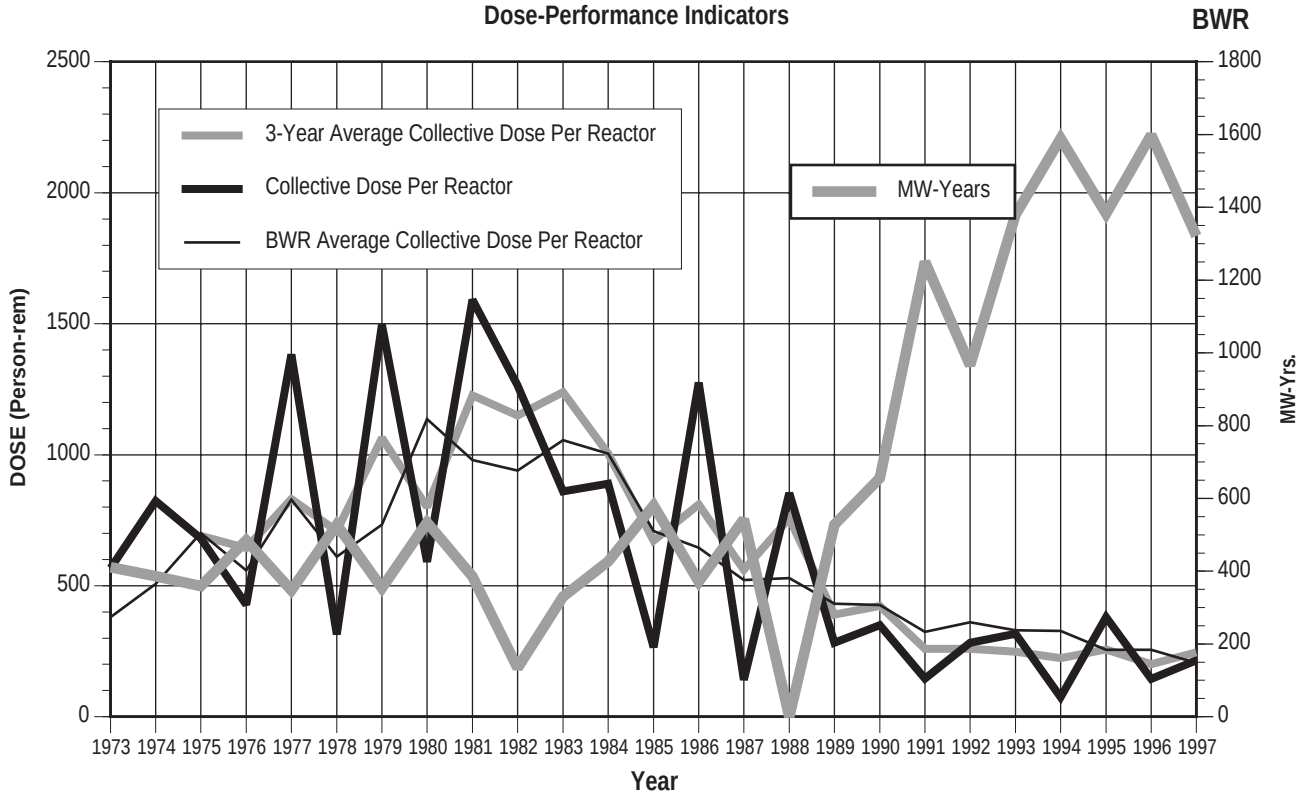
Breakdown by Job Function



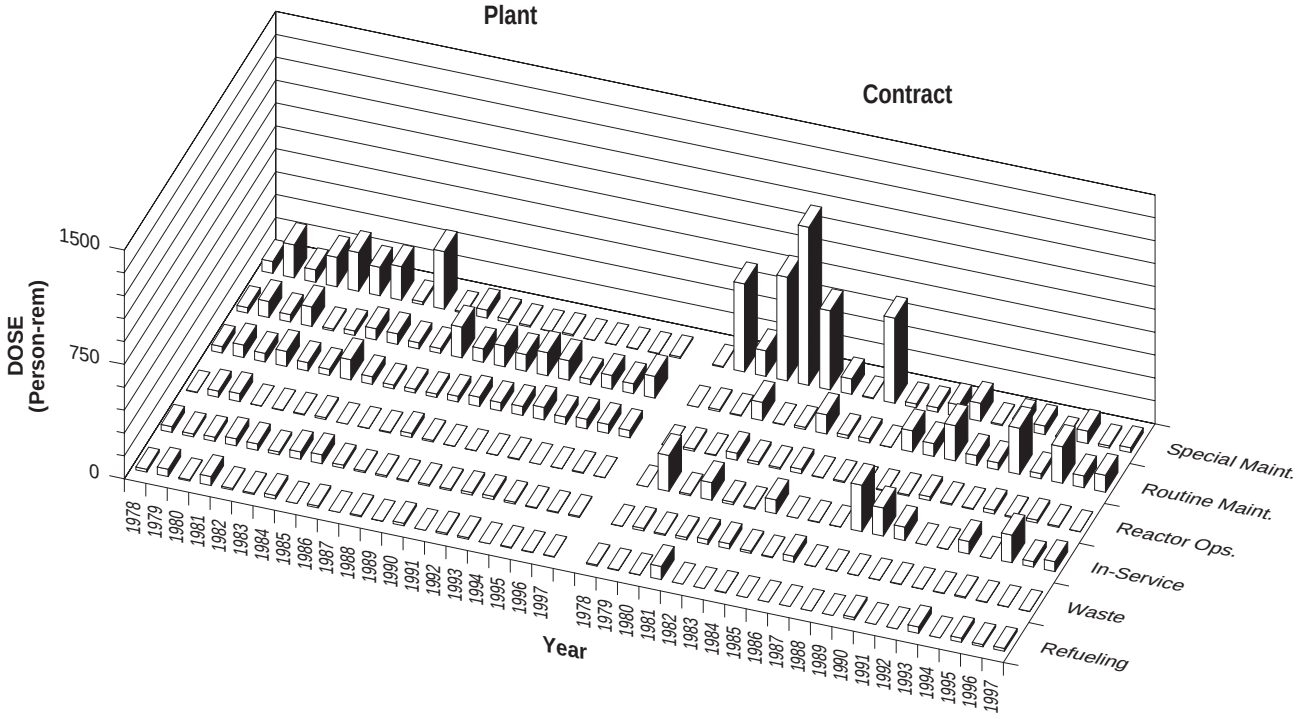
APPENDIX E (continued)

NINE MILE POINT 1, 2

Dose-Performance Indicators



Breakdown by Job Function

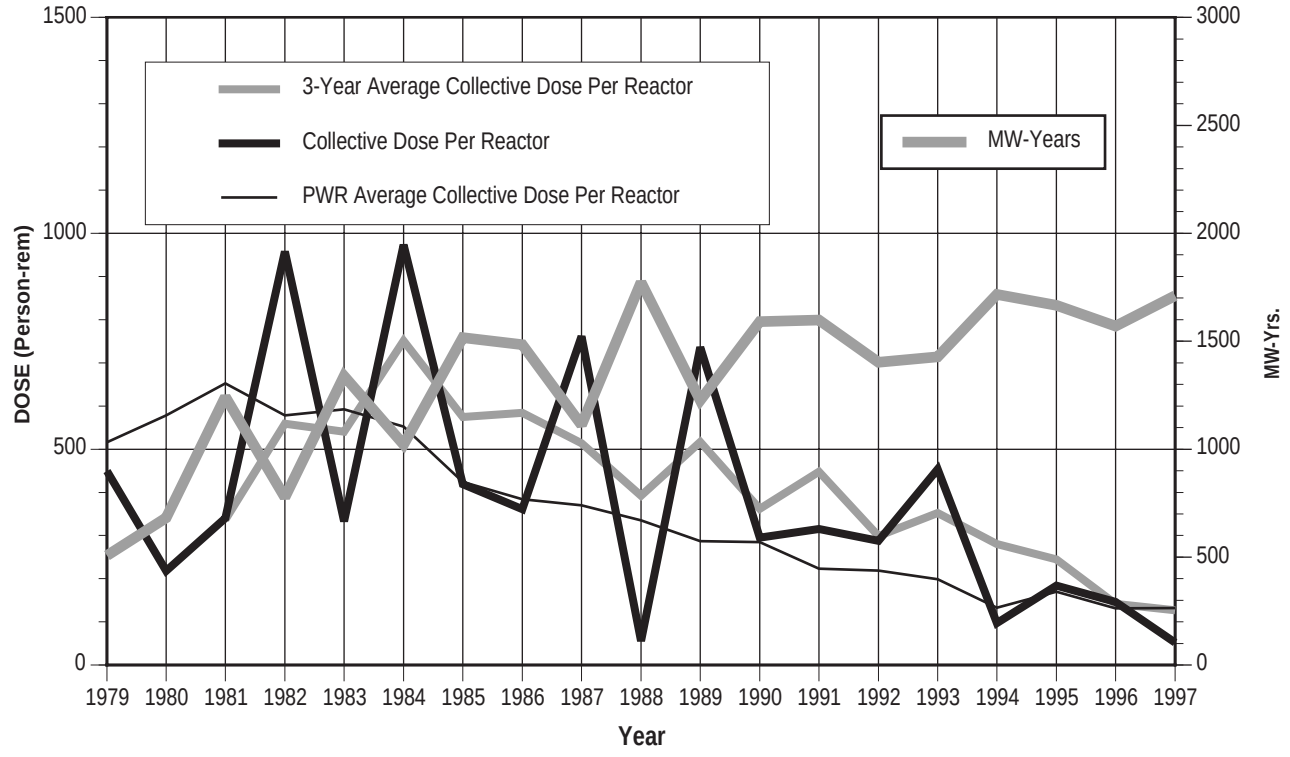


APPENDIX E (continued)

