NUREG–0713
Vol. 17

Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities 1995

Twenty-Eighth Annual Report

U.S. Nuclear Regulatory Commission

Office of Nuclear Regulatory Research

M. L. Thomas, D. Hagemeyer

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Manuscript Completed: December 1996
Date Published: January 1997

M. L. Thomas, D. Hagemeyer*

Division of Regulatory Applications
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, DC 20555–0001

*Science Applications International Corporation
301 Laboratory Road
Oak Ridge, TN 37830

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.

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 1995 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 1995 were received from a total of **295** NRC licensees, of which **109** were operators of nuclear power reactors in commercial operation. Compilations of the reports submitted by the 295 licensees indicated that **143,684** individuals were monitored, **77,737** of whom received a measurable dose (Table 3.1). The collective dose incurred by these individuals was **24,884** person-cSv (person-rem)[2] which represents a **<0.1% decrease** from the 1994 value. The number of workers receiving a measurable dose also decreased, resulting in the average measurable dose of **0.32** cSv (rem) for 1995. 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 1995, the annual collective dose per reactor for light water reactor licensees (LWRs) was **199** person-cSv (person-rem). This is the same value that was reported for 1994. The annual collective dose per reactor for boiling water reactors (BWRs) was **256** person-cSv (person-rem) and, for pressurized water reactors (PWRs), it was **170** person-cSv (person-rem).

Analyses of transient worker data indicate that **17,153** 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 1995, the average measurable dose calculated from reported data was **0.26** cSv (rem). The corrected dose distribution resulted in an average measurable dose of **0.32** cSv (rem).

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

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

EDITOR'S NOTE

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

Comments should be directed to:

Mary L. Thomas: (301) 415-6230
E-Mail Address: mlt1@nrc.gov
REIRS Project Manager
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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FOREWORD

Based on information received from 294 licensees required to submit annual reports, collective doses decreased by less than 1% from 1994 to 1995. The annual collective dose decreased by less than 1 % at light-water reactors from 1994 to 1995.Collective doses reported by industrial radiographers, low-level waste disposal facilities, fuel fabrication and processing facilities also showed a decrease whereas manufacturers and distributors and independent spent fuel storage facilities showed slight increase.

NUREG-0713, Volume 17, summarizes the occupational exposure data for 1995 that are maintained in the U.S. Nuclear Regulatory Commission's Radiation Exposure Information Reporting System (REIRS). It does not present staff positions or requirements. However, the NRC staff believes that it can be a useful tool in evaluating the effectiveness of an ALARA program.

Mary L. Thomas
Radiation Protection and Health Effects Branch
Division of Regulatory Applications
Office of Nuclear Regulatory Research

PREFACE

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

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

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

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

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

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

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

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

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

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at Commercial Nuclear Power Reactors and Other Facilities
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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

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

information reported by the facilities under its jurisdiction. The annual reports published by the 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 second compilation of radiation exposure information collected under the revised 10 CFR 20. Certain sections of the report have been modified to account for the change in the reporting of exposure information. Readers are encouraged to comment on these changes. Recommendations for further analysis or for different presentation of information are welcome.

1.1 Radiation Exposure Information on the Internet

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

The main web URL address for the NRC is:

http://www.nrc.gov

The NRC radiation exposure information web URL address is:

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

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

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

2 LIMITATIONS OF THE DATA

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

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

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

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

report, 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 and 1995 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 pay attention to the differences between all power reactors [including the high temperature gas reactor (HTGR), all pressurized water reactors (PWRs), and all boiling water reactors (BWRs)]. The totals may be inclusive or exclusive of those licensees that were in commercial operation for less than one full year. These parameters vary throughout the tables and appendices of this report in order to provide the most comprehensive analysis of all the data available. The apparent discrepancies among the various tables are a necessary side-effect of this endeavor.

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

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

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

3 ANNUAL PERSONNEL MONITORING REPORTS - 10 CFR 20.2206

3.1 Definition of Terms and Sources of Data

3.1.1 Statistical Summary Reports

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

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

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

3.1.2 Number of Monitored Workers

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

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[5] Commercial nuclear power reactors; industrial radiographers; fuel processors, fabricators and reprocessors; manufacturers and distributors of by-product material; independent spent fuel storage installations; and facilities for land disposal of low-level radioactive waste.

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

3.1.3 Number of Workers with Measurable Doses

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

3.1.4 Collective Dose

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

It should be noted that the collective dose in past years was, in some cases, calculated from the dose distributions by summing the products obtained from multiplying the number of workers reported in each of the dose ranges by the midpoint of the corresponding dose range. This assumes that the midpoint of the range is equal to the arithmetic mean of the individual doses in the range. Past experience has shown that the actual mean dose of workers reported in each dose range is less than the midpoint of the range, and therefore the resultant calculated collective doses shown in this report for these licensees may be about 10% higher than the sum of the actual individual doses. Care should be taken when comparing the actual collective dose calculated for 1995 with the collective dose for previous years because of this change in methodology. In addition, prior to 1994, doses only included the external whole body dose. Although the contribution of internal dose to the TEDE is minimal for most licensees, it should be taken into consideration when comparing the 1995 collective dose with the collective dose for prior years. One noted exception is for fuel fabrication licensees where the CEDE in some cases contributes the majority of the TEDE (see Section 3.3.5.).

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

3.1.5 Average Individual Dose

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

3.1.6 Average Measurable Dose

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

3.1.7 Number of Licensees Reporting

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

3.1.8 CR

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

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

TABLE 3.1
ANNUAL EXPOSURE DATA FOR CERTAIN CATEGORIES OF LICENSEES
1986 - 1995

License Category*	Calendar Year	Number of Licensees Reporting	Number of Monitored Individuals	Number of Workers With Measurable TEDE	Collective TEDE (person-cSv or person-rem)	Average TEDE (cSv or rem)	Average Measurable TEDE per Worker (cSv or rem)	CR**
Industrial Radiography	1995	139	3,530	2,485	1,338	0.38	0.54	0.40
	1994	139	3,230	2,351	1,415	0.44	0.60	0.51
	1993	178	4,721	3,007	1,598	0.34	0.53	0.45
	1992	246	6,703	4,265	1,864	0.28	0.44	0.37
	1991	248	6,820	4,649	2,160	0.32	0.46	0.40
	1990	258	6,523	4,458	2,120	0.33	0.48	0.42
	1989	276	6,745	4,352	2,067	0.31	0.47	0.42
	1988	286	6,878	4,223	1,981	0.29	0.47	0.43
	1987	312	7,236	4,454	1,835	0.25	0.41	0.36
	1986	335	7,952	5,130	2,108	0.27	0.41	0.39
Manufacturing and 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
	1993	58	4,913	2,254	680	0.14	0.30	0.47
	1992	67	5,210	2,250	784	0.15	0.35	0.54
	1991	59	4,930	1,952	722	0.15	0.37	0.59
	1990	58	4,203	2,279	693	0.16	0.30	0.55
	1989	48	4,554	2,345	770	0.17	0.33	0.53
	1988	16	2,177	868	343	0.16	0.40	0.62
	1987	24	3,589	2,317	716	0.20	0.31	0.54
	1986	33	4,042	2,065	745	0.18	0.36	0.49
Low-Level Waste Disposal	1995	2	212	56	8	0.04	0.15	0.00
	1994	2	202	83	22	0.11	0.27	0.15
	1993	2	432	76	21	0.05	0.27	0.22
	1992	2	487	82	37	0.08	0.45	0.34
	1991	2	905	147	39	0.04	0.27	0.24
	1990	2	784	115	26	0.03	0.23	0.17
	1989	2	925	119	35	0.04	0.29	0.17
	1988	2	864	171	27	0.03	0.16	0.06
	1987	2	778	173	24	0.03	0.14	0.00
	1986	2	996	175	31	0.03	0.18	0.05
Independent Spent Fuel Storage	1995	1	104	49	51	0.49	1.04	0.83
	1994	1	158	89	42	0.27	0.47	0.44
	1993	2	135	52	14	0.10	0.26	0.11
	1992	2	280	85	11	0.04	0.13	0.00
	1991	2	41	24	4	0.10	0.17	0.00
	1990	2	56	22	6	[illegible]	0.27	0.00
	1989	2	190	102	33	[illegible]	0.32	0.09
	1988	2	217	57	25	[illegible]	0.44	0.27
	1987	2	129	64	41	0	0.64	0.60
	1986	1	32	32	34	1.06	1.06	0.46
Fuel Fabrication and Processing	1995	8	4,106	2,959	1,217	0.30	0.41	0.38
	1994	8	3,596	2,847	1,147	0.32	0.40	0.40
	1993	8	3,649	2,611	339	0.04	0.13	0.08
	1992	11	8,439	5,081	545	0.06	0.11	0.03
	1991	11	11,702	3,929	378	0.03	0.10	0.01
	1990	11	14,505	3,871	422	0.03	0.11	0.01
	1989	8	11,583	2,992	243	0.02	0.08	0.00
	1988	10	11,994	3,869	455	0.04	0.12	0.01
	1987	10	10,370	3,994	514	0.05	0.13	0.01
	1986	10	8,017	3,790	486	0.06	0.12	0.01
Commercial Light Water Reactors***	1995	109	133,086	70,986	21,874	0.16	0.31	0.06
	1994	109	142,707	73,780	21,695	0.15	0.29	0.08
	1993	114	169,862	86,187	28,365	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	98,602	36,607	0.20	0.37	0.33
	1989	113	188,477	100,080	35,930	0.19	0.36	0.33
	1988	111	193,532	96,653	40,055	0.21	0.41	0.38
	1987	105	205,895	97,992	39,708	0.19	0.41	0.37
	1986	101	191,978	96,535	41,932	0.22	0.43	0.44
Grand Totals and Averages	1995	295	143,684	77,737	24,884	0.17	0.32	0.11
	1994	303	152,834	80,401	24,901	0.16	0.31	0.13
	1993	360	189,712	94,187	29,014	0.15	0.31	0.24
	1992	442	205,009	106,060	32,538	0.16	0.31	0.25
	1991	437	203,441	101,786	31,831	0.16	0.31	0.27
	1990	447	213,152	109,547	39,874	0.19	0.36	0.34
	1989	449	212,474	109,990	39,078	0.18	0.36	0.34
	1988	427	215,662	105,841	42,886	0.20	0.41	0.38
	1987	455	227,997	108,994	42,838	0.19	0.39	0.37
	1986	482	213,017	107,727	45,316	0.21	0.42	0.43

* These categories consist only of NRC licensees. Agreement State licensed organizations do not report occupational exposure data to the NRC.

** CR is the ratio of the annual collective dose delivered at annual doses exceeding 1.5 cSv to the total annual collective dose. (Section 3.1.8)

*** Includes all LWRs in commercial operation, although some of them may not have been in operation for a full year. 1994 and 1995 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)

indicator when consistently applied to the data from year to year.

The last column in Table 3.1 shows the values of CR for the different types of licensees. With the implementation of the revised 10 CFR 20 in 1994, licensees were required to submit dose records for each individual. This allowed the NRC to determine the CR value directly by summing the collective dose for individuals with a total TEDE greater than or equal to 1.5 cSv and divide it by the collective TEDE for the licensee. This method yielded a large reduction in the CR for Reactors. The CR value for Reactors dropped 64% from 0.22 in 1993 to 0.08 in 1994 and to 0.06 in 1995. Using the previous methodology, the CR value would have been calculated to be 0.23 in 1994 and 0.19 for 1995. One of the contributing factors for this difference is the administrative controls imposed at nuclear power facilities for individuals who exceed 1 cSv. This causes the dose distribution to drop off sharply above 1 cSv with fewer exposures exceeding 1.5 cSv. Therefore, the actual CR is significantly less than the value that is calculated by assuming a uniform dose distribution.

Other licensees, such as Manufacturing and Distribution and Independent Spent Fuel Storage, have experienced increases in the CR value and exceed the 0.50 value recommended by UNSCEAR. Fuel Fabrication doses, including the CR value, have increased primarily because of the inclusion of internal exposure in the TEDE for 1994 and 1995. However, the overall average CR for all licensees remained below 0.50, and decreased to a value of 0.10 in 1995 primarily because of the decrease in CR at power reactor licensees.

3.2 Annual TEDE Dose Distributions

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

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

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

TABLE 3.2
DISTRIBUTION OF ANNUAL COLLECTIVE TEDE BY LICENSE CATEGORY
1995

LICENSE CATEGORY (Number of sites reporting)	*Number of Individuals with TEDE in the Ranges (cSv or rem)														TOTAL NUMBER MONITORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE DOSE (TEDE) (person-cSv)
	No Meas.	Meas. <0.1	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.00	1.00-2.00	2.00-3.00	3.00-4.00	4.00-5.00	5.00-6.00	6.00-7.00	7-12	>12			
INDUSTRIAL RADIOGRAPHY																	
Single Location (27)	224	39	12	8	2										285	61	6
Multiple Location (112)	841	703	417	425	255	163	302	110	26	2	1				3,245	2,404	1,332
Total (139)	1,065	742	429	433	257	163	302	110	26	2	1				3,530	2,465	1,338
MANUFACTURING AND DISTRIBUTION																	
"A" - Broad (7)	1,107	400	123	78	59	42	113	59	32	3					2,016	909	557
Limited (29)	337	222	49	25	8	4	5								650	313	38
Total (36)	1,444	622	172	103	67	46	118	59	32	3					2,666	1,222	595
LOW-LEVEL WASTE DISPOSAL																	
Total (2)	156	32	12	7	3	2									212	56	8
INDEPENDENT SPENT FUEL STORAGE																	
Total (1)	55	14	6	9	3		6	4	6	1					104	49	51
FUEL FABRICATION																	
Total (8)	1,147	1,316	448	392	232	160	329	72	10						4,106	2,959	1,217
COMMERCIAL POWER REACTORS**																	
Boiling Water (37)	31,335	15,264	7,986	6,332	3,117	1,567	1,360	32	1						66,994	35,659	9,467
Pressurized Water (72)	49,697	23,311	12,259	8,947	3,767	1,769	1,717	93	4						101,564	51,867	12,207
Total (109)	81,032	38,575	20,245	15,279	6,884	3,336	3,077	125	5						168,558	87,526	21,674
GRAND TOTALS	84,899	41,301	21,312	16,223	7,446	3,707	3,832	370	79	6	1				179,176	94,277	24,884

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

** Includes all reactors in commercial operation for a full year during 1995.

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

1968-1995

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

* Data for 1977-1995 are based on the distribution of individual doses after adjusting for the multiple counting of transient reactor workers (see Section 5). The number of people exceeding 5 cSv is shown in parentheses from 1985-1995.

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 139 radiography licensees in 1995. Table 3.4 summarizes the reported data for the two types of radiography licenses for 1995 and for the previous 2 years for comparison purposes.

For the years prior to 1994, the average measurable dose for workers performing radiography at a single location ranged from 20 to 40% of the average measurable dose of workers at multiple location facilities. This is because it is more difficult for workers to avoid exposure to radiation in the field, where conditions are not optimal and may change daily. In 1994, the average measurable dose for single location radiographers was much closer to the value for multiple location licensees because of high average doses at one licensee, Buckeye Steel Castings. For 1995, the average measurable dose for single location licensees

TABLE 3.4

ANNUAL EXPOSURE INFORMATION FOR INDUSTRIAL RADIOGRAPHERS

1993 - 1995

Year	Type of License	Number of Licenses	Number of Monitored Workers	Workers with Measurable Dose	Collective Dose (person-cSv, rem)	Average Measurable Dose (cSv or rem)
	Single Location	27	285	61	6	0.10
1995	Multiple Locations	112	3,245	2,404	1,332	0.55
	Total	139	3,530	2,465	1,338	0.54
	Single Location	29	330	89	44	0.50
1994	Multiple Locations	111	2,900	2,262	1,371	0.61
	Total	139	3,230	2,351	1,415	0.60
	Single Location	39	673	183	23	0.13
1993	Multiple Locations	137	4,046	2,824	1,572	0.56
	Total	176	4,721	3,007	1,596	0.53

is back down to ~ 20% of the average dose for multi-location licensees. 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 1995 is presented in Appendix A in descending order of average measurable dose.

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

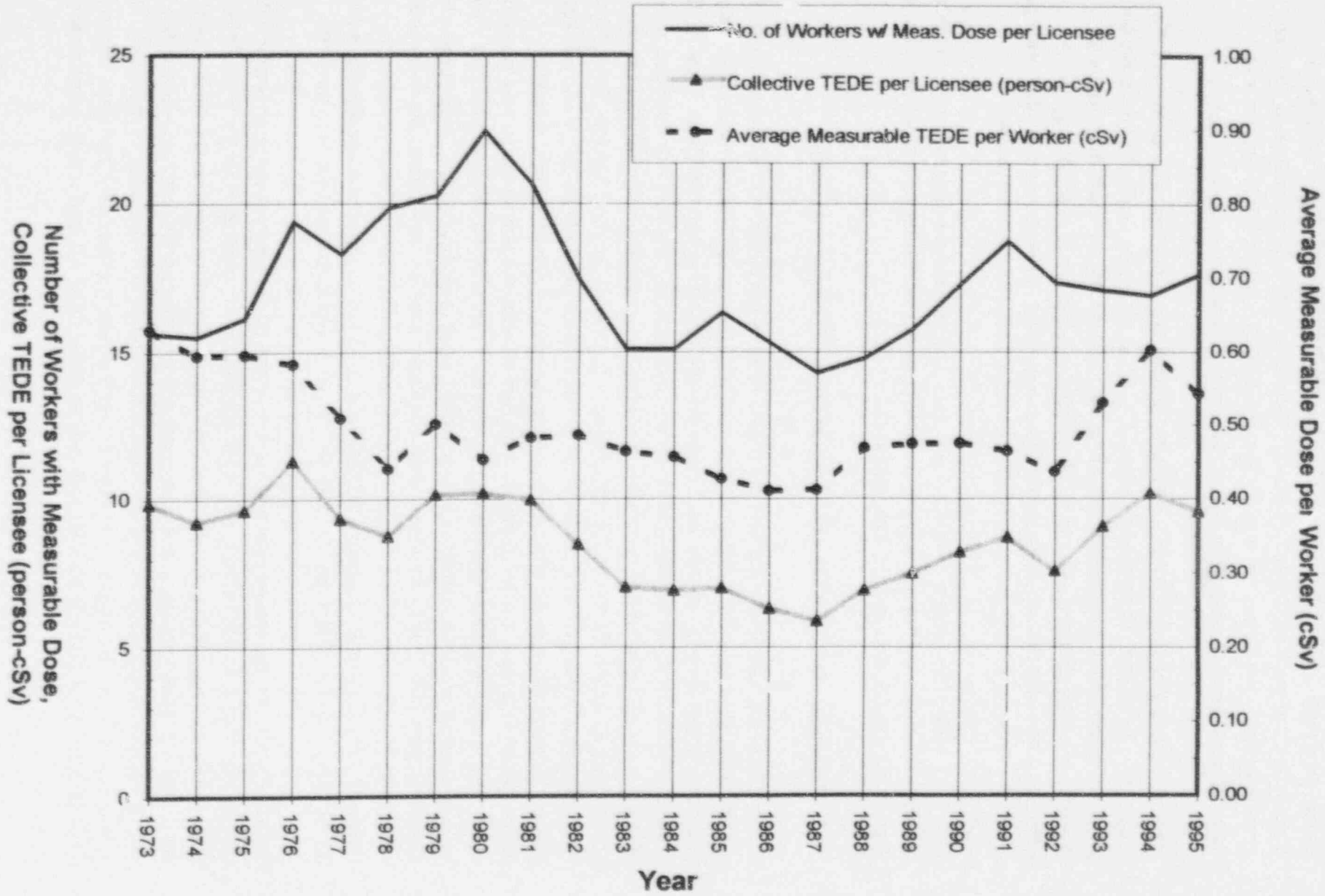
Figure 3.1 shows the number of workers with measurable dose per licensee, the total collective dose per licensee, and the average measurable dose per worker for both types of Industrial Radiography facilities from 1973 through 1995.

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

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

Table 3.5 presents the annual data that were reported by the two types of licensees for 1995 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

FIGURE 3.1
Average Annual Values at Industrial Radiography Facilities 1973 - 1995



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 3.2 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.

To see the contribution that each of these licensees made toward the total values of the number of workers monitored, number of workers, and collective dose, Appendix A lists the values of these parameters for each licensee in descending order of average measurable dose for 1995.

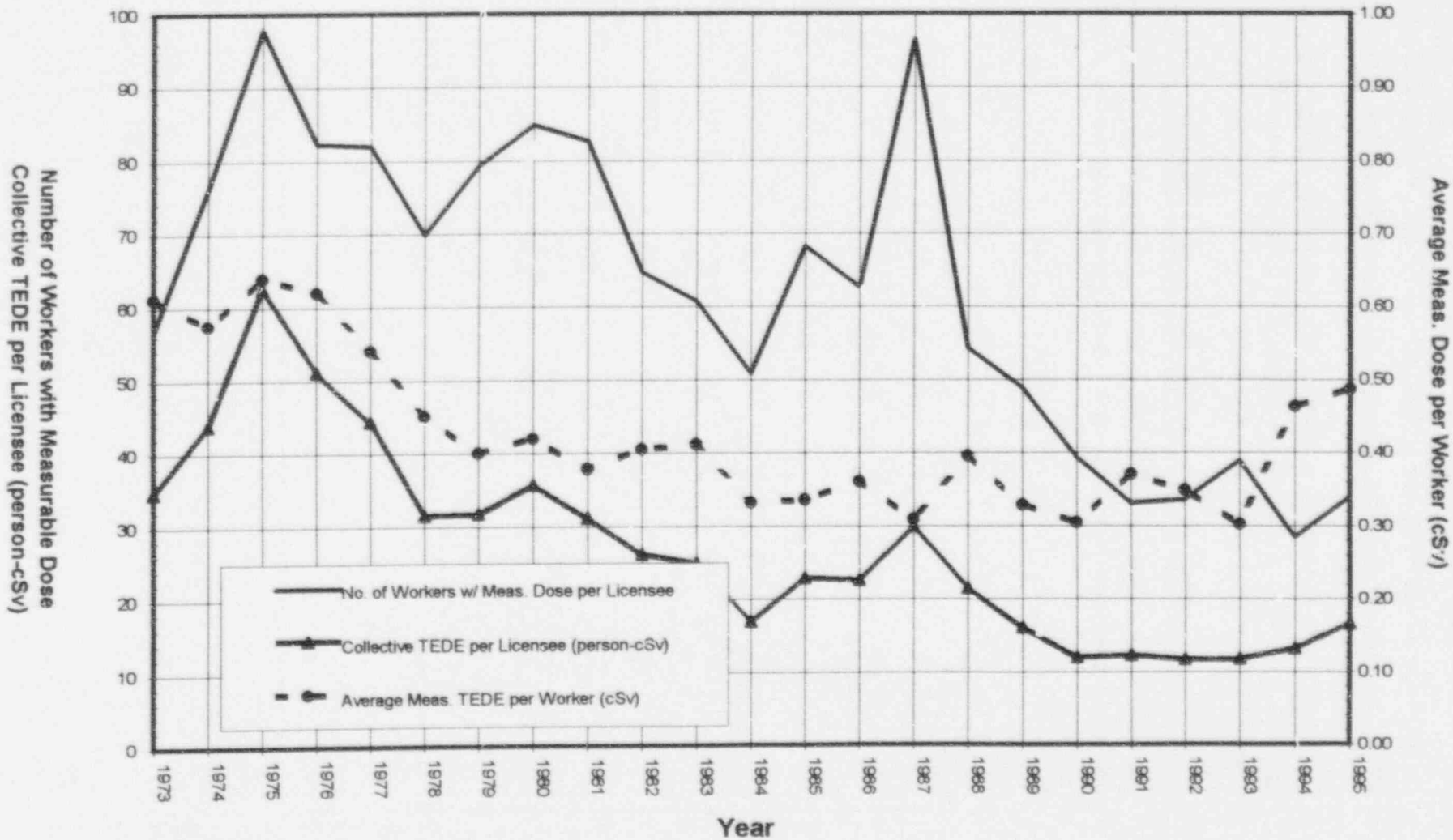
TABLE 3.5

ANNUAL EXPOSURE INFORMATION FOR MANUFACTURERS AND DISTRIBUTORS

1993 - 1995

Year	Type of License	Number of Licenses	Number of Monitored Workers	Workers with Measurable Dose	Collective Dose (person-cSv, rem)	Average Measurable Dose (cSv or rem)
	M & D-"A"-Broad	7	2,016	909	557	0.61
1995	M & D-Limited	29	650	313	38	0.12
	Total	36	2,666	1,222	595	0.49
	M & D-"A"-Broad	8	2,133	877	544	0.62
1994	M & D-Limited	36	808	374	36	0.10
	Total	44	2,941	1,251	580	0.46
	M & D-"A"-Broad	8	2,455	925	512	0.55
1993	M & D-Limited	50	2,458	1,329	168	0.13
	Total	58	4,913	2,254	680	0.30

FIGURE 3.2
Average Annual Values at Manufacturing and Distribution Facilities 1973 - 1995



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 that have primary regulatory authority over its activity. However, they also have an NRC license that covers certain special nuclear material they might receive. The annual dose reports submitted by these licensees include all doses received during the year regardless of whether they were the result of NRC or Agreement State licensed material.

The requirement for this category of NRC licensee to file annual reports became effective in January 1983. There was only one licensee in this category in 1982 and 1983; however, there have been two licensees in this category since 1984. Table 3.1 summarizes the data reported for 1984 through 1995. Appendix A summarizes the exposure information reported by these two licensees in 1995.

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 1995. Because only two licensees have been involved in this activity over the past 10 years, the numbers have remained fairly stable from 1984 through 1995.

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 1995. Appendix A summarizes the exposure information reported by this installation.

FIGURE 3.3
Average Annual Values at Low Level Waste Disposal Facilities
1982 - 1995

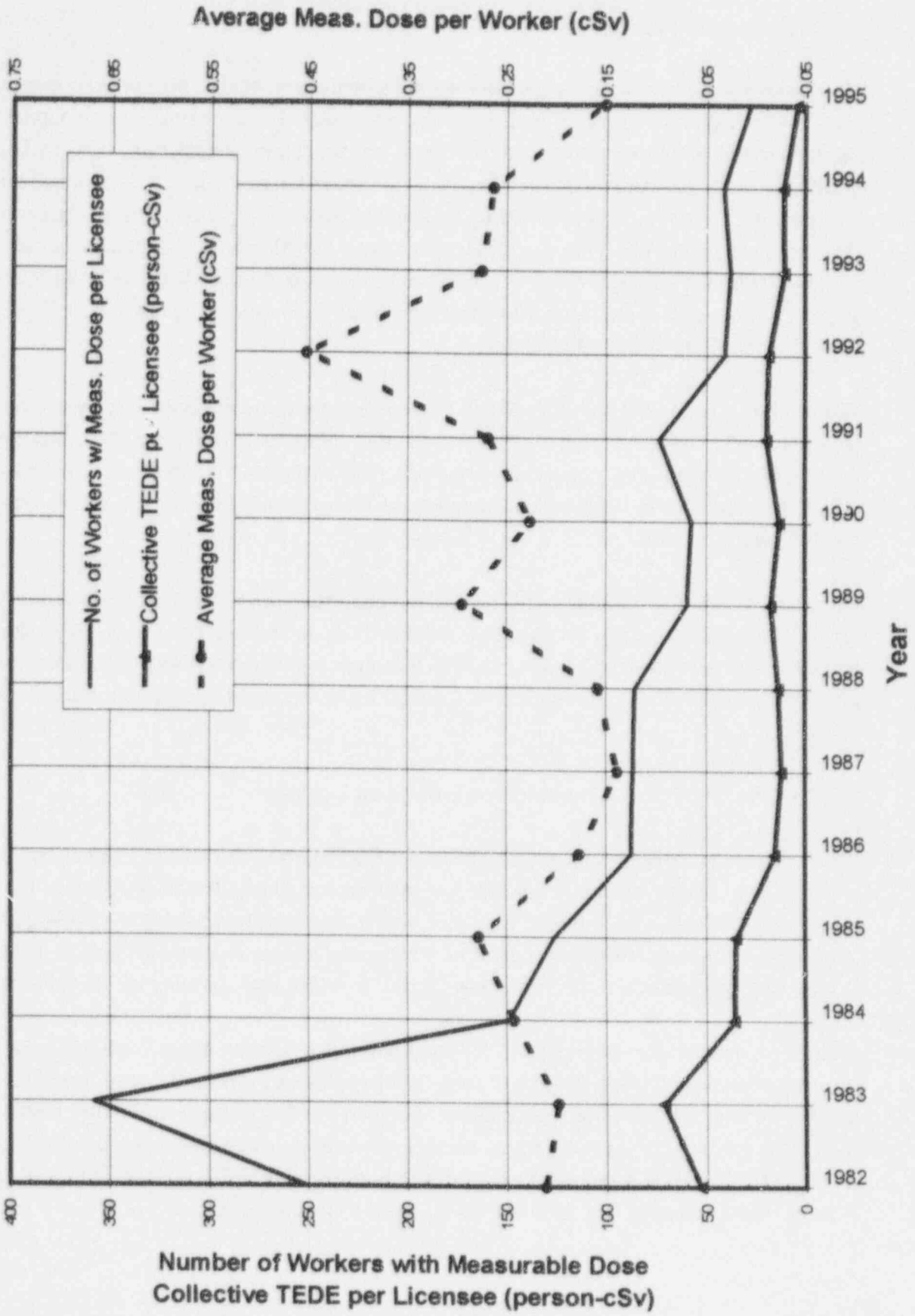


Figure 3.4 shows the number of workers with measurable dose per licensee, the total collective dose per licensee, and the average measurable dose per worker for Independent Spent Fuel Storage facilities. The large increase in the collective dose per licensee and number of workers per licensee was mainly because only one licensee reported separately for 1994 and 1995, rather than the two licensees that reported in prior years. The average measurable dose parameter is not based on the number of licensees and has also experienced a significant increase since 1993.

3.3.5 Fuel Fabrication and Processing Licenses

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

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

Appendix A lists each of the licensees reporting in 1995, with the number of workers monitored, the number of workers receiving measurable external doses, and the collective dose for each licensee in descending order of average measurable dose.

Table 3.6 shows that there were eight licensed Fuel Fabrication facilities in 1995. Several licensees were involved in decontamination and decommissioning of their plutonium facilities, and for several years the data for these licensees were shown in the "Decommissioning" category in Table 3.1. Because these facilities have ceased to fabricate plutonium fuel, they are not required to file annual reports and are no longer shown in the tables.

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

TABLE 3.6

ANNUAL EXPOSURE INFORMATION FOR FUEL FABRICATORS

1993 - 1995

Year	Type of License	Number of Licenses	Number of Monitored Workers	Workers with Measurable Dose	Collective TEDE (person-cSv, rem)	Average Measurable Dose (cSv or rem)	Collective CEDE (person-cSv, rem)	Average CEDE (cSv or rem)
1995	Uranium Fuel Fab	8	4,106	2,959	1,217	0.41	990	0.33
1994	Uranium Fuel Fab	8	3,596	2,847	1,147	0.40	867	0.30
1993	Uranium Fuel Fab	8	9,649	2,611	339	0.13	NA	NA

NA - Not applicable prior to the revised 10 CFR20 implementation in 1994.

FIGURE 3.4
Average Annual Values at Independent Spent Fuel Storage Facilities
1982 - 1995

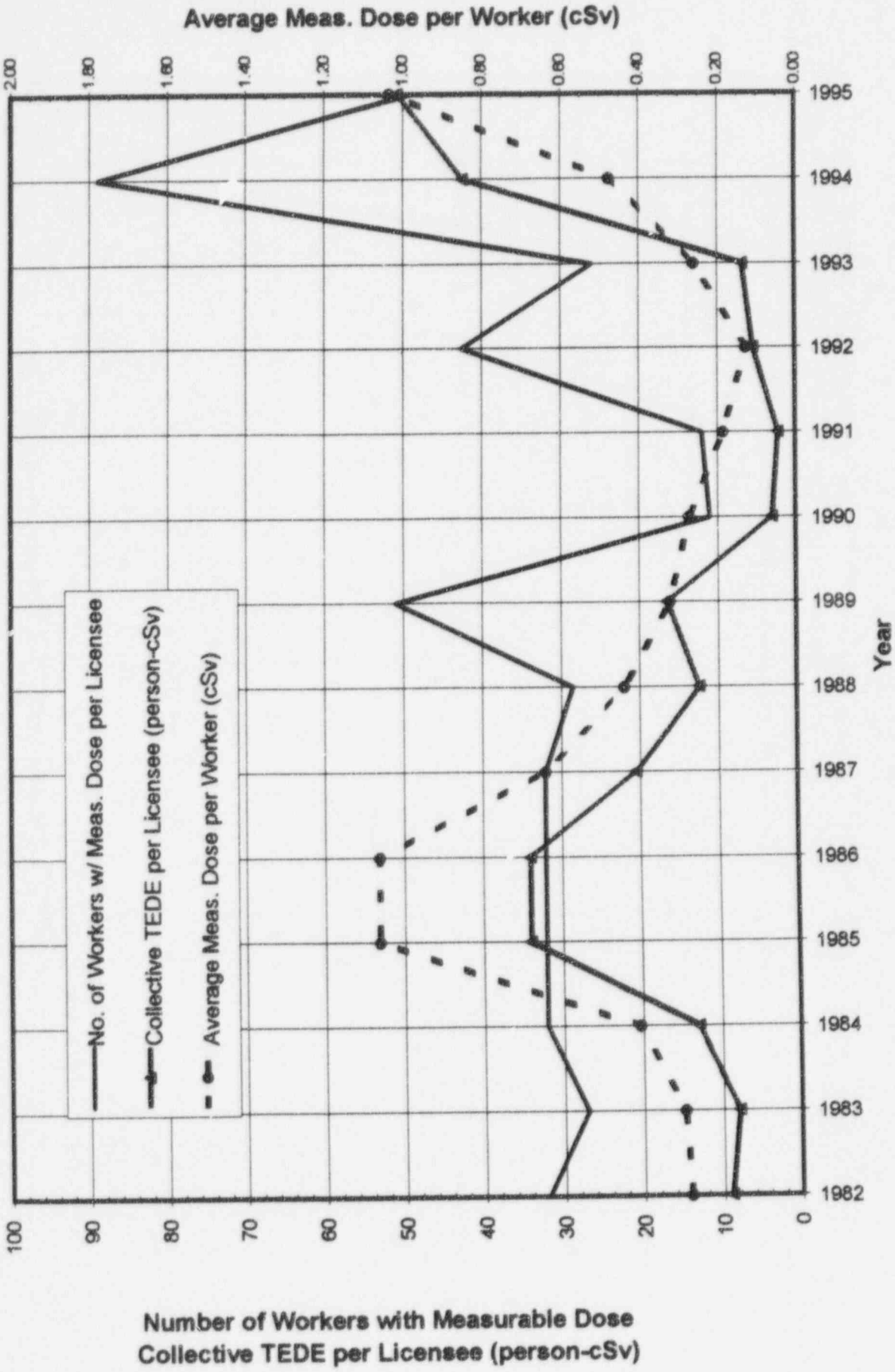
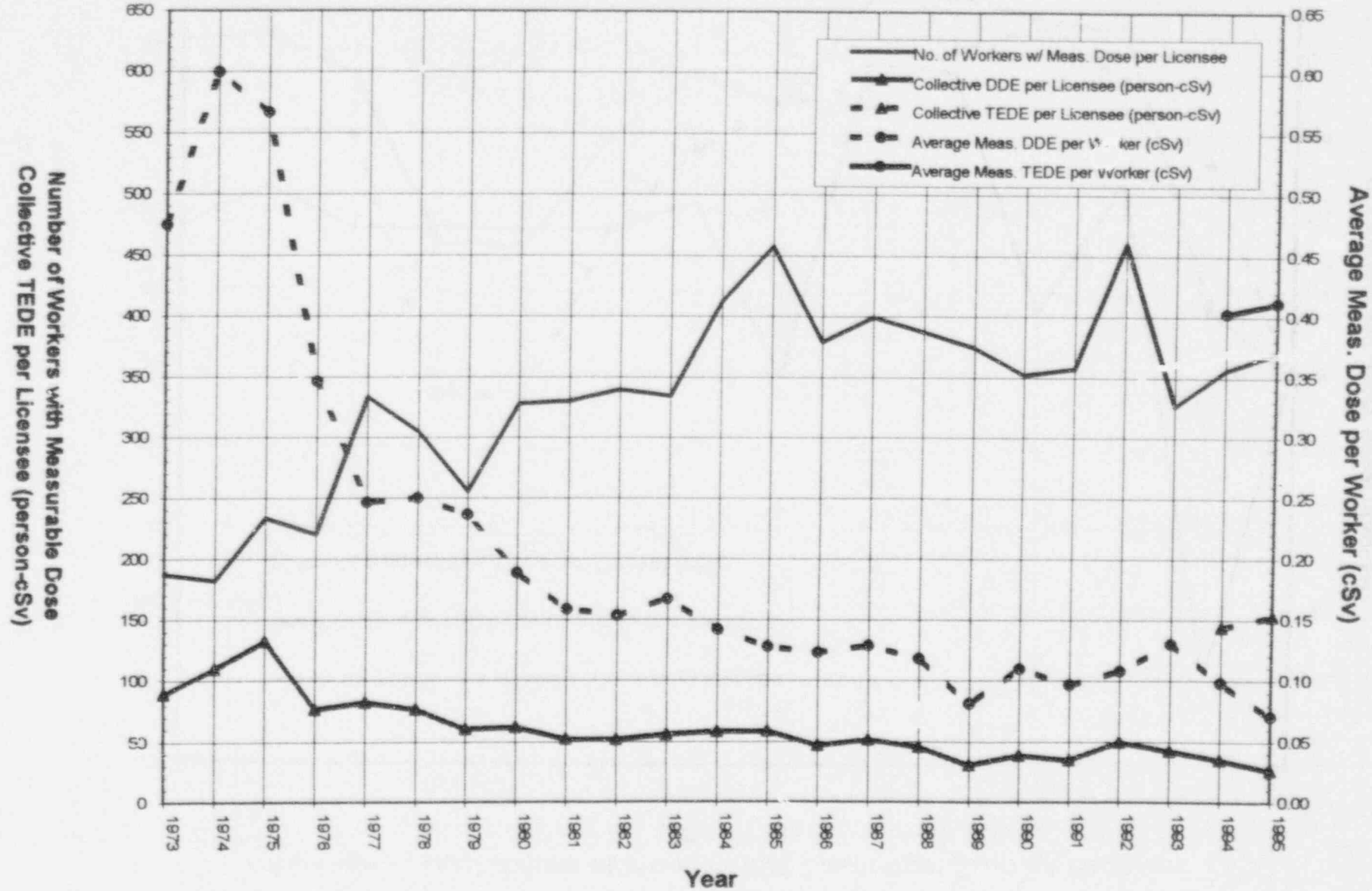


FIGURE 3.5
Average Annual Values at Fuel Fabrication and Processing Facilities 1973 - 1995



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 1986 through 1995. This table includes reactors that may not have been in commercial operation for a full year. Data for 1986 through 1988 included all reactors that reported, even though some of them were shut down. Data for 1989 through 1995 do not include reactors that have been shut down. These figures have been adjusted for the multiple counting of transient workers (see Section 5). The reported dose distribution of workers monitored at each plant site is presented in alphabetical order by site name in Appendix B.

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

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

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

TABLE 3.7

ANNUAL EXPOSURE INFORMATION FOR FORT ST. VRAIN

1974 - 1995

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

3.4 Summary of Intake Data by License Category

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

Tables 3.8 and 3.9 summarize the intake data reported to the NRC during 1995. The data are categorized by licensee type and are listed in order of radionuclide and pulmonary clearance class. Table 3.8 lists the intakes where the mode of intake into the body was recorded as ingestion. Table 3.9 lists the intakes where the mode of intake was inhalation from ambient airborne radioactive material in the workplace. The pulmonary clearance class is recorded as D, W, or Y corresponding to its clearance half-time in the order of days, weeks, or years from the pulmonary region of the lung into the blood and gastrointestinal tract. The amount of material taken into the body is given in microcuries, a unit of measure of the quantity of radioactive material. For each category of licensee, the maximum number of intake records and the maximum intake is highlighted in the table in bold for ease of reference.

TABLE 3.8
INTAKE BY LICENSEE TYPE AND RADIONUCLIDE
MODE OF INTAKE - *INGESTION*
1995

Licensee Type	Program Code	Radionuclide	Number of Intake Records*	Intake in microcuries
Nuclear Pharmacies	02500	TC-99M	25	17.692
Reactors	41111	CO-58	18	2.521
	41111	CO-60	26	5.216
	41111	CR-51	1	0.130
	41111	CS-134	1	0.001
	41111	CS-137	1	1.700
	41111	I-131	3	0.026
	41111	MN-54	19	0.649
	41111	NB-95	11	0.368
	41111	RU-103	1	0.010
	41111	SB-125	1	0.065
	41111	ZN-65	4	0.325
	41111	ZR-95	10	0.304

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

TABLE 3.9
INTAKE BY LICENSEE TYPE AND RADIONUCLIDE
MODE OF INTAKE - ***INHALATION***
1995

Licensee Type	Program Code	Radionuclide	Pulmonary Clearance Class	Number of Intake Records*	Intake in microcuries	Intake in microcuries (sci. notation)
Nuclear Pharmacy	02500	I-125	D	2	0.002	1.84E-03
	02500	I-131	D	**66**	**45.290**	**4.53E+01**
Manufacture and Distributors - Broad	03211	CO-60	Y	11	0.093	9.25E-02
Fuel Fabrication	21210	CO-60	Y	159	0.147	1.47E-01
	21210	CS-137	D	57	0.000	1.91E-05
	21210	NP-237	W	57	0.000	2.37E-05
	21210	PA-234	W	57	0.000	5.00E-04
	21210	PU-238	W	57	0.000	2.50E-07
	21210	PU-239	W	95	0.000	4.91E-04
	21210	TC-99	D	57	0.002	1.97E-03
	21210	TH-228	W	57	0.000	2.28E-06
	21210	TH-228	Y	222	0.000	2.32E-04
	21210	TH-230	W	57	0.000	1.00E-04
	21210	TH-230	Y	222	0.000	1.06E-04
	21210	TH-232	W	57	0.000	4.56E-06
	21210	TH-232	Y	228	0.000	4.19E-04
	21210	TH-234	Y	57	0.000	1.97E-04
	21210	U-232	Y	1	0.000	5.05E-05
	21210	U-234	D	42	0.154	1.54E-01
	21210	U-234	W	37	0.031	3.13E-02
	21210	U-234	Y	**943**	**2.668**	**2.67E+00**
	21210	U-235	Y	772	0.075	7.46E-02
	21210	U-236	Y	236	0.002	2.02E-03
	21210	U-238	D	42	0.025	2.51E-02
	21210	U-238	Y	845	0.311	3.11E-01
Power Reactors	41111	AM-241	W	2	0.000	0.00E+00
	41111	BA-140	D	2	0.980	9.80E-01
	41111	CO-58	Y	143	193.305	1.93E+02
	41111	CO-60	W	1	0.028	2.80E-02
	41111	CO-60	Y	**196**	**319.408**	**3.19E+02**
	41111	CR-51	Y	5	3.625	3.63E+00
	41111	CS-134	D	6	27.105	2.71E+01
	41111	CS-137	D	134	41.555	4.16E+01
	41111	CS137	D	2	0.062	6.20E-02
	41111	FE-59	D	1	0.250	2.50E-01
	41111	FE-59	W	3	1.510	1.51E+00
	41111	H-3	V	12	48.100	4.81E+01
	41111	I-131	D	5	0.847	8.47E-01
	41111	I-132	D	1	0.300	3.00E-01
	41111	I-133	D	4	1.757	1.76E+00
	41111	I-135	D	1	0.275	2.75E-01
	41111	MN-54	W	81	12.036	1.20E+01
	41111	NB-95	Y	52	5.026	5.03E+00
	41111	SB-124	W	1	197.000	1.97E+02
	41111	ZN-65	Y	15	0.539	5.39E-01
	41111	ZR-95	D	5	0.357	3.57E-01
	41111	ZR-95	W	7	0.684	6.84E-01
	41111	ZR-95	Y	31	1.696	1.70E+00
	41111	ZRNB-95	W	2	0.290	2.90E-01
	41111	ZRNB-95	Y	1	0.200	2.00E-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.

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 has been shut down since the 1979 accident and has been in the process of defueling and decommissioning since that time. TMI 2 has not been included in the data analysis since 1988. Data for this reactor, however, will be listed in Appendices B, C, D and E for reference purposes.

4.2.2 Electric Energy Generated

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

TABLE 4.1

SUMMARY OF INFORMATION REPORTED BY COMMERCIAL BOILING WATER REACTORS

1973 - 1995

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

* 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.

TABLE 4.2

SUMMARY OF INFORMATION REPORTED BY COMMERCIAL PRESSURIZED WATER REACTORS

1973 - 1995

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

* 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.

TABLE 4.3

SUMMARY OF INFORMATION REPORTED BY COMMERCIAL LIGHT WATER REACTORS

1973 - 1995

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

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

4.2.3 Collective Dose per Megawatt-Year

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

4.2.4 Average Maximum Dependable Capacity

Average maximum dependable capacity, shown in Tables 4.1, 4.2, and 4.3, was found by dividing the sum of the net maximum dependable capacities of the reactors in megawatts (net MWe) by the number of reactors included each year. The net maximum dependable capacity is defined as the gross electrical output as measured at the output terminals of the turbine generator during the most restrictive seasonal conditions, less the normal station service loads. This "capacity" of each plant was found in Reference 14, and it is shown for each site in Appendix C.

4.2.5 Percent of Maximum Dependable Capacity Achieved

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

From 1973 to 1978 this indicator exhibited an increasing trend as a number of new reactors began producing power at higher efficiencies. Following the accident at Three Mile Island, reactor operations personnel concentrated on improving safety systems and complying with the new regulations for these systems. During this time period, from 1979 to 1987, the percent of maximum dependable capacity remained around 61%. Following the completion of most of these mandated repairs, reactors have increased the percent of maximum dependable capacity from 62% in 1987 to 82% in 1995, a gain of 20% in 8 years.

4.3 Annual TEDE Distributions

Table 4.4 summarizes the distribution of the annual TEDE doses received by workers at all commercial LWRs during each of the years 1977 through 1995. This distribution is the sum of the annual dose distributions reported by each licensed LWR each year. As previously mentioned, the distribution reported by each LWR site for 1995 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 <1% to a value of 21,674 person-cSv (person-rem) in 1995. The value of CR decreased to a value of 0.06. The large decrease from 1993 to 1994 is primarily because of the change in methodology by which the CR value is determined (see Section 3.1.8) . In 1994 and 1995, 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 eleventh consecutive year that the value of CR has been <0.50.

4.4 Average Annual TEDE Doses

Some of the data presented in Tables 4.1, 4.2, and 4.3 are graphically displayed in Figure 4.1, where it can be seen that the average collective dose and average number of workers per BWR have been higher than those for PWRs since 1974 and that the values of both parameters, in general, continued to rise at both types of facilities until 1983. Between 1983 and 1995, the average collective dose per reactor dropped by 74%. In 1995, the collective dose per reactor for PWRs increased by 28% to 170 person-cSv (person-rem). The collective dose per reactor for BWRs decreased by 22% from 327 person-cSv (person-rem) in 1994, to 256 person-cSv (person-rem) in 1995. The overall collective dose per reactor for LWRs remained the same at 199 person-cSv (person-rem) in 1995. The number of workers with measurable dose per reactor has decreased to 964 for BWRs but increased to 720 for PWRs in 1995. 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 <1% from a value of 21,695 person-cSv (person-rem) in 1994 to 21,674 person-cSv (person-rem) in 1995. Together with the increase in the number of workers with measurable dose, this resulted in the average measurable dose per worker decreasing to 0.25 cSv (rem) in 1995. Figure 4.2 shows that in 1995 the gross electricity generated increased to an all-time high of 80,562 MW-yr.

TABLE 4.4

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

1977 - 1995

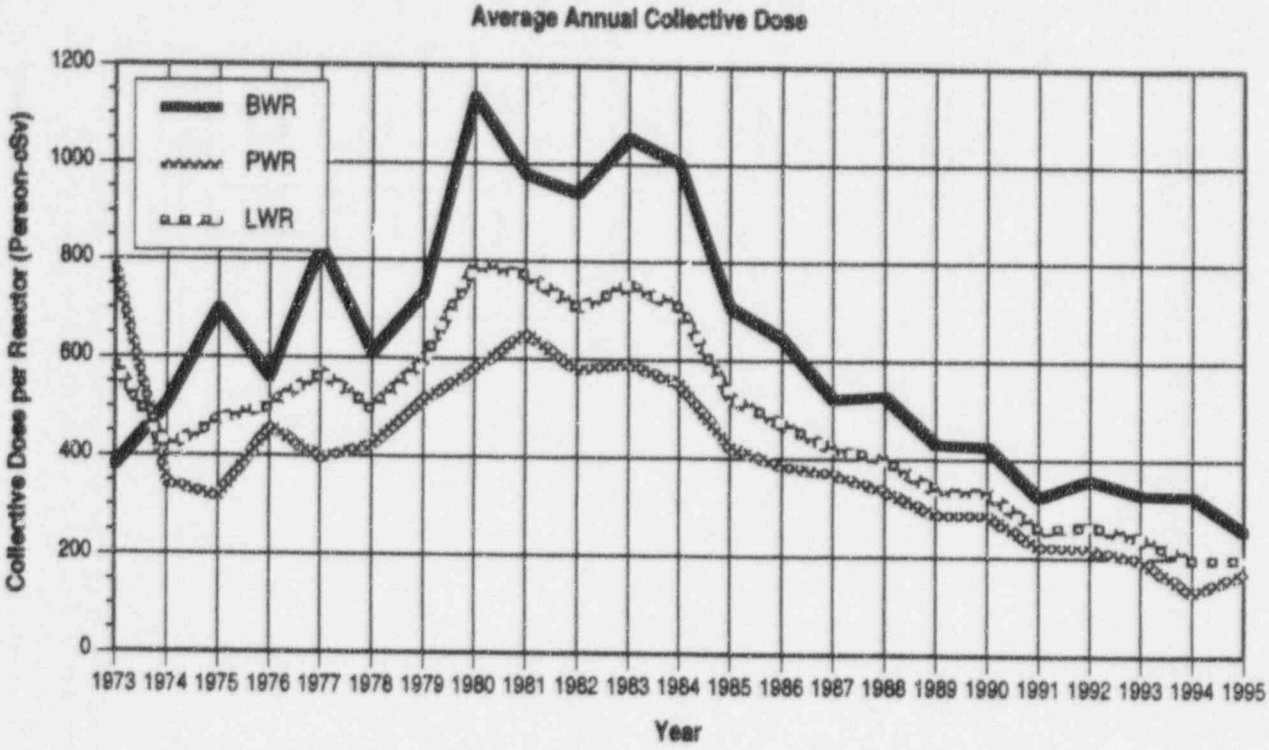
Year	Number of individuals with Whole Body Doses in the Ranges (cSv or rem)																	Total Number Monitored	Number with Measurable Exposure	Collective Dose** (person-cSv or rem)	CR***
	No Meas'ble Exposure	Meas'ble <0.10	0.10-0.25	0.25-0.5	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	6.0-7.0	7.0-8.0	8.0-9.0	9.0-10.0	10.0-12.0	>12				
1977	23,562	12,395	6,030	4,518	2,890	2,220	5,649	2,856	1,288	661	186	89	47	23	6			62,420	38,858	32,508	0.65
1978	28,372	15,101	6,342	4,998	3,088	2,247	5,995	3,034	1,197	514	109	37	9	0	1	0	2	71,046	42,674	31,801	0.61
1979	43,330	22,508	8,965	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	33,831	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	26,353	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								133,086	70,986	21,674	0.06

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

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

***CR is the ratio of annual collective dose delivered at individual doses exceeding 1.5 cSv (rem) to the total annual collective dose. For 1994 and 1995, CR was determined directly from individual dose records submitted under 10 CFR 20.2206.

Figure 4.1
Average Collective Dose and Number of Workers per Reactor 1973 – 1995



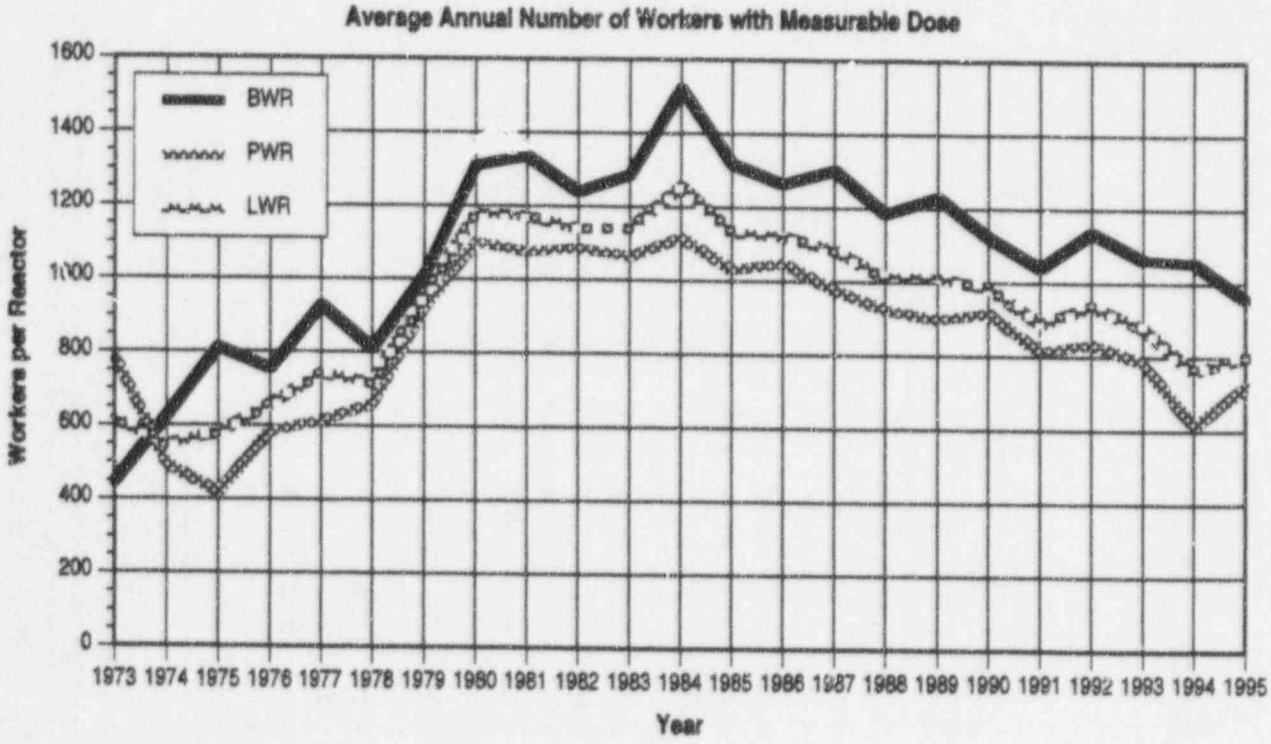
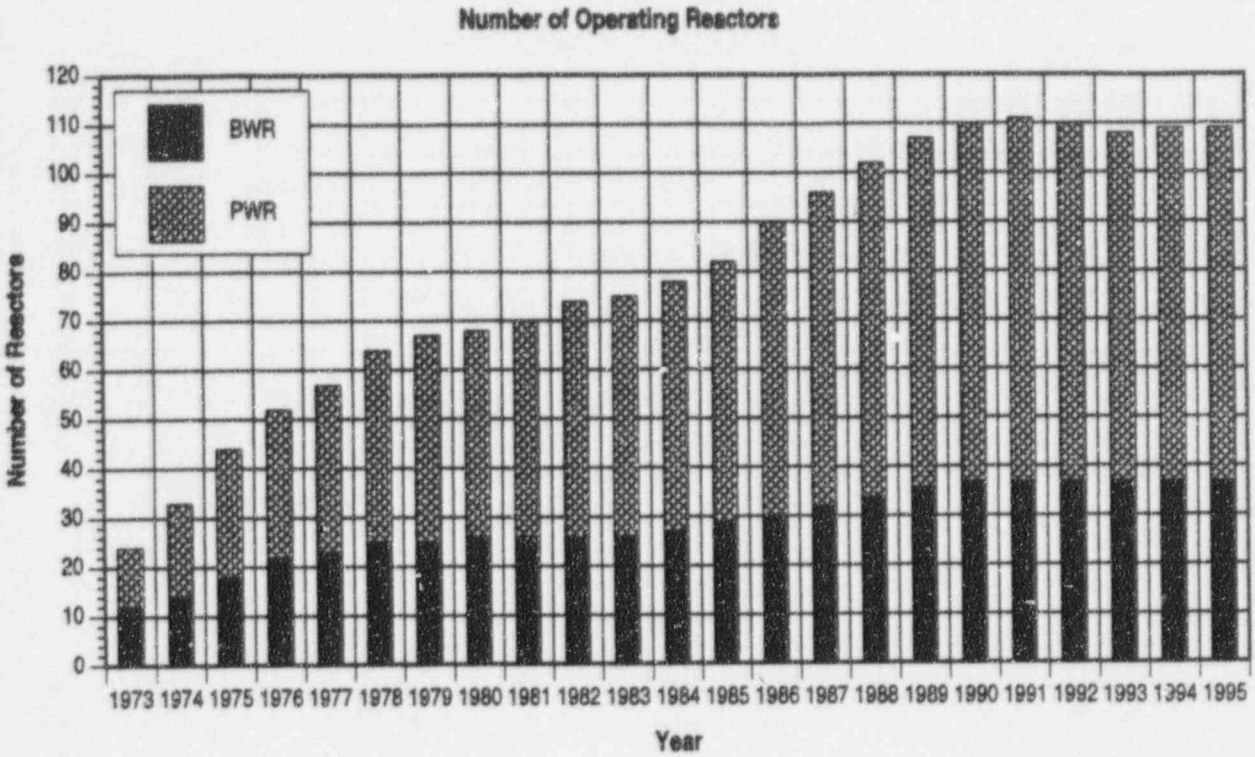


Figure 4.2
Number of Operating Reactors and Gross Electricity Generated 1973 – 1995



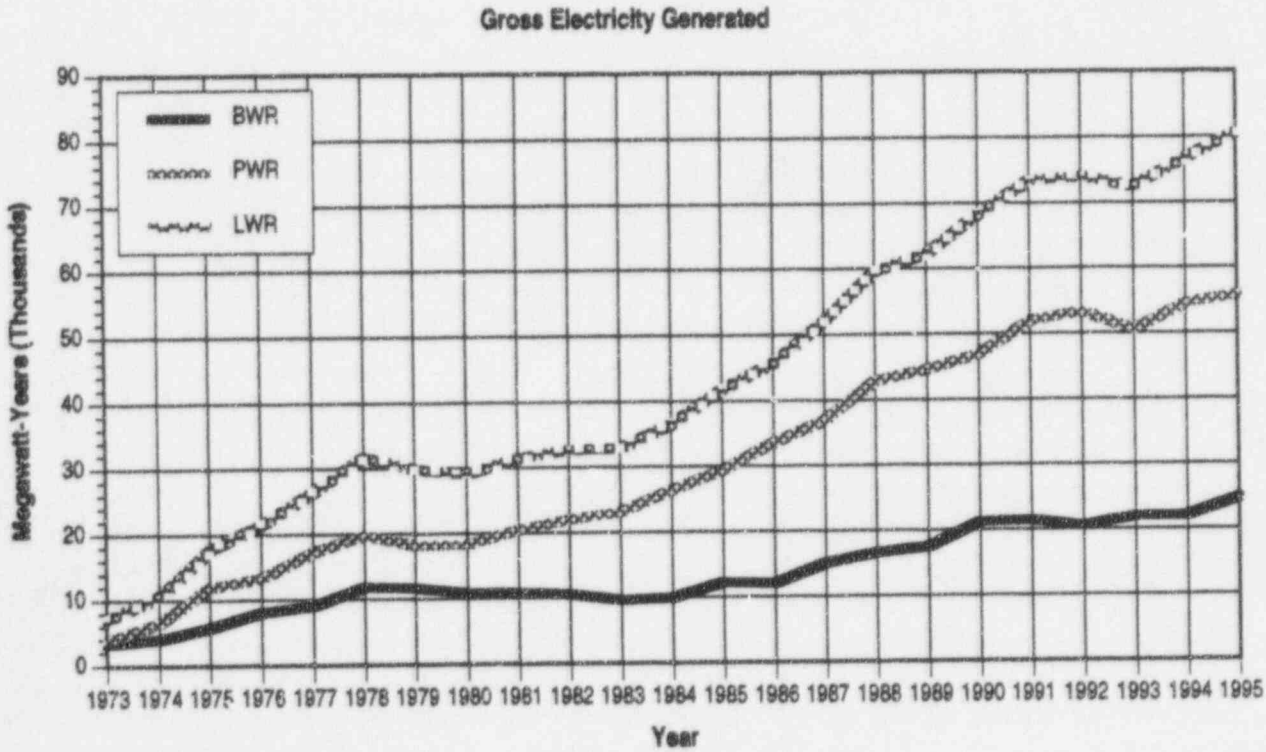
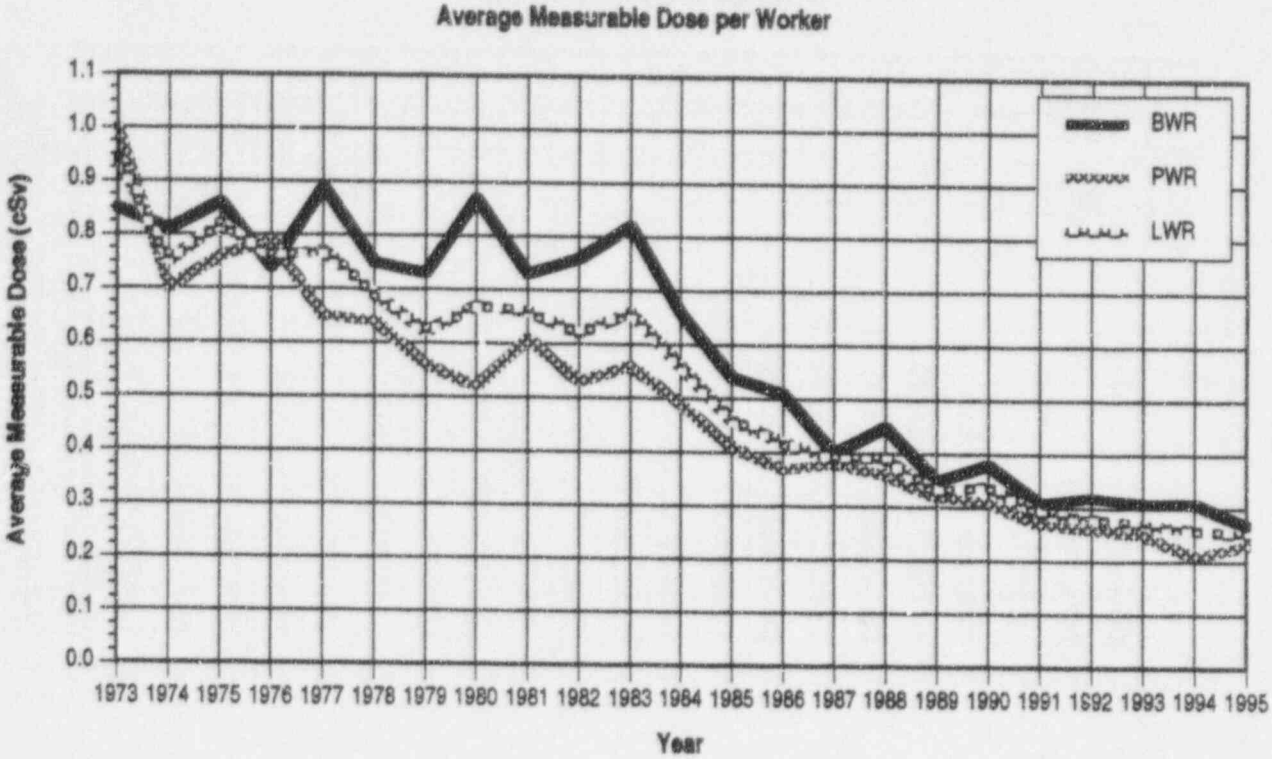
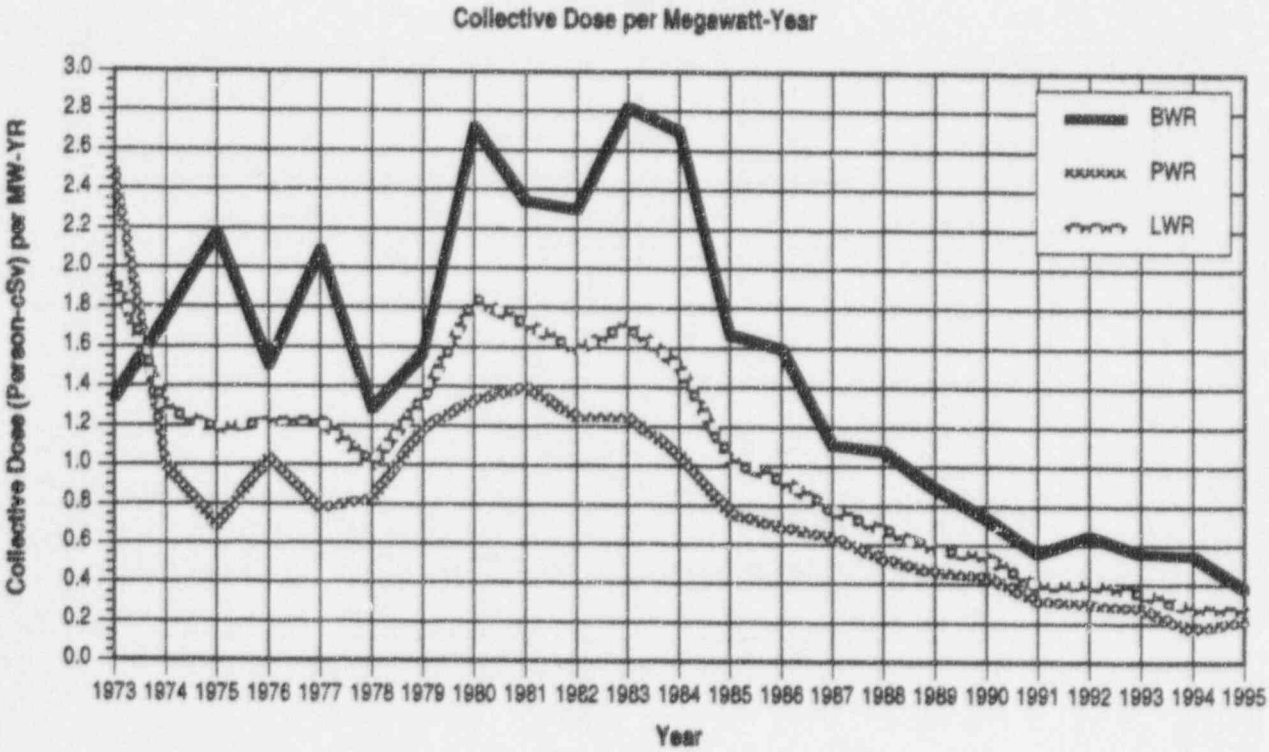


Figure 4.3
Average Measurable Dose per Worker and Collective Dose per Megawatt-Year 1973 – 1995





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

To further assist in the identification of any trends that might exist, Figure 4.4 displays the average and median[9] values of the collective dose per reactor for BWRs and for PWRs for the years 1973 through 1995. The ranges of the values reported each year are shown by the vertical lines with a small bar at each end marking the two extreme values. The rectangles indicate the range of values of the collective dose exhibited by those plants ranked in the twenty-fifth through the seventy-fifth percentiles. Since the median values usually are not as greatly affected by the extreme values of the collective doses, they do not normally fluctuate as much from year to year as do the average values. The median collective dose for PWRs experienced an increase from 135 person-cSv (person-rem) in 1994 to 146 person-cSv (person-rem) in 1995. At BWRs, the median fluctuates more from year to year, and in 1995 the median collective dose decreased to 244 person-cSv (person-rem). Figure 4.4 also shows that, in 1995, 50% of the PWRs reported collective doses between 102 and 207 person-cSv (person-rem) while 50% of the BWRs reported collective doses between 136 and 357 person-cSv (person-rem). Nearly every year, the median collective dose is less than the average, which indicates that the collective dose for most plants is less than the average collective dose per reactor (the value that is widely quoted).