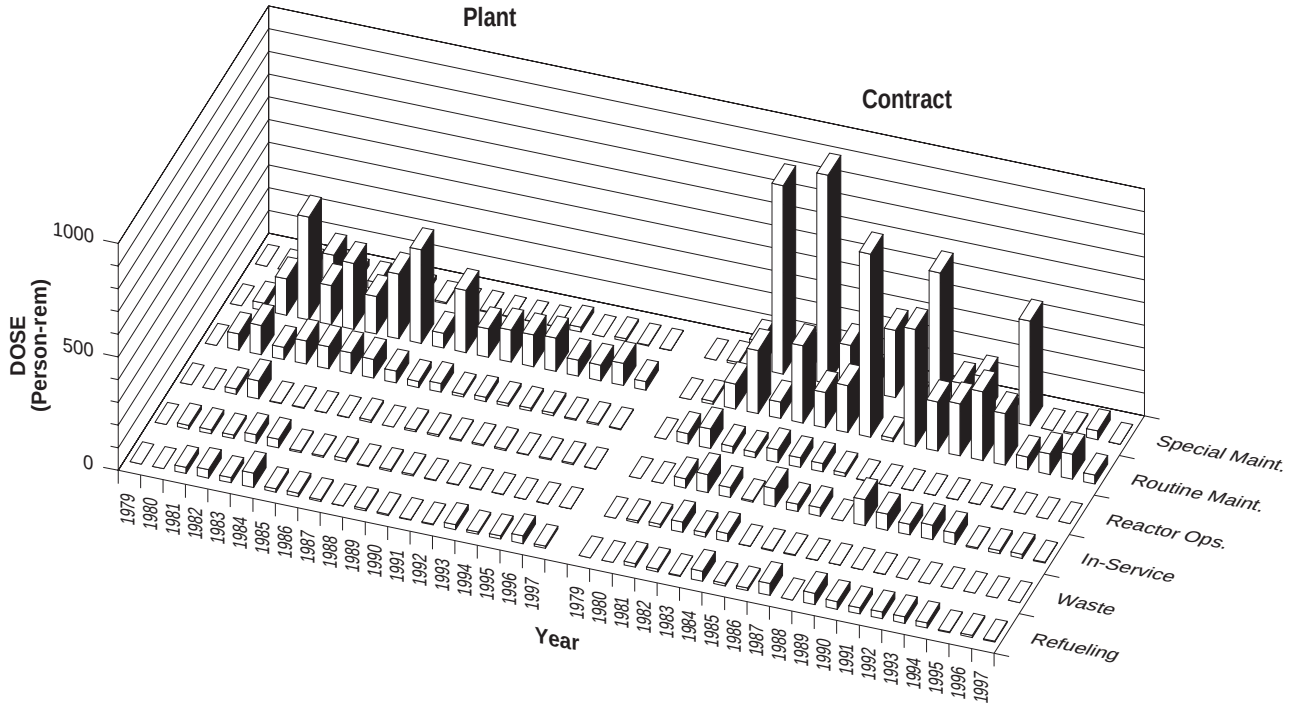
NORTH ANNA 1, 2

Dose-Performance Indicators

PWR

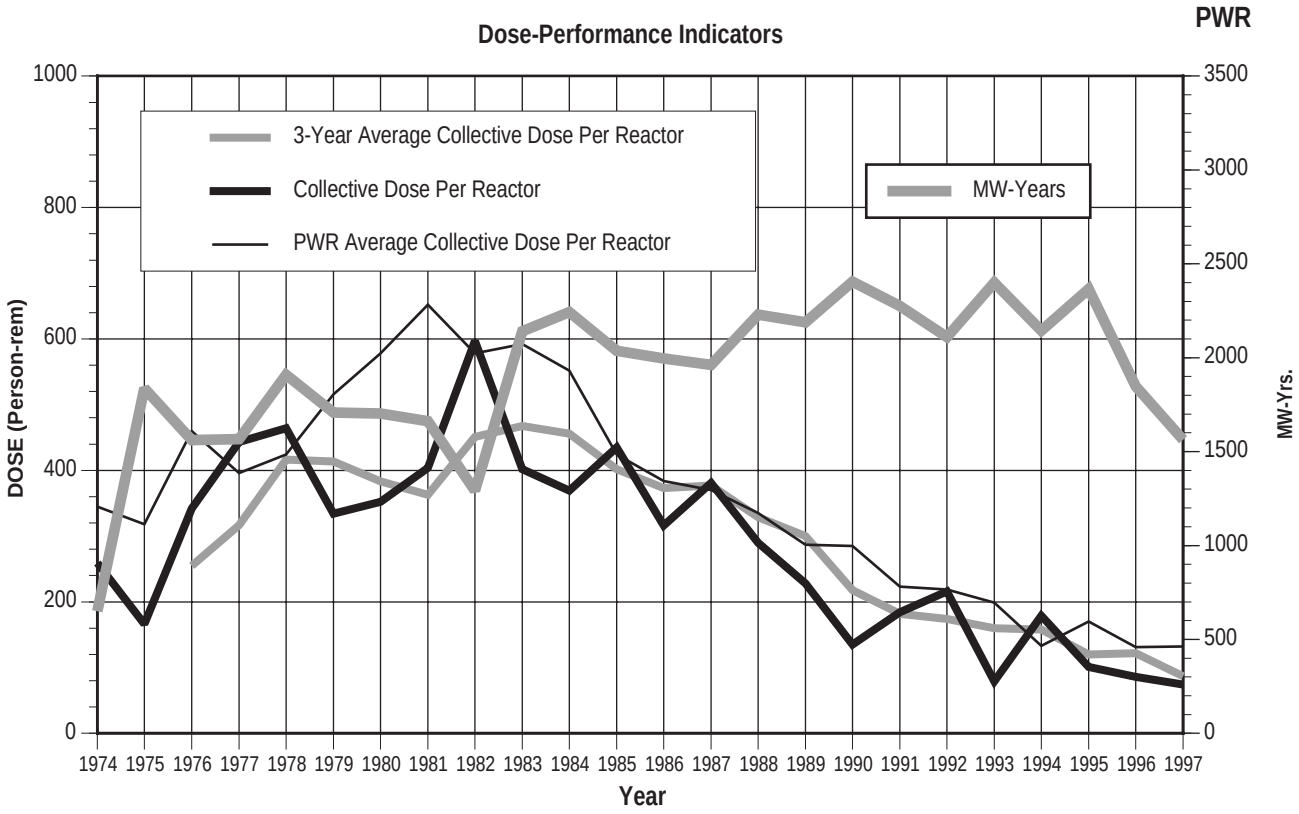


Breakdown by Job Function

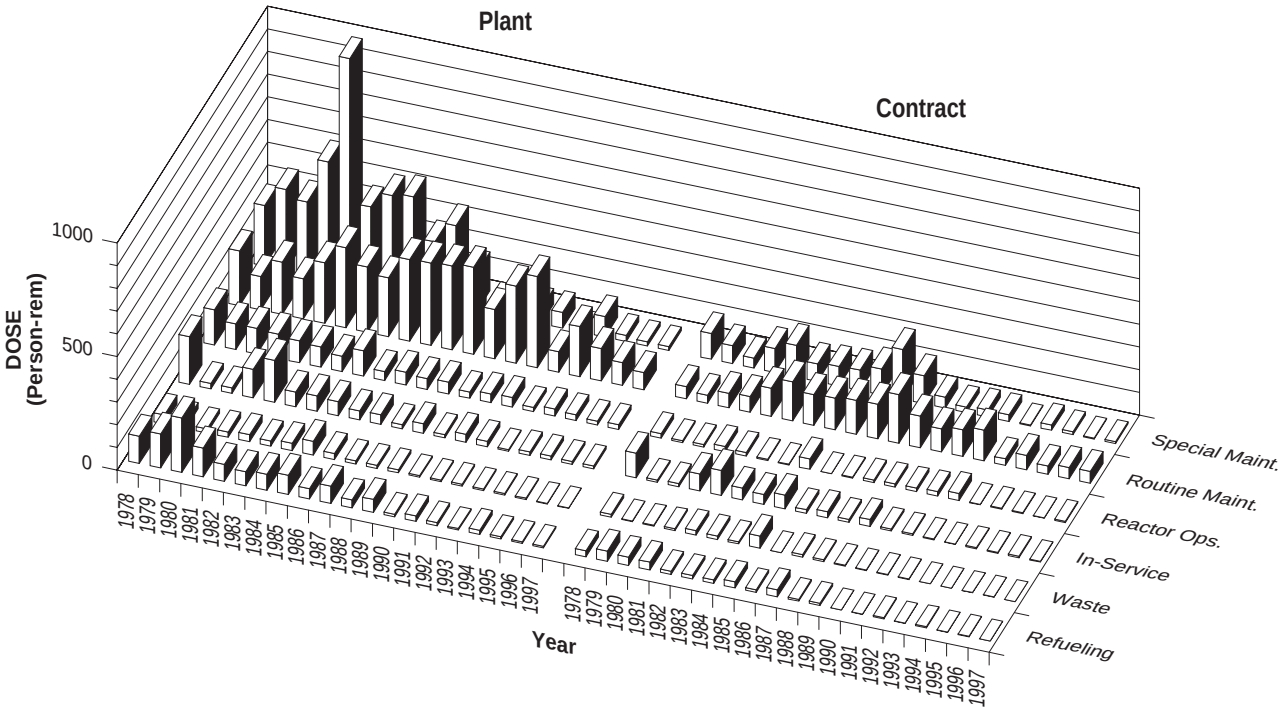


OCONEE 1, 2, 3

Dose-Performance Indicators



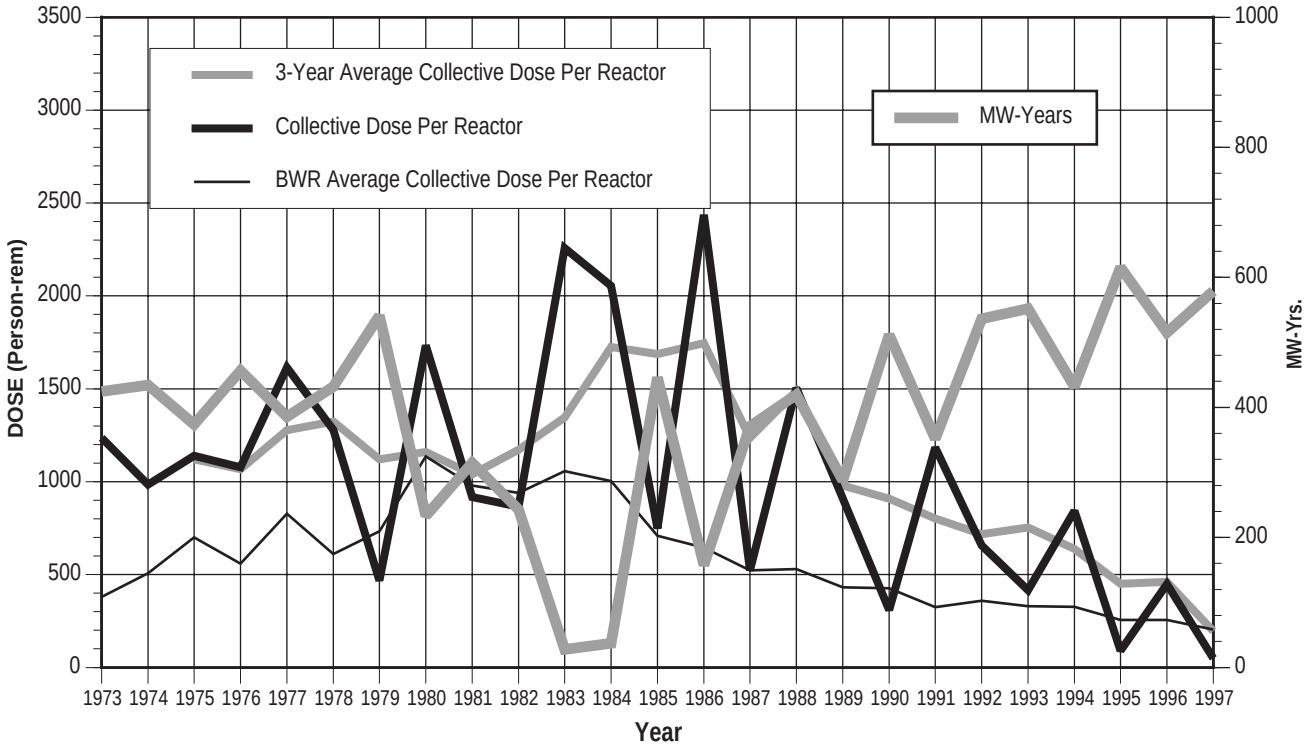
Breakdown by Job Function



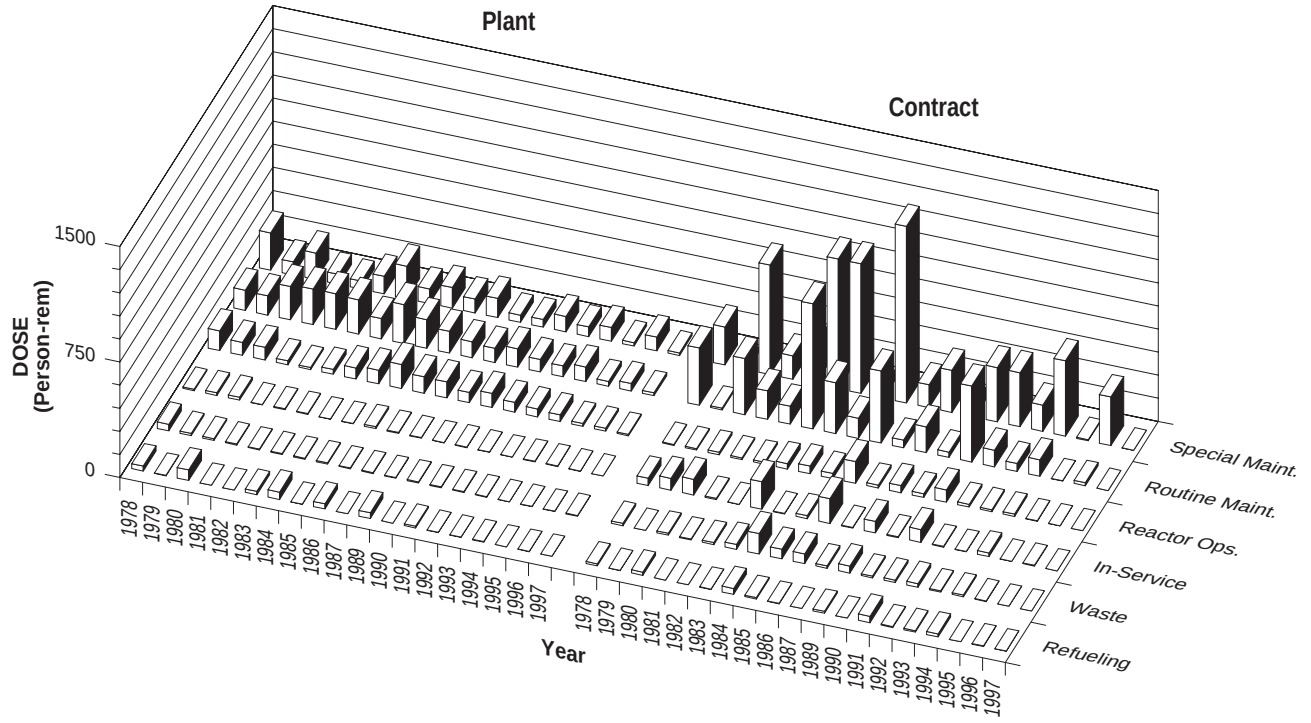
OYSTER CREEK

Dose-Performance Indicators

BWR



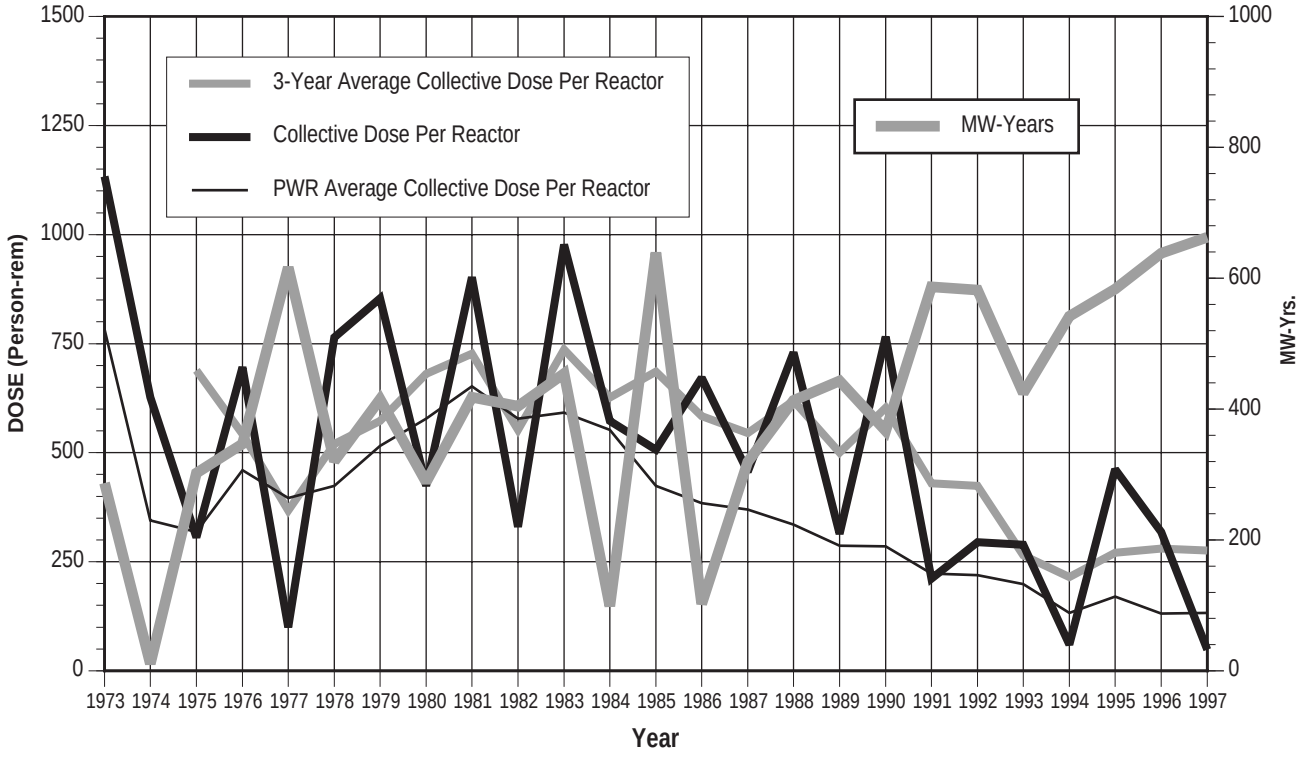
Breakdown by Job Function



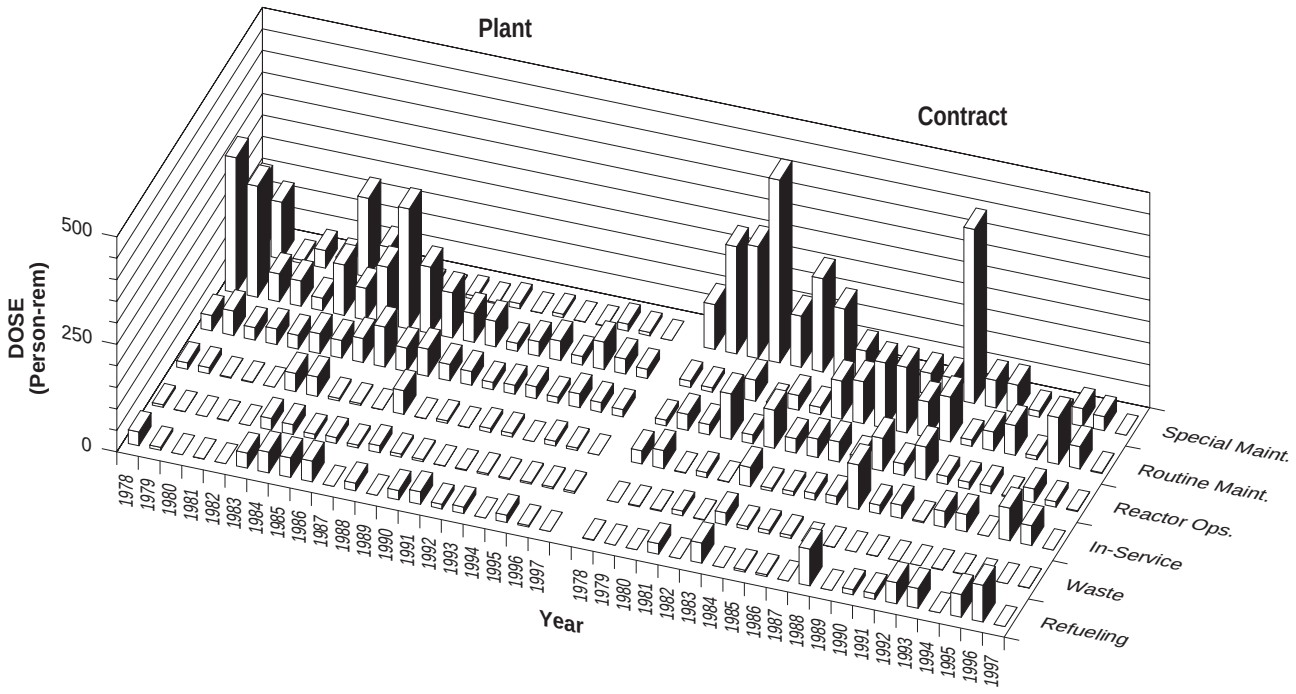
APPENDIX E (continued)

PALISADES

Dose-Performance Indicators **PWR**



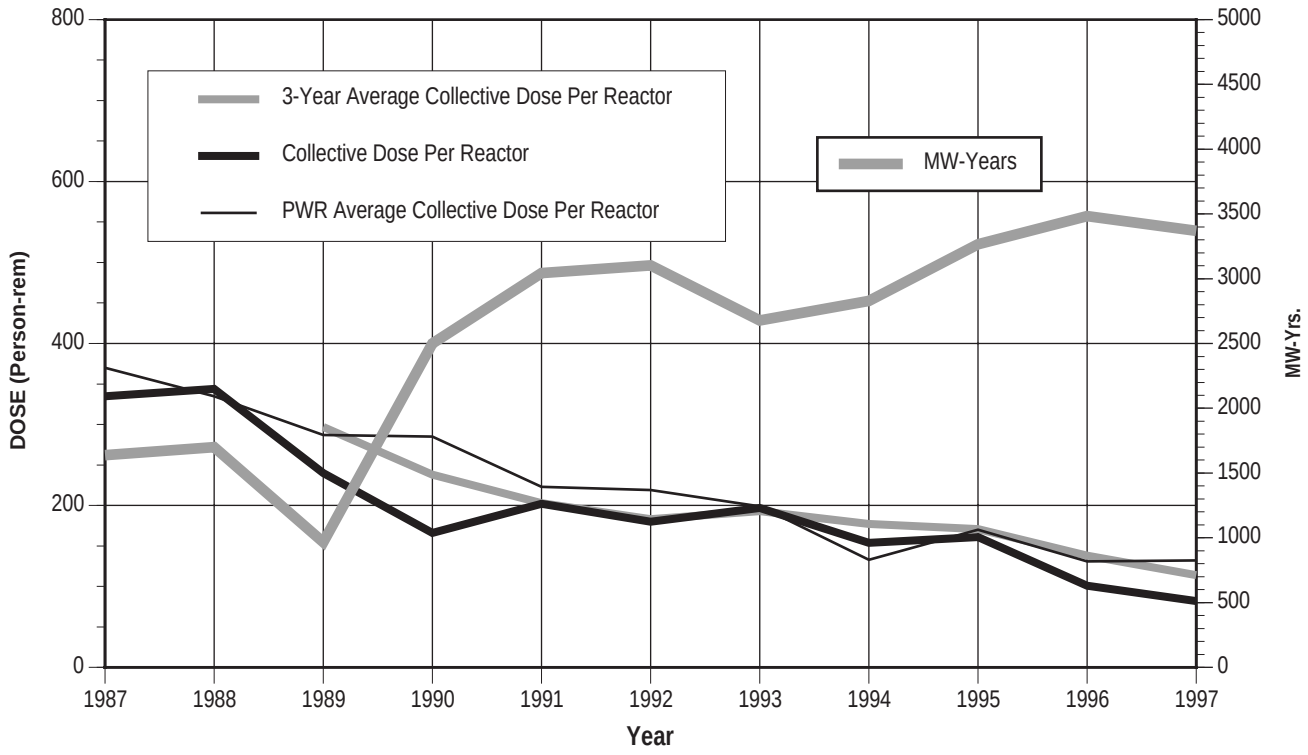
Breakdown by Job Function



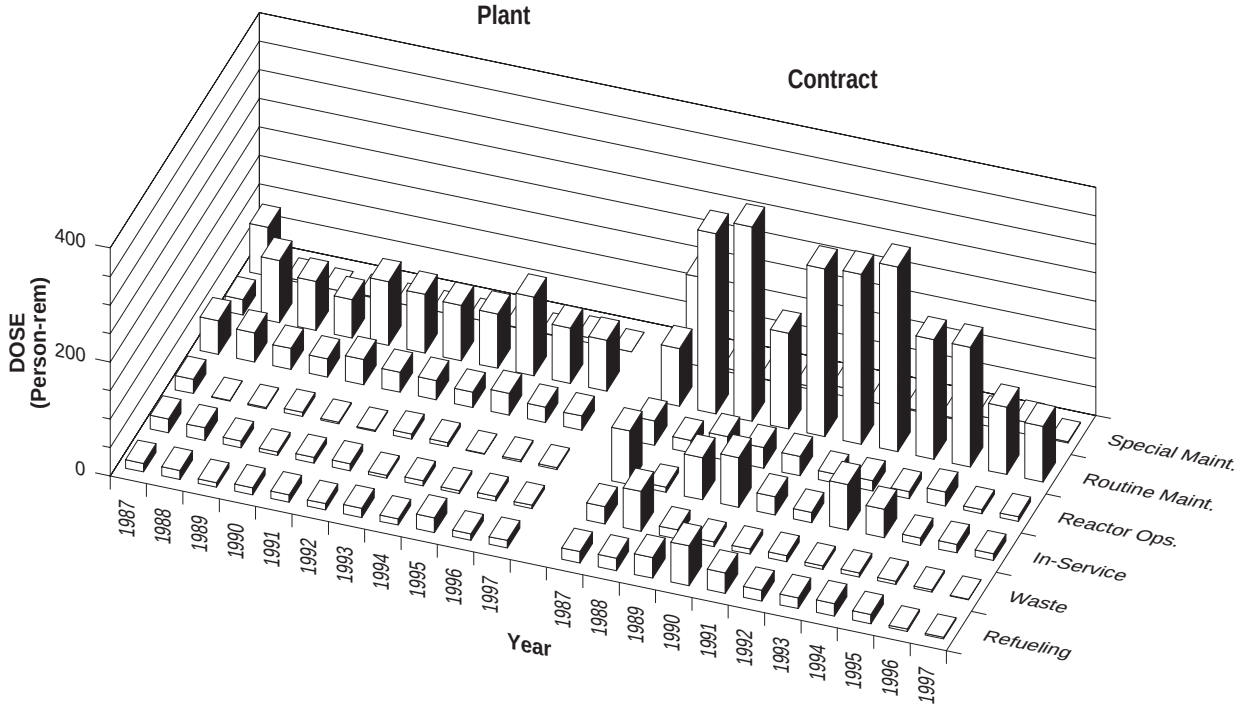
PALO VERDE 1, 2, 3

Dose-Performance Indicators

PWR



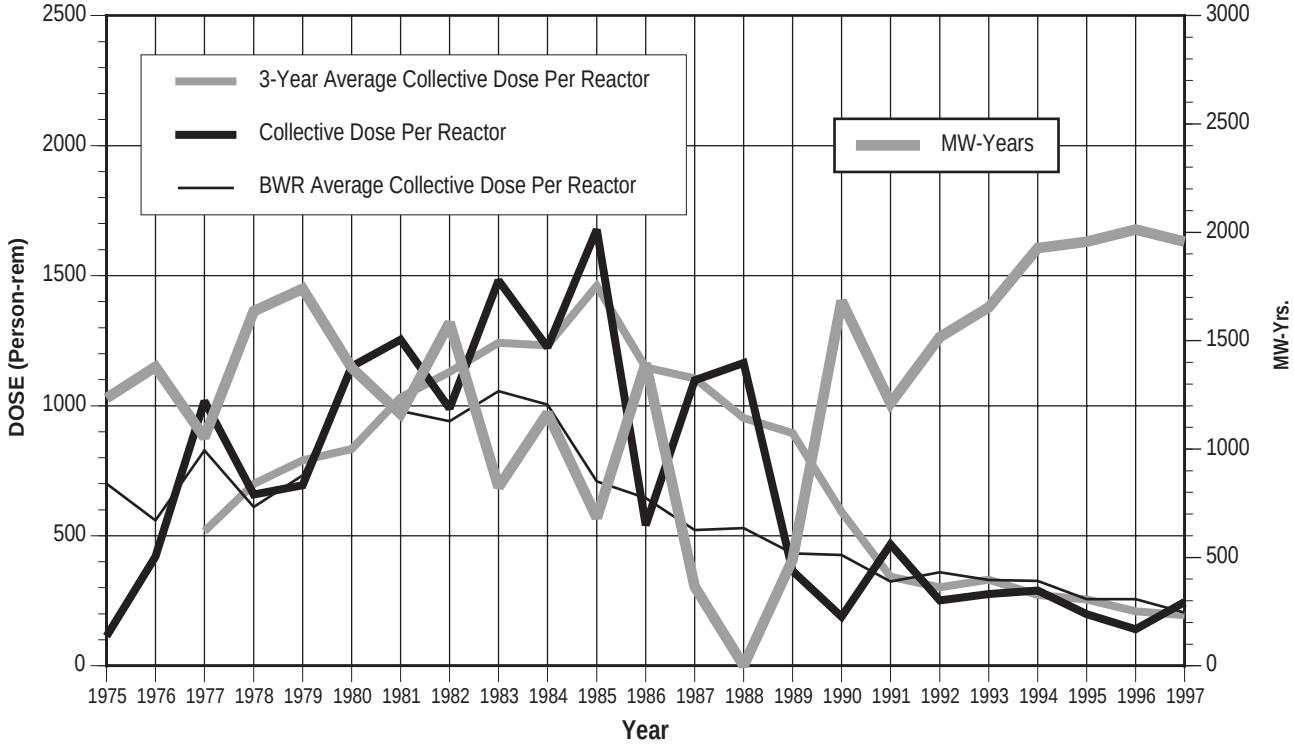
Breakdown by Job Function



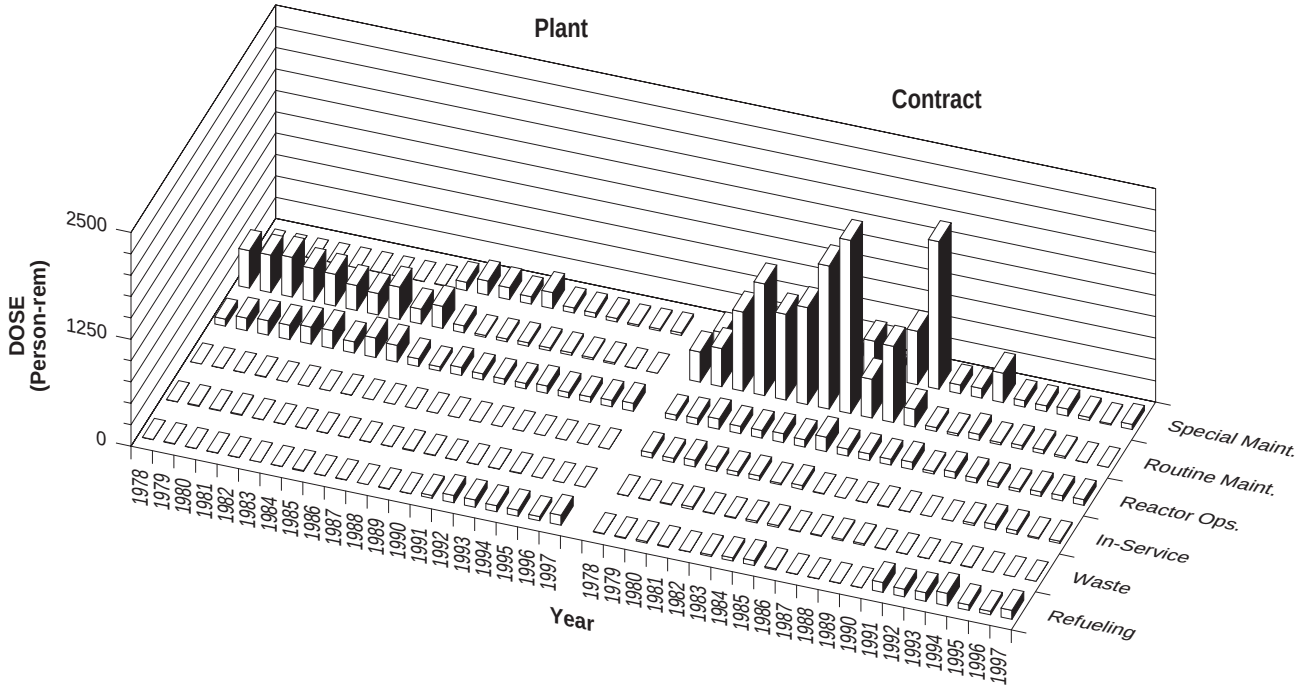
APPENDIX E (continued)