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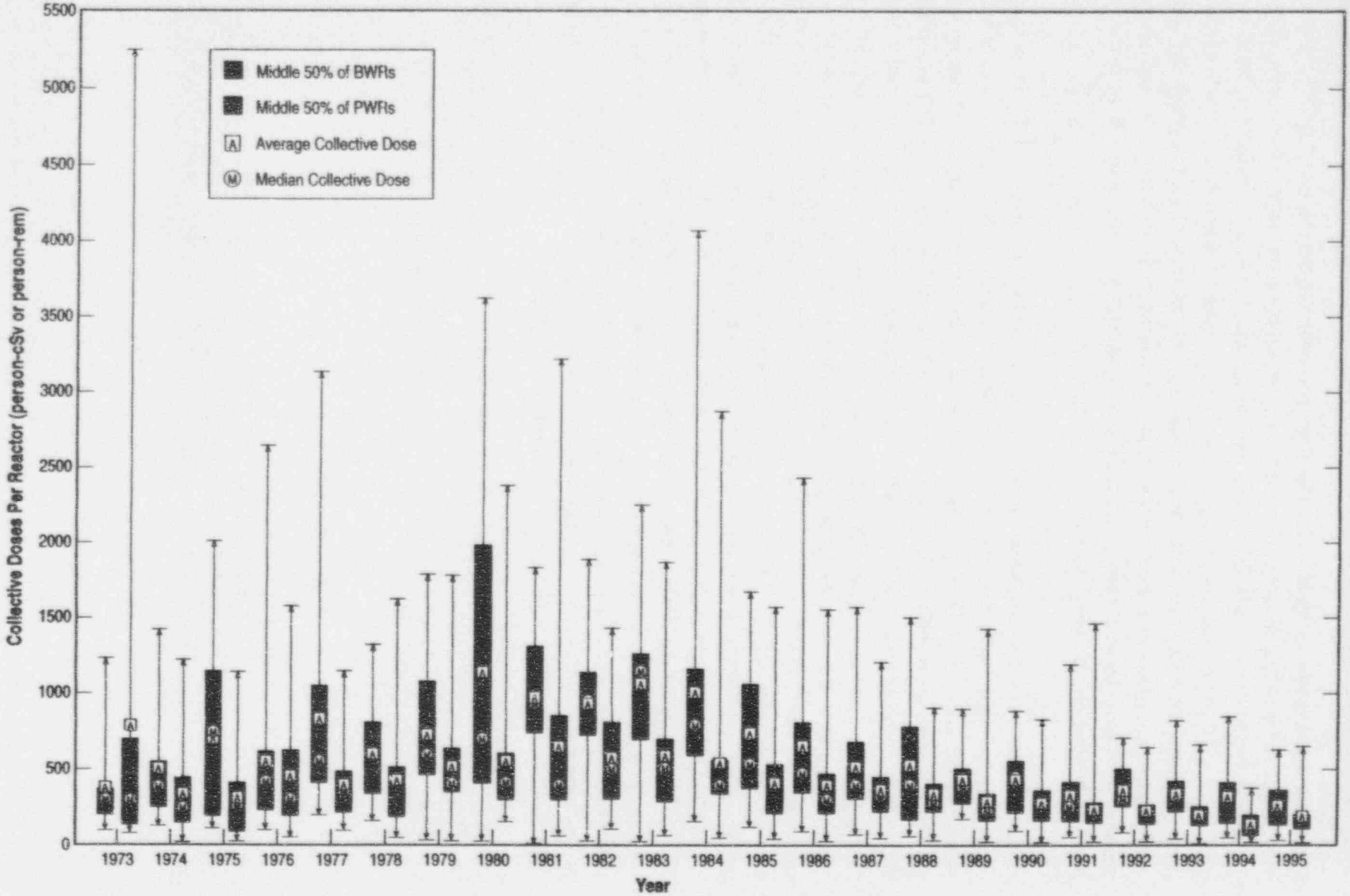
9 The value at which 50% of the reactors reported greater collective doses and the other 50% reported smaller collective doses.

Figure 4.4
Average, Median, and Extreme Values of the Collective Dose Per Reactor 1973 – 1995



4.5 Plant Rankings by Collective Dose per Reactor

Because the number of reactors from which data have been collected is still statistically rather small, the information reported by a few reactors where unusual conditions or problems may have occurred could have a large impact on some of the statistics presented in this report. In an effort to identify those plants, Tables 4.5 and 4.6 list the BWRs and PWRs in ascending order of collective dose per reactor for each of the 5 years from 1991 through 1995. The total collective dose per site is listed in the tables even though the dose per reactor was used for all ranking. Two other parameters, average measurable dose per worker and collective dose per megawatt-year, are also given for each plant. Also shown is a parameter CR, which is defined as the ratio of the annual collective dose delivered at individual doses exceeding 1.5 cSv (rem) to the total annual collective dose. The value of CR has continued to decline for most plants, and in 1995, the CR for all the U.S. LWRs fell between 0.05 and 0.50, the range recommended by the UNSCEAR [Ref. 10]. Note that in 1994 and 1995, the CR value was determined directly from the individual radiation exposure records submitted under 10 CFR 20.2206 (Form 5) rather than calculating the value from the statistical dose distribution summary (see Section 3.1.8).

In 1995, the five BWR sites with the highest collective doses all exceeded 379 person-cSv (person-rem) per reactor (Table 4.5). These reactors were Nine Mile Point 1 and 2, Dresden 2 and 3, Washington Nuclear 2, Pilgrim, and Millstone Point 1. Although the seven reactors at these five sites represented only 19% of the 37 BWRs, they contributed 34% of the total collective dose incurred at BWRs in 1995.

Some of the activities that contributed to the collective dose accumulated at the BWR site with the highest collective dose per reactor [Millstone Point 1 with 620 person-cSv (person-rem)] were weld repair, in-service inspection, hanger work, insulation removal and replacement, staging work, and refueling activities.

In 1995, the five PWR sites with the highest collective doses all exceeded 398 person-cSv (person-rem) per reactor (Table 4.6). These reactors were Zion 1 and 2, Haddam Neck, Palisades, Indian Point 2, and Maine Yankee. Although representing 8% of the 72 PWRs included in 1995, they contributed 24% of the total collective dose at PWRs. Much of the collective dose accumulated at the plant with the highest dose per reactor in 1995 [Maine Yankee with 653 person-cSv (person-rem)] was attributed to steam generator related work (including tube sleeving, eddy current testing, and sludge lancing), reactor coolant pump work, outage support, valve work, decontamination, refueling activities, and in-service inspection.

TABLE 4.5
BOILING WATER REACTORS LISTED IN ASCENDING ORDER OF COLLECTIVE DOSE PER REACTOR***
1991 - 1995

1991

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
LIMERICK 1,2	108	0.09	0.1	0.04
GRAND GULF	94	0.13	0.1	0.11
BROWNS FERRY 1,2,3	354	0.20	0.8	0.01
VERMONT YANKEE	118	0.38	0.2	0.13
RIVER BEND 1	144	0.18	0.2	0.02
NINE MILE POINT 1,2	282	0.19	0.2	0.10
PERRY	146	0.24	0.1	0.10
DUANE ARNOLD	202	0.60	0.4	0.56
BIG ROCK POINT	226	0.52	3.8	0.48
FERMI 2	228	0.19	0.3	0.00
CLINTON	233	0.23	0.3	0.01
SUSQUEHANNA 1,2	507	0.27	0.3	0.07
QUAD CITIES 1,2	509	0.30	0.5	0.18
FITZPATRICK	333	0.28	0.8	0.23
HOPE CREEK 1	373	0.22	0.4	0.18
WASHINGTON NUCLEAR 2	387	0.38	0.8	0.21
BRUNSWICK 1,2	778	0.30	0.8	0.23
LASALLE 1,2	808	0.41	0.4	0.28
COOPER STATION	405	0.37	0.7	0.26
MILLSTONE POINT 1	409	0.35	1.9	0.18
MONTICELLO	465	0.48	1.1	0.29
PEACH BOTTOM 2,3	934	0.38	0.8	0.20
DRESDEN 2,3	1,005	0.49	1.5	0.40
HATCH 1,2	1,161	0.48	1.0	0.30
PILGRIM	605	0.21	1.5	0.14
OYSTER CREEK	1,185	0.38	3.4	0.34

1992

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
COOPER STATION	84	0.18	0.1	0.07
MILLSTONE POINT 1	99	0.28	0.2	0.47
MONTICELLO	114	0.25	0.2	0.19
LIMERICK 1,2	330	0.21	0.2	0.06
BROWNS FERRY 1,2,3	516	0.19	0.5	0.04
FERMI 2	245	0.20	0.3	0.01
PEACH BOTTOM 2,3	502	0.28	0.3	0.16
HATCH 1,2	550	0.34	0.4	0.16
BIG ROCK POINT	277	0.56	[illegible]	0.52
PILGRIM	281	0.21	0.5	0.02
NINE MILE POINT 1,2	583	0.31	0.6	0.17
DRESDEN 2,3	619	0.34	0.7	0.22
BRUNSWICK 1,2	823	0.23	1.7	0.16
SUSQUEHANNA 1,2	724	0.36	0.5	0.23
VERMONT YANKEE	381	0.41	0.9	0.19
CLINTON	431	0.36	0.7	0.12
HOPE CREEK 1	436	0.26	0.5	0.18
GRAND GULF	484	0.24	0.5	0.14
DUANE ARNOLD	582	0.48	1.2	0.28
PERRY	571	0.38	0.7	0.15
QUAD CITIES 1,2	1,157	0.48	1.2	0.31
LASALLE 1,2	1,167	0.48	0.8	0.32
WASHINGTON NUCLEAR 2	612	0.41	0.9	0.24
OYSTER CREEK	657	0.24	1.2	0.16
FITZPATRICK	674	0.28	—	0.24
RIVER BEND 1	710	0.35	2.1	0.21

1993

Site Name	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
FERMI 2	35	0.19	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	182	0.38	3.0	0.28
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	0.18	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	879	0.24	1.3	0.08
NINE MILE POINT 1,2	[illegible]	0.27	0.5	0.14
GRAND GULF	332	0.18	0.4	0.07
HATCH 1,2	889	0.38	0.8	0.18
COOPER STATION	391	0.35	0.9	0.29
DUANE ARNOLD	407	0.36	1.0	0.34
OYSTER CREEK	418	0.18	0.8	0.07
QUAD CITIES 1,2	849	0.38	0.9	0.24
LASALLE 1,2	854	0.50	0.8	0.33
PILGRIM	435	0.33	0.2	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	496	0.40	0.7	0.09
DRESDEN 2,3	1,655	0.90	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	129	0.24	0.2	0.03
LIMERICK 1,2	275	0.18	0.1	0.00
PILGRIM	200	0.28	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	0.20	1.0	0.06
PEACH BOTTOM 2,3	570	0.27	0.3	0.00
FITZPATRICK	322	0.20	0.5	0.10
HOPE CREEK 1	328	0.18	0.4	0.05
LASALLE 1,2	720	0.40	0.5	0.05
MILLSTONE POINT 1	391	0.30	1.0	0.01
MONTICELLO	395	0.50	0.8	0.17
DRESDEN 2,3	833	0.38	1.2	0.05
HATCH 1,2	864	0.39	0.7	0.20
BRUNSWICK 1,2	890	0.33	0.8	0.05
RIVER BEND 1	519	0.23	0.9	0.08
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	868	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	0.28	0.9	0.18
PERRY	84	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	286	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	186	0.13	0.2	0.07
PEACH BOTTOM 2,3	386	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	0.32
CLINTON	316	0.27	0.4	0.01
FITZPATRICK	327	0.28	0.8	0.03
BRUNSWICK 1,2	883	0.28	0.5	0.00
GRAND GULF	342	0.22	0.4	0.01
DUANE ARNOLD	367	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	0.36	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	0.66	1.2	0.16

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

** CR is the ratio of the annual collective dose delivered at individual doses exceeding 1.5 cSv (rems) to the collective dose. For '94 & '95 data, the CR value was determined from the individual Form 5 submittals.

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

TABLE 4.6
PRESSURIZED WATER REACTORS LISTED IN ASCENDING ORDER OF COLLECTIVE DOSE PER REACTOR***
1991 - 1995

1991	Collect. Dose per Site*	Dose per Worker	Dose per MW-Y	CR**
Site Name				
CALLAWAY 1	21	0.07	0.0	0.00
COOK 1,2	60	0.08	0.0	0.00
INDIAN POINT 3	40	0.13	0.0	0.00
YANKEE-ROWE	40	0.26	0.3	0.07
PRAIRIE ISLAND 1,2	98	0.17	0.1	0.00
FORT CALHOUN	67	0.20	0.1	0.07
CALVERT CLIFFS 1,2	132	0.07	0.1	0.02
ZION 1,2	173	0.19	0.2	0.00
SEABROOK	92	0.13	0.1	0.00
CRYSTAL RIVER 3	104	0.13	0.2	0.01
MAINE YANKEE	105	0.25	0.1	0.09
SOUTH TEXAS 1,2	257	0.22	0.1	0.06
POINT BEACH 1,2	265	0.37	0.3	0.22
BYRON 1,2	269	0.25	0.1	0.07
SAN ONOFRE 1,2,3	412	0.23	0.2	[illegible]
COMANCHE PEAK	149	0.15	0.2	[illegible]
ARKANSAS 1,2	351	0.17	0.2	[illegible]
MCGUIRE 1,2	361	0.21	0.2	0.06
VOGTLE 1,2	362	0.27	0.2	0.07
OCONEE 1,2,3	551	0.28	0.2	0.16
MILLSTONE POINT 2,3	391	0.35	0.5	0.18
ROBINSON 2	193	0.22	0.3	0.10
THREE MILE ISLAND 1	168	0.13	0.3	0.02
PALO VERDE 1,2,3	606	0.27	0.2	0.15
PALISADES	211	0.16	0.4	0.01
DAVIS-BESSE	216	0.22	0.3	0.11
KEWAUNEE	221	0.45	0.5	0.46
HARRIS	226	0.26	0.3	0.09
SALEM 1,2	456	0.11	0.3	0.23
CATAWBA 1,2	462	0.25	0.3	0.10
ST. LUCIE 1,2	479	0.37	0.3	0.18
BEAVER VALLEY 1,2	466	0.29	0.4	0.19
BURRY 1,2	510	0.33	0.4	0.18
DIABLO CANYON 1,2	546	0.27	0.3	0.10
BRAIDWOOD 1,2	550	0.34	0.4	0.15
SUMMER 1	291	0.30	0.5	0.14
NORTH ANNA 1,2	629	0.30	0.4	0.35
FARLEY 1,2	648	0.39	0.4	0.35
GINNA	328	0.35	0.8	0.14
WOLF CREEK 1	331	0.33	0.5	0.10
SEQUOYAH 1,2	698	0.36	0.4	0.25
WATERFORD 3	954	0.28	0.4	0.11
TURKEY POINT 3,4	939	0.45	3.6	0.30
TROJAN	667	0.38	3.1	0.31
HADDAM NECK	590	0.51	1.3	0.36
INDIAN POINT 2	1,468	0.81	3.2	0.41

1992	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
Site Name				
DAVIS-BESSE	19	0.07	0.0	0.00
SUMMER 1	27	0.11	0.0	0.00
THREE MILE ISLAND 1	34	0.06	0.0	0.00
SOUTH TEXAS 1,2	147	0.16	0.1	0.01
WOLF CREEK 1	76	0.17	0.1	0.12
TROJAN	84	0.15	0.2	0.03
INDIAN POINT 2	97	0.20	0.1	0.13
BYRON 1,2	199	0.19	0.1	0.02
PRAIRIE ISLAND 1,2	211	0.25	0.3	0.10
SAN ONOFRE 1,2,3	334	0.20	0.1	0.02
BRAIDWOOD 1,2	228	0.22	0.1	0.05
KEWAUNEE	122	0.27	0.3	0.07
POINT BEACH 1,2	256	0.41	0.3	0.24
ST. LUCIE 1,2	254	0.21	0.2	0.04
BEAVER VALLEY 1,2	289	0.20	0.2	0.06
SEABROOK	147	0.18	0.2	0.01
TURKEY POINT 3,4	325	0.24	0.3	0.11
CALVERT CLIFFS 1,2	330	0.17	0.3	0.16
PALO VERDE 1,2,3	541	0.27	0.2	0.19
COMANCHE PEAK	188	0.17	0.2	0.02
MCGUIRE 1,2	386	0.24	0.2	0.13
CATAWBA 1,2	394	0.26	0.2	0.05
HADDAM NECK	202	0.25	0.4	0.08
INDIAN POINT 3	212	0.21	0.4	0.04
HARRIS	213	0.23	0.3	0.07
VOGTLE 1,2	426	0.34	0.2	0.10
SALEM 1,2	431	0.10	0.4	0.06
OCONEE 1,2,3	549	0.33	0.3	0.10
WATERFORD 3	226	0.19	0.2	0.05
DIABLO CANYON 1,2	459	0.25	0.2	0.09
SEQUOYAH 1,2	465	0.27	0.3	0.09
COOK 1,2	460	0.26	0.6	0.12
GINNA	261	0.31	0.6	0.09
BURRY 1,2	539	0.32	0.4	0.15
FORT CALHOUN	272	0.34	0.9	0.10
NORTH ANNA 1,2	576	0.27	0.4	0.27
PALISADES	266	0.23	0.5	0.18
CALLAWAY 1	336	0.30	0.3	0.12
ROBINSON 2	362	0.28	0.7	0.09
FARLEY 1,2	805	0.40	0.6	0.28
CRYSTAL RIVER 3	424	0.30	0.7	0.16
ARKANSAS 1,2	876	0.28	0.6	0.18
MAINE YANKEE	481	0.39	0.7	0.17
ZION 1,2	1,043	0.60	0.9	0.44
MILLSTONE POINT 2,3	1,280	0.40	1.1	0.33

1993	Collect. Dose per Site*	Dose per Worker	Dose per MW-Y	CR**
Site Name				
SEABROOK	6	0.05	0.0	0.00
WATERFORD 3	16	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	105	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	261	0.22	1.5	0.04
ARKANSAS 1,2	269	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
BURRY 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	453	0.27	0.3	0.14
ST. LUCIE 1,2	462	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	938	0.33	0.6	0.28
INDIAN POINT 2	675	0.45	1.0	0.23

1994	Collect. Dose per Site*	Dose per Worker	Dose per MW-Y	CR**
Site Name				
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	60	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	186	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	308	0.26	0.2	0.02
PALO VERDE 1,2,3	452	0.23	0.2	0.07
OCONEE 1,2,3	537	0.28	0.3	0.08
BURRY 1,2	378	0.25	0.3	0.00
WATERFORD 3	191	0.15	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	478	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	Collect. Dose per Site*	Dose per Worker	Dose per MW-Yr	CR**
Site Name				
DAVIS-BESSE	7	0.03	0.0	0.00
CRYSTAL RIVER 3	6	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	189	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	238	0.21	0.1	0.01
GINNA	136	0.18	0.3	0.05
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	462	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	357	0.24	0.2	0.05
CALLAWAY 1	167	0.16	0.2	0.00
ARKANSAS 1,2	386	0.17	0.3	0.03
BURRY 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	216	0.20	0.3	0.00
BEAVER VALLEY 1,2	453	0.29	0.3	0.02
SAN ONOFRE 1,2,3	456	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	650	0.56	77.7	0.26

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

** CR is the ratio of the annual collective dose delivered at individual doses exceeding 1.5 cSv (rems) to the collective dose. For '94 and '95 data, the CR value was determined from the individual Form 5 submittals.

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

Tables 4.7a and b list the sites that had been in commercial operation for at least 5 years as of December 31, 1995, 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 319 person-cSv (person-rem), the average measurable dose per worker was 0.30 cSv (rem), and the average collective dose per megawatt-year was 0.5.

Based on the 353 reactor-years of operation at the 71 PWRs listed, the average annual collective dose per reactor, average measurable dose per worker, and average collective dose per megawatt-year were found to be 190 person-cSv (person-rem), 0.25 cSv (rem), and 0.3 person-cSv/MW-yr, respectively. All of these values, at both types of facilities, are lower than those found for the 5 year period ending in 1994, with the exception of the average collective dose per site and average collective dose per megawatt-year at PWRs, which remained the same.

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

Usually, the combination of a large annual collective dose and a large collective dose to megawatt-year ratio for a plant indicates that extensive maintenance or modifications were undertaken during the year. Jobs that were large contributors to BWR doses in 1995 included in-service inspections, valve maintenance work, refueling activities, shielding installation and removal, and area and system decontamination. At PWR facilities, the major contributors to the collective dose were steam generator related work, valve maintenance work, refueling activities, scaffolding and insulation, in-service inspections, health physics coverage, and reactor coolant pump maintenance.

A complete breakdown of the activities contributing to the collective dose at the ten sites with the highest dose per reactor ranking in 1995 (from Tables 4.5 and 4.6) is given in Tables 4.8a and 4.8b for BWRs and PWRs respectively. The outage dose and duration are shown as well as the collective dose for each activity.

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

1991 - 1995

Site Name*	Number of Reactor Years	Annual Collective Dose per Reactor	Total Coll. Dose per Site (cSv)	Workers with Meas. Doses	Avg. Meas. Dose (cSv)	Total MW-yrs	Average Collective Dose per MW-yr
LIMERICK 1,2	10	119	1,188	7,121	0.17	9,367.0	0.1
FERMI 2	5	150	749	4,316	0.17	3,215.9	0.2
BIG ROCK POINT	5	166	828	1,865	0.44	254.7	3.3
VERMONT YANKEE	5	187	936	3,021	0.31	2,319.3	0.4
BROWNS FERRY 1,2,3	15	200	3,004	13,906	0.22	4,126.0	0.7
COOPER STATION	5	237	1,187	4,120	0.29	2,482.1	0.5
NINE MILE POINT 1,2	10	240	2,396	8,799	0.27	6,568.7	0.4
SUSQUEHANNA 1,2	10	248	2,484	8,570	0.29	8,749.5	0.3
GRAND GULF	5	262	1,308	6,582	0.20	5,086.7	0.3
HOPE CREEK 1	5	286	1,429	7,432	0.19	4,470.1	0.3
PEACH BOTTOM 2,3	10	297	2,965	10,443	0.28	8,264.8	0.4
MONTICELLO	5	302	1,512	3,360	0.45	2,451.8	0.6
CLINTON	5	308	1,541	5,093	0.30	3,628.3	0.4
DUANE ARNOLD	5	318	1,588	4,044	0.39	2,264.7	0.7
MILLSTONE POINT 1	5	320	1,600	4,038	0.40	2,187.4	0.7
RIVER BEND 1	5	328	1,638	6,525	0.25	3,353.6	0.5
PERRY	5	350	1,750	6,007	0.29	4,051.3	0.4
HATCH 1,2	10	373	3,732	9,557	0.39	6,301.1	0.6
FITZPATRICK	5	378	1,888	7,914	0.24	2,117.5	0.9
BRUNSWICK 1,2	10	396	3,955	13,903	0.28	4,478.8	0.9
PILGRIM	5	401	2,003	7,548	0.27	2,466.3	0.8
LASALLE 1,2	10	407	4,065	9,539	0.43	8,103.0	0.5
QUAD CITIES 1,2	10	438	4,379	10,489	0.42	4,664.2	0.9
DRESDEN 2,3	10	499	4,987	11,425	0.44	3,841.0	1.3
WASHINGTON NUCLEAR 2	5	558	2,790	7,526	0.37	3,668.9	0.8
OYSTER CREEK	5	638	3,192	11,563	0.28	2,486.9	1.3
Grand Totals and Averages	185		59,094	194,706	0.30	110,969.6	0.5
Averages Per Reactor-Year			319	1,052		599.8	

* Sites where not all reactors had completed 5 full years of commercial operation as of 12/31/95 are not included.

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

1991 - 1995

Site Name*	Number of Reactor Years	Annual Collective Dose per Reactor	Total Coll. Dose per Site (cSv)	Workers with Meas. Doses	Avg. Meas. Dose (cSv)	Total MW-yrs	Average Collective Dose per MW-yr
PRAIRIE ISLAND 1,2	10	63	631	2,940	0.21	4,833.3	0.1
INDIAN POINT 3	5	87	437	2,947	0.15	1,739.8	0.3
SEABROOK	5	92	460	3,267	0.14	4,546.2	0.1
SOUTH TEXAS 1,2	10	99	993	5,351	0.19	7,995.0	0.1
POINT BEACH 1,2	10	107	1,067	2,996	0.36	4,425.4	0.2
KEWAUNEE	5	126	630	2,160	0.29	2,301.5	0.3
COOK 1,2	10	129	1,287	6,414	0.20	7,287.2	0.2
FORT CALHOUN	5	130	648	2,637	0.25	1,959.8	0.3
THREE MILE ISLAND 1	5	138	691	5,589	0.12	3,819.1	0.2
DAVIS-BESSE	5	147	734	3,648	0.20	4,037.1	0.2
BYRON 1,2	10	149	1,485	5,537	0.27	9,344.2	0.2
OCONEE 1,2,3	15	152	2,278	8,928	0.26	11,295.3	0.2
SAN ONOFRE 1,2,3*	13	153	1,990	3,100	0.25	9,895.1	0.2
CALVERT CLIFFS 1,2	10	156	1,556	8,100	0.19	6,703.2	0.2
CALLAWAY 1	5	157	783	3,792	0.21	5,349.5	0.1
VOGTLE 1,2	10	157	1,571	5,958	0.26	10,530.3	0.1
BRAIDWOOD 1,2	10	159	1,585	6,114	0.26	8,743.2	0.2
CRYSTAL RIVER 3	5	165	824	4,195	0.20	3,587.3	0.2
WOLF CREEK 1	5	168	841	3,755	0.22	4,874.1	0.2
SALEM 1,2	10	170	1,703	14,281	0.12	6,219.1	0.3
HARRIS	5	173	866	4,286	0.20	3,771.5	0.2
MCGUIRE 1,2	10	175	1,745	7,923	0.22	9,092.6	0.2
PALO VERDE 1,2,3	15	179	2,682	10,270	0.26	14,916.1	0.2
BEAVER VALLEY 1,2	10	190	1,902	7,213	0.26	6,771.1	0.3
WATERFORD 3	5	190	949	4,968	0.19	4,745.0	0.2
CATAWBA 1,2	10	192	1,921	8,110	0.24	9,667.5	0.2
SUMMER 1	5	200	1,002	4,160	0.24	3,699.9	0.3
ARKANSAS 1,2	10	205	2,053	10,779	0.19	7,533.7	0.3
GINNA	5	211	1,056	4,052	0.26	2,098.1	0.5
ST. LUCIE 1,2	10	215	2,153	7,389	0.29	7,063.7	0.3
DIABLO CANYON 1,2	10	216	2,162	9,330	0.23	9,596.8	0.2
SEQUOYAH 1,2	10	219	2,185	8,546	0.26	7,503.0	0.3
SURRY 1,2	10	222	2,216	8,022	0.28	6,605.2	0.3
TURKEY POINT 3,4	10	223	2,230	7,363	0.30	4,965.1	0.4
ROBINSON 2	5	232	1,160	4,851	0.24	2,744.0	0.4
FARLEY 1,2	10	250	2,499	7,563	0.33	7,149.6	0.3
PALISADES	5	263	1,317	5,117	0.26	2,718.6	0.5
NORTH ANNA 1,2	10	267	2,673	9,599	0.28	7,812.6	0.3
MILLSTONE POINT 2,3	10	282	2,822	9,278	0.30	6,294.5	0.4
ZION 1,2	10	296	2,962	7,389	0.40	6,409.2	0.5
MAINE YANKEE	5	336	1,680	4,095	0.41	2,851.0	0.6
HADDAM NECK	5	355	1,777	4,438	0.40	2,253.2	0.8
INDIAN POINT 2	5	567	2,836	5,884	0.48	3,580.4	0.8
Grand Totals and Averages	353		67,042	267,334	0.25	259,328.1	0.3
Averages Per Reactor-Year			190	757		734.6	

* Sites where not all reactors had completed 5 full years of commercial operation as of 12/31/95 are not included. San Onofre is included in the compilation even though Unit 1 is no longer in operation.

TABLE 4.5a
ACTIVITIES CONTRIBUTING TO HIGH COLLECTIVE DOSES AT SELECTED PLANTS IN 1995

BWR's with High Collective Doses

Millstone Point 1 (620 rem)

Outage dose/duration: 500 rem/59 days
Average daily outage dose: 8.47 rem/day
Average daily operating dose: N/A

-Weld repair (drywell) (152.5 rem)
-ISI (in-service inspection) (drywell) (75.5 rem)
-Hanger work (drywell) (28.6 rem)
-Insulation removal/replacement (drywell) (26.4 rem)
-Staging (drywell) (24.9 rem)
-Refueling (18.9 rem)
-Cleanup valve replacement (drywell) (13.7 rem)
-Shielding (drywell) (10.9 rem)

Dresden 2, 3 (876 rem)

Outage dose/duration (U2): 685 rem/210 days
Outage dose/duration (U3): 23 rem/127 days
Average daily outage dose(U2): 3.26 rem/day
Average daily outage dose(U3): 0.18 rem/day
Average daily operating dose (U2+3): 0.42 rem/day

Unit 2

-RWCU (reactor water cleanup system) pipe and heat exchanger replacement (91.1 rem)
-Valve work/replacement (Total of 87.6 rem)
  Two 16" MOVs (motor-operated valves) replaced - 52.2 rem
  MSIV (main steam isolation valve) repair - 18.2 rem
  Electromagnetic and safety relief valve repair - 17.2 rem
-ISI (in-service inspection) in drywell (70.4 rem)
-Shielding (Total of 47.1 rem)
  Perm. recirculation ring header shielding installation - 31.2 rem
  Temporary drywell shielding installation/removal - 15.9 rem
-Outage activities support (Total of 46.7 rem)
  HP support - 29.2 rem
  Operations support - 17.4 rem
Chemical decontamination (recirc and RWCU) (23.7 rem)
-Installed instrument caps on LPCI (low pressure coolant injection) recirc. risers for injecting decon solution (13.7 rem)
-Inspect/clean main condenser water boxes (11.8 rem)
-Insulation removal/replacement in drywell (10.5 rem)
-CRD (control rod drive) removal/installation (10.3 rem)
-Unclog drain line at bottom of reactor vessel (9.4 rem)

Pilgrim (482 rem)

Outage dose/duration: 410 rem/73 days
Average daily outage dose: 5.62 rem/day
Average daily operating dose: 0.25 rem/day

-ISI (in-service inspection) (includes doses due to scaffolding and insulation) (74.5 rem)
-Refueling (Total of 69 rem)
  Reactor head removal/replacement, cavity decon - 44.9 rem
-Modifications (63.9 rem)
-MOV (motor-operated valve) repair/replacement (49.5 rem)
-Corrective maintenance (43.5 rem)
-Health physics support (22.6 rem)
-Miscellaneous support (19.1 rem)
-Shielding (15.6 rem)
-Operations support (15.5 rem)
-Preventive maintenance (13 rem)
-Decontamination (6.8 rem)

WNP 2 (456 rem)

Outage dose/duration: 297 rem/49 days
Average daily outage dose: 6.06 rem/day
Average daily operating dose: 0.5 rem/day

-Shielding (drywell) installation/removal (30 rem)
-Reactor disassembly/reassembly (Total of 25.5 rem)
  Reactor reassembly - 14.3 rem
  Reactor disassembly - 10.3 rem
-Chemical decontamination of RWCU (reactor water cleanup system) (20.6 rem)
-ISI (in-service inspection) for erosion/corrosion (19.5 rem)
-Main steam relief valve removal/replacement (14.8 rem)

TABLE 4.8a (Continued)
ACTIVITIES CONTRIBUTING TO HIGH COLLECTIVE DOSES AT SELECTED PLANTS IN 1995

BWR's with High Collective Doses

Nine Mile Pt 1, 2 (759 rem)

Outage dose/duration (U1): 312 rem/56 days
Outage dose/duration (U2): 325 rem/55 days
Average daily outage dose (U1): 5.91 rem/day
Average daily outage dose (U2): 5.57 rem/day
Average daily operating dose : N/A

Unit 1

-ISI (in-service inspection) (94.4 rem)
-Valve work/replacement (Total of 62.2 rem)
  EC (emergency cooling) check valve repair - 23.6 rem
  Drywell Limitorque valve work - 19.4 rem
  Modifications to pressure relief valves - 7.3 rem
-CRD (control rod drive) exchanges (16.8 rem)
-Health physics surveys and support (16 rem)
-Refueling (including reactor head removal/replacement, ISI, decon, fuel sipping) (12.3 rem)
-RRP cooler replacement (11.5 rem)
-Operations (drywell) (9.6 rem)
-Shielding (drywell) (8.9 rem)
-Insulation work (8.2 rem)
-Housekeeping (drywell) (5.1 rem)

Unit 2

-ISI (Total of 88 rem)
  Inside bioshield - 43.8 rem
  Outside bioshield - 34.5 rem
-Snubber related work (Total of 47.4 rem)
  Snubber reduction modifications - 26.1 rem
  Snubber functional testing - 21.3 rem
-Valve work/replacement (Total of 38.5 rem)
  MOV (motor-operating valve) testing - 17.2 rem
  SRV (safety relief valve) change out - 9.7 rem
-Refueling (Total of 17.7 rem)
  Reactor head removal/replacement - 11.5 rem
  Operations and support - 6.2 rem
-CRD exchanges (12.5 rem)
-Health physics surveys and job coverage (10.9 rem)
-Temporary shielding (7.1 rem)
-Neutron monitor replacement/repair (7 rem)
-Decontamination (drywell) (5.7 rem)

TABLE 4.8b
ACTIVITIES CONTRIBUTING TO HIGH COLLECTIVE DOSES AT SELECTED PLANTS IN 1995

PWR's with High Collective Doses

Maine Yankee (653 rem)

Outage dose/duration*: 667 rem/358 days
Average daily outage dose: 1.86 rem/day
Average daily operating dose: N/A
*Outage extended from 1/23/95 to 1/16/96

-Steam generator related work (Total of 272.1 rem)
  Tube sleeving (17,[illegible]0 tubes sleeved) - 142.3 rem
  ECT (eddy current testing) - 83.2 rem
  Sludge lancing and inspections - 38 rem
  Manual hard rolling - 7.4 rem
-RCP (Reactor Coolant Pump) work (Total of 90.3 rem)
  Rotating assembly replacement - 45.3 rem
  Motor removal/installation - 21 rem
  Seal replacement - 13.8 rem
-Outage support (Total of 90 rem)
  Rad Controls outage support - 69.2 rem
-Valve work (Total of 59.6 rem)
  Valve and SRV (safety relief valve) maintenance - 38.2 rem
  MOV (motor-operated valve) testing and repair - 21.4 rem
-Decontamination (Total of 48.6 rem)
  Reactor coolant system loop - 32.4 rem
-Refueling Operation (Total of 42.3 rem)
  Reactor head removal/replacement - 29.2 rem
  CEA (control element assembly) shaft replacement - 8.3 rem
-ISI (in-service inspection) (22.1 rem)
-Pressurizer inconel inspection (14.4 rem)
-Temporary shielding (9 rem)

Indian Point 2 (548 rem)*

Outage dose/duration: 499.9 rem/122 days
Average daily outage dose: 4.1 rem/day
Average daily operating dose: 0.20 rem/day
*Indian Point performed a full system decontamination in 1995

-Modifications (Total of 67.8 rem)
  Steam generator nozzle ring installation - 16.3 rem
  Reactor vessel head split pin repair - 14.9 rem
-Refueling (55.7 rem)
-Maintenance (51.2 rem)
-Radiation protection (47.3 rem)
-Radwaste (40.4 rem)
-Steam generator work (Total of 36.6 rem)
  Primary side (eddy current testing) - 32.5 rem
  Secondary side (sludge lancing) - 4.1 rem
-Scaffolding and insulation installation/removal (34 rem)
-Supervisory plant tours (33.1 rem)
-ISI (in-service inspection) (23.7 rem)
-Full system decontamination (21 rem)
-RCP (Reactor Coolant Pump) work (20 rem)
-Operations (20.3 rem)
-MOV (motor-operated valve) work (16.5 rem)
-Services (lighting, air) (10.6 rem)

Palisades (462 rem)

Outage dose/duration: 421 rem/97 days
Average daily outage dose: 4.53 rem/day
Average daily operating dose: 0.15 rem/day

-Refueling (Total of 68.8 rem)
  Reactor head removal/replacement - 60.8 rem
  Fuel movement - 6.3 rem
-ISI (in-service inspection) (Total of 55.2 rem)
  Inconel weld inspections (26.1 rem)
-Valve work (36.5 rem)
-Insulation removal/replacement (34.6 rem)
-Steam generator work (Total of 32 rem)
  Nozzle dam installation/removal - 12.2 rem
  ECT (eddy current testing) - 8.3 rem
-Scaffolding installation/removal (30.6 rem)
-Health Physics surveys (19.2 rem)
-Mechanical maintenance (15.4 rem)
-Pump work (11.1 rem)
-Ventilation system maintenance (10.5 rem)
-Decontamination and cleanup (9.5 rem)
-Temporary shielding (7.3 rem)
-Electrical maintenance (7.1 rem)

TABLE 4.8b (Continued)
ACTIVITIES CONTRIBUTING TO HIGH COLLECTIVE
DOSES AT SELECTED PLANTS IN 1995

PWR's with High Collective Doses

Zion 1, 2 (797 rem)

Outage dose/duration (U1): 460 rem/99 days
Outage dose/duration (U2): 167 rem/103 days
Average daily outage dose (U1): 4.65 rem/day
Average daily outage dose (U2): 1.62/day
Average daily operating dose: N/A

UNIT 1

-Steam generator work (183.7 rem)
-Valve work (74.1 rem)
-Scaffolding installation/removal (36.6 rem)
-ISI (in-service inspection) (34.4 rem)
-Radiation protection support (30.6 rem)
-Refueling (Total of 24.3 rem)
  Reactor head disassembly/assembly - 21 rem
  Fuel shuffle and inspection - 3.3 rem
-Snubber/hanger work (23.6 rem)
-Shielding (15.9 rem)
-Flange work (15.4 rem)
-Reactor coolant pump work (11.2 rem)
-Operating department routines (10.2 rem)

Unit 2

-Steam generator work (42.7 rem)
-Valve work (24.6 rem)
-Scaffolding installation/removal (20.8 rem)
-ISI (17.7 rem)
-Radiation protection support (15.9 rem)
-Refueling (Total of 15.9 rem)
  Reactor head disassembly/assembly - 12 rem
  Fuel shuffle and inspection - 3.9 rem
-Snubber/hanger work (13.9 rem)
-Shielding (5.7 rem)
-Reactor coolant pump work (5 rem)

Haddam Neck (442 rem*)

Outage dose/duration: 454 rem/81 days
Average daily outage dose: 5.6 rem/day
Average daily operating dose: 0.07 rem/day
*442 rem total year dose measured by TLD,
454 rem outage dose measured by pocket ion chamber

-Steam generator related work (Total of 121.8 rem)
  Eddy current and ultrasonic testing - 42 rem
  Tube plugging and rerolls - 31.5 rem
  Equipment setup/teardown - 14.4 rem
  Remove/install manways - 11.2 rem
  Install/remove nozzle covers - 6.6 rem
  HP surveys/job coverage - 5.7 rem
-Valve related work (Total of 68.5 rem)
  MOV (motor-operated valve) testing and repairs -26.3 rem
  Misc. valve repair - 22.2 rem
  Gate valve pressure locking fix - 20 rem
-Inspection and repair of service water system piping (52.3 rem)
-ISI (in-service inspection) (Total of 45.5 rem)
  UT (ultrasonic tests)/liquid penetrant exams - 16.5 rem
  Insulation removal/replacement - 10.1 rem
  Scaffolding installation/removal - 6.4 rem
-Refueling (40.6 rem)
-Operations (21.3 rem)
-HP coverage (19.2 rem)
-Facilities and waste management (8.8 rem)
-Shielding (7.1 rem)
-RCP (Reactor Coolant Pump) seal replacement (5.4 rem)

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

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

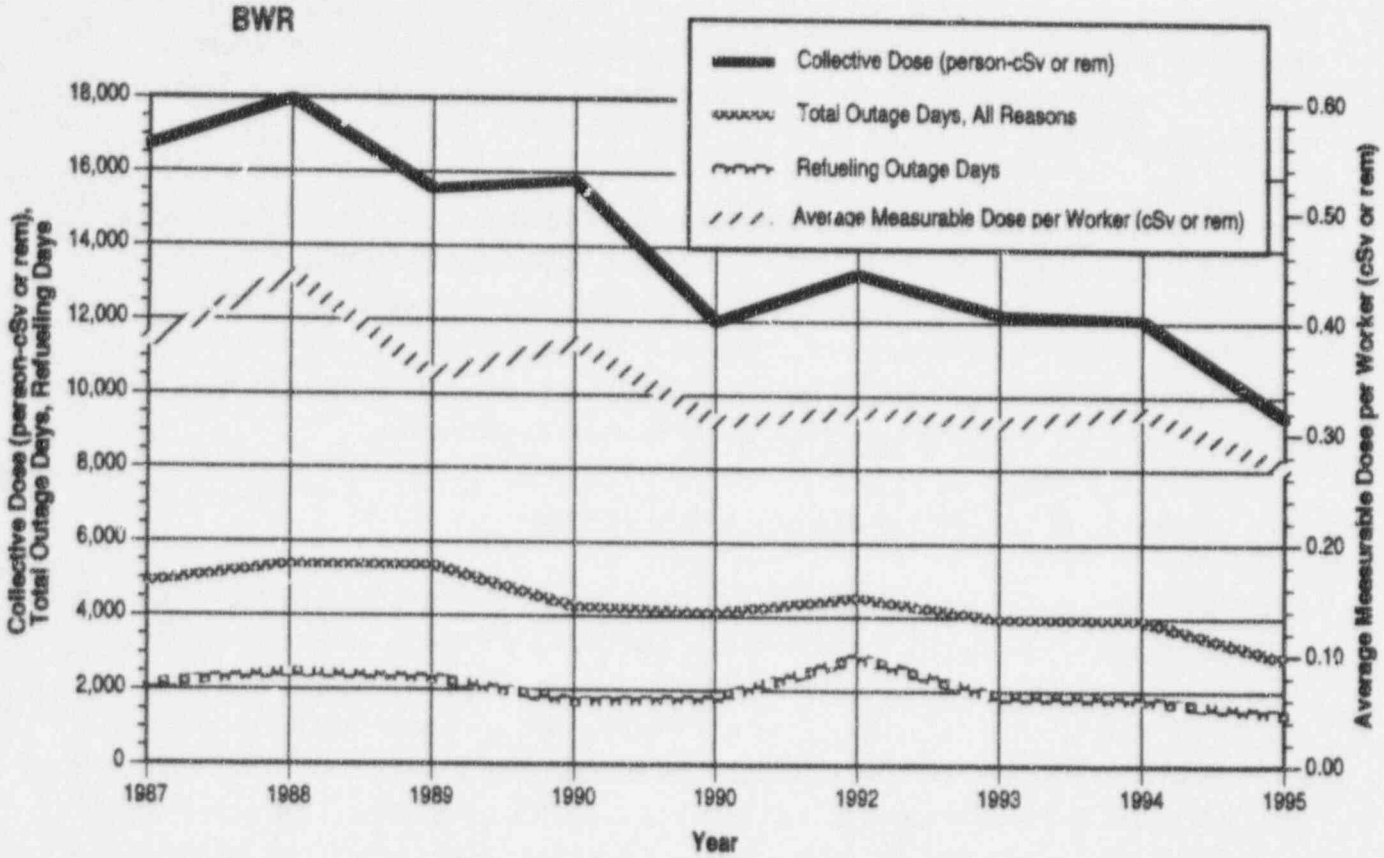
4.6 Collective Dose by Work Function and Employee Type

Each plant is required by its Technical Specifications to submit an annual statistical report that provides the collective dose of workers monitored at each plant site by employee type (plant, utility, or contractor) and by work and job functions. A copy of the report submitted for each reactor site is provided in Appendix D, and much of the data are graphically represented for each site in Appendix E. Tables 4.9 through 4.14 summarize the 1995 data for BWRs, PWRs, and LWRs. Table 4.9 shows that, at both BWRs and PWRs, about 62% of the collective dose is incurred during routine and special maintenance activities. Also, the portion of the collective dose incurred during most of the other activities is similar at the two types of plants.

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

Table 4.10 shows that workers performing special maintenance prior to 1987 incurred the largest portion (35%-45%) of the collective dose and that workers performing routine maintenance activities usually incurred between 25% and 35% of the total. For the past 9 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

Figure 4.5
Outage Days, Average Dose, and Collective Dose



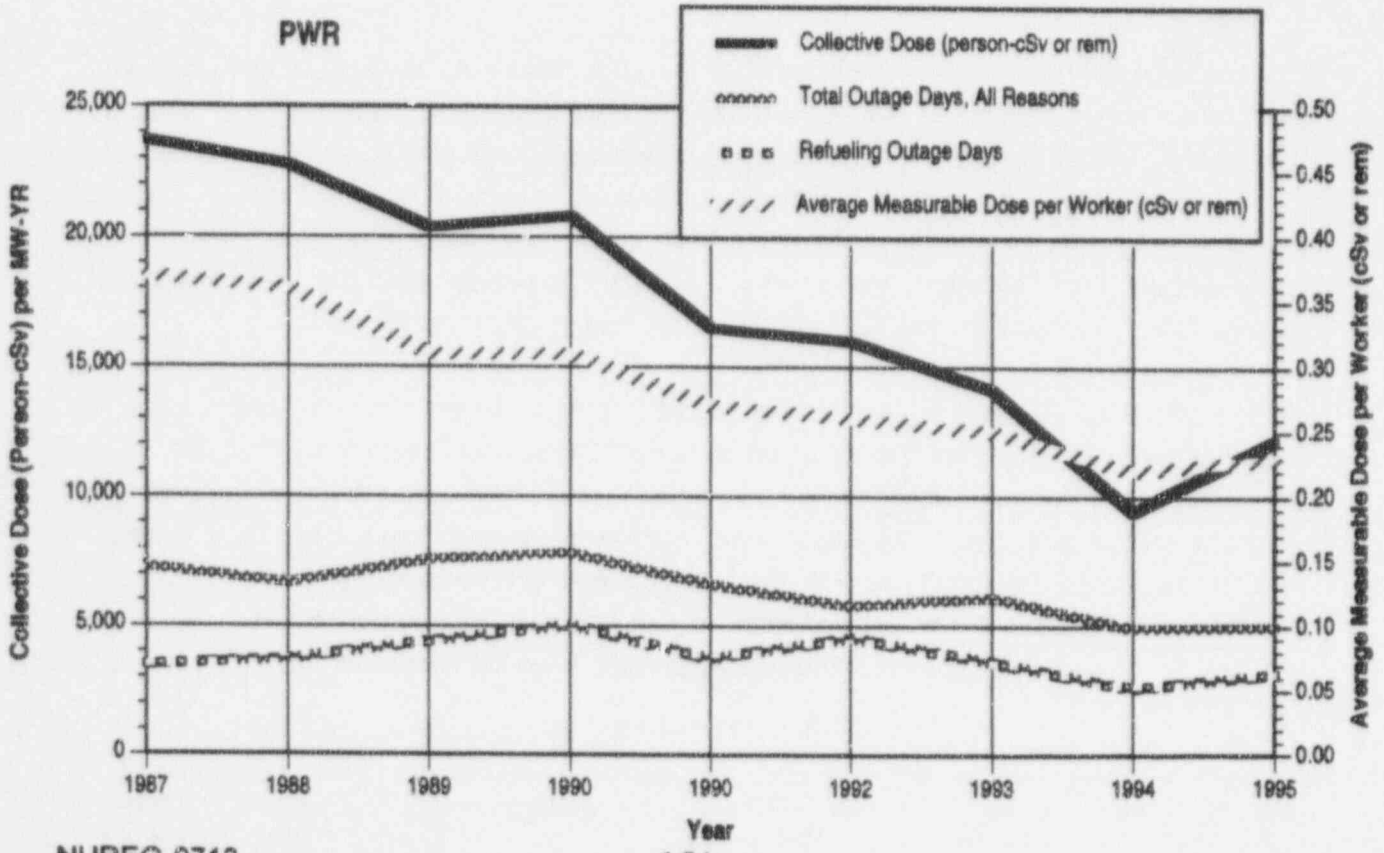


TABLE 4.9

ANNUAL COLLECTIVE DOSE

BY WORK FUNCTION AND PERSONNEL TYPE

1995

WORK AND JOB FUNCTION	STATION EMPLOYEES PERSON-cSv	STATION EMPLOYEES % OF TOTAL	UTILITY EMPLOYEES PERSON-cSv	UTILITY EMPLOYEES % OF TOTAL	CONTRACT WORKERS PERSON-cSv	CONTRACT WORKERS % OF TOTAL	TOTAL PER WORK FUNCTION PERSON-cSv	TOTAL PER WORK FUNCTION % OF TOTAL
BOILING WATER REACTORS								
REACTOR OPS & SURV	1,069	11.6%	74	0.8%	499	5.4%	1,643	17.8%
ROUTINE MAINTENANCE	1,623	17.6%	425	4.6%	2,179	23.6%	4,227	45.8%
IN-SERVICE INSPECTION	53	0.6%	81	0.9%	627	6.8%	761	8.2%
SPECIAL MAINTENANCE	311	3.4%	242	2.6%	1,276	13.8%	1,829	19.8%
WASTE PROCESSING	106	1.1%	13	0.1%	52	0.6%	171	1.9%
REFUELING	150	1.6%	64	0.7%	392	4.2%	607	6.6%
TOTAL	3,313	35.9%	900	9.7%	5,025	54.4%	9,238	100.0%
PRESSURIZED WATER REACTORS								
REACTOR OPS & SURV	667	5.5%	40	0.3%	539	4.4%	1,245	10.2%
ROUTINE MAINTENANCE	1,770	14.5%	397	3.3%	2,916	23.9%	5,083	41.7%
IN-SERVICE INSPECTION	114	0.9%	191	1.6%	1,158	9.5%	1,462	12.0%
SPECIAL MAINTENANCE	468	3.8%	257	2.1%	1,419	11.6%	2,144	17.6%
WASTE PROCESSING	143	1.2%	13	0.1%	195	1.6%	352	2.9%
REFUELING	522	4.3%	121	1.0%	1,255	10.3%	1,898	15.6%
TOTAL	3,684	30.2%	1,019	8.4%	7,481	61.4%	12,184	100.0%
ALL LIGHT WATER REACTORS								
REACTOR OPS & SURV	1,737	8.1%	114	0.5%	1,038	4.8%	2,888	13.5%
ROUTINE MAINTENANCE	3,393	15.8%	822	3.8%	5,095	23.8%	9,310	43.5%
IN-SERVICE INSPECTION	167	0.8%	272	1.3%	1,784	8.3%	2,223	10.4%
SPECIAL MAINTENANCE	779	3.6%	499	2.3%	2,695	12.6%	3,973	18.5%
WASTE PROCESSING	249	1.2%	27	0.1%	247	1.2%	523	2.4%
REFUELING	672	3.1%	186	0.9%	1,647	7.7%	2,505	11.7%
TOTAL	6,997	32.7%	1,919	9.0%	12,506	58.4%	21,422	100.0%

TABLE 4.10

PERCENTAGES OF ANNUAL COLLECTIVE DOSE AT LWRs BY WORK FUNCTION 1984 - 1995

WORK FUNCTION	PERCENTAGE OF COLLECTIVE DOSE EACH YEAR											
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
REACTOR OPERATIONS AND SURVEILLANCE	11.4%	12.8%	12.8%	11.9%	11.0%	12.2%	12.3%	14.0%	11.6%	11.2%	12.8%	13.5%
ROUTINE MAINTENANCE	26.9%	34.6%	33.2%	35.0%	37.7%	36.2%	36.5%	36.1%	38.7%	42.0%	42.7%	43.5%
IN-SERVICE INSPECTION	6.3%	8.6%	8.3%	8.0%	8.7%	9.5%	8.6%	8.9%	9.2%	10.8%	8.5%	10.4%
SPECIAL MAINTENANCE	45.4%	32.5%	35.5%	33.2%	30.1%	31.3%	31.6%	28.2%	25.8%	22.0%	19.9%	18.5%
WASTE PROCESSING	3.6%	5.1%	4.0%	3.9%	3.6%	3.4%	3.0%	3.1%	3.1%	2.5%	2.7%	2.4%
REFUELING	6.4%	6.5%	6.2%	8.1%	8.8%	7.3%	7.7%	9.7%	11.5%	11.4%	13.3%	11.7%

and routine maintenance, always accounting for the majority of the collective dose. Some of the fluctuations shown inthe 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 dose by work function and type of personnel for the years 1990 through 1995 for BWRs and PWRs separately. The general decrease in collective dose is also apparent among most of these activities.

Table 4.11 presents the distribution of the collective dose for 1995 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 1994. The collective doses shown in Tables 4.9 and 4.11 do not equal those shown in other tables in the report because they are the sum of the doses taken from the type of annual reports shown in Appendix D rather than the collective dose that was obtained or calculated from the annual reports that had been required to be submitted pursuant to 10 CFR 20.2206.

Another use made of the reports given in Appendix D is in proportioning the collective dose obtained from the § 20.407 annual reports into the work functions and personnel types shown in Appendix C. This was done in the following way:

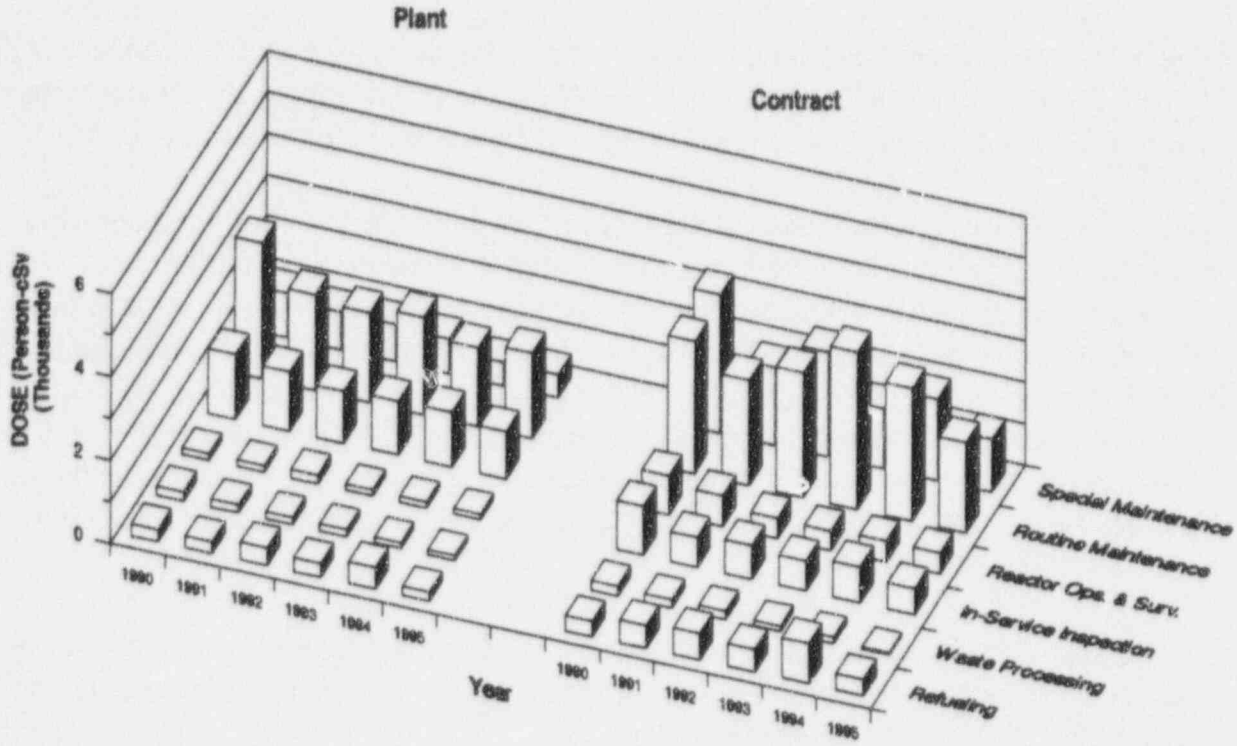
(1) The collective dose incurred by workers in the work function "Reactor Operations and Surveillance" on each plant's annual report submitted pursuant to their technical specifications (the first number in the last column in Appendix D) was determined.

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

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

Figure 4.6
Collective Dose by Work Function and Personnel Type 1990 – 1995

Boiling Water Reactors



Pressurized Water Reactors

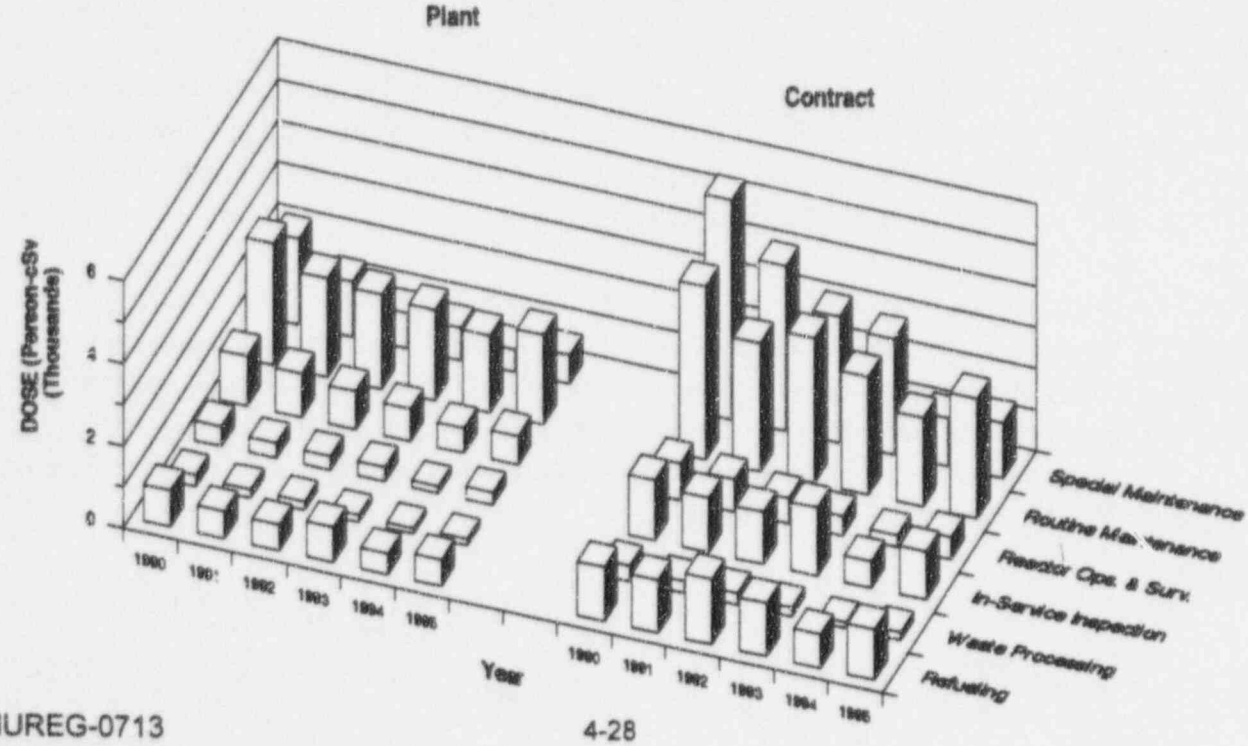


TABLE 4.11

ANNUAL COLLECTIVE DOSE

BY OCCUPATION AND PERSONNEL TYPE

1995

OCCUPATION	STATION EMPLOYEES PERSON-cSv	STATION EMPLOYEES % OF TOTAL	UTILITY EMPLOYEES PERSON-cSv	UTILITY EMPLOYEES % OF TOTAL	CONTRACT WORKERS PERSON-cSv	CONTRACT WORKERS % OF TOTAL	TOTAL PER WORK FUNCTION PERSON-cSv	TOTAL PER WORK FUNCTION % OF TOTAL
BOILING WATER REACTORS								
MAINTENANCE	1,757	19.0%	750	8.1%	4,074	44.1%	6,581	71.2%
OPERATIONS	703	7.6%	21	0.2%	158	1.7%	882	9.5%
HEALTH PHYSICS	502	5.4%	62	0.7%	307	3.3%	870	9.4%
SUPERVISORY	175	1.9%	6	0.1%	108	1.2%	289	3.1%
ENGINEERING	177	1.9%	61	0.7%	378	4.1%	616	6.7%
TOTAL	3,313	35.9%	900	9.7%	5,025	54.4%	9,238	100.0%
PRESSURIZED WATER REACTORS								
MAINTENANCE	1,835	15.1%	893	7.3%	4,604	37.8%	7,332	60.2%
OPERATIONS	681	5.6%	25	0.2%	250	2.1%	957	7.9%
HEALTH PHYSICS	720	5.9%	31	0.3%	1,121	9.2%	1,872	15.4%
SUPERVISORY	214	1.8%	17	0.1%	425	3.5%	655	5.4%
ENGINEERING	234	1.9%	53	0.4%	1,082	8.9%	1,368	11.2%
TOTAL	3,684	30.2%	1,019	8.4%	7,481	61.4%	1[illegible],184	100.0%
ALL LIGHT WATER REACTORS								
MAINTENANCE	3,592	16.8%	1,643	7.7%	8,677	40.5%	13,913	64.9%
OPERATIONS	1,384	6.5%	46	0.2%	408	1.9%	1,838	8.6%
HEALTH PHYSICS	1,221	5.7%	93	0.4%	1,428	6.7%	2,742	12.8%
SUPERVISORY	389	1.8%	23	0.1%	533	2.5%	944	4.4%
ENGINEERING	411	1.9%	114	0.5%	1,460	6.8%	1,985	9.3%
TOTAL	6,997	32.7%	1,919	9.0%	12,506	58.4%	21,422	100.0%

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

4.7 Number of Personnel by Work Function and Employee Type

Half of the information presented in the statistical annual reports shown in Appendix D concerns the number of various types of personnel that performed certain work functions. Tables 4.12 and 4.13 sum this information to show the percentage of personnel by work function and occupation. The major problem in interpreting the numbers shown in these tables is that the same person may perform several work functions during the year so that the total number of personnel obtained by summing those shown in the various work functions would be inflated. However, Table 4.12 is still useful in showing the percentage of personnel associated with each of the six work functions shown. About 55% of the personnel performed routine or special maintenance functions, 26% were involved with reactor operations and surveillance, and the remaining 19% were divided among the other three work functions.

Table 4.13 shows the percentage of personnel in each of five occupational categories at BWRs, PWRs, and LWRs. The workers were similarly distributed at BWRs and PWRs. The largest differences occurred in the maintenance and supervisory percentages for 1995. Overall, 56% of the personnel were contractors, 36% were station employees, and 8% were utility employees in 1995.

Table 4.14 presents the average annual dose incurred by workers in the five occupational categories in 1995. These averages were calculated by dividing the collective dose reported for these groups (see Table 4.11) by the number of individuals shown in Table 4.13. It shows that, in most instances, the maintenance and health physics personnel incur the highest average doses. Examination of the values of the averages given in Table 4.14 is subject to several sources of error: (1) the number of individuals may be inflated because the same plant contractor employee may work at several plants so that the employee would be counted more than once in a summary such as Table 4.14; (2) the occupations are not clearly defined so that workers performing certain tasks in one plant may be classified as being in one occupation and be included in a different one at another plant; and (3) some plants count only those workers whose doses exceed 0.10 cSv (rem) while other plants count all workers regardless of the dose received. Because of these mitigating factors, the usefulness of the numbers of individuals obtained from the reports provided in Appendix D is limited; therefore, they are not used to develop any other statistics in this document.

TABLE 4.12

NUMBER OF PERSONNEL*

BY WORK FUNCTION AND PERSONNEL TYPE

1995

WORK AND JOB FUNCTION	STATION EMPLOYEES NUMBER	STATION EMPLOYEES % OF TOTAL	UTILITY EMPLOYEES NUMBER	UTILITY EMPLOYEES % OF TOTAL	CONTRACT WORKERS NUMBER	CONTRACT WORKERS % OF TOTAL	TOTAL PER WORK FUNCTION NUMBER	TOTAL PER WORK FUNCTION % OF TOTAL
BOILING WATER REACTORS								
REACTOR OPS & SURV	20,294	18.1%	1,673	1.5%	11,865	10.6%	33,832	30.1%
ROUTINE MAINTENANCE	14,290	12.7%	2,641	2.3%	28,932	25.7%	45,863	40.8%
IN-SERVICE INSPECTION	541	0.5%	346	0.3%	7,654	6.8%	8,541	7.6%
SPECIAL MAINTENANCE	2,351	2.1%	1,198	1.1%	9,476	8.4%	13,025	11.6%
WASTE PROCESSING	2,752	2.4%	274	0.2%	1,290	1.1%	4,316	3.8%
REFUELING	1,901	1.7%	570	0.5%	4,354	3.9%	6,825	6.1%
TOTAL	42,129	37.5%	6,702	6.0%	63,571	56.6%	112,402	100.0%
PRESSURIZED WATER REACTORS								
REACTOR OPS & SURV	9,372	10.3%	1,976	2.2%	6,617	7.3%	17,965	19.8%
ROUTINE MAINTENANCE	13,280	14.7%	4,109	4.5%	18,485	20.4%	35,874	39.6%
IN-SERVICE INSPECTION	1,130	1.2%	1,216	1.3%	4,143	4.6%	6,489	7.2%
SPECIAL MAINTENANCE	3,855	4.3%	2,399	2.6%	11,074	12.2%	17,328	19.1%
WASTE PROCESSING	1,444	1.6%	391	0.4%	1,615	1.8%	3,450	3.8%
REFUELING	2,816	3.1%	1,026	1.1%	5,644	6.2%	9,486	10.5%
TOTAL	31,897	35.2%	11,117	12.3%	47,578	52.5%	90,592	100.0%
ALL LIGHT WATER REACTORS								
REACTOR OPS & SURV	29,666	14.6%	3,649	1.8%	18,482	9.1%	51,797	25.5%
ROUTINE MAINTENANCE	27,570	13.6%	6,750	3.3%	47,417	23.4%	81,737	40.3%
IN-SERVICE INSPECTION	1,671	0.8%	1,562	0.8%	11,797	5.8%	15,030	7.4%
SPECIAL MAINTENANCE	6,206	3.1%	3,597	1.8%	20,550	10.1%	30,353	15.0%
WASTE PROCESSING	4,196	2.1%	665	0.3%	2,905	1.4%	7,766	3.8%
REFUELING	4,717	2.3%	1,596	0.8%	9,998	4.9%	16,311	8.0%
TOTAL	74,026	36.5%	17,819	8.8%	111,149	54.8%	202,994	100.0%

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

TABLE 4.13

NUMBER OF PERSONNEL*

BY OCCUPATION AND PERSONNEL TYPE

1995

OCCUPATION	STATION EMPLOYEES NUMBER	STATION EMPLOYEES % OF TOTAL	UTILITY EMPLOYEES NUMBER	UTILITY EMPLOYEES % OF TOTAL	CONTRACT WORKERS NUMBER	CONTRACT WORKERS % OF TOTAL	TOTAL PER WORK FUNCTION NUMBER	TOTAL PER WORK FUNCTION % OF TOTAL
BOILING WATER REACTORS								
MAINTENANCE	12,853	11.8%	3,412	3.1%	45,414	41.7%	61,679	56.7%
OPERATIONS	12,561	11.5%	527	0.5%	3,393	3.1%	16,481	15.1%
HEALTH PHYSICS	7,187	6.6%	765	0.7%	4,571	4.2%	12,523	11.5%
SUPERVISORY	2,495	2.3%	309	0.3%	2,470	2.3%	5,274	4.8%
ENGINEERING	5,450	5.0%	1,409	1.3%	5,981	5.5%	12,840	11.8%
TOTAL	40,546	37.3%	6,422	5.9%	61,829	56.8%	108,797	100.0%
PRESSURIZED WATER REACTORS								
MAINTENANCE	10,854	13.6%	4,935	6.2%	23,314	29.2%	39,103	48.9%
OPERATIONS	8,195	10.3%	539	0.7%	2,235	2.8%	10,969	13.7%
HEALTH PHYSICS	4,006	5.0%	368	0.5%	7,299	9.1%	11,673	14.6%
SUPERVISORY	3,054	3.8%	310	0.4%	5,421	6.8%	8,785	11.0%
ENGINEERING	1,844	2.3%	1,727	2.2%	5,808	7.3%	9,379	11.7%
TOTAL	27,953	35.0%	7,879	9.9%	44,077	55.2%	79,909	100.0%
ALL LIGHT WATER REACTORS								
MAINTENANCE	23,707	12.6%	8,347	4.4%	68,728	36.4%	100,782	53.4%
OPERATIONS	20,756	11.0%	1,066	0.6%	5,628	3.0%	27,450	14.5%
HEALTH PHYSICS	11,193	5.9%	1,133	0.6%	11,870	6.3%	24,196	12.8%
SUPERVISORY	5,549	2.9%	619	0.3%	7,891	4.2%	14,059	7.5%
ENGINEERING	7,294	3.9%	3,136	1.7%	11,789	6.2%	22,219	11.8%
TOTAL	68,499	36.3%	14,301	7.6%	105,906	56.1%	188,706	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 Table 4.11 because the actual total number of individuals in each category was provided by some plants in an attempt to correct for the multiple counting of individuals.

TABLE 4.14

AVERAGE DOSES BY OCCUPATION AND PERSONNEL TYPE*

1995

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	1,757	12,853	0.14	750	3,412	0.22	4,074	45,414	0.09	6,581	61,679	0.11
OPERATIONS	703	12,561	0.06	21	527	0.04	158	3,393	0.05	882	16,481	0.05
HEALTH PHYSICS	502	7,187	0.07	62	765	0.08	307	4,571	0.07	870	12,523	0.07
SUPERVISORY	175	2,495	0.07	6	309	0.02	108	2,470	0.04	289	5,274	0.05
ENGINEERING	177	5,450	0.03	61	1,409	0.04	378	5,981	0.06	616	12,840	0.05
TOTAL	3,313	40,546	0.08	900	6,422	0.14	5,025	61,829	0.08	9,238	108,797	0.08
PRESSURIZED WATER REACTORS												
MAINTENANCE	1,835	10,854	0.17	893	4,935	0.18	4,604	23,314	0.20	7,332	39,103	0.19
OPERATIONS	681	8,195	0.08	25	539	0.05	250	2,235	0.11	957	10,969	0.09
HEALTH PHYSICS	720	4,006	0.18	31	368	0.09	1,121	7,299	0.15	1,872	11,673	0.16
SUPERVISORY	214	3,054	0.07	17	310	0.05	425	5,421	0.08	655	8,785	0.07
ENGINEERING	234	1,844	0.13	53	1,727	0.03	1,082	5,808	0.19	1,368	9,379	0.15
TOTAL	3,684	27,953	0.13	1,019	7,879	0.13	7,481	44,077	0.17	12,184	79,909	0.15
ALL LIGHT WATER REACTORS												
MAINTENANCE	3,592	23,707	0.15	1,643	8,347	0.20	8,677	68,728	0.13	13,913	100,782	0.14
OPERATIONS	1,384	20,756	0.07	46	1,066	0.04	408	5,628	0.07	1,838	27,450	0.07
HEALTH PHYSICS	1,221	11,193	0.11	93	1,133	0.08	1,428	11,870	0.12	2,742	24,196	0.11
SUPERVISORY	389	5,549	0.07	23	619	0.04	533	7,891	0.07	944	14,059	0.07
ENGINEERING	411	7,294	0.06	114	3,136	0.04	1,460	11,789	0.12	1,985	22,219	0.09
TOTAL	6,997	68,499	0.10	1,919	14,301	0.13	12,506	105,906	0.12	21,422	188,706	0.11

* 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 1995, and the other indicates the collective dose by job function for 1978 through 1995. The dose and performance indicators shown in the top graph illustrate the history of the collective dose for the site, the rolling 3-year average collective dose per reactor, and the gross electricity generated at the site. These data are plotted, beginning with the plant's first full year of commercial operation, and continuing through 1995. However, any data reported prior to 1973 are not included. The 3-year average collective dose per reactor data is included because it provides a better overall indication of the plant's general trend in collective dose. This average is determined by summing the collective dose for the current year and the previous 2 years and then dividing this sum by the number of reactors reporting during those years. Data for years when the plant was not in commercial operation have been included when available. This reduces the sporadic effects on annual doses of refueling operations (usually a 2- to 3-year cycle) and occasional high-dose maintenance activities, and gives a better idea of collective dose trends over the life of the plant. For sites with more than one reactor, the plot of the 3-year rolling average will lie below that of the plot of the annual collective dose for the site because it is calculated on a per-reactor basis.

The second type of graph at the bottom of each page in Appendix E displays the breakdown of collective dose by job function and employee type for the years 1978 through 1995. 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 among plant and contract workers. The data are taken from the submittals presented in Appendix D and therefore represent at least 80% of the collective dose at each site. Only those reactors that have completed at least 1 full year of commercial operation are presented in Appendix E.

4.9 Health Implications of Average Annual Doses

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

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

doses of radiation delivered at lower dose rates produce less of an effect on a cell per unit dose than high-dose, high-dose-rate irradiations. Thus the estimates of risks to radiation workers are likely to be conservative.

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

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

The Committee on the Biological Effects of Ionizing Radiations (BEIR) of the National Academy of Sciences (NAS) National Research Council has been conducting an ongoing study of the health effects of ionizing radiation. Its latest report, BEIR V, was published in 1990. Based on this report, the 76,822 workers receiving the average dose of 0.32 cSv (rem) continuously during an entire working career (working from age 18 until age 65) or the maximum accidental dose of 5.1 cSv (rem) to the whole body during 1995 (see Section 6) might expect an increased cancer death risk of about 9 chances in 1000 for the average dose and 4 chances per 1000 for the maximum dose.[10] Should a worker receive 0.32 cSv (rem) continuously during an entire working career (working from age 18 until age 65), his/her lifetime risk of dying from cancer is estimated to increase by approximately 4%. Since the American Cancer Society estimates that an individual's risk of dying of cancer is about 20% (one in five), the risk to an individual receiving 0.32 cSv (rem) would be approximately 21%.

The potential genetic effects from a worker population receiving 24,536 person-cSv (person-rem) (Table 3.1) are small compared to genetic damages that normally occur spontaneously in a population of this size. Approximately 100,000 serious genetic defects occur normally in one million live births, i.e., an average of about one serious defect in every ten live births. Theoretically, the total genetic damage in the first generation children of the 76,822 exposed workers would, according to NUREG/CR-4214 [Ref. 17], be an increase of

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

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

4.10 Estimation of Future Occupational Radiation Exposure at Commercial Reactor Sites

Data on occupational exposure from 1973 to 1995 suggest that commercial power reactor sites show a consistent life-cycle exposure pattern, as illustrated in Figure 4.7. The horizontal axis shows the average age of reactors at a site in years, while the vertical axis shows the average yearly collective dose per site in cSv (rem). The general shape of the curve supports the hypothesis that exposure increases during the startup and "shakedown" phase of operation, and then gradually decreases as operations become more routine and sources of exposures are identified and remediated. While BWR and PWR reactors show the same general pattern, the average exposure levels at PWR reactors are lower until well into the second decade of operation.

A regression model that captures this life-cycle pattern was developed based on exposures at U.S. power plants from 1973 to 1995. The model uses information on average site age and other factors, such as type of reactor, site capacity, and amount of power generated in a year, that can influence worker exposure. Only reactors completing a full year of commercial power operation are included. Dose information for reactors that began operation prior to 1973 are not included, so the initial years of operation for these reactors are not included in the model or reflected on the graphs. In addition, only those sites where the reactor unit age difference is <5 years are included. Because the average refueling cycle is 18-24 months, the model uses a 3-year exposure total to minimize the effect of the year-to-year differences that can occur within that cycle. The analysis summarizes dose and reactor information by site, because exposure data per reactor unit are not available. Data that allow separate calculations for each reactor at a site would increase the model's accuracy. The model estimates the collective dose in cSv (rem) at each site based on the parameters shown in Table 4.15.

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[11] Assuming that, on the average, each exposed person will have one live-born child in the future, i.e., 76,822 children born to this worker population. The estimates were calculated from Table 4.1 of reference 17.

Figure 4.7 Average Collective Dose by Site Age

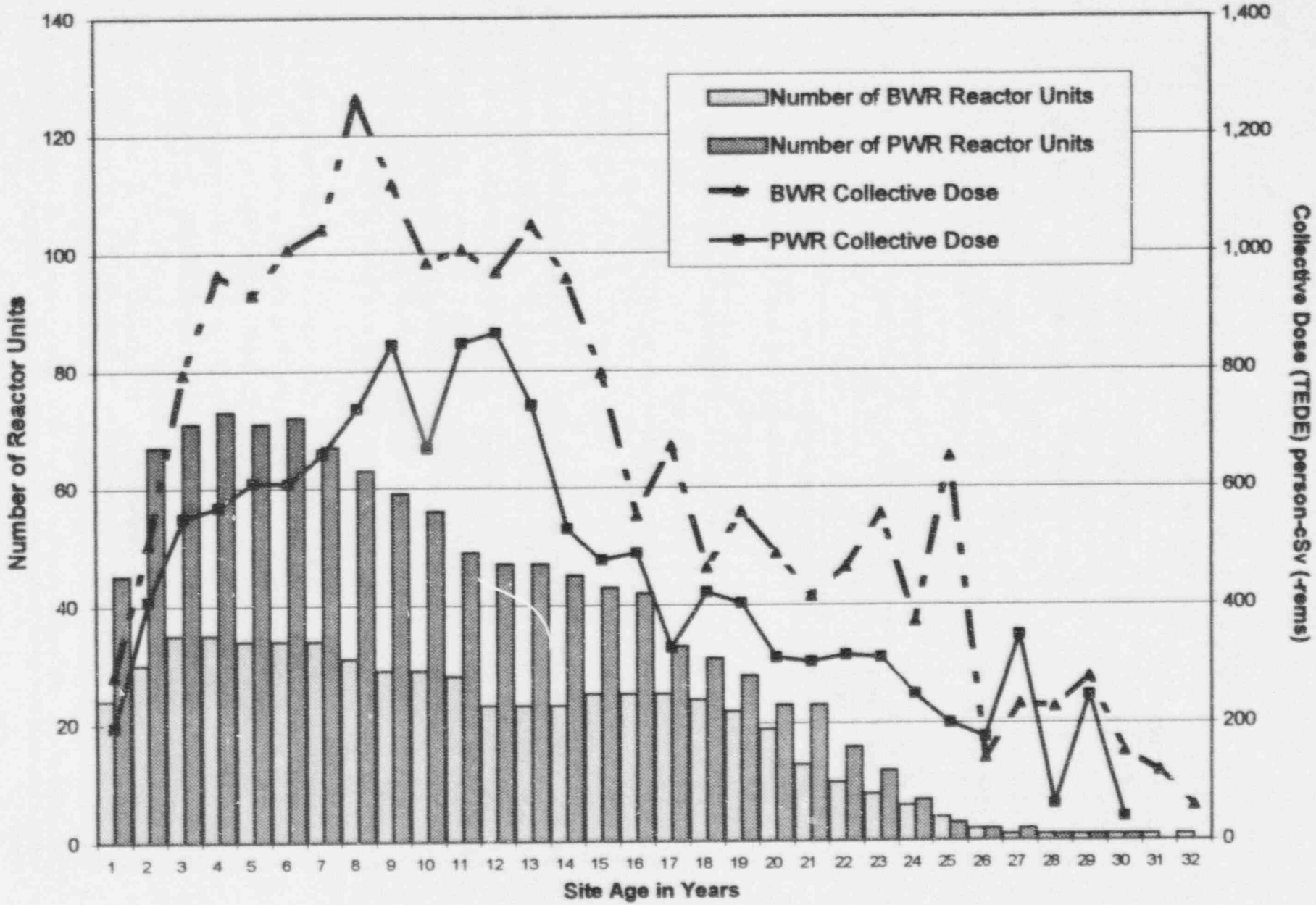


Table 4.15 Parameters Used in Collective Dose vs. Plant Age Data Model	
Parameter	**Description**
Site Age	Average age of reactor units at the site in years. Only includes sites where reactor unit age differences are < 5 years and only includes data from 1973 to 1995.
Capacity	Total capacity in megawatts
MW Years	A measure of amount of power generated during the year
Reactor Type	PWR, BWR[12]
Dose Year 1	Total dose 1 year ago
Dose Year 2	Total dose 2 years ago
Dose Year 3	Total dose 3 years ago
RX Size	1 if average reactor size at site is ≥ 1000 MW; 0 if less than 1000 MW
Site Size	1 if capacity is ≥ 1000 MW or there is more than 1 reactor at the site; 0 if the capacity is less than 1000 MW

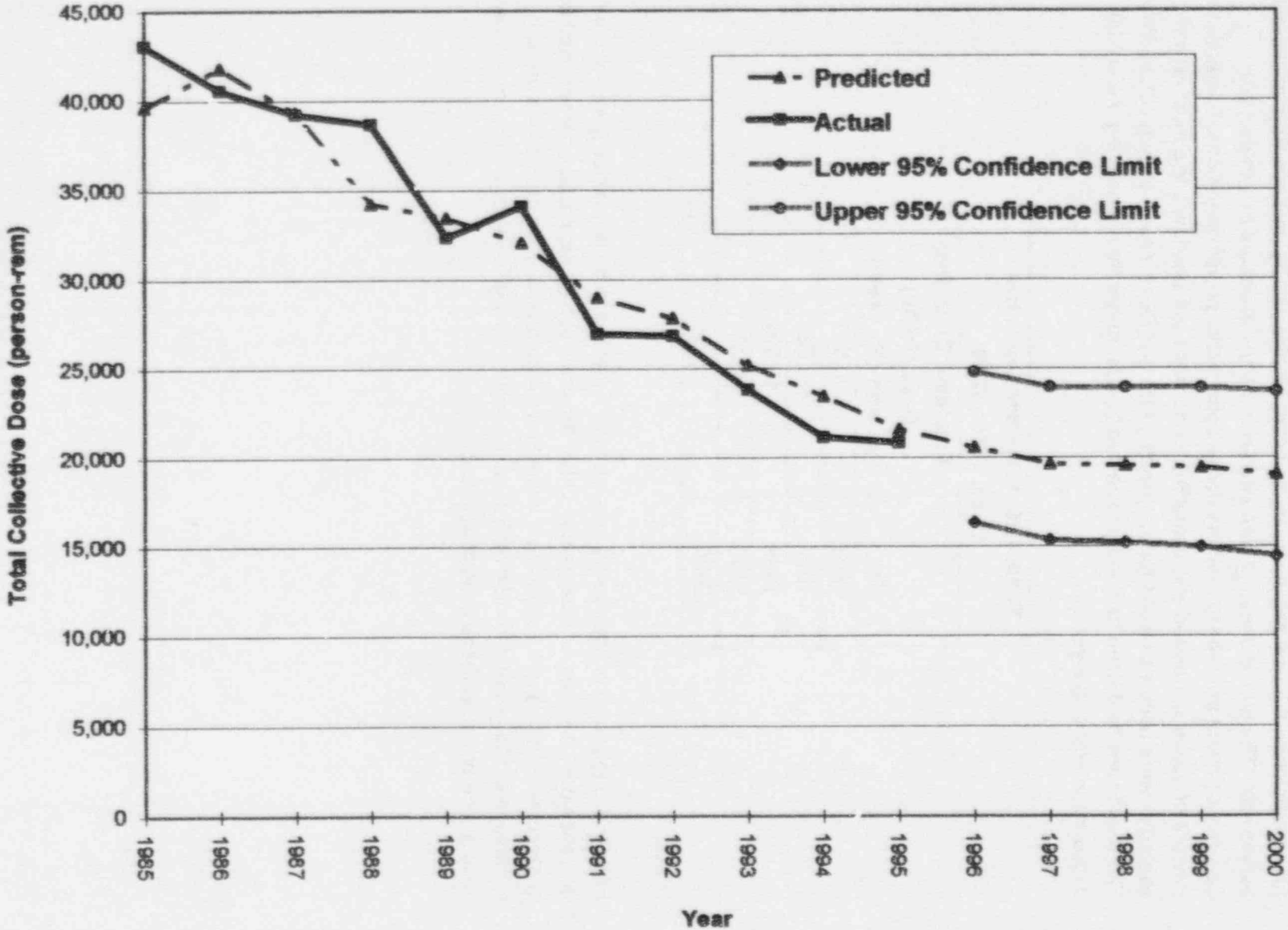
Because exposure levels were impacted significantly in the wake of the TMI incident, a single model will not fit the data before and after this incident. Most of the post-TMI mandated plant modifications were completed from 1980 to 1985. Collective exposure per site dropped from 860 cSv (rem) for 1973-1985 to 473 cSv (rem) in 1986-1995; exposure per megawatt rated capacity dropped from 1.1 cSv/MS (rem/MW) to 0.5 cSv/MW (rem/MW) between the two periods. The model included here uses all the available data, and provides the best fit for the post-TMI period, to provide the most accurate projections for future years.

The model generates year-by-year estimates of expected dose that can be aggregated to estimate total U.S. worker exposure for a given year. This allows predictions to be made for the United States as a whole, while taking into account the varying ages and histories of reactors at each site. Figure 4.8 compares the actual versus projected aggregate U.S. exposure levels for 1985-1995[13], and shows projections through 2005. The projections (also

[12]Only one site had both PWR and BWR reactors (Millstone Point), and it was classified as a PWR site. The single site does not provide enough data to test whether its exposures are significantly different from a PWR-only site. The single HTGR reactor did not provide enough data to be included in the analysis.

[13]The projections through 1993 have been adjusted by using actual dose for the first 3 years of a site's operation, because a site must have at least 3 years of operating history before the next year's dosage can be estimated. For 1994 and later years, no adjustment is needed.

Figure 4.8 Reactor Collective Dose Projections



shown in Table 4.16) take into account all of the factors listed in Table 4.15, the aging of the reactor population, and the scheduled closing of Big Rock Point in 2000. The actual dates of future reactor shutdowns are unknown and may be affected by petitions for plant license extensions. The model does not take into account any exposure associated with decommissioning after these reactors cease commercial power operations. Because the exact amount of power generated and actual future dosages are unknown, the most recent 3-year averages were used as values for megawatt-years and Dose Year 1 through Dose Year 3. The results are best used to identify expected trends, rather than predicting the actual exposure in any single year.

Table 4.16 Projected Collective Dose, 1996 - 2000

Year	Projected Collective Dose (TEDE) person-cSv (-rem)
1996	20,553
1997	19,620
1998	19,531
1999	19,401
2000	19,056

From this analysis, it is anticipated that the total collective dose at reactor sites will continue to decrease over the next several years. Other factors, such as extended unanticipated outages or shutdowns, may have a significant impact on future doses. The projections are an estimation of the general trend over the next 5 years. Any given year may have a collective dose above or below these estimated values.

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

1995

License Category	Number of Individuals with TEDE in the Ranges (cSv or rem)												Total Number Monitored	Number with Measurable Exposure	Collective TEDE (person-cSv or rem)	Average TEDE (cSv or rem)	Average Meas. TEDE (cSv or rem)
	No Meas'ble Exposure	Meas'ble <0.10	0.10-0.25	0.25-0.5	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5.0-6.0	>6					
POWER REACTORS																	
FORM 5 SUMMATION ①	81,032	38,575	20,245	15,279	6,884	3,336	3,077	125	5				168,558	87,526	21,674	0.13	0.25
TRANSIENTS - AS REPORTED ②	24,454	13,521	8,033	6,330	2,765	1,397	1,367	75	2				57,964	33,510	9,008	0.16	0.27
TRANSIENTS- ACTUAL ③	5,502	4,627	2,980	3,134	2,027	1,367	2,195	540	118	2			22,472	16,970	9,008	0.40	0.53
CORRECTED DISTRIBUTION (1-(2-3))	**62,080**	**29,681**	**16,152**	**12,083**	**6,146**	**3,306**	**3,905**	**690**	**121**	**2**			**133,066**	**70,986**	**21,674**	**0.16**	**0.31**
ALL LICENSEES																	
FORM 5 SUMMATION ①	84,839	41,301	21,312	16,223	7,446	3,707	3,832	370	79	6	1		179,176	94,277	24,884	0.14	0.26
TRANSIENTS - AS REPORTED ②	24,980	13,737	8,172	6,430	2,802	1,420	1,403	84	6				59,034	34,054	9,043	0.15	0.27
TRANSIENTS- ACTUAL ③	5,442	4,627	2,989	3,186	2,059	1,394	2,235	554	124	5			22,595	17,153	9,043	0.40	0.53
CORRECTED DISTRIBUTION (1-(2-3))	**85,361**	**32,191**	**16,109**	**12,879**	**6,703**	**3,681**	**4,684**	**840**	**197**	**11**	**1**		**142,737**	**77,376**	**24,884**	**0.17**	**0.32**

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

The following definitions apply to Table 5.1:

Form 5 Summation	The summation of the TEDE from each of the Form 5s submitted for the monitoring year. This is the summation of each dose record grouped by licensee and individual. This distribution takes into account multiple Form 5s for an individual at one NRC-licensed facility but not multiple exposures at multiple licensees.
Transients - As Reported	This distribution represents the population of transient workers as they were reported by each licensee. This distribution is the subset of all Form 5s where individuals were monitored at more than one licensee during the monitoring year. This is the summation of dose records grouped by individual and by licensee, so the distribution 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 staff's summation of the exposure reports for 1995. 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 1995, Table 5.1 shows that the summation of annual reports for reactor licensees indicated that 130 individuals received doses greater than 2 cSv (rem). After accounting for those individuals who were reported more than once, the corrected distribution indicated that there were really 713 workers who received doses greater than 2 cSv (rem). Correcting for the multiple counting of individuals also has a significant effect on the average measurable dose for these workers. The corrected average measurable dose for transient workers is twice as high as the value calculated by the summation of licensee records. The transient workers represent 22% of the workforce that receives measurable dose and increases the average measurable dose for all licensees by 19% from 0.26 cSv (rem) to 0.32 cSv (rem).

One purpose of the REIRS database, which tracks occupational radiation exposures at NRC-licensed facilities, is to identify individuals who may have exceeded the occupational radiation exposure limits because of multiple exposures at different facilities throughout the year. The REIRS database stores the radiation exposure information for an individual by their unique identification number and identification type [Ref. 18, Section 1.5] and sums the exposure for all facilities during the monitoring year. An individual exceeding the TEDE 5 cSv (rem) per year regulatory limit would be identified in Table 5.1 in one of the dose ranges >5 rem. In 1995, no individual exceeded this dose limit, and **since 1985, there have been no additional transient workers identified as having received a dose of >5 cSv (rem) that have not appeared in the annual reports received by the Commission**. This reflects the industry's continuing concerted efforts to keep the total annual doses of all workers under 5 cSv (rem) and shows that such reductions can be accomplished without increasing the collective dose because the collective dose has decreased during this same time period.

6 EXPOSURES TO PERSONNEL IN EXCESS OF REGULATORY LIMITS

6.1 Control Levels

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

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

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

(1) Category A

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

(2) Category B

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

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

(3) Category C

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

6.2 Limitations of the Data

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

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

It ***does not*** include:

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

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

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

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

6.3 Summary of Exposures in Excess of Regulatory Limits

Table 6.1 summarizes the occupational exposures in excess of regulatory limits as reported by Commission licensees pursuant to 10 CFR 20.2202 and 10 CFR 20.2203 from 1994 to 1995. 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 1995, three workers received doses that exceeded the regulatory limit. There were no occurrences in which individuals received an exposure of the magnitude described previously as "Category A." One "Category B" occurrence was reported.

The incident involved an individual working at a multi-location radiography licensee that received 5.100 cSv (rem) during 1995. The worker received 2.670 cSv (rem) during the first half of the year, causing the licensee to begin corrective measures. The licensee counseled the worker concerning reducing his exposure, but the individual stated that personal problems

had distracted him. During the third quarter the licensee limited the individual's work activities, but by the end of the year the individual exceeded the 5 cSv (rem) TEDE annual limit. The NRC regional office was notified via telephone and a written report was submitted as required.

Two exposures to the skin in excess of the annual limit of 50 cSv (rem) were reported in 1995. Both of these exposures were because of "hot particles," which are small pieces of radioactive material that can cause high doses to a localized area of the skin of the exposed worker. Both of the exposures occurred at the same licensee, which is a manufacturer and distributor of radionuclides (Type A - Broad, see Section 3.3.2). The exposures were from Iridium-192. One individual received an estimated absorbed dose to the skin of 230 rads in March 1995, and the other received 342 rem to the skin in September. After the first incident, the NRC issued a Notice of Violation. Upon the second event the licensee suspended all operations involving Ir-192 and the NRC began conducting a review of the licensee's hot particle procedures.

6.4 Maximum Exposures Below the NRC Limits

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

TABLE 6.1
OCCUPATIONAL EXPOSURES IN EXCESS OF REGULATORY LIMITS
1994 - 1995

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

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

[b] 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[d]	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[e]		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[a]								
		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	6.1	6.1						118	
	ALL OTHER	NO. OF PERSONS	7			4	1	1	1	1	
		SUM OF DOSES	19.34			66.8	61	276	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 extremity 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
1995

Exposure Category	Maximum Exposure Reported cSv (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	41.960	84%	61,245	112	18	2	0
SDE-WB	22.710	45%	75,957	1	0	0	0
LDE	4.232	28%	73,311	37	0	0	0
CEDE	3.315**		2,495				
CDE	28.805**		1,685				
DDE	5.1*		76,822				
TEDE	5.1*	> limit	76,822	3,539	500	40	1 (>limit)
TODE	29.065**	58%	76,822	163	3	0	0

*These doses were received by the same individual

**These internal doses were received by the same individual

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

As can be seen from Table 6.3, few exposures exceed half of the NRC occupational annual limits. Only the extremity and TEDE doses exceed 50%. The only dose to come within 5% of the limit was the one exposure that exceeded the limit.

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APPENDIX A

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

1995

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1995

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)	AVERAGE MEAS. TEDE (cSv, rems)
		No Meas. Exposure	Meas. <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.00	1.00-2.00	2.00-3.00	3.00-4.00	4.00-5.00	5.00-6.00	6.00-12.00	>12.0				
NUCLEAR PHARMACIES - 02500																		
CAPITAL PHARMACY INC.	21-28597-01MD	9	2												11	2	0.120	0.06
MALLINCKRODT INCORPORATED	24-04208-08MD		9	4											13	13	1.122	0.09
MALLINCKRODT MEDICAL, INC.	24-04208-01MD	5	6	2	1										14	9	0.740	0.08
MALLINCKRODT MEDICAL, INC.	24-04208-12MD	1	6	1		1									9	8	1.060	0.13
MALLINCKRODT MEDICAL, INC.	24-04208-13MD	2	8	4	1			1							16	14	2.420	0.17
MALLINCKRODT MEDICAL, INC.	24-04208-14MD	3	5	5	1										14	11	1.270	0.12
MALLINCKRODT MEDICAL, INC.	24-04208-15MD	2	5		3	1									11	9	1.670	0.19
MALLINCKRODT MEDICAL, INC.	24-04208-17MD		2	1											3	3	0.240	0.08
MALLINCKRODT MEDICAL, INC.	24-04208-19MD	3	7	3	1										14	11	1.270	0.12
MID-AMERICA ISOTOPES, INC.	24-28241-01	13	9												22	9	0.110	0.01
NORTHERN VIRGINIA ISOTOPES, INC.	45-25221-01MD	8	4												12	4	0.120	0.03
OKLAHOMA, UNIVERSITY OF	35-03178-04MD	13	24	2	2										41	28	1.470	0.05
PHARMALOGIC LTD.	44-30124-01MD	9	1	1											11	2	0.160	0.08
SPECTRUM PHARMACY INC.	13-28387-01	3	21	3	1	3									31	28	3.590	0.13
SYNCOR CORPORATION	34-18654-01MD	108	48	7	4	1									168	60	4.220	0.07
Total	15	179	157	33	14	6		1							390	211	19.582	0.09
MANUFACTURING AND DISTRIBUTION - TYPE A BROAD - 03211																		
ABB INDUSTRIAL SYSTEMS INC.	34-00255-03	2	1												3	1	0.010	0.01
ADVANCED MEDICAL SYS., INC.	34-19089-01	30	4	1	1	2									38	8	1.827	0.23
AMERSHAM CORPORATION	20-12836-01	20	10	7	5	5	2	5							54	34	13.840	0.41
DU PONT MERCK PHARM. CO.	20-28598-01	298	226	69	47	23	30	55	21	10	1				780	482	237.920	0.49
E. I. DU PONT DE NEMOURS & CO., INC	20-00320-21		4	10	1										15	15	2.460	0.16
E. R. SQUIBB & SONS, INC.	29-00139-02	665	106	16	6	4		1							802	133	11.410	0.09
MALLINCKRODT, INC.	24-04208-01	88	49	20	18	25	10	52	38	22	2				324	236	289.465	1.23
Total	7	1107	400	123	78	59	42	113	59	32	3				2,016	909	556.932	0.61

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1995

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)	AVERAGE MEAS. TEDE (cSv, rems)
		No Meas. Exposure	Meas. <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.00	1.00-2.00	2.00-3.00	3.00-4.00	4.00-5.00	5.00-6.00	6.00-12.00	>12.0				
MANUFACTURING AND DISTRIBUTION - TYPE B BROAD - 03212																		
BEST INDUSTRIES, INC.	45-19757-01	30	10	4	5	1									50	20	3.329	0.17
FRONTIER TECHNOLOGY CORP.	SNM-1957	1	5	2	1		2								11	10	2.775	0.28
Total	2	31	15	6	6	1	2								61	30	6.104	0.20
MANUFACTURING AND DISTRIBUTION - OTHER - 03214																		
BERTHOLD SYSTEMS, INC.	37-21226-01	8	11	1	1			1							22	14	2.140	0.15
CERBERUS TECHNOLOGIES, INC.	26-03864-03	1													1	-	-	-
CIS-US, INC.	20-20973-01	8	11	3	2		1	2							27	19	5.310	0.28
ELIAS USA, INC.	48-28355-01	1													1	-	-	-
HALLIBURTON CO.	35-00502-03			2											2	2	0.230	0.12
HERLEY-MDI	20-13270-01	9	1												10	1	0.010	0.01
INTERGRATED INDUSTRIAL SYS., INC.	08-21253-01	17	4												21	4	0.050	0.01
LIFECODES CORPORATION	08-28786-01	13	3												16	3	0.040	0.01
RTS TECHNOLOGY, INC.	20-27986-01	2	3	1											6	4	0.340	0.09
SAINT-GOBAIN/NORTON	34-08558-05	50	9												59	9	0.200	0.02
SEAMAN NUCLEAR CORPORATION	48-12018-01			1	1	1	1	1							5	5	3.360	0.67
THERATRONICS INTERNATIONAL LTD	54-28315-01	18	8	2	1										29	11	0.860	0.08
Total	12	127	50	10	5	1	2	4							199	72	12.540	0.17
LOW LEVEL WASTE DISPOSAL FACILITIES - 03231																		
CHEM-NUCLEAR SYSTEMS, INC.	12-13538-01	153	21	7	7	3	2								193	40	7.224	0.18
U. S. ECOLOGY, INC.	16-19204-01	3	11	5											19	16	1.243	0.08
Total	2	156	32	12	7	3	2								212	56	8.467	0.15

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1995

PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)	AVERAGE MEAS. TEDE (cSv, rems)
		No Meas. Exposure	Meas. <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.00	1.00-2.00	2.00-3.00	3.00-4.00	4.00-5.00	5.00-6.00	6.00-12.00	>12.0				
INDUSTRIAL RADIOGRAPHY - SINGLE LOCATION - 03310																		
ARMY, DEPARTMENT OF THE	13-18235-01	35	8												43	8	0.114	0.01
ARROW TANK & ENGINEERING CO.	22-13253-01			1											1	1	0.100	0.10
ATLANTIC RESEARCH CORP	45-02806-04	5	1												6	1	0.020	0.02
BABCOCK & WILCOX COMPANY	34-02160-03	13	4												17	4	0.040	0.01
BUCKEYE STEEL CASTINGS	34-08827-01	2													2	-	-	-
CARONDELET FOUNDRY COMPANY	24-26136-01	5	4												9	4	0.130	0.03
CONNEX PIPE SYSTEMS INC	45-26591-01	1	4												5	4	0.014	-
DURALOY	37-02279-02		2	1	1										4	4	0.470	0.12
DURIRON CO., INC., (THE)	34-08398-01	1	1	1											3	2	0.220	0.11
EMPIRE STEEL CASTINGS, INC.	37-02448-01	4													4	-	-	-
GENERAL MOTORS CORP.	21-08678-05	3													3	-	-	-
GENERAL MOTORS CORPORATION	34-15315-02	17													17	-	-	-
GM POWERTRAIN	21-02392-01	5													5	-	-	-
GREDE-PRYOR, INC.	35-18099-01	2													2	-	-	-
HARRISON STEEL CASTINGS CO	13-02141-01	4	2												6	2	0.100	0.05
INGERSOLL-RAND CO.	29-02015-02	2													2	-	-	-
LUCIUS PITKIN, INC.	29-27818-01	2	3	2	3										10	8	1.355	0.17
LYNCHBURG FOUNDRY COMPANY	45-17464-01	8	2												10	2	0.020	0.01
MANOIR - ELECTRO ALLOYS, INC.	34-24346-01	5	3	2		1									11	6	0.960	0.16
MINNESOTA VALLEY ENGINEERING	22-24393-01	1	1	3	2										7	6	1.190	0.20
MISSOURI STEEL CASTINGS	24-15152-01	5													5	-	-	-
NILES STEEL TANK CO.	21-04741-01		1												1	1	0.020	0.02
PELTON CASTEEL, INC.	48-02869-02	2	1												3	1	0.020	0.02
THE WILLIAM POWELL COMPANY	34-02963-01	3													3	-	-	-
TRANS WORLD AIRLINES, INC.	24-05151-05	95													95	-	-	-
WAUKESHA FOUNDRY DIVISION	48-13778-01	3	1												4	1	0.040	0.04
WISCONSIN CENTRIFUGAL, INC.	48-11641-01	1	1	2	2	1									7	6	1.650	0.28
Total	27	224	39	12	8	2									285	61	6.463	0.11

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
CY 1995

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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																		
ABC TESTING, INC.	20-19178-01		3	1	2										6	6	1.000	0.17
ACCU-TECH EVAL. SERVICES, INC	29-28358-01	9	10	2	3	1	1								26	17	3.400	0.20
AKRON INDUSTRIAL SERV., INC.	34-24673-01				1			1							2	2	1.610	0.81
ALASKA INDUSTRIAL X-RAY	50-16084-01	1		1	1	3	1	1	1						9	8	7.290	0.91
ALLEGHENY LABORATORIES	37-20734-01		2												2	2	0.090	0.05
ALONSO & CARUS IRON WORKS, INC.	52-21350-01	1	6												7	6	0.254	0.04
AMERICAN AIRLINES, INC.	35-13984-01	20	6	1											27	7	0.280	0.04
AMERICAN FOUNDRY GROUP,INC.	35-28893-01	3													3	-	-	-
ANVIL CORPORATION	46-23236-03	11	8	5	9	10	2	3							48	37	15.220	0.41
ARMY, DEPARTMENT OF THE	30-02405-05	2													2	-	-	-
ASTROTECH, INC.	37-09928-01	3	7	1	1	1									13	10	1.280	0.13
BAKER TESTING SERV., INC.	20-19087-01	9	3	1	2	1									16	7	1.690	0.24
BARNETT INDUSTRIAL X-RAY	35-28953-01		3	4	5	1	1	2							16	16	6.320	0.40
BILL MILLER, INC.	35-19048-01	3	6	10	11	3									33	30	7.390	0.25
BRANCH RADIOGRAPHIC LABS., INC.	29-03405-02	3	5	4	1	2	2								17	14	4.380	0.31
BRAUN INTERTEC CORPORATION	22-18537-02	4	11	3	4	4		1							27	23	5.590	0.24
CALUMET TESTING SERV., INC.	13-18347-01	11	3	1	1	1	2	4	4						27	16	17.480	1.09
CAPITAL X-RAY SERV., INC.	35-11114-01				9	1	1	4	4	5					24	24	34.820	1.45
CENTERIOR SERVICE COMPANY	34-23408-01	2	3	1	1										7	5	0.561	0.11
CENTURY INSPECTION, INC.	42-08456-32	12	14	17	23	15	15	8	2						106	94	50.350	0.54
CERTIFIED TESTING LABS., INC.	29-14150-01		3	2				1							6	6	1.836	0.31
CHICAGO BRIDGE AND IRON CO	42-13553-02	31	30	5	6	3	2	3							80	49	12.220	0.25
COLBY & THIELMEIER TESTING CO.	24-13737-01		1		1	1	1	4							8	8	7.550	0.94
COMO TECH INSPECTION	15-28978-01	2	1	1	4	1	1								10	9	2.909	0.36
CONAM INSPECTION	12-18559-01	42	34	30	27	15	10	11	6	1					176	134	67.617	0.50
CONNELL LIMITED PARTNERSHIP	35-13735-01	1				1									2	1	0.590	0.59
CONSUMERS POWER CO.	21-08808-03	8	5	5	1	1									18	12	2.057	0.17
CRAMER & LINDELL ENGINEERS, INC.	08-20794-01	6	10	6	5										27	21	3.060	0.15
CTI, INC.	50-19202-01	29	20	25	31	16	12	7	2						142	113	49.612	0.44
CURTIS INSPECTION SERVICES, INC.	35-27438-01	6	11	6	7	2									32	26	4.745	0.18

APPENDIX A
ANNUAL WHOLE BODY DOSES FOR NON-REACTOR NRC LICENSEES
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PROGRAM CODE - LICENSEE NAME	LICENSE#	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)													TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE TEDE (person-cSv, rem)	AVERAGE MEAS. TEDE (cSv, rems)
		No Meas. Exposure	Meas. <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.00	1.00-2.00	2.00-3.00	3.00-4.00	4.00-5.00	5.00-6.00	6.00-12.00	>12.0				
INDUSTRIAL RADIOGRAPHY - MULTIPLE LOCATION - 03320 Continued																		
DAYTON X-RAY CO.	34-08943-01	2	2	4	7	4	2	4							25	23	11.710	0.51
DIAMOND H TESTING COMPANY	11-27316-01	2	2	4	3		2	5							18	16	9.836	0.61
EASTERN TESTING & INSPECTION, INC.	29-09814-01	5	1	3	1	3	1	2							16	11	5.810	0.53
EDWARDS PIPELINE TESTING, INC.	35-23193-01	2	21	24	39	25	20	17							148	146	74.546	0.51
EG & G FLORIDA, INC., BOC-005	09-21233-01	29	8												37	8	0.190	0.02
FROEHLING & ROBERTSON, INC.	45-08890-01	6	7	1	2										16	10	1.220	0.12
GENERAL DYNAMICS CORP	06-01781-08		23	16	4										43	43	4.891	0.11
GLITSCH FIELD SERVICES/NDE,INC.	34-14071-01	2	16	9	6	3	2	2							40	38	10.260	0.27
GLOBE X-RAY SERV., INC.	35-15194-01	4	1	1	5	4	2	4	4	3	1	1			30	26	40.770	1.57
GREAT LAKES TESTING, INC.	49-26484-01		1	3	2			3							9	9	5.742	0.64
GRINNELL CORPORATION	38-28750-01	3	3	1	1										8	5	0.520	0.10
H&G INSPECTION COMPANY, INC.	42-26838-01	1		3	2	1	1	6	2						16	15	16.280	1.09
H. R. INSPECTION SERV., INC.	15-06209-01	2	1	2	2			4							11	9	7.590	0.84
HIGH MOUNTAIN INSP. SERV. INC.	49-28808-02	2	2	3	2										9	7	1.390	0.20
HUNTINGDON ENGINEERING	22-01376-02	5	4	5	2	1	2	6	2						27	22	16.450	0.75
HUNTINGTON TESTING & TECH	47-23076-01	1	2	7	8	3	2	8	5						36	35	31.100	0.89
HUTCHINSON TECHNICAL COLLEGE	22-15554-01	117	6	1											124	7	0.240	0.03
INDUSTRIAL NDT CO., INC.	39-24888-01	1	3	2	3	1	1	2	2						15	14	10.370	0.74
INDUSTRIAL NDT SERVICES DIVISION	13-06147-04	1	7	2	1	1		2							14	13	3.520	0.27
INSPECTION MANAGEMENT CORP	35-26824-01	1	3	2	1	1		2	2	1	1				14	13	20.860	1.60
INTERMOUNTAIN TESTING CO.	05-07872-01		3	2	5	3	4	6	5						28	28	28.361	1.01
JAN X-RAY SERVICES, INC.	21-16560-01		3	6	10	8	8	9	1	1					46	46	36.500	0.79
MAGNA CHEK, INC.	21-19111-02	2	5	1											8	6	0.220	0.04
MARYLAND Q.C. LABORATORIES, INC.	19-28683-01	5	2	2	2	2		3							16	11	5.880	0.53
MASSACHUSETTS MATERIALS RES.	07-01173-03	2	2	1	2	1		1							9	7	3.220	0.46
MATERIAL TESTING LABS, INC.	45-17151-01	7	3	1	2			1							14	7	2.790	0.40
MATTINGLY TESTING SERVICES, INC.	25-21479-01		5		3	1	1	1							11	11	4.205	0.38
MET-CHEM TESTING LABS.,INC.	43-27362-01	5	4	1	4	4		2	2	1					23	18	15.314	0.85
MID AMERICAN INSP. SERV,INC	21-28060-01				1	2	3	3	2						11	11	13.870	1.26
MIDWEST INDUSTRIAL X-RAY, INC.	33-27427-01	3	1		1	2	1	4	3						15	12	14.890	1.24

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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																		
MIDWEST INSPECTION SERVICES	35-27005-01	2	2	2		2	1	10	6	2					27	25	39.980	1.60
MONTANA X-RAY, INC.	25-21134-01			1		1	1								3	3	1.700	0.57
MOS INSPECTION, INC.	12-00622-07	90	79	39	35	19	17	31	5	1					316	226	105.860	0.47
NDE SERVICES, INC.	11-29082-01		2			1									3	3	0.584	0.19
NDT SERVICES, INC.	52-19438-01	6	7	3	1	2	3	2							24	18	7.630	0.42
NDT SPECIALISTS, INC.	48-25917-01					1									1	1	0.520	0.52
NEWPORT NEWS SHIPBUILDING	45-09428-02	2	29	7	9										47	45	5.634	0.13
NON-DESTRUCTIVE TESTING CORP.	29-19742-01	4	5	1	1	2									13	9	1.570	0.17
NOOTER CORPORATION	24-03783-01	4	10	4											18	14	0.880	0.06
NORFOLK SHIPBUILDING & DRYDOCK CO.	45-12042-01	8	3	1		1									13	5	0.760	0.15
NORTH AMERICAN INSPECTION, INC.	37-23370-01	1	6	7	5	7		8	6						40	39	33.150	0.85
NORTHWEST INSP. & TESTING SERV. INC	11-27394-01		1				1								2	2	0.811	0.41
PENN INSPECTION CO.	35-21144-01		1	4	2	5	4	6							22	22	15.831	0.72
PITT-DES MOINES, INC.	37-27878-01	11	7	3	3	2	1	2							29	18	6.910	0.38
PRECISION COMPONENTS CORP.	37-16280-01	43	14	3	2										62	19	1.500	0.08
PROFESSIONAL SERVICE INDUSTRIES	12-16941-03	2	6	4	1	1	3	10	4	2					33	31	35.450	1.14
PROFESSIONAL WELDING ASSOC.,INC.	48-25806-01	4													4	-	-	-
PROGRESS SERV., INC.	34-19592-01	4	3	1	1										9	5	0.460	0.09
PSI ENERGY, INC.	13-15544-08	1	3	1											5	4	0.320	0.08
QSL INSPECTION, INC.	37-28085-01	6	6	8	4	1	2	9	7	1					44	38	40.100	1.06
QUALITY ENERGY SERV. & TESTS CORP.	35-28815-01	4		2		1		2	5	1					15	11	18.712	1.70
QUALITY INSPECTION & TESTING	50-29038-01		2	2				1	1						6	6	3.810	0.64
RAYTHEON ENGINEERS & CONST.	29-07056-03		2	1	1	3	1	1							9	9	5.030	0.56
S. K. MCBRYDE, INC.	32-25137-01	2		3	1										6	4	0.790	0.20
SAM-SON INSPECTION & TECH.SERV.INC.	34-25898-01	3	2	5	3	2	1	4							20	17	9.860	0.58
SENIOR ENGINEERING CO.	24-19500-01	4													4	-	-	-
SIERRA TESTING, INC.	35-28950-01	1	1	3	3		1		4	5					18	17	28.744	1.69
SOUTHWEST X-RAY CORPORATION	49-27434-01	7	2			1	1	4	2	1					18	11	16.900	1.54
SPEC CONSULTANTS, INC.	37-27891-01	10	6	6	1	1		3							27	17	5.900	0.35
ST. LOUIS TESTING LABS., INC.	24-00188-02	1	4	1	3	3		2	1						15	14	8.320	0.59

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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																		
TENNECO GAS PIPELINE COMPANY	42-09073-02	5	10												15	10	0.175	0.02
TENNESSEE VALLEY AUTHORITY	41-06832-08	7	6	6	4	1	2								26	19	5.103	0.27
TESTING TECHNOLOGIES, INC.	45-25007-01	1	5	1	3	2	2	1							15	14	6.190	0.44
TESTMASTER INSPECTION CO.,INC.	34-24872-01		2	1	5	4	1	4	1						18	18	12.975	0.72
TRI STATE ASSOCIATES, INC.	45-24987-01	2	1		1		1								5	3	1.140	0.38
TRI STATE INSPECTION & CONSULT.	37-19640-01	1		1				1							3	2	1.555	0.78
TULSA GAMMA RAY, INC.	35-17178-01	3	4	8	6	3	1	7	10						42	39	39.550	1.01
TWIN PORTS TESTING, INC.	48-23476-01	14	5	3	2	2		4							30	16	7.610	0.48
UNITED STATES TESTING CO., INC.	41-25235-01	35	48	23	25	22	5	13	3	1					175	140	60.902	0.44
VALLEY INDUSTRIAL X-RAY	04-29076-01		9	4	4	2	4	7	3						33	33	23.770	0.72
VALLEY INSPECTION SERVICE, INC.	37-28385-01	2	3					2							7	5	2.820	0.56
VENEGAS INDUSTRIAL TESTING	28-14847-02		1		1										2	2	0.360	0.18
VERMONT NONDESTRUCT. TESTING INC.	44-28509-01	4	1												5	1	0.010	0.01
VOITH HYDRO, INC.	37-16280-03	11	1												12	1	0.010	0.01
WALASHEK ENTERPRISES, INC.	53-23225-01	1	4												5	4	0.110	0.03
WESTERN IND. X-RAY INSPECTION CO.	49-27356-01		3	1											4	4	0.295	0.07
WESTERN STRESS, INC.	42-28900-01	11													11	-	-	-
WESTERN STRESS, INC.	45-27519-01	2	2		2	1	1		1						9	7	4.800	0.69
WESTERN X-RAY COMPANY	35-19993-01			1	2	1	2	10							16	16	18.470	1.15
WISCONSIN INDUSTRIAL TESTING, INC.	48-17480-01	5	20	12	11	8	4	10	1						69	64	29.680	0.46
X-RAY TESTING	21-05472-01	85	18	4	2				1						110	25	3.680	0.15
X-RAY, INC.	46-03414-03	5	11	1	4	2		1							24	19	4.880	0.26
Total	112	841	703	417	425	255	163	302	110	26	2	1			3,245	2,404	1,331.557	0.55

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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				
FUEL FABRICATION FACILITIES - 21210																		
B&W FUEL CO.	SNM-1168	162	64	24	18	4	3	5							280	118	22.904	0.19
BABCOCK AND WILCOX CO., NAVAL	SNM-0042	39	66	37	88	31	17	41	3	1					323	284	141.939	0.50
COMBUSTION ENGINEERING, INC.	SNM-0033	[illegible]	48	28	26	23	19	64	11						248	219	167.167	0.76
GENERAL ATOMICS	SNM-0896	106	18	12	4										140	34	3.760	0.11
GENERAL ELECTRIC CO.	SNM-1097	270	4 2	136	133	84	53	94	13						1,245	975	339.851	0.35
NUCLEAR FUEL SERVICES INC.	SNM-0124	192	166	12	16	6									392	200	15.185	0.08
SIEMENS POWER CORP.	SNM-1227	188	329	102	48	40	36	27							770	582	131.694	0.23
WESTINGHOUSE ELECTRIC CORP.	SNM-1107	181	163	97	59	44	32	98	45	9					708	547	394.780	0.69
Total	8	1147	1316	448	392	232	160	329	72	10					4,106	2,959	1,217.280	0.41
FRESH FUEL STORAGE AT REACTOR SITES - 23100																		
GENERAL ELECTRIC CO.	SNM-2500	55	14	6	9	3		6	4	6	1				104	49	50.720	1.04
Total	1	55	14	6	9	3		6	4	6	1				104	49	50.720	1.04

APPENDIX B

Annual Whole Body Doses at Licensed Nuclear Power Facilities

1995

APPENDIX B
ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES
CY 1995

PLANT NAME	TYPE	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)														TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE DOSE (person-cSv, rem)
		No Meas. Exposure	Meas. <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.00	1.00-2.00	2.00-3.00	3.00-4.00	4.00-5.00	5.00-6.00	6.00-7.00	7.00-12.00	>12.0			
ARKANSAS 1,2	PWR	1,437	1,244	532	301	107	39	36	-	-	-	-	-	-	-	3,696	2,259	386
BEAVER VALLEY 1,2	PWR	1,221	494	395	350	163	64	69	1	-	-	-	-	-	-	2,757	1,536	453
BIG ROCK POINT	BWR	124	113	25	34	11	6	16	-	-	-	-	-	-	-	329	205	54
BRAIDWOOD 1,2	PWR	1,224	464	324	235	84	15	12	-	-	-	-	-	-	-	2,358	1,134	236
BROWNS FERRY 1,2,3	BWR	2,400	1,285	677	438	115	23	2	-	-	-	-	-	-	-	4,940	2,540	409
BRUNSWICK 1,2	BWR	1,534	1,237	481	473	207	151	108	-	-	-	-	-	-	-	4,191	2,657	683
BYRON 1,2	PWR	1,349	396	291	203	133	50	34	-	-	-	-	-	-	-	2,456	1,107	306
CALLAWAY 1	PWR	958	524	289	169	50	19	11	-	-	-	-	-	-	-	2,020	1,062	187
CALVERT CLIFFS 1,2	PWR	1,607	568	309	200	79	40	7	-	-	-	-	-	-	-	2,810	1,203	235
CATAWBA 1,2	PWR	1,720	753	493	387	129	73	57	-	-	-	-	-	-	-	3,612	1,892	462
CLINTON	BWR	928	368	307	322	138	29	18	-	-	-	-	-	-	-	2,110	1,182	316
COMANCHE PEAK 1,2	PWR	586	465	238	151	70	22	5	-	-	-	-	-	-	-	1,537	951	179
COOK 1,2	PWR	1,159	679	375	174	58	16	8	-	-	-	-	-	-	-	2,469	1,310	203
COOPER STATION	BWR	1,121	494	260	219	97	24	11	-	-	-	-	-	-	-	2,216	1,095	228
CRYSTAL RIVER 3	PWR	851	195	14	-	-	-	-	-	-	-	-	-	-	-	1,060	209	8
DAVIS-BESSE	PWR	790	240	14	2	-	-	-	-	-	-	-	-	-	-	1,046	256	7
DIABLO CANYON 1,2	PWR	1,739	927	327	222	65	32	42	-	-	-	-	-	-	-	3,354	1,615	286
DRESDEN 2,3	BWR	2,106	867	509	455	261	175	215	-	-	-	-	-	-	-	4,588	2,482	875
DUANE ARNOLD	BWR	787	406	241	211	116	98	57	-	-	-	-	-	-	-	1,918	1,129	357
FARLEY 1,2	PWR	789	572	379	342	123	87	75	3	-	-	-	-	-	-	2,350	1,561	463
FERMI 2	BWR	1,440	304	69	16	1	-	-	-	-	-	-	-	-	-	1,830	390	28
FITZPATRICK	BWR	1,188	528	279	210	114	77	41	-	-	-	-	-	-	-	2,437	1,249	327
FORT CALHOUN	PWR	595	258	161	124	62	17	5	-	-	-	-	-	-	-	1,222	627	139
GINNA	PWR	873	374	193	109	35	15	12	-	-	-	-	-	-	-	1,611	738	136
GRAND GULF	BWR	1,138	786	339	253	115	58	38	-	-	-	-	-	-	-	2,727	1,589	342
HADDAM NECK	PWR	785	286	183	190	130	91	124	2	-	-	-	-	-	-	1,791	1,006	442
HARRIS	PWR	912	618	223	146	45	15	21	-	-	-	-	-	-	-	1,980	1,068	174
HATCH 1,2	BWR	970	519	314	285	150	78	107	5	-	-	-	-	-	-	2,428	1,458	488
HOPE CREEK 1	BWR	819	908	384	201	62	19	18	1	-	-	-	-	-	-	2,390	1,571	196
INDIAN POINT 2	PWR	850	601	365	327	186	115	90	6	-	-	-	-	-	-	2,540	1,690	548
INDIAN POINT 3	PWR	907	388	188	54	6	2	-	-	-	-	-	-	-	-	1,545	638	67
KEWAUNEE	PWR	264	148	101	102	34	18	12	-	-	-	-	-	-	-	679	415	109
LASALLE 1,2	BWR	1,195	508	378	343	247	92	57	-	-	-	-	-	-	-	2,818	1,623	512
LIMERICK 1,2	BWR	2,088	849	344	227	59	32	19	1	-	-	-	-	-	-	3,669	1,581	260
MAINE YANKEE	PWR	659	217	226	249	160	96	192	24	3	-	-	-	-	-	1,826	1,167	653
MCGUIRE 1,2	PWR	2,283	793	336	103	24	3	-	-	-	-	-	-	-	-	3,542	1,259	138
MILLSTONE POINT 1	BWR	595	328	175	164	79	53	96	14	1	-	-	-	-	-	1,505	910	620
MILLSTONE POINT 2,3	PWR	1,105	609	326	305	148	99	178	25	1	-	-	-	-	-	2,796	1,691	416
MONTICELLO	BWR	592	68	65	51	14	-	2	-	-	-	-	-	-	-	792	200	44
NINE MILE POINT 1,2	BWR	1,239	794	546	442	246	112	153	11	-	-	-	-	-	-	3,543	2,304	759

APPENDIX B (Continued)
ANNUAL WHOLE BODY DOSE AT LICENSED NUCLEAR POWER FACILITIES
CY 1995

PLANT NAME	TYPE	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)														TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE DOSE (person-cSv, rem)
		No Meas. Exposure	Meas. <0.10	0.10-0.25	0.25-0.5	0.50-0.75	0.75-1.00	1.00-2.00	2.00-3.00	3.00-4.00	4.00-5.00	5.00-6.00	6.00-7.00	7.00-12.00	>12.0			
NORTH ANNA 1,2	PWR	1,373	644	403	297	113	56	37	1	-	-	-	-	-	-	2,824	1,551	367
OCONEE 1,2,3	PWR	1,751	708	477	288	74	19	16	4	-	-	-	-	-	-	3,337	1,586	304
OYSTER CREEK	BWR	538	472	178	88	15	5	3	-	-	-	-	-	-	-	1,299	761	90
PALISADES	PWR	464	403	214	286	140	102	98	7	-	-	-	-	-	-	1,694	1,230	482
PALO VERDE 1,2,3	PWR	1,723	824	398	332	161	83	77	-	-	-	-	-	-	-	3,598	1,875	482
PEACH BOTTOM 2,3	BWR	1,747	983	437	290	120	62	48	-	-	-	-	-	-	-	3,687	1,940	398
PERRY	BWR	1,159	338	194	51	4	-	-	-	-	-	-	-	-	-	1,746	587	64
PILGRIM	BWR	853	325	284	277	224	124	60	-	-	-	-	-	-	-	2,147	1,294	482
POINT BEACH 1,2	PWR	437	171	120	101	78	39	39	-	-	-	-	-	-	-	985	548	190
PRAIRIE ISLAND 1,2	PWR	581	220	119	104	43	12	1	-	-	-	-	-	-	-	1,080	499	107
QUAD CITIES 1,2	BWR	1,213	629	438	392	273	145	164	-	-	-	-	-	-	-	3,254	2,041	736
RIVER BEND 1	BWR	1,522	414	146	83	14	7	3	-	-	-	-	-	-	-	2,189	667	85
ROBINSON 2	PWR	862	492	256	200	75	19	16	-	-	-	-	-	-	-	1,920	1,058	215
SALEM 1,2	PWR	622	689	277	153	47	15	14	-	-	-	-	-	-	-	1,817	1,195	218
SAN ONOFRE 2,3	PWR	3,304	783	448	379	220	62	22	-	-	-	-	-	-	-	5,218	1,914	455
SEABROOK	PWR	1,293	445	243	99	13	-	-	-	-	-	-	-	-	-	2,093	800	102
SEQUOYAH 1,2	PWR	1,684	727	406	272	133	46	33	1	-	-	-	-	-	-	3,302	1,618	358
SOUTH TEXAS 1,2	PWR	1,711	706	372	249	98	41	19	-	-	-	-	-	-	-	3,196	1,485	291
ST. LUCIE 1,2	PWR	1,083	563	366	324	114	65	59	7	-	-	-	-	-	-	2,581	1,498	413
SUMMER 1	PWR	801	217	37	3	-	-	-	-	-	-	-	-	-	-	1,058	257	13
SURRY 1,2	PWR	1,009	957	358	343	113	58	46	8	-	-	-	-	-	-	2,892	1,883	406
SUSQUEHANNA 1,2	BWR	1,569	688	431	336	183	74	61	-	-	-	-	-	-	-	3,342	1,773	476
THREE MILE ISLAND 1	PWR	785	693	273	174	57	22	1	-	-	-	-	-	-	-	2,005	1,220	213
TURKEY POINT 3,4	PWR	1,197	505	328	218	67	17	7	-	-	-	-	-	-	-	2,339	1,142	215
VERMONT YANKEE	BWR	1,254	235	215	191	71	19	6		-	-	-	-	-	-	1,991	737	182
VOGTLE 1,2	PWR	852	406	273	169	76	15	14	-	-	-	-	-	-	-	1,806	953	199
WASHINGTON NUCLEAR 2	BWR	1,216	772	290	280	191	104	57	-	-	-	-	-	-	-	2,910	1,694	456
WATERFORD 3	PWR	1,068	629	282	137	28	9	7	-	-	-	-	-	-	-	2,160	1,092	153
WOLF CREEK 1	PWR	957	208	25	8	1	-	-	-	-	-	-	-	-	-	1,199	242	14
ZION 1,2	PWR	1,496	508	302	386	225	181	221	4	-	-	-	-	-	-	3,303	1,807	797
TOTALS: 37 BWRs		31,335	15,284	7,986	6,332	3,117	1,567	1,360	32	1	-	-	-	-	-	66,994	35,659	9,467
TOTALS: 72 PWRs		49,697	23,311	12,259	8,947	3,767	1,769	1,717	93	4	-	-	-	-	-	101,564	51,867	12,207
TOTALS: 109 LWRs		81,032	38,575	20,245	15,279	6,884	3,336	3,077	125	5	-	-	-	-	-	168,558	87,526	21,674

APPENDIX B (Continued)
ANNUAL WHOLE BODY DOSES AT LICENSED NUCLEAR POWER FACILITIES
FACILITIES NOT IN OPERATION OR IN OPERATION LESS THAN ONE YEAR
CY 1995

PLANT NAME	TYPE	Number of Individuals with Whole Body Doses in the Ranges (cSv or rems)														TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. DOSE	TOTAL COLLECTIVE DOSE (person-cSv, rem)
		No Meas. Exposure	Meas. <0.10	0.10-0.25	0.25-0.5	0.50-0.75	0.75-1.00	1.00-2.00	2.00-3.00	3.00-4.00	4.00-5.00	5.00-6.00	6.00-7.00	7.00-12.00	>12.0			
BELLEFONTE	PWR															-	-	-
DRESDEN 1 *	BWR	Reported with Dresden 2,3																
FORT ST. VRAIN *	HTGR	460	62	52	40	29	15	43	34	3	-	-	-	-	-	738	278	210
HUMBOLDT BAY *	BWR	156	39	3	-	-	-	-	-	-	-	-	-	-	-	198	42	2
INDIAN POINT 1 *	PWR	Reported with Indian Point 2																
LACROSSE *	BWR	80	17	12	2	-	-	-	-	-	-	-	-	-	-	111	31	3
RANCHO SECO *	PWR	177	15	1	-	-	-	-	-	-	-	-	-	-	-	193	16	1
SAN ONOFRE 1*	PWR	Reported with San Onofre 2,3																
THREE MILE ISLAND 2*	PWR	124	109	43	27	9	3	-	-	-	-	-	-	-	-	315	191	2
TROJAN *	PWR	220	48	27	32	19	9	6	-	-	-	-	-	-	-	361	141	44
WATTS BAR 1,2	PWR															-	-	-
YANKEE-ROWE *	PWR															-	-	-
TOTAL REPORTING: 6		1,217	290	138	101	57	27	49	34	3						1,916	699	262

* Indicates plants that are no longer in commercial operation.