PEACH BOTTOM 2, 3

Dose-Performance Indicators **BWR**



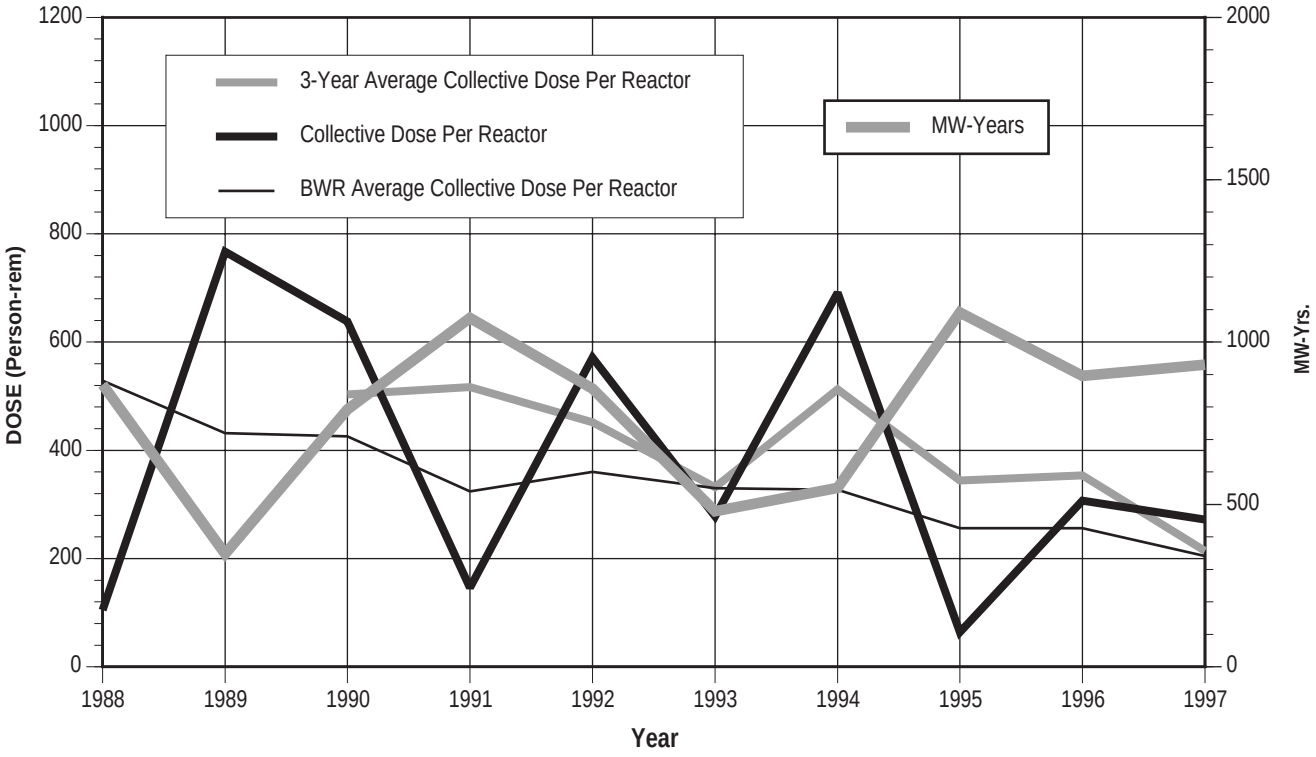
Breakdown by Job Function



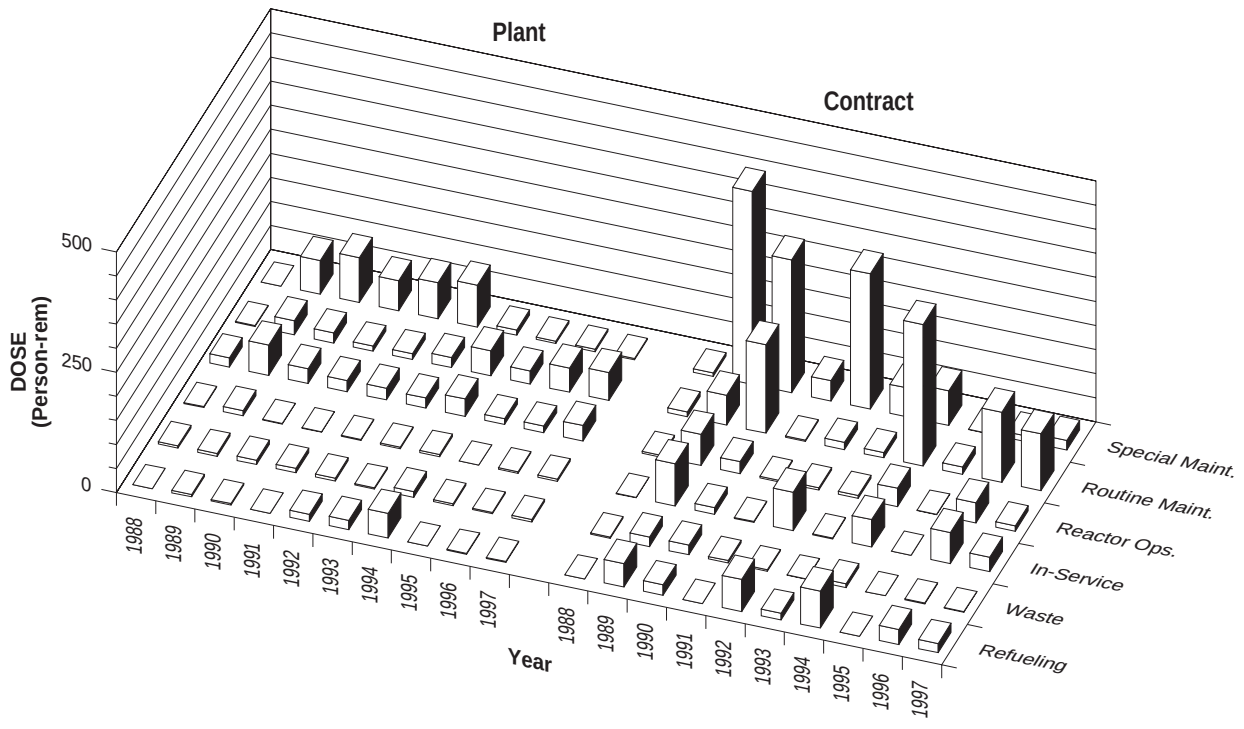
PERRY

Dose-Performance Indicators

BWR

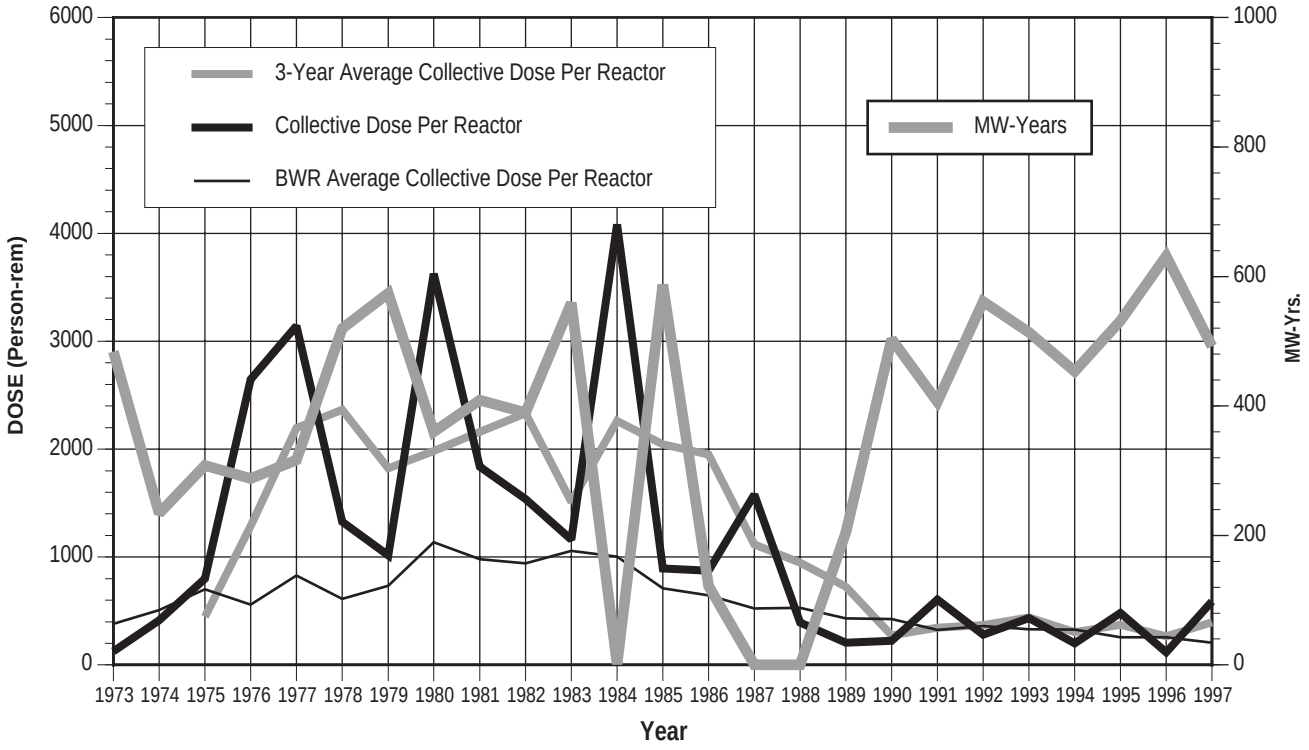


Breakdown by Job Function

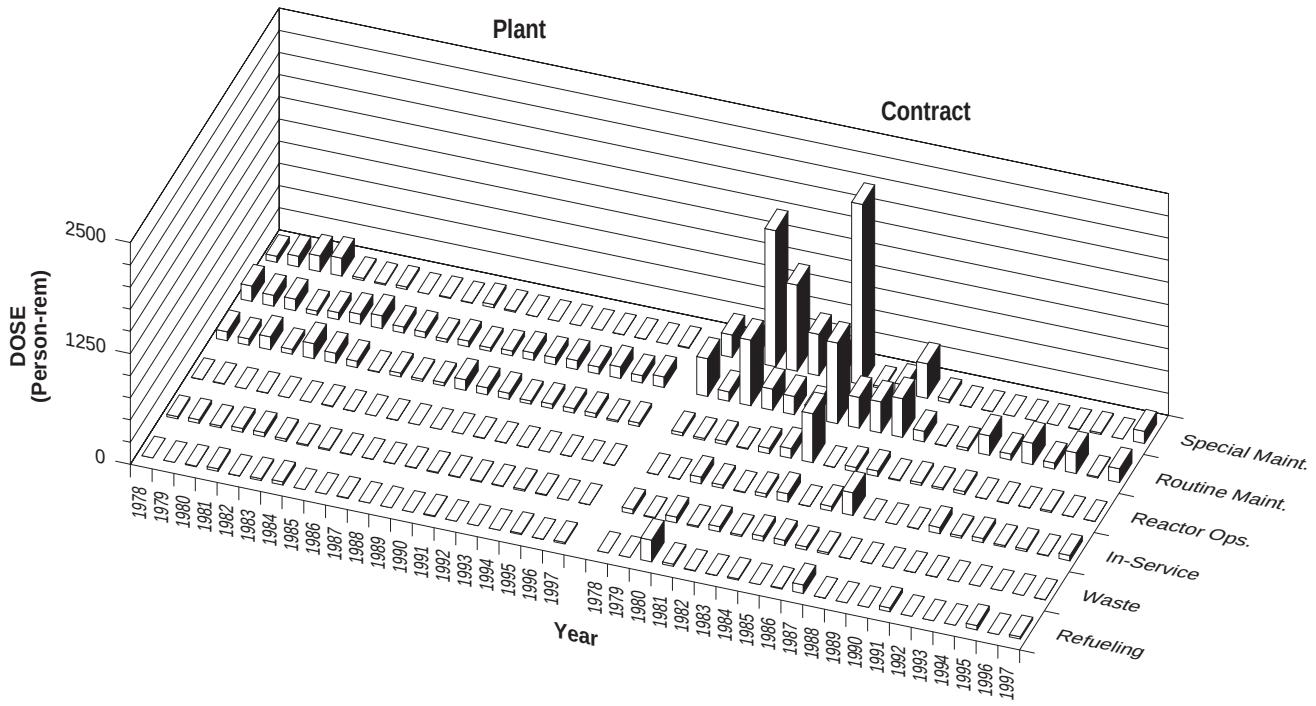


PILGRIM

Dose-Performance Indicators **BWR**



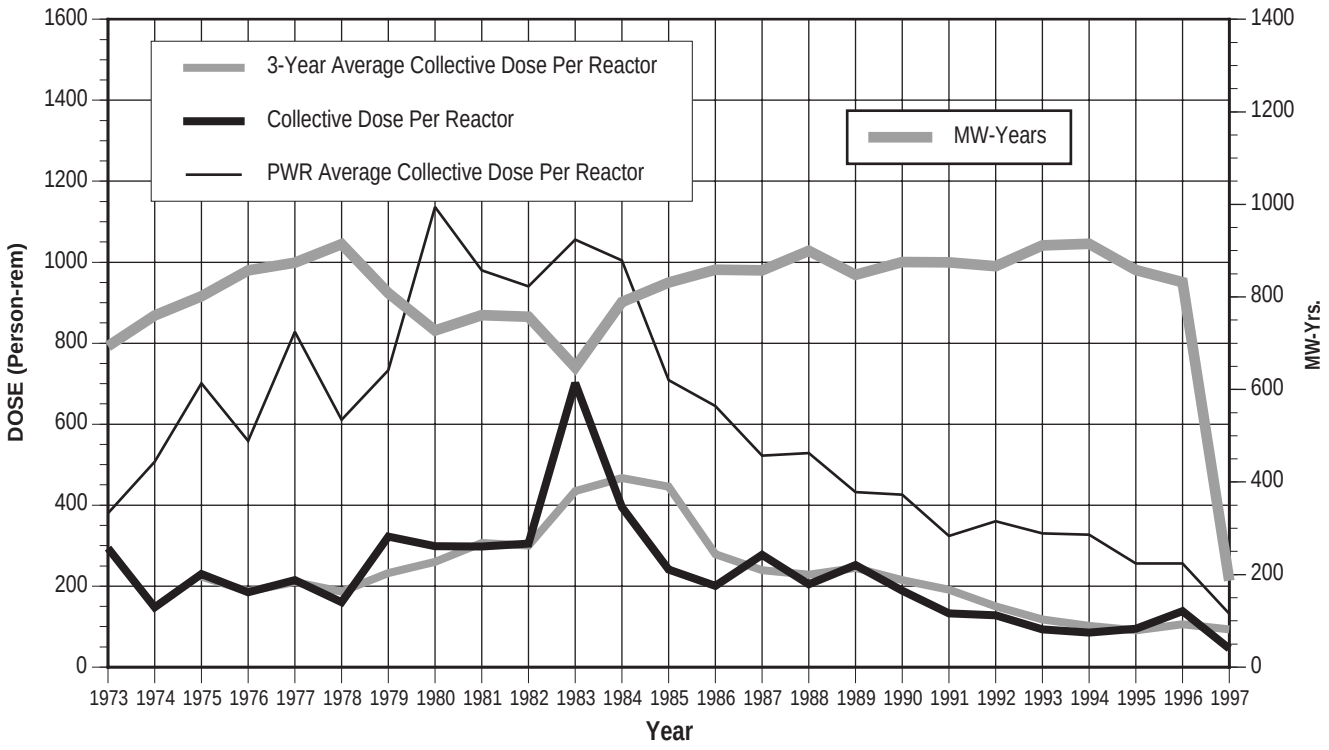
Breakdown by Job Function



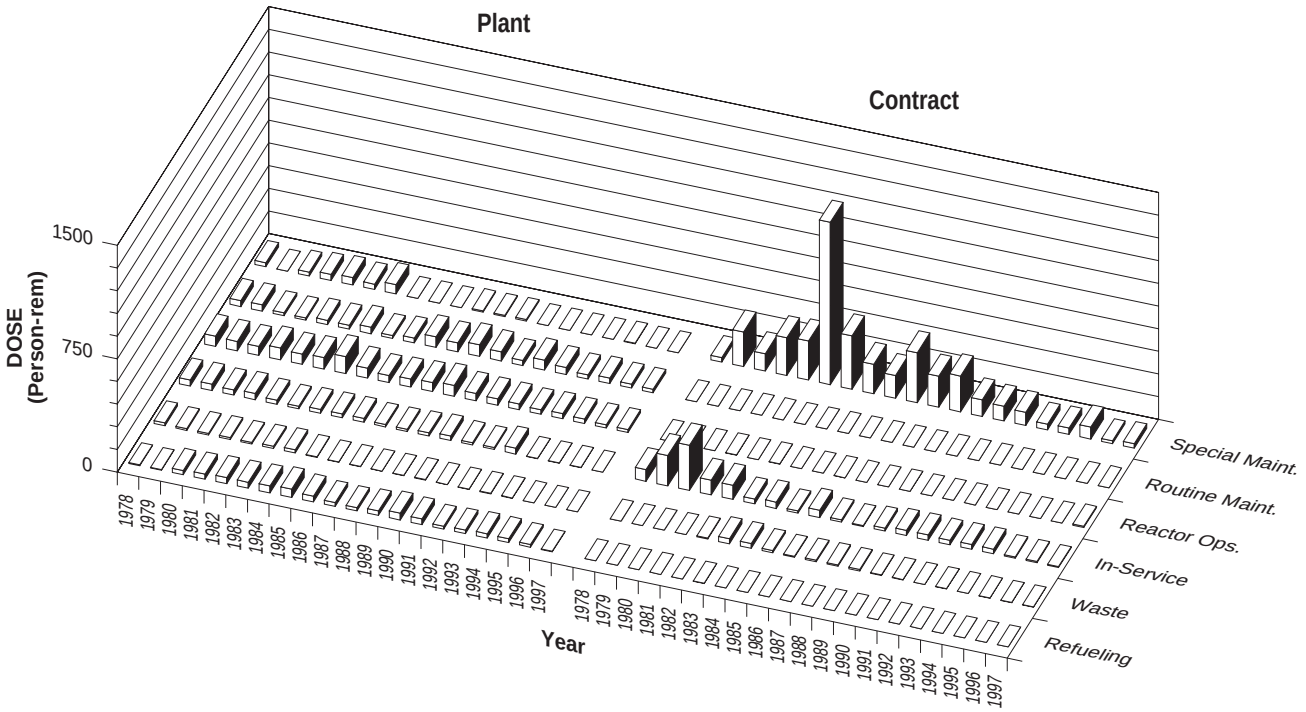
APPENDIX E (continued)