APPENDIX C*

Personnel, Dose, and Power Generation Summary

1969-1995

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

APPENDIX C
PERSONNEL, DOSE AND POWER GENERATION SUMMARY

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
ARKANSAS 1,2	1975	588.0	76.5	147	21					0.14	0.0
Docket 50-313, 50-368; DPR-51; NPF-6	1976	464.6	56.6	476	289	27	262	100	189	0.61	0.6
1st commercial operation 12/74	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
BEAVER VALLEY 1,2	1977	355.6	57.0	331	878	79	58	29		0.26	0.2
Docket 50-334, 50-412; DPR-66, NPF-73	1978	304.2	40.8	646	190	11	179	151	39	0.29	0.6
1st commercial operation 10/76, 11/87	1979	221.0	40.0	704	132	22	110	67	65	0.19	0.6
Type - PWRs	1980	39.8	6.8	1,817	553	76	477	477	76	0.30	13.9
Capacity - 810, 820	1981	573.4	73.6	1,237	229	38	191	142	87	0.19	0.4
	1982	326.7	41.6	1,755	599	126	473	481	118	0.34	1.8
	1983	561.2	68.2	1,485	772	158	614	615	157	0.52	1.4
	1984	576.7	71.8	1,393	504	124	380	302	202	0.36	0.9
	1985	717.7	91.9	619	60	17	43	12	48	0.10	0.1
	1986	581.3	70.7	1,575	627	82	545	456	171	0.40	1.1
	1987	684.1	83.8	1,282	210	43	167	137	73	0.16	0.3
	1988	1,386.1	87.4	1,764	530	90	440	438	92	0.30	0.4
	1989	1,017.4	69.6	2,349	1,378	197	1,181	1,151	227	0.59	1.4
	1990	1,271.0	85.3	1,675	348	33	315	268	80	0.21	0.3
	1991	1,267.5	78.6	1,689	495	62	433	325	170	0.29	0.4
	1992	1,441.9	89.1	1,414	289	29	260	203	86	0.20	0.2

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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
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
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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
BROWNS FERRY 1,2,3	1975	161.7	17.8	2,380	325					0.14	2.0
Docket 50-259, 50-260, 50-296	1976	337.6	26.9	2,207	234					0.11	0.7
DPR - 33, - 52, - 68	1977	1,327.5	73.7	1,858	863	60	803	249	614	0.46	0.7
1st commercial operation 8/74, 3/75,	1978	1,992.1	73.5	2,376	1,792	4	1,788	261	1,531	0.75	0.9
3/77	1979	2,393.0	79.1	2,689	1,667	0	1,667	289	1,378	0.62	0.7
Type - BWRs	1980	2,182.1	73.6	2,712	1,826	4	1,822	50	1,776	0.67	0.8
Capacity - 1065,1065,1065 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
BRUNSWICK 1,2	1976	297.2	56.0	1,265	326	15	311	222	104	0.26	1.1
Docket 50-324, 50-325; DPR-62, -71	1977	291.1	55.7	1,512	1,120	48	1,071	782	337	0.74	3.8
1st commercial operation 3/77, 11/75	1978	1,173.1	83.7	1,458	1,004	99	905	695	309	0.69	0.9
Type - BWRs	1979	810.0	60.1	2,891	2,602	97	2,505	2,074	528	0.90	3.2
Capacity - 767, 754 MWe	1980	687.2	52.2	3,788	3,870	111	3,759	3,098	772	1.02	5.6
	1981	925.2	56.9	3,854	2,638	159	2,479	1,890	748	0.68	2.9
	1982	540.3	50.3	4,957	3,792	162	3,630	2,841	951	0.76	7.0
	1983	636.7	44.3	5,602	3,475	152	3,323	2,428	1,047	0.62	5.5
	1984	761.3	51.5	5,046	3,260	143	3,117	2,363	897	0.65	4.3
	1985	822.2	58.4	4,057	2,804	120	2,684	2,077	727	0.69	3.4
	1986	1,051.3	69.1	3,370	1,909	97	1,812	1,273	636	0.57	1.8
	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.[illegible]	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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
BYRON 1,2	1986	894.5	88.6	1,081	76	12	54	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	657	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	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
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 - 1115 MWe	1989	1,000.3	85.4	1,055	283	46	237	191	92	0.27	0.3
	1990	960.7	84.1	1,134	442	50	392	332	110	0.39	0.5
	1991	1,193.1	99.7	280	21	9	12	2	19	0.07	0.0
	1992	967.5	83.0	1,133	336	52	284	244	92	0.30	0.3
	1993	1,002.9	86.4	1,126	225	73	152	157	68	0.20	0.2
	1994	1,196.4	100.0	191	14	6	7	0	13	0.07	0.0
	1995	989.6	84.7	1,062	187	30	157	118	69	0.18	0.2
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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
CALVERT CLIFFS 1,2 (continued)	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
CATAWBA 1,2	1986	638.9	49.9	1,724	286	27	259	68	218	0.17	0.4
Docket 50-413, 50-414; NPF-35, NPF-52	1987	1,651.2	75.9	1,865	449	32	417	161	288	0.24	0.3
1st commercial operation 6/85, 8/86	1988	1,675.2	77.2	2,009	556	71	485	200	356	0.28	0.3
Type - PWR	1989	1,733.6	79.5	1,660	334	48	286	110	224	0.20	0.2
Capacity - 1129, 1129 MWe	1990	1,616.3	70.8	2,174	809	58	751	292	517	0.37	0.5
	1991	1,691.5	74.6	1,871	462	50	412	141	321	0.25	0.3
	1992	1,962.8	83.9	1,515	414	52	362	92	322	0.27	0.2
	1993	1,896.1	81.5	1,564	396	29	367	59	337	0.25	0.2
	1994	2,105.2	90.2	1,268	207	35	172	47	160	0.16	0.1
	1995	2,011.9	85.3	1,892	462	62	400	83	379	0.24	0.2
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
COMANCHE PEAK 1,2	1991	644.4	52.2	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
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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
COOK 1,2 (continued)	1986	1,307.1	73.4	1,774	745	64	681	585	160	0.42	0.6
	1987	1,199.5	70.2	1,696	666	79	587	525	141	0.39	0.6
	1988	1,160.4	63.5	2,266	867	52	815	762	105	0.38	0.7
	1989	1,433.1	72.8	1,575	493	50	443	421	72	0.31	0.3
	1990	1,318.5	67.9	1,851	580	87	493	504	76	0.31	0.4
	1991	1,837.4	90.2	815	69	28	41	48	21	0.08	0.0
	1992	760.9	50.8	1,954	492	60	432	416	76	0.25	0.6
	1993	1,927.7	98.5	587	44	10	34	29	15	0.07	0.0
	1994	1,105.2	65.2	1,748	479	26	453	362	117	0.27	0.4
	1995	1,656.0	82.1	1,310	203	29	174	142	61	0.15	0.1
COOPER STATION Docket 50-298, DPR-46 1st commercial operation 7/74 Type - BWR Capacity - 764 MWe	1975	456.4	83.6	579	117	30	87	19	98	0.20	0.3
	1976	433.3	75.5	763	350	39	311	210	140	0.46	0.8
	1977	538.2	86.2	315	198	50	147	66	131	0.63	0.4
	1978	576.0	91.0	297	158	40	118	58	100	0.53	0.3
	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
CRYSTAL RIVER 3 Docket 50-302, DPR-72 1st commercial operation 3/77 Type - PWR Capacity - 818 MWe	1978	311.5	41.4	643	321	8	313	244	77	0.50	1.0
	1979	453.0	58.9	1,150	495	29	466	346	149	0.43	1.1
	1980	404.1	53.2	1,053	625	24	601	382	243	0.59	1.5
	1981	490.4	62.2	1,120	408	18	390	236	172	0.36	0.8
	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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
CRYSTAL RIVER 3 (continued)	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
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 - 868 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
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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
DRESDEN 1[1],2,3	1969	99.7			286						2.9
Docket 50-010, 50-237, 50-249;	1970	163.1			143						0.9
DPR-2, -19, -25	1971	394.5			715						1.8
1st commercial operation 7/60, 6/70, 11/71	1972	1,243.7			728						0.6
Type - BWRs	1973	1,112.2		1,341	939	143	796	344	595	0.70	0.8
Capacity - 197, 772, 773 MWe	1974	842.5	54.9	1,594	1,662			57	1,605	1.04	2.0
	1975	708.1	54.6	2,310	3,423	271	3,152	2,252	1,171	1.48	4.8
	1976	1,127.2	80.8	1,746	1,680	228	1,452	749	931	0.96	1.5
	1977	1,132.9	77.0	1,862	1,694	316	1,377	693	1,000	0.91	1.5
	1978	1,242.2	79.5	1,946	1,529	359	1,170	619	1,529	0.79	1.2
	1979	1,013.0	74.7	2,407	1,800	191	1,609	641	1,159	0.75	1.8
	1980	1,074.4	55.0	2,717	2,105	236	1,869	1,093	1,012	0.77	2.0
	1981	1,035.7	51.5	2,331	2,802	120	2,682	1,850	952	1.20	2.7
	1982	1,085.3	77.9	2,572	2,923	136	2,787	1,731	1,192	1.14	2.7
	1983	913.6	65.6	2,854	3,582	176	3,406	2,127	1,455	1.26	3.9
	1984	789.8	55.3	2,261	1,774	153	1,621	815	959	0.78	2.2
	1985	903.0	64.5	2,817	1,686	474	1,212	879	807	0.60	1.9
	1986	740.5	52.6	3,111	2,668	268	2,400	2,009	659	0.86	3.6
	1987	933.9	74.0	2,052	1,145	241	904	593	552	0.56	1.2
	1988	1,014.7	75.8	2,414	1,409	215	1,194	808	601	0.58	1.4
	1989	1,184.2	83.1	2,259	1,131	154	976	641	489	0.50	1.0
	1990	1,107.8	76.6	2,235	1,400	176	1,224	753	647	0.63	1.3
	1991	675.2	60.7	2,044	1,005	166	839	433	572	0.49	1.5
	1992	872.4	75.4	1,812	619	128	491	272	347	0.34	0.7
	1993	960.1	68.5	2,751	1,655	125	1,530	1,116	539	0.60	1.7
	1994	690.2	51.7	2,336	833	93	740	517	316	0.36	1.2
	1995	643.1	49.8	2,482	875	69	806	2	873	0.35	1.4
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	0.68	6.5
Type - BWR	1979	352.0	78.0	757	275	35	240	219	56	0.36	0.8
Capacity - 515 MWe	1980	339.1	73.3	1,108	671	32	639	570	101	0.61	2.0
	1981	277.7	69.6	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

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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
DUANE ARNOLD (continued)	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
FARLEY 1,2 Docket 50-348, 50-364; NPF-2, -8 1st commercial operation 12/77, 7/81 Type - PWR Capacity - 812, 822 MWe	1978	713.8	86.5	527	108	39	69	34	74	0.20	0.2
	1979	211.0	28.6	1,227	643	108	535	460	183	0.52	3.0
	1980	557.3	69.3	1,330	435	106	329	185	250	0.33	0.8
	1981	310.2	41.4	1,331	512	96	416	270	242	0.38	1.7
	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
FERMI 2 Docket 50-341; NPF-43 1st commercial operation 1/88 Type - BWR Capacity - 1085 MWe	1989	624.0	68.5	1,270	255	35	220	182	73	0.20	0.4
	1990	848.2	84.7	462	83	31	52	14	69	0.18	0.1
	1991	739.0	77.0	1,223	228	53	175	151	77	0.19	0.3
	1992	874.3	81.3	1,213	245	50	195	151	94	0.20	0.3
	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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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 - 774 MWe	1980	509.5	70.3	2,056	2,040	118	1,922	1,808	232	0.99	4.0
	1981	562.9	74.7	2,490	1,425	187	1,238	1,072	353	0.57	2.5
	1982	583.6	75.0	2,322	1,190	136	1,054	863	327	0.51	2.0
	1983	546.2	70.6	1,715	1,090	158	932	667	423	0.64	2.0
	1984	576.2	76.8	1,610	971	82	889	467	504	0.60	1.7
	1985	492.3	63.7	1,845	1,051	85	966	718	333	0.57	2.1
	1986	711.2	90.6	1,185	411	81	330	168	243	0.35	0.6
	1987	496.2	70.3	1,578	940	164	776	616	324	0.60	1.9
	1988	514.0	69.0	1,553	786	162	624	506	280	0.51	1.5
	1989	727.5	92.3	1,027	377	58	319	191	186	0.37	0.5
	1990	543.8	72.6	1,536	884	92	792	557	327	0.58	1.6
	1991	399.7	53.4	1,269	333	48	285	127	206	0.26	0.8
	1992	0.0	0.0	2,374	674	70	604	476	198	0.28	—
	1993	559.6	81.7	1,427	232	33	199	81	151	0.16	0.4
	1994	588.4	83.2	1,595	322	276	46	141	181	0.20	0.5
	1995	569.8	74.5	1,249	327	292	35	151	176	0.26	0.6
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-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
GINNA	1971	327.8		340	430	69	361	108	322	1.26	1.3
Docket 50-244; DPR-18	1972	293.6		677	1,032	71	961	278	754	1.52	3.5
1st commercial operation 7/70	1973	409.5		319	224	55	169	84	140	0.70	0.5
Type - PWR	1974	253.7	62.4	884	1,225					1.39	4.8
Capacity - 470 MWe	1975	365.2	76.7	685	538					0.79	1.5
	1976	248.8	58.2	758	636	29	607	210	426	0.84	2.6
	1977	365.5	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
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 - 1143 MWe	1990	883.5	78.9	1,765	482	52	430	321	161	0.27	0.5
	1991	1,085.2	94.0	699	94	22	72	25	69	0.13	0.1
	1992	969.0	83.7	2,032	484	68	416	349	135	0.24	0.5
	1993	936.4	81.5	1,807	332	38	294	223	109	0.18	0.4
	1994	1,143.2	96.6	455	56	31	25	13	43	0.12	0.0
	1995	952.9	80.4	1,589	342	27	315	208	134	0.22	0.4

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
HADDAM NECK	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
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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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 - 741, 765 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
HOPE CREEK 1	1987	869.2	86.4	589	117	21	96	40	77	0.20	0.1
Docket 50-354; NPF-57	1988	832.7	80.7	1,734	287	38	249	163	124	0.17	0.3
1st commercial operation 12/86	1989	791.1	77.8	1,873	465	40	425	292	173	0.25	0.6
Type - BWR	1990	966.4	91.6	1,394	196	26	170	89	107	0.14	0.2
Capacity - 1031 MWe	1991	882.5	84.2	1,700	373	11	362	249	124	0.22	0.4
	1992	841.9	80.8	1,694	436	9	427	304	132	0.26	0.5
	1993	1,049.2	97.8	688	98	22	76	8	90	0.14	0.1
	1994	852.0	81.2	1,779	326	34	292	194	132	0.18	0.3
	1995	844.5	79.8	1,571	196	27	169	101	95	0.12	0.2
HUMBOLDT BAY[2]	1969	44.6		125	164	69	95	12	152	1.31	3.7
Docket 50-133; DPR-7	1970	49.3		115	209	130	79	37	172	1.82	4.2
1st commercial operation 8/63	1971	39.6		140	292	114	178	65	227	2.09	7.4
Type - BWR	1972	43.1		127	253	81	172	57	196	1.99	5.9
Capacity - 63 MWe	1973	50.1		210	266	60	206			1.27	5.3
	1974	43.4	83.8	296	318	103	215			1.07	7.3

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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
HUMBOLDT BAY[3] (continued)	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	***
INDIAN POINT 1[4],2,3[5]	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	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[6],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

[3] 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.

[4] 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.

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

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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
INDIAN POINT 1[7],2 (continued)	1983	702.6	84.0	1,057	486	202	284	219	267	0.46	0.7
INDIAN POINT 2	1984	416.7	51.9	2,919	2,644	650	1,994	1,863	781	0.91	6.3
Docket 50-247; DPR-26	1985	791.4	95.7	708	192	123	69	95	97	0.27	0.2
1st commercial operation 8/74	1986	457.5	56.2	1,926	1,250	350	900	349	901	0.65	2.7
Type - PWR	1987	611.4	73.4	1,980	1,217	128	1,089	805	412	0.61	2.0
Capacity - 951 MWe	1988	719.3	86.9	890	235	51	184	117	118	0.26	0.3
	1989	532.5	64.6	2,093	1,436	208	1,228	813	623	0.69	2.7
	1990	618.0	66.6	1,061	608	66	542	450	158	0.57	1.0
	1991	461.2	55.7	1,810	1,468	179	1,289	927	541	0.81	3.2
	1992	930.9	99.1	489	97	27	70	39	58	0.20	0.1
	1993	702.1	75.7	1,514	675	77	598	480	195	0.45	1.0
	1994	903.8	100.0	381	48	0	0	0	0	0.13	0.1
	1995	582.4	70.8	1,690	548	97	451	368	180	0.32	0.9
INDIAN POINT 3[8]	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

[7] 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.

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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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
	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
LACROSSE[9]	1970	15.3			111			40	71		7.2
Docket 50-409; DPR-45	1971	323.1		218	158					0.72	4.8
1t 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

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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
LACROSSE[10] (continued)	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	***
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
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 - 1055, 1055 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
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

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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
MAINE YANKEE (continued)	1979	537.0	68.4	393	154	70	84	26	128	0.39	0.3
	1980	527.0	72.2	735	462	117	345	277	185	0.63	0.9
	1981	624.2	78.2	868	424	11	413	308	116	0.49	0.7
	1982	542.5	69.1	1,295	619	33	586	462	157	0.48	1.1
	1983	677.1	83.6	592	165	41	124	72	93	0.28	0.2
	1984	605.7	74.4	1,262	884	9	875	702	182	0.70	1.5
	1985	635.4	79.2	1,009	700	54	646	529	171	0.69	1.1
	1986	737.6	87.8	495	100	34	66	14	86	0.20	0.1
	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
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
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-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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
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 - 873, 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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
MONTICELLO	1972	424.4		99	61	40	21	1	60	0.62	0.1
Docket 50-263; DPR-22	1973	389.5		401	176	48	128	67	109	0.44	0.5
1st commercial operation 6/71	1974	349.3	74.9	842	349			91	258	0.41	1.0
Type - BWR	1975	344.8	72.2	1,353	1,353					1.00	3.9
Capacity - 536 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
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, 994 MWe	1974	385.9	70.5	740	824	42	782	279	545	1.11	2.1
	1975	359.0	72.1	649	681	68	613	203	478	1.05	1.9
	1976	484.6	88.2	392	428	52	376	229	199	1.09	0.9
	1977	347.4	59.2	1,093	1,383	41	1,342	883	500	1.27	4.0
	1978	527.7	95.1	561	314	59	255	26	288	0.56	0.6
	1979	354.0	66.1	1,326	1,497	106	1,391	940	557	1.13	4.2
	1980	533.9	92.3	1,174	591	75	516	251	340	0.50	1.1
	1981	385.2	66.0	2,029	1,592	144	1,448	1,064	528	0.78	4.1
	1982	133.5	21.4	1,352	1,264	63	1,201	944	320	0.93	9.5
	1983	329.8	56.2	1,405	860	50	810	576	284	0.61	2.6
	1984	426.8	71.9	1,530	890	163	727	372	518	0.58	2.1
	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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
NINE MILE POINT 1,2 (continued)											
	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
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 - 900, 887 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
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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
OCONEE 1,2,3 (continued)	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
OYSTER CREEK	1970	413.6		95	63	21	42	11	52	0.66	0.1
Docket 50-219; DPR-16	1971	448.9		249	240	50	190	92	148	0.96	0.5
1st commercial operation 12/69	1972	515.0		339	582	150	432	167	415	1.72	1.1
Type - BWR	1973	424.6		782	1,236	195	1,041	683	553	1.58	2.9
Capacity - 619 MWe	1974	434.5	70.4	935	984	166	818	162	822	1.05	2.3
	1975	373.6	73.3	1,210	1,140	169	971	271	869	0.94	3.1
	1976	456.5	79.3	1,582	1,078	70	1,008	587	491	0.68	2.4
	1977	385.7	70.1	1,673	1,614	76	1,538	1,048	566	0.96	4.2
	1978	431.8	74.3	1,411	1,279	134	1,145	696	583	0.91	3.0
	1979	541.0	85.9	842	467	95	372	135	332	0.55	0.9
	1980	232.9	41.4	1,966	1,733	97	1,636	1,183	550	0.88	7.4
	1981	314.8	59.8	1,689	917	48	869	479	438	0.54	2.9
	1982	242.7	62.5	1,270	865	33	832	491	374	0.68	3.6
	1983	27.9	11.5	2,303	2,257	65	2,192	1,863	394	0.98	80.9
	1984	37.1	9.6	2,369	2,054	134	1,920	1,537	517	0.87	55.4
	1985	446.1	89.4	2,342	748	116	632	318	430	0.32	1.7
	1986	157.3	31.5	3,740	2,436	288	2,148	1,924	512	0.65	15.5
	1987	371.0	64.2	1,932	522	112	410	211	311	0.27	1.4
	1988	419.6	65.9	2,875	1,504	135	1,369	1,232	272	0.52	3.6
	1989	287.5	57.3	2,395	910	138	772	566	344	0.38	3.2
	1990	511.8	89.1	1,941	310	76	234	131	179	0.16	0.6
	1991	351.6	60.5	3,089	1,185	151	1,034	938	247	0.38	3.4
	1992	536.3	85.9	2,771	657	70	587	438	219	0.24	1.2
	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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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
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 - 1221, 1221, 1221 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
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, 1035 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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
PEACH BOTTOM 2,3 (continued)	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
PERRY Docket 50-440; NPF-58 1st commercial operation 11/87 Type - BWR Capacity - 1166 MWe	1988	869.3	79.0	782	105	34	71	36	69	0.13	0.1
	1989	642.2	57.0	1,883	767	113	654	604	163	0.41	1.2
	1990	792.7	67.1	1,537	638	51	587	494	144	0.42	0.8
	1991	1,074.2	91.9	600	146	24	122	50	96	0.24	0.1
	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
PILGRIM 1 Docket 50-293; DPR-35 1st commercial operation 12/72 Type - BWR Capacity - 670 MWe	1973	484.0		230	126	49	77			0.55	0.3
	1974	234.1	39.2	454	415					0.91	1.8
	1975	308.1	71.3	473	798	142	656	412	386	1.69	2.6
	1976	287.8	60.7	1,317	2,648	66	2,582	2,270	378	2.01	9.2
	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	—
	'88	0.0	0.0	2,073	392	58	334	218	174	0.19	—

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-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
PILGRIM 1 (continued)	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
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
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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
PRAIRIE ISLAND 1,2 (continued)	1981	844.9	80.5	836	329	37	292	128	201	0.39	0.4
	1982	944.9	90.4	645	229	30	199	68	161	0.36	0.2
	1983	921.1	86.8	654	233	14	219	73	160	0.36	0.3
	1984	972.4	91.7	546	147	18	129	52	95	0.27	0.2
	1985	882.6	84.0	1,082	416	31	385	136	280	0.38	0.5
	1986	930.6	90.3	818	255	18	237	80	175	0.31	0.3
	1987	969.6	91.6	593	135	9	126	51	84	0.23	0.1
	1988	932.0	89.1	732	199	17	182	62	137	0.27	0.2
	1989	1,001.8	94.7	476	99	10	89	28	71	0.21	0.1
	1990	925.4	89.2	737	188	8	180	74	114	0.26	0.2
	1991	1,023.3	95.6	586	98	10	88	26	72	0.17	0.1
	1992	811.6	76.2	845	211	12	199	72	139	0.25	0.3
	1993	978.3	90.7	532	106	5	101	32	74	0.20	0.1
	1994	996.9	91.5	478	109	17	92	41	68	0.23	0.1
	1995	1,023.2	93.9	499	107	11	96	40	67	0.21	0.1
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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
RANCHO SECO[11]	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	261	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	***
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
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

[11] Rancho Seco has been permanently shutdown.

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
ROBINSON 2 (continued)	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	[illegible]	48.7	1,098	195	31	164	88	107	0.18	0.6
	1990	400.[illegible]	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
SALEM 1,2 Docket 50-272, -311; DPR-70, -75 1st commercial operation 6/77 Type - PWRs Capacity - 1106, 1106 MWe	1978	546.4	55.6	574	122	28	94	32	90	0.21	0.2
	1979	250.0	25.5	1,488	584	100	484	359	225	0.39	2.3
	1980	680.6	69.2	1,704	449	55	394	281	168	0.26	0.7
	1981	743.0	78.1	1,652	254	4	250	152	102	0.15	0.3
	1982	1,440.4	72.6	3,228	1,203	66	1,137	846	357	0.37	0.8
	1983	742.0	30.5	2,383	581	10	571	463	118	0.24	0.8
	1984	650.1	31.8	1,395	681	10	671	469	212	0.49	1.0
	1985	1,657.7	75.8	1,112	204	59	145	54	150	0.18	0.1
	1986	1,484.3	70.4	3,554	599	10	589	459	140	0.17	0.4
	1987	1,478.2	73.3	2,543	600	8	592	433	167	0.24	0.4
	1988	1,591.6	73.6	1,609	503	1	502	329	174	0.31	0.3
	1989	1,675.4	79.5	2,944	338	4	334	209	129	0.11	0.2
	1990	1,362.6	65.1	3,636	272	6	266	188	84	0.07	0.2
	1991	1,726.4	79.3	4,201	458	15	443	366	92	0.11	0.3
	1992	1,200.9	61.1	4,376	431	16	415	340	91	0.10	0.4
	1993	1,366.3	65.4	3,559	408	11	397	318	90	0.11	0.3
	1994	1,367.4	73.8	950	188	2	186	122	66	0.20	0.1
	1995	558.1	29.3	1,195	218	4	214	147	71	0.18	0.4

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
SAN ONOFRE 1, [12] 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
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 - 1150 Mwe	1995	995.5	87.5	800	102	2	100	76	26	0.13	0.1
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 - 1111, 1106 MWe	1986	0.0	0.0	1,735	526	101	425	70	456	0.30	—

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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
SEQUOYAH 1,2 (continued)	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
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
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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
SUMMER 1	1984	504.6	61.1	1,120	295	29	266	202	93	0.26	0.6
Docket 50-395; NPF-12	1985	627.7	71.6	1,201	379	74	305	241	138	0.32	0.6
1st commercial operation 1/84	1986	853.7	95.3	392	23	5	18	12	11	0.06	0.03
Type - PWR	1987	618.7	71.0	1,075	560	34	526	454	106	0.52	0.9
Capacity - 835 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
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 - 781, 781 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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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 - 1040, 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.[illegible]	77.3	1,488	335	19	316	172	163	0.23	0.2
	1994	1,814.[illegible]	85.4	1,580	442	20	422	246	196	0.28	0.2
	1995	1,850.3	85.3	1,773	476	54	422	176	300	0.27	0.3
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[13]	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

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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
THREE MILE ISLAND 2[14]	1986	0.0	0.0	1,497	915	97	818	615	300	0.61	—
Docket 50-320; DPR-73	1987	0.0	0.0	1,378	977	90	887	687	290	0.71	—
1st commercial operation 12/78	1988	0.0	0.0	1,247	917	26	891	691	226	0.74	—
Type - PWR	1989	0.0	0.0	1,014	639	88	551	382	257	0.63	—
Capacity - 880 MWe	1990	0.0	0.0	484	136	25	111	50	86	0.28	—
	1991	0.0	0.0	153	37	1	36	3	34	0.24	—
	1992	0.0	0.0	315	157	7	150	99	58	0.50	—
	1993	0.0	0.0	167	33	1	32	19	14	0.20	—
	1994	0.0	0.0	259	7	0	7	2	5	0.03	—
	1995	0.0	0.0	191	2	1	1	0	2	0.01	***
TROJAN[15]	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	***

[14] 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.

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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
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 - 666, 666 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
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 - 504 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
	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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Opera-tions	Per Work Function: Maint & Others	Per Personnel Type: Con-tractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
VERMONT YANKEE (continued)	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
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 - 1169, 1169 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	85.2	953	199	13	186	94	105	0.21	0.1
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 - 1086 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
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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) / MW-yr
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 - 1160 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
YANKEE ROWE[16]	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	0	0	0	0	0	0	0.00	***

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

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

Reporting Organization	Year	Megawatt Years MW-YR	Unit Availability Factor	Total Personnel With Measurable Doses	Person-cSv (-rems) Collective Dose	Per Work Function: Operations	Per Work Function: Maint & Others	Per Personnel Type: Contractor	Per Personnel Type: Station & Utility	Average Measurable Dose (cSv or rems)	Person cSv (-rems) MW-yr
ZION 1,2	1974	425.3	71.1	306	56			13	43	0.18	0.1
Docket 50-295, 50-304; DPR-39, -48	1975	1,181.5	74.9	436	127	17	110	49	78	0.29	0.1
1st commercial operation 12/73, 9/74	1976	1,134.9	61.9	774	571	64	507	257	314	0.74	0.5
Type - PWRs	1977	1,358.6	75.0	784	1,003	43	960	561	442	1.28	0.7
Capacity - 1040, 1040 MWe	1978	1,613.5	80.2	1,104	1,017	294	723	418	1,017	0.92	0.6
	1979	1,238.0	67.6	1,472	1,274	168	1,106	747	527	0.87	1.0
	1980	1,411.2	74.1	1,363	920	107	813	560	360	0.67	0.7
	1981	1,366.9	72.3	1,754	1,720	50	1,670	1,155	565	0.98	1.3
	1982	1,186.4	64.3	1,575	2,103	42	2,061	1,688	415	1.34	1.8
	1983	1,222.3	69.4	1,285	1,311	118	1,193	905	406	1.02	1.1
	1984	1,389.9	69.6	1,110	786	23	763	556	230	0.71	0.6
	1985	1,187.9	62.9	1,498	1,166	39	1,127	787	379	0.78	1.0
	1986	1,462.0	73.2	967	474	21	453	330	144	0.49	0.3
	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	660.4	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	1,471.5	72.4	1,807	797	8	789	590	207	0.44	0.5

APPENDIX D

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

1995

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

1995

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	1	1	32	34	0.220	0.375	14.677	15.272
OPERATIONS PERSONNEL	1	1	0	2	0.101	0.170	0.000	0.271
HEALTH PHYSICS PERSONNEL	30	1	11	42	6.864	0.169	2.162	9.195
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.129	0.129
ENGINEERING PERSONNEL	1	0	0	1	0.240	0.000	0.000	0.240
TOTAL	33	3	44	80	7.425	0.714	16.968	25.107
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	5	5	0.000	0.000	0.694	0.694
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	5	5	0.000	0.000	0.694	0.694
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	38	38	0.000	0.000	13.785	13.785
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	0	3	0.614	0.000	0.000	0.614
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.579	0.579
ENGINEERING PERSONNEL	2	0	9	11	0.300	0.000	1.921	2.221
TOTAL	5	0	48	53	0.914	0.000	16.285	17.199
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	75	2	219	296	15.015	0.264	49.128	64.427
OPERATIONS PERSONNEL	11	2	1	14	1.397	0.270	0.174	1.841
HEALTH PHYSICS PERSONNEL	36	1	66	103	7.485	0.234	12.649	20.368
SUPERVISORY PERSONNEL	3	0	0	3	0.511	0.000	0.000	0.511
ENGINEERING PERSONNEL	7	0	2	9	1.448	0.000	0.664	2.112
TOTAL	132	5	288	425	25.856	0.788	62.615	89.259
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	3	0	1	4	0.570	0.000	0.457	1.027
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	1	2	0.117	0.000	0.458	0.575
TOTAL	4	0	2	6	0.687	0.000	0.915	1.602
REFUELING								
MAINTENANCE PERSONNEL	87	9	215	311	21.922	1.219	77.432	100.573
OPERATIONS PERSONNEL	23	0	0	23	4.611	0.000	0.000	4.611
HEALTH PHYSICS PERSONNEL	46	0	35	81	13.462	0.000	8.145	21.607
SUPERVISORY PERSONNEL	5	1	4	10	1.976	0.153	3.138	5.267
ENGINEERING PERSONNEL	18	1	21	40	3.351	0.160	15.162	18.673
TOTAL	179	11	275	465	45.322	1.532	103.877	150.731
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	163	12	509	684	37.157	1.878	155.716	194.751
OPERATIONS PERSONNEL	35	3	1	39	6.109	0.440	0.174	6.723
HEALTH PHYSICS PERSONNEL	118	2	113	233	28.995	0.403	23.413	52.811
SUPERVISORY PERSONNEL	8	1	6	15	2.487	0.153	3.846	6.486
ENGINEERING PERSONNEL	29	1	33	63	5.456	0.160	18.205	23.821
GRAND TOTALS	353	19	662	1034	80.204	3.034	201.354	284.592

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	11	0	12	23	2.521	0.000	6.400	8.921
OPERATIONS PERSONNEL	83	0	6	69	16.110	0.000	0.845	16.955
HEALTH PHYSICS PERSONNEL	29	0	27	56	7.030	0.000	10.548	17.578
SUPERVISORY PERSONNEL	15	0	4	19	3.784	0.000	0.806	4.590
ENGINEERING PERSONNEL	3	0	0	3	0.545	0.000	0.150	0.695
TOTAL	121	0	49	170	29.990	0.000	18.749	48.739
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	185	0	262	427	67.009	0.000	110.498	177.507
OPERATIONS PERSONNEL	2	0	0	2	0.685	0.000	0.000	0.685
HEALTH PHYSICS PERSONNEL	13	0	75	88	2.765	0.000	32.547	35.312
SUPERVISORY PERSONNEL	15	0	11	26	3.679	0.000	5.950	9.629
ENGINEERING PERSONNEL	5	0	10	15	1.065	0.000	2.990	4.055
TOTAL	200	0	358	558	75.203	0.000	151.985	227.188
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	4	0	166	170	2.140	0.000	101.939	104.079
OPERATIONS PERSONNEL	0	0	0	0	0.060	0.000	0.000	0.060
HEALTH PHYSICS PERSONNEL	0	0	38	38	0.065	0.000	15.287	15.352
SUPERVISORY PERSONNEL	8	0	11	19	4.930	0.000	8.500	13.430
ENGINEERING PERSONNEL	1	0	2	3	0.180	0.000	0.387	0.567
TOTAL	13	0	217	230	7.375	0.000	126.113	133.488
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	6	6	0.113	0.000	2.088	2.201
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.005	0.000	0.149	0.154
SUPERVISORY PERSONNEL	0	0	0	0	0.075	0.000	0.010	0.085
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	6	6	0.193	0.000	2.247	2.440
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	3	4	0.397	0.000	0.570	0.967
OPERATIONS PERSONNEL	4	0	0	4	0.960	0.000	0.000	0.960
HEALTH PHYSICS PERSONNEL	2	0	9	11	0.410	0.000	3.450	3.860
SUPERVISORY PERSONNEL	1	0	0	1	0.335	0.000	0.000	0.335
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	8	0	12	20	2.102	0.000	4.020	6.122
REFUELING								
MAINTENANCE PERSONNEL	7	0	59	66	2.284	0.000	37.894	40.178
OPERATIONS PERSONNEL	2	0	0	2	1.110	0.000	0.000	1.110
HEALTH PHYSICS PERSONNEL	0	0	20	20	0.010	0.000	9.081	9.091
SUPERVISORY PERSONNEL	6	0	3	9	3.817	0.000	1.240	5.057
ENGINEERING PERSONNEL	2	0	8	10	0.530	0.000	2.630	3.160
TOTAL	17	0	90	107	7.751	0.000	50.845	58.596
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	188	0	508	696	74.464	0.000	259.389	333.853
OPERATIONS PERSONNEL	71	0	6	77	18.925	0.000	0.845	19.770
HEALTH PHYSICS PERSONNEL	44	0	169	213	10.285	0.000	71.062	81.347
SUPERVISORY PERSONNEL	45	0	29	74	16.620	0.000	16.506	33.126
ENGINEERING PERSONNEL	11	0	20	31	2.320	0.000	6.157	8.477
GRAND TOTALS	359	0	732	1091	122.614	0.000	353.959	476.573

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	0	0	0	0	0.180	0.000	0.001	0.181
OPERATIONS PERSONNEL	33	0	0	33	13.960	0.008	0.003	13.971
HEALTH PHYSICS PERSONNEL	10	0	2	12	3.870	0.002	0.770	4.642
SUPERVISORY PERSONNEL	0	0	0	0	0.387	0.018	0.225	0.630
ENGINEERING PERSONNEL	2	0	0	2	0.850	0.010	0.027	0.887
TOTAL	45	0	2	47	19.247	0.038	1.026	20.311
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	19	1	4	24	5.940	0.340	1.158	7.438
OPERATIONS PERSONNEL	1	0	0	1	0.340	0.000	0.000	0.340
HEALTH PHYSICS PERSONNEL	7	0	2	9	1.895	0.008	0.408	2.311
SUPERVISORY PERSONNEL	0	0	1	1	0.051	0.026	0.294	0.371
ENGINEERING PERSONNEL	3	0	0	3	0.660	0.022	0.006	0.688
TOTAL	30	1	7	38	8.886	0.396	1.866	11.148
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.036	0.000	0.000	0.036
OPERATIONS PERSONNEL	0	0	0	0	0.031	0.000	0.000	0.031
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.006	0.006
SUPERVISORY PERSONNEL	0	0	0	0	0.012	0.000	0.000	0.012
ENGINEERING PERSONNEL	0	0	0	0	0.007	0.000	0.000	0.007
TOTAL	0	0	0	0	0.086	0.000	0.006	0.092
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	5	5	0.267	0.006	8.128	8.401
OPERATIONS PERSONNEL	1	0	0	1	0.396	0.000	0.000	0.396
HEALTH PHYSICS PERSONNEL	11	0	0	11	6.121	0.000	0.165	6.286
SUPERVISORY PERSONNEL	0	0	1	1	0.021	0.050	0.910	0.981
ENGINEERING PERSONNEL	2	0	0	2	0.518	0.000	0.016	0.534
TOTAL	14	0	6	20	7.323	0.056	9.219	16.598
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	1	1	0.068	0.000	0.435	0.503
OPERATIONS PERSONNEL	0	0	0	0	0.193	0.000	0.000	0.193
HEALTH PHYSICS PERSONNEL	8	0	1	9	5.151	0.000	0.253	5.404
SUPERVISORY PERSONNEL	0	0	0	0	0.054	0.000	0.007	0.061
ENGINEERING PERSONNEL	1	0	0	1	0.129	0.000	0.002	0.131
TOTAL	9	0	2	11	5.595	0.000	0.697	6.292
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	19	1	10	30	6.491	0.346	9.722	16.559
OPERATIONS PERSONNEL	35	0	0	35	14.920	0.008	0.003	14.931
HEALTH PHYSICS PERSONNEL	36	0	5	41	17.037	0.010	1.602	18.649
SUPERVISORY PERSONNEL	0	0	2	2	0.525	0.094	1.436	2.055
ENGINEERING PERSONNEL	8	0	0	8	2.164	0.032	0.051	2.247
GRAND TOTALS	98	1	17	116	41.137	0.490	12.814	54.441

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	12	0	0	12	2.499	0.040	0.002	2.541
OPERATIONS PERSONNEL	36	27	1	64	3.737	0.153	0.004	3.894
HEALTH PHYSICS PERSONNEL	15	4	9	28	3.370	0.766	0.033	4.169
SUPERVISORY PERSONNEL	44	6	1	51	1.361	0.106	0.000	1.467
ENGINEERING PERSONNEL	31	0	0	31	0.593	0.001	0.000	0.594
TOTAL	138	37	11	186	11.560	1.066	0.039	12.665
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	110	445	9	564	22.485	70.952	0.568	94.005
OPERATIONS PERSONNEL	140	1	20	161	14.339	0.005	0.119	14.463
HEALTH PHYSICS PERSONNEL	41	33	85	159	6.971	5.883	0.326	15.180
SUPERVISORY PERSONNEL	180	88	1	269	5.680	1.664	0.000	7.344
ENGINEERING PERSONNEL	70	4	10	84	1.349	0.046	0.057	1.452
TOTAL	541	571	125	1237	52.824	78.550	1.070	132.444
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	112	0	112	0.000	17.875	0.000	17.875
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.001	0.001
HEALTH PHYSICS PERSONNEL	0	1	5	6	0.000	0.165	0.019	0.184
SUPERVISORY PERSONNEL	0	1	1	2	0.011	0.020	0.000	0.031
ENGINEERING PERSONNEL	16	1	1	18	0.295	0.015	0.009	0.319
TOTAL	16	115	7	138	0.306	18.075	0.029	18.410
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	36	281	10	327	7.380	44.914	0.613	52.907
OPERATIONS PERSONNEL	2	0	23	25	0.150	0.000	0.143	0.293
HEALTH PHYSICS PERSONNEL	6	24	28	58	1.315	4.117	0.109	5.541
SUPERVISORY PERSONNEL	43	6	9	58	1.346	0.110	0.000	1.456
ENGINEERING PERSONNEL	23	21	2	46	0.452	0.264	0.011	0.727
TOTAL	110	332	72	514	10.643	49.405	0.876	60.924
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	29	0	29	0.005	4.543	0.000	4.548
OPERATIONS PERSONNEL	4	145	1	150	0.417	0.837	0.004	1.258
HEALTH PHYSICS PERSONNEL	2	0	10	12	0.001	0.001	0.038	0.040
SUPERVISORY PERSONNEL	2	0	0	2	0.074	0.000	0.000	0.074
ENGINEERING PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
TOTAL	8	174	11	193	0.498	5.381	0.042	5.921
REFUELING								
MAINTENANCE PERSONNEL	12	11	6	29	2.389	1.785	0.354	4.528
OPERATIONS PERSONNEL	10	0	0	10	1.057	0.000	0.002	1.059
HEALTH PHYSICS PERSONNEL	1	0	23	24	0.165	0.032	0.088	0.285
SUPERVISORY PERSONNEL	17	0	1	18	0.542	0.000	0.000	0.542
ENGINEERING PERSONNEL	9	0	0	9	0.179	0.000	0.000	0.179
TOTAL	49	11	30	90	4.332	1.817	0.444	6.593
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	170	878	25	1073	34.758	140.109	1.537	176.404
OPERATIONS PERSONNEL	192	173	45	410	19.700	0.995	0.273	20.968
HEALTH PHYSICS PERSONNEL	65	62	160	287	13.822	10.964	0.613	25.399
SUPERVISORY PERSONNEL	286	101	13	400	9.014	1.900	0.000	10.914
ENGINEERING PERSONNEL	149	26	13	188	2.869	0.326	0.077	3.272
GRAND TOTALS	862	1240	256	2358	80.163	154.294	2.500	236.957

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	133	21	304	458	11.843	2.532	6.528	20.903
OPERATIONS PERSONNEL	108	3	2	113	21.349	0.480	0.000	21.829
HEALTH PHYSICS PERSONNEL	54	6	1	61	10.649	0.579	0.000	11.228
SUPERVISORY PERSONNEL	30	0	51	81	4.277	0.000	2.037	6.314
ENGINEERING PERSONNEL	23	1	40	64	1.989	0.008	1.443	3.440
TOTAL	348	31	398	777	50.107	3.599	10.008	63.714
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	159	25	680	864	27.683	2.502	111.579	141.764
OPERATIONS PERSONNEL	96	3	9	108	6.999	0.028	2.633	9.660
HEALTH PHYSICS PERSONNEL	56	6	1	63	6.316	0.646	0.201	7.163
SUPERVISORY PERSONNEL	22	2	69	93	1.285	0.219	8.723	10.227
ENGINEERING PERSONNEL	24	4	44	72	1.494	0.294	2.945	4.733
TOTAL	357	40	803	1200	43.777	3.689	126.081	173.547
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	3	3	0.000	0.000	0.041	0.041
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	3	3	0.000	0.000	0.041	0.041
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	133	24	738	898	11.464	3.311	127.239	142.014
OPERATIONS PERSONNEL	56	2	3	61	1.255	0.104	0.668	2.027
HEALTH PHYSICS PERSONNEL	53	6	1	60	5.360	1.043	0.021	6.424
SUPERVISORY PERSONNEL	9	2	71	82	0.242	0.058	8.092	8.392
ENGINEERING PERSONNEL	15	1	46	62	0.950	0.000	5.568	6.518
TOTAL	269	35	859	1163	19.271	4.516	141.588	165.375
WASTE PROCESSING								
MAINTENANCE PERSONNEL	18	1	13	32	0.279	0.026	0.057	0.362
OPERATIONS PERSONNEL	10	0	1	11	0.754	0.000	0.282	1.036
HEALTH PHYSICS PERSONNEL	10	0	0	10	0.136	0.000	0.000	0.136
SUPERVISORY PERSONNEL	3	0	0	3	0.060	0.000	0.000	0.060
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	41	1	14	56	1.229	0.026	0.339	1.594
REFUELING								
MAINTENANCE PERSONNEL	0	0	7	7	0.000	0.000	0.011	0.011
OPERATIONS PERSONNEL	13	0	0	13	0.074	0.000	0.000	0.074
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.002	0.000	0.000	0.002
SUPERVISORY PERSONNEL	1	0	1	2	0.001	0.000	0.015	0.016
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	15	0	8	23	0.077	0.000	0.026	0.103
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	446	71	1745	2262	51.269	8.371	245.455	305.095
OPERATIONS PERSONNEL	283	8	15	306	30.431	0.612	3.583	34.626
HEALTH PHYSICS PERSONNEL	174	18	3	195	22.463	2.268	0.222	24.953
SUPERVISORY PERSONNEL	65	4	192	261	5.865	0.277	18.867	25.009
ENGINEERING PERSONNEL	62	6	130	198	4.433	0.302	9.956	14.691
GRAND TOTALS	1030	107	2085	3222	114.461	11.830	278.083	404.374

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	11	2	6	19	3.666	0.340	3.536	7.542
OPERATIONS PERSONNEL	79	0	41	120	33.938	0.000	10.099	44.037
HEALTH PHYSICS PERSONNEL	64	0	29	93	26.008	0.006	12.232	38.244
SUPERVISORY PERSONNEL	14	1	2	17	5.791	0.140	0.615	6.546
ENGINEERING PERSONNEL	5	0	2	7	3.628	0.185	1.312	5.125
TOTAL	173	3	80	256	73.029	0.671	27.794	101.494
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	171	1	413	585	72.745	2.463	196.957	272.165
OPERATIONS PERSONNEL	0	0	1	1	0.632	0.165	0.282	1.079
HEALTH PHYSICS PERSONNEL	22	0	15	37	6.577	0.000	6.097	12.674
SUPERVISORY PERSONNEL	11	0	7	18	5.057	0.065	2.871	7.993
ENGINEERING PERSONNEL	39	1	128	168	16.327	0.761	72.429	89.517
TOTAL	243	2	564	809	101.338	3.454	278.636	383.428
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	3	0	18	21	0.912	0.000	5.320	6.232
OPERATIONS PERSONNEL	4	0	0	4	1.877	0.000	0.000	1.877
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.223	0.000	0.039	0.262
SUPERVISORY PERSONNEL	1	0	0	1	0.289	0.000	0.013	0.302
ENGINEERING PERSONNEL	7	0	14	21	1.931	0.044	4.592	6.567
TOTAL	16	0	32	48	5.232	0.044	9.964	15.240
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	7	283	290	1.240	1.273	110.477	112.990
OPERATIONS PERSONNEL	0	0	2	2	0.044	0.000	0.830	0.874
HEALTH PHYSICS PERSONNEL	10	0	17	27	2.197	0.000	3.882	6.079
SUPERVISORY PERSONNEL	3	0	5	8	1.053	0.003	1.039	2.095
ENGINEERING PERSONNEL	5	1	17	23	1.590	0.362	4.763	6.715
TOTAL	18	8	324	350	6.124	1.638	120.991	128.753
WASTE PROCESSING								
MAINTENANCE PERSONNEL	10	0	23	33	4.472	0.012	6.627	11.111
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	1	4	0.698	0.000	0.463	1.161
SUPERVISORY PERSONNEL	0	0	1	1	0.150	0.000	0.330	0.480
ENGINEERING PERSONNEL	1	0	4	5	0.336	0.001	1.647	1.984
TOTAL	14	0	29	43	5.656	0.013	9.067	14.736
REFUELING								
MAINTENANCE PERSONNEL	8	2	30	38	1.764	0.336	13.134	15.234
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.007	0.000	0.293	0.300
SUPERVISORY PERSONNEL	1	0	2	3	0.339	0.001	1.367	1.707
ENGINEERING PERSONNEL	5	0	44	49	1.554	0.087	20.966	22.607
TOTAL	12	2	77	91	3.664	0.424	35.760	39.848
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	201	12	773	986	84.799	4.424	336.051	425.274
OPERATIONS PERSONNEL	83	0	44	127	36.491	0.165	11.211	47.867
HEALTH PHYSICS PERSONNEL	100	0	63	163	35.708	0.006	23.006	58.720
SUPERVISORY PERSONNEL	30	1	17	48	12.679	0.209	6.235	19.123
ENGINEERING PERSONNEL	62	2	209	273	25.366	1.440	105.709	132.515
GRAND TOTALS	476	15	1106	1597	195.043	6.244	482.212	683.499

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	0	0	1	1	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.088	0.088
SUPERVISORY PERSONNEL	0	0	3	3	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	1.074	1.074
TOTAL	0	0	4	4	0.000	0.000	1.162	1.162
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	182	0	531	713	2.862	4.199	0.228	7.289
OPERATIONS PERSONNEL	233	0	171	404	21.352	0.000	4.836	26.188
HEALTH PHYSICS PERSONNEL	82	0	36	118	63.522	0.000	77.020	140.542
SUPERVISORY PERSONNEL	241	54	227	522	15.693	0.000	1.716	17.409
ENGINEERING PERSONNEL	58	351	25	434	14.182	0.172	70.986	85.340
TOTAL	796	405	990	2191	117.611	4.371	154.786	276.768
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	187	187	0.028	0.401	0.072	0.501
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.118	0.000	27.130	27.248
SUPERVISORY PERSONNEL	0	6	0	6	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	34	8	43	0.000	0.019	0.000	0.019
TOTAL	1	40	195	236	0.146	0.420	27.202	27.768
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.013	0.005	0.000	0.018
OPERATIONS PERSONNEL	0	0	0	0	0.011	0.000	0.000	0.011
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.057	0.000	0.014	0.071
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	0.088	0.005	0.014	0.107
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.001	0.001	0.000	0.002
OPERATIONS PERSONNEL	1	0	11	12	0.005	0.000	0.000	0.005
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.004	0.000	0.000	0.004
SUPERVISORY PERSONNEL	0	0	0	0	0.051	0.000	0.107	0.158
ENGINEERING PERSONNEL	0	0	0	0	0.021	0.000	0.000	0.021
TOTAL	1	0	11	12	0.082	0.001	0.107	0.190
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.040	0.000	0.000	0.040
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.114	0.000	0.000	0.114
SUPERVISORY PERSONNEL	4	0	0	4	0.007	0.000	0.000	0.007
ENGINEERING PERSONNEL	0	0	0	0	0.183	0.000	0.000	0.183
TOTAL	4	0	0	4	0.344	0.000	0.000	0.344
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	182	0	719	901	2.904	4.606	0.300	7.810
OPERATIONS PERSONNEL	234	0	182	416	21.408	0.000	4.836	26.244
HEALTH PHYSICS PERSONNEL	82	0	36	118	63.815	0.000	104.252	168.067
SUPERVISORY PERSONNEL	245	60	230	535	15.751	0.000	1.823	17.574
ENGINEERING PERSONNEL	59	385	33	477	14.393	0.191	72.060	86.644
GRAND TOTALS	802	445	1200	2447	118.271	4.797	183.271	306.339

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	1	1	0.144	0.000	0.688	0.832
OPERATIONS PERSONNEL	24	0	0	24	5.098	0.000	0.000	5.098
HEALTH PHYSICS PERSONNEL	39	0	35	74	9.470	0.067	10.054	19.591
SUPERVISORY PERSONNEL	4	0	1	5	2.246	0.038	0.284	2.568
ENGINEERING PERSONNEL	2	1	0	3	1.254	0.341	0.051	1.646
TOTAL	69	1	37	107	18.212	0.446	11.077	29.735
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	97	1	96	194	25.571	0.121	31.387	57.079
OPERATIONS PERSONNEL	2	0	0	2	0.817	0.000	0.000	0.817
HEALTH PHYSICS PERSONNEL	1	1	0	2	1.400	0.194	0.841	2.435
SUPERVISORY PERSONNEL	2	0	0	2	1.003	0.001	0.148	1.152
ENGINEERING PERSONNEL	9	0	1	10	2.776	0.039	0.297	3.112
TOTAL	111	2	97	210	31.567	0.355	32.673	64.595
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	36	37	0.178	0.000	17.983	18.161
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	4	0	5	9	1.029	0.000	1.870	2.899
SUPERVISORY PERSONNEL	0	0	0	0	0.102	0.012	0.000	0.114
ENGINEERING PERSONNEL	1	0	2	3	0.467	0.000	0.954	1.421
TOTAL	6	0	43	49	1.776	0.012	20.807	22.595
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	18	0	84	102	5.829	0.000	38.094	43.923
OPERATIONS PERSONNEL	0	0	0	0	0.038	0.000	0.000	0.038
HEALTH PHYSICS PERSONNEL	1	0	2	3	0.687	0.055	1.044	1.786
SUPERVISORY PERSONNEL	2	0	0	2	0.537	0.000	0.000	0.537
ENGINEERING PERSONNEL	14	0	2	16	3.142	0.000	0.615	3.757
TOTAL	35	0	88	123	10.233	0.055	39.753	50.041
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	0	0	0.062	0.000	0.000	0.062
HEALTH PHYSICS PERSONNEL	12	0	0	12	3.398	0.000	0.319	3.717
SUPERVISORY PERSONNEL	0	0	0	0	0.039	0.000	0.000	0.039
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.010	0.010
TOTAL	12	0	0	12	3.499	0.000	0.329	3.828
REFUELING								
MAINTENANCE PERSONNEL	0	0	27	27	0.441	0.027	10.966	11.434
OPERATIONS PERSONNEL	0	0	10	10	0.181	0.000	0.000	0.181
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.245	0.000	2.345	2.590
SUPERVISORY PERSONNEL	1	0	0	1	0.224	0.000	0.003	0.227
ENGINEERING PERSONNEL	3	1	0	4	0.999	0.425	0.074	1.498
TOTAL	4	1	37	42	2.090	0.452	13.388	15.930
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	116	1	244	361	32.163	0.148	99.118	131.429
OPERATIONS PERSONNEL	26	0	10	36	6.196	0.000	0.000	6.196
HEALTH PHYSICS PERSONNEL	57	1	42	100	16.229	0.316	16.473	33.018
SUPERVISORY PERSONNEL	9	0	1	10	4.151	0.051	0.435	4.637
ENGINEERING PERSONNEL	29	2	5	36	8.638	0.805	2.001	11.444
GRAND TOTALS	237	4	302	543	67.377	1.320	118.027	186.724

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	26		0		9		35		3.590	0.000	1.233	4.823
OPERATIONS PERSONNEL	0		0		0		0		0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	19		0		62		81		3.912	0.000	12.019	15.931
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	45		0		71		116		7.502	0.000	13.252	20.754
ROUTINE MAINTENANCE												
MAINTENANCE PERSONNEL	0		1		5		6		0.000	0.114	0.654	0.768
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		1		5		6		0.000	0.114	0.654	0.768
IN-SERVICE INSPECTION												
MAINTENANCE PERSONNEL	2		0		66		68		0.404	0.000	15.727	16.131
OPERATIONS PERSONNEL	0		0		0		0		0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	2		0		9		11		0.350	0.000	1.400	1.750
SUPERVISORY PERSONNEL	0		0		0		0		0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1		0		0		1		0.154	0.000	0.000	0.154
TOTAL	5		0		75		80		0.908	0.000	17.127	18.035
SPECIAL MAINTENANCE												
MAINTENANCE PERSONNEL	74		24		150		248		20.302	6.536	39.499	66.337
OPERATIONS PERSONNEL	3		0		2		5		0.493	0.000	0.400	0.893
HEALTH PHYSICS PERSONNEL	7		0		48		55		0.963	0.000	8.344	9.307
SUPERVISORY PERSONNEL	1		0		1		2		0.113	0.000	0.103	0.216
ENGINEERING PERSONNEL	4		0		4		8		0.661	0.000	0.758	1.419
TOTAL	89		24		205		318		22.532	6.536	49.104	78.172
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	9		0		1		10		1.450	0.000	0.112	1.562
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		1		10		1.450	0.000	0.112	1.562
REFUELING												
MAINTENANCE PERSONNEL	7		0		80		87		2.316	0.000	33.627	35.943
OPERATIONS PERSONNEL	3		0		1		4		0.350	0.000	0.384	0.734
HEALTH PHYSICS PERSONNEL	5		0		20		[illegible]		1.319	0.000	5.074	6.393
SUPERVISORY PERSONNEL	0		0		1		[illegible]		0.000	0.000	0.850	0.850
ENGINEERING PERSONNEL	0		0		5		[illegible]		0.000	0.000	2.888	2.888
TOTAL	15		0		107		1[illegible]		3.985	0.000	42.823	46.808
TOTAL BY JOB FUNCTION												
MAINTENANCE PERSONNEL	109	(89)	25	(25)	310	(257)	444	(371)	26.612	6.650	90.740	124.002
OPERATIONS PERSONNEL	6	(35)	0	(0)	3	(3)	9	(38)	0.843	0.000	0.784	1.627
HEALTH PHYSICS PERSONNEL	42	(36)	0	(0)	140	(110)	182	(146)	7.994	0.000	26.949	34.943
SUPERVISORY PERSONNEL	1	(2)	0	(0)	2	(3)	3	(5)	0.113	0.000	0.953	1.066
ENGINEERING PERSONNEL	5	(9)	0	(1)	9	(9)	14	(19)	0.815	0.000	3.646	4.461
GRAND TOTALS	163	(171)	25	(26)	464	(382)	652	(579)	36.377	6.650	123.072	166.099

*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

1995

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	171	591	110	872	5.099	11.705	1.195	17.999
OPERATIONS PERSONNEL	93	0	34	127	26.031	0.000	3.841	29.872
HEALTH PHYSICS PERSONNEL	29	1	89	119	3.194	0.018	9.861	13.073
SUPERVISORY PERSONNEL	4	3	2	9	0.274	0.018	0.006	0.298
ENGINEERING PERSONNEL	9	2	6	17	0.041	0.064	0.000	0.105
TOTAL	306	597	241	1144	34.639	11.805	14.903	61.347
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	170	532	72	774	38.763	87.255	11.967	137.985
OPERATIONS PERSONNEL	53	0	35	88	0.856	0.000	6.172	7.028
HEALTH PHYSICS PERSONNEL	28	1	80	109	2.943	0.033	7.192	10.168
SUPERVISORY PERSONNEL	3	2	1	6	0.404	0.107	0.058	0.569
ENGINEERING PERSONNEL	7	1	1	9	0.284	0.078	0.001	0.363
TOTAL	261	536	189	986	43.250	87.473	25.390	156.113
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	115	408	77	600	8.768	107.569	11.068	127.405
OPERATIONS PERSONNEL	14	0	1	15	1.467	0.000	0.005	1.472
HEALTH PHYSICS PERSONNEL	10	0	49	59	0.234	0.000	7.131	7.365
SUPERVISORY PERSONNEL	1	2	0	3	0.034	0.269	0.000	0.303
ENGINEERING PERSONNEL	1	1	3	5	0.000	0.001	0.584	0.585
TOTAL	141	411	130	682	10.503	107.839	18.788	137.130
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	124	472	64	660	5.954	37.747	4.772	48.473
OPERATIONS PERSONNEL	75	0	25	100	0.417	0.000	2.354	2.771
HEALTH PHYSICS PERSONNEL	18	1	73	92	0.356	0.187	1.586	2.129
SUPERVISORY PERSONNEL	2	2	1	5	0.094	0.003	0.080	0.177
ENGINEERING PERSONNEL	8	1	2	11	1.216	0.003	0.315	1.534
TOTAL	227	476	165	868	8.037	37.940	9.107	55.084
WASTE PROCESSING								
MAINTENANCE PERSONNEL	12	28	2	42	0.019	0.031	0.000	0.050
OPERATIONS PERSONNEL	6	0	31	37	0.303	0.000	0.395	0.698
HEALTH PHYSICS PERSONNEL	14	0	22	36	1.133	0.000	3.916	5.049
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.002	0.002
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	32	28	56	116	1.455	0.031	4.313	5.799
REFUELING								
MAINTENANCE PERSONNEL	108	326	50	484	3.497	24.809	3.220	31.526
OPERATIONS PERSONNEL	62	0	30	92	0.197	0.000	3.846	4.043
HEALTH PHYSICS PERSONNEL	8	0	37	45	0.522	0.000	2.271	2.793
SUPERVISORY PERSONNEL	1	3	0	4	0.021	0.026	0.000	0.047
ENGINEERING PERSONNEL	1	0	0	1	0.015	0.000	0.000	0.015
TOTAL	180	329	117	626	4.252	24.835	9.337	38.424
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	700	(173 2357 (596)	375	(113) 3432	(882)	62.100	269.116	32.222	363.438
OPERATIONS PERSONNEL	303	(93) 0 (0)	156	(35) 459	(128)	29.271	0.000	16.613	45.884
HEALTH PHYSICS PERSONNEL	107	(29) 3 (1)	350	(89) 460	(119)	8.382	0.238	31.957	40.577
SUPERVISORY PERSONNEL	11	(4) 12 (3)	5	(2) 28	(9)	0.827	0.423	0.146	1.396
ENGINEERING PERSONNEL	26	(9) 5 (2)	12	(6) 43	(17)	1.556	0.146	0.900	2.602
GRAND TOTALS	1147	(308 2377 (602)	898	(245) 4422	(1155)	102.136	269.923	81.838	453.897

*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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	125	1	197	323	4.318	0.044	3.505	7.867
OPERATIONS PERSONNEL	67	0	10	77	5.901	0.000	0.275	6.176
HEALTH PHYSICS PERSONNEL	40	0	44	84	2.957	0.000	5.660	8.617
SUPERVISORY PERSONNEL	18	0	1	19	0.628	0.000	0.069	0.697
ENGINEERING PERSONNEL	15	0	7	22	0.416	0.000	0.231	0.647
TOTAL	265	1	259	525	14.220	0.044	9.740	24.004
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	30	0	23	53	0.546	0.000	0.713	1.259
OPERATIONS PERSONNEL	3	0	0	3	0.008	0.000	0.000	0.008
HEALTH PHYSICS PERSONNEL	15	0	2	17	0.179	0.000	0.020	0.199
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	0	0	2	0.014	0.000	0.000	0.014
TOTAL	50	0	25	75	0.747	0.000	0.733	1.480
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	7	0	33	40	0.199	0.000	4.621	4.820
OPERATIONS PERSONNEL	2	0	0	2	0.010	0.000	0.000	0.010
HEALTH PHYSICS PERSONNEL	1	0	11	12	0.002	0.000	0.092	0.094
SUPERVISORY PERSONNEL	1	0	0	1	0.186	0.000	0.000	0.186
ENGINEERING PERSONNEL	4	0	9	13	0.281	0.000	2.195	2.476
TOTAL	15	0	53	68	0.678	0.000	6.908	7.586
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	153	3	374	530	41.245	0.623	108.761	150.629
OPERATIONS PERSONNEL	72	1	11	84	12.258	0.016	0.512	12.786
HEALTH PHYSICS PERSONNEL	50	0	46	96	11.320	0.000	4.789	16.109
SUPERVISORY PERSONNEL	25	0	4	29	2.104	0.000	0.196	2.300
ENGINEERING PERSONNEL	19	0	4	23	2.548	0.000	0.369	2.917
TOTAL	319	4	439	762	69.475	0.639	114.627	184.741
WASTE PROCESSING								
MAINTENANCE PERSONNEL	7	0	1	8	0.038	0.000	0.282	0.320
OPERATIONS PERSONNEL	0	0	3	3	0.000	0.000	0.545	0.545
HEALTH PHYSICS PERSONNEL	13	0	0	13	0.287	0.000	0.000	0.287
SUPERVISORY PERSONNEL	1	0	0	1	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	21	0	4	25	0.326	0.000	0.827	1.153
REFUELING								
MAINTENANCE PERSONNEL	122	3	352	477	12.380	0.215	53.687	66.282
OPERATIONS PERSONNEL	60	0	8	68	4.152	0.000	1.361	5.513
HEALTH PHYSICS PERSONNEL	32	0	44	76	1.660	0.000	3.756	5.416
SUPERVISORY PERSONNEL	18	0	3	21	1.948	0.000	0.327	2.275
ENGINEERING PERSONNEL	11	0	2	13	1.475	0.000	0.324	1.799
TOTAL	243	3	409	655	21.615	0.215	59.455	81.285
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	444	7	980	1431	58.726	0.882	171.569	231.177
OPERATIONS PERSONNEL	204	1	32	237	22.329	0.016	2.693	25.038
HEALTH PHYSICS PERSONNEL	151	0	147	298	16.405	0.000	14.317	30.722
SUPERVISORY PERSONNEL	63	0	8	71	4.867	0.000	0.592	5.459
ENGINEERING PERSONNEL	51	0	22	73	4.734	0.000	3.119	7.853
GRAND TOTALS	913	8	1189	2110	107.061	0.898	192.290	300.249

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	8	8	0.023	0.000	2.077	2.100
OPERATIONS PERSONNEL	13	0	2	15	5.922	0.073	1.038	7.033
HEALTH PHYSICS PERSONNEL	11	0	29	40	2.700	0.071	7.488	10.259
SUPERVISORY PERSONNEL	0	0	0	0	0.031	0.000	0.153	0.184
ENGINEERING PERSONNEL	2	0	1	3	1.088	0.000	0.321	1.409
TOTAL	26	0	40	66	9.764	0.144	11.077	20.985
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	23	0	172	195	6.790	0.000	54.220	61.010
OPERATIONS PERSONNEL	3	0	6	9	1.243	0.000	1.553	2.796
HEALTH PHYSICS PERSONNEL	2	0	5	7	0.801	0.000	2.019	2.820
SUPERVISORY PERSONNEL	0	0	0	0	0.001	0.000	0.001	0.002
ENGINEERING PERSONNEL	1	0	6	7	0.949	0.045	1.816	2.810
TOTAL	29	0	189	218	9.784	0.045	59.609	69.438
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	125	126	0.462	0.000	45.824	46.286
OPERATIONS PERSONNEL	0	0	7	7	0.146	0.000	2.679	2.825
HEALTH PHYSICS PERSONNEL	4	0	8	12	1.031	0.000	2.543	3.574
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	3	3	0.251	0.000	1.514	1.765
TOTAL	5	0	143	148	1.890	0.000	52.560	54.450
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	15	17	0.698	0.000	7.578	8.276
OPERATIONS PERSONNEL	0	0	0	0	0.034	0.000	0.171	0.205
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.001	0.000	0.043	0.044
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.177	0.177
TOTAL	2	0	15	17	0.733	0.000	7.969	8.702
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.013	0.000	0.327	0.340
OPERATIONS PERSONNEL	1	0	1	2	0.676	0.000	0.774	1.450
HEALTH PHYSICS PERSONNEL	4	0	1	5	0.773	0.095	0.746	1.614
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.071	0.000	0.000	0.071
TOTAL	5	0	2	7	1.533	0.095	1.847	3.475
REFUELING								
MAINTENANCE PERSONNEL	1	0	42	43	0.349	0.000	18.388	18.737
OPERATIONS PERSONNEL	4	0	0	4	0.720	0.000	0.005	0.725
HEALTH PHYSICS PERSONNEL	0	0	6	6	0.238	0.000	2.282	2.520
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.148	0.000	0.178	0.326
TOTAL	5	0	49	54	1.455	0.000	20.853	22.308
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	27	0	362	389	8.335	0.000	128.414	136.749
OPERATIONS PERSONNEL	21	0	16	37	8.741	0.073	6.220	15.034
HEALTH PHYSICS PERSONNEL	21	0	49	70	5.544	0.166	15.121	20.831
SUPERVISORY PERSONNEL	0	0	0	0	0.032	0.000	0.154	0.186
ENGINEERING PERSONNEL	3	0	11	14	2.507	0.045	4.006	6.558
GRAND TOTALS	72	0	438	510	25.159	0.284	153.915	179.358

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***COOK 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	6	0	7	13	4.866	0.004	4.644	9.514
OPERATIONS PERSONNEL	18	1	3	22	6.930	0.134	1.999	9.063
HEALTH PHYSICS PERSONNEL	25	0	15	40	6.342	0.002	5.214	11.558
SUPERVISORY PERSONNEL	1	0	0	1	0.296	0.000	0.018	0.314
ENGINEERING PERSONNEL	0	0	0	0	1.181	0.091	0.243	1.515
TOTAL	50	1	25	76	19.615	0.231	12.118	31.964
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	72	0	235	307	17.280	0.169	89.048	106.497
OPERATIONS PERSONNEL	19	1	31	51	7.492	0.277	13.885	21.654
HEALTH PHYSICS PERSONNEL	23	0	40	63	7.681	0.013	12.908	20.602
SUPERVISORY PERSONNEL	1	0	2	3	0.325	0.000	0.359	0.684
ENGINEERING PERSONNEL	11	0	2	13	3.715	0.288	1.423	5.426
TOTAL	126	1	310	437	36.493	0.747	117.623	154.863
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	7	0	18	25	1.725	0.000	6.168	7.893
OPERATIONS PERSONNEL	3	0	2	5	0.601	0.020	0.545	1.166
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.138	0.016	0.117	0.271
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.025	0.025
ENGINEERING PERSONNEL	0	0	1	1	0.267	0.139	0.243	0.649
TOTAL	10	0	21	31	2.731	0.175	7.098	10.004
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	24	25	0.429	0.000	8.659	9.088
OPERATIONS PERSONNEL	0	1	0	1	0.105	0.141	0.027	0.273
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.015	0.016	0.000	0.031
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.016	0.016
ENGINEERING PERSONNEL	0	4	0	4	0.445	1.232	0.040	1.717
TOTAL	1	5	24	30	0.994	1.389	8.742	11.125
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	1	1	0.016	0.000	0.388	0.404
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.014	0.014
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.133	0.000	0.202	0.335
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.027	0.000	0.021	0.048
TOTAL	1	0	2	3	0.176	0.000	0.625	0.801
REFUELING								
MAINTENANCE PERSONNEL	4	0	27	31	1.226	0.000	7.194	8.420
OPERATIONS PERSONNEL	6	0	8	14	2.140	0.000	2.133	4.273
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.747	0.000	0.095	0.842
SUPERVISORY PERSONNEL	0	0	0	0	0.005	0.000	0.010	0.015
ENGINEERING PERSONNEL	0	0	0	0	0.089	0.001	0.090	0.180
TOTAL	11	0	35	46	4.207	0.001	9.522	13.730
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	90	0	312	402	[illegible] 542	0.173	116.101	141.816
OPERATIONS PERSONNEL	46	3	44	93	[illegible] 98	0.572	18.603	36.443
HEALTH PHYSICS PERSONNEL	50	0	56	106	[illegible] 56	0.047	18.536	33.639
SUPERVISORY PERSONNEL	2	0	2	4	0.626	0.000	0.428	1.054
ENGINEERING PERSONNEL	11	4	3	18	5.724	1.751	2.060	9.535
GRAND TOTALS	199	7	417	623	64.216	2.543	155.728	222.487

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	54	2	65	121	1.266	0.056	0.897	2.219
OPERATIONS PERSONNEL	41	0	0	41	8.407	0.000	0.000	8.407
HEALTH PHYSICS PERSONNEL	30	0	33	63	7.385	0.000	7.422	14.807
SUPERVISORY PERSONNEL	6	0	2	8	0.305	0.000	0.379	0.684
ENGINEERING PERSONNEL	19	2	17	38	1.380	0.063	0.545	1.988
TOTAL	150	4	117	271	18.743	0.119	9.243	28.105
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	76	2	323	401	34.616	0.581	63.922	99.119
OPERATIONS PERSONNEL	42	0	0	42	7.701	0.000	0.000	7.701
HEALTH PHYSICS PERSONNEL	33	0	33	66	11.834	0.000	6.788	18.622
SUPERVISORY PERSONNEL	7	0	4	11	1.278	0.000	0.358	1.636
ENGINEERING PERSONNEL	20	3	19	42	2.852	0.708	2.819	6.379
TOTAL	178	5	379	562	58.281	1.289	73.887	133.457
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	8	0	137	145	0.218	0.000	36.160	36.378
OPERATIONS PERSONNEL	6	0	0	6	0.038	0.000	0.000	0.038
HEALTH PHYSICS PERSONNEL	12	0	6	18	0.254	0.000	0.519	0.773
SUPERVISORY PERSONNEL	1	0	1	2	0.148	0.000	0.001	0.149
ENGINEERING PERSONNEL	5	1	1	7	0.329	0.006	0.032	0.367
TOTAL	32	1	145	178	0.987	0.006	36.712	37.705
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	18	1	80	99	0.660	0.021	3.568	4.249
OPERATIONS PERSONNEL	2	0	0	2	0.134	0.000	0.000	0.134
HEALTH PHYSICS PERSONNEL	9	0	10	19	0.117	0.000	0.094	0.211
SUPERVISORY PERSONNEL	1	0	0	1	0.005	0.000	0.000	0.005
ENGINEERING PERSONNEL	1	2	3	6	0.061	0.089	0.019	0.169
TOTAL	31	3	93	127	0.977	0.110	3.681	4.768
WASTE PROCESSING								
MAINTENANCE PERSONNEL	17	0	5	22	0.044	0.000	0.007	0.051
OPERATIONS PERSONNEL	26	0	0	26	0.774	0.000	0.000	0.774
HEALTH PHYSICS PERSONNEL	14	0	6	20	0.540	0.000	0.062	0.602
SUPERVISORY PERSONNEL	1	0	0	1	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	58	0	11	69	1.359	0.000	0.069	1.428
REFUELING								
MAINTENANCE PERSONNEL	1	0	16	17	0.001	0.000	0.880	0.881
OPERATIONS PERSONNEL	5	0	0	5	0.253	0.000	0.000	0.253
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.004	0.000	0.000	0.004
SUPERVISORY PERSONNEL	1	0	0	1	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	1	0	1	2	0.067	0.000	0.002	0.069
TOTAL	10	0	17	27	0.326	0.000	0.882	1.208
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	174 (78)	5 (2)	626 (351)	805 (429)	36.805	0.658	105.434	142.897
OPERATIONS PERSONNEL	122 (42)	0 (0)	0 (0)	122 (42)	17.307	0.000	0.000	17.307
HEALTH PHYSICS PERSONNEL	100 (33)	0 (0)	88 (41)	188 (74)	20.134	0.000	14.885	35.019
SUPERVISORY PERSONNEL	17 (7)	0 (0)	7 (4)	24 (11)	1.738	0.000	0.738	2.476
ENGINEERING PERSONNEL	46 (20)	8 (3)	41 (20)	95 (43)	4.689	0.866	3.417	8.972
GRAND TOTALS	459 (178)	13 (5)	762 (416)	1234 (599)	80.673	1.524	124.474	206.671

*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

1995

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	0.010	0.000	0.000	0.010
OPERATIONS PERSONNEL	1	0	0	1	0.876	0.000	0.000	0.876
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	0.017	0.000	0.000	0.017
TOTAL	1	0	0	1	0.903	0.000	0.000	0.903
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	0	1	1.797	0.282	0.384	2.463
OPERATIONS PERSONNEL	1	0	0	1	0.664	0.000	0.000	0.664
HEALTH PHYSICS PERSONNEL	7	0	0	7	2.135	0.000	0.000	2.135
SUPERVISORY PERSONNEL	0	0	0	0	0.239	0.132	0.378	0.749
ENGINEERING PERSONNEL	0	0	0	0	0.172	0.267	0.000	0.439
TOTAL	9	0	0	9	5.007	0.681	0.762	6.450
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	0.003	0.000	0.000	0.003
OPERATIONS PERSONNEL	2	0	0	2	0.624	0.000	0.000	0.624
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.016	0.000	0.000	0.016
SUPERVISORY PERSONNEL	1	0	0	1	0.148	0.000	0.000	0.148
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	3	0	0	3	0.791	0.000	0.000	0.791
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	0	0	1	1.810	0.282	0.384	2.476
OPERATIONS PERSONNEL	4	0	0	4	2.164	0.000	0.000	2.164
HEALTH PHYSICS PERSONNEL	7	0	0	7	2.151	0.000	0.000	2.151
SUPERVISORY PERSONNEL	1	0	0	1	0.387	0.132	0.378	0.897
ENGINEERING PERSONNEL	0	0	0	0	0.189	0.267	0.000	0.456
GRAND TOTALS	13	0	0	13	6.701	0.681	0.762	8.144

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	0.001	0.000	0.010	0.011
OPERATIONS PERSONNEL	0	0	0	0	1.110	0.000	0.003	1.113
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.620	0.000	0.000	0.620
SUPERVISORY PERSONNEL	0	0	0	0	0.007	0.000	0.001	0.008
ENGINEERING PERSONNEL	0	0	0	0	0.059	0.000	0.000	0.059
TOTAL	0	0	0	0	1.797	0.000	0.014	1.811
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	1.220	0.000	0.016	1.236
OPERATIONS PERSONNEL	0	0	0	0	0.005	0.000	0.000	0.005
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.031	0.000	0.000	0.031
SUPERVISORY PERSONNEL	0	0	0	0	0.003	0.000	0.000	0.003
ENGINEERING PERSONNEL	0	0	0	0	0.143	0.000	0.000	0.143
TOTAL	0	0	0	0	1.402	0.000	0.016	1.418
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
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	0.001	0.000	0.000	0.001
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	0	2	0.935	0.000	0.000	0.935
OPERATIONS PERSONNEL	1	0	0	1	0.611	0.000	0.000	0.611
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.784	0.000	0.000	0.784
SUPERVISORY PERSONNEL	0	0	0	0	0.011	0.000	0.000	0.011
ENGINEERING PERSONNEL	0	0	0	0	0.026	0.000	0.000	0.026
TOTAL	5	0	0	5	2.367	0.000	0.000	2.367
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.027	0.000	0.059	0.086
OPERATIONS PERSONNEL	0	0	0	0	0.022	0.000	0.000	0.022
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.558	0.000	0.000	0.558
SUPERVISORY PERSONNEL	0	0	0	0	0.003	0.000	0.000	0.003
ENGINEERING PERSONNEL	0	0	0	0	0.006	0.000	0.000	0.006
TOTAL	0	0	0	0	0.616	0.000	0.059	0.675
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.004	0.000	0.070	0.074
OPERATIONS PERSONNEL	0	0	0	0	0.004	0.000	0.000	0.004
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.033	0.000	0.000	0.033
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.012	0.000	0.007	0.019
TOTAL	0	0	0	0	0.053	0.000	0.077	0.130
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	2	0	0	2	2.188	0.000	0.155	2.343
OPERATIONS PERSONNEL	1	0	0	1	1.752	0.000	0.003	1.755
HEALTH PHYSICS PERSONNEL	2	0	0	2	2.026	0.000	0.000	2.026
SUPERVISORY PERSONNEL	0	0	0	0	0.024	0.000	0.001	0.025
ENGINEERING PERSONNEL	0	0	0	0	0.246	0.000	0.007	0.253
GRAND TOTALS	5	0	0	5	6.236	0.000	0.166	6.402

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	1	2	1	4	0.065	0.010	0.025	0.100
OPERATIONS PERSONNEL	33	1	0	34	1.523	0.061	0.000	1.584
HEALTH PHYSICS PERSONNEL	23	3	0	26	0.288	0.046	0.000	0.334
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.061	0.061
TOTAL	57	6	2	65	1.876	0.117	0.086	2.079
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	68	30	166	264	4.575	1.434	5.583	11.592
OPERATIONS PERSONNEL	17	0	5	22	0.386	0.000	0.047	0.433
HEALTH PHYSICS PERSONNEL	38	14	17	69	3.074	0.708	0.500	4.282
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	7	4	10	21	0.268	0.027	1.024	1.319
TOTAL	130	48	198	376	8.303	2.169	7.154	17.626
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	4	11	32	47	0.982	2.961	7.568	11.531
OPERATIONS PERSONNEL	5	0	3	8	2.770	0.000	0.766	3.536
HEALTH PHYSICS PERSONNEL	6	5	3	14	0.117	0.091	0.426	0.634
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	3	3	0.000	0.000	1.028	1.028
TOTAL	15	16	41	72	3.869	3.072	9.788	16.729
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	61	25	251	337	10.712	1.786	82.236	94.734
OPERATIONS PERSONNEL	14	0	7	21	0.662	0.000	0.864	1.526
HEALTH PHYSICS PERSONNEL	30	21	24	75	4.838	3.081	5.232	13.151
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	1.277	1.277
ENGINEERING PERSONNEL	4	2	9	15	0.071	0.114	0.824	1.009
TOTAL	109	48	292	449	16.283	4.981	90.433	111.697
WASTE PROCESSING								
MAINTENANCE PERSONNEL	25	6	13	44	0.600	0.071	0.057	0.728
OPERATIONS PERSONNEL	15	1	1	17	0.082	0.002	0.002	0.086
HEALTH PHYSICS PERSONNEL	24	5	5	34	4.148	0.055	1.580	5.783
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	64	12	19	95	4.830	0.128	1.639	6.597
REFUELING								
MAINTENANCE PERSONNEL	77	39	314	430	21.305	6.643	64.637	92.585
OPERATIONS PERSONNEL	53	1	8	62	6.894	0.043	2.108	9.045
HEALTH PHYSICS PERSONNEL	40	30	31	101	6.419	5.298	7.032	18.749
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	8	4	12	24	1.309	0.443	1.450	3.202
TOTAL	178	74	365	617	35.927	12.427	75.227	123.581
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	236	113	777	1126	38.239	12.925	160.106	211.270
OPERATIONS PERSONNEL	137	3	24	164	12.317	0.106	3.787	16.210
HEALTH PHYSICS PERSONNEL	161	78	80	319	18.884	9.279	14.770	42.933
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	1.277	1.277
ENGINEERING PERSONNEL	19	10	35	64	1.648	0.584	4.387	6.619
GRAND TOTALS	553	204	917	1674	71.088	22.894	184.327	278.309

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	10	34	4	48	3.398	10.391	0.044	13.833
OPERATIONS PERSONNEL	146	44	0	190	23.325	2.672	0.000	25.997
HEALTH PHYSICS PERSONNEL	30	4	147	181	8.904	1.328	0.482	10.714
SUPERVISORY PERSONNEL	127	133	0	260	7.325	0.787	0.000	8.112
ENGINEERING PERSONNEL	88	80	0	168	5.746	4.217	0.000	9.963
TOTAL	401	295	151	847	48.698	19.395	0.526	68.619
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	334	960	35	1329	109.234	293.085	0.425	402.744
OPERATIONS PERSONNEL	162	62	0	224	25.906	3.764	0.000	29.670
HEALTH PHYSICS PERSONNEL	46	100	107	253	13.488	31.905	0.348	45.741
SUPERVISORY PERSONNEL	192	12	0	204	11.058	0.075	0.000	11.133
ENGINEERING PERSONNEL	116	293	0	409	7.662	15.337	0.000	22.999
TOTAL	850	1427	142	2419	167.348	344.166	0.773	512.287
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	226	0	226	0.000	69.149	0.000	69.149
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	1	133	134	0.019	0.294	0.431	0.744
SUPERVISORY PERSONNEL	0	16	0	16	0.036	0.092	0.000	0.128
ENGINEERING PERSONNEL	15	22	0	37	0.961	1.179	0.000	2.140
TOTAL	15	265	133	413	1.016	70.714	0.431	72.161
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	7	617	0	624	2.275	188.307	0.004	190.586
OPERATIONS PERSONNEL	2	7	0	9	0.286	0.428	0.000	0.714
HEALTH PHYSICS PERSONNEL	1	28	8	37	0.372	9.065	0.025	9.462
SUPERVISORY PERSONNEL	8	0	0	8	0.447	0.000	0.000	0.447
ENGINEERING PERSONNEL	10	64	0	74	0.676	3.378	0.000	4.054
TOTAL	28	716	8	752	4.056	201.178	0.029	205.263
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	4	0	4	0.083	1.271	0.000	1.354
OPERATIONS PERSONNEL	11	68	0	79	1.734	4.083	0.000	5.817
HEALTH PHYSICS PERSONNEL	5	0	0	5	1.610	0.009	0.000	1.619
SUPERVISORY PERSONNEL	5	0	0	5	0.281	0.000	0.000	0.281
ENGINEERING PERSONNEL	0	0	0	0	0.001	0.003	0.000	0.004
TOTAL	21	72	0	93	3.709	5.366	0.000	9.075
REFUELING								
MAINTENANCE PERSONNEL	7	9	0	16	2.208	2.815	0.001	5.024
OPERATIONS PERSONNEL	2	1	0	3	0.349	0.075	0.000	0.424
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.203	0.044	0.002	0.249
SUPERVISORY PERSONNEL	8	0	0	8	0.444	0.001	0.000	0.445
ENGINEERING PERSONNEL	3	33	0	36	0.224	1.705	0.000	1.929
TOTAL	21	43	1	65	3.428	4.640	0.003	8.071
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	358	1850	39	2247	117.198	585.018	0.474	682.690
OPERATIONS PERSONNEL	323	182	0	505	51.600	11.022	0.000	62.622
HEALTH PHYSICS PERSONNEL	83	133	396	612	24.596	42.645	1.288	68.529
SUPERVISORY PERSONNEL	340	161	0	501	19.591	0.955	0.000	20.546
ENGINEERING PERSONNEL	232	492	0	724	15.270	25.819	0.000	41.089
GRAND TOTALS	1336	2818	435	4589	228.255	645.459	1.762	875.476

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	15	0	6	21	3.669	0.000	1.309	4.978
OPERATIONS PERSONNEL	25	0	0	25	6.279	0.000	0.000	6.279
HEALTH PHYSICS PERSONNEL	10	0	36	46	4.284	0.000	13.326	17.610
SUPERVISORY PERSONNEL	9	0	4	13	2.740	0.000	0.908	3.648
ENGINEERING PERSONNEL	7	0	2	9	1.445	0.000	0.365	1.810
TOTAL	66	0	48	114	18.417	0.000	15.908	34.325
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	132	0	202	334	62.362	0.000	79.136	141.498
OPERATIONS PERSONNEL	33	0	2	35	13.903	0.000	0.356	14.259
HEALTH PHYSICS PERSONNEL	9	0	15	24	1.452	0.000	2.732	4.184
SUPERVISORY PERSONNEL	8	1	18	27	1.970	0.195	3.935	6.100
ENGINEERING PERSONNEL	20	0	12	32	4.012	0.000	3.354	7.366
TOTAL	202	1	249	452	83.699	0.195	89.513	173.407
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	3	0	28	31	0.519	0.000	6.398	6.917
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	0.102	0.102
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	3	0	20	23	0.460	0.000	12.946	13.406
TOTAL	6	0	49	55	0.979	0.000	19.446	20.425
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	33	0	129	162	10.941	0.000	35.816	46.757
OPERATIONS PERSONNEL	1	0	0	1	0.219	0.000	0.000	0.219
HEALTH PHYSICS PERSONNEL	3	0	4	7	0.816	0.000	0.660	1.476
SUPERVISORY PERSONNEL	1	0	3	4	0.274	0.000	0.682	0.956
ENGINEERING PERSONNEL	6	0	17	23	0.828	0.000	5.584	6.412
TOTAL	44	0	153	197	13.078	0.000	42.742	55.820
WASTE PROCESSING								
MAINTENANCE PERSONNEL	6	0	1	7	1.399	0.000	0.458	1.857
OPERATIONS PERSONNEL	9	0	1	10	2.757	0.000	0.690	3.447
HEALTH PHYSICS PERSONNEL	2	0	1	3	0.844	0.000	0.112	0.956
SUPERVISORY PERSONNEL	0	0	2	2	0.000	0.000	0.446	0.446
ENGINEERING PERSONNEL	0	0	5	5	0.000	0.000	1.474	1.474
TOTAL	17	0	10	27	5.000	0.000	3.180	8.180
REFUELING								
MAINTENANCE PERSONNEL	2	0	36	38	0.488	0.000	12.779	13.267
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	2	0	11	13	0.468	0.000	1.777	2.245
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	0	12	14	0.299	0.000	5.144	5.443
TOTAL	6	0	59	65	1.255	0.000	19.700	20.955
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	191	0	402	593	79.378	0.000	135.896	215.274
OPERATIONS PERSONNEL	68	0	3	71	23.158	0.000	1.046	24.204
HEALTH PHYSICS PERSONNEL	26	0	68	94	7.864	0.000	18.709	26.573
SUPERVISORY PERSONNEL	18	1	27	46	4.984	0.195	5.971	11.150
ENGINEERING PERSONNEL	38	0	68	106	7.044	0.000	28.867	35.911
GRAND TOTALS	341	1	568	910	122.428	0.195	190.489	313.112

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	1	0	0	1	0.317	0.007	0.170	0.494
OPERATIONS PERSONNEL	74	0	0	74	21.207	0.000	0.000	21.207
HEALTH PHYSICS PERSONNEL	33	0	77	110	10.666	0.000	24.205	34.871
SUPERVISORY PERSONNEL	0	0	2	2	0.494	0.113	0.336	0.943
ENGINEERING PERSONNEL	0	0	3	3	0.795	0.184	1.004	1.983
TOTAL	108	0	82	190	33.479	0.304	25.715	59.498
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	13	0	0	13	7.454	0.000	0.974	8.428
OPERATIONS PERSONNEL	0	0	0	0	0.229	0.000	0.000	0.229
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.515	0.000	0.000	0.515
SUPERVISORY PERSONNEL	0	0	0	0	0.027	0.000	0.000	0.027
ENGINEERING PERSONNEL	0	0	0	0	0.052	0.001	0.026	0.079
TOTAL	15	0	0	15	8.277	0.001	1.000	9.278
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	61	61	0.222	0.019	39.900	40.141
OPERATIONS PERSONNEL	0	0	0	0	0.033	0.000	0.003	0.036
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.231	0.000	0.954	1.185
SUPERVISORY PERSONNEL	0	0	1	1	0.002	0.021	1.627	1.650
ENGINEERING PERSONNEL	6	0	57	63	1.269	0.121	31.251	32.641
TOTAL	6	0	120	126	1.757	0.161	73.735	75.653
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	155	1	371	527	66.591	0.106	167.859	234.556
OPERATIONS PERSONNEL	8	0	9	17	4.993	0.000	2.905	7.898
HEALTH PHYSICS PERSONNEL	49	0	23	72	17.752	0.000	6.852	24.604
SUPERVISORY PERSONNEL	2	0	3	5	0.415	0.080	0.982	1.477
ENGINEERING PERSONNEL	8	0	51	59	3.300	0.024	19.663	22.987
TOTAL	222	1	457	680	93.051	0.210	198.261	291.522
WASTE PROCESSING								
MAINTENANCE PERSONNEL	5	0	4	9	1.420	0.000	1.037	2.457
OPERATIONS PERSONNEL	5	0	1	6	1.492	0.000	0.241	1.733
HEALTH PHYSICS PERSONNEL	28	0	4	32	10.328	0.000	2.255	12.583
SUPERVISORY PERSONNEL	0	0	0	0	0.108	0.000	0.013	0.121
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.013	0.013
TOTAL	38	0	9	47	13.348	0.000	3.559	16.907
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.007	0.000	0.078	0.085
OPERATIONS PERSONNEL	5	0	11	16	1.756	0.021	3.326	5.103
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.116	0.000	0.689	0.805
SUPERVISORY PERSONNEL	2	0	0	2	0.366	0.021	0.015	0.402
ENGINEERING PERSONNEL	0	0	0	0	0.158	0.046	0.284	0.488
TOTAL	7	0	11	18	2.403	0.088	4.392	6.883
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	174	1	436	611	76.011	0.132	210.018	286.161
OPERATIONS PERSONNEL	92	0	21	113	29.710	0.021	6.475	36.206
HEALTH PHYSICS PERSONNEL	112	0	105	217	39.608	0.000	34.955	74.563
SUPERVISORY PERSONNEL	4	0	6	10	1.412	0.235	2.973	4.620
ENGINEERING PERSONNEL	14	0	111	125	5.574	0.376	52.241	58.191
GRAND TOTALS	396	1	679	1076	152.315	0.764	306.662	459.741

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	143	2	65	210	4.624	0.005	2.196	6.825
OPERATIONS PERSONNEL	109	1	24	134	5.831	0.000	3.912	9.743
HEALTH PHYSICS PERSONNEL	31	0	2	33	2.446	0.000	0.201	2.647
SUPERVISORY PERSONNEL	110	15	128	253	1.759	0.010	0.977	2.746
ENGINEERING PERSONNEL	121	2	6	129	1.294	0.000	0.007	1.301
TOTAL	514	20	225	759	15.954	0.015	7.293	23.262
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	5	0	1	6	0.359	0.000	0.132	0.491
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	2	0	2	0.000	0.000	0.000	0.000
TOTAL	5	2	1	8	0.359	0.000	0.132	0.491
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.171	0.000	0.000	0.171
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	0	3	0.475	0.000	0.000	0.475
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.026	0.026
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	3	0	1	4	0.646	0.000	0.026	0.672
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	20	0	68	88	1.725	0.000	1.427	3.152
OPERATIONS PERSONNEL	5	0	4	9	0.080	0.000	0.109	0.189
HEALTH PHYSICS PERSONNEL	6	0	0	6	0.735	0.000	0.000	0.735
SUPERVISORY PERSONNEL	9	0	56	65	0.516	0.000	1.815	2.331
ENGINEERING PERSONNEL	2	0	1	3	0.004	0.000	0.013	0.017
TOTAL	42	0	129	171	3.060	0.000	3.364	6.424
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	1	1	0.000	0.000	0.017	0.017
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.150	0.150
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	3	3	0.295	0.000	0.045	0.340
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	1	0	4	5	0.295	0.000	0.212	0.507
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	168	2	135	305	6.879	0.005	3.772	10.656
OPERATIONS PERSONNEL	114	1	28	143	5.911	0.000	4.171	10.082
HEALTH PHYSICS PERSONNEL	41	0	2	43	3.656	0.000	0.201	3.857
SUPERVISORY PERSONNEL	119	15	188	322	2.570	0.010	2.863	5.443
ENGINEERING PERSONNEL	123	4	7	134	1.298	0.000	0.020	1.318
GRAND TOTALS	565	22	360	947	20.314	0.015	11.027	31.356

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***FITZPATRICK** 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	109	0	317	426	61.800	0.000	110.600	172.400
OPERATIONS PERSONNEL	74	6	15	95	40.730	0.720	4.790	46.240
HEALTH PHYSICS PERSONNEL	52	0	25	77	21.250	0.000	6.770	28.020
SUPERVISORY PERSONNEL	14	0	23	37	3.500	0.000	5.780	9.280
ENGINEERING PERSONNEL	12	0	8	20	3.270	0.000	2.760	6.030
TOTAL	261	6	388	655	130.550	0.720	130.700	261.970
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	4	0	2	6	3.410	0.000	0.650	4.060
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	4	0	2	6	3.410	0.000	0.650	4.060
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	0	1	0.270	0.000	0.000	0.270
OPERATIONS PERSONNEL	1	0	0	1	0.720	0.000	0.000	0.720
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.730	0.000	0.000	0.730
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	0	4	1.720	0.000	0.000	1.720
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	11	11	0.000	0.000	2.040	2.040
OPERATIONS PERSONNEL	0	1	0	1	0.000	0.020	0.000	0.020
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.050	0.000	0.090	0.140
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	1	12	14	0.050	0.020	2.130	2.200
WASTE PROCESSING								
MAINTENANCE PERSONNEL	13	0	36	49	11.950	0.000	1.200	13.150
OPERATIONS PERSONNEL	2	0	6	8	1.440	0.000	0.170	1.610
HEALTH PHYSICS PERSONNEL	7	0	3	10	3.590	0.000	0.670	4.260
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	22	0	46	68	16.980	0.000	2.040	19.020
REFUELING								
MAINTENANCE PERSONNEL	1	0	0	1	0.690	0.000	0.000	0.690
OPERATIONS PERSONNEL	5	0	1	6	2.730	0.000	0.000	2.730
HEALTH PHYSICS PERSONNEL	3	0	2	5	0.990	0.000	0.310	1.300
SUPERVISORY PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	10	0	3	13	4.410	0.000	0.310	4.720
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	128	0	366	494	78.120	0.000	114.490	192.610
OPERATIONS PERSONNEL	82	7	22	111	45.620	0.740	4.960	51.320
HEALTH PHYSICS PERSONNEL	65	0	31	96	26.610	0.000	7.840	34.450
SUPERVISORY PERSONNEL	15	0	24	39	3.500	0.000	5.780	9.280
ENGINEERING PERSONNEL	12	0	8	20	3.270	0.000	2.760	6.030
GRAND TOTALS	302	7	451	760	157.120	0.740	135.330	293.690

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	1	0	0	1	0.388	0.004	0.001	0.393
OPERATIONS PERSONNEL	32	0	0	32	8.434	0.000	0.000	8.434
HEALTH PHYSICS PERSONNEL	17	0	14	31	6.085	0.000	3.617	9.702
SUPERVISORY PERSONNEL	2	0	0	2	0.757	0.000	0.000	0.757
ENGINEERING PERSONNEL	2	0	0	2	0.799	0.000	0.001	0.800
TOTAL	54	0	14	68	16.463	0.004	3.619	20.086
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	54	18	45	117	17.199	5.426	16.392	39.017
OPERATIONS PERSONNEL	0	0	0	0	0.399	0.000	0.005	0.404
HEALTH PHYSICS PERSONNEL	20	0	27	47	6.050	0.000	7.721	13.771
SUPERVISORY PERSONNEL	7	0	0	7	2.201	0.014	1.163	3.378
ENGINEERING PERSONNEL	11	1	1	13	3.421	0.495	0.750	4.666
TOTAL	92	19	73	184	29.270	5.935	26.031	61.236
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	15	14	7	36	4.040	4.072	2.127	10.239
OPERATIONS PERSONNEL	0	0	0	0	0.083	0.000	0.017	0.100
HEALTH PHYSICS PERSONNEL	3	0	17	0	0.849	0.000	4.330	5.179
SUPERVISORY PERSONNEL	0	0	0	0	0.059	0.000	0.200	0.259
ENGINEERING PERSONNEL	6	0	35	41	1.564	0.014	17.892	19.470
TOTAL	24	14	59	97	6.595	4.086	24.566	35.247
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	1	14	16	0.559	0.344	5.007	5.910
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.189	0.000	1.122	1.311
SUPERVISORY PERSONNEL	0	0	0	0	0.084	0.000	0.039	0.123
ENGINEERING PERSONNEL	3	0	6	9	0.742	0.000	4.098	4.840
TOTAL	4	1	20	25	1.574	0.344	10.266	12.184
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.014	0.005	0.008	0.027
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	8	0	3	11	1.814	0.000	1.500	3.314
SUPERVISORY PERSONNEL	0	0	0	0	0.003	0.000	0.000	0.003
ENGINEERING PERSONNEL	0	0	0	0	0.001	0.000	0.002	0.003
TOTAL	8	0	3	11	1.832	0.005	1.510	3.347
REFUELING								
MAINTENANCE PERSONNEL	35	21	8	64	12.471	9.880	4.698	27.049
OPERATIONS PERSONNEL	0	0	0	0	1.749	0.000	0.000	1.749
HEALTH PHYSICS PERSONNEL	5	0	24	29	1.372	0.000	5.442	6.814
SUPERVISORY PERSONNEL	2	0	0	2	1.290	0.000	0.268	1.558
ENGINEERING PERSONNEL	8	0	5	13	3.314	0.100	1.790	5.204
TOTAL	50	21	37	108	20.196	9.980	12.198	42.374
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	106	54	74	234	34.671	19.731	28.233	82.635
OPERATIONS PERSONNEL	32	0	0	32	10.665	0.000	0.022	10.687
HEALTH PHYSICS PERSONNEL	53	0	85	138	16.359	0.000	23.732	40.091
SUPERVISORY PERSONNEL	11	0	0	11	4.394	0.014	1.670	6.078
ENGINEERING PERSONNEL	30	1	47	78	9.841	0.609	24.533	34.983
GRAND TOTALS	232	55	206	493	75.930	20.354	78.190	174.474

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	163	163	0.000	0.000	187.880	187.880
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	36	36	0.000	0.000	13.346	13.346
SUPERVISORY PERSONNEL	0	0	9	9	0.000	0.000	4.767	4.767
ENGINEERING PERSONNEL	2	0	5	7	0.258	0.000	1.426	1.684
TOTAL	2	0	213	215	0.258	0.000	207.419	207.677
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	163	163	0.000	0.000	187.880	187.880
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	36	36	0.000	0.000	13.346	13.343
SUPERVISORY PERSONNEL	0	0	9	9	0.000	0.000	4.767	4.767
ENGINEERING PERSONNEL	2	0	5	7	0.258	0.000	1.426	1.684
GRAND TOTALS	2	0	213	215	0.258	0.000	207.419	207.677

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: *GINNA

TYPE: PWR

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	469	174	214	857	0.395	0.057	0.040	0.492
OPERATIONS PERSONNEL	3166	1	28	3195	3.751	0.000	0.000	3.751
HEALTH PHYSICS PERSONNEL	878	0	1860	2738	1.772	0.000	2.694	4.466
SUPERVISORY PERSONNEL	8	0	0	8	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	123	188	304	615	0.055	0.288	0.086	0.429
TOTAL	4644	363	2406	7413	5.974	0.345	2.820	9.139
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	3080	611	1545	5236	2.068	0.684	1.127	3.879
OPERATIONS PERSONNEL	819	4	95	918	1.149	0.000	0.006	1.155
HEALTH PHYSICS PERSONNEL	6	0	0	6	0.103	0.000	0.000	0.103
SUPERVISORY PERSONNEL	1060	0	3749	4809	1.275	0.000	10.684	11.959
ENGINEERING PERSONNEL	68	468	718	1254	0.139	0.456	0.424	1.019
TOTAL	5033	1083	6107	12223	4.734	1.140	12.241	18.115
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	20	50	71	0.000	0.172	0.451	0.623
OPERATIONS PERSONNEL	70	0	0	70	0.434	0.000	0.000	0.434
HEALTH PHYSICS PERSONNEL	13	0	2	15	0.006	0.000	0.000	0.006
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	227	189	416	0.000	1.287	1.536	2.823
TOTAL	84	247	241	572	0.440	1.459	1.987	3.886
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	857	801	2652	4110	5.080	20.998	25.849	51.927
OPERATIONS PERSONNEL	60	0	0	60	0.283	0.000	0.000	0.283
HEALTH PHYSICS PERSONNEL	103	0	989	1092	1.836	0.000	6.393	8.229
SUPERVISORY PERSONNEL	11	0	1	12	0.138	0.000	0.000	0.138
ENGINEERING PERSONNEL	25	92	2067	2184	0.146	1.718	44.588	46.452
TOTAL	856	893	5709	7458	7.483	22.716	76.830	107.029
WASTE PROCESSING								
MAINTENANCE PERSONNEL	29	5	6	40	0.010	0.000	0.000	0.010
OPERATIONS PERSONNEL	6	0	0	6	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	35	0	196	231	0.017	0.000	0.519	0.536
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	18	2	20	0.000	0.005	0.000	0.005
TOTAL	70	23	204	297	0.027	0.005	0.519	0.551
REFUELING								
MAINTENANCE PERSONNEL	56	45	35	136	1.664	0.618	0.364	2.646
OPERATIONS PERSONNEL	113	25	886	1024	0.954	0.545	15.283	16.782
HEALTH PHYSICS PERSONNEL	5	0	122	127	0.078	0.000	0.698	0.776
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	21	25	46	0.000	0.510	0.174	0.684
TOTAL	174	91	1068	1333	2.696	1.673	16.519	20.888
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	4292	1656	4502	10450	9.217	22.529	27.831	59.577
OPERATIONS PERSONNEL	4234	30	1009	5273	6.571	0.545	15.289	22.405
HEALTH PHYSICS PERSONNEL	1040	0	3169	4209	3.812	0.000	10.304	14.116
SUPERVISORY PERSONNEL	1079	0	3750	4829	1.414	0.000	10.684	12.098
ENGINEERING PERSONNEL	216	1014	3305	4535	0.340	4.264	46.808	51.412
GRAND TOTALS	10861	2700	15735	29296	21.354	27.338	110.916	159.608

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	4	0	2	6	1.090	0.003	0.377	1.470
OPERATIONS PERSONNEL	1	0	0	1	1.183	0.000	0.003	1.186
HEALTH PHYSICS PERSONNEL	28	7	27	62	13.315	2.209	10.278	25.802
SUPERVISORY PERSONNEL	1	0	0	1	0.275	0.000	0.015	0.290
ENGINEERING PERSONNEL	0	0	0	0	0.172	0.000	0.000	0.172
TOTAL	34	7	29	70	16.035	2.212	10.673	28.920
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	157	25	417	599	70.723	8.093	153.983	232.799
OPERATIONS PERSONNEL	58	0	11	69	25.683	0.002	7.547	33.232
HEALTH PHYSICS PERSONNEL	28	1	8	37	9.666	0.428	2.793	12.887
SUPERVISORY PERSONNEL	11	1	17	29	3.338	0.386	4.177	7.901
ENGINEERING PERSONNEL	16	0	2	18	6.192	0.011	0.988	7.191
TOTAL	270	27	455	752	115.602	8.920	169.488	294.010
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	64	64	0.084	0.000	24.246	24.330
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.026	0.026
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.018	0.003	0.004	0.025
SUPERVISORY PERSONNEL	3	0	31	34	1.094	0.026	9.393	10.513
ENGINEERING PERSONNEL	2	0	0	2	0.371	0.001	0.055	0.427
TOTAL	5	0	95	100	1.567	0.030	33.724	35.321
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	38	38	0.118	0.000	11.142	11.260
OPERATIONS PERSONNEL	1	0	2	3	0.453	0.000	0.534	0.987
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.022	0.000	0.070	0.092
SUPERVISORY PERSONNEL	0	0	2	2	0.347	0.007	0.401	0.755
ENGINEERING PERSONNEL	0	0	0	0	0.416	0.000	0.000	0.416
TOTAL	1	0	42	43	1.356	0.007	12.147	13.510
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	161	25	521	707	72.015	8.096	189.748	269.859
OPERATIONS PERSONNEL	60	0	13	73	27.319	0.002	8.110	35.431
HEALTH PHYSICS PERSONNEL	56	8	35	99	23.021	2.640	13.145	38.806
SUPERVISORY PERSONNEL	15	1	50	66	5.054	0.419	13.986	19.459
ENGINEERING PERSONNEL	18	0	2	20	7.151	0.012	1.043	8.206
GRAND TOTALS	310	34	621	965	134.560	11.169	226.032	371.761

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	51	15	205	271	8.142	0.961	25.812	34.915
OPERATIONS PERSONNEL	44	0	0	44	25.250	0.000	0.000	25.250
HEALTH PHYSICS PERSONNEL	19	0	45	64	4.308	0.000	9.867	14.175
SUPERVISORY PERSONNEL	2	1	1	4	0.310	0.030	0.006	0.346
ENGINEERING PERSONNEL	15	4	30	49	1.309	0.370	0.640	2.319
TOTAL	131	20	281	432	39.319	1.361	36.325	77.005
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	53	37	325	415	17.697	4.759	37.410	59.866
OPERATIONS PERSONNEL	21	0	0	21	0.893	0.000	0.000	0.893
HEALTH PHYSICS PERSONNEL	18	0	44	62	2.443	0.000	0.811	3.254
SUPERVISORY PERSONNEL	2	1	1	4	0.065	0.040	0.075	0.180
ENGINEERING PERSONNEL	15	5	174	194	1.385	0.307	11.193	12.885
TOTAL	109	43	544	696	22.483	5.106	49.489	77.078
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	18	8	231	257	7.494	0.636	83.549	91.679
OPERATIONS PERSONNEL	4	0	0	4	0.015	0.000	0.000	0.015
HEALTH PHYSICS PERSONNEL	5	0	30	35	0.485	0.000	6.483	6.968
SUPERVISORY PERSONNEL	0	1	1	2	0.000	0.040	0.037	0.077
ENGINEERING PERSONNEL	9	4	159	172	0.766	0.405	122.283	123.454
TOTAL	36	13	421	470	8.760	1.081	212.352	222.193
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	33	21	143	197	6.171	4.557	21.639	32.367
OPERATIONS PERSONNEL	3	0	0	3	0.260	0.000	0.000	0.260
HEALTH PHYSICS PERSONNEL	5	0	9	14	0.185	0.000	0.365	0.550
SUPERVISORY PERSONNEL	1	1	1	3	0.010	0.095	0.021	0.126
ENGINEERING PERSONNEL	12	2	17	31	0.805	0.360	1.434	2.599
TOTAL	54	24	170	248	7.431	5.012	23.459	35.902
WASTE PROCESSING								
MAINTENANCE PERSONNEL	3	4	14	21	0.005	0.303	0.088	0.396
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	17	0	34	51	4.321	0.000	12.211	16.532
SUPERVISORY PERSONNEL	1	0	0	1	0.145	0.000	0.000	0.145
ENGINEERING PERSONNEL	1	0	3	4	0.020	0.000	0.028	0.048
TOTAL	22	4	51	77	4.491	0.303	12.327	17.121
REFUELING								
MAINTENANCE PERSONNEL	16	3	69	88	2.290	0.100	30.076	32.466
OPERATIONS PERSONNEL	2	0	0	2	0.065	0.000	0.000	0.065
HEALTH PHYSICS PERSONNEL	4	0	9	13	0.035	0.000	0.390	0.425
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.142	0.142
ENGINEERING PERSONNEL	4	0	2	6	0.200	0.000	0.260	0.460
TOTAL	26	3	81	110	2.590	0.100	30.868	33.558
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	174	88	987	1249	41.799	11.316	198.574	251.689
OPERATIONS PERSONNEL	74	0	0	74	26.483	0.000	0.000	26.483
HEALTH PHYSICS PERSONNEL	68	0	171	239	11.777	0.000	30.127	41.904
SUPERVISORY PERSONNEL	6	4	5	15	0.530	0.205	0.281	1.016
ENGINEERING PERSONNEL	56	15	385	456	4.485	1.442	135.838	141.765
GRAND TOTALS	378	107	1548	2033	85.074	12.963	364.820	462.857

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	2	0	2	4	0.432	0.000	0.509	0.941
OPERATIONS PERSONNEL	1	0	0	1	2.319	0.000	0.247	2.566
HEALTH PHYSICS PERSONNEL	19	0	6	25	4.979	0.032	2.064	7.075
SUPERVISORY PERSONNEL	0	0	0	0	0.108	0.003	0.012	0.121
ENGINEERING PERSONNEL	0	0	0	0	0.322	0.021	0.027	0.370
TOTAL	22	0	8	30	8.158	0.056	2.859	11.073
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	3	3	1.775	0.026	2.044	3.845
OPERATIONS PERSONNEL	0	0	0	0	0.192	0.000	0.005	0.197
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.580	0.000	0.018	0.598
SUPERVISORY PERSONNEL	0	0	0	0	0.013	0.000	0.015	0.028
ENGINEERING PERSONNEL	0	0	0	0	0.287	0.007	0.129	0.423
TOTAL	0	0	3	3	2.847	0.033	2.211	5.091
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	0	0	2	0.294	0.035	0.012	0.341
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.001	0.001
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.032	0.000	0.000	0.032
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.084	0.001	0.000	0.085
TOTAL	2	0	0	2	0.410	0.036	0.013	0.459
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	13	0	37	50	5.726	0.000	10.778	16.504
OPERATIONS PERSONNEL	1	0	0	1	0.391	0.000	0.030	0.421
HEALTH PHYSICS PERSONNEL	10	0	0	10	2.851	0.000	0.095	2.946
SUPERVISORY PERSONNEL	0	0	0	0	0.018	0.000	0.000	0.018
ENGINEERING PERSONNEL	1	0	2	3	0.431	0.001	0.468	0.900
TOTAL	25	0	39	64	9.417	0.001	11.371	20.789
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.490	0.000	0.239	0.729
OPERATIONS PERSONNEL	0	0	0	0	0.098	0.000	0.000	0.098
HEALTH PHYSICS PERSONNEL	2	0	0	2	1.420	0.000	0.072	1.492
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.019	0.000	0.189	0.208
TOTAL	3	0	1	4	2.027	0.000	0.500	2.527
REFUELING								
MAINTENANCE PERSONNEL	47	4	102	153	14.489	0.941	36.067	51.497
OPERATIONS PERSONNEL	12	0	1	13	4.671	0.000	0.641	5.312
HEALTH PHYSICS PERSONNEL	17	0	20	37	5.613	0.002	5.168	10.783
SUPERVISORY PERSONNEL	0	0	4	4	0.408	0.062	1.357	1.827
ENGINEERING PERSONNEL	15	0	133	148	5.648	0.386	65.944	71.978
TOTAL	91	4	260	355	30.829	1.391	109.177	141.397
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	65	4	144	213	23.206	1.002	49.649	73.857
OPERATIONS PERSONNEL	14	0	1	15	7.671	0.000	0.924	8.595
HEALTH PHYSICS PERSONNEL	48	0	26	74	15.475	0.034	7.417	22.926
SUPERVISORY PERSONNEL	0	0	4	4	0.545	0.065	1.384	1.994
ENGINEERING PERSONNEL	16	0	136	152	6.791	0.416	66.757	73.964
GRAND TOTALS	143	4	311	458	53.688	1.517	126.131	181.336

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	32	0	0	32	12.622	0.042	3.088	15.752
OPERATIONS PERSONNEL	67	0	0	67	34.843	0.000	0.000	34.843
HEALTH PHYSICS PERSONNEL	62	4	21	87	20.765	1.173	6.668	28.606
SUPERVISORY PERSONNEL	10	0	0	10	4.044	0.008	0.536	4.588
ENGINEERING PERSONNEL	2	0	0	2	1.189	0.016	0.232	1.417
TOTAL	173	4	21	198	73.443	1.239	10.524	85.206
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	176	13	325	514	112.209	3.371	143.386	258.966
OPERATIONS PERSONNEL	10	0	0	10	3.719	0.000	0.000	3.719
HEALTH PHYSICS PERSONNEL	14	1	3	18	4.221	0.139	1.886	6.246
SUPERVISORY PERSONNEL	25	0	9	34	12.481	0.056	3.050	15.587
ENGINEERING PERSONNEL	11	0	8	19	3.902	0.078	2.396	6.376
TOTAL	236	14	345	595	136.532	3.644	150.718	290.894
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	4	0	20	24	0.777	0.112	15.391	16.280
OPERATIONS PERSONNEL	17	0	0	17	4.326	0.000	0.000	4.326
HEALTH PHYSICS PERSONNEL	7	3	15	25	3.558	1.663	6.733	11.954
SUPERVISORY PERSONNEL	0	0	0	0	0.030	0.038	0.010	0.078
ENGINEERING PERSONNEL	0	0	1	1	0.143	0.050	0.429	0.622
TOTAL	28	3	36	67	8.834	1.863	22.563	33.260
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	29	0	53	82	14.597	0.006	31.465	46.068
OPERATIONS PERSONNEL	0	0	0	0	0.248	0.000	0.000	0.248
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.618	0.028	0.465	1.111
SUPERVISORY PERSONNEL	3	0	0	3	2.097	0.000	0.019	2.116
ENGINEERING PERSONNEL	0	0	3	3	0.046	0.000	1.649	1.695
TOTAL	33	0	56	89	17.606	0.034	33.598	51.238
WASTE PROCESSING								
MAINTENANCE PERSONNEL	4	0	0	4	1.552	0.000	0.230	1.782
OPERATIONS PERSONNEL	1	0	0	1	0.397	0.000	0.000	0.397
HEALTH PHYSICS PERSONNEL	2	2	3	7	1.378	0.325	1.646	3.349
SUPERVISORY PERSONNEL	1	0	0	1	0.330	0.000	0.032	0.362
ENGINEERING PERSONNEL	0	0	0	0	0.009	0.000	0.051	0.060
TOTAL	8	2	3	13	3.666	0.325	1.959	5.950
REFUELING								
MAINTENANCE PERSONNEL	0	0	59	59	0.025	0.037	16.537	16.599
OPERATIONS PERSONNEL	0	0	0	0	0.555	0.000	0.000	0.555
HEALTH PHYSICS PERSONNEL	0	0	9	9	0.096	0.013	2.302	2.411
SUPERVISORY PERSONNEL	1	0	0	1	0.252	0.000	0.071	0.323
ENGINEERING PERSONNEL	0	0	4	4	0.100	0.000	1.443	1.543
TOTAL	1	0	72	73	1.028	0.050	20.353	21.431
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	245	13	457	715	141.782	3.566	210.097	355.447
OPERATIONS PERSONNEL	95	0	0	95	44.088	0.000	0.000	44.088
HEALTH PHYSICS PERSONNEL	86	10	51	147	30.636	3.341	19.700	53.677
SUPERVISORY PERSONNEL	40	0	9	49	19.234	0.102	3.718	23.054
ENGINEERING PERSONNEL	13	0	16	29	5.369	0.144	6.200	11.713
GRAND TOTALS	479	23	533	1035	241.109	7.155	239.715	487.979