POINT BEACH 1, 2

Dose-Performance Indicators **PWR**



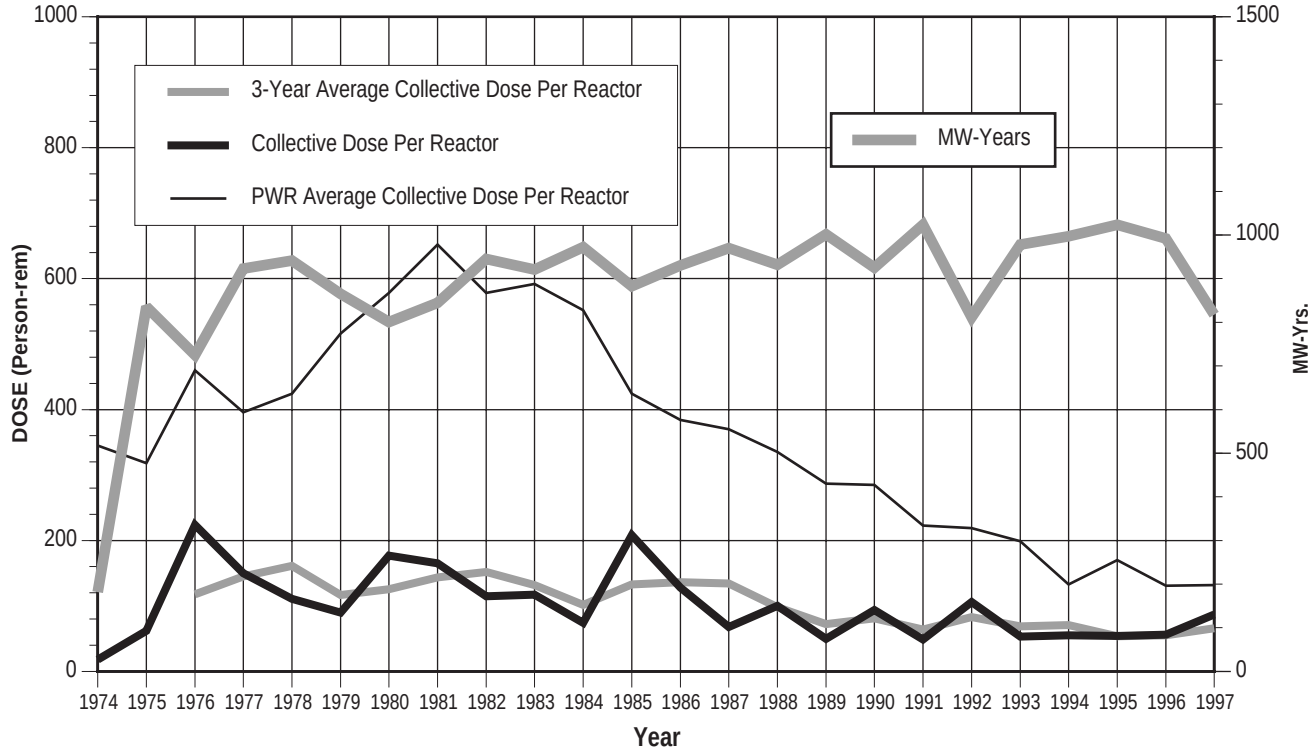
Breakdown by Job Function



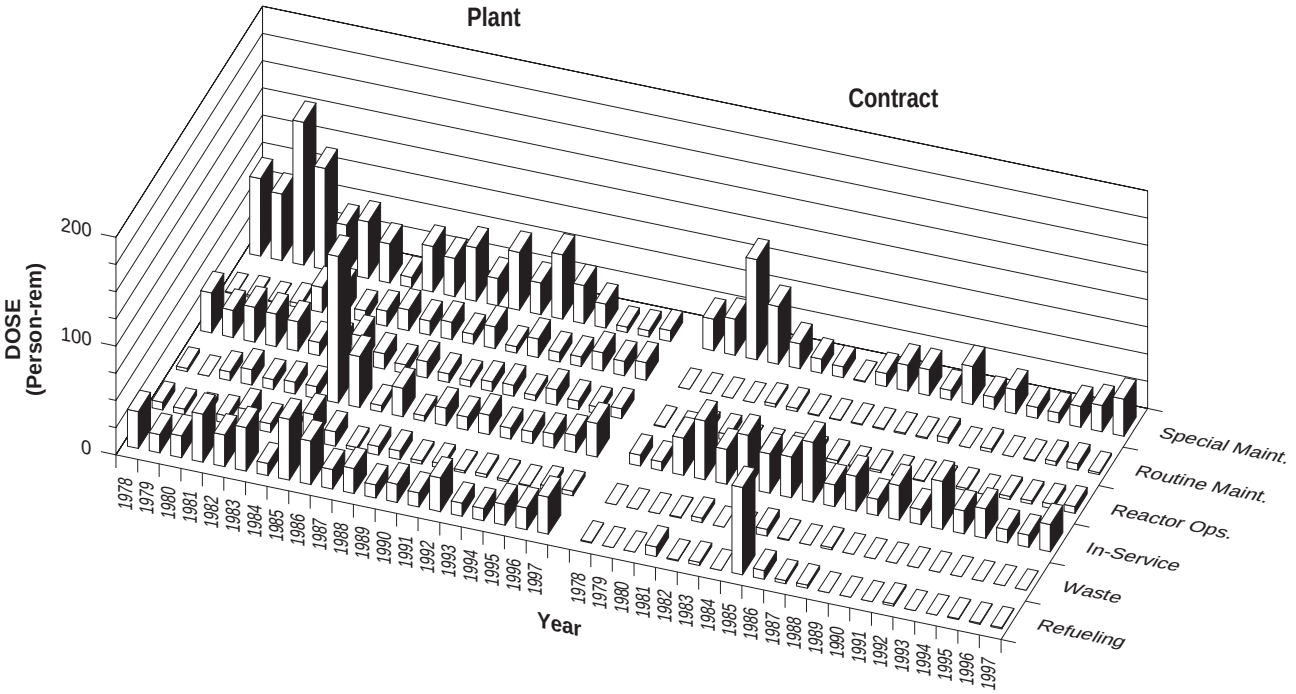
PRAIRIE ISLAND 1, 2

Dose-Performance Indicators

PWR

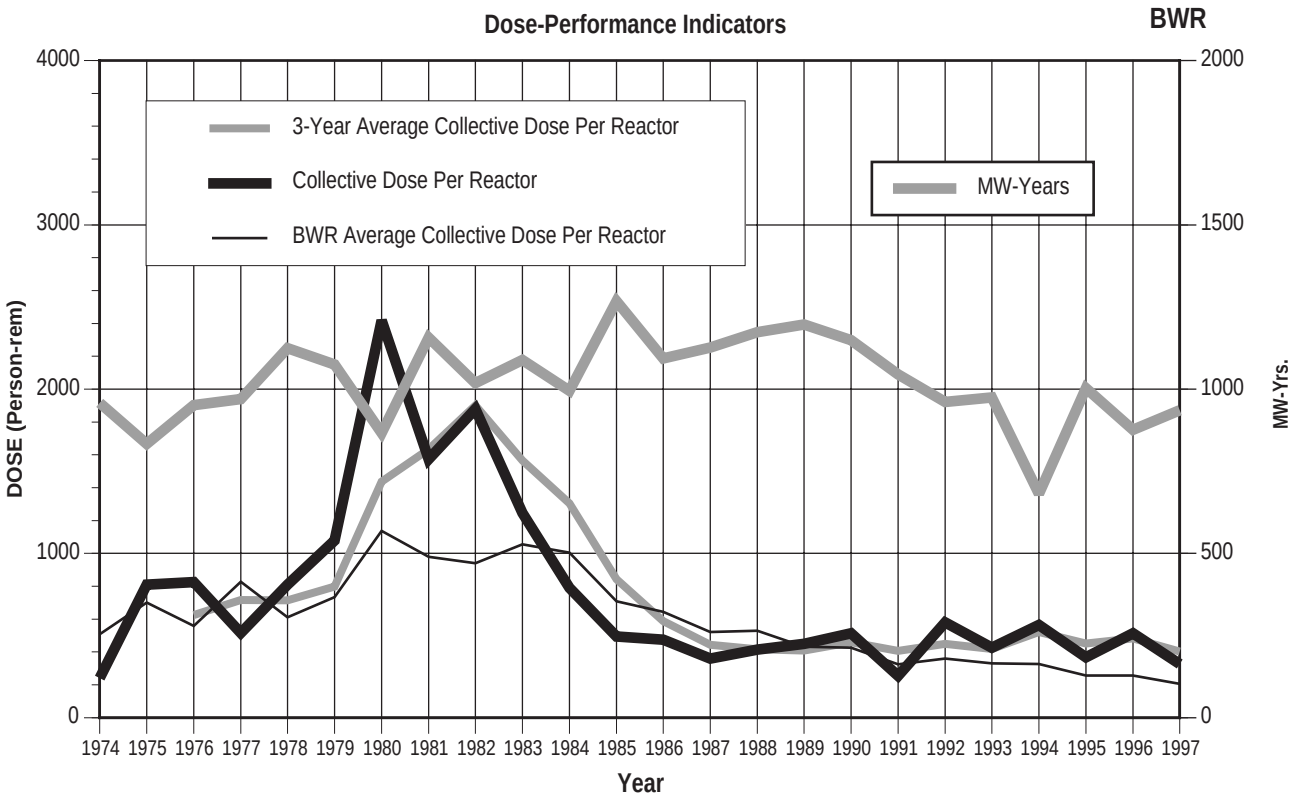


Breakdown by Job Function

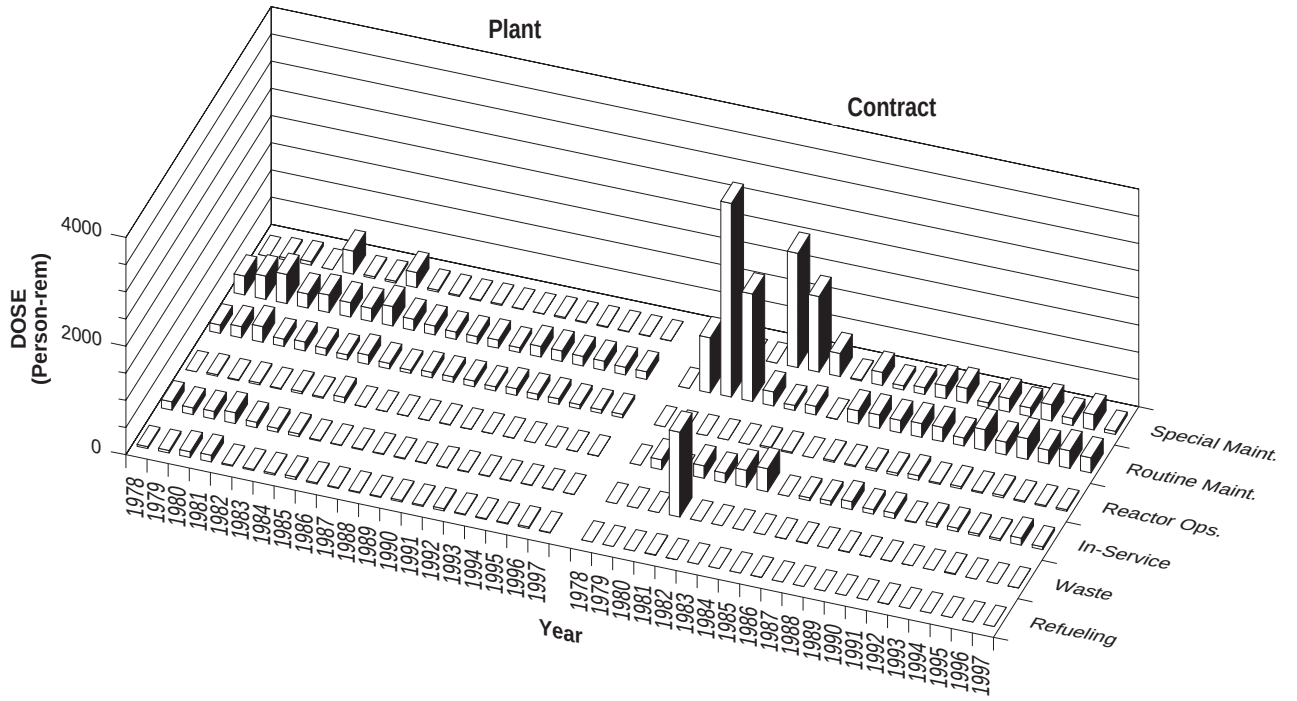


QUAD CITIES 1, 2

Dose-Performance Indicators



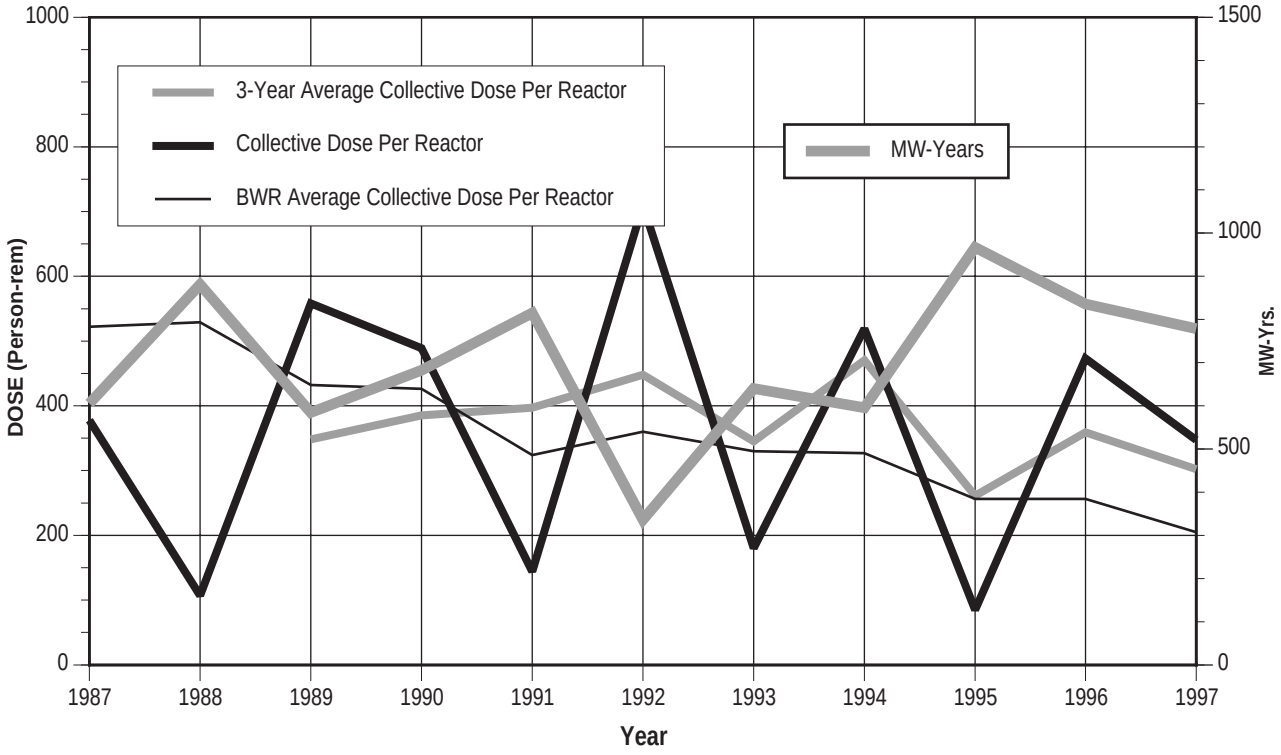
Breakdown by Job Function



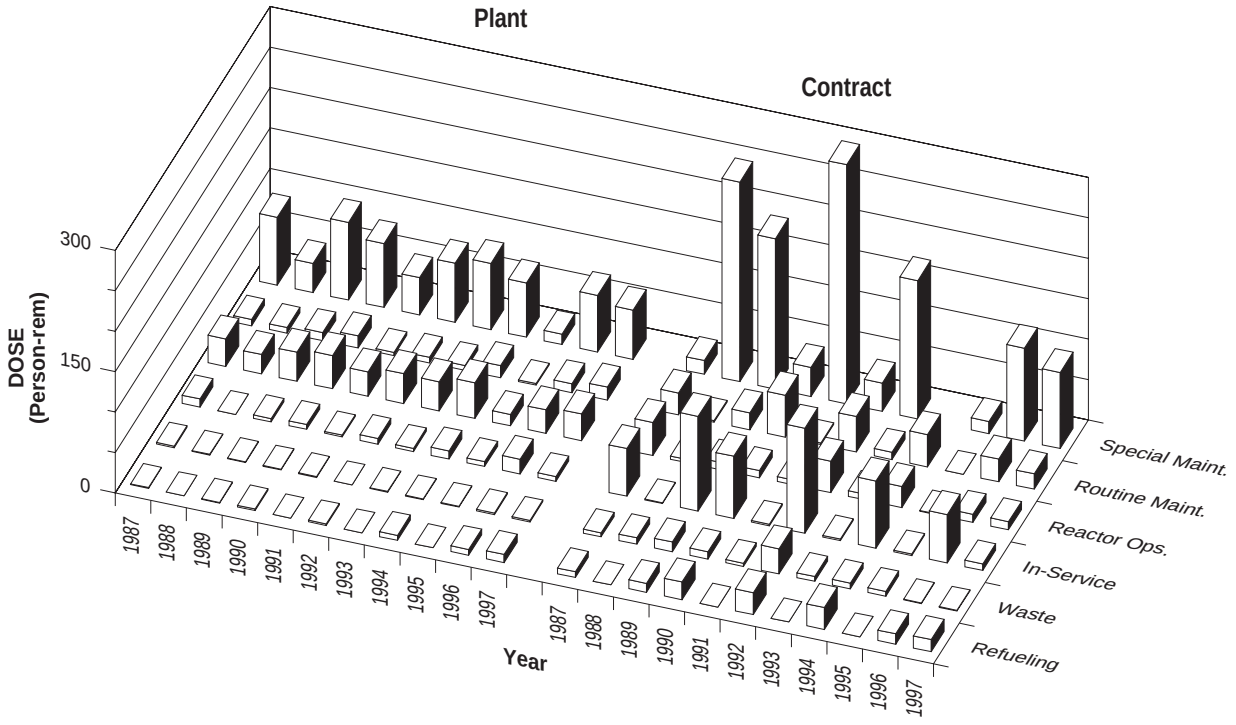
RIVER BEND 1

Dose-Performance Indicators

BWR



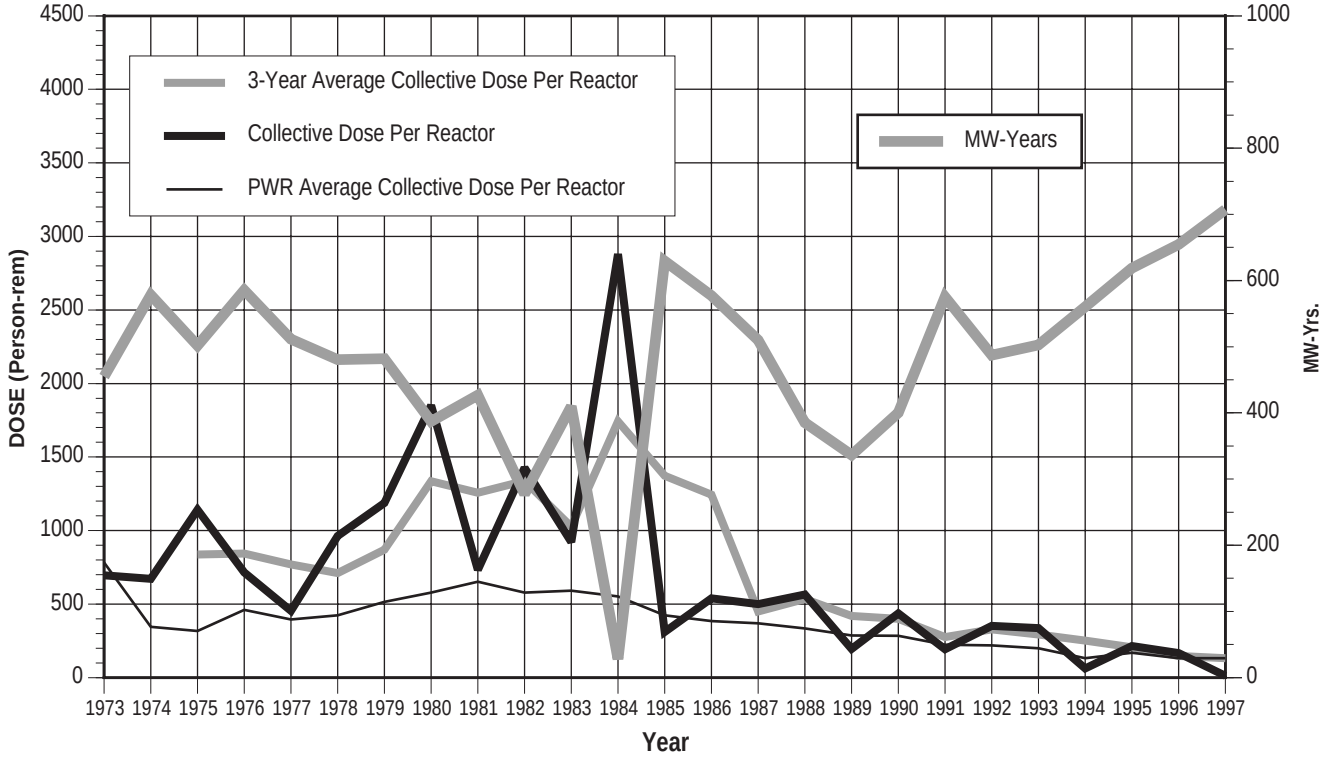
Breakdown by Job Function



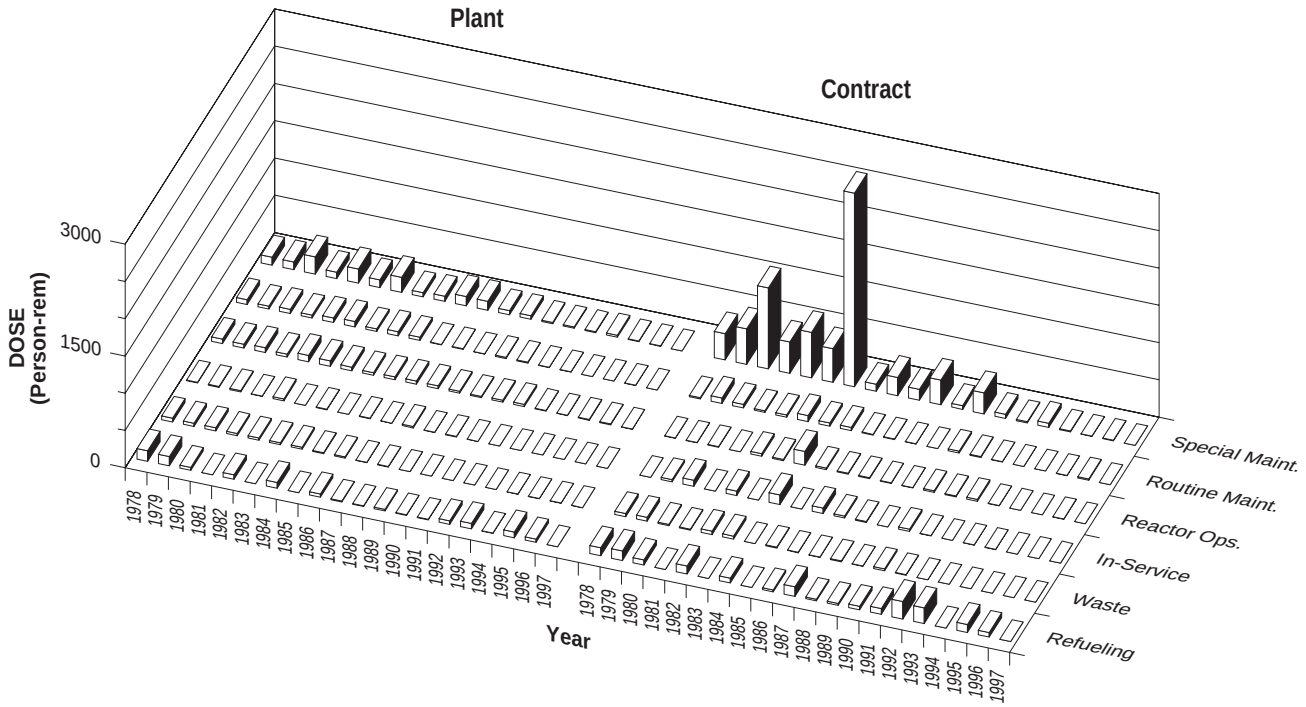
ROBINSON 2

Dose-Performance Indicators

PWR



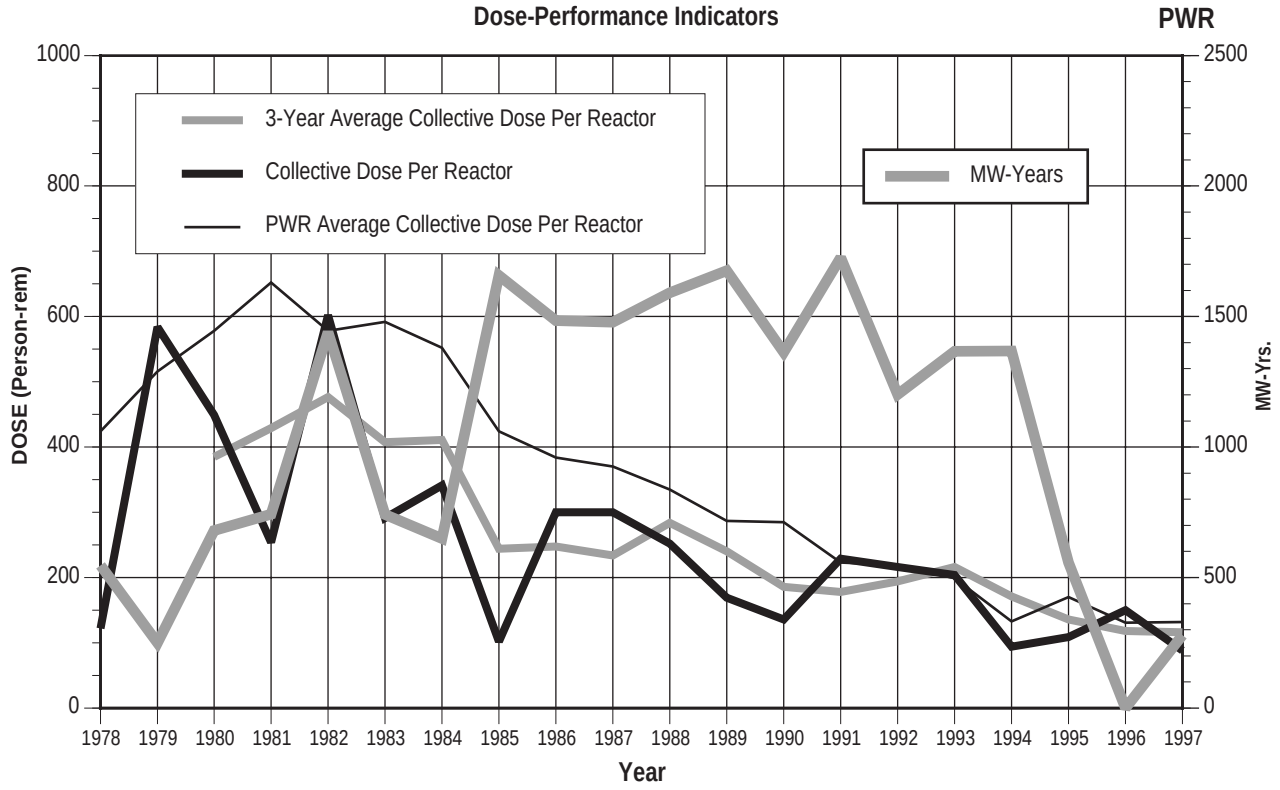
Breakdown by Job Function



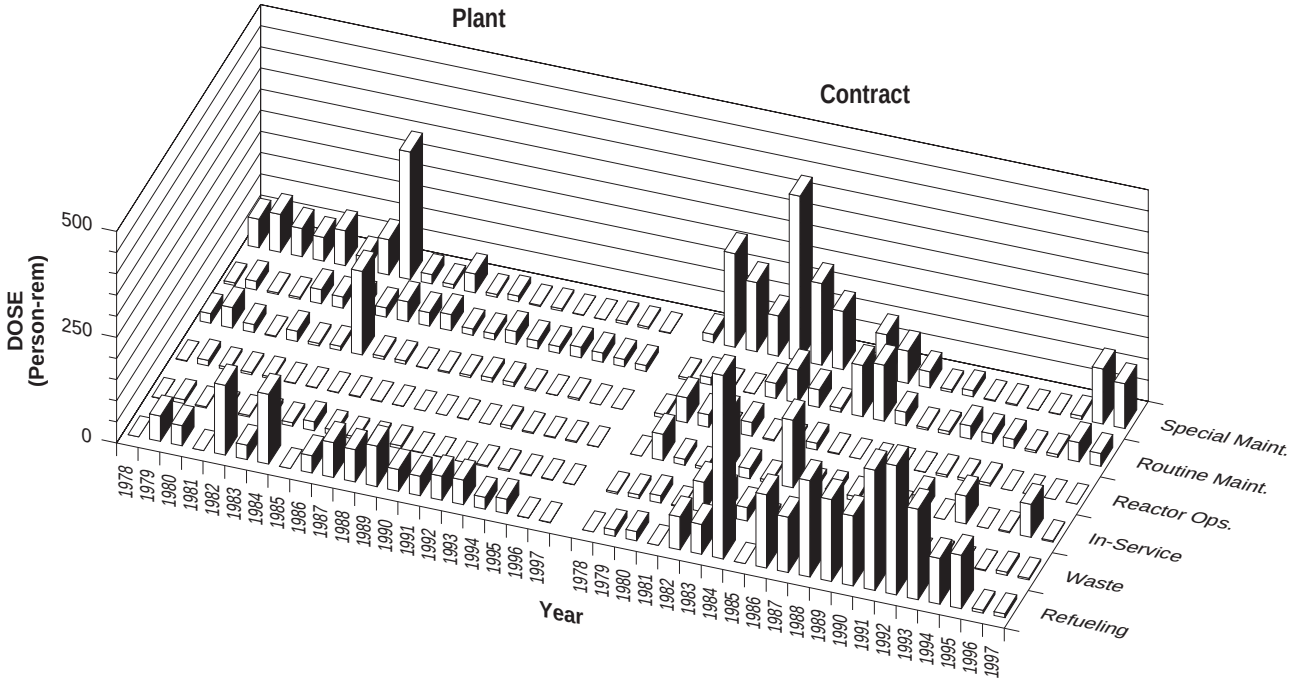
APPENDIX E (continued)