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	17	1	5	23	5.324	0.607	1.982	7.913
OPERATIONS PERSONNEL	41	0	0	41	12.724	0.463	1.538	14.725
HEALTH PHYSICS PERSONNEL	18	0	1	19	3.604	0.017	0.593	4.214
SUPERVISORY PERSONNEL	0	0	0	0	0.023	0.008	0.142	0.173
ENGINEERING PERSONNEL	0	0	0	0	0.117	0.088	0.003	0.208
TOTAL	76	1	6	83	21.792	1.183	4.258	27.233
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	11	0	1	12	3.470	0.129	0.359	3.958
OPERATIONS PERSONNEL	3	0	0	3	0.986	0.068	0.116	1.170
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.494	0.000	0.028	0.522
SUPERVISORY PERSONNEL	0	0	0	0	0.001	0.002	0.000	0.003
ENGINEERING PERSONNEL	0	0	0	0	0.102	0.220	0.201	0.323
TOTAL	14	0	1	15	5.053	0.419	0.504	5.976
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	2	38	40	0.055	0.544	13.987	14.586
OPERATIONS PERSONNEL	0	2	21	23	0.103	0.568	10.866	11.537
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.125	0.000	0.066	0.191
SUPERVISORY PERSONNEL	0	0	2	2	0.000	0.000	0.296	0.296
ENGINEERING PERSONNEL	0	1	0	1	0.040	0.355	0.116	0.511
TOTAL	0	5	61	66	0.323	1.467	25.331	27.121
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	86	7	87	180	30.466	2.190	23.103	55.759
OPERATIONS PERSONNEL	19	3	33	55	7.632	1.285	9.008	17.925
HEALTH PHYSICS PERSONNEL	27	0	4	31	5.996	0.070	1.370	7.436
SUPERVISORY PERSONNEL	0	0	1	1	0.046	0.017	0.235	0.298
ENGINEERING PERSONNEL	2	2	1	5	0.388	0.667	0.183	1.238
TOTAL	134	12	126	272	44.528	4.229	33.899	82.656
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.289	0.144	0.000	0.433
OPERATIONS PERSONNEL	7	0	1	8	1.503	0.036	0.392	1.931
HEALTH PHYSICS PERSONNEL	9	1	1	11	3.045	0.252	0.233	3.530
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.139	0.000	0.139
TOTAL	16	1	2	19	4.837	0.571	0.625	6.033
REFUELING								
MAINTENANCE PERSONNEL	2	4	62	68	1.208	1.415	17.881	20.504
OPERATIONS PERSONNEL	6	1	51	58	2.438	0.511	14.033	16.982
HEALTH PHYSICS PERSONNEL	13	0	9	22	4.451	0.000	3.647	8.098
SUPERVISORY PERSONNEL	0	0	0	0	0.031	0.006	0.137	0.174
ENGINEERING PERSONNEL	0	0	1	1	0.091	0.089	0.155	0.335
TOTAL	21	5	123	149	8.219	2.021	35.853	46.093
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	116	14	193	323	40.812	5.029	57.312	103.153
OPERATIONS PERSONNEL	76	6	106	188	25.386	2.931	35.953	64.270
HEALTH PHYSICS PERSONNEL	67	1	15	83	17.715	0.339	5.937	23.991
SUPERVISORY PERSONNEL	0	0	3	3	0.101	0.033	0.810	0.944
ENGINEERING PERSONNEL	2	3	2	7	0.738	1.558	0.458	2.754
GRAND TOTALS	261	24	319	604	84.752	9.890	100.470	195.112

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	46	41	100	187	1.985	2.152	3.042	7.159
OPERATIONS PERSONNEL	73	0	3	76	28.190	0.000	0.271	28.461
HEALTH PHYSICS PERSONNEL	25	3	94	122	8.426	1.386	50.564	60.376
SUPERVISORY PERSONNEL	12	11	11	34	1.540	1.942	1.169	4.651
ENGINEERING PERSONNEL	17	7	21	45	1.967	0.468	0.930	3.365
TOTAL	173	62	229	464	42.088	5.948	55.976	104.012
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	74	110	138	322	5.733	1.983	1.517	9.233
OPERATIONS PERSONNEL	7	0	2	9	0.094	0.000	0.012	0.106
HEALTH PHYSICS PERSONNEL	3	0	5	8	0.107	0.000	0.040	0.147
SUPERVISORY PERSONNEL	3	2	7	12	0.009	0.004	0.094	0.107
ENGINEERING PERSONNEL	9	4	12	25	0.436	0.124	0.168	0.728
TOTAL	96	116	164	376	6.379	2.111	1.831	10.321
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	10	27	46	83	0.502	0.236	1.879	2.617
OPERATIONS PERSONNEL	4	0	1	5	0.130	0.000	0.141	0.271
HEALTH PHYSICS PERSONNEL	4	0	16	20	0.057	0.000	0.283	0.340
SUPERVISORY PERSONNEL	2	3	0	5	0.162	0.028	0.000	0.190
ENGINEERING PERSONNEL	9	1	5	15	0.706	0.002	0.365	1.073
TOTAL	29	31	68	128	1.557	0.266	2.668	4.491
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	83	181	304	568	15.141	74.432	102.250	191.823
OPERATIONS PERSONNEL	28	0	3	31	0.816	0.000	1.275	2.091
HEALTH PHYSICS PERSONNEL	25	0	53	78	1.743	0.000	8.845	10.588
SUPERVISORY PERSONNEL	6	11	12	29	0.496	4.011	1.873	6.380
ENGINEERING PERSONNEL	19	10	30	59	4.164	4.473	6.867	15.504
TOTAL	161	202	402	765	22.360	82.916	121.110	226.386
WASTE PROCESSING								
MAINTENANCE PERSONNEL	26	29	155	210	2.470	3.632	44.015	50.117
OPERATIONS PERSONNEL	3	0	0	3	0.014	0.000	0.000	0.014
HEALTH PHYSICS PERSONNEL	18	0	25	43	1.040	0.000	5.533	6.573
SUPERVISORY PERSONNEL	4	0	3	7	0.348	0.000	0.386	0.734
ENGINEERING PERSONNEL	1	3	7	11	0.001	0.007	0.817	0.825
TOTAL	52	32	190	274	3.873	3.639	50.751	58.263
REFUELING								
MAINTENANCE PERSONNEL	63	80	336	479	2.094	7.816	149.122	159.032
OPERATIONS PERSONNEL	10	0	3	13	1.919	0.000	0.592	2.511
HEALTH PHYSICS PERSONNEL	7	0	30	37	0.348	0.000	1.800	2.148
SUPERVISORY PERSONNEL	11	7	14	32	3.580	1.302	3.285	8.167
ENGINEERING PERSONNEL	17	7	29	53	4.116	0.954	6.806	11.876
TOTAL	108	94	412	614	12.057	10.072	161.605	183.734
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	302 (91)	468 (186)	1079 (508)	1849 (785)	27.905	90.251	301.825	419.981
OPERATIONS PERSONNEL	125 (74)	0 (0)	12 (4)	137 (78)	31.163	0.000	2.291	33.454
HEALTH PHYSICS PERSONNEL	82 (27)	3 (3)	223 (102)	308 (132)	11.721	1.386	67.065	80.172
SUPERVISORY PERSONNEL	38 (15)	34 (12)	47 (17)	119 (44)	6.135	7.287	6.807	20.229
ENGINEERING PERSONNEL	72 (26)	32 (13)	104 (43)	208 (82)	11.390	6.028	15.953	33.371
GRAND TOTALS	619 (233)	537 (214)	1465 (674)	2621 (1121)	88.314	104.952	393.941	587.207

*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

1995

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	17	0	30	47	2.570	0.000	5.170	7.740
OPERATIONS PERSONNEL	37	0	5	42	6.430	0.000	0.860	7.290
HEALTH PHYSICS PERSONNEL	19	0	7	26	5.450	0.000	0.980	6.430
SUPERVISORY PERSONNEL	5	0	0	5	0.770	0.000	0.000	0.770
ENGINEERING PERSONNEL	4	1	1	6	0.800	0.110	0.100	1.010
TOTAL	82	1	43	126	16.020	0.110	7.110	23.240
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	23	0	68	91	5.110	0.000	12.370	17.480
OPERATIONS PERSONNEL	0	0	4	4	0.000	0.000	0.800	0.800
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	4	0	0	4	0.610	0.000	0.000	0.610
ENGINEERING PERSONNEL	1	0	0	1	0.100	0.000	0.000	0.100
TOTAL	28	0	72	100	5.820	0.000	13.170	18.990
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	1	0	0	1	0.110	0.000	0.000	0.110
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	0.110	0.000	0.000	0.110
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	0	98	138	7.680	0.000	17.540	25.220
OPERATIONS PERSONNEL	38	0	9	47	6.540	0.000	1.660	8.200
HEALTH PHYSICS PERSONNEL	19	0	7	26	5.450	0.000	0.980	6.430
SUPERVISORY PERSONNEL	9	0	0	9	1.380	0.000	0.000	1.380
ENGINEERING PERSONNEL	5	1	1	7	0.900	0.110	0.100	1.110
GRAND TOTALS	111	1	115	227	21.950	0.110	20.280	42.340

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***KEWAUNEE** 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	0.000	0.000	0.315	0.315
OPERATIONS PERSONNEL	4	0	0	4	2.162	0.000	0.000	2.162
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	0.000	0.000	0.000	0.000
TOTAL	4	0	2	6	2.164	0.000	0.315	2.479
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	8	0	16	24	4.415	0.083	5.170	9.668
OPERATIONS PERSONNEL	1	0	1	2	1.010	0.000	0.190	1.200
HEALTH PHYSICS PERSONNEL	13	0	19	32	5.521	0.000	6.580	12.101
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	0	1	0.312	0.000	0.000	0.312
TOTAL	23	0	36	59	11.258	0.083	11.940	23.281
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	4	0	14	18	0.786	0.214	6.873	7.873
OPERATIONS PERSONNEL	1	0	10	11	0.178	0.000	2.710	2.888
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.045	0.000	0.000	0.045
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	0	0	2	0.639	0.000	0.000	0.639
TOTAL	7	0	24	31	1.648	0.214	9.583	11.445
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	12	1	76	89	6.254	0.390	44.465	51.109
OPERATIONS PERSONNEL	2	0	2	4	0.907	0.000	0.380	1.287
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.447	0.000	0.000	0.447
SUPERVISORY PERSONNEL	1	0	0	1	0.368	0.000	0.000	0.368
ENGINEERING PERSONNEL	10	0	0	10	5.191	0.000	0.000	5.191
TOTAL	27	1	78	106	13.167	0.390	44.845	58.402
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.106	0.000	0.003	0.109
OPERATIONS PERSONNEL	0	0	0	0	0.250	0.000	0.000	0.250
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.151	0.000	0.000	0.151
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	0.507	0.000	0.003	0.510
REFUELING								
MAINTENANCE PERSONNEL	11	1	0	12	3.939	0.563	0.158	4.660
OPERATIONS PERSONNEL	5	0	0	5	1.756	0.000	0.000	1.756
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	0	0	2	0.604	0.000	0.000	0.604
TOTAL	18	1	0	19	6.299	0.563	0.158	7.020
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	35	2	108	145	15.500	1.250	56.984	73.734
OPERATIONS PERSONNEL	13	0	13	26	6.263	0.000	3.280	9.543
HEALTH PHYSICS PERSONNEL	15	0	19	34	6.164	0.000	6.580	12.744
SUPERVISORY PERSONNEL	1	0	0	1	0.370	0.000	0.000	0.370
ENGINEERING PERSONNEL	15	0	0	15	6.746	0.000	0.000	6.746
GRAND TOTALS	79	2	140	221	35.043	1.250	66.844	103.137

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***LASALLE 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	34	1	18	53	15.962	0.057	3.384	19.423
OPERATIONS PERSONNEL	132	0	115	247	34.419	0.000	5.730	40.149
HEALTH PHYSICS PERSONNEL	43	123	7	173	17.090	1.100	1.677	19.867
SUPERVISORY PERSONNEL	100	0	64	164	6.818	0.000	1.648	8.466
ENGINEERING PERSONNEL	76	0	5	81	8.275	0.000	1.438	9.713
TOTAL	385	124	209	718	82.584	1.157	13.877	97.618
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	229	22	646	897	108.542	1.089	123.030	232.661
OPERATIONS PERSONNEL	19	0	0	19	4.718	0.000	0.001	4.719
HEALTH PHYSICS PERSONNEL	36	146	29	211	14.154	1.313	7.041	22.508
SUPERVISORY PERSONNEL	147	0	69	216	10.153	0.000	1.774	11.927
ENGINEERING PERSONNEL	57	0	91	148	6.083	0.000	25.475	31.558
TOTAL	488	168	835	1491	143.650	2.402	157.321	303.373
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	242	242	0.094	0.000	46.015	46.109
OPERATIONS PERSONNEL	0	0	0	0	0.042	0.000	0.000	0.042
HEALTH PHYSICS PERSONNEL	1	3	21	25	0.238	0.028	5.224	5.490
SUPERVISORY PERSONNEL	6	0	24	30	0.388	0.000	0.615	1.003
ENGINEERING PERSONNEL	8	0	39	47	0.858	0.000	11.022	11.880
TOTAL	15	3	326	344	1.620	0.028	62.876	64.524
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	2	39	43	1.023	0.124	7.262	8.409
OPERATIONS PERSONNEL	0	0	0	0	0.121	0.000	0.000	0.121
HEALTH PHYSICS PERSONNEL	1	1	0	2	0.453	0.006	0.017	0.476
SUPERVISORY PERSONNEL	4	0	6	10	0.257	0.000	0.163	0.420
ENGINEERING PERSONNEL	4	0	0	4	0.475	0.000	0.003	0.478
TOTAL	11	3	45	59	2.329	0.130	7.445	9.904
WASTE PROCESSING								
MAINTENANCE PERSONNEL	3	0	10	13	1.267	0.000	1.917	3.184
OPERATIONS PERSONNEL	1	0	31	32	0.380	0.000	1.546	1.926
HEALTH PHYSICS PERSONNEL	1	4	0	5	0.360	0.034	0.000	0.394
SUPERVISORY PERSONNEL	2	0	4	6	0.113	0.000	0.114	0.227
ENGINEERING PERSONNEL	0	0	0	0	0.026	0.000	0.000	0.026
TOTAL	7	4	45	56	2.146	0.034	3.577	5.757
REFUELING								
MAINTENANCE PERSONNEL	3	0	42	45	1.241	0.000	8.078	9.319
OPERATIONS PERSONNEL	7	0	0	7	1.872	0.000	0.000	1.872
HEALTH PHYSICS PERSONNEL	4	13	2	19	1.591	0.114	0.389	2.094
SUPERVISORY PERSONNEL	18	0	3	21	1.214	0.000	0.080	1.294
ENGINEERING PERSONNEL	1	0	57	58	0.110	0.000	15.934	16.044
TOTAL	33	13	104	150	6.028	0.114	24.481	30.623
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	271	25	997	1293	128.149	1.270	189.686	319.105
OPERATIONS PERSONNEL	159	0	146	305	41.552	0.000	7.277	48.829
HEALTH PHYSICS PERSONNEL	86	290	59	435	33.886	2.595	14.348	50.829
SUPERVISORY PERSONNEL	277	0	170	447	18.943	0.000	4.394	23.337
ENGINEERING PERSONNEL	146	0	192	338	15.827	0.000	53.872	69.699
GRAND TOTALS	939	315	1564	2818	238.357	3.865	269.577	511.799

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	335	268	978	1581	28.968	11.579	47.037	87.584
OPERATIONS PERSONNEL	224	33	172	429	15.462	1.612	9.916	26.990
HEALTH PHYSICS PERSONNEL	43	4	41	88	7.998	0.744	4.374	13.116
SUPERVISORY PERSONNEL	10	3	17	30	0.279	0.018	0.243	0.540
ENGINEERING PERSONNEL	101	78	29	208	5.586	1.915	0.632	8.133
TOTAL	713	386	1237	2336	58.293	15.868	62.202	136.363
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	139	81	287	507	7.537	3.612	47.462	58.611
OPERATIONS PERSONNEL	101	15	31	147	3.878	0.211	0.973	5.062
HEALTH PHYSICS PERSONNEL	30	2	17	49	1.561	0.068	0.779	2.428
SUPERVISORY PERSONNEL	2	0	6	8	0.026	0.000	0.055	0.081
ENGINEERING PERSONNEL	38	18	5	61	0.945	0.782	0.052	1.779
TOTAL	310	116	346	772	13.947	4.693	49.321	67.961
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	2	62	64	0.000	0.177	13.836	14.013
OPERATIONS PERSONNEL	1	0	0	1	0.035	0.000	0.000	0.035
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.010	0.000	0.110	0.120
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.028	0.028
TOTAL	2	2	64	68	0.045	0.177	13.974	14.196
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	59	76	70	205	4.529	5.839	3.464	13.832
OPERATIONS PERSONNEL	12	2	28	42	0.560	0.088	0.910	1.558
HEALTH PHYSICS PERSONNEL	19	1	15	35	0.914	0.027	0.628	1.569
SUPERVISORY PERSONNEL	1	0	0	1	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	9	4	0	13	0.306	0.100	0.000	0.406
TOTAL	100	83	113	296	6.310	6.054	5.002	17.366
WASTE PROCESSING								
MAINTENANCE PERSONNEL	49	78	38	165	6.202	1.256	0.192	7.650
OPERATIONS PERSONNEL	29	4	31	64	1.755	0.103	0.838	2.696
HEALTH PHYSICS PERSONNEL	18	1	14	33	0.938	0.033	0.337	1.308
SUPERVISORY PERSONNEL	1	0	0	1	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	10	1	0	11	0.519	0.837	0.000	1.356
TOTAL	107	84	83	274	9.415	2.229	1.367	13.011
REFUELING								
MAINTENANCE PERSONNEL	16	96	67	179	0.250	6.381	1.376	8.007
OPERATIONS PERSONNEL	11	6	42	59	0.155	0.024	1.779	1.958
HEALTH PHYSICS PERSONNEL	14	1	10	25	0.336	0.080	0.532	0.948
SUPERVISORY PERSONNEL	2	0	1	3	0.027	0.000	0.001	0.028
ENGINEERING PERSONNEL	6	1	6	13	0.040	0.025	0.077	0.142
TOTAL	49	104	126	279	0.808	6.510	3.765	11.083
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	598 (502)	601 (418)	1502 (1433)	2701 (2353)	47.486	28.844	113.367	189.697
OPERATIONS PERSONNEL	378 (294)	60 (112)	304 (212)	742 (618)	21.845	2.038	14.416	38.299
HEALTH PHYSICS PERSONNEL	125 (48)	9 (8)	98 (45)	232 (101)	11.757	0.972	6.760	19.489
SUPERVISORY PERSONNEL	16 (18)	3 (17)	24 (75)	43 (110)	0.334	0.018	0.299	0.651
ENGINEERING PERSONNEL	164 (156)	102 (195)	41 (119)	307 (470)	7.396	3.659	0.789	11.844
GRAND TOTALS	1281 (1018)	775 (750)	1989 (1884)	4025 (3652)	88.818	35.531	135.631	259.980

*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

1995

PLANT: *MAINE YANKEE TYPE: PWR

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	5	0	8	13	1.660	0.000	4.077	5.737
OPERATIONS PERSONNEL	43	0	18	61	18.057	0.000	19.684	37.741
HEALTH PHYSICS PERSONNEL	22	0	120	142	13.376	0.000	69.780	83.156
SUPERVISORY PERSONNEL	1	0	2	3	0.452	0.000	0.800	1.252
ENGINEERING PERSONNEL	4	0	1	5	2.259	0.000	4.332	6.591
TOTAL	75	0	149	224	35.804	0.000	98.673	134.477
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	46	0	202	248	31.602	0.000	82.377	113.979
OPERATIONS PERSONNEL	22	0	17	39	10.066	0.000	6.938	17.004
HEALTH PHYSICS PERSONNEL	14	0	46	60	6.322	0.000	26.576	32.898
SUPERVISORY PERSONNEL	14	0	30	44	4.710	0.000	16.640	21.350
ENGINEERING PERSONNEL	16	0	187	203	8.047	0.000	174.922	182.969
TOTAL	112	0	482	[illegible]	60.747	0.000	307.453	368.200
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	21	21	0.025	0.000	11.095	11.120
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.035	0.035
HEALTH PHYSICS PERSONNEL	0	0	6	6	0.020	0.000	3.760	3.780
SUPERVISORY PERSONNEL	0	0	10	10	0.085	0.000	6.930	7.015
ENGINEERING PERSONNEL	2	0	28	30	0.595	0.000	12.137	12.732
TOTAL	2	0	65	67	0.725	0.000	33.957	34.682
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	6	0	24	30	2.606	0.000	8.170	10.776
OPERATIONS PERSONNEL	0	0	4	4	0.680	0.000	0.702	1.382
HEALTH PHYSICS PERSONNEL	1	0	3	4	0.235	0.000	1.438	1.673
SUPERVISORY PERSONNEL	0	0	3	3	0.555	0.000	1.815	2.370
ENGINEERING PERSONNEL	3	0	99	102	1.328	0.000	62.427	63.755
TOTAL	10	0	133	143	5.404	0.000	74.552	79.956
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	0	2	0.480	0.000	0.000	0.480
OPERATIONS PERSONNEL	2	0	0	2	0.855	0.000	0.000	0.855
HEALTH PHYSICS PERSONNEL	3	0	0	3	0.815	0.000	0.165	0.980
SUPERVISORY PERSONNEL	2	0	0	2	0.520	0.000	0.030	0.550
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.030	0.030
TOTAL	9	0	0	9	2.670	0.000	0.225	2.895
REFUELING								
MAINTENANCE PERSONNEL	30	0	114	144	17.396	0.000	52.377	69.773
OPERATIONS PERSONNEL	23	0	4	27	8.884	0.000	1.312	10.196
HEALTH PHYSICS PERSONNEL	6	0	36	42	1.440	0.000	17.175	18.615
SUPERVISORY PERSONNEL	5	0	17	22	3.022	0.000	9.991	13.013
ENGINEERING PERSONNEL	7	0	40	47	2.209	0.000	20.483	22.692
TOTAL	71	0	211	282	32.951	0.000	101.338	134.289
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	89	0	369	458	53.769	0.000	158.096	211.865
OPERATIONS PERSONNEL	90	0	43	133	38.542	0.000	28.671	67.213
HEALTH PHYSICS PERSONNEL	46	0	211	257	22.208	0.000	118.894	141.102
SUPERVISORY PERSONNEL	22	0	62	84	9.344	0.000	36.206	45.550
ENGINEERING PERSONNEL	32	0	355	387	14.438	0.000	274.331	288.769
GRAND TOTALS	279	0	1040	1319	138.301	0.000	616.198	754.499

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	106	185	48	339	0.821	1.089	0.086	1.996
OPERATIONS PERSONNEL	23	0	12	35	0.918	0.000	0.353	1.271
HEALTH PHYSICS PERSONNEL	18	0	19	37	1.377	0.000	0.453	1.830
SUPERVISORY PERSONNEL	1	0	0	1	0.020	0.000	0.000	0.020
ENGINEERING PERSONNEL	5	3	0	8	0.153	0.057	0.000	0.210
TOTAL	153	188	79	420	3.289	1.146	0.892	5.327
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	106	203	62	371	23.688	44.229	14.312	82.229
OPERATIONS PERSONNEL	26	0	16	42	3.399	0.000	2.887	6.286
HEALTH PHYSICS PERSONNEL	18	0	19	37	2.544	0.000	2.423	4.967
SUPERVISORY PERSONNEL	1	0	0	1	0.096	0.000	0.000	0.096
ENGINEERING PERSONNEL	5	3	0	8	0.718	0.370	0.000	1.088
TOTAL	156	206	97	459	30.445	44.599	19.622	94.666
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	45	17	8	70	0.817	0.765	0.360	1.942
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	4	7	0.014	0.000	0.029	0.043
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	17	12	77	0.831	0.765	0.389	1.985
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	44	23	9	76	1.010	0.336	1.178	2.524
OPERATIONS PERSONNEL	2	0	4	6	0.044	0.000	0.069	0.113
HEALTH PHYSICS PERSONNEL	9	0	4	13	0.316	0.000	0.044	0.360
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	0	1	0.003	0.000	0.000	0.003
TOTAL	56	23	17	96	1.373	0.336	1.291	3.000
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	1	2	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	0	0	13	13	0.000	0.000	0.174	0.174
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	2	0	14	16	0.000	0.000	0.174	0.174
REFUELING								
MAINTENANCE PERSONNEL	1	10	0	11	0.000	0.010	0.000	0.010
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	1	10	0	11	0.000	0.010	0.000	0.010
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	303 (107)	438 (203)	128 (62)	869 (372)	26.336	46.429	15.936	88.701
OPERATIONS PERSONNEL	51 (26)	0 (0)	45 (16)	96 (42)	4.361	0.000	3.483	7.844
HEALTH PHYSICS PERSONNEL	49 (18)	0 (0)	46 (19)	95 (37)	4.251	0.000	2.949	7.200
SUPERVISORY PERSONNEL	2 (1)	0 (0)	0 (0)	2 (1)	0.116	0.000	0.000	0.116
ENGINEERING PERSONNEL	11 (5)	6 (3)	0 (0)	17 (8)	0.874	0.427	0.000	1.301
GRAND TOTALS	416 (157)	444 (206)	219 (97)	1079 (460)	35.938	43.856	22.368	105.162

*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

1995

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	50	24	198	272	2.143	0.565	1.521	4.229
OPERATIONS PERSONNEL	60	1	26	87	11.018	0.001	1.391	12.410
HEALTH PHYSICS PERSONNEL	47	5	39	91	4.173	0.316	6.069	10.558
SUPERVISORY PERSONNEL	1	0	0	1	0.121	0.000	0.000	0.121
ENGINEERING PERSONNEL	13	10	15	38	0.262	0.096	0.019	0.377
TOTAL	171	40	278	489	17.717	0.978	9.000	27.695
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	106	66	522	694	7.829	1.614	10.323	19.766
OPERATIONS PERSONNEL	16	1	6	23	0.072	0.002	0.000	0.074
HEALTH PHYSICS PERSONNEL	23	3	20	46	0.771	0.002	1.344	2.117
SUPERVISORY PERSONNEL	3	0	6	9	0.011	0.000	0.216	0.227
ENGINEERING PERSONNEL	19	20	49	88	0.823	0.521	1.073	2.417
TOTAL	167	90	603	860	9.506	2.139	12.956	24.601
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	5	5	0.000	0.000	0.015	0.015
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.007	0.000	0.000	0.007
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	1	4	6	0.000	0.004	0.024	0.028
TOTAL	3	1	9	13	0.007	0.004	0.039	0.050
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	86	66	689	841	11.852	10.328	407.606	429.786
OPERATIONS PERSONNEL	37	1	25	63	3.714	0.190	7.685	11.589
HEALTH PHYSICS PERSONNEL	42	3	38	83	6.416	0.073	9.568	16.057
SUPERVISORY PERSONNEL	2	0	6	8	0.024	0.000	1.678	1.702
ENGINEERING PERSONNEL	19	18	58	95	2.375	2.863	30.401	35.639
TOTAL	186	88	816	1090	24.381	13.454	456.936	494.773
WASTE PROCESSING								
MAINTENANCE PERSONNEL	45	37	235	317	1.431	0.034	3.376	4.841
OPERATIONS PERSONNEL	5	0	11	16	0.007	0.000	0.391	0.398
HEALTH PHYSICS PERSONNEL	24	1	18	43	0.629	0.000	1.040	1.669
SUPERVISORY PERSONNEL	2	0	0	2	0.223	0.000	0.000	0.223
ENGINEERING PERSONNEL	2	0	7	9	0.000	0.000	0.003	0.003
TOTAL	78	38	271	387	2.290	0.034	4.810	7.134
REFUELING								
MAINTENANCE PERSONNEL	34	13	163	210	1.122	0.895	22.285	24.302
OPERATIONS PERSONNEL	11	0	3	14	1.254	0.000	0.001	1.255
HEALTH PHYSICS PERSONNEL	23	1	8	32	1.432	0.010	0.664	2.106
SUPERVISORY PERSONNEL	0	0	2	2	0.000	0.000	0.006	0.006
ENGINEERING PERSONNEL	6	7	11	24	0.523	1.079	2.498	4.100
TOTAL	74	21	187	282	4.331	1.984	25.454	31.769
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	321	206	1812	2339	24.377	13.436	445.126	482.939
OPERATIONS PERSONNEL	129	3	71	203	16.065	0.193	9.468	25.726
HEALTH PHYSICS PERSONNEL	161	13	123	297	13.428	0.401	18.685	32.514
SUPERVISORY PERSONNEL	8	0	14	22	0.379	0.000	1.900	2.279
ENGINEERING PERSONNEL	60	56	144	260	3.983	4.563	34.018	42.564
GRAND TOTALS	679	278	2164	3121	58.232	18.593	509.197	586.022

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	209	111	1158	1478	16.079	5.282	75.971	97.332
OPERATIONS PERSONNEL	77	8	51	136	17.760	0.441	0.539	18.740
HEALTH PHYSICS PERSONNEL	94	7	83	184	10.735	0.525	11.168	22.428
SUPERVISORY PERSONNEL	4	0	9	13	0.032	0.000	0.181	0.213
ENGINEERING PERSONNEL	27	26	55	108	1.231	0.257	1.859	3.347
TOTAL	411	152	1356	1919	45.837	6.505	89.718	142.060
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	165	75	738	978	27.628	3.085	58.329	89.022
OPERATIONS PERSONNEL	52	3	29	84	1.385	0.012	0.300	1.697
HEALTH PHYSICS PERSONNEL	43	2	41	86	3.609	0.039	2.547	6.195
SUPERVISORY PERSONNEL	4	0	6	10	0.145	0.000	0.216	0.361
ENGINEERING PERSONNEL	23	19	35	77	0.745	0.471	0.656	1.872
TOTAL	287	99	849	1235	33.512	3.587	62.048	99.147
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	40	57	384	481	1.089	0.727	53.702	55.518
OPERATIONS PERSONNEL	11	1	3	15	0.480	0.257	0.000	0.737
HEALTH PHYSICS PERSONNEL	25	2	34	61	0.134	0.073	0.951	1.158
SUPERVISORY PERSONNEL	1	0	2	3	0.060	0.000	0.014	0.074
ENGINEERING PERSONNEL	16	21	42	79	0.781	0.568	15.365	16.714
TOTAL	93	81	465	639	2.544	1.625	70.032	74.201
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	19	7	52	78	0.269	0.044	0.170	0.483
OPERATIONS PERSONNEL	2	0	2	4	0.002	0.000	0.000	0.002
HEALTH PHYSICS PERSONNEL	8	1	4	13	0.077	0.017	0.116	0.210
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	10	6	2	18	0.559	0.155	0.033	0.747
TOTAL	39	14	61	114	0.907	0.216	0.319	1.442
WASTE PROCESSING								
MAINTENANCE PERSONNEL	119	74	379	572	4.101	0.086	4.740	8.927
OPERATIONS PERSONNEL	24	3	31	58	0.292	0.000	0.040	0.332
HEALTH PHYSICS PERSONNEL	68	1	59	128	1.708	0.000	1.173	2.881
SUPERVISORY PERSONNEL	4	0	0	4	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	15	3	15	33	0.003	0.198	0.013	0.214
TOTAL	230	81	484	795	6.105	0.284	5.966	12.355
REFUELING								
MAINTENANCE PERSONNEL	120	73	665	858	14.387	1.826	34.673	50.886
OPERATIONS PERSONNEL	34	5	24	63	2.389	1.078	0.033	3.500
HEALTH PHYSICS PERSONNEL	46	5	48	99	3.232	0.256	4.258	7.746
SUPERVISORY PERSONNEL	3	0	3	6	0.097	0.000	0.002	0.099
ENGINEERING PERSONNEL	13	11	32	56	0.523	0.102	0.743	1.368
TOTAL	216	94	772	1082	20.628	3.262	39.709	63.599
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	672	397	3376	4445	63.553	11.030	227.585	302.168
OPERATIONS PERSONNEL	200	20	140	360	22.308	1.788	0.912	25.008
HEALTH PHYSICS PERSONNEL	284	18	289	571	19.495	0.910	20.213	40.618
SUPERVISORY PERSONNEL	16	0	21	37	0.335	0.000	0.413	0.748
ENGINEERING PERSONNEL	104	86	181	371	3.842	1.751	18.669	24.262
GRAND TOTALS	1276	521	3987	5784	109.533	15.479	267.792	392.804

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	24	4	2	30	4.081	1.496	0.861	6.438
OPERATIONS PERSONNEL	31	0	0	31	9.239	0.000	0.066	9.305
HEALTH PHYSICS PERSONNEL	16	3	2	21	4.996	0.505	0.348	5.849
SUPERVISORY PERSONNEL	7	0	1	8	2.810	0.151	0.445	3.406
ENGINEERING PERSONNEL	8	0	0	8	2.580	0.000	0.000	2.580
TOTAL	86	7	5	98	23.706	2.152	1.720	27.578
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	18	7	2	27	3.750	1.439	0.342	5.531
OPERATIONS PERSONNEL	0	0	0	0	0.070	0.000	0.000	0.070
HEALTH PHYSICS PERSONNEL	3	5	1	9	0.803	1.616	0.254	2.673
SUPERVISORY PERSONNEL	1	0	0	1	0.384	0.047	0.006	0.437
ENGINEERING PERSONNEL	0	0	0	0	0.186	0.000	0.000	0.186
TOTAL	22	12	3	37	5.193	3.102	0.602	8.897
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	2	2	4	0.000	0.425	0.321	0.746
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	1	0	1	0.016	0.324	0.000	0.340
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	3	2	5	0.016	0.749	0.321	1.086
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	6	1	7	0.003	2.005	0.351	2.359
OPERATIONS PERSONNEL	0	0	0	0	0.008	0.000	0.000	0.008
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.032	0.000	0.164	0.196
SUPERVISORY PERSONNEL	0	0	0	0	0.010	0.000	0.000	0.010
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	6	1	7	0.053	2.005	0.515	2.573
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	4	0	4	0.354	2.512	0.017	2.883
OPERATIONS PERSONNEL	1	0	0	1	0.162	0.000	0.000	0.162
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.579	0.091	0.340	1.010
SUPERVISORY PERSONNEL	0	0	0	0	0.109	0.000	0.000	0.109
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	2	4	1	7	1.204	2.603	0.357	4.164
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	42	23	7	72	8.188	7.877	1.892	17.957
OPERATIONS PERSONNEL	32	0	0	32	9.479	0.000	0.066	9.545
HEALTH PHYSICS PERSONNEL	20	8	4	32	6.410	2.212	1.106	9.728
SUPERVISORY PERSONNEL	8	1	1	10	3.329	0.522	0.451	4.302
ENGINEERING PERSONNEL	8	0	0	8	2.766	0.000	0.000	2.766
GRAND TOTALS	110	32	12	154	30.172	10.611	3.515	44.298

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***NINE MILE POINT 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	2041	0	3096	5137	10.509	0.000	12.074	22.583
OPERATIONS PERSONNEL	6657	0	736	7393	36.285	0.000	1.757	38.042
HEALTH PHYSICS PERSONNEL	2985	0	919	3904	10.415	0.000	3.734	14.149
SUPERVISORY PERSONNEL	350	4	251	605	1.510	0.008	0.742	2.260
ENGINEERING PERSONNEL	1694	22	480	2196	4.323	0.314	1.721	6.358
TOTAL	13727	26	5482	19235	63.042	0.322	20.028	83.392
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	3830	0	15643	19473	57.481	0.000	199.164	256.645
OPERATIONS PERSONNEL	328	0	806	1134	3.054	0.000	2.175	5.229
HEALTH PHYSICS PERSONNEL	1789	0	1749	3538	15.296	0.000	19.796	35.092
SUPERVISORY PERSONNEL	257	26	386	669	4.275	0.129	2.616	7.020
ENGINEERING PERSONNEL	1501	32	1479	3012	9.724	0.125	16.314	26.163
TOTAL	7705	58	20063	27826	89.830	0.254	240.065	330.149
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	32	0	4112	4144	0.679	0.000	126.183	126.862
OPERATIONS PERSONNEL	2	0	1	3	0.003	0.000	0.002	0.005
HEALTH PHYSICS PERSONNEL	9	0	25	34	0.059	0.000	0.129	0.188
SUPERVISORY PERSONNEL	16	1	159	176	0.483	0.001	4.075	4.559
ENGINEERING PERSONNEL	53	1	1323	1377	0.578	0.000	51.397	51.975
TOTAL	112	2	5620	5734	1.802	0.001	181.786	183.589
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	116	0	3541	3657	2.013	0.000	73.413	75.426
OPERATIONS PERSONNEL	12	0	74	86	0.070	0.000	0.200	0.270
HEALTH PHYSICS PERSONNEL	67	0	17	84	0.291	0.000	0.074	0.365
SUPERVISORY PERSONNEL	15	1	174	190	0.061	0.010	2.095	2.166
ENGINEERING PERSONNEL	62	11	903	976	1.113	0.181	5.499	6.793
TOTAL	272	12	4709	4993	3.548	0.191	81.281	85.020
WASTE PROCESSING								
MAINTENANCE PERSONNEL	136	0	134	270	1.302	0.000	0.967	2.269
OPERATIONS PERSONNEL	1459	0	296	1755	5.322	0.000	2.262	7.584
HEALTH PHYSICS PERSONNEL	108	0	22	130	0.454	0.000	0.125	0.579
SUPERVISORY PERSONNEL	31	0	0	31	0.087	0.000	0.000	0.087
ENGINEERING PERSONNEL	9	0	112	121	0.028	0.000	0.865	0.893
TOTAL	1743	0	564	2307	7.193	0.000	4.219	11.412
REFUELING								
MAINTENANCE PERSONNEL	97	0	1600	1697	1.739	0.000	23.901	25.640
OPERATIONS PERSONNEL	162	0	47	209	1.185	0.000	0.362	1.547
HEALTH PHYSICS PERSONNEL	216	0	165	381	1.266	0.000	1.102	2.368
SUPERVISORY PERSONNEL	27	0	3	30	0.922	0.000	0.007	0.929
ENGINEERING PERSONNEL	175	0	133	308	1.439	0.000	1.762	3.201
TOTAL	677	0	1948	2625	6.551	0.000	27.134	33.685
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	6252	0	28126	34378	73.723	0.000	435.702	509.425
OPERATIONS PERSONNEL	8620	0	1960	10580	45.919	0.000	6.758	52.677
HEALTH PHYSICS PERSONNEL	5174	0	2897	8071	27.781	0.000	24.960	52.741
SUPERVISORY PERSONNEL	696	32	973	1701	7.338	0.148	9.535	17.021
ENGINEERING PERSONNEL	3494	66	4430	7990	17.205	0.620	77.558	95.383
GRAND TOTALS	24236	98	38386	62720	171.966	0.768	554.513	727.247

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	41	0	0	41	0.460	0.000	0.000	0.460
OPERATIONS PERSONNEL	91	0	0	91	4.666	0.000	0.000	4.666
HEALTH PHYSICS PERSONNEL	19	0	12	31	0.243	0.000	0.034	0.277
SUPERVISORY PERSONNEL	33	0	0	33	0.121	0.000	0.000	0.121
ENGINEERING PERSONNEL	10	0	2	12	0.103	0.000	0.023	0.126
TOTAL	194	0	14	208	5.593	0.000	0.057	5.650
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	236	0	489	725	52.797	0.000	62.604	115.401
OPERATIONS PERSONNEL	210	84	46	340	1.436	0.283	0.102	1.821
HEALTH PHYSICS PERSONNEL	95	4	241	340	11.703	0.035	27.920	39.658
SUPERVISORY PERSONNEL	79	1	9	89	0.626	0.000	0.022	0.648
ENGINEERING PERSONNEL	111	10	48	169	2.586	0.000	0.715	3.301
TOTAL	731	99	833	1663	69.148	0.318	91.363	160.829
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	15	0	44	59	1.467	0.000	7.790	9.257
OPERATIONS PERSONNEL	17	0	0	17	1.504	0.000	0.185	1.689
HEALTH PHYSICS PERSONNEL	10	0	11	21	0.066	0.000	0.195	0.261
SUPERVISORY PERSONNEL	1	0	1	2	0.000	0.000	0.046	0.046
ENGINEERING PERSONNEL	9	0	26	35	1.508	0.000	5.428	6.936
TOTAL	52	0	82	134	4.545	0.000	13.644	18.189
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	88	0	88	176	0.832	0.000	0.388	1.220
OPERATIONS PERSONNEL	131	30	24	185	6.685	0.318	0.279	7.282
HEALTH PHYSICS PERSONNEL	30	0	56	86	0.408	0.000	6.694	7.102
SUPERVISORY PERSONNEL	37	0	3	40	0.633	0.000	0.002	0.635
ENGINEERING PERSONNEL	64	1	8	73	1.707	0.006	0.094	1.807
TOTAL	350	31	179	560	10.265	0.324	7.457	18.046
WASTE PROCESSING								
MAINTENANCE PERSONNEL	56	0	32	88	0.201	0.000	0.079	0.280
OPERATIONS PERSONNEL	14	1	0	15	0.096	0.000	0.000	0.096
HEALTH PHYSICS PERSONNEL	38	0	8	46	0.747	0.000	0.131	0.878
SUPERVISORY PERSONNEL	8	0	0	8	0.029	0.000	0.000	0.029
ENGINEERING PERSONNEL	1	0	0	1	0.003	0.000	0.000	0.003
TOTAL	117	1	40	158	1.076	0.000	0.210	1.286
REFUELING								
MAINTENANCE PERSONNEL	101	0	61	162	10.912	0.000	2.949	13.861
OPERATIONS PERSONNEL	61	7	1	69	2.150	0.229	0.005	2.384
HEALTH PHYSICS PERSONNEL	26	0	51	77	0.531	0.000	1.471	2.002
SUPERVISORY PERSONNEL	18	0	0	18	0.491	0.000	0.000	0.491
ENGINEERING PERSONNEL	6	0	11	17	0.141	0.000	0.059	0.200
TOTAL	212	7	124	343	14.225	0.229	4.484	18.938
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	537	0	714	1251	66.669	0.000	73.810	140.479
OPERATIONS PERSONNEL	524	122	71	717	16.537	0.830	0.571	17.938
HEALTH PHYSICS PERSONNEL	218	4	379	601	13.698	0.035	36.445	50.178
SUPERVISORY PERSONNEL	176	1	13	190	1.900	0.000	0.070	1.970
ENGINEERING PERSONNEL	201	11	95	307	6.048	0.006	6.319	12.373
GRAND TOTALS	1656	138	1272	3066	104.852	0.871	117.215	222.938

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***OCONEE 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	190		375		89		654		4.992	1.762	0.217	6.971
OPERATIONS PERSONNEL	78		0		27		105		15.550	0.000	0.833	16.383
HEALTH PHYSICS PERSONNEL	39		0		74		113		1.720	0.000	3.267	4.987
SUPERVISORY PERSONNEL	5		1		0		6		1.063	0.000	0.000	1.063
ENGINEERING PERSONNEL	1		1		4		6		0.080	0.001	0.004	0.085
TOTAL	313		377		194		884		23.405	1.763	4.321	29.489
ROUTINE MAINTENANCE												
MAINTENANCE PERSONNEL	190		376		84		650		45.069	90.416	8.200	143.685
OPERATIONS PERSONNEL	59		0		43		102		2.220	0.000	16.287	18.507
HEALTH PHYSICS PERSONNEL	37		0		75		112		4.258	0.000	11.266	15.524
SUPERVISORY PERSONNEL	4		1		0		5		0.729	0.252	0.000	0.981
ENGINEERING PERSONNEL	1		0		2		3		0.278	0.000	0.036	0.314
TOTAL	291		377		204		872		52.554	90.668	35.789	179.011
IN-SERVICE INSPECTION												
MAINTENANCE PERSONNEL	48		119		35		202		2.037	15.565	0.217	17.819
OPERATIONS PERSONNEL	1		0		0		1		0.000	0.000	0.833	0.833
HEALTH PHYSICS PERSONNEL	5		0		39		44		0.033	0.000	3.267	3.300
SUPERVISORY PERSONNEL	0		0		0		0		0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1		0		2		3		0.000	0.000	0.004	0.004
TOTAL	55		119		76		250		2.070	15.565	4.321	21.956
SPECIAL MAINTENANCE												
MAINTENANCE PERSONNEL	94		204		45		343		5.406	20.730	9.813	35.949
OPERATIONS PERSONNEL	11		0		13		24		0.050	0.000	0.611	0.661
HEALTH PHYSICS PERSONNEL	20		0		44		64		0.387	0.000	2.041	2.428
SUPERVISORY PERSONNEL	2		1		0		3		0.023	0.159	0.000	0.182
ENGINEERING PERSONNEL	1		1		1		3		0.000	0.185	0.118	0.303
TOTAL	128		206		103		437		5.866	21.074	12.583	39.523
WASTE PROCESSING												
MAINTENANCE PERSONNEL	35		10		1		46		0.879	0.023	0.000	0.902
OPERATIONS PERSONNEL	27		0		34		61		2.832	0.000	1.089	3.921
HEALTH PHYSICS PERSONNEL	30		0		1		31		1.870	0.000	0.013	1.883
SUPERVISORY PERSONNEL	3		0		0		3		0.210	0.000	0.000	0.210
ENGINEERING PERSONNEL	0		0		0		0		0.000	0.000	0.000	0.000
TOTAL	95		10		36		141		5.791	0.023	1.102	6.916
REFUELING												
MAINTENANCE PERSONNEL	23		68		13		104		1.037	8.625	0.561	10.223
OPERATIONS PERSONNEL	0		0		15		15		0.000	0.000	0.181	0.181
HEALTH PHYSICS PERSONNEL	12		0		24		36		0.021	0.000	0.454	0.475
SUPERVISORY PERSONNEL	1		0		0		1		0.014	0.000	0.000	0.014
ENGINEERING PERSONNEL	1		0		0		1		0.041	0.000	0.000	0.041
TOTAL	37		68		52		157		1.113	8.625	1.196	10.934
TOTAL BY JOB FUNCTION												
MAINTENANCE PERSONNEL	580	(190)	152	(378)	267	(93)	1999	(661)	59.420	137.121	19.008	215.549
OPERATIONS PERSONNEL	176	(80)	0	(0)	132	(43)	308	(123)	20.652	0.000	19.834	40.486
HEALTH PHYSICS PERSONNEL	143	(39)	0	(0)	257	(75)	400	(114)	8.289	0.000	20.308	28.597
SUPERVISORY PERSONNEL	15	(5)	3	(1)	0	(0)	18	(6)	2.039	0.411	0.000	2.450
ENGINEERING PERSONNEL	5	(1)	2	(1)	9	(4)	16	(6)	0.399	0.186	0.162	0.747
GRAND TOTALS	919	(315)	157	(380)	665	(215)	2741	(910)	90.799	137.718	59.312	287.829

*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

1995

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	103	0	14	117	5.188	0.000	2.773	7.961
OPERATIONS PERSONNEL	106	0	0	106	11.413	0.000	0.000	11.413
HEALTH PHYSICS PERSONNEL	38	0	0	38	2.329	0.000	0.000	2.329
SUPERVISORY PERSONNEL	7	0	0	7	0.209	0.000	0.000	0.209
ENGINEERING PERSONNEL	9	0	1	10	0.114	0.000	0.200	0.314
TOTAL	263	0	15	278	19.253	0.000	2.973	22.226
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	272	6	136	414	20.360	0.169	1.562	22.091
OPERATIONS PERSONNEL	185	0	9	194	5.041	0.000	0.024	5.065
HEALTH PHYSICS PERSONNEL	58	1	0	59	1.981	0.000	0.000	1.981
SUPERVISORY PERSONNEL	68	3	13	84	0.930	0.003	0.038	0.971
ENGINEERING PERSONNEL	119	2	17	138	2.503	0.004	0.259	2.766
TOTAL	702	12	175	889	30.815	0.176	1.883	32.874
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	36	0	8	44	2.818	0.000	1.162	3.980
OPERATIONS PERSONNEL	6	0	0	6	0.295	0.000	0.000	0.295
HEALTH PHYSICS PERSONNEL	17	0	0	17	0.356	0.000	0.000	0.356
SUPERVISORY PERSONNEL	2	0	0	2	0.545	0.000	0.000	0.545
ENGINEERING PERSONNEL	6	1	0	7	0.201	0.001	0.000	0.202
TOTAL	67	1	8	76	4.215	0.001	1.162	5.378
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	146	6	103	255	12.583	0.347	6.951	19.881
OPERATIONS PERSONNEL	51	0	2	53	1.848	0.000	0.187	2.035
HEALTH PHYSICS PERSONNEL	60	0	1	61	6.334	0.000	0.053	6.387
SUPERVISORY PERSONNEL	9	0	1	10	0.083	0.000	0.012	0.095
ENGINEERING PERSONNEL	27	0	3	30	0.415	0.000	0.724	1.139
TOTAL	293	6	110	409	21.263	0.347	7.927	29.537
WASTE PROCESSING								
MAINTENANCE PERSONNEL	59	0	14	73	0.667	0.000	1.981	2.648
OPERATIONS PERSONNEL	48	0	1	49	0.449	0.000	1.563	2.012
HEALTH PHYSICS PERSONNEL	34	0	0	34	0.684	0.000	0.000	0.684
SUPERVISORY PERSONNEL	3	0	0	3	0.103	0.000	0.000	0.103
ENGINEERING PERSONNEL	1	1	1	3	0.091	0.000	0.135	0.226
TOTAL	145	1	16	162	1.994	0.000	3.679	5.673
REFUELING								
MAINTENANCE PERSONNEL	11	0	2	13	0.041	0.000	0.001	0.042
OPERATIONS PERSONNEL	21	0	0	21	0.256	0.000	0.000	0.256
HEALTH PHYSICS PERSONNEL	7	0	0	7	0.019	0.000	0.000	0.019
SUPERVISORY PERSONNEL	9	0	0	9	0.052	0.000	0.000	0.052
ENGINEERING PERSONNEL	1	0	0	1	0.001	0.000	0.000	0.001
TOTAL	49	0	2	51	0.369	0.000	0.001	0.370
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	627 (264)	12 (8)	277 (170)	916 (462)	41.657	0.516	14.430	56.603
OPERATIONS PERSONNEL	417 (243)	0 (0)	12 (12)	429 (255)	19.302	0.000	1.774	21.076
HEALTH PHYSICS PERSONNEL	214 (81)	1 (1)	1 (1)	216 (83)	11.703	0.000	0.053	11.756
SUPERVISORY PERSONNEL	98 (74)	3 (3)	14 (14)	115 (91)	1.922	0.0[illegible]	0.050	1.975
ENGINEERING PERSONNEL	163 (126)	4 (2)	22 (17)	189 (145)	3.325	0.0[illegible]	1.318	4.648
GRAND TOTALS	1519 (808)	20 (14)	326 (214)	1865 (1036)	77.909	0.524	17.625	96.058

*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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	1	0	4	5	2.095	0.405	2.434	4.934
OPERATIONS PERSONNEL	36	0	0	36	13.831	0.040	0.802	14.673
HEALTH PHYSICS PERSONNEL	31	0	52	83	9.489	0.000	23.269	32.758
SUPERVISORY PERSONNEL	6	0	0	6	2.362	0.031	0.186	2.579
ENGINEERING PERSONNEL	8	0	11	19	3.134	0.143	5.393	8.670
TOTAL	82	0	67	149	30.911	0.619	32.084	63.614
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	75	21	171	267	36.210	6.078	91.979	134.267
OPERATIONS PERSONNEL	12	0	5	17	2.781	0.005	2.340	5.126
HEALTH PHYSICS PERSONNEL	47	0	27	74	12.700	0.000	6.780	19.480
SUPERVISORY PERSONNEL	5	0	2	7	1.972	0.000	0.751	2.723
ENGINEERING PERSONNEL	8	2	22	32	3.336	1.203	7.400	11.939
TOTAL	147	23	227	397	56.999	7.286	109.250	173.535
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	4	82	87	0.611	1.790	57.165	59.586
OPERATIONS PERSONNEL	0	0	0	0	0.120	0.000	0.080	0.200
HEALTH PHYSICS PERSONNEL	2	0	11	13	0.717	0.000	3.031	3.748
SUPERVISORY PERSONNEL	1	0	0	1	0.445	0.000	0.000	0.445
ENGINEERING PERSONNEL	1	8	33	42	0.427	6.642	15.224	22.293
TOTAL	5	12	126	143	2.320	8.432	75.500	86.252
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	4	32	84	120	1.494	10.332	29.578	41.404
OPERATIONS PERSONNEL	0	0	5	5	0.383	0.000	1.370	1.753
HEALTH PHYSICS PERSONNEL	6	0	3	9	2.001	0.000	1.550	3.551
SUPERVISORY PERSONNEL	2	1	3	6	0.729	0.169	1.102	2.000
ENGINEERING PERSONNEL	1	3	18	22	0.815	0.750	6.918	8.483
TOTAL	13	36	113	162	5.422	11.251	40.518	57.191
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.013	0.318	0.336	0.667
OPERATIONS PERSONNEL	0	0	0	0	0.034	0.000	0.070	0.104
HEALTH PHYSICS PERSONNEL	5	0	0	5	3.377	0.000	0.032	3.409
SUPERVISORY PERSONNEL	1	0	0	1	0.461	0.000	0.001	0.462
ENGINEERING PERSONNEL	0	0	0	0	0.033	0.015	0.036	0.084
TOTAL	6	0	0	[illegible]	3.918	0.333	0.475	4.726
REFUELING								
MAINTENANCE PERSONNEL	15	2	28	45	6.481	0.448	26.006	32.935
OPERATIONS PERSONNEL	17	0	3	20	6.016	0.000	0.614	6.630
HEALTH PHYSICS PERSONNEL	1	0	5	6	0.151	0.000	2.497	2.648
SUPERVISORY PERSONNEL	5	0	3	8	1.448	0.000	4.713	6.161
ENGINEERING PERSONNEL	8	1	19	28	2.483	0.155	18.940	21.558
TOTAL	46	3	58	107	16.559	0.603	52.770	69.932
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	96	59	369	524	46.904	19.371	207.498	273.773
OPERATIONS PERSONNEL	65	0	13	78	23.165	0.045	5.276	28.486
HEALTH PHYSICS PERSONNEL	92	0	98	190	28.435	0.000	37.159	65.594
SUPERVISORY PERSONNEL	20	1	8	29	7.417	0.200	6.753	14.370
ENGINEERING PERSONNEL	26	14	103	143	10.208	8.908	53.911	73.027
GRAND TOTALS	299	74	591	964	116.129	28.524	310.597	455.250

*Workers may be counted in more than one category.