SALEM 1, 2

Dose-Performance Indicators

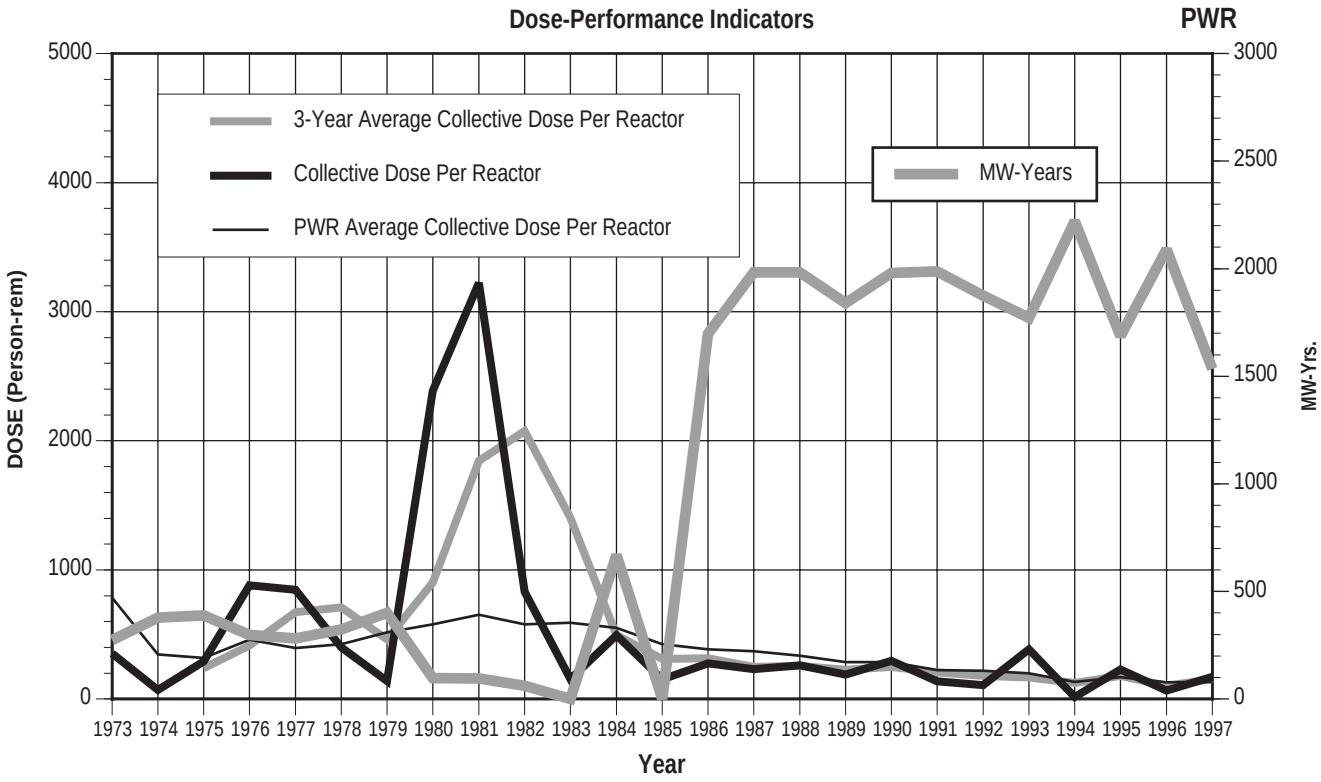


Breakdown by Job Function

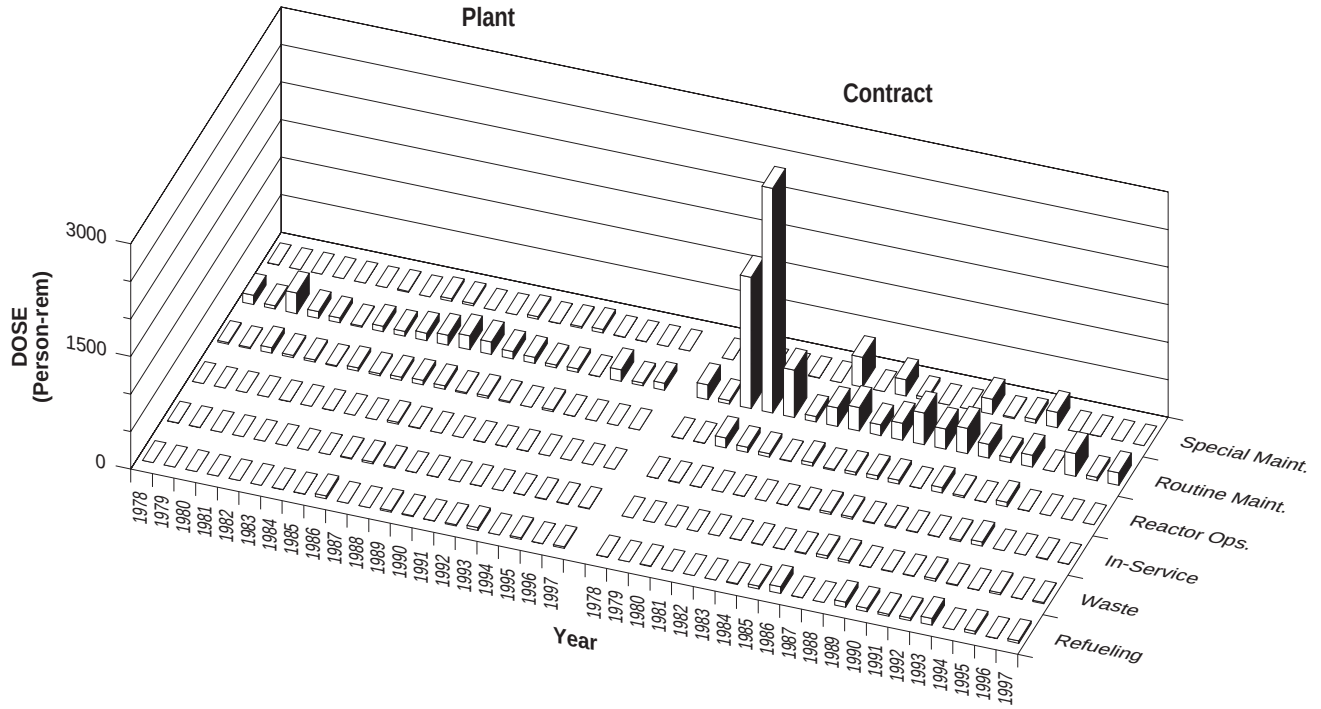


SAN ONOFRE 1, 2, 3

Dose-Performance Indicators

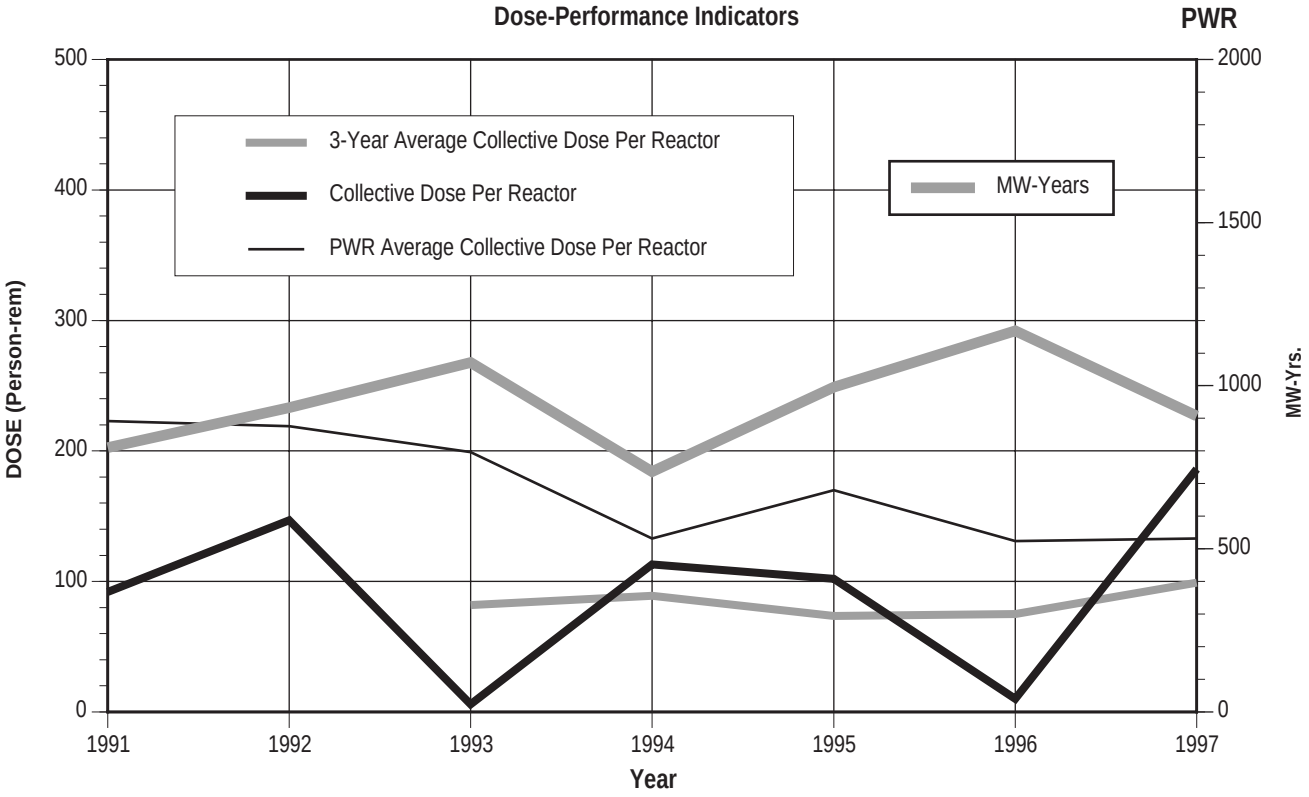


Breakdown by Job Function

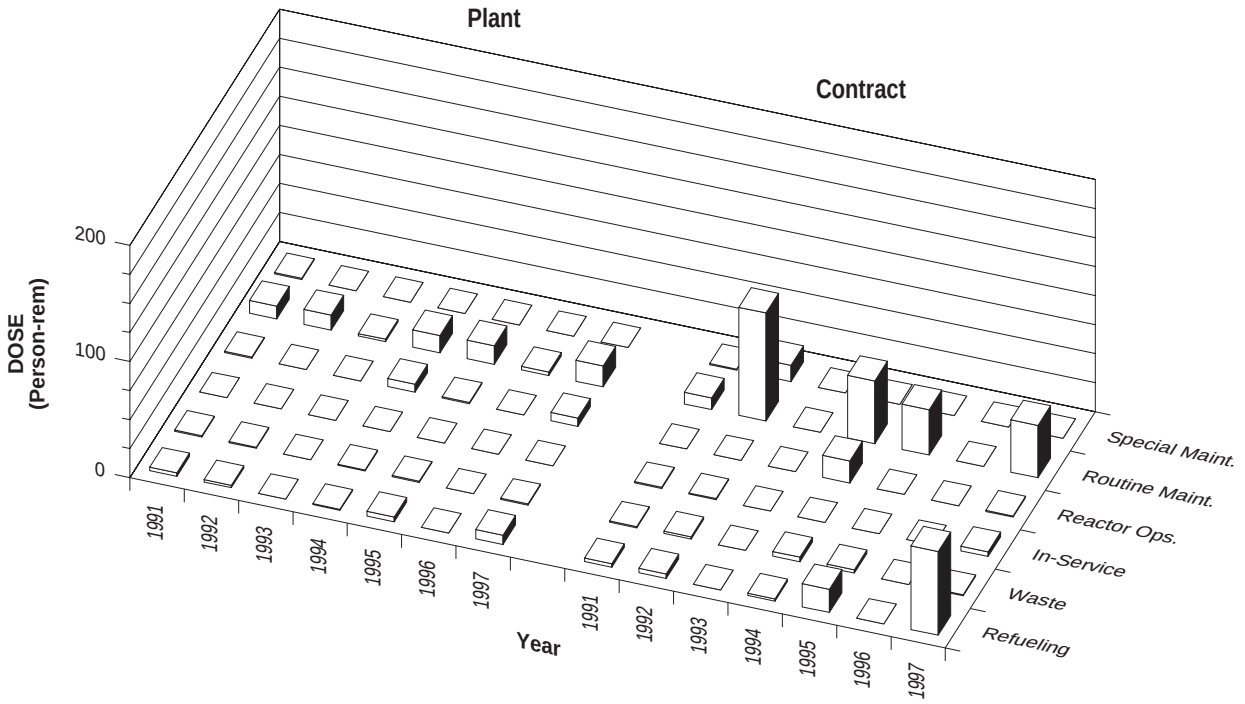


SEABROOK

Dose-Performance Indicators



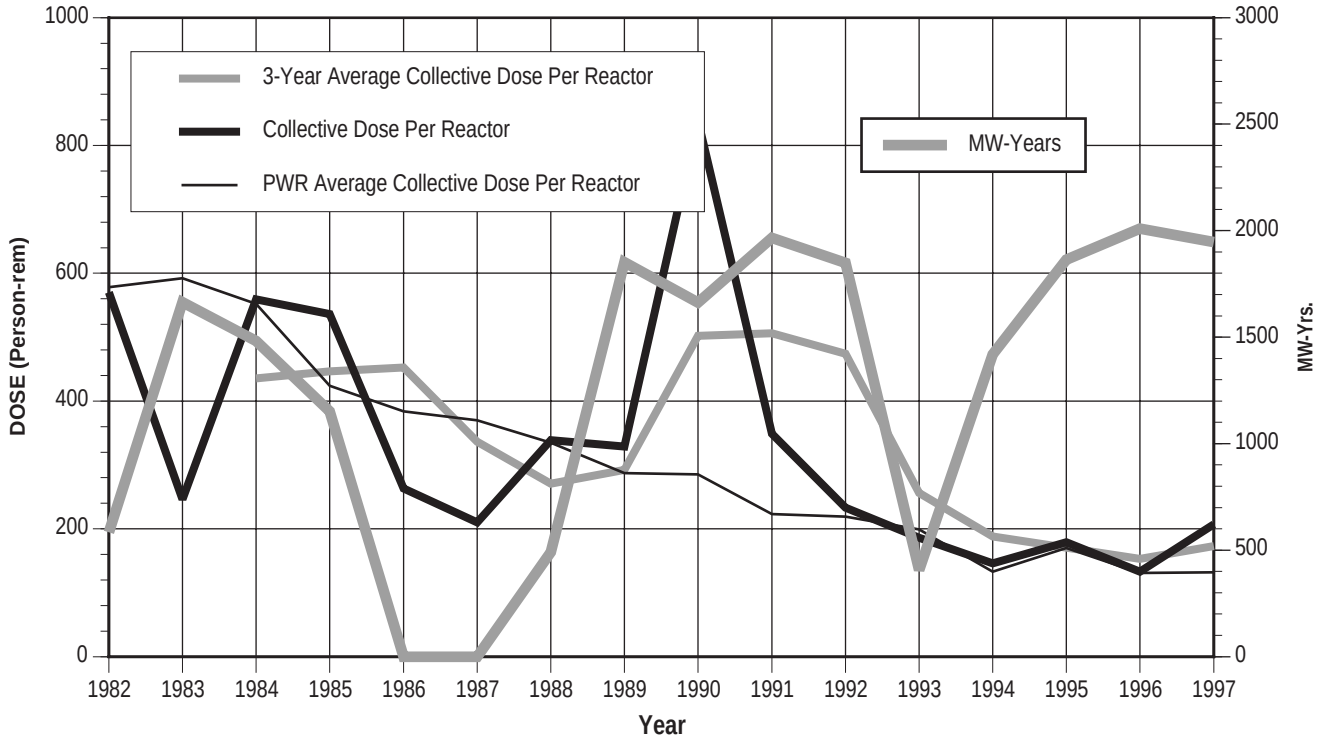
Breakdown by Job Function



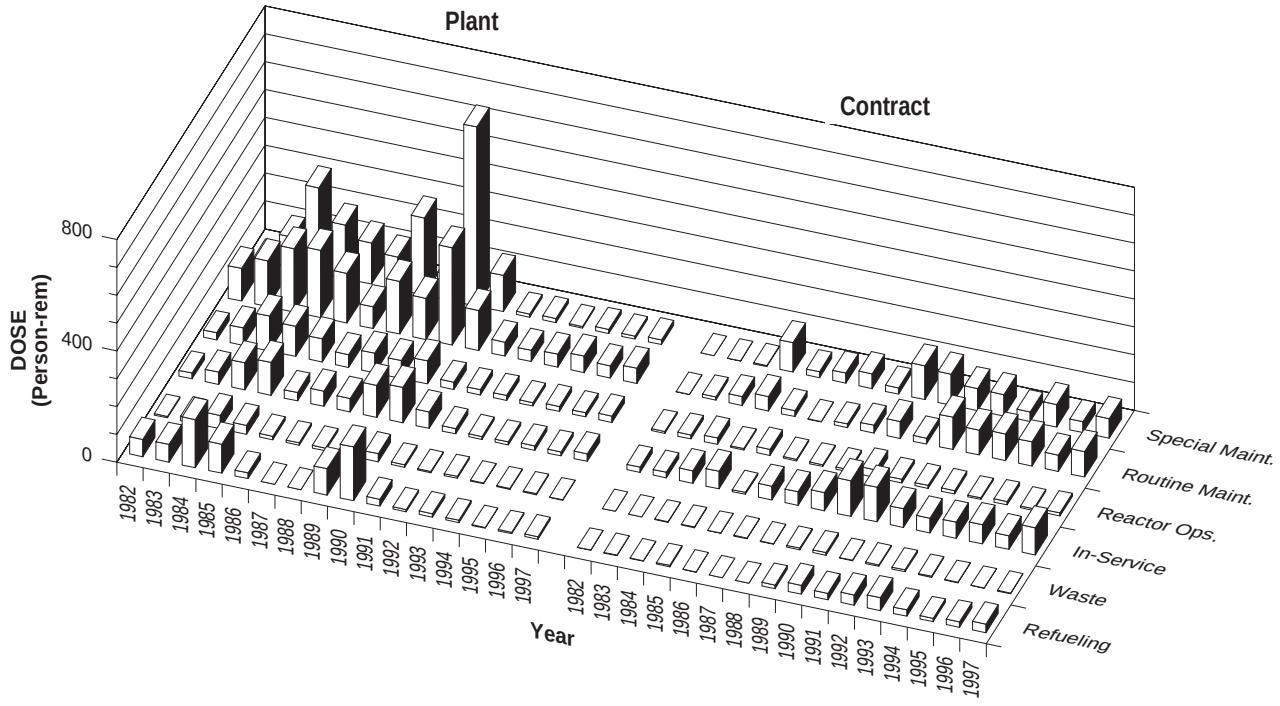
APPENDIX E (continued)

SEQUOYAH 1, 2

Dose-Performance Indicators **PWR**



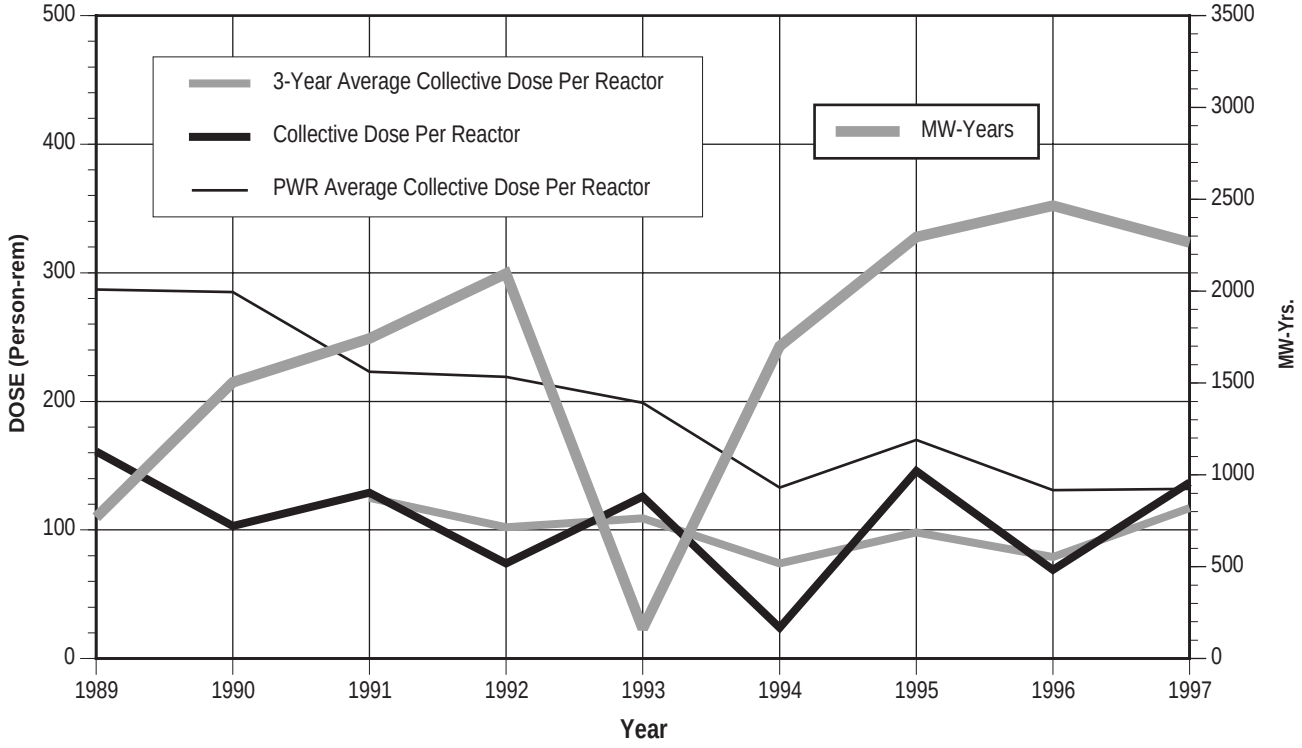
Breakdown by Job Function



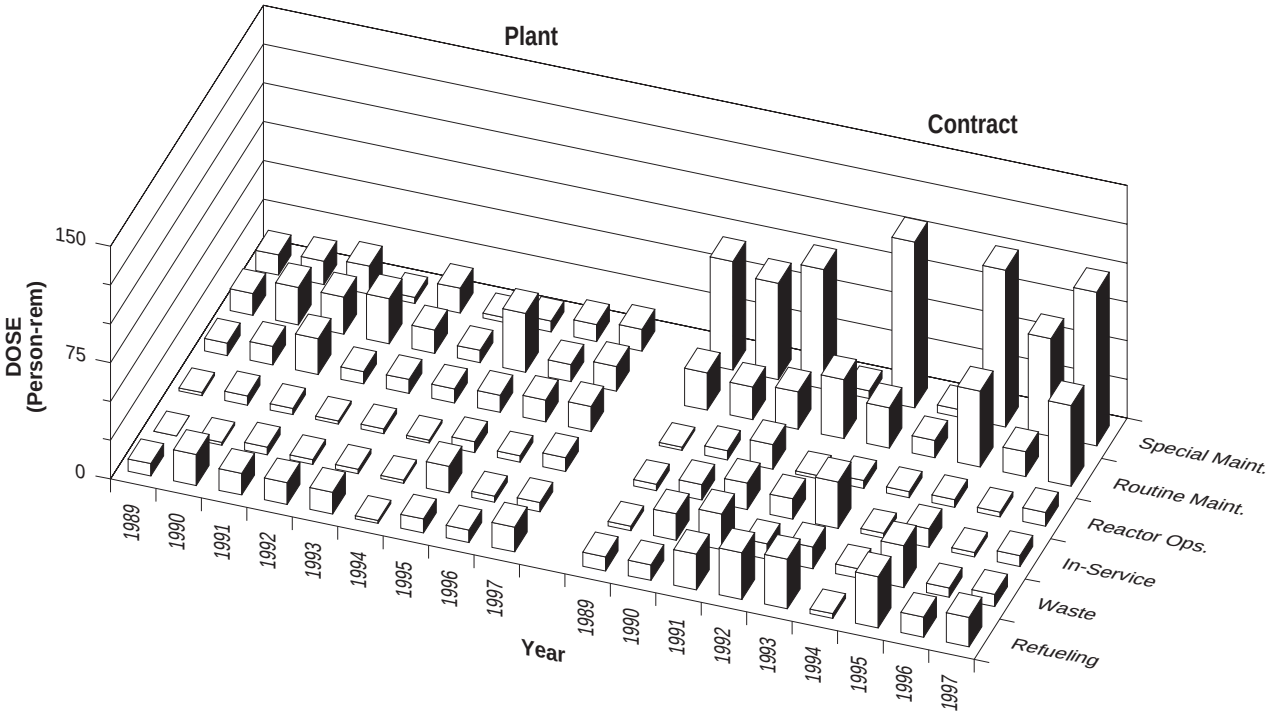
APPENDIX E (continued)

SOUTH TEXAS 1, 2

Dose-Performance Indicators **PWR**

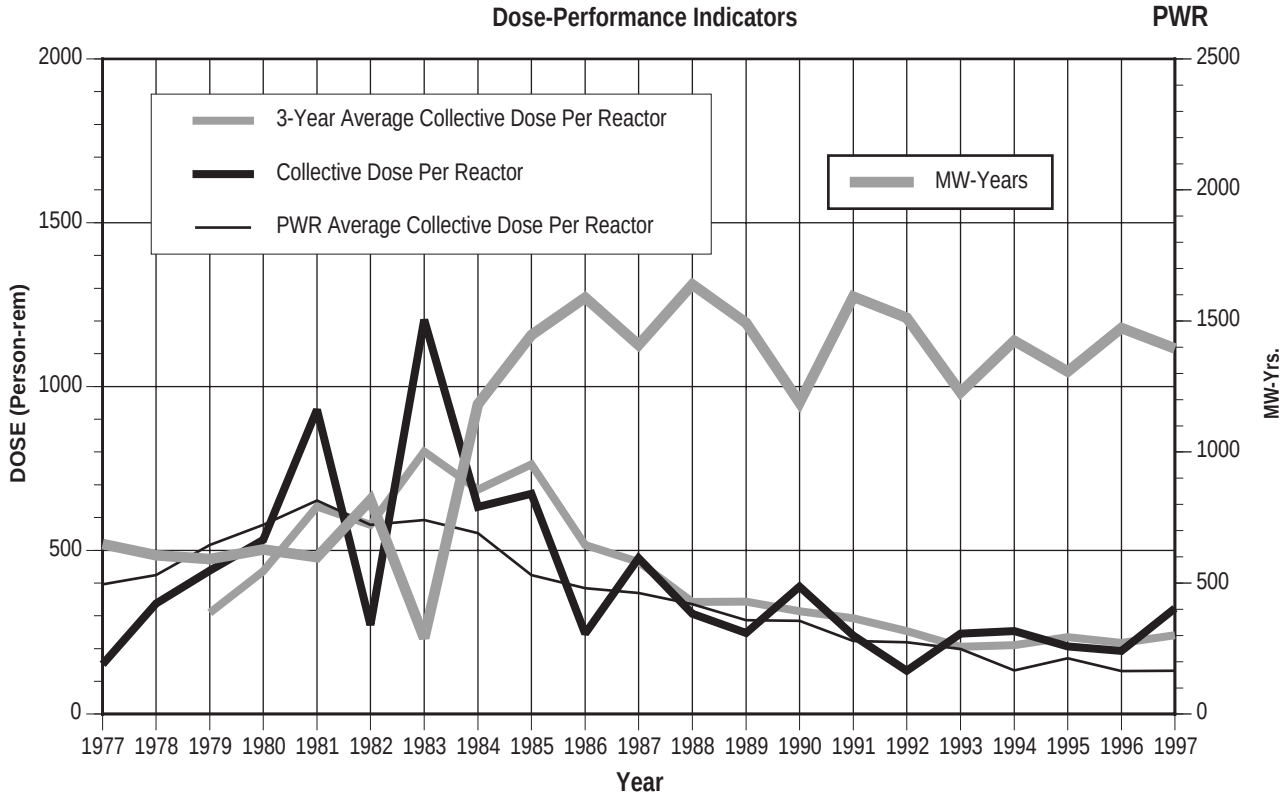


Breakdown by Job Function

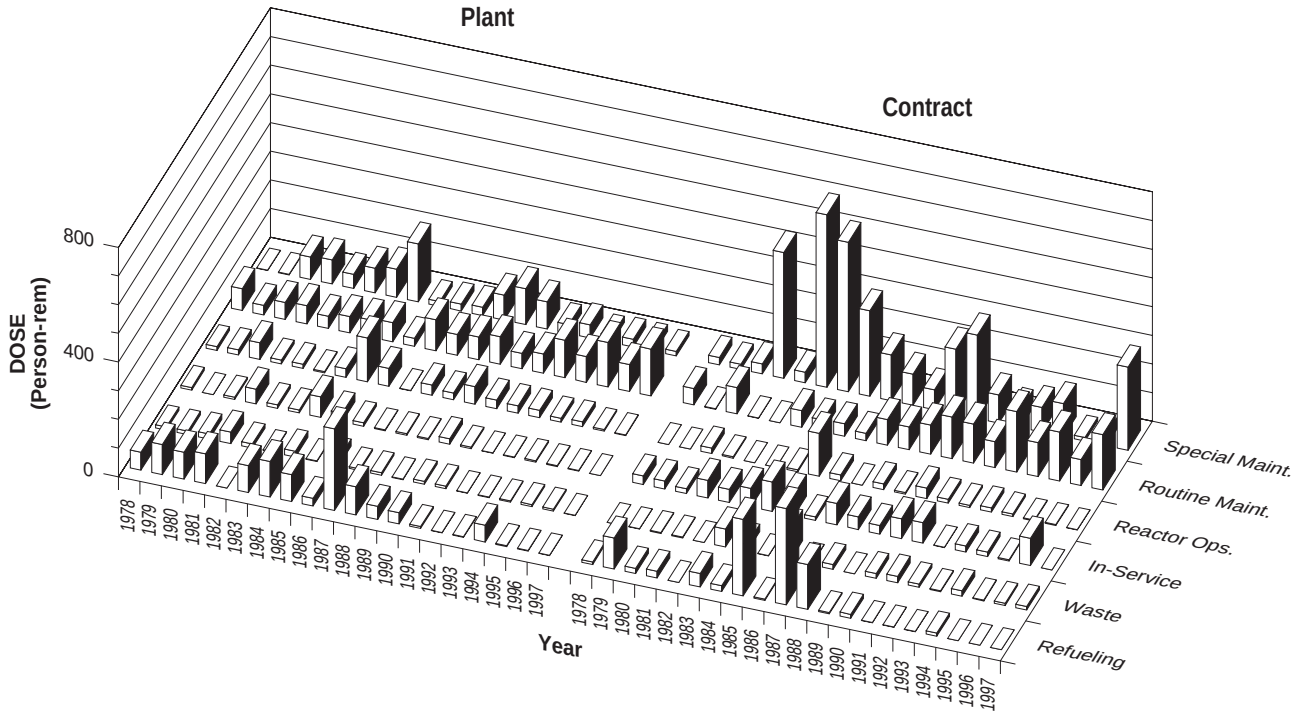


ST. LUCIE 1, 2

Dose-Performance Indicators



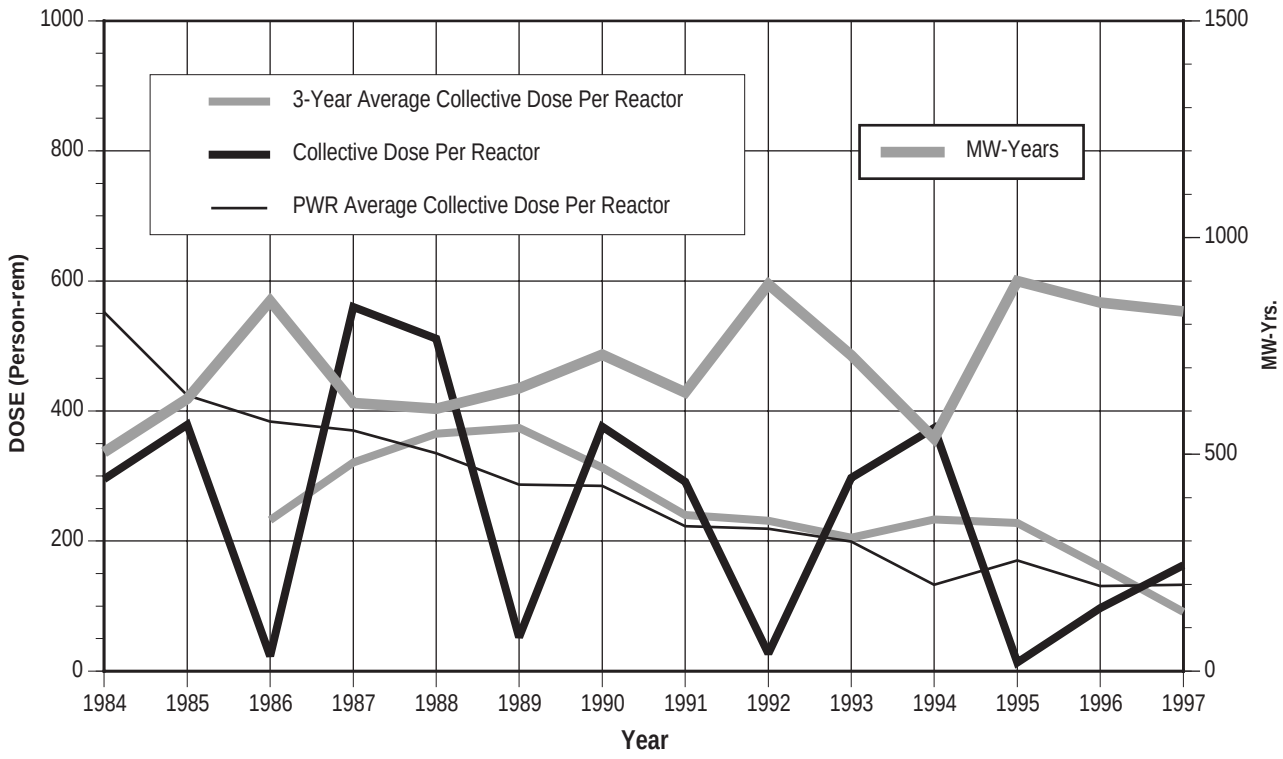
Breakdown by Job Function



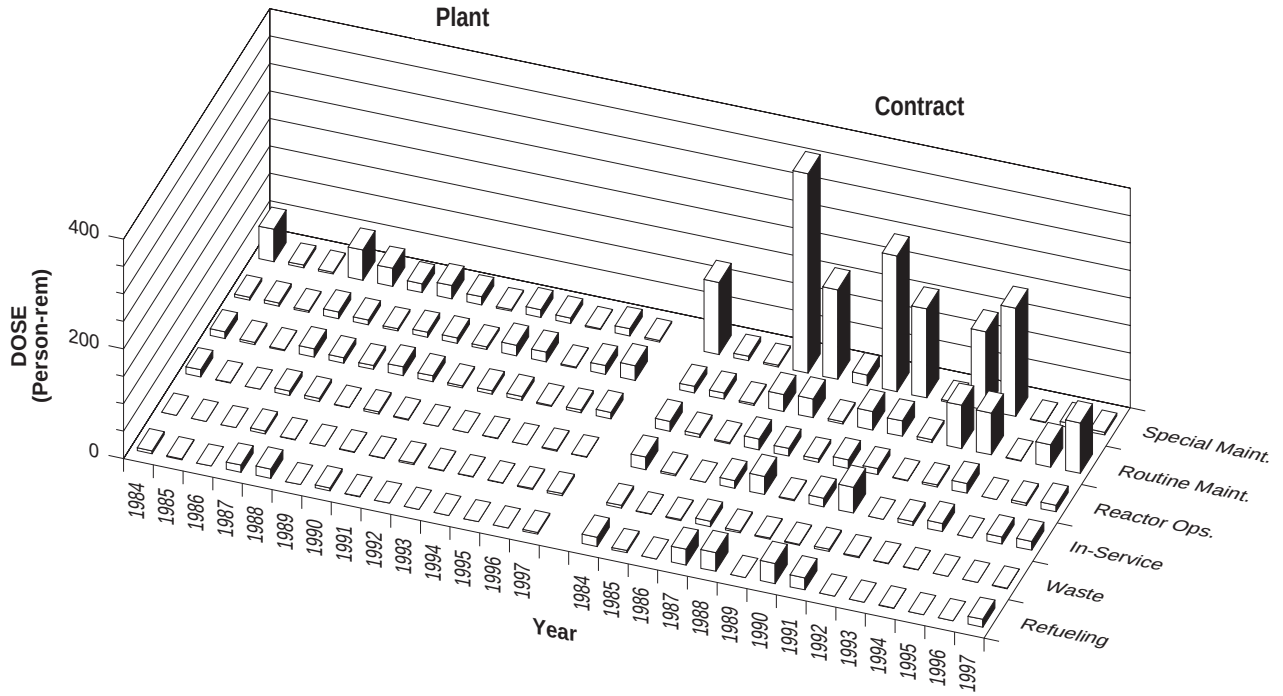
APPENDIX E (continued)

SUMMER 1

Dose-Performance Indicators **PWR**

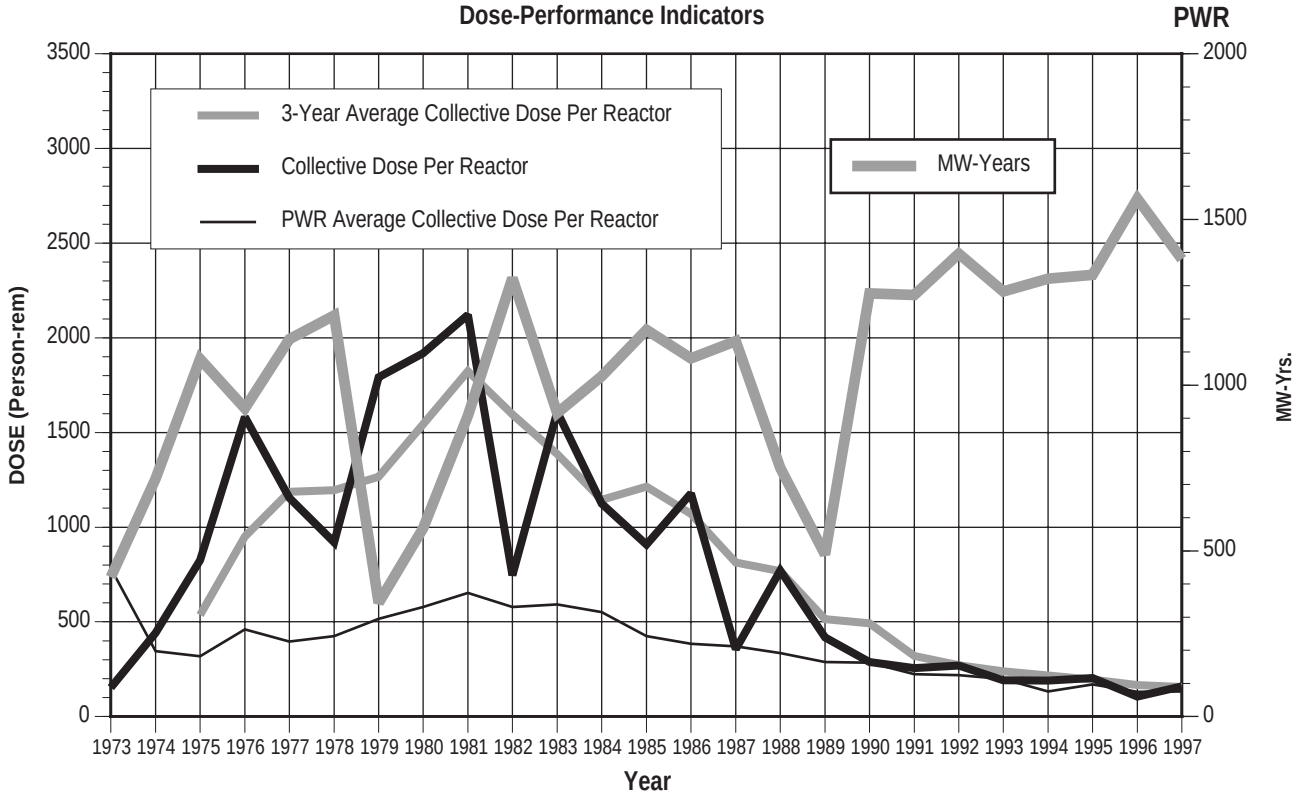


Breakdown by Job Function

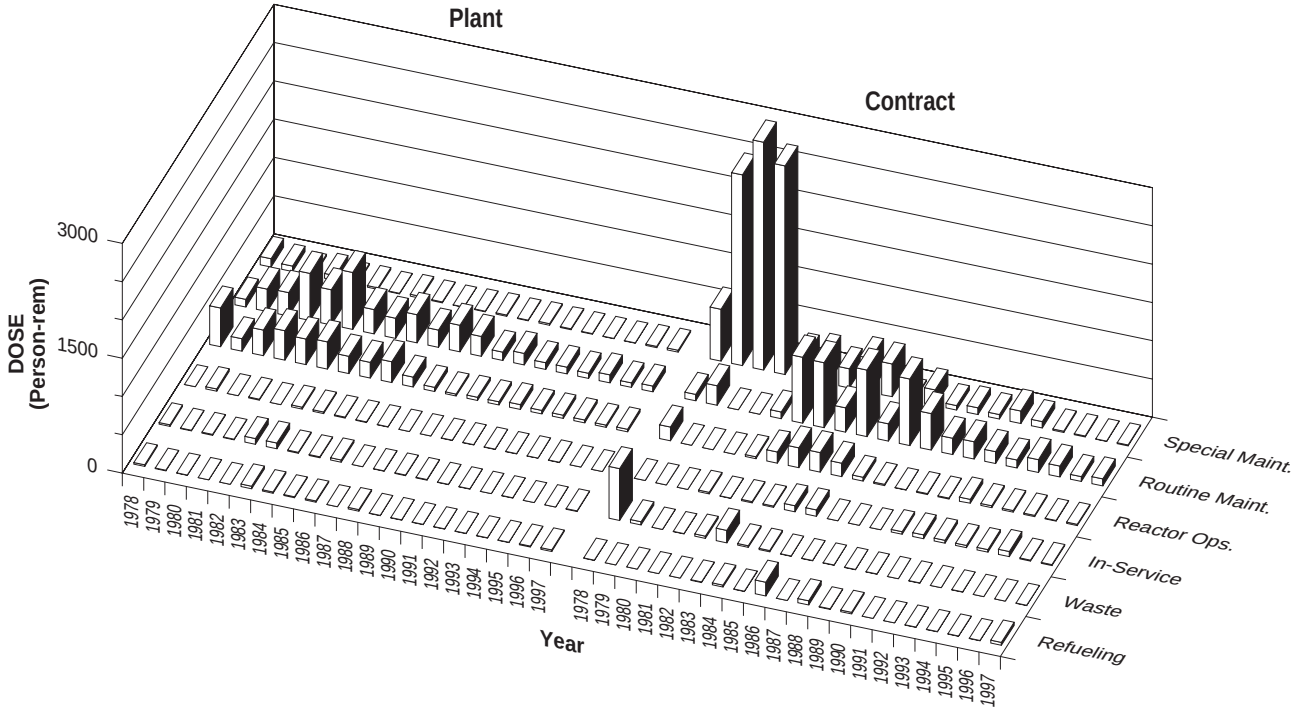


SURRY 1, 2

Dose-Performance Indicators



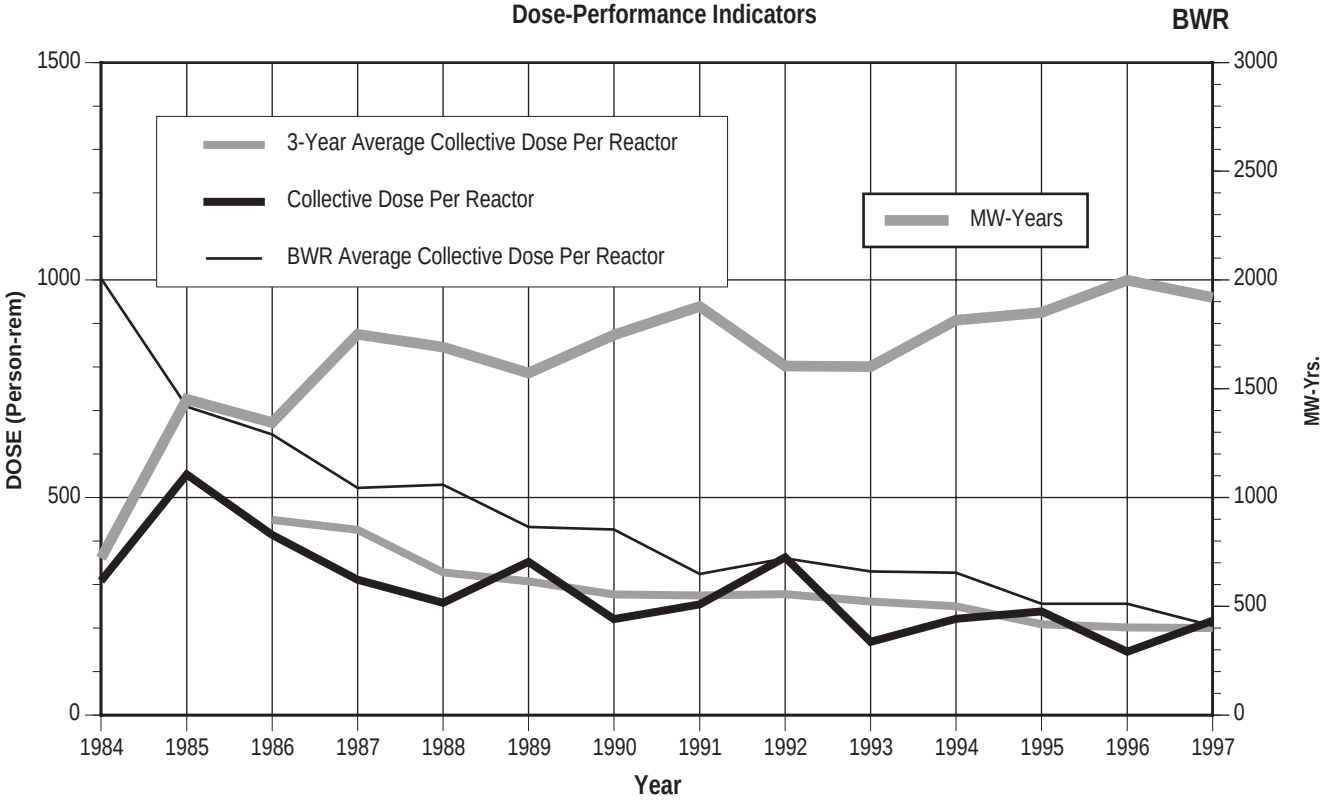
Breakdown by Job Function



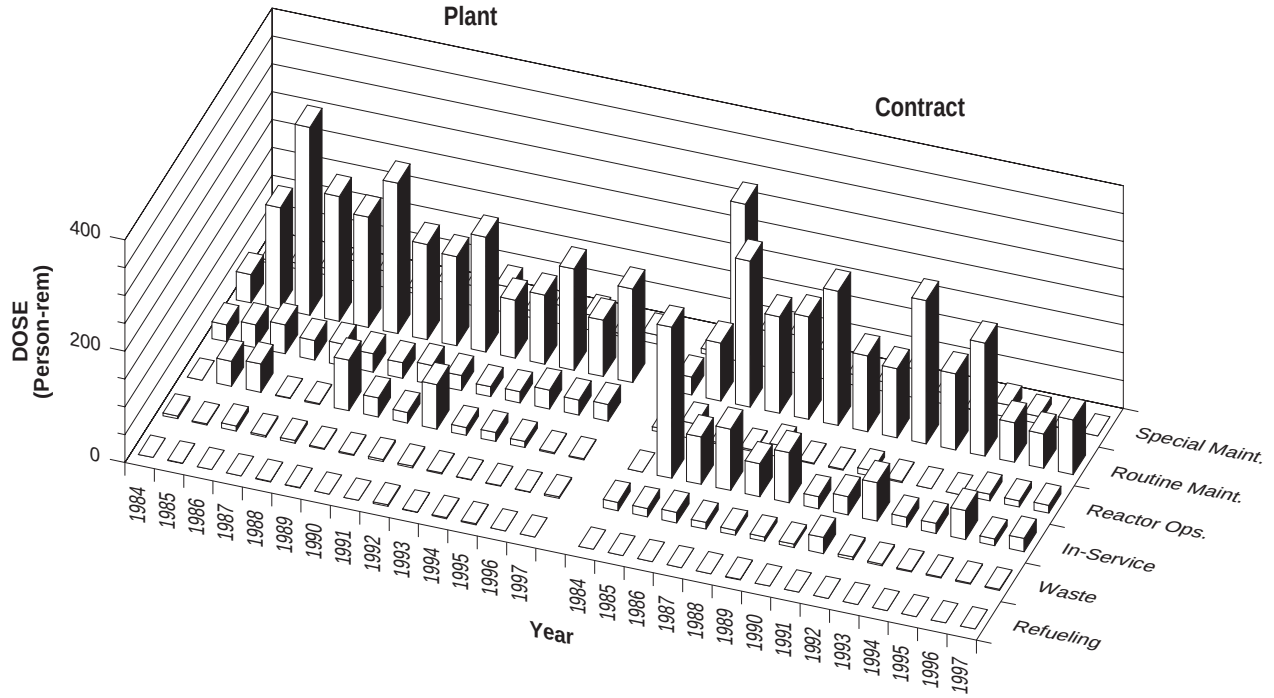
APPENDIX E (continued)