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

1995

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	16	0	26	42	5.962	0.000	7.454	13.416
OPERATIONS PERSONNEL	37	0	0	37	12.569	0.000	0.132	12.701
HEALTH PHYSICS PERSONNEL	55	0	59	114	14.015	0.000	16.633	30.648
SUPERVISORY PERSONNEL	6	0	0	6	2.375	0.000	0.044	2.419
ENGINEERING PERSONNEL	6	0	1	7	3.270	0.000	0.606	3.876
TOTAL	120	0	86	206	38.191	0.000	24.869	63.060
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	175	0	390	565	76.694	0.000	168.978	245.672
OPERATIONS PERSONNEL	35	0	5	40	15.497	0.000	1.320	16.817
HEALTH PHYSICS PERSONNEL	56	0	86	142	20.761	0.000	28.679	49.440
SUPERVISORY PERSONNEL	25	0	3	28	8.975	0.000	0.956	9.931
ENGINEERING PERSONNEL	25	0	29	54	15.803	0.000	9.996	25.799
TOTAL	316	0	513	829	137.730	0.000	209.929	347.659
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	26	27	0.325	0.000	9.267	9.592
OPERATIONS PERSONNEL	1	0	1	2	0.320	0.000	0.549	0.869
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.027	0.000	0.304	0.331
SUPERVISORY PERSONNEL	1	0	0	1	0.125	0.000	0.000	0.125
ENGINEERING PERSONNEL	1	0	4	5	0.654	0.000	2.880	3.534
TOTAL	4	0	31	35	1.451	0.000	13.000	14.451
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	34	34	0.177	0.000	12.975	13.152
OPERATIONS PERSONNEL	0	0	0	0	0.070	0.000	0.000	0.070
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.125	0.000	0.480	0.605
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.662	0.662
ENGINEERING PERSONNEL	1	0	3	4	0.308	0.000	0.510	0.818
TOTAL	1	0	38	39	0.680	0.000	14.627	15.307
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	1	2	0.366	0.000	1.160	1.526
OPERATIONS PERSONNEL	0	0	1	1	0.075	0.000	0.444	0.519
HEALTH PHYSICS PERSONNEL	10	0	8	18	3.936	0.000	4.030	7.966
SUPERVISORY PERSONNEL	0	0	0	0	0.156	0.000	0.050	0.206
ENGINEERING PERSONNEL	0	0	0	0	0.003	0.000	0.144	0.147
TOTAL	11	0	10	21	4.536	0.000	5.828	10.364
REFUELING								
MAINTENANCE PERSONNEL	42	0	26	68	17.818	0.000	9.252	27.070
OPERATIONS PERSONNEL	4	0	0	4	1.005	0.000	0.020	1.025
HEALTH PHYSICS PERSONNEL	5	0	12	17	1.921	0.000	4.447	6.368
SUPERVISORY PERSONNEL	11	0	0	11	3.698	0.000	0.000	3.698
ENGINEERING PERSONNEL	4	0	7	11	1.384	0.000	1.839	3.223
TOTAL	66	0	45	111	25.826	0.000	15.558	41.384
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	235	0	503	738	101.342	0.000	209.086	310.428
OPERATIONS PERSONNEL	77	0	7	84	29.536	0.000	2.465	32.001
HEALTH PHYSICS PERSONNEL	126	0	165	291	40.785	0.000	54.573	95.358
SUPERVISORY PERSONNEL	43	0	4	47	15.329	0.000	1.712	17.041
ENGINEERING PERSONNEL	37	0	44	81	21.422	0.000	15.975	37.397
GRAND TOTALS	518	0	723	1241	208.414	0.000	283.811	492.225

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***PEACH BOTTOM 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	442	310	1005	1757	42.861	14.589	47.820	105.270
OPERATIONS PERSONNEL	105	36	100	241	2.424	0.282	3.578	6.284
HEALTH PHYSICS PERSONNEL	22	4	19	45	2.394	0.024	1.596	4.014
SUPERVISORY PERSONNEL	10	8	29	47	0.043	0.028	0.265	0.336
ENGINEERING PERSONNEL	44	64	33	141	0.634	0.931	0.163	1.728
TOTAL	623	422	1186	2231	48.356	15.854	53.422	117.632
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	114	111	293	518	10.547	7.713	23.877	42.137
OPERATIONS PERSONNEL	5	6	22	33	0.182	0.056	1.042	1.280
HEALTH PHYSICS PERSONNEL	2	0	3	5	0.105	0.000	0.040	0.145
SUPERVISORY PERSONNEL	0	0	4	4	0.000	0.000	0.105	0.105
ENGINEERING PERSONNEL	2	7	8	17	0.024	0.094	0.041	0.159
TOTAL	123	124	330	577	10.858	7.863	25.105	43.826
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	17	13	314	344	0.463	0.845	44.185	45.493
OPERATIONS PERSONNEL	0	3	4	7	0.000	0.037	0.744	0.781
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	0.007	0.007
ENGINEERING PERSONNEL	0	0	2	2	0.000	0.000	0.018	0.018
TOTAL	17	16	321	354	0.463	0.882	44.954	46.299
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	135	121	365	621	9.856	6.019	32.724	48.599
OPERATIONS PERSONNEL	12	8	27	47	0.303	0.052	4.287	4.642
HEALTH PHYSICS PERSONNEL	7	0	3	10	0.566	0.000	0.272	0.838
SUPERVISORY PERSONNEL	0	2	1	3	0.000	0.032	0.146	0.178
ENGINEERING PERSONNEL	9	18	10	37	0.096	0.282	0.109	0.487
TOTAL	163	149	406	718	10.821	6.385	37.538	54.744
WASTE PROCESSING								
MAINTENANCE PERSONNEL	12	2	15	29	0.236	0.099	0.491	0.826
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	0.001	0.001
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	12	2	16	30	0.236	0.099	0.492	0.827
REFUELING								
MAINTENANCE PERSONNEL	228	274	812	1314	19.646	43.041	57.932	120.619
OPERATIONS PERSONNEL	43	20	44	107	2.101	1.022	3.238	6.361
HEALTH PHYSICS PERSONNEL	14	2	15	31	1.657	0.009	1.572	3.238
SUPERVISORY PERSONNEL	3	2	9	14	0.176	0.059	0.887	1.122
ENGINEERING PERSONNEL	29	32	15	76	0.908	1.958	0.499	3.365
TOTAL	317	330	895	1542	24.488	46.089	64.128	134.705
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	948 (565)	831 (483)	2804 (1556)	4583 (2594)	83.609	72.306	207.029	362.944
OPERATIONS PERSONNEL	165 (210)	73 (108)	198 (178)	436 (496)	5.010	1.440	12.890	19.349
HEALTH PHYSICS PERSONNEL	45 (49)	6 (9)	40 (27)	91 (85)	4.722	0.033	3.480	8.235
SUPERVISORY PERSONNEL	13 (18)	12 (18)	44 (96)	69 (132)	0.219	0.119	1.410	1.748
ENGINEERING PERSONNEL	84 (95)	121 (184)	68 (98)	273 (377)	1.662	3.265	0.830	5.757
GRAND TOTALS	1255 (927)	1043 (802)	3154 (1955)	5452 (3684)	95.222	77.172	225.639	398.033

*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

1995

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	147	33	145	325	0.579	0.019	0.330	0.928
OPERATIONS PERSONNEL	228	21	17	266	7.903	0.053	0.008	7.964
HEALTH PHYSICS PERSONNEL	63	12	45	120	2.827	0.041	0.549	3.417
SUPERVISORY PERSONNEL	3	4	52	59	0.002	0.003	0.173	0.178
ENGINEERING PERSONNEL	39	90	40	169	0.249	0.317	0.255	0.821
TOTAL	480	160	299	939	11.560	0.433	1.315	13.308
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	216	81	378	675	14.351	3.989	11.410	29.750
OPERATIONS PERSONNEL	324	49	44	417	3.033	0.327	0.191	3.551
HEALTH PHYSICS PERSONNEL	66	15	62	143	2.871	0.828	2.476	6.175
SUPERVISORY PERSONNEL	4	4	40	48	0.000	0.014	0.116	0.130
ENGINEERING PERSONNEL	58	164	68	290	0.379	1.376	0.608	2.363
TOTAL	668	313	592	1573	20.634	6.534	14.801	41.969
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	2	0	4	6	0.010	0.000	0.000	0.010
OPERATIONS PERSONNEL	5	2	0	7	0.007	0.005	0.000	0.012
HEALTH PHYSICS PERSONNEL	8	0	0	8	0.035	0.000	0.000	0.035
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	7	2	9	0.000	0.146	0.000	0.146
TOTAL	15	9	6	30	0.052	0.151	0.000	0.203
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	91	12	48	151	2.981	0.064	0.839	3.884
OPERATIONS PERSONNEL	68	3	5	76	0.805	0.002	0.036	0.843
HEALTH PHYSICS PERSONNEL	32	5	10	47	0.548	0.026	0.074	0.648
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	8	16	2	26	0.016	0.093	0.016	0.125
TOTAL	199	36	65	300	4.350	0.185	0.965	5.500
WASTE PROCESSING								
MAINTENANCE PERSONNEL	74	28	36	138	0.409	0.337	0.201	0.947
OPERATIONS PERSONNEL	78	5	11	94	2.046	0.001	0.045	2.092
HEALTH PHYSICS PERSONNEL	49	14	33	96	0.531	0.426	0.237	1.194
SUPERVISORY PERSONNEL	0	1	4	5	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	13	12	4	29	0.037	0.001	0.000	0.038
TOTAL	214	60	88	362	3.023	0.765	0.483	4.271
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	530	154	611	1295	18.330	4.409	12.780	35.519
OPERATIONS PERSONNEL	703	80	77	860	13.794	0.388	0.280	14.462
HEALTH PHYSICS PERSONNEL	218	46	150	414	6.812	1.321	3.336	11.469
SUPERVISORY PERSONNEL	7	9	96	112	0.002	0.017	0.289	0.308
ENGINEERING PERSONNEL	118	289	116	523	0.681	1.933	0.879	3.493
GRAND TOTALS	1576	578	1050	3204	39.619	8.068	17.564	65.251

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***PILGRIM** 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	170	13	716	899	3.663	0.230	7.868	11.761
OPERATIONS PERSONNEL	126	10	74	210	29.413	0.100	1.567	31.080
HEALTH PHYSICS PERSONNEL	41	4	30	75	3.768	0.436	5.587	9.791
SUPERVISORY PERSONNEL	123	15	89	227	2.854	0.532	1.132	4.518
ENGINEERING PERSONNEL	128	22	48	198	3.852	0.699	0.662	5.213
TOTAL	588	64	957	1609	43.550	1.997	16.816	62.363
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	230	32	796	1058	71.591	6.904	200.870	279.365
OPERATIONS PERSONNEL	110	4	166	280	9.450	0.251	9.914	19.615
HEALTH PHYSICS PERSONNEL	54	3	44	101	19.299	0.099	7.154	26.552
SUPERVISORY PERSONNEL	132	16	106	254	12.934	0.715	8.028	21.675
ENGINEERING PERSONNEL	144	23	59	226	8.354	0.836	6.938	16.628
TOTAL	670	78	1171	1919	122.128	8.805	232.902	363.835
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	66	2	288	356	3.352	0.003	23.525	26.880
OPERATIONS PERSONNEL	7	0	10	17	0.026	0.000	0.312	0.338
HEALTH PHYSICS PERSONNEL	19	0	6	25	0.267	0.000	0.133	0.400
SUPERVISORY PERSONNEL	15	4	13	32	0.164	0.020	0.416	0.600
ENGINEERING PERSONNEL	26	3	2	31	0.514	0.046	0.210	0.770
TOTAL	133	9	319	461	4.323	0.069	24.596	28.988
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	38	3	265	306	1.679	0.023	14.041	15.743
OPERATIONS PERSONNEL	8	0	8	16	0.287	0.000	0.379	0.666
HEALTH PHYSICS PERSONNEL	3	0	1	4	0.007	0.000	0.009	0.016
SUPERVISORY PERSONNEL	2	0	14	16	0.001	0.000	0.314	0.315
ENGINEERING PERSONNEL	13	3	12	28	0.222	0.004	0.915	1.141
TOTAL	64	6	300	370	2.196	0.027	15.658	17.881
WASTE PROCESSING								
MAINTENANCE PERSONNEL	50	3	28	81	0.852	0.098	0.913	1.863
OPERATIONS PERSONNEL	43	2	1	46	6.364	0.624	0.004	6.992
HEALTH PHYSICS PERSONNEL	29	0	2	31	2.114	0.000	0.110	2.224
SUPERVISORY PERSONNEL	15	0	1	16	0.557	0.000	0.000	0.557
ENGINEERING PERSONNEL	7	0	2	9	0.794	0.000	0.017	0.811
TOTAL	144	5	34	183	10.681	0.722	1.044	12.447
REFUELING								
MAINTENANCE PERSONNEL	126	10	165	301	9.176	0.346	38.299	47.821
OPERATIONS PERSONNEL	46	2	25	73	2.524	0.001	2.814	5.339
HEALTH PHYSICS PERSONNEL	28	0	12	40	2.125	0.000	2.083	4.208
SUPERVISORY PERSONNEL	36	4	18	58	2.094	0.012	3.339	5.445
ENGINEERING PERSONNEL	38	2	17	57	0.701	0.319	1.514	2.534
TOTAL	274	18	237	529	16.620	0.678	48.049	65.347
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	680	63	2258	3001	90.313	7.604	285.516	383.433
OPERATIONS PERSONNEL	340	18	284	642	48.064	0.976	14.990	64.030
HEALTH PHYSICS PERSONNEL	174	7	95	276	27.580	0.535	15.076	43.191
SUPERVISORY PERSONNEL	323	39	241	603	18.604	1.279	13.227	33.110
ENGINEERING PERSONNEL	356	53	140	549	14.937	1.904	10.256	27.097
GRAND TOTALS	1873	180	3018	5071	199.498	12.298	339.065	550.861

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	48	0	0	48	11.210	0.000	0.040	11.250
HEALTH PHYSICS PERSONNEL	27	0	0	27	10.440	0.000	0.000	10.440
SUPERVISORY PERSONNEL	10	0	0	10	3.710	0.000	0.000	3.710
ENGINEERING PERSONNEL	8	10	0	18	1.700	1.120	0.360	3.180
TOTAL	93	10	0	103	27.060	1.120	0.400	28.580
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	52	40	0	92	24.360	11.060	0.000	35.420
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	6	0	0	6	0.860	0.000	0.000	0.860
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	58	40	0	98	25.220	11.060	0.000	36.280
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	2	2	0.000	0.000	0.310	0.310
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	4	21	26	0.570	1.560	9.590	11.720
TOTAL	1	4	23	28	0.570	1.560	9.900	12.030
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	52	0	53	105	3.810	0.000	27.120	30.930
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	37	37	0.000	0.000	11.779	11.779
SUPERVISORY PERSONNEL	6	0	2	8	0.110	0.000	2.470	2.580
ENGINEERING PERSONNEL	0	0	68	68	0.000	0.000	38.130	38.130
TOTAL	58	0	160	218	3.920	0.000	79.499	83.419
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	7	7	0.000	0.000	1.270	1.270
OPERATIONS PERSONNEL	48	0	0	48	0.150	0.000	0.000	0.150
HEALTH PHYSICS PERSONNEL	27	0	2	29	0.400	0.000	0.850	1.250
SUPERVISORY PERSONNEL	1	0	0	1	0.210	0.000	0.000	0.210
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	76	0	9	85	0.760	0.000	2.120	2.880
REFUELING								
MAINTENANCE PERSONNEL	52	40	0	92	13.760	10.940	0.000	24.700
OPERATIONS PERSONNEL	48	0	0	48	1.360	0.000	0.000	1.360
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	13	0	0	13	0.790	0.000	0.000	0.790
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	113	40	0	153	15.910	10.940	0.000	26.850
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	156 (52)	80 (40)	62 (62)	298 (154)	41.930	22.000	28.700	92.630
OPERATIONS PERSONNEL	144 (48)	0 (0)	0 (0)	144 (48)	12.720	0.000	0.040	12.760
HEALTH PHYSICS PERSONNEL	54 (27)	0 (0)	39 (39)	93 (66)	10.840	0.000	12.629	23.469
SUPERVISORY PERSONNEL	36 (36)	0 (0)	2 (2)	38 (38)	5.680	0.000	2.470	8.150
ENGINEERING PERSONNEL	9 (9)	14 (14)	89 (89)	112 (112)	2.270	2.680	48.080	53.030
GRAND TOTALS	399 (172)	94 (54)	192 (192)	685 (418)	73.440	24.680	91.919	190.039

*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

1995

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	2	0	0	2	1.044	0.711	0.006	1.761
OPERATIONS PERSONNEL	4	0	0	4	2.799	0.000	0.000	2.799
HEALTH PHYSICS PERSONNEL	6	0	10	16	1.524	0.000	2.822	4.346
SUPERVISORY PERSONNEL	3	0	1	4	1.228	0.146	0.324	1.698
ENGINEERING PERSONNEL	0	0	0	0	0.277	0.000	0.000	0.277
TOTAL	15	0	11	26	6.872	0.857	3.152	10.881
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	24	23	2	49	5.889	7.661	0.873	14.423
OPERATIONS PERSONNEL	1	0	0	1	0.131	0.000	0.000	0.131
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.189	0.000	0.212	0.401
SUPERVISORY PERSONNEL	3	0	8	11	1.408	0.273	2.813	4.494
ENGINEERING PERSONNEL	6	0	0	6	1.527	0.000	0.000	1.527
TOTAL	34	23	10	67	9.144	7.934	3.898	20.976
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	5	32	7	44	1.281	11.190	2.592	15.063
OPERATIONS PERSONNEL	0	0	0	0	0.017	0.000	0.000	0.017
HEALTH PHYSICS PERSONNEL	0	0	7	7	0.273	0.000	1.278	1.551
SUPERVISORY PERSONNEL	1	0	23	24	0.489	0.044	7.738	8.271
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.120	0.120
TOTAL	6	32	37	75	2.060	11.234	11.728	25.022
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	4	5	10	19	1.093	2.265	4.040	7.398
OPERATIONS PERSONNEL	0	0	0	0	0.026	0.000	0.000	0.026
HEALTH PHYSICS PERSONNEL	0	0	3	3	0.098	0.000	0.991	1.089
SUPERVISORY PERSONNEL	1	0	23	24	0.962	0.102	13.838	14.902
ENGINEERING PERSONNEL	1	0	0	1	0.467	0.000	0.000	0.467
TOTAL	6	5	36	47	2.646	2.367	18.869	23.882
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.608	0.075	0.000	0.683
OPERATIONS PERSONNEL	0	0	0	0	0.080	0.000	0.000	0.080
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.216	0.000	0.032	0.248
SUPERVISORY PERSONNEL	0	0	0	0	0.110	0.039	0.000	0.149
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	2	0	0	2	0.994	0.114	0.032	1.140
REFUELING								
MAINTENANCE PERSONNEL	26	43	0	69	6.722	11.349	0.000	18.071
OPERATIONS PERSONNEL	0	0	0	0	0.208	0.000	0.000	0.208
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.282	0.000	0.162	0.444
SUPERVISORY PERSONNEL	1	0	2	3	0.564	0.119	0.488	1.171
ENGINEERING PERSONNEL	1	0	0	1	0.227	0.000	0.000	0.227
TOTAL	28	43	3	74	8.003	11.468	0.650	20.121
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	62	103	19	184	16.637	33.251	7.511	57.399
OPERATIONS PERSONNEL	5	0	0	5	3.241	0.000	0.000	3.241
HEALTH PHYSICS PERSONNEL	7	0	21	28	2.582	0.000	5.497	8.079
SUPERVISORY PERSONNEL	9	0	57	66	4.761	0.723	25.201	30.685
ENGINEERING PERSONNEL	8	0	0	8	2.498	0.000	0.120	2.618
GRAND TOTALS	91	103	97	291	29.719	33.974	38.329	102.022

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	2	0	16	18	1.644	0.000	4.278	5.922
OPERATIONS PERSONNEL	103	0	175	278	36.058	0.000	13.759	49.817
HEALTH PHYSICS PERSONNEL	44	37	17	98	21.711	0.390	4.743	26.844
SUPERVISORY PERSONNEL	108	0	26	134	10.566	0.000	1.273	11.839
ENGINEERING PERSONNEL	84	1	11	96	5.968	0.006	0.700	6.674
TOTAL	341	38	245	624	75.947	0.396	24.753	101.096
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	154	0	844	998	127.688	0.000	229.979	357.667
OPERATIONS PERSONNEL	27	0	0	27	9.477	0.000	0.036	9.513
HEALTH PHYSICS PERSONNEL	28	109	39	176	14.081	1.148	10.566	25.795
SUPERVISORY PERSONNEL	147	0	136	283	14.305	0.000	6.565	20.870
ENGINEERING PERSONNEL	66	0	59	125	4.694	0.000	3.604	8.298
TOTAL	422	109	1078	1609	170.245	1.148	250.750	422.143
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	122	123	0.530	0.000	33.094	33.624
OPERATIONS PERSONNEL	1	0	0	1	0.220	0.000	0.000	0.220
HEALTH PHYSICS PERSONNEL	1	18	3	22	0.545	0.195	0.853	1.593
SUPERVISORY PERSONNEL	2	0	7	9	0.209	0.000	0.330	0.539
ENGINEERING PERSONNEL	13	0	13	26	0.936	0.000	0.818	1.754
TOTAL	18	18	145	181	2.440	0.195	35.095	37.730
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	0	407	412	4.178	0.000	110.755	114.933
OPERATIONS PERSONNEL	3	0	1	4	1.172	0.000	0.085	1.257
HEALTH PHYSICS PERSONNEL	5	19	29	53	2.779	0.196	8.165	11.140
SUPERVISORY PERSONNEL	12	0	81	93	1.150	0.000	3.913	5.063
ENGINEERING PERSONNEL	31	7	68	106	2.184	0.035	4.180	6.399
TOTAL	56	26	586	668	11.463	0.231	127.098	138.792
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	5	5	0.392	0.000	1.229	1.621
OPERATIONS PERSONNEL	26	0	11	37	9.178	0.000	0.834	10.012
HEALTH PHYSICS PERSONNEL	5	0	0	5	2.308	0.003	0.059	2.368
SUPERVISORY PERSONNEL	32	0	0	32	3.062	0.000	0.010	3.072
ENGINEERING PERSONNEL	0	0	0	0	0.026	0.000	0.000	0.026
TOTAL	63	0	16	79	14.964	0.003	2.132	17.099
REFUELING								
MAINTENANCE PERSONNEL	12	0	5	17	9.401	0.000	1.329	10.730
OPERATIONS PERSONNEL	13	0	0	13	4.501	0.000	0.006	4.507
HEALTH PHYSICS PERSONNEL	3	27	0	30	1.398	0.286	0.072	1.756
SUPERVISORY PERSONNEL	17	0	1	18	1.704	0.000	0.061	1.765
ENGINEERING PERSONNEL	5	0	3	8	0.368	0.000	0.175	0.543
TOTAL	50	27	9	86	17.372	0.286	1.643	19.301
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	174	0	1399	1573	143.833	0.000	380.664	524.497
OPERATIONS PERSONNEL	173	0	187	360	60.606	0.000	14.720	75.326
HEALTH PHYSICS PERSONNEL	86	210	88	384	42.820	2.218	24.458	69.496
SUPERVISORY PERSONNEL	318	0	251	569	30.996	0.000	12.152	43.148
ENGINEERING PERSONNEL	199	8	154	361	14.176	0.041	9.477	23.694
GRAND TOTALS	950	218	2079	3247	292.431	2.259	441.471	736.161

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	6	1	5	12	0.005	0.000	0.000	0.005
OPERATIONS PERSONNEL	49	1	3	53	0.241	0.000	0.002	0.243
HEALTH PHYSICS PERSONNEL	22	1	3	26	0.818	0.000	0.108	0.926
SUPERVISORY PERSONNEL	13	1	5	19	0.005	0.000	0.000	0.005
ENGINEERING PERSONNEL	10	0	10	20	0.024	0.000	0.003	0.027
TOTAL	100	4	26	130	1.093	0.000	0.113	1.206
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	29	1	18	48	0.274	0.000	0.012	0.286
OPERATIONS PERSONNEL	13	0	1	14	0.016	0.000	0.001	0.017
HEALTH PHYSICS PERSONNEL	8	0	2	8	0.012	0.000	0.003	0.015
SUPERVISORY PERSONNEL	5	0	0	5	0.005	0.000	0.000	0.005
ENGINEERING PERSONNEL	7	0	3	10	0.005	0.000	0.003	0.008
TOTAL	60	1	24	85	0.312	0.000	0.019	0.331
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	10	0	3	13	0.016	0.000	0.000	0.016
OPERATIONS PERSONNEL	5	0	0	5	0.010	0.000	0.000	0.010
HEALTH PHYSICS PERSONNEL	5	0	1	6	0.087	0.000	0.011	0.098
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	20	0	4	24	0.113	0.000	0.011	0.124
REFUELING								
MAINTENANCE PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	10	0	0	10	0.008	0.000	0.000	0.008
HEALTH PHYSICS PERSONNEL	2	0	1	3	0.003	0.000	0.000	0.003
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
TOTAL	14	0	1	15	0.011	0.000	0.000	0.011
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	46	2	26	74	0.295	0.000	0.012	0.307
OPERATIONS PERSONNEL	77	1	4	82	0.275	0.000	0.003	0.278
HEALTH PHYSICS PERSONNEL	35	1	7	43	0.920	0.000	0.122	1.042
SUPERVISORY PERSONNEL	18	1	5	24	0.010	0.000	0.000	0.010
ENGINEERING PERSONNEL	18	0	13	31	0.029	0.000	0.006	0.035
GRAND TOTALS	194	5	55	254	1.529	0.000	0.143	1.672

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	3	0	3	6	0.530	0.029	0.469	1.028
OPERATIONS PERSONNEL	36	0	0	36	8.268	0.000	0.006	8.274
HEALTH PHYSICS PERSONNEL	18	1	3	22	4.513	0.065	0.421	4.999
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.035	0.035
ENGINEERING PERSONNEL	4	1	1	6	0.522	0.108	0.048	0.678
TOTAL	61	2	8	71	13.833	0.202	0.979	15.014
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	11	1	1	13	1.570	0.214	0.199	1.983
OPERATIONS PERSONNEL	0	0	0	0	0.256	0.000	0.000	0.256
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.068	0.000	0.000	0.068
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.005	0.005
ENGINEERING PERSONNEL	1	0	0	1	0.244	0.011	0.005	0.260
TOTAL	12	1	1	14	2.138	0.225	0.209	2.572
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	9	1	4	14	4.141	0.217	1.188	5.546
OPERATIONS PERSONNEL	2	0	0	2	0.953	0.000	0.000	0.953
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.049	0.000	0.012	0.061
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.017	0.017
ENGINEERING PERSONNEL	0	1	3	4	0.085	0.105	0.684	0.874
TOTAL	11	2	7	20	5.228	0.322	1.901	7.451
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	24	2	60	86	10.283	0.239	14.592	25.114
OPERATIONS PERSONNEL	1	0	0	1	0.228	0.000	0.253	0.481
HEALTH PHYSICS PERSONNEL	1	0	0	1	1.332	0.066	0.314	1.712
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.107	0.107
ENGINEERING PERSONNEL	1	1	0	2	0.343	0.167	0.209	0.719
TOTAL	27	3	60	90	12.186	0.472	15.475	28.133
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	22	22	0.002	0.000	5.496	5.498
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.065	0.065
HEALTH PHYSICS PERSONNEL	2	0	1	3	0.767	0.003	0.654	1.424
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.005	0.000	0.000	0.005
TOTAL	2	0	23	25	0.774	0.003	6.215	6.992
REFUELING								
MAINTENANCE PERSONNEL	3	0	1	4	0.103	0.000	0.085	0.188
OPERATIONS PERSONNEL	0	0	0	0	0.004	0.000	0.000	0.004
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.061	0.000	0.011	0.072
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	1	5	0.168	0.000	0.096	0.264
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	50	4	91	145	16.629	0.699	22.029	39.357
OPERATIONS PERSONNEL	39	0	0	39	9.709	0.000	0.324	10.033
HEALTH PHYSICS PERSONNEL	22	1	4	27	6.790	0.134	1.412	8.336
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.164	0.164
ENGINEERING PERSONNEL	6	3	4	13	1.199	0.391	0.946	2.536
GRAND TOTALS	117	8	100	225	34.327	1.224	24.875	60.426

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	6	0	0	6	2.160	0.007	0.084	2.251
OPERATIONS PERSONNEL	14	0	0	14	4.295	0.000	0.077	4.372
HEALTH PHYSICS PERSONNEL	15	0	0	15	4.320	0.003	0.112	4.435
SUPERVISORY PERSONNEL	0	0	0	0	0.121	0.001	0.002	0.124
ENGINEERING PERSONNEL	0	0	0	0	0.960	0.013	0.132	1.105
TOTAL	35	0	0	35	11.856	0.024	0.407	12.287
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	2	4	1.271	0.021	1.066	2.358
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.005	0.005
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.073	0.000	0.000	0.073
SUPERVISORY PERSONNEL	0	0	0	0	0.003	0.000	0.012	0.015
ENGINEERING PERSONNEL	0	0	0	0	0.047	0.006	0.009	0.062
TOTAL	2	0	2	4	1.394	0.027	1.092	2.513
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.05[illegible]	0.000	0.052	0.104
OPERATIONS PERSONNEL	0	0	0	0	0.0[illegible]	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.419	0.000	0.000	0.419
SUPERVISORY PERSONNEL	0	0	0	0	0.001	0.000	0.000	0.001
ENGINEERING PERSONNEL	1	0	0	1	0.479	0.000	0.141	0.620
TOTAL	2	0	0	2	0.951	0.000	0.193	1.144
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	36	0	7	43	8.672	0.341	2.821	11.834
OPERATIONS PERSONNEL	0	0	0	0	0.140	0.000	0.005	0.145
HEALTH PHYSICS PERSONNEL	4	0	0	4	1.642	0.000	0.034	1.676
SUPERVISORY PERSONNEL	0	0	0	0	0.068	0.000	0.000	0.068
ENGINEERING PERSONNEL	2	0	0	2	1.015	0.040	0.224	1.279
TOTAL	42	0	7	49	11.537	0.381	3.084	15.002
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.033	0.000	0.003	0.036
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	5	0	0	5	1.436	0.000	0.017	1.453
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.032	0.000	0.076	0.108
TOTAL	5	0	0	5	1.501	0.000	0.096	1.597
REFUELING								
MAINTENANCE PERSONNEL	90	27	166	283	40.582	9.304	58.024	107.910
OPERATIONS PERSONNEL	38	0	0	38	10.406	0.000	0.327	10.733
HEALTH PHYSICS PERSONNEL	26	0	38	64	6.785	0.000	11.555	18.340
SUPERVISORY PERSONNEL	14	1	5	20	3.962	0.120	2.243	6.325
ENGINEERING PERSONNEL	24	0	84	108	7.315	0.205	36.133	43.653
TOTAL	192	28	293	513	69.050	9.629	108.282	186.961
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	134	27	175	336	52.770	9.673	62.050	124.493
OPERATIONS PERSONNEL	52	0	0	52	14.841	0.000	0.414	15.255
HEALTH PHYSICS PERSONNEL	51	0	38	89	14.675	0.003	11.718	26.396
SUPERVISORY PERSONNEL	14	1	5	20	4.155	0.121	2.257	6.533
ENGINEERING PERSONNEL	27	0	84	111	9.848	0.264	36.715	46.827
GRAND TOTALS	278	28	302	608	96.289	10.061	113.154	219.504

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	3	1	0	4	1.240	0.185	0.013	1.438
OPERATIONS PERSONNEL	2	0	0	2	0.756	0.150	0.033	0.939
HEALTH PHYSICS PERSONNEL	4	0	0	4	1.329	0.000	0.004	1.333
SUPERVISORY PERSONNEL	0	0	0	0	0.012	0.004	0.000	0.016
ENGINEERING PERSONNEL	0	0	0	0	0.018	0.032	0.000	0.050
TOTAL	9	1	0	10	3.355	0.371	0.050	3.776
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	15	1	7	23	8.221	2.034	5.305	15.560
OPERATIONS PERSONNEL	11	1	0	12	6.171	0.958	1.197	8.326
HEALTH PHYSICS PERSONNEL	17	0	0	17	3.512	0.164	0.418	4.094
SUPERVISORY PERSONNEL	0	0	0	0	0.112	0.037	0.124	0.273
ENGINEERING PERSONNEL	1	0	0	1	0.406	0.558	0.214	1.178
TOTAL	44	2	7	53	18.422	3.751	7.258	29.431
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	1	3	4	0.129	1.075	1.860	3.064
OPERATIONS PERSONNEL	0	1	1	2	0.139	0.569	0.592	1.300
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.018	0.022	0.186	0.226
SUPERVISORY PERSONNEL	0	0	0	0	0.008	0.000	0.051	0.059
ENGINEERING PERSONNEL	0	0	0	0	0.008	0.285	0.037	0.330
TOTAL	0	2	4	6	0.302	1.951	2.726	4.979
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	5	1	22	28	3.728	0.692	7.063	11.483
OPERATIONS PERSONNEL	0	0	1	1	0.498	0.131	0.708	1.337
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.350	0.000	0.041	0.391
SUPERVISORY PERSONNEL	0	0	0	0	0.105	0.008	0.001	0.114
ENGINEERING PERSONNEL	0	0	0	0	0.067	0.005	0.007	0.079
TOTAL	5	1	23	29	4.748	0.836	7.820	13.404
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	1	2	0.330	0.106	0.248	0.684
OPERATIONS PERSONNEL	0	0	0	0	0.034	0.004	0.208	0.246
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.924	0.150	1.082	2.156
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.058	0.030	0.000	0.088
TOTAL	1	0	1	2	1.346	0.290	1.538	3.174
REFUELING								
MAINTENANCE PERSONNEL	24	7	217	248	11.748	5.030	83.195	99.973
OPERATIONS PERSONNEL	4	0	38	42	5.312	0.765	21.851	27.928
HEALTH PHYSICS PERSONNEL	22	0	44	66	9.935	0.179	17.700	27.814
SUPERVISORY PERSONNEL	0	0	3	3	0.171	0.031	2.493	2.695
ENGINEERING PERSONNEL	0	0	0	0	0.335	0.892	0.263	1.490
TOTAL	50	7	302	359	27.501	6.897	125.502	159.900
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	48	11	250	309	25.396	9.122	97.684	132.202
OPERATIONS PERSONNEL	17	2	40	59	12.910	2.577	24.589	40.076
HEALTH PHYSICS PERSONNEL	43	0	44	87	16.068	0.515	19.431	36.014
SUPERVISORY PERSONNEL	0	0	3	3	0.408	0.080	2.669	3.157
ENGINEERING PERSONNEL	1	0	0	1	0.892	1.802	0.521	3.215
GRAND TOTALS	109	13	337	459	55.674	14.096	144.894	214.664

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***SAN ONOFRE 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	17	2	26	45	0.178	0.002	0.116	0.296
OPERATIONS PERSONNEL	3	0	0	3	0.027	0.000	0.000	0.027
HEALTH PHYSICS PERSONNEL	2	0	11	13	0.008	0.000	0.115	0.123
SUPERVISORY PERSONNEL	1	0	0	1	0.009	0.000	0.000	0.009
ENGINEERING PERSONNEL	8	0	2	10	0.112	0.000	0.003	0.115
TOTAL	31	2	39	72	0.334	0.002	0.234	0.570
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	201	28	617	846	82.152	11.192	246.507	339.851
OPERATIONS PERSONNEL	45	25	16	86	9.724	6.109	1.047	16.880
HEALTH PHYSICS PERSONNEL	74	2	126	202	30.094	0.289	38.643	69.026
SUPERVISORY PERSONNEL	5	0	8	13	1.651	0.000	2.968	4.619
ENGINEERING PERSONNEL	35	5	42	82	10.559	2.114	12.289	24.962
TOTAL	360	60	809	1229	134.180	19.704	301.454	455.338
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	22	3	82	107	0.583	0.086	1.412	2.081
OPERATIONS PERSONNEL	3	1	0	4	0.054	0.001	0.000	0.055
HEALTH PHYSICS PERSONNEL	10	0	25	35	0.043	0.000	0.017	0.060
SUPERVISORY PERSONNEL	1	0	3	4	0.018	0.000	0.129	0.147
ENGINEERING PERSONNEL	8	0	7	15	0.373	0.000	0.117	0.490
TOTAL	44	4	117	165	1.071	0.087	1.675	2.833
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	64	4	81	149	0.782	0.140	2.256	3.178
OPERATIONS PERSONNEL	13	6	1	20	0.084	0.050	0.003	0.137
HEALTH PHYSICS PERSONNEL	37	0	14	51	0.180	0.000	0.084	0.264
SUPERVISORY PERSONNEL	1	0	4	5	0.085	0.000	0.139	0.224
ENGINEERING PERSONNEL	9	2	4	15	0.272	0.050	0.195	0.517
TOTAL	124	12	104	240	1.403	0.240	2.677	4.320
WASTE PROCESSING								
MAINTENANCE PERSONNEL	10	1	26	37	0.568	0.282	0.505	1.355
OPERATIONS PERSONNEL	3	3	15	21	1.527	1.033	6.799	9.359
HEALTH PHYSICS PERSONNEL	33	1	63	97	7.540	0.065	17.368	24.973
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	1	0	1	0.000	0.241	0.000	0.241
TOTAL	46	6	104	156	9.635	1.621	24.672	35.928
REFUELING								
MAINTENANCE PERSONNEL	48	3	129	180	16.892	1.409	38.541	56.842
OPERATIONS PERSONNEL	5	3	4	12	0.253	0.141	0.043	0.437
HEALTH PHYSICS PERSONNEL	9	1	11	21	1.346	0.001	0.232	1.579
SUPERVISORY PERSONNEL	1	0	3	4	0.028	0.000	0.965	0.993
ENGINEERING PERSONNEL	17	3	7	27	1.320	0.372	0.391	2.083
TOTAL	80	10	154	244	19.839	1.923	40.172	61.934
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	362 (201)	41 (28)	961 (630)	1364 (859)	101.155	13.111	289.337	403.603
OPERATIONS PERSONNEL	72 (45)	38 (25)	36 (17)	146 (87)	11.669	7.334	7.892	26.895
HEALTH PHYSICS PERSONNEL	165 (74)	4 (2)	250 (135)	419 (211)	39.211	0.355	56.459	96.025
SUPERVISORY PERSONNEL	9 (5)	0 (0)	18 (8)	27 (13)	1.791	0.000	4.201	5.992
ENGINEERING PERSONNEL	77 (35)	11 (5)	62 (42)	150 (82)	12.636	2.777	12.995	28.408
GRAND TOTALS	685 (360)	94 (60)	1327 (832)	2106 (1252)	166.462	23.577	370.884	560.923

*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

1995

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	2	0	0	2	0.136	0.000	0.000	0.136
OPERATIONS PERSONNEL	14	0	1	15	1.318	0.000	0.097	1.415
HEALTH PHYSICS PERSONNEL	2	0	0	2	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	1	0	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	18	1	1	20	1.454	0.000	0.097	1.551
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	35	3	147	185	6.980	0.462	22.607	30.049
OPERATIONS PERSONNEL	23	6	7	36	2.098	0.865	0.852	3.815
HEALTH PHYSICS PERSONNEL	16	0	49	65	4.354	0.000	7.662	12.016
SUPERVISORY PERSONNEL	2	6	0	8	0.020	0.465	0.000	0.485
ENGINEERING PERSONNEL	0	2	37	39	0.000	0.333	7.878	8.211
TOTAL	76	17	240	333	13.452	2.125	38.999	54.576
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	1	0	1	0.000	0.011	0.000	0.011
OPERATIONS PERSONNEL	0	1	0	1	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	2	0	1	3	0.012	0.000	0.000	0.012
SUPERVISORY PERSONNEL	0	1	0	1	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	1	0	1	0.000	0.000	0.000	0.000
TOTAL	2	4	1	7	0.012	0.011	0.000	0.023
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	3	4	0.000	0.000	0.038	0.038
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	0.018	0.018
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.002	0.000	0.013	0.015
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	5	7	0.002	0.000	0.069	0.071
WASTE PROCESSING								
MAINTENANCE PERSONNEL	5	1	17	23	0.468	0.012	1.414	1.894
OPERATIONS PERSONNEL	3	0	1	4	0.152	0.000	0.046	0.198
HEALTH PHYSICS PERSONNEL	8	0	18	26	0.329	0.000	1.963	2.292
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.008	0.008
TOTAL	16	1	37	54	0.949	0.012	3.431	4.392
REFUELING								
MAINTENANCE PERSONNEL	26	2	75	103	1.807	0.165	11.898	13.870
OPERATIONS PERSONNEL	8	3	3	14	0.294	0.483	0.574	1.351
HEALTH PHYSICS PERSONNEL	1	0	17	18	0.002	0.000	1.573	1.575
SUPERVISORY PERSONNEL	2	4	0	6	0.564	0.633	0.000	1.197
ENGINEERING PERSONNEL	0	1	24	25	0.000	0.004	6.295	6.299
TOTAL	37	10	119	166	2.667	1.285	20.340	24.292
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	69	7	242	318	9.391	0.650	35.957	45.998
OPERATIONS PERSONNEL	48	10	13	71	3.862	1.348	1.587	6.797
HEALTH PHYSICS PERSONNEL	30	0	86	116	4.699	0.000	11.211	15.910
SUPERVISORY PERSONNEL	4	12	0	16	0.584	1.098	0.000	1.682
ENGINEERING PERSONNEL	0	4	62	66	0.000	0.337	14.181	14.518
GRAND TOTALS	151	33	403	587	18.536	3.433	62.936	84.905

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***SEQUOYAH 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	90	2	156	248	1.756	0.019	3.292	5.067
OPERATIONS PERSONNEL	53	3	7	63	7.560	0.460	0.061	8.081
HEALTH PHYSICS PERSONNEL	58	3	55	116	6.254	0.213	7.921	14.388
SUPERVISORY PERSONNEL	13	6	0	19	0.773	0.233	0.000	1.006
ENGINEERING PERSONNEL	24	6	9	39	0.676	0.024	0.628	1.328
TOTAL	238	20	227	485	17.019	0.949	11.902	29.870
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	113	4	367	484	29.103	0.682	69.706	99.491
OPERATIONS PERSONNEL	52	5	9	66	1.556	0.145	1.197	2.898
HEALTH PHYSICS PERSONNEL	74	3	60	137	19.400	0.083	7.288	26.771
SUPERVISORY PERSONNEL	18	7	0	25	3.385	0.158	0.000	3.543
ENGINEERING PERSONNEL	31	19	60	110	3.242	0.818	8.368	12.428
TOTAL	288	38	496	822	56.686	1.886	86.559	145.131
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	16	0	48	64	2.427	0.000	9.020	11.447
OPERATIONS PERSONNEL	6	1	4	11	0.714	0.126	0.079	0.919
HEALTH PHYSICS PERSONNEL	28	4	38	70	2.001	0.505	8.566	11.072
SUPERVISORY PERSONNEL	2	5	0	7	0.076	0.810	0.000	0.886
ENGINEERING PERSONNEL	7	23	109	139	0.787	8.102	51.757	60.646
TOTAL	59	33	199	291	6.005	9.543	69.422	84.970
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	62	3	256	321	7.729	0.599	60.076	68.404
OPERATIONS PERSONNEL	33	2	10	45	0.928	0.334	1.233	2.495
HEALTH PHYSICS PERSONNEL	52	1	19	72	2.694	0.008	0.549	3.251
SUPERVISORY PERSONNEL	11	5	2	18	0.457	0.245	0.282	0.984
ENGINEERING PERSONNEL	21	5	72	98	1.636	0.242	18.569	20.447
TOTAL	179	16	359	554	13.444	1.428	80.709	95.581
WASTE PROCESSING								
MAINTENANCE PERSONNEL	8	0	19	27	0.187	0.000	0.405	0.592
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	0.739	0.739
HEALTH PHYSICS PERSONNEL	34	0	17	51	3.266	0.000	0.399	3.665
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.000	0.000	0.810	0.810
TOTAL	42	0	38	80	3.453	0.000	2.353	5.806
REFUELING								
MAINTENANCE PERSONNEL	10	0	21	31	0.456	0.000	2.899	3.355
OPERATIONS PERSONNEL	1	1	3	5	0.078	0.100	0.295	0.473
HEALTH PHYSICS PERSONNEL	7	0	8	15	0.623	0.000	0.194	0.817
SUPERVISORY PERSONNEL	5	0	0	5	1.568	0.000	0.000	1.568
ENGINEERING PERSONNEL	3	2	21	26	0.175	0.234	8.561	8.970
TOTAL	26	3	53	82	2.900	0.334	11.949	15.183
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	299	9	867	1175	41.658	1.300	145.398	188.356
OPERATIONS PERSONNEL	145	12	34	191	10.836	1.165	3.604	15.605
HEALTH PHYSICS PERSONNEL	253	11	197	461	34.238	0.809	24.917	59.964
SUPERVISORY PERSONNEL	49	23	2	74	6.259	1.446	0.282	7.987
ENGINEERING PERSONNEL	86	55	272	413	6.516	9.420	88.693	104.629
GRAND TOTALS	832	110	1372	2314	99.507	14.140	262.894	376.541

*Workers activity counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	3	0	1	4	2.598	0.000	0.497	3.095
OPERATIONS PERSONNEL	11	0	1	12	3.492	0.000	0.330	3.822
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	11	0	12	23	3.788	0.000	3.887	7.675
ENGINEERING PERSONNEL	2	0	0	2	1.214	0.000	0.005	1.219
TOTAL	27	0	14	41	11.092	0.000	4.719	15.811
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	74	0	30	104	26.762	0.000	8.346	35.108
OPERATIONS PERSONNEL	7	0	0	7	1.676	0.000	0.000	1.676
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	20	0	113	133	7.933	0.000	40.534	48.467
ENGINEERING PERSONNEL	6	0	0	6	1.699	0.000	0.043	1.742
TOTAL	107	0	143	250	38.070	0.000	48.923	86.993
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	13	0	18	31	4.603	0.000	5.028	9.631
OPERATIONS PERSONNEL	0	0	0	0	0.036	0.000	0.000	0.036
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	4	0	17	21	1.074	0.000	6.239	7.313
ENGINEERING PERSONNEL	7	0	1	8	1.593	0.000	0.937	2.530
TOTAL	24	0	36	60	7.306	0.000	12.204	19.510
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	13	0	5	18	5.467	0.000	1.425	6.892
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	189	191	1.562	0.000	99.429	100.991
ENGINEERING PERSONNEL	2	0	2	4	0.290	0.000	0.294	0.584
TOTAL	17	0	196	213	7.319	0.000	101.148	108.467
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	2	4	0.575	0.000	0.302	0.877
OPERATIONS PERSONNEL	24	0	0	24	7.366	0.000	0.000	7.366
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	25	0	73	98	9.071	0.000	26.954	36.025
ENGINEERING PERSONNEL	0	0	0	0	0.048	0.000	0.000	0.048
TOTAL	51	0	75	126	17.060	0.000	27.256	44.316
REFUELING								
MAINTENANCE PERSONNEL	16	0	4	20	5.847	0.000	1.650	7.497
OPERATIONS PERSONNEL	2	0	0	2	0.434	0.000	0.000	0.434
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	6	0	89	95	2.627	0.000	30.957	33.584
ENGINEERING PERSONNEL	0	0	0	0	0.343	0.000	0.000	0.343
TOTAL	24	0	93	117	9.251	0.000	32.607	41.858
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	121	0	60	181	45.852	0.000	17.248	63.100
OPERATIONS PERSONNEL	44	0	1	45	13.004	0.000	0.330	13.334
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	68	0	493	561	26.055	0.000	208.000	234.055
ENGINEERING PERSONNEL	17	0	3	20	5.187	0.000	1.279	6.466
GRAND TOTALS	250	0	557	807	90.098	0.000	226.857	316.955

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM) STATION	UTILITY	CONTRACT	TOTAL	TOTAL PERSON-REM STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	5	0	1	6	2.172	0.057	0.936	3.165
OPERATIONS PERSONNEL	40	2	2	44	11.291	0.717	1.236	13.244
HEALTH PHYSICS PERSONNEL	5	0	2	7	1.337	0.002	0.589	1.928
SUPERVISORY PERSONNEL	0	0	0	0	0.009	0.000	0.000	0.009
ENGINEERING PERSONNEL	0	2	0	2	0.000	1.318	0.000	1.318
TOTAL	50	4	5	59	14.809	2.094	2.761	19.664
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	235	3	231	469	113.613	0.716	78.348	192.677
OPERATIONS PERSONNEL	26	8	96	130	9.244	3.770	53.508	66.522
HEALTH PHYSICS PERSONNEL	55	0	87	142	24.337	0.002	38.741	63.080
SUPERVISORY PERSONNEL	1	0	0	1	0.159	0.000	0.000	0.159
ENGINEERING PERSONNEL	0	7	0	7	0.000	2.509	0.141	2.650
TOTAL	317	18	414	749	147.353	6.997	170.738	325.088
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	6	7	0.479	0.058	1.675	2.212
OPERATIONS PERSONNEL	0	5	6	11	0.441	1.095	1.930	3.466
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.068	0.000	0.002	0.070
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.600	0.034	0.634
TOTAL	1	5	12	18	0.988	1.753	3.641	6.382
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	63	0	37	100	20.563	0.003	11.681	32.247
OPERATIONS PERSONNEL	1	0	1	2	0.460	0.063	0.495	1.018
HEALTH PHYSICS PERSONNEL	19	0	3	22	5.005	0.000	0.945	5.950
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	2	0	2	0.000	0.300	0.066	0.366
TOTAL	83	2	41	126	26.028	0.366	13.187	39.581
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	5	6	1.290	0.018	1.496	2.804
OPERATIONS PERSONNEL	0	0	1	1	0.153	0.012	0.395	0.560
HEALTH PHYSICS PERSONNEL	14	0	0	14	5.228	0.000	0.695	5.923
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	2	0	2	0.000	0.779	0.092	0.871
TOTAL	15	2	6	23	6.671	0.809	2.678	10.158
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	1.157	0.000	0.311	1.468
OPERATIONS PERSONNEL	1	1	0	2	1.887	0.113	0.021	2.021
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.020	0.000	0.006	0.026
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.141	0.000	0.141
TOTAL	1	1	0	2	3.064	0.254	0.338	3.656
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	305 (267)	3 (3)	280 (271)	588 (541)	139.274	0.852	94.447	234.573
OPERATIONS PERSONNEL	68 (73)	16 (0)	106 (101)	190 (183)	23.476	5.770	57.585	86.831
HEALTH PHYSICS PERSONNEL	93 (59)	0 (0)	92 (92)	185 (151)	35.995	0.004	40.978	76.977
SUPERVISORY PERSONNEL	1 (1)	0 (0)	0 (0)	1 (1)	0.168	0.000	0.000	0.168
ENGINEERING PERSONNEL	0 (0)	13 (13)	0 (0)	13 (13)	0.000	5.647	0.333	5.980
GRAND TOTALS	467 (400)	32 (25)	478 (464)	977 (889)	198.913	12.273	193.343	404.529

*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

1995

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	0	0	0	0	0.052	0.000	0.056	0.108
OPERATIONS PERSONNEL	0	0	1	1	0.860	0.000	0.156	1.016
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.634	0.000	0.044	0.678
SUPERVISORY PERSONNEL	0	0	0	0	0.051	0.000	0.031	0.082
ENGINEERING PERSONNEL	0	0	0	0	0.110	0.000	0.013	0.123
TOTAL	0	0	1	1	1.707	0.000	0.300	2.007
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	1.390	0.001	0.776	2.167
OPERATIONS PERSONNEL	0	0	0	0	0.257	0.000	0.469	0.726
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.252	0.000	0.020	0.272
SUPERVISORY PERSONNEL	0	0	0	0	0.061	0.000	0.006	0.067
ENGINEERING PERSONNEL	0	0	0	0	0.032	0.000	0.003	0.035
TOTAL	0	0	0	0	1.992	0.001	1.274	3.267
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	1.480	0.000	1.032	2.512
OPERATIONS PERSONNEL	0	0	0	0	0.342	0.000	0.295	0.637
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.341	0.000	0.017	0.358
SUPERVISORY PERSONNEL	0	0	0	0	0.060	0.000	0.000	0.060
ENGINEERING PERSONNEL	0	0	0	0	0.083	0.000	0.151	0.234
TOTAL	3	0	2	5	2.306	0.000	1.495	3.801
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.035	0.000	0.033	0.068
OPERATIONS PERSONNEL	0	0	0	0	0.010	0.000	0.071	0.081
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.573	0.000	0.069	0.642
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	1	0	0	1	0.619	0.000	0.173	0.792
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	3	0	2	5	2.957	0.001	1.897	4.855
OPERATIONS PERSONNEL	0	0	1	1	1.469	0.000	0.991	2.460
HEALTH PHYSICS PERSONNEL	1	0	0	1	1.800	0.000	0.150	1.950
SUPERVISORY PERSONNEL	0	0	0	0	0.173	0.000	0.037	0.210
ENGINEERING PERSONNEL	0	0	0	0	0.225	0.000	0.167	0.392
GRAND TOTALS	4	0	3	7	6.624	0.001	3.242	9.867

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: ***SURRY 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	201	4	336	541	4.138	0.017	1.992	6.147
OPERATIONS PERSONNEL	312	54	43	409	21.628	0.056	0.220	21.904
HEALTH PHYSICS PERSONNEL	89	1	207	297	10.272	0.001	17.876	28.149
SUPERVISORY PERSONNEL	128	8	29	165	2.461	0.001	0.278	2.740
ENGINEERING PERSONNEL	105	8	14	127	0.759	0.005	0.034	0.798
TOTAL	835	75	629	1539	39.258	0.080	20.400	59.738
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	215	11	851	1077	76.140	1.377	108.368	185.885
OPERATIONS PERSONNEL	261	44	28	333	5.911	0.383	1.079	7.373
HEALTH PHYSICS PERSONNEL	58	0	182	240	13.228	0.000	27.962	41.190
SUPERVISORY PERSONNEL	89	3	30	122	5.570	0.012	3.085	8.667
ENGINEERING PERSONNEL	77	10	36	123	3.422	0.038	1.472	4.992
TOTAL	700	68	1127	1895	104.271	1.870	141.966	248.107
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	69	0	294	363	4.513	0.000	44.919	49.432
OPERATIONS PERSONNEL	53	1	4	58	0.191	0.022	0.285	0.498
HEALTH PHYSICS PERSONNEL	37	0	57	94	1.179	0.000	2.657	3.836
SUPERVISORY PERSONNEL	25	1	8	34	0.391	0.000	3.572	3.963
ENGINEERING PERSONNEL	13	1	32	46	1.549	0.000	13.151	14.700
TOTAL	197	3	395	595	7.823	0.022	64.584	72.429
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	44	1	291	336	1.279	0.013	13.861	15.153
OPERATIONS PERSONNEL	24	3	13	40	0.575	0.032	0.035	0.642
HEALTH PHYSICS PERSONNEL	19	0	32	51	0.405	0.000	0.437	0.842
SUPERVISORY PERSONNEL	11	0	23	34	0.122	0.000	0.717	0.839
ENGINEERING PERSONNEL	15	0	1	16	0.263	0.000	0.009	0.272
TOTAL	113	4	360	477	2.344	0.045	15.059	17.748
WASTE PROCESSING								
MAINTENANCE PERSONNEL	41	0	8	49	0.076	0.000	0.039	0.115
OPERATIONS PERSONNEL	30	7	3	40	0.454	0.050	0.005	0.509
HEALTH PHYSICS PERSONNEL	40	0	13	53	0.432	0.000	0.144	0.576
SUPERVISORY PERSONNEL	14	0	1	15	0.130	0.000	0.000	0.130
ENGINEERING PERSONNEL	3	0	0	3	0.001	0.000	0.000	0.001
TOTAL	128	7	25	160	1.093	0.050	0.188	1.331
REFUELING								
MAINTENANCE PERSONNEL	20	0	65	85	0.594	0.000	2.546	3.140
OPERATIONS PERSONNEL	31	14	4	49	1.344	0.116	0.658	2.118
HEALTH PHYSICS PERSONNEL	23	0	39	62	0.493	0.000	0.638	1.131
SUPERVISORY PERSONNEL	17	0	1	18	0.534	0.000	0.056	0.590
ENGINEERING PERSONNEL	3	0	0	3	0.033	0.000	0.000	0.033
TOTAL	94	14	109	217	2.998	0.116	3.898	7.012
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	590	16	1845	2451	86.740	1.407	171.725	259.872
OPERATIONS PERSONNEL	711	123	95	929	30.103	0.659	2.282	33.044
HEALTH PHYSICS PERSONNEL	266	1	530	797	26.009	0.001	49.714	75.724
SUPERVISORY PERSONNEL	284	12	92	388	9.208	0.013	7.708	16.929
ENGINEERING PERSONNEL	216	19	83	318	6.027	0.103	14.666	20.796
GRAND TOTALS	2067	171	2645	4883	158.087	2.183	246.095	406.365

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	1	0	0	1	0.119	0.000	0.000	0.119
OPERATIONS PERSONNEL	55	0	0	55	18.714	0.000	0.000	18.714
HEALTH PHYSICS PERSONNEL	32	1	38	71	13.802	0.104	12.499	26.405
SUPERVISORY PERSONNEL	2	0	0	2	0.477	0.000	0.000	0.477
ENGINEERING PERSONNEL	1	0	0	1	0.316	0.000	0.000	0.316
TOTAL	91	1	38	130	33.428	0.104	12.499	46.031
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	318	19	151	488	142.933	10.782	58.483	212.198
OPERATIONS PERSONNEL	10	0	0	10	4.535	0.000	0.000	4.535
HEALTH PHYSICS PERSONNEL	50	0	34	84	16.521	0.000	10.481	27.002
SUPERVISORY PERSONNEL	10	0	4	14	2.063	0.000	0.957	3.020
ENGINEERING PERSONNEL	21	4	5	30	4.711	0.668	0.837	6.216
TOTAL	409	23	194	626	170.763	11.450	70.758	252.971
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	21	3	94	118	8.915	1.401	44.260	54.576
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	10	10	0.000	0.000	5.302	5.302
SUPERVISORY PERSONNEL	1	1	1	3	0.134	0.152	0.200	0.486
ENGINEERING PERSONNEL	0	0	6	6	0.000	0.000	2.419	2.419
TOTAL	22	4	111	137	9.049	1.553	52.181	62.783
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	47	1	51	99	26.733	0.184	11.583	38.500
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	0.222	0.222
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	8	8	0.000	0.000	1.664	1.664
TOTAL	47	1	60	108	26.733	0.184	13.469	40.386
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	0	1	0.124	0.000	0.000	0.124
OPERATIONS PERSONNEL	0	0	1	1	0.000	0.000	1.310	1.310
HEALTH PHYSICS PERSONNEL	5	0	2	7	1.354	0.000	0.624	1.978
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	3	9	1.478	0.000	1.934	3.412
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	11	0	0	11	1.723	0.000	0.000	1.723
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	1	0	0	1	0.147	0.000	0.000	0.147
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	12	0	0	12	1.870	0.000	0.000	1.870
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	388	23	296	707	178.824	12.367	114.326	305.517
OPERATIONS PERSONNEL	76	0	1	77	24.972	0.000	1.310	26.282
HEALTH PHYSICS PERSONNEL	87	1	85	173	31.677	0.104	29.128	60.909
SUPERVISORY PERSONNEL	14	1	5	20	2.821	0.152	1.157	4.130
ENGINEERING PERSONNEL	22	4	19	45	5.027	0.668	4.920	10.615
GRAND TOTALS	587	29	406	1022	243.321	13.291	150.841	407.453

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	108	5	90	203	1.891	0.081	2.971	4.943
OPERATIONS PERSONNEL	108	1	0	109	11.695	0.026	0.000	11.721
HEALTH PHYSICS PERSONNEL	70	4	23	97	8.554	0.356	1.658	10.568
SUPERVISORY PERSONNEL	167	37	29	233	3.527	0.277	1.289	5.093
ENGINEERING PERSONNEL	59	7	7	73	1.987	0.119	0.178	2.284
TOTAL	512	54	149	715	27.654	0.859	6.096	34.609
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	139	14	397	550	10.264	0.255	5.182	15.701
OPERATIONS PERSONNEL	59	3	4	66	1.043	0.001	0.004	1.048
HEALTH PHYSICS PERSONNEL	28	1	6	35	0.276	0.003	0.033	0.312
SUPERVISORY PERSONNEL	197	35	37	269	2.211	0.098	0.070	2.379
ENGINEERING PERSONNEL	75	13	16	104	0.803	0.059	0.387	1.249
TOTAL	498	66	460	1024	14.597	0.416	5.676	20.689
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	31	1	88	120	0.883	0.008	2.945	3.836
OPERATIONS PERSONNEL	6	1	1	8	0.101	0.049	0.160	0.310
HEALTH PHYSICS PERSONNEL	5	0	1	6	0.052	0.000	0.014	0.066
SUPERVISORY PERSONNEL	19	3	3	25	1.099	0.093	0.025	1.217
ENGINEERING PERSONNEL	9	4	1	14	0.028	0.020	0.104	0.152
TOTAL	70	9	94	173	2.163	0.170	3.248	5.581
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	125	6	740	871	11.874	0.089	92.543	104.506
OPERATIONS PERSONNEL	59	0	3	62	3.742	0.000	0.379	4.121
HEALTH PHYSICS PERSONNEL	40	1	13	54	3.957	0.327	3.855	8.139
SUPERVISORY PERSONNEL	74	5	55	134	3.579	0.134	5.907	9.620
ENGINEERING PERSONNEL	45	7	37	89	2.263	0.078	5.763	8.104
TOTAL	343	19	848	1210	25.415	0.628	108.447	134.490
WASTE PROCESSING								
MAINTENANCE PERSONNEL	56	1	61	118	1.189	0.022	3.057	4.268
OPERATIONS PERSONNEL	63	0	1	64	8.446	0.000	0.127	8.573
HEALTH PHYSICS PERSONNEL	34	1	3	38	0.624	0.000	0.107	0.731
SUPERVISORY PERSONNEL	35	4	3	42	1.542	0.000	0.000	1.542
ENGINEERING PERSONNEL	8	4	3	15	0.010	0.000	0.000	0.010
TOTAL	196	10	71	277	11.811	0.022	3.291	15.124
REFUELING								
MAINTENANCE PERSONNEL	91	1	193	285	5.736	0.004	10.478	16.218
OPERATIONS PERSONNEL	85	0	0	85	4.047	0.000	0.000	4.047
HEALTH PHYSICS PERSONNEL	17	3	5	25	0.705	0.026	0.232	0.963
SUPERVISORY PERSONNEL	46	5	11	62	2.082	0.142	0.606	2.830
ENGINEERING PERSONNEL	18	4	20	42	0.516	0.107	2.818	3.441
TOTAL	257	13	229	499	13.086	0.279	14.134	27.499
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	550 (150)	28 (19)	1569 (835)	2147 (1004)	31.837	0.459	117.176	149.472
OPERATIONS PERSONNEL	380 (116)	5 (3)	9 (4)	394 (123)	29.074	0.076	0.670	29.820
HEALTH PHYSICS PERSONNEL	194 (71)	10 (6)	51 (26)	255 (103)	14.168	0.712	5.899	20.779
SUPERVISORY PERSONNEL	538 (239)	89 (72)	138 (79)	765 (390)	14.040	0.744	7.897	22.681
ENGINEERING PERSONNEL	214 (102)	39 (26)	84 (57)	337 (185)	5.607	0.383	9.250	15.240
GRAND TOTALS	1876 (678)	171 (126)	1851 (1001)	3898 (1805)	94.726	2.374	140.892	237.992

*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

1995

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	28	1	15	44	0.232	0.000	0.002	0.234
OPERATIONS PERSONNEL	91	0	0	91	0.255	0.000	0.000	0.255
HEALTH PHYSICS PERSONNEL	37	1	5	43	0.466	0.000	0.009	0.475
SUPERVISORY PERSONNEL	29	3	6	38	0.212	0.001	0.000	0.213
ENGINEERING PERSONNEL	8	1	0	9	0.004	0.000	0.000	0.004
TOTAL	193	6	26	225	1.169	0.001	0.011	1.181
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	57	0	5	62	0.008	0.000	0.000	0.008
OPERATIONS PERSONNEL	6	0	0	6	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	9	0	0	9	0.005	0.000	0.000	0.005
SUPERVISORY PERSONNEL	4	0	0	4	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	2	0	0	2	0.001	0.000	0.000	0.001
TOTAL	78	0	5	83	0.014	0.000	0.000	0.014
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	4	0	0	4	0.343	0.000	0.000	0.343
OPERATIONS PERSONNEL	1	0	0	1	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	0	3	0.293	0.000	0.000	0.293
SUPERVISORY PERSONNEL	2	0	0	2	0.093	0.000	0.000	0.093
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	10	0	0	10	0.729	0.000	0.000	0.729
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	8	0	0	8	0.000	0.000	0.000	0.000
OPERATIONS PERSONNEL	5	0	0	5	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	3	0	0	3	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	16	0	0	16	0.000	0.000	0.000	0.000
WASTE PROCESSING								
MAINTENANCE PERSONNEL	1	0	1	2	0.017	0.000	0.000	0.017
OPERATIONS PERSONNEL	7	0	0	7	0.080	0.000	0.000	0.080
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	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	8	0	1	9	0.097	0.000	0.000	0.097
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	98 (71)	1 (1)	21 (20)	120 (92)	0.600	0.000	0.002	0.602
OPERATIONS PERSONNEL	110 (95)	0 (0)	0 (0)	110 (95)	0.335	0.000	0.000	0.335
HEALTH PHYSICS PERSONNEL	52 (39)	1 (1)	5 (5)	58 (45)	0.764	0.000	0.009	0.773
SUPERVISORY PERSONNEL	35 (33)	3 (3)	6 (6)	44 (42)	0.305	0.001	0.000	0.306
ENGINEERING PERSONNEL	10 (10)	1 (1)	0 (0)	11 (11)	0.005	0.000	0.000	0.005
GRAND TOTALS	305 (248)	6 (6)	32 (31)	343 (285)	2.009	0.001	0.011	2.021

*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

1995

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		0.080	0.000	0.000	0.080
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		0.057	0.000	0.000	0.057
TOTAL	0		0		0		0		0.281	0.000	0.000	0.281
ROUTINE MAINTENANCE												
MAINTENANCE PERSONNEL	141		4		147		292		41.687	0.804	36.735	79.226
OPERATIONS PERSONNEL	32		0		2		34		10.520	0.000	0.661	11.181
HEALTH PHYSICS PERSONNEL	42		0		55		97		13.974	0.008	11.957	25.939
SUPERVISORY PERSONNEL	5		0		2		7		1.717	0.083	1.267	3.067
ENGINEERING PERSONNEL	16		0		3		19		6.200	0.261	1.267	7.728
TOTAL	236		4		209		449		74.098	1.156	51.887	127.141
IN-SERVICE INSPECTION												
MAINTENANCE PERSONNEL	5		1		67		73		1.164	0.168	21.579	22.911
OPERATIONS PERSONNEL	0		0		0		0		0.452	0.000	0.000	0.452
HEALTH PHYSICS PERSONNEL	0		0		7		7		0.449	0.000	1.496	1.945
SUPERVISORY PERSONNEL	0		1		56		57		0.031	0.126	23.074	23.231
ENGINEERING PERSONNEL	11		0		1		12		3.052	0.082	0.311	3.445
TOTAL	16		2		131		149		5.148	0.376	46.460	51.984
SPECIAL MAINTENANCE												
MAINTENANCE PERSONNEL	7		0		11		18		2.855	0.081	2.920	5.856
OPERATIONS PERSONNEL	0		0		0		0		0.085	0.000	0.000	0.085
HEALTH PHYSICS PERSONNEL	1		0		0		1		0.568	0.000	0.163	0.731
SUPERVISORY PERSONNEL	2		0		0		2		0.238	0.000	0.015	0.253
ENGINEERING PERSONNEL	2		1		0		3		0.475	0.167	0.000	0.642
TOTAL	12		1		11		24		4.201	0.248	3.098	7.547
WASTE PROCESSING												
MAINTENANCE PERSONNEL	0		0		0		0		0.408	0.000	0.004	0.412
OPERATIONS PERSONNEL	0		0		0		0		0.106	0.000	0.056	0.162
HEALTH PHYSICS PERSONNEL	0		0		4		4		0.258	0.000	0.866	1.124
SUPERVISORY PERSONNEL	0		0		0		0		0.005	0.000	0.012	0.017
ENGINEERING PERSONNEL	0		0		0		0		0.001	0.000	0.000	0.001
TOTAL	0		0		4		4		0.778	0.000	0.938	1.716
REFUELING												
MAINTENANCE PERSONNEL	62		0		3		65		27.031	0.000	1.688	28.719
OPERATIONS PERSONNEL	2		0		1		3		2.817	0.000	0.302	3.119
HEALTH PHYSICS PERSONNEL	1		0		7		8		0.426	0.009	2.527	2.962
SUPERVISORY PERSONNEL	1		0		0		1		0.268	0.017	0.011	0.296
ENGINEERING PERSONNEL	4		0		0		4		1.138	0.045	0.095	1.278
TOTAL	70		0		11		81		31.680	0.071	4.623	36.374
TOTAL BY JOB FUNCTION												
MAINTENANCE PERSONNEL	215	(173)	5	(5)	228	(186)	448	(364)	73.145	1.053	62.926	137.124
OPERATIONS PERSONNEL	34	(34)	0	(0)	3	(3)	37	(37)	14.040	0.000	1.019	15.059
HEALTH PHYSICS PERSONNEL	44	(42)	0	(0)	73	(71)	117	(113)	15.819	0.017	17.009	32.845
SUPERVISORY PERSONNEL	8	(5)	1	(1)	58	(58)	67	(64)	2.259	0.226	24.379	26.864
ENGINEERING PERSONNEL	33	(33)	1	(1)	4	(4)	38	(38)	10.923	0.555	1.673	13.151
GRAND TOTALS	334	(287)	7	(7)	366	(322)	707	(616)	116.186	1.851	107.006	225.043

*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

1995

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	65	87	5.124	0.000	23.608	28.732
OPERATIONS PERSONNEL	25	0	1	26	7.484	0.000	0.433	7.917
HEALTH PHYSICS PERSONNEL	12	0	19	31	4.422	0.000	5.414	9.836
SUPERVISORY PERSONNEL	0	0	0	0	0.090	0.000	0.011	0.101
ENGINEERING PERSONNEL	0	0	0	0	0.186	0.000	0.000	0.186
TOTAL	59	0	85	144	17.306	0.000	29.466	46.772
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	23	0	229	252	7.630	0.000	84.114	91.744
OPERATIONS PERSONNEL	2	0	0	2	1.493	0.000	0.037	1.530
HEALTH PHYSICS PERSONNEL	8	0	40	48	3.633	0.000	12.069	15.702
SUPERVISORY PERSONNEL	2	0	0	2	0.482	0.000	0.081	0.563
ENGINEERING PERSONNEL	0	0	1	1	0.065	0.000	0.156	0.221
TOTAL	35	0	270	305	13.303	0.000	96.457	109.760
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	54	54	0.072	0.000	22.257	22.329
OPERATIONS PERSONNEL	0	0	0	0	0.015	0.000	0.002	0.017
HEALTH PHYSICS PERSONNEL	0	0	2	2	0.061	0.000	0.790	0.851
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.009	0.009
ENGINEERING PERSONNEL	0	0	0	0	0.010	0.000	0.000	0.010
TOTAL	0	0	56	56	0.158	0.000	23.058	23.216
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	0.000	0.000	0.353	0.353
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	0	0	0	0	0.000	0.000	0.353	0.353
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.237	0.000	0.395	0.632
OPERATIONS PERSONNEL	0	0	0	0	0.007	0.000	0.000	0.007
HEALTH PHYSICS PERSONNEL	0	0	1	1	0.107	0.000	0.287	0.394
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	0.353	0.000	0.682	1.035
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.089	0.000	0.279	0.368
OPERATIONS PERSONNEL	0	0	0	0	0.157	0.000	0.004	0.161
HEALTH PHYSICS PERSONNEL	0	0	0	0	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	0	0	0.006	0.000	0.000	0.006
TOTAL	0	0	0	0	0.252	0.000	0.285	0.537
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	45	0	348	393	13.152	0.000	131.006	144.158
OPERATIONS PERSONNEL	27	0	1	28	9.156	0.000	0.476	9.632
HEALTH PHYSICS PERSONNEL	20	0	62	82	8.223	0.000	18.562	26.785
SUPERVISORY PERSONNEL	2	0	0	2	0.574	0.000	0.101	0.675
ENGINEERING PERSONNEL	0	0	1	1	0.267	0.000	0.156	0.423
GRAND TOTALS	94	0	412	506	31.372	0.000	150.301	181.673