SUSQUEHANNA 1, 2

Dose-Performance Indicators



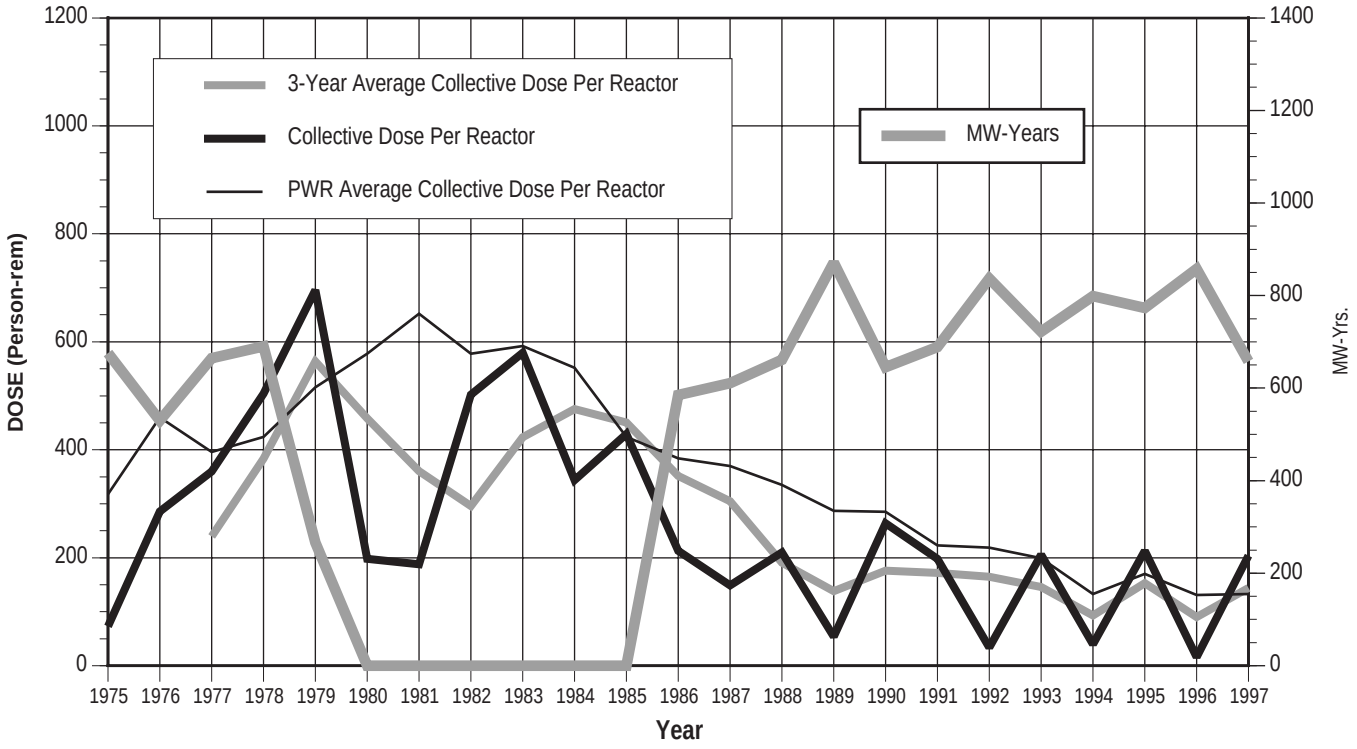
Breakdown by Job Function



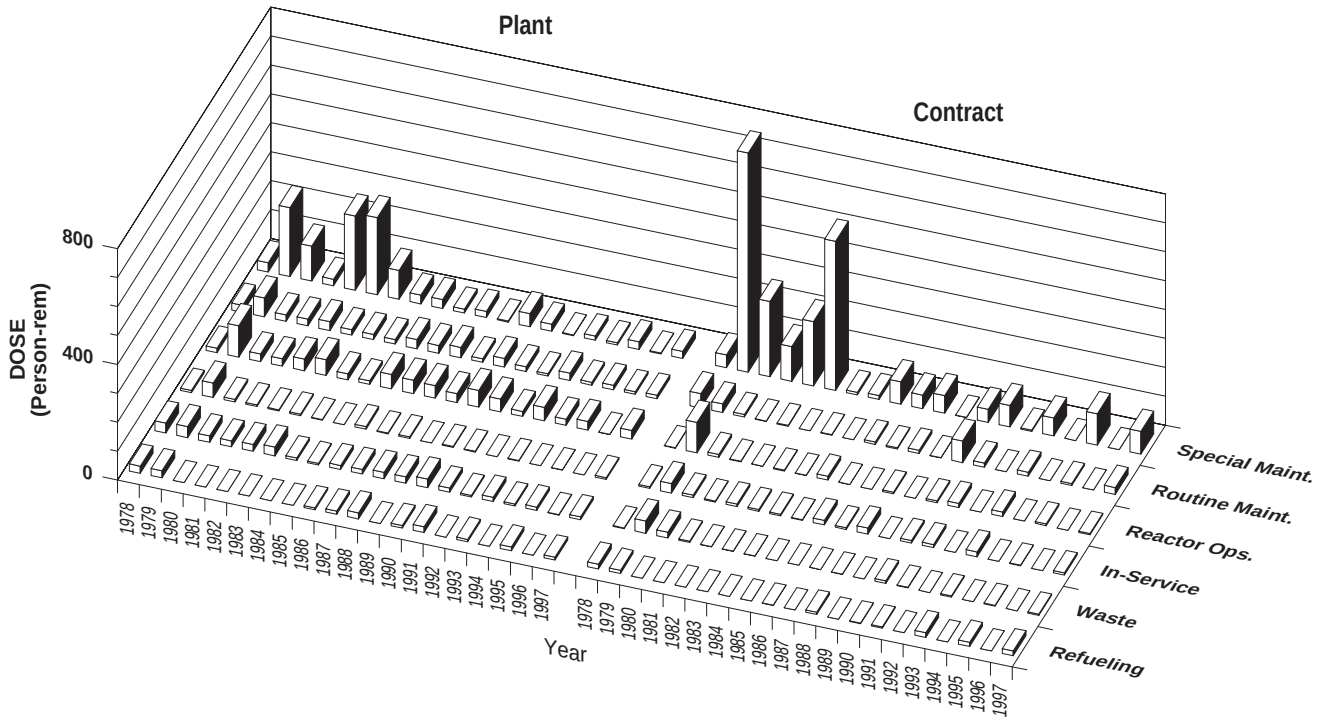
THREE MILE ISLAND 1

Dose-Performance Indicators

PWR



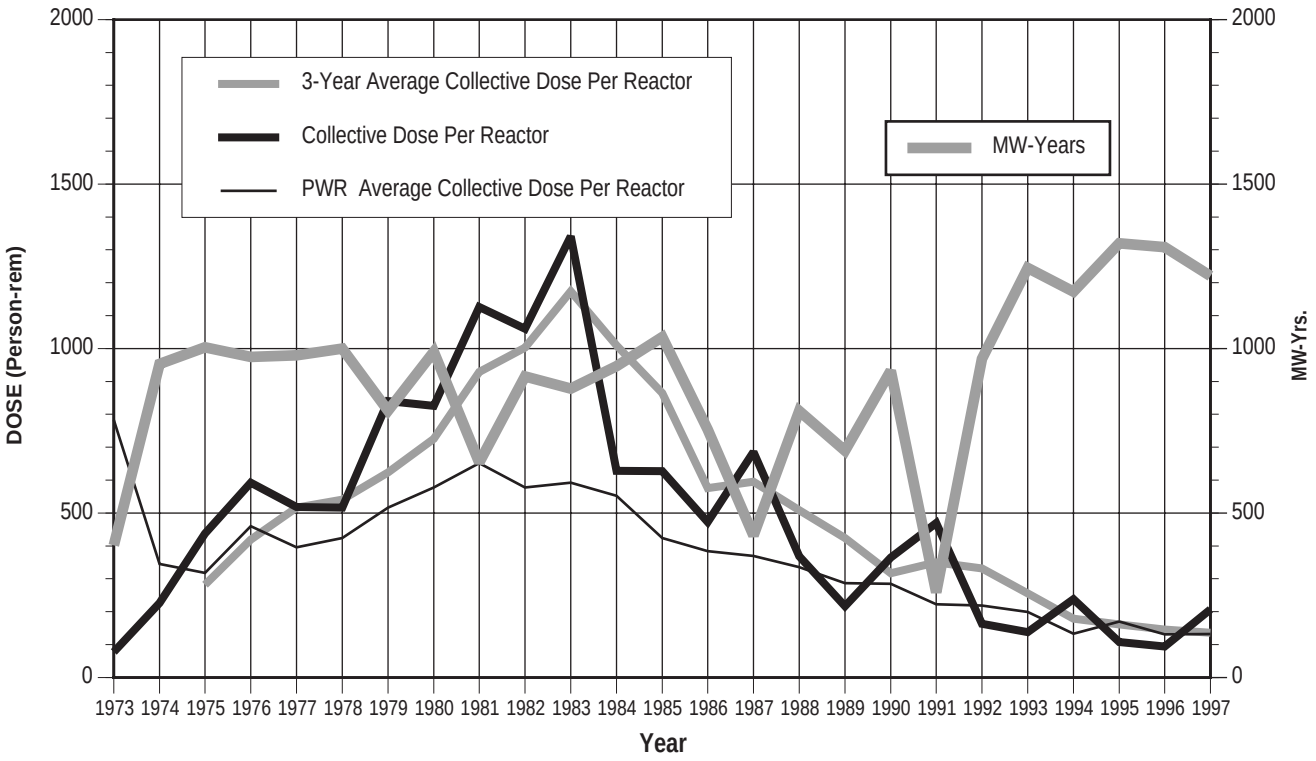
Breakdown by Job Function



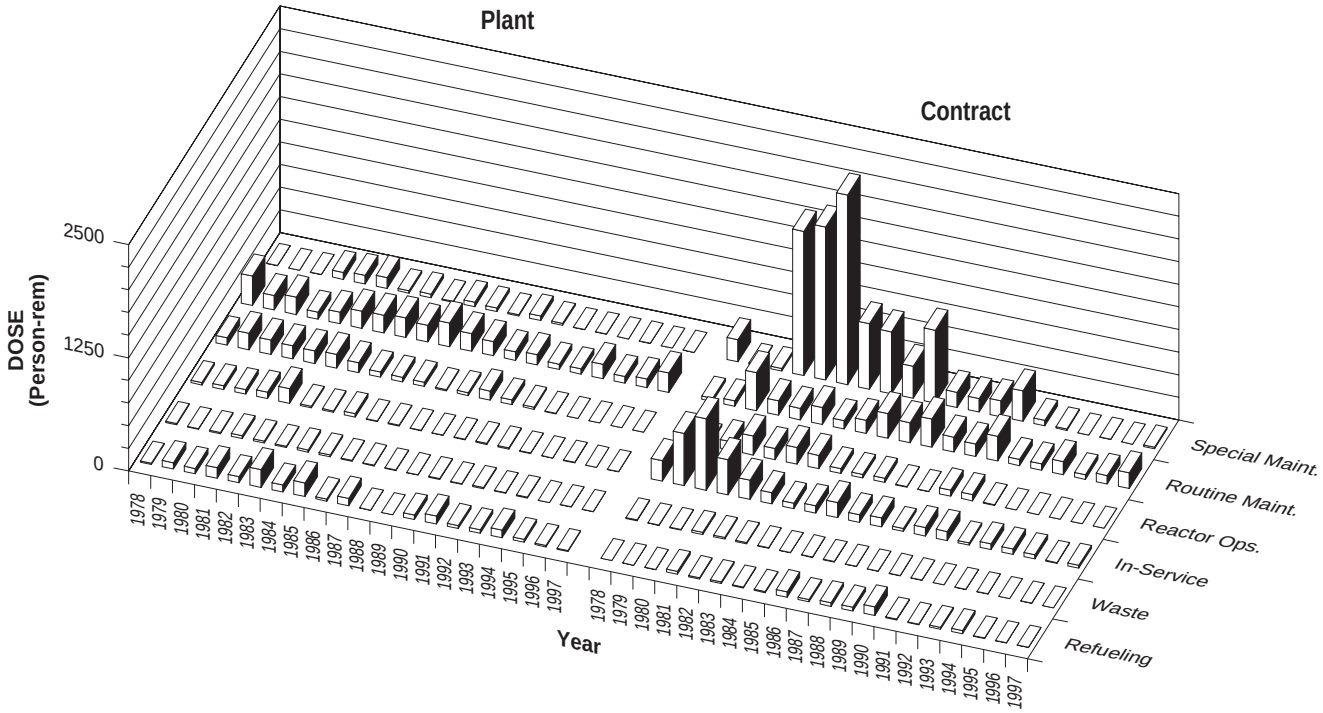
APPENDIX E (continued)

TURKEY POINT 3, 4

Dose-Performance Indicators **PWR**



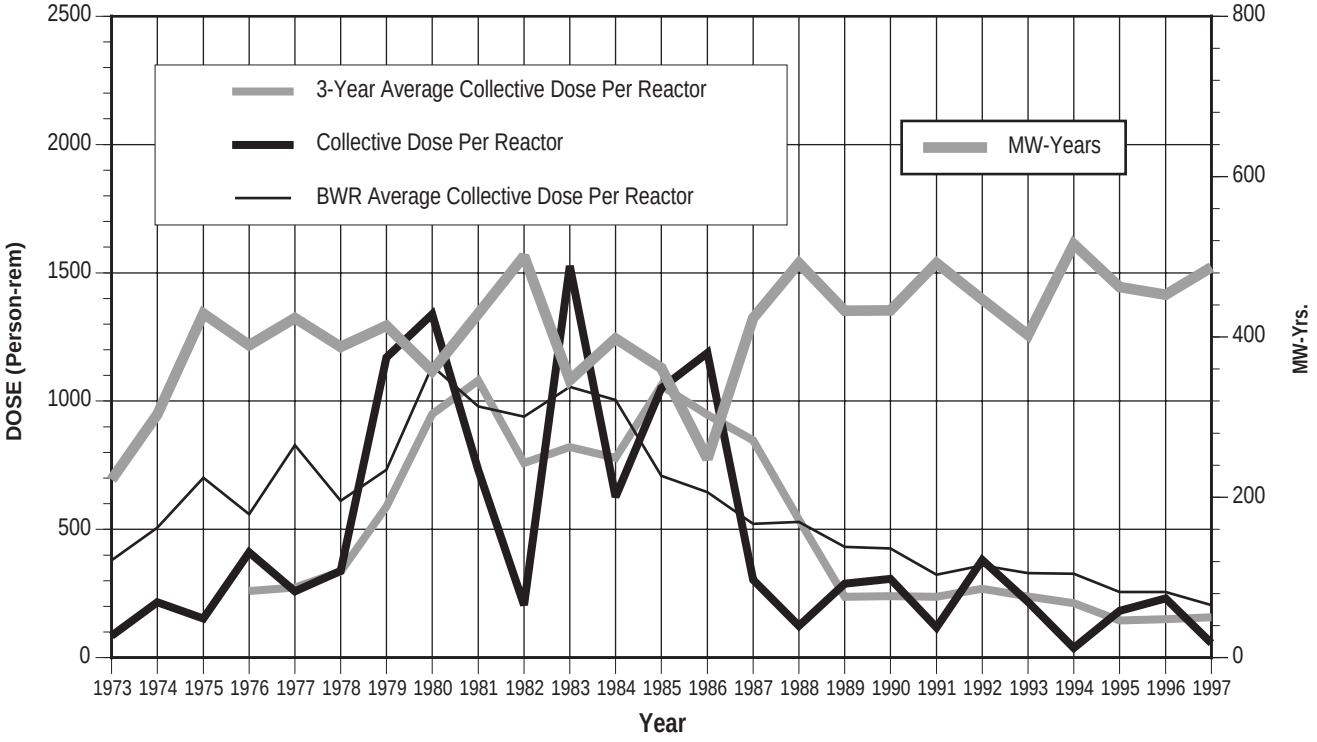
Breakdown by Job Function



VERMONT YANKEE

Dose-Performance Indicators

BWR



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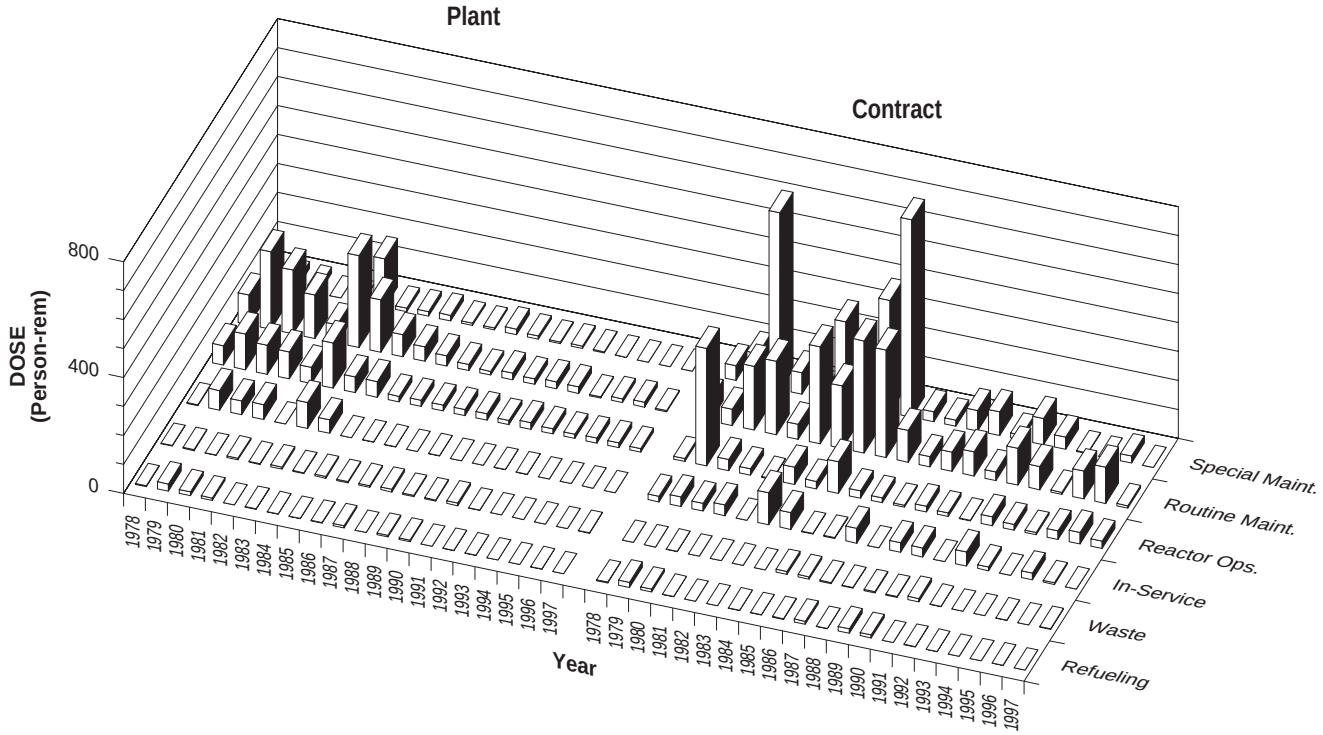
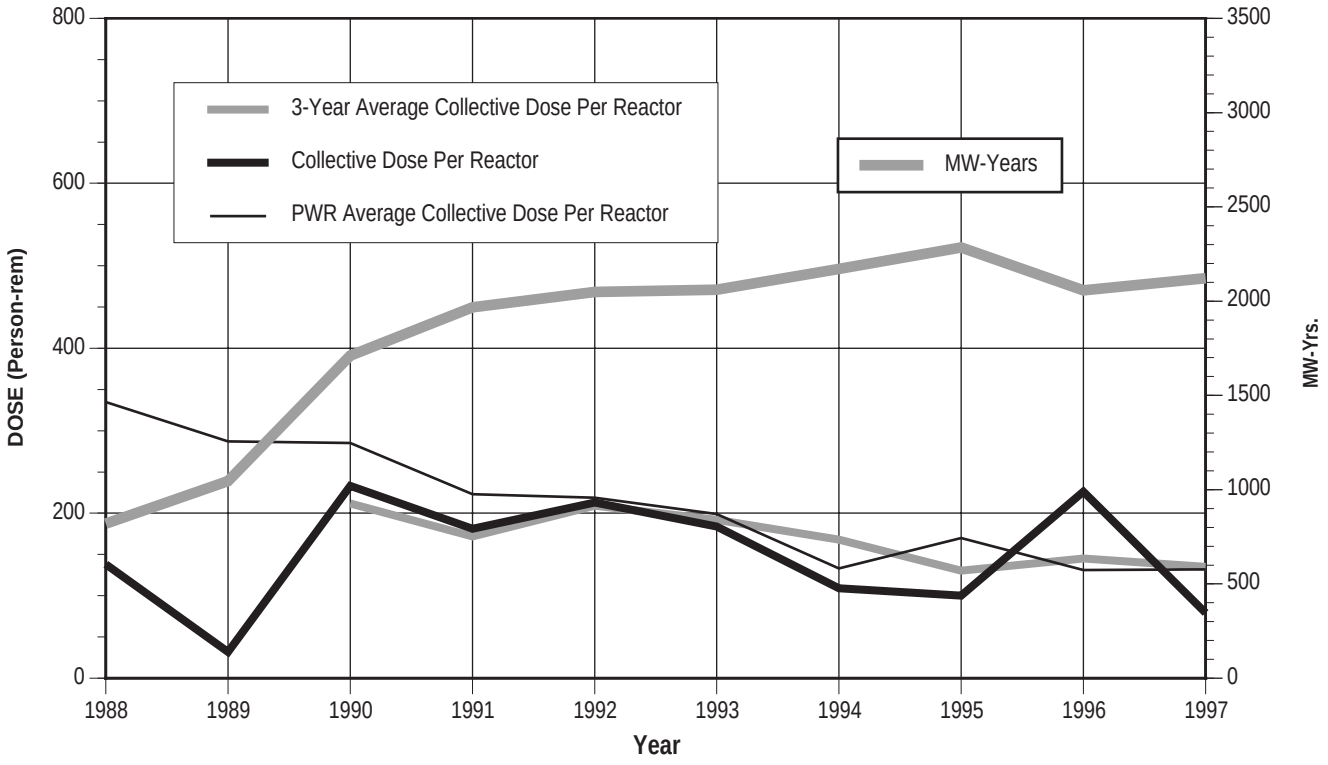


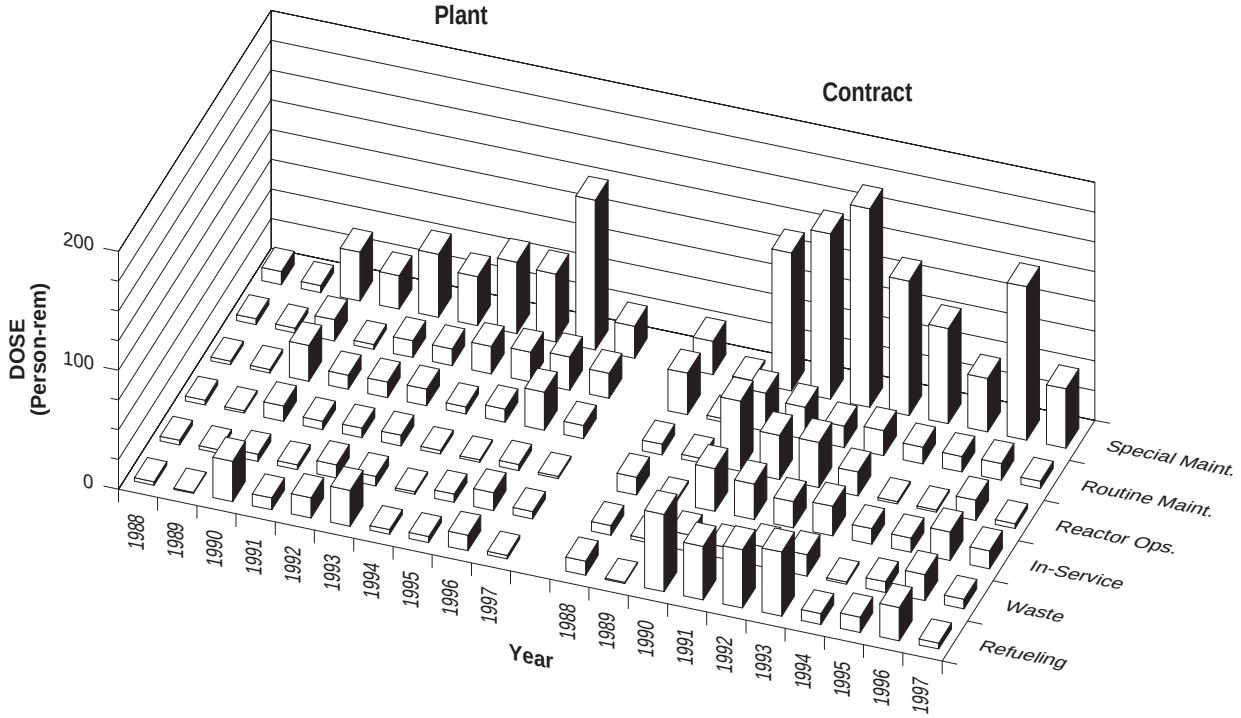
APPENDIX E (continued)

VOGTLE 1, 2

Dose-Performance Indicators **PWR**



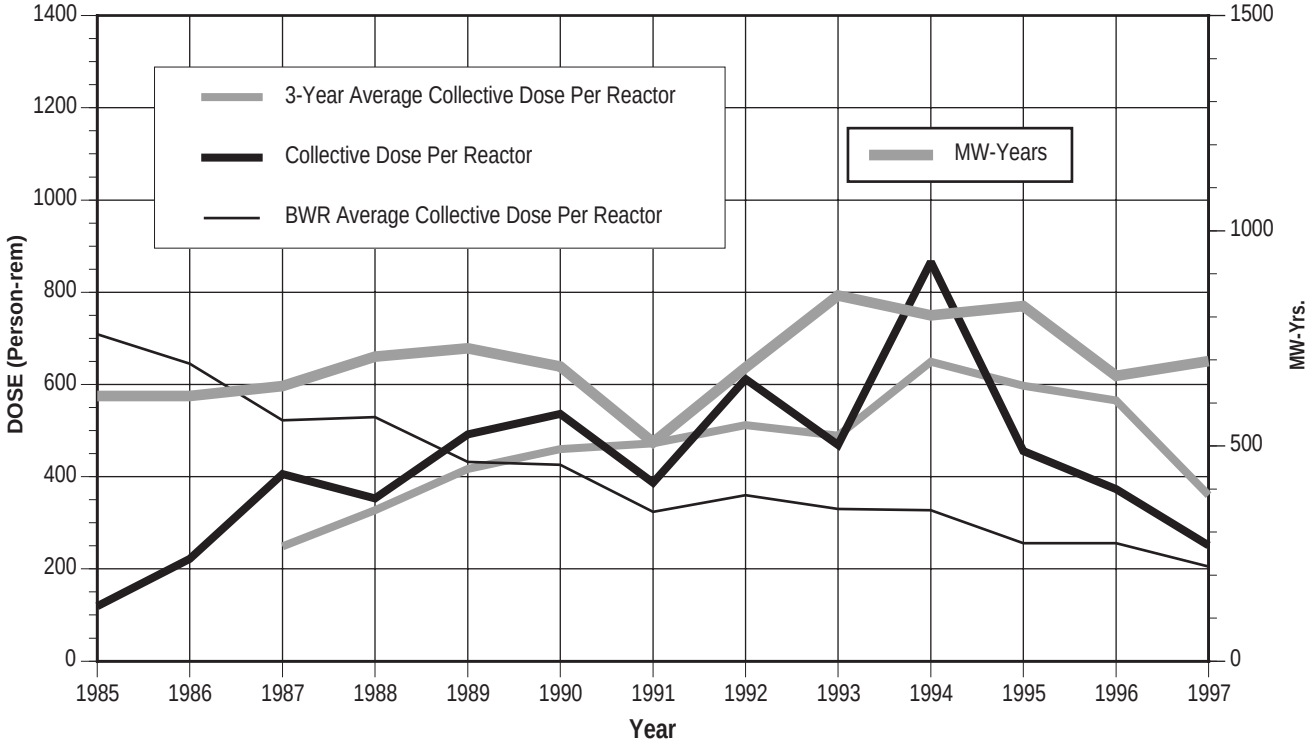
Breakdown by Job Function



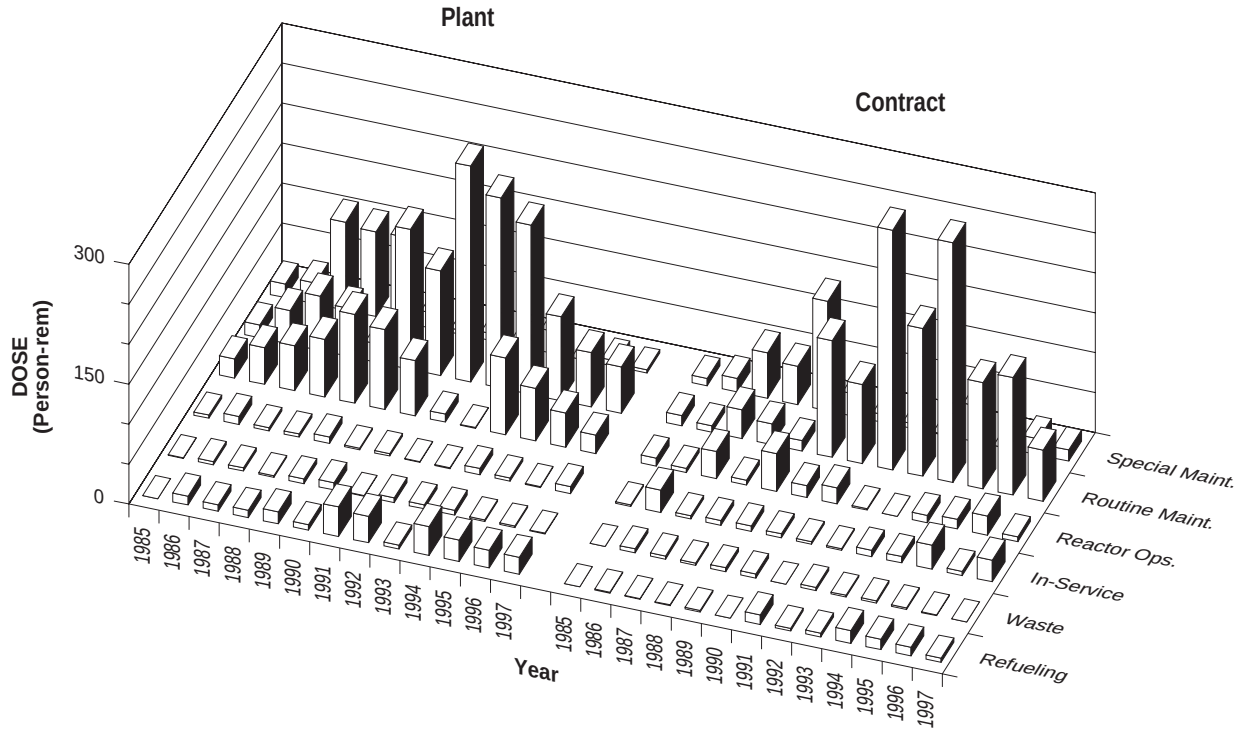
APPENDIX E (continued)

WASHINGTON NUCLEAR 2

Dose-Performance Indicators **BWR**



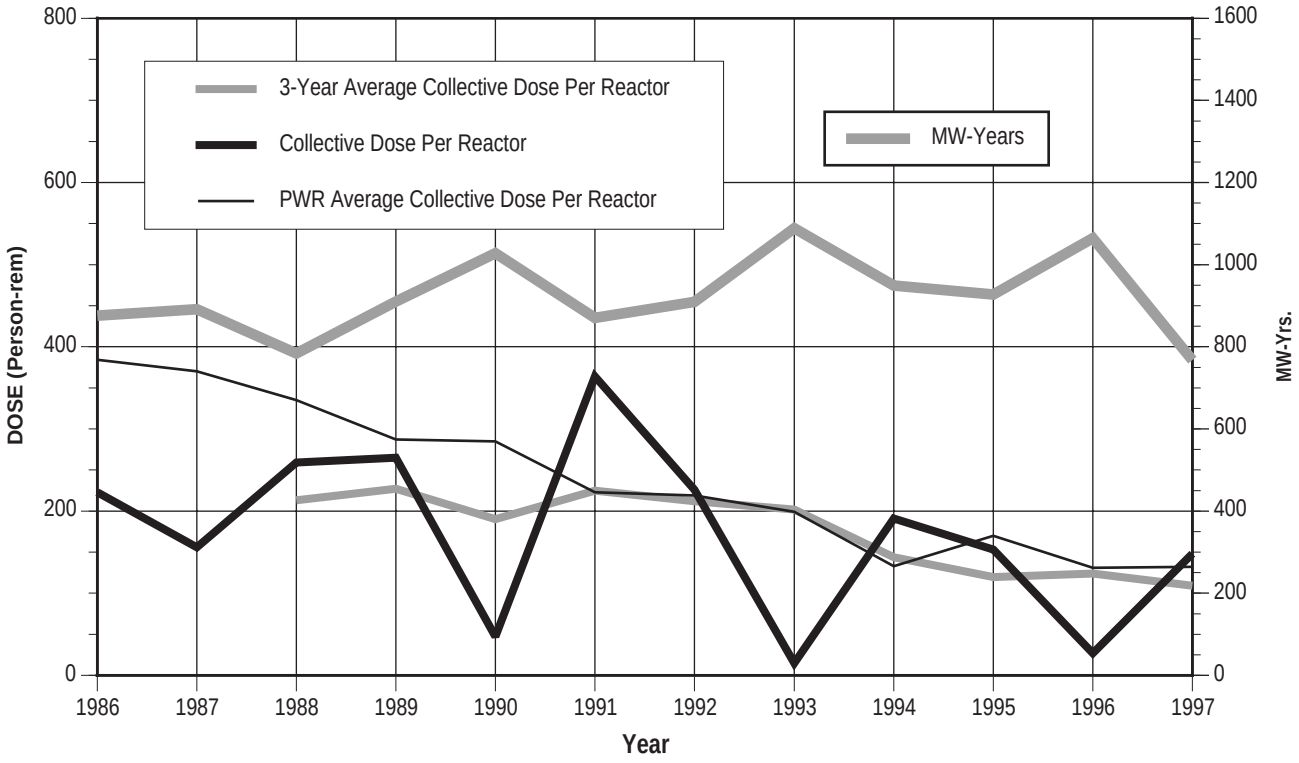
Breakdown by Job Function



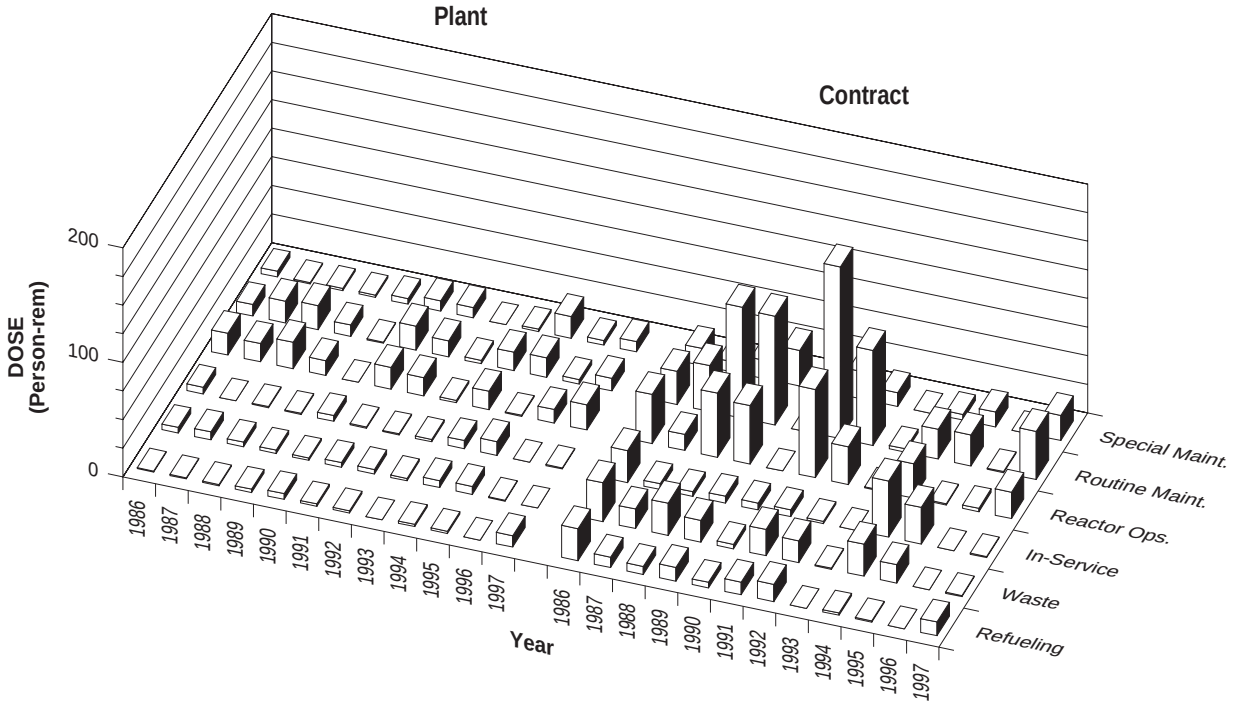
WATERFORD 3

Dose-Performance Indicators

PWR

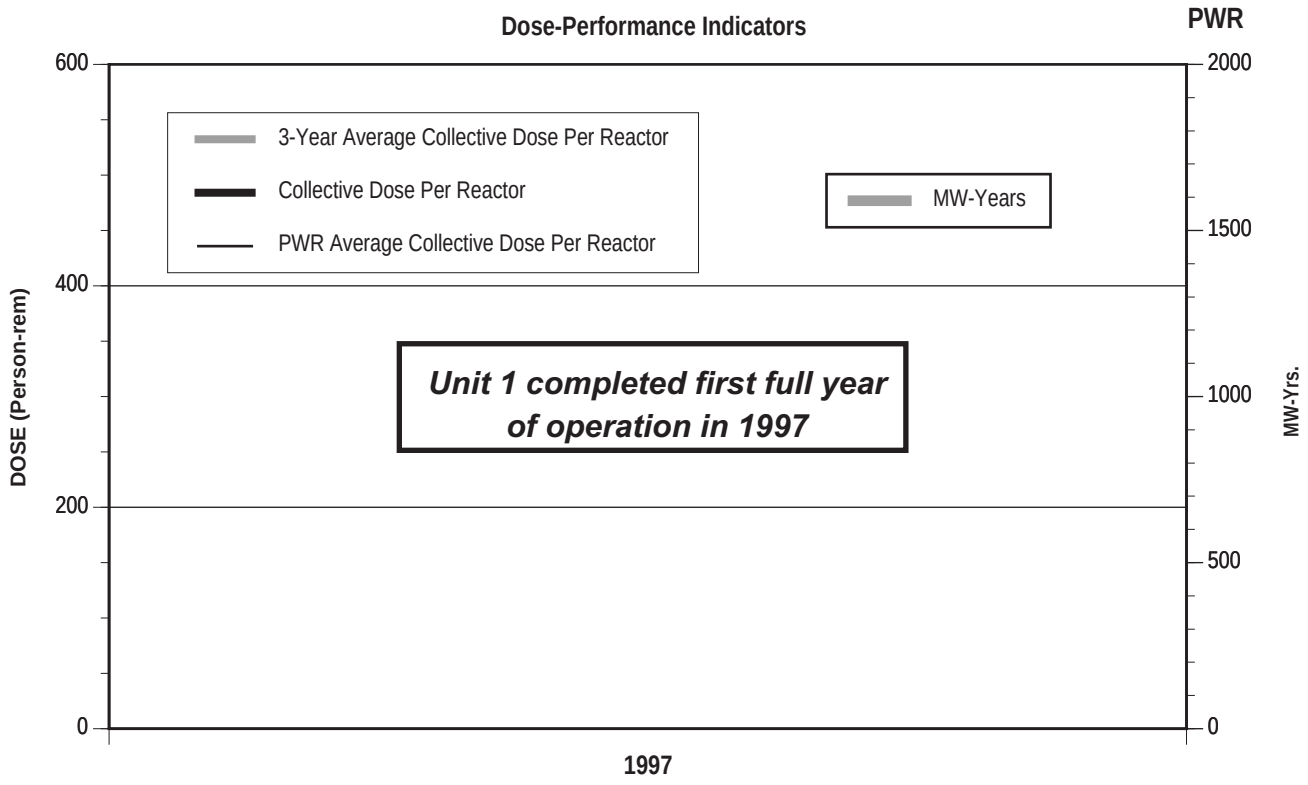


Breakdown by Job Function

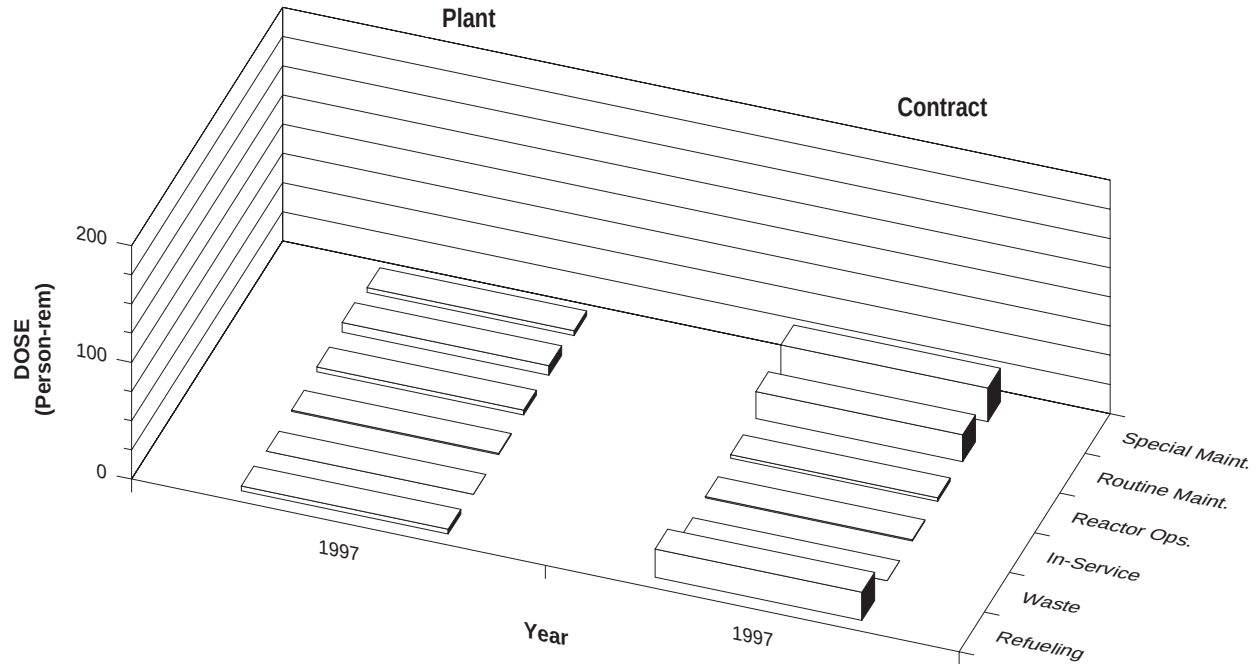


WATTS BAR 1

Dose-Performance Indicators



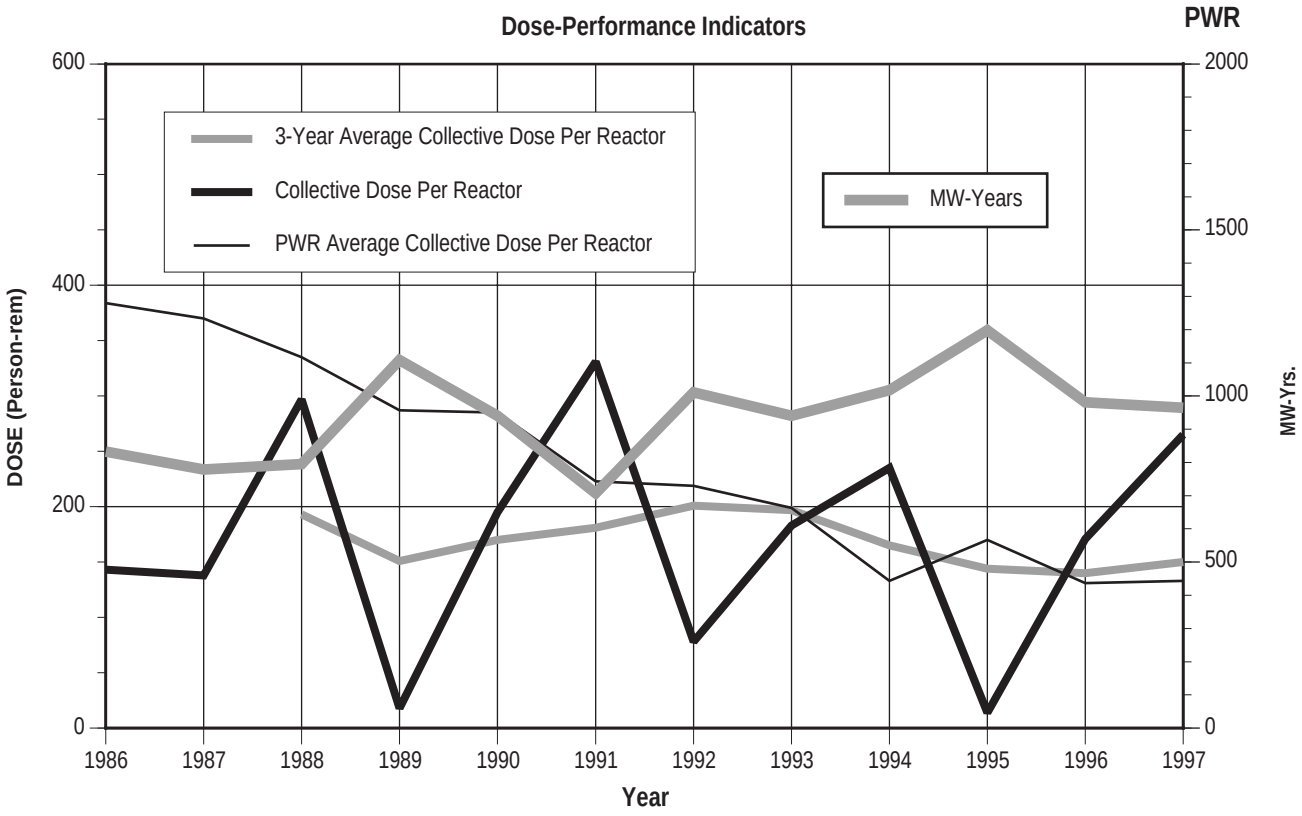
Breakdown by Job Function



APPENDIX E (continued)

WOLF CREEK 1

Dose-Performance Indicators



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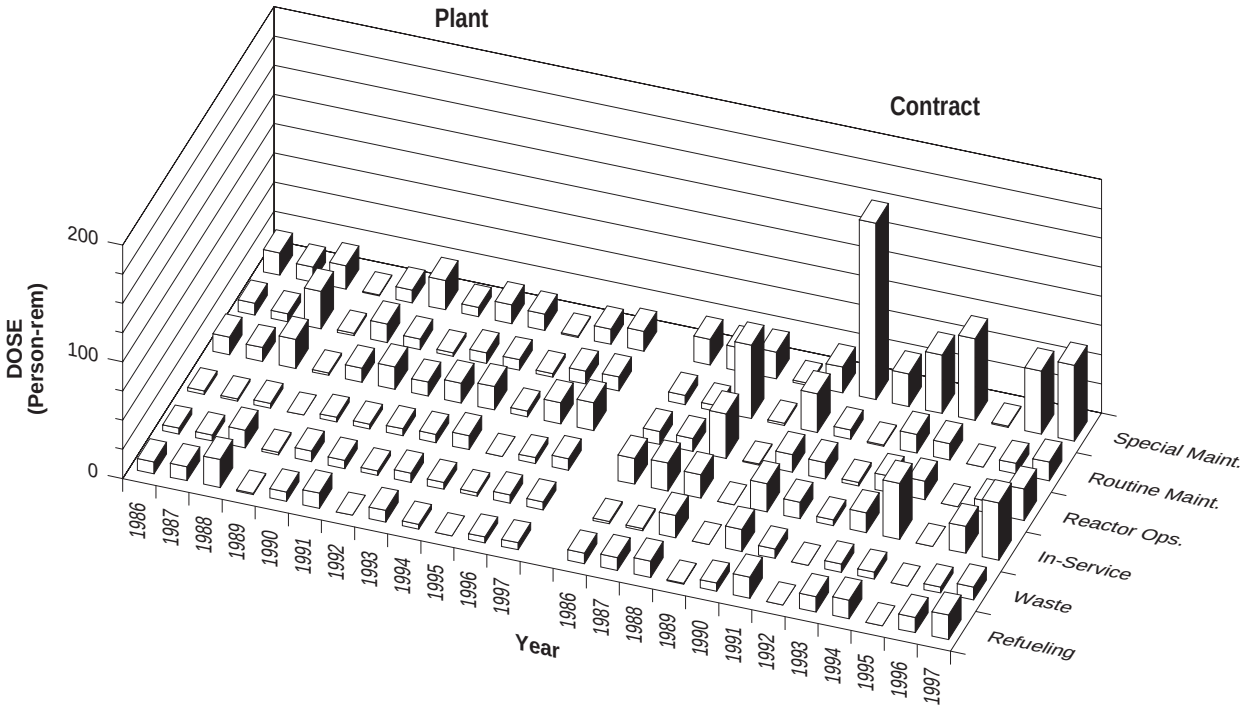
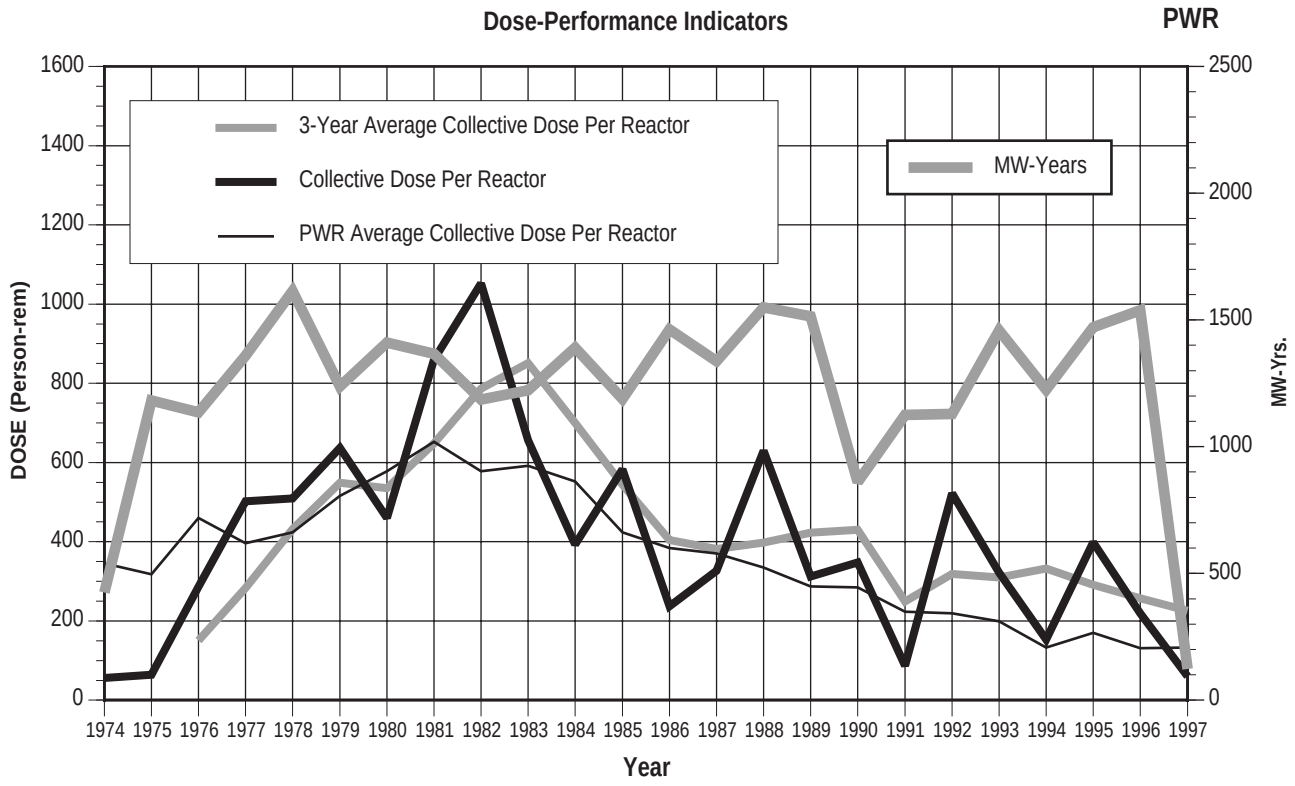
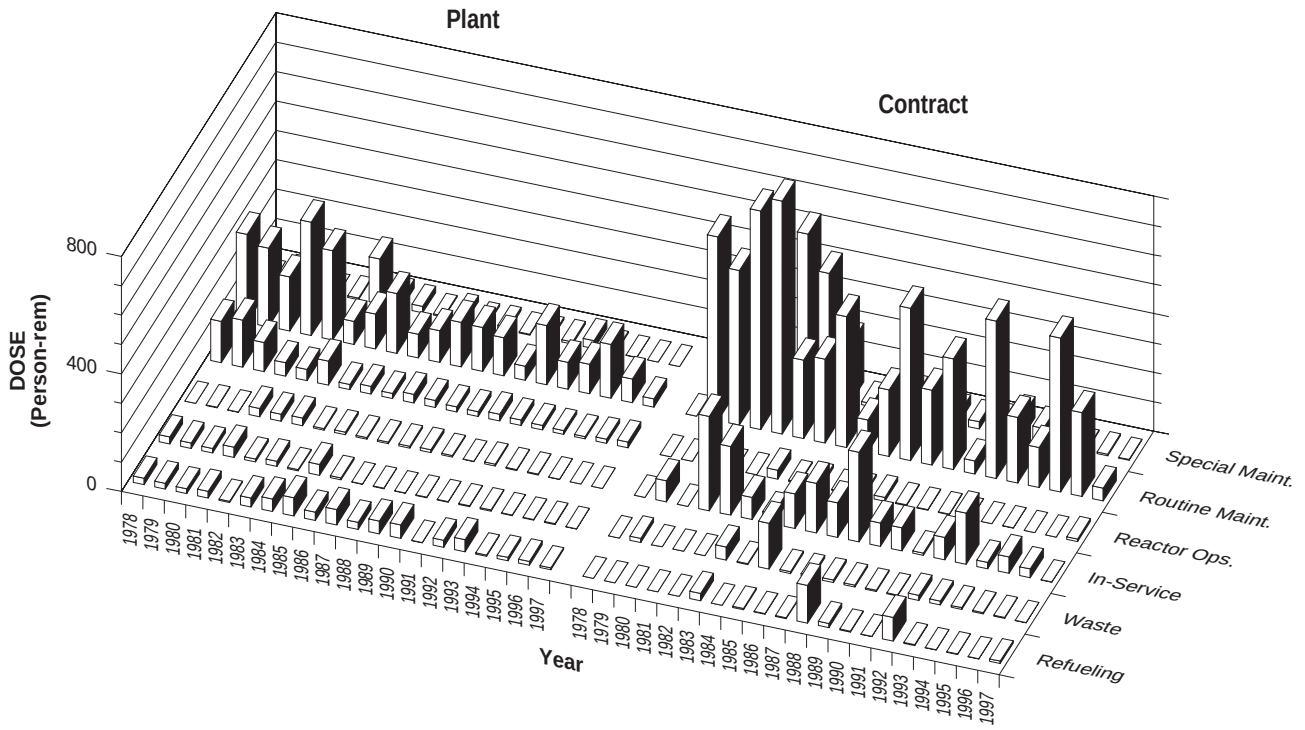


ZION 1, 2

Dose-Performance Indicators



Breakdown by Job Function



APPENDIX F

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

1988-1997

APPENDIX F*

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

1989 - 1997

YEAR AND REACTOR TYPE	Number of Reac.	Number of Individuals with Whole Body Doses in the Ranges (rems)																TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. EXPOSURE	TOTAL COLLECTIVE DOSE (Person-rem)
		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	
1997 - PWR	72	50,879	25,498	12,405	7,974	2,861	1,130	741	19											101,507	50,628	9,539
1997 - BWR	37	29,284	16,261	7,546	5,422	2,533	1,110	930	40	3										63,129	33,845	7,597
1997 - LWR	109	80,163	41,759	19,951	13,396	5,394	2,240	1,671	59	3										164,636	84,473	17,136
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

* 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 other years indicated.

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10. SUPPLEMENTARY NOTES

11. ABSTRACT *(200 words or less)*

This report summarizes the occupational exposure data that are maintained in the U.S. Nuclear Regulatory Commission's (NRC) Radiation Exposure Information and Report System (REIRS). The bulk of the information contained in the report was compiled from the 1997 annual reports submitted by six of the seven categories 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 1997 were received from a total of 296 NRC licensees, of which 109 were operators of nuclear power reactors in commercial operation. Compilations of the reports submitted by the 296 licensees indicated that 142,730 individuals were monitored, 75,291 of whom received a measurable dose (Table 3.1). The collective dose incurred by these individuals was 19, 841 person-rem which represents a 9% decrease from the 1996 value. The number of workers receiving a measurable dose also decreased, resulting in the average measurable dose of 0.26 rem for 1997. 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 1997, the annual collective dose per reactor for, light water reactor licensees (LWRs) was 157 person-rem. This represents a 9% decrease from the value reported for 1996. The annual collective dose per reactor for boiling water reactors (BWRs) was 205 person-rem and for pressurized water reactors (PWRs), it was 132 person-rem. Analyses of transient worker data indicate that 31,065 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 1997, the average measurable dose calculated from reported data was 0.22 rem. The corrected dose distribution resulted in an average dose of 0.26 rem.

12. KEY WORDS/DESCRIPTORS *(List words or phrases that will assist researchers in locating the report.)*

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