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	9	0	3	12	2.980	0.065	1.654	4.699
OPERATIONS PERSONNEL	21	0	0	21	6.303	0.000	0.038	6.341
HEALTH PHYSICS PERSONNEL	4	0	1	5	0.760	0.000	0.244	1.004
SUPERVISORY PERSONNEL	1	0	0	1	0.248	0.069	0.181	0.498
ENGINEERING PERSONNEL	0	0	0	0	0.132	0.000	0.018	0.150
TOTAL	35	0	4	39	10.403	0.154	2.135	12.692
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	20	0	29	49	7.954	0.086	9.148	17.188
OPERATIONS PERSONNEL	6	0	0	6	3.130	0.062	0.126	3.318
HEALTH PHYSICS PERSONNEL	60	1	9	70	12.710	0.202	2.748	15.660
SUPERVISORY PERSONNEL	1	0	0	1	0.295	0.000	0.511	0.806
ENGINEERING PERSONNEL	1	0	0	1	0.569	0.000	0.097	0.666
TOTAL	88	1	38	127	24.658	0.350	12.630	37.638
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	1	0	23	24	0.536	0.043	9.646	10.225
OPERATIONS PERSONNEL	0	0	0	0	0.184	0.017	0.000	0.201
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.003	0.000	0.057	0.060
SUPERVISORY PERSONNEL	0	0	6	6	0.053	0.258	2.067	2.378
ENGINEERING PERSONNEL	2	0	2	4	0.440	0.009	0.408	0.857
TOTAL	3	0	31	34	1.216	0.327	12.178	13.721
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	84	1	77	162	40.236	0.618	31.045	71.899
OPERATIONS PERSONNEL	11	0	0	11	6.500	0.060	0.089	6.649
HEALTH PHYSICS PERSONNEL	18	4	36	58	4.477	0.718	8.639	13.834
SUPERVISORY PERSONNEL	6	5	6	17	1.918	1.009	2.134	5.061
ENGINEERING PERSONNEL	1	0	8	9	1.165	0.043	3.285	4.493
TOTAL	120	10	127	257	54.296	2.448	45.192	101.936
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.165	0.019	0.000	0.184
OPERATIONS PERSONNEL	3	0	0	3	1.326	0.000	0.020	1.346
HEALTH PHYSICS PERSONNEL	12	0	27	39	4.929	0.038	8.636	13.603
SUPERVISORY PERSONNEL	1	0	1	2	0.253	0.000	0.301	0.554
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	16	0	28	44	6.673	0.057	8.957	15.687
REFUELING								
MAINTENANCE PERSONNEL	4	0	17	21	1.582	0.000	7.263	8.845
OPERATIONS PERSONNEL	4	0	0	4	1.305	0.000	0.000	1.305
HEALTH PHYSICS PERSONNEL	1	0	7	8	1.058	0.037	2.266	3.361
SUPERVISORY PERSONNEL	2	0	3	5	0.277	0.000	0.922	1.199
ENGINEERING PERSONNEL	1	0	6	7	0.496	0.000	2.149	2.645
TOTAL	12	0	33	45	4.718	0.037	12.600	17.355
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	118	1	149	268	53.433	0.851	58.756	113.040
OPERATIONS PERSONNEL	45	0	0	45	18.748	0.139	0.273	19.160
HEALTH PHYSICS PERSONNEL	95	5	80	180	23.937	0.995	22.590	47.522
SUPERVISORY PERSONNEL	11	5	16	32	3.044	1.336	6.116	10.496
ENGINEERING PERSONNEL	5	0	16	21	2.802	0.052	5.957	8.811
GRAND TOTALS	274	11	281	546	101.964	3.373	93.692	199.029

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	93	5	48	146	23.832	1.618	5.769	31.219
OPERATIONS PERSONNEL	47	1	1	49	22.834	0.229	0.193	23.256
HEALTH PHYSICS PERSONNEL	35	1	35	71	9.569	0.057	5.195	14.821
SUPERVISORY PERSONNEL	14	4	2	20	2.891	0.539	0.273	3.703
ENGINEERING PERSONNEL	11	20	11	42	1.411	3.262	0.875	5.548
TOTAL	200	31	97	328	60.537	5.705	12.305	78.547
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	98	3	241	342	68.152	2.507	109.110	179.769
OPERATIONS PERSONNEL	2	0	0	2	8.038	0.026	0.000	8.064
HEALTH PHYSICS PERSONNEL	6	0	21	27	11.067	0.048	13.495	24.630
SUPERVISORY PERSONNEL	4	2	5	11	3.715	0.518	1.009	5.242
ENGINEERING PERSONNEL	8	13	31	52	4.027	7.029	9.146	20.202
TOTAL	118	18	298	434	95.019	10.128	132.760	237.907
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	35	35	0.582	0.004	18.944	19.530
OPERATIONS PERSONNEL	0	0	0	0	0.002	0.000	0.000	0.002
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.232	0.000	0.187	0.419
SUPERVISORY PERSONNEL	0	0	1	1	0.000	0.000	0.384	0.384
ENGINEERING PERSONNEL	2	2	16	20	1.027	2.512	10.139	13.678
TOTAL	2	2	52	56	1.843	2.516	29.654	34.013
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	0.949	0.458	0.017	1.424
OPERATIONS PERSONNEL	0	0	0	0	0.010	0.000	0.000	0.010
HEALTH PHYSICS PERSONNEL	1	0	4	5	0.578	0.000	1.980	2.558
SUPERVISORY PERSONNEL	0	0	0	0	0.071	0.000	0.000	0.071
ENGINEERING PERSONNEL	0	0	0	0	0.004	0.013	0.000	0.017
TOTAL	1	0	4	5	1.612	0.471	1.997	4.080
REFUELING								
MAINTENANCE PERSONNEL	15	0	14	29	20.710	0.020	6.423	27.153
OPERATIONS PERSONNEL	2	0	0	2	1.934	0.000	0.000	1.934
HEALTH PHYSICS PERSONNEL	1	0	14	15	0.609	0.000	4.964	5.573
SUPERVISORY PERSONNEL	2	0	1	3	2.188	0.150	0.109	2.447
ENGINEERING PERSONNEL	2	4	5	11	0.557	0.999	1.346	2.902
TOTAL	22	4	34	60	25.998	1.169	12.842	40.009
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	206	8	338	552	114.225	4.607	140.263	259.095
OPERATIONS PERSONNEL	51	1	1	53	32.818	0.255	0.193	33.266
HEALTH PHYSICS PERSONNEL	43	1	74	118	22.075	0.105	25.821	48.001
SUPERVISORY PERSONNEL	20	6	9	35	8.865	1.207	1.775	11.847
ENGINEERING PERSONNEL	23	39	63	125	7.026	13.815	21.506	42.347
GRAND TOTALS	343	55	485	883	185.009	19.989	189.558	394.556

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.086	0.005	0.386	0.477
OPERATIONS PERSONNEL	1	0	2	3	0.392	0.000	0.351	0.743
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.012	0.000	0.000	0.012
SUPERVISORY PERSONNEL	0	0	0	0	0.093	0.000	0.000	0.093
ENGINEERING PERSONNEL	0	0	1	1	0.120	0.000	0.331	0.451
TOTAL	1	0	3	4	0.703	0.005	1.068	1.776
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	11	1	27	39	7.012	0.138	13.310	20.460
OPERATIONS PERSONNEL	12	1	1	14	4.727	0.439	0.157	5.323
HEALTH PHYSICS PERSONNEL	6	3	8	17	1.843	0.656	2.915	5.414
SUPERVISORY PERSONNEL	3	0	6	9	0.973	0.000	1.540	2.513
ENGINEERING PERSONNEL	1	0	25	26	0.739	0.016	8.805	9.560
TOTAL	33	5	67	105	15.294	1.249	26.727	43.270
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	23	1	80	104	7.343	0.663	24.594	32.600
OPERATIONS PERSONNEL	3	0	11	14	1.574	0.031	3.696	5.301
HEALTH PHYSICS PERSONNEL	3	0	14	17	1.018	0.106	3.655	4.779
SUPERVISORY PERSONNEL	2	0	0	2	0.567	0.000	0.032	0.599
ENGINEERING PERSONNEL	1	0	0	1	0.477	0.000	0.111	0.588
TOTAL	32	1	105	138	10.979	0.800	32.088	43.867
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	6	0	11	17	4.172	0.237	8.243	12.652
OPERATIONS PERSONNEL	32	0	1	33	7.102	0.029	0.635	7.766
HEALTH PHYSICS PERSONNEL	15	7	16	38	4.998	1.384	3.697	10.079
SUPERVISORY PERSONNEL	1	0	0	1	0.535	0.000	0.060	0.595
ENGINEERING PERSONNEL	1	0	0	1	0.765	0.000	0.059	0.824
TOTAL	55	7	28	90	17.572	1.650	12.694	31.916
WASTE PROCESSING								
MAINTENANCE PERSONNEL	11	0	24	35	3.410	0.002	6.321	9.733
OPERATIONS PERSONNEL	5	0	1	6	1.293	0.038	0.578	1.909
HEALTH PHYSICS PERSONNEL	1	0	1	2	0.224	0.057	0.319	0.600
SUPERVISORY PERSONNEL	4	0	0	4	1.058	0.000	0.001	1.059
ENGINEERING PERSONNEL	3	0	21	24	0.994	0.000	8.318	9.312
TOTAL	24	0	47	71	6.979	0.097	15.537	22.613
REFUELING								
MAINTENANCE PERSONNEL	4	0	0	4	1.084	0.056	0.046	1.186
OPERATIONS PERSONNEL	1	0	0	1	0.800	0.000	0.075	0.875
HEALTH PHYSICS PERSONNEL	2	0	1	3	0.518	0.004	0.882	1.404
SUPERVISORY PERSONNEL	0	0	0	0	0.028	0.000	0.000	0.028
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
TOTAL	7	0	1	8	2.430	0.060	1.003	3.493
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	55	2	142	199	23.107	1.101	52.900	77.108
OPERATIONS PERSONNEL	54	1	16	71	15.888	0.537	5.492	21.917
HEALTH PHYSICS PERSONNEL	27	10	40	77	8.613	2.207	11.468	22.288
SUPERVISORY PERSONNEL	10	0	6	16	3.254	0.000	1.633	4.887
ENGINEERING PERSONNEL	6	0	47	53	3.095	0.016	17.624	20.735
GRAND TOTALS	152	13	251	416	53.957	3.861	89.117	146.935

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

PLANT: *WOLF CREEK 1 TYPE: PWR

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.306	0.000	0.134	0.440
OPERATIONS PERSONNEL	0	0	0	0	0.685	0.120	0.001	0.806
HEALTH PHYSICS PERSONNEL	8	1	0	9	3.032	0.124	0.000	3.156
SUPERVISORY PERSONNEL	1	0	0	1	0.499	0.075	0.042	0.616
ENGINEERING PERSONNEL	0	0	0	0	0.362	0.019	0.001	0.382
TOTAL	9	1	0	10	4.884	0.338	0.178	5.400
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	0	0	0	0	1.172	0.015	0.275	1.462
OPERATIONS PERSONNEL	0	0	0	0	0.149	0.018	0.000	0.167
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.289	0.033	0.000	0.322
SUPERVISORY PERSONNEL	0	0	0	0	0.561	0.001	0.181	0.743
ENGINEERING PERSONNEL	0	0	0	0	0.587	0.015	0.043	0.645
TOTAL	0	0	0	0	2.758	0.082	0.499	3.339
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.073	0.000	0.003	0.076
OPERATIONS PERSONNEL	0	0	0	0	0.002	0.000	0.000	0.002
HEALTH PHYSICS PERSONNEL	1	0	0	1	0.190	0.000	0.000	0.190
SUPERVISORY PERSONNEL	0	0	0	0	0.027	0.000	0.000	0.027
ENGINEERING PERSONNEL	0	0	0	0	0.032	0.000	0.004	0.036
TOTAL	1	0	0	1	0.324	0.000	0.007	0.331
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	1	0	4	5	0.631	0.092	0.965	1.688
OPERATIONS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.206	0.013	0.000	0.219
SUPERVISORY PERSONNEL	0	0	0	0	0.099	0.000	0.000	0.099
ENGINEERING PERSONNEL	0	0	0	0	0.085	0.004	0.000	0.089
TOTAL	1	0	4	5	1.021	0.109	0.965	2.095
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	0	0	0.274	0.000	0.018	0.292
OPERATIONS PERSONNEL	1	0	0	1	0.416	0.003	0.047	0.466
HEALTH PHYSICS PERSONNEL	3	0	0	3	1.912	0.014	0.000	1.926
SUPERVISORY PERSONNEL	0	0	0	0	0.088	0.000	0.000	0.088
ENGINEERING PERSONNEL	0	0	0	0	0.018	0.000	0.000	0.018
TOTAL	4	0	0	4	2.708	0.017	0.065	2.790
REFUELING								
MAINTENANCE PERSONNEL	0	0	0	0	0.053	0.000	0.000	0.053
OPERATIONS PERSONNEL	0	0	0	0	0.057	0.000	0.000	0.057
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.017	0.001	0.000	0.018
SUPERVISORY PERSONNEL	0	0	0	0	0.040	0.000	0.000	0.040
ENGINEERING PERSONNEL	0	0	0	0	0.044	0.000	0.002	0.046
TOTAL	0	0	0	0	0.211	0.001	0.002	0.214
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	1	0	4	5	2.509	0.107	1.395	4.011
OPERATIONS PERSONNEL	1	0	0	1	1.309	0.141	0.048	1.498
HEALTH PHYSICS PERSONNEL	12	1	0	13	5.646	0.185	0.000	5.831
SUPERVISORY PERSONNEL	1	0	0	1	1.314	0.076	0.223	1.613
ENGINEERING PERSONNEL	0	0	0	0	1.128	0.038	0.050	1.216
GRAND TOTALS	15	1	4	20	11.906	0.547	1.716	14.169

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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	0.165	0.075	0.980	1.220
OPERATIONS PERSONNEL	2	0	0	2	0.630	0.010	0.275	0.915
HEALTH PHYSICS PERSONNEL	0	0	3	3	0.015	0.085	1.690	1.790
SUPERVISORY PERSONNEL	0	0	0	0	0.005	0.000	0.010	0.015
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.185	0.015	0.200
TOTAL	2	0	3	5	0.815	0.355	2.970	4.140
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	4	0	19	23	1.015	0.010	7.570	8.595
OPERATIONS PERSONNEL	0	0	1	1	0.095	0.000	0.245	0.340
HEALTH PHYSICS PERSONNEL	3	4	26	33	0.580	1.425	12.985	15.000
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.035	0.035
ENGINEERING PERSONNEL	0	1	0	1	0.030	0.385	0.035	0.450
TOTAL	7	5	46	58	1.730	1.820	20.870	24.420
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	0	0	0.010	0.000	0.170	0.180
OPERATIONS PERSONNEL	0	0	0	0	0.040	0.000	0.020	0.060
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.005	0.000	0.005	0.010
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.010	0.010
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.040	0.000	0.040
TOTAL	0	0	0	0	0.055	0.040	0.205	0.300
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	32	34	0.760	0.015	14.928	15.703
OPERATIONS PERSONNEL	0	0	0	0	0.085	0.000	0.010	0.095
HEALTH PHYSICS PERSONNEL	0	0	5	5	0.000	0.005	1.930	1.935
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.050	0.065	0.005	0.120
TOTAL	2	0	37	39	0.895	0.085	16.873	17.853
WASTE PROCESSING								
MAINTENANCE PERSONNEL	2	0	69	71	0.670	0.055	28.615	29.340
OPERATIONS PERSONNEL	0	0	1	1	0.200	0.000	0.991	1.191
HEALTH PHYSICS PERSONNEL	1	1	23	25	0.460	0.380	10.429	11.269
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	1	1	0.030	0.240	0.390	0.660
TOTAL	3	1	94	98	1.360	0.675	40.425	42.460
REFUELING								
MAINTENANCE PERSONNEL	0	0	1	1	0.035	0.000	0.190	0.225
OPERATIONS PERSONNEL	0	0	0	0	0.010	0.000	0.010	0.020
HEALTH PHYSICS PERSONNEL	0	1	1	2	0.000	0.200	0.400	0.600
SUPERVISORY PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
ENGINEERING PERSONNEL	0	0	0	0	0.000	0.080	0.000	0.080
TOTAL	0	1	2	3	0.045	0.280	0.600	0.925
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	8	0	121	129	2.655	0.155	52.453	55.263
OPERATIONS PERSONNEL	2	0	2	4	1.060	0.010	1.551	2.621
HEALTH PHYSICS PERSONNEL	4	6	58	68	1.070	2.095	27.439	30.604
SUPERVISORY PERSONNEL	0	0	0	0	0.005	0.000	0.055	0.060
ENGINEERING PERSONNEL	0	1	1	2	0.110	0.995	0.445	1.550
GRAND TOTALS	14	7	182	203	4.900	3.255	81.943	90.098

*Workers may be counted in more than one category.

APPENDIX D (Continued)

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

1995

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

WORK AND JOB FUNCTION	NUMBER OF PERSONNEL (>100 mREM)				TOTAL PERSON-REM			
	STATION	UTILITY	CONTRACT	TOTAL	STATION	UTILITY	CONTRACT	TOTAL
REACTOR OPS & SURV								
MAINTENANCE PERSONNEL	0	0	0	0	0.239	0.000	0.024	0.263
OPERATIONS PERSONNEL	44	0	0	44	7.491	0.000	0.000	7.491
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.000	0.000	0.000	0.000
SUPERVISORY PERSONNEL	8	0	0	8	0.725	0.000	0.008	0.733
ENGINEERING PERSONNEL	0	0	0	0	0.009	0.000	0.000	0.009
TOTAL	52	0	0	52	8.464	0.000	0.032	8.496
ROUTINE MAINTENANCE								
MAINTENANCE PERSONNEL	164	11	1256	1431	92.997	1.868	457.947	552.812
OPERATIONS PERSONNEL	146	0	164	310	24.982	0.000	0.162	25.144
HEALTH PHYSICS PERSONNEL	68	127	83	278	23.450	1.367	35.320	60.137
SUPERVISORY PERSONNEL	277	0	324	601	25.194	0.000	28.073	53.267
ENGINEERING PERSONNEL	173	0	38	211	13.564	0.000	2.217	15.781
TOTAL	828	138	1865	2831	180.187	3.235	523.719	707.141
IN-SERVICE INSPECTION								
MAINTENANCE PERSONNEL	0	0	127	127	0.106	0.000	46.415	46.521
OPERATIONS PERSONNEL	0	0	0	0	0.009	0.000	0.000	0.009
HEALTH PHYSICS PERSONNEL	0	1	0	1	0.031	0.009	0.000	0.040
SUPERVISORY PERSONNEL	1	0	88	89	0.091	0.000	7.648	7.739
ENGINEERING PERSONNEL	7	0	33	40	0.484	0.000	1.906	2.390
TOTAL	8	1	248	257	0.721	0.009	55.969	56.699
SPECIAL MAINTENANCE								
MAINTENANCE PERSONNEL	2	0	9	11	0.917	0.000	3.141	4.058
OPERATIONS PERSONNEL	1	0	0	1	0.158	0.000	0.000	0.158
HEALTH PHYSICS PERSONNEL	0	0	0	0	0.018	0.000	0.000	0.018
SUPERVISORY PERSONNEL	1	0	8	9	0.087	0.000	0.697	0.784
ENGINEERING PERSONNEL	4	0	0	4	0.300	0.000	0.034	0.334
TOTAL	8	0	17	25	1.480	0.000	3.872	5.352
WASTE PROCESSING								
MAINTENANCE PERSONNEL	0	0	9	9	0.058	0.000	3.233	3.291
OPERATIONS PERSONNEL	5	0	0	5	0.872	0.000	0.000	0.872
HEALTH PHYSICS PERSONNEL	3	0	3	6	1.079	0.003	1.178	2.260
SUPERVISORY PERSONNEL	2	0	0	2	0.210	0.000	0.027	0.237
ENGINEERING PERSONNEL	0	0	0	0	0.003	0.000	0.003	0.006
TOTAL	10	0	12	22	2.222	0.003	4.441	6.666
REFUELING								
MAINTENANCE PERSONNEL	5	0	5	10	3.122	0.009	1.839	4.970
OPERATIONS PERSONNEL	33	0	0	33	5.544	0.000	0.000	5.544
HEALTH PHYSICS PERSONNEL	0	35	0	35	0.040	0.372	0.022	0.434
SUPERVISORY PERSONNEL	19	0	3	22	1.683	0.000	0.217	1.900
ENGINEERING PERSONNEL	3	0	0	3	0.270	0.000	0.001	0.271
TOTAL	60	35	8	103	10.659	0.381	2.079	13.119
TOTAL BY JOB FUNCTION								
MAINTENANCE PERSONNEL	171	11	1406	1588	97.439	1.877	512.599	611.915
OPERATIONS PERSONNEL	229	0	164	393	39.056	0.000	0.162	39.218
HEALTH PHYSICS PERSONNEL	71	163	86	320	24.618	1.751	36.520	62.889
SUPERVISORY PERSONNEL	308	0	423	731	27.990	0.000	36.670	64.660
ENGINEERING PERSONNEL	187	0	71	258	14.630	0.000	4.161	18.791
GRAND TOTALS	966	174	2150	3290	203.733	3.628	590.112	797.473

*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

1973-1995

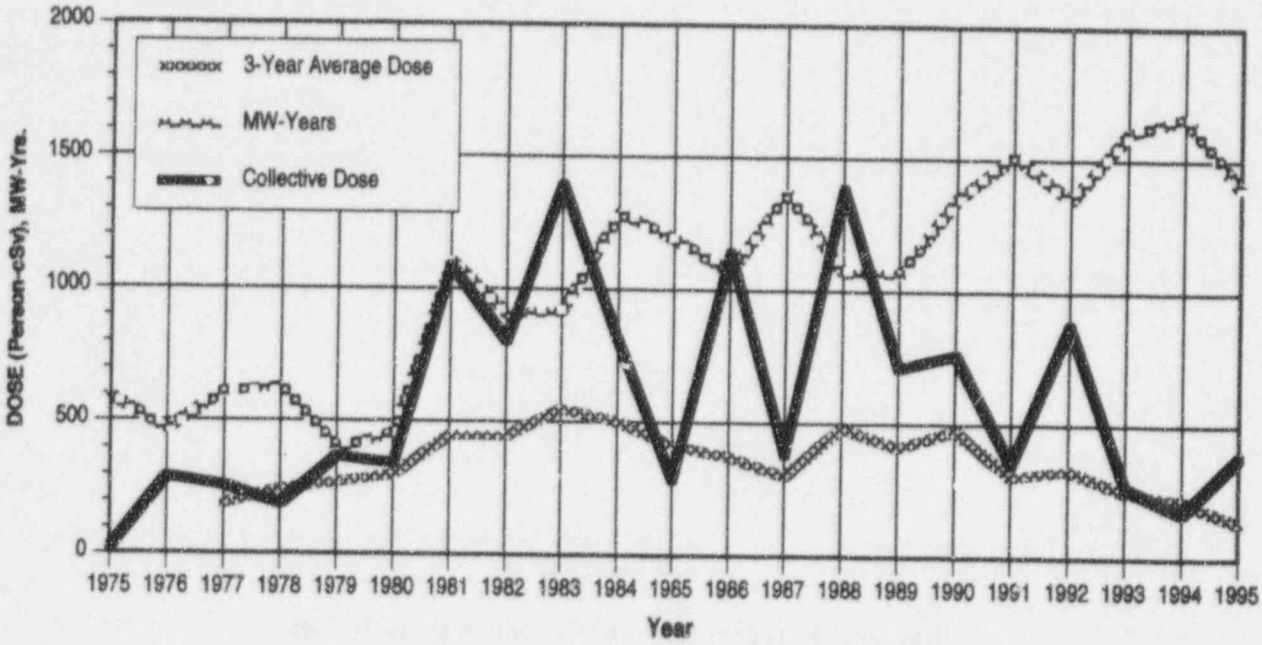
NOTE: Appendix E contains data on operating plants as well as plants which are no longer in commercial operation.

APPENDIX E

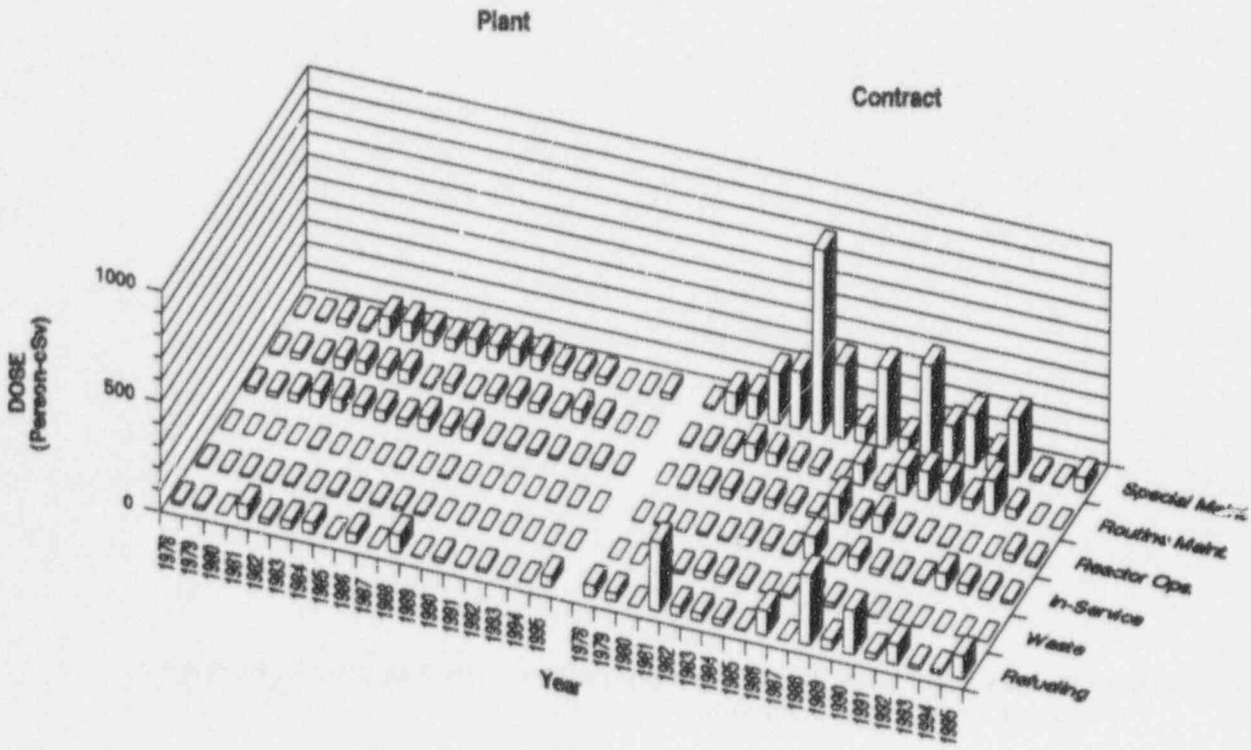
ARKANSAS 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

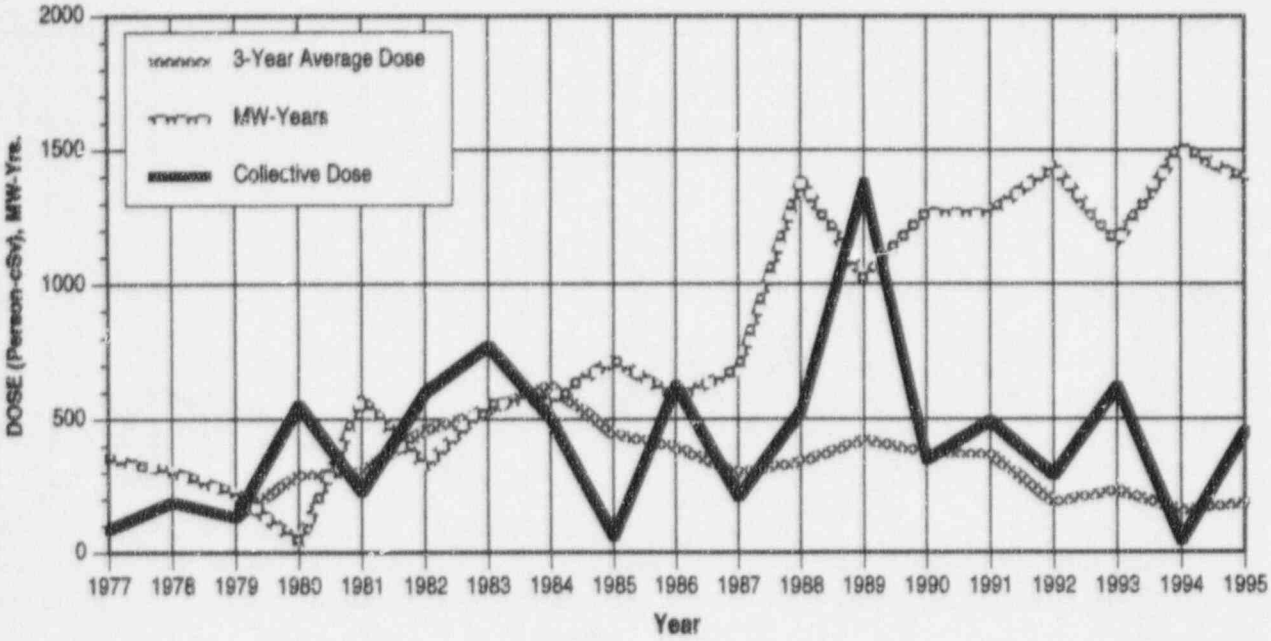


APPENDIX E (continued)

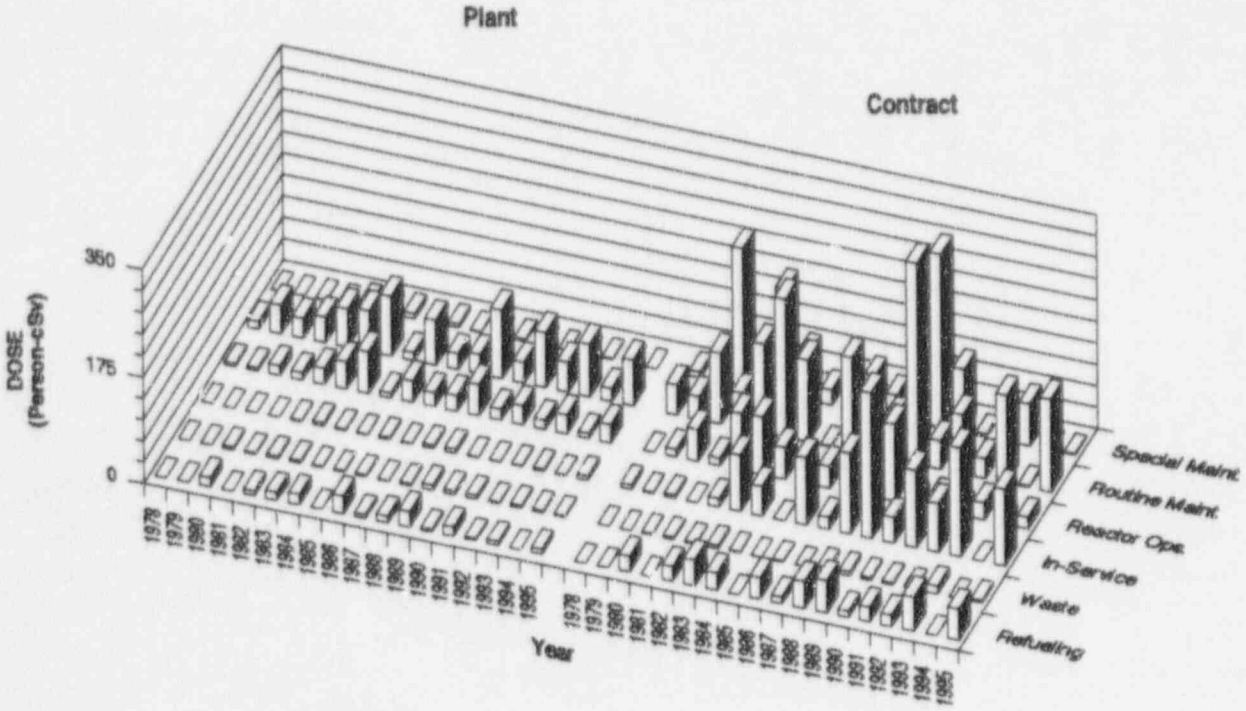
BEAVER VALLEY 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

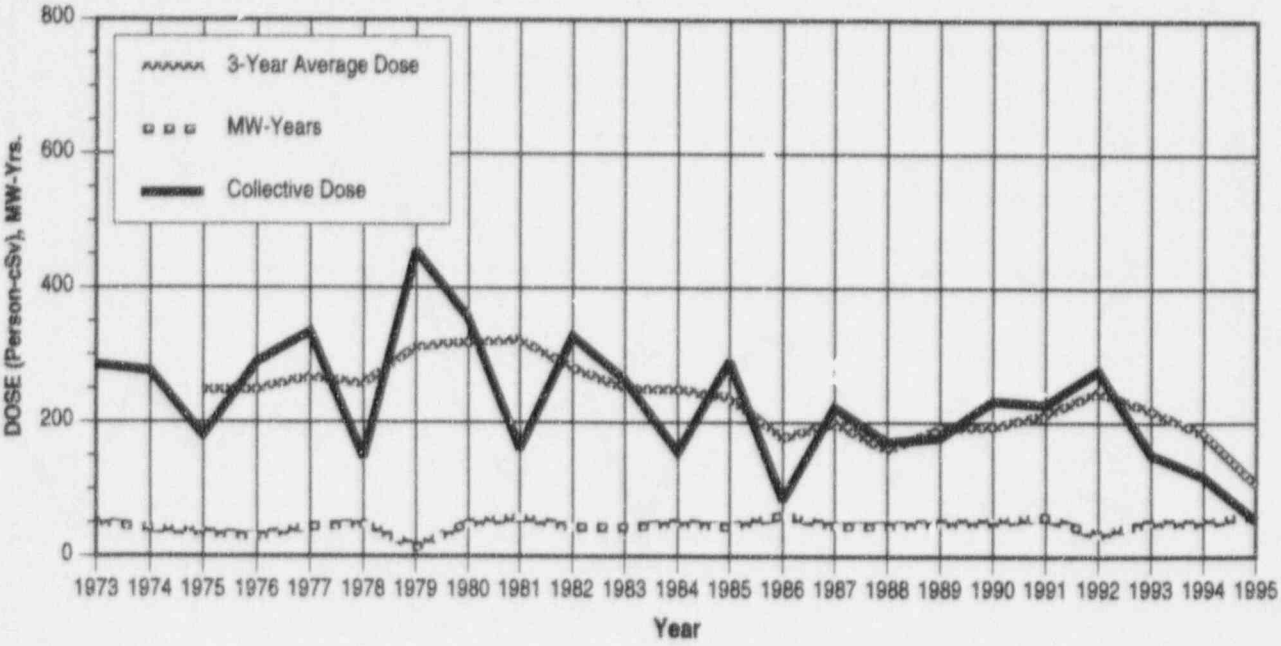


APPENDIX E (continued)

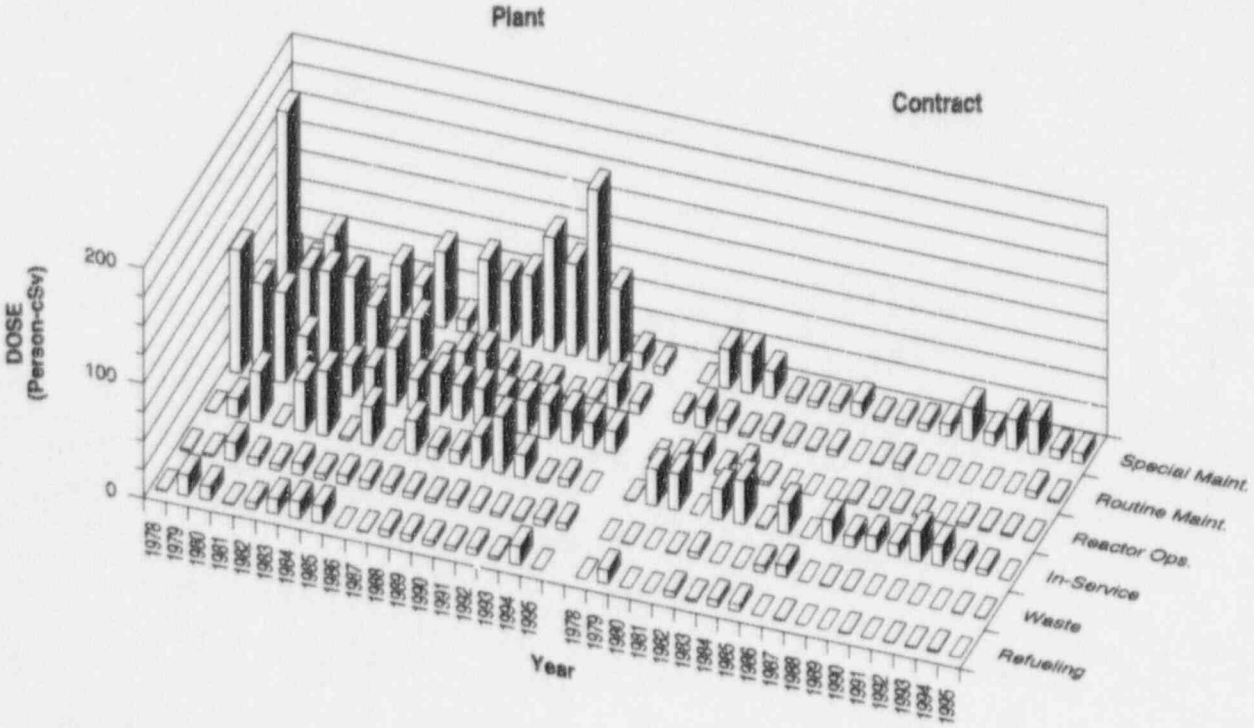
BIG ROCK POINT

Dose-Performance Indicators

BWR



Breakdown by Job Function

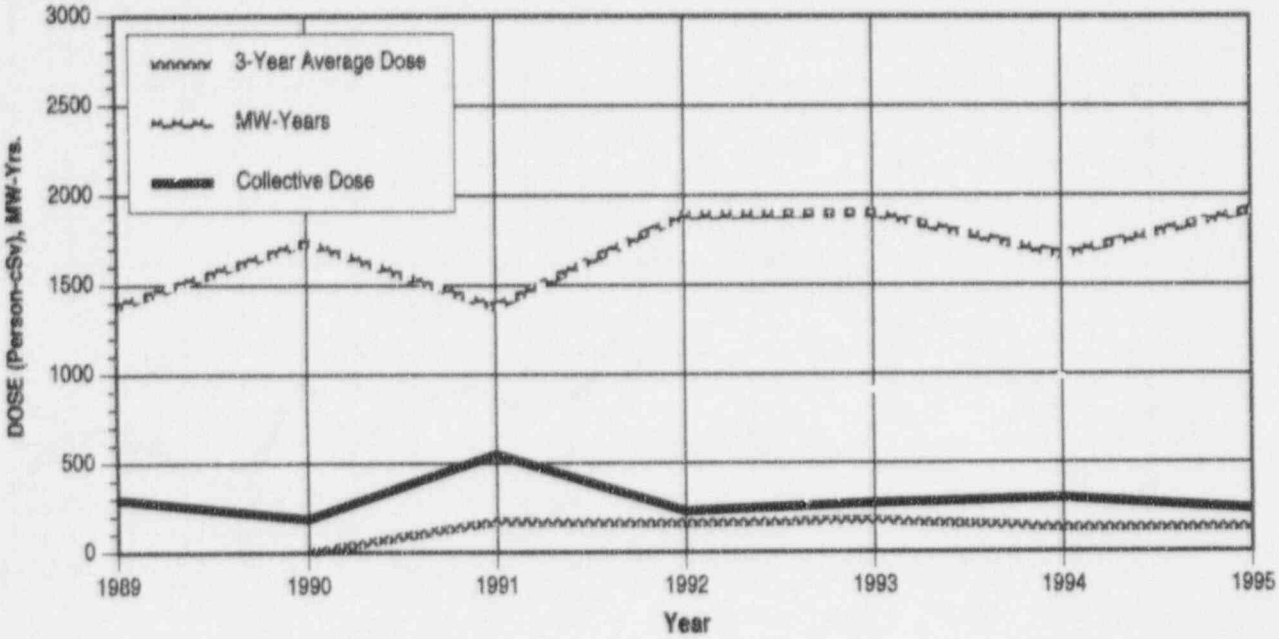


APPENDIX E (continued)

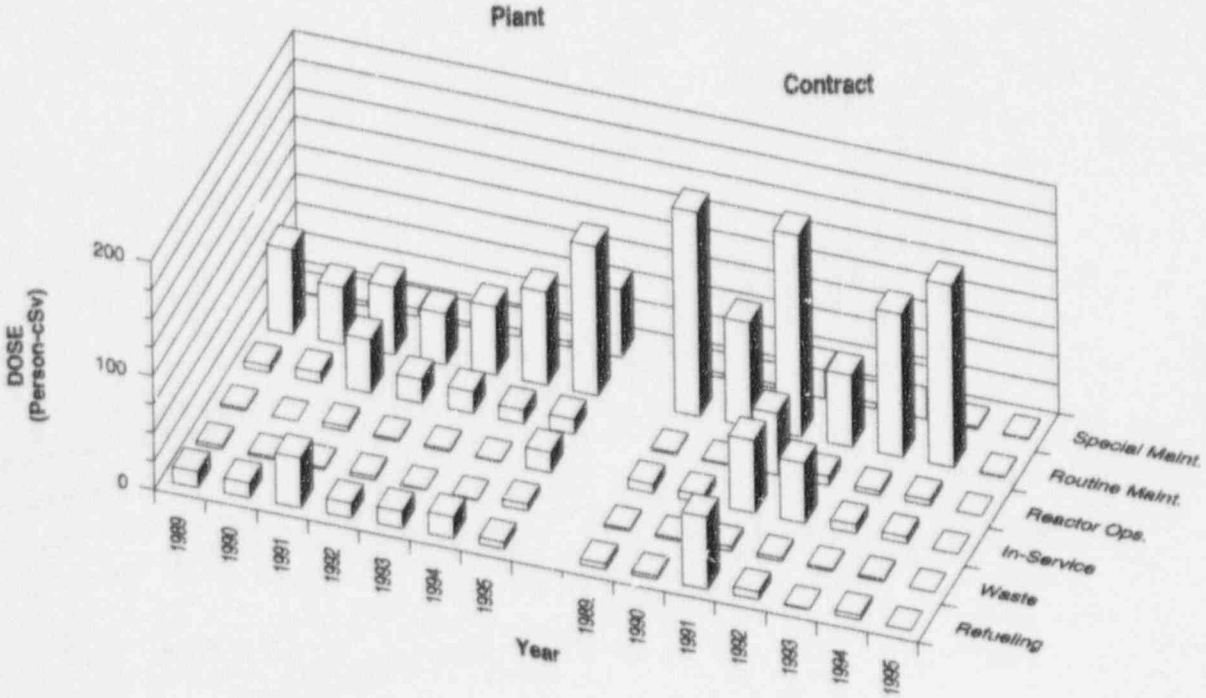
BRAIDWOOD 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

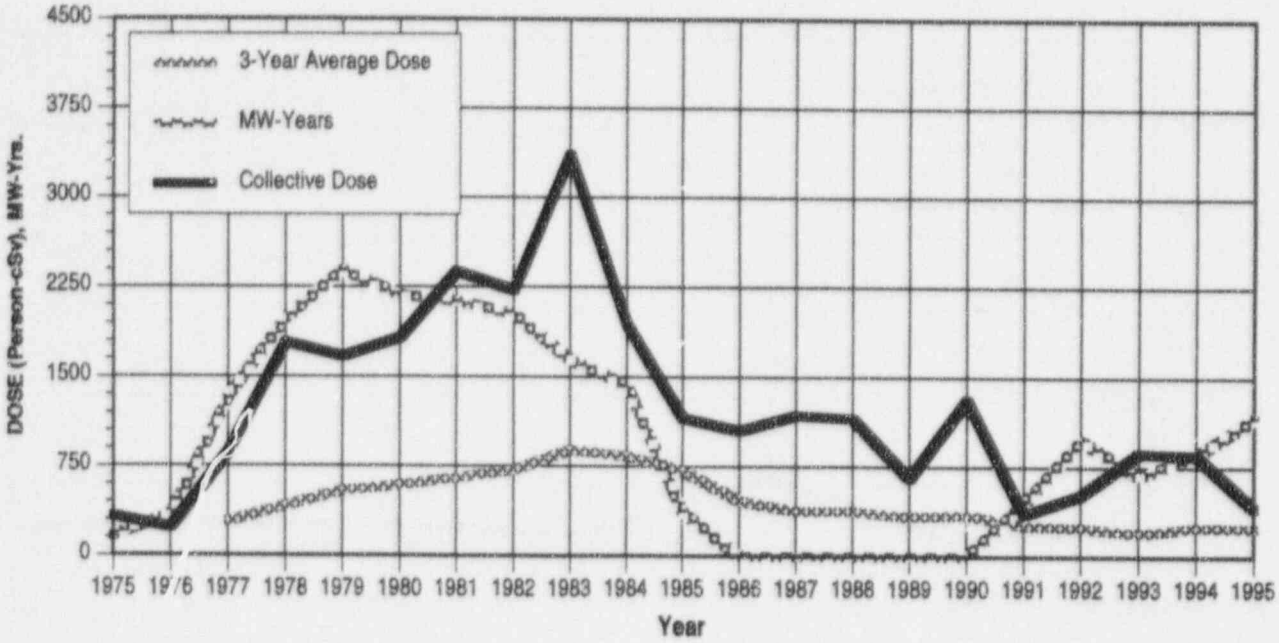


APPENDIX E (continued)

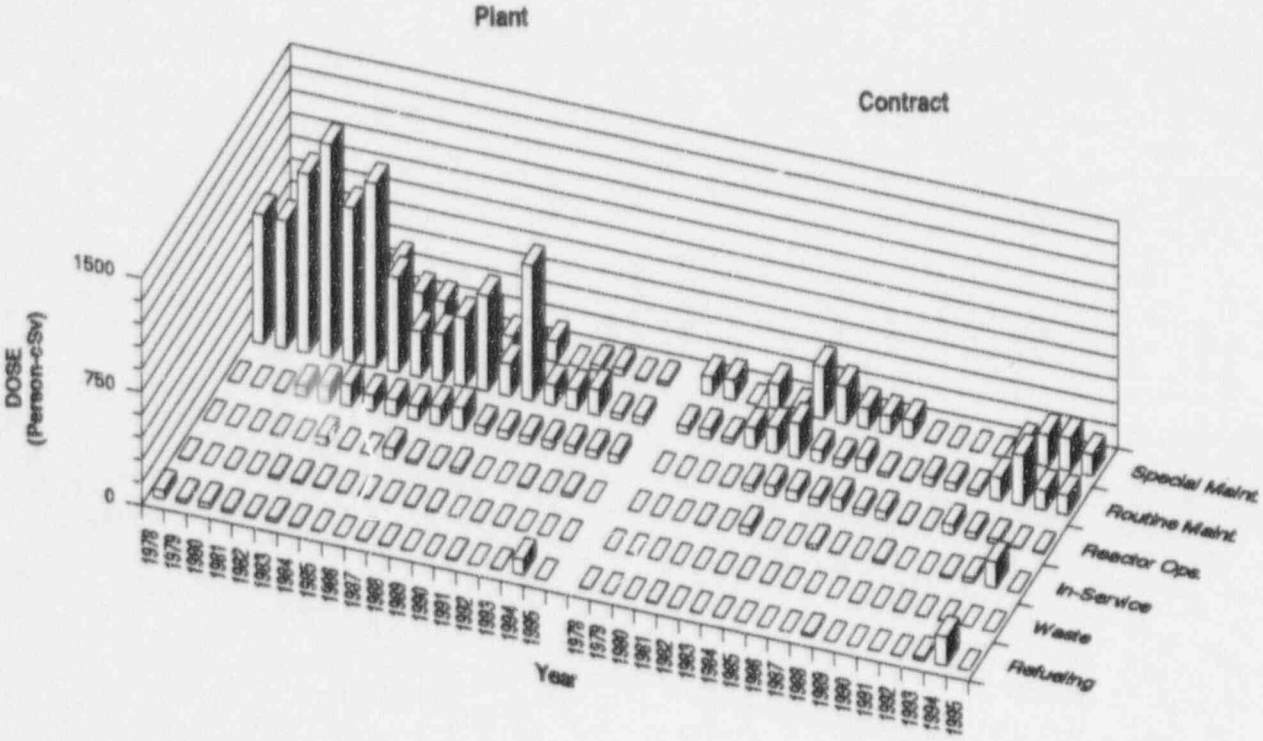
BROWNS FERRY 1, 2, 3

Dose-Performance Indicators

BWR



Breakdown by Job Function

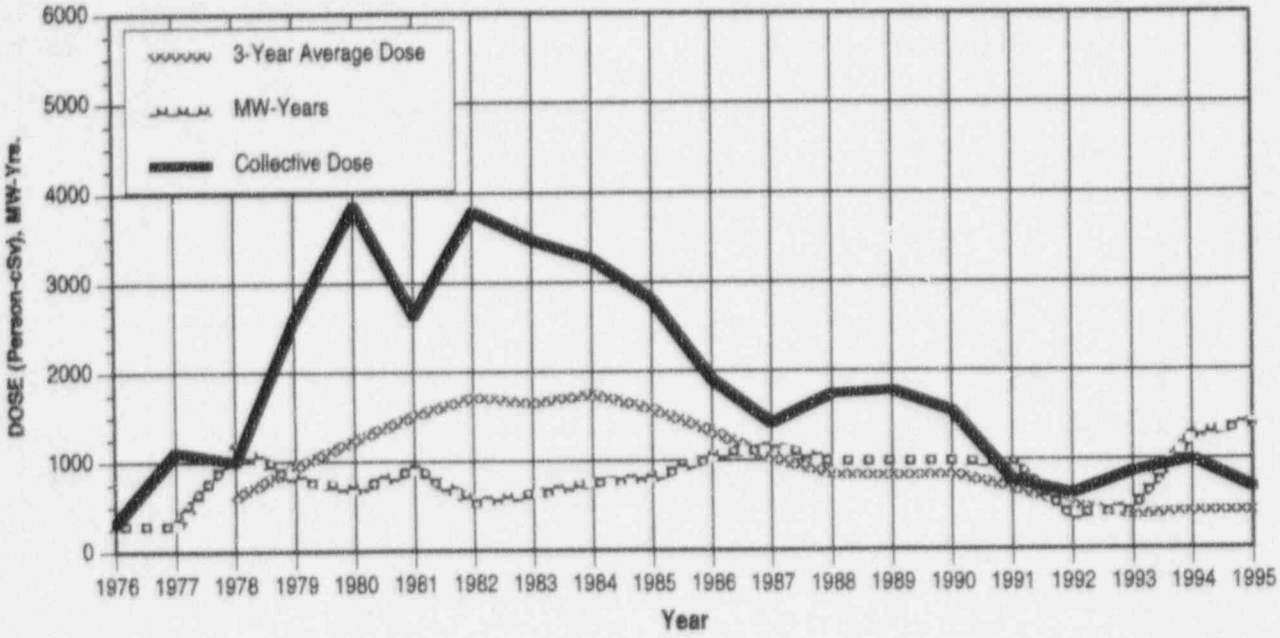


APPENDIX E (continued)

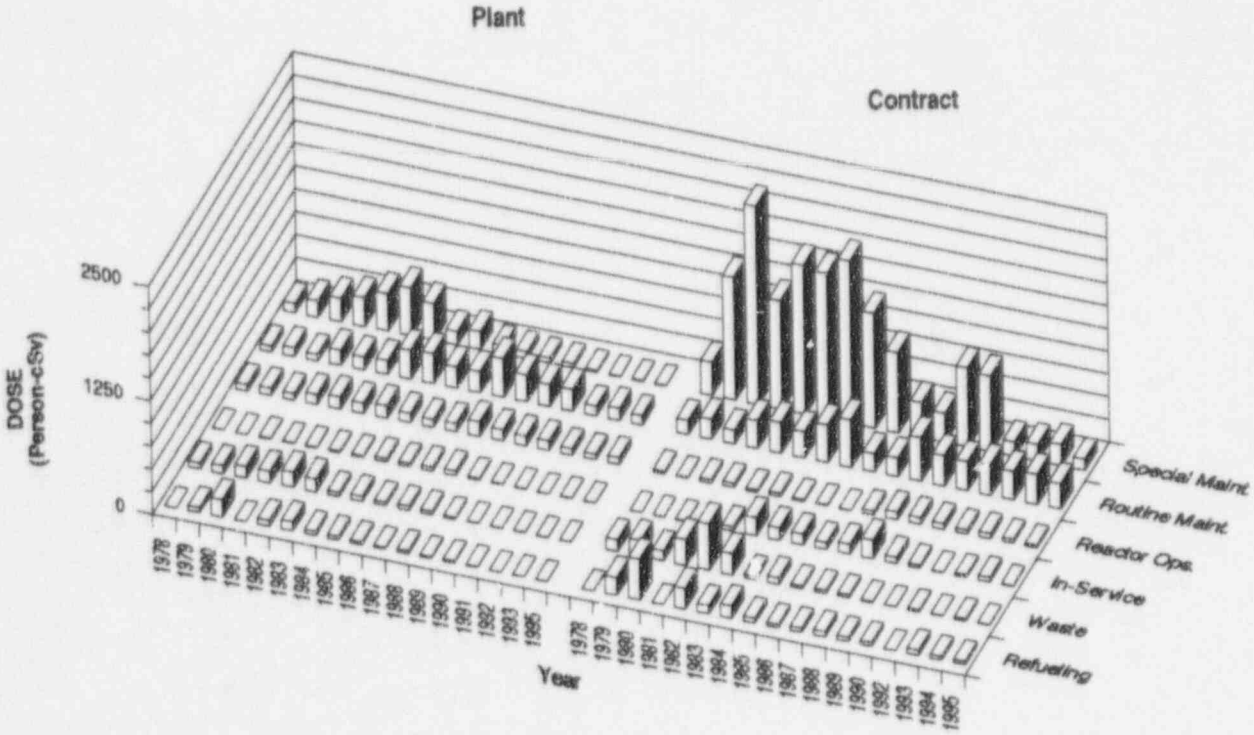
BRUNSWICK 1, 2

Dose-Performance Indicators

BWR



Breakdown by Job Function

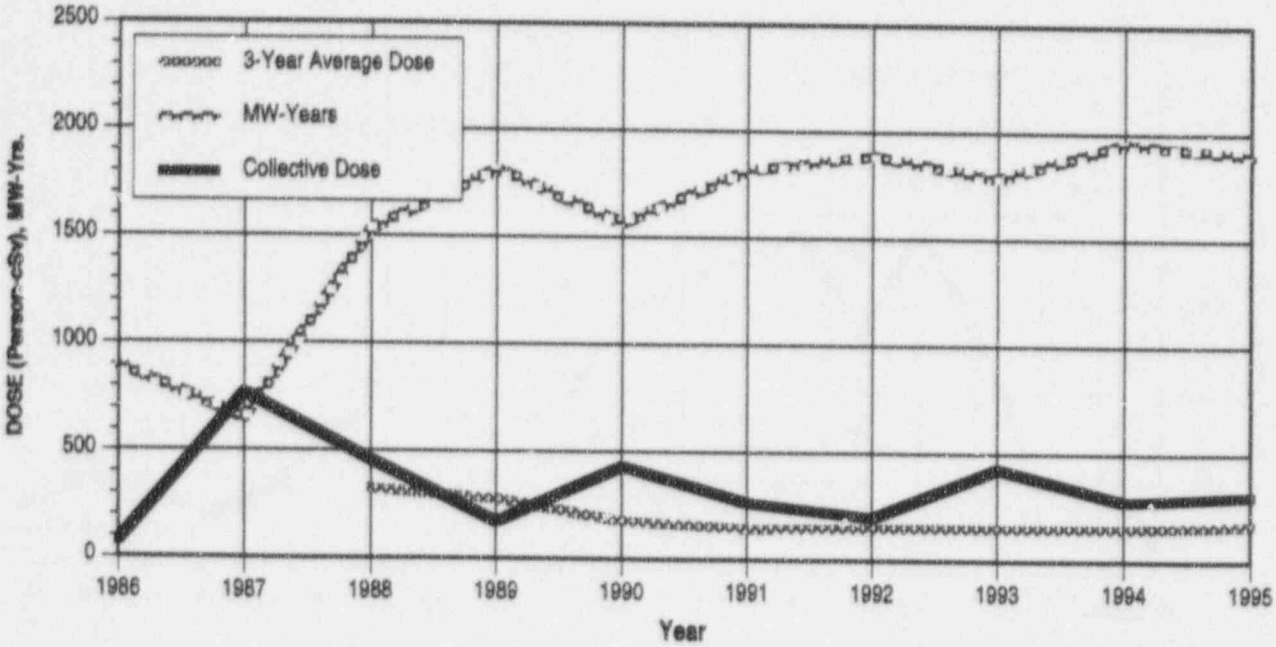


APPENDIX E (continued)

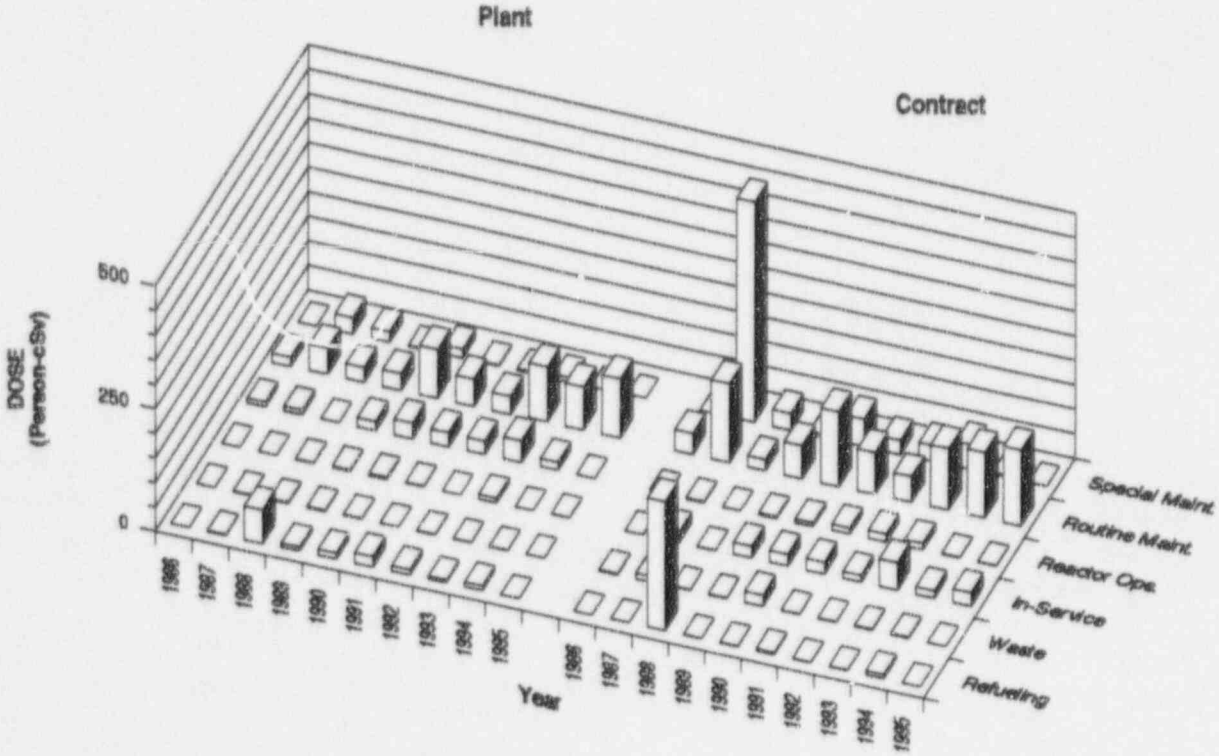
BYRON 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

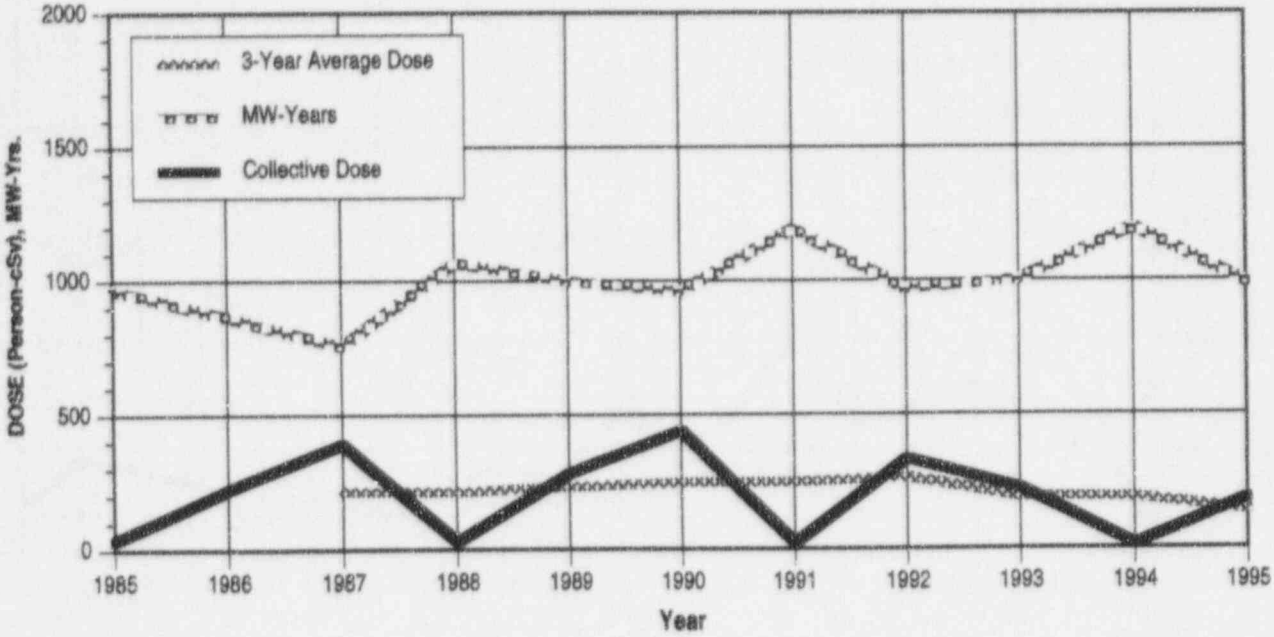


APPENDIX E (continued)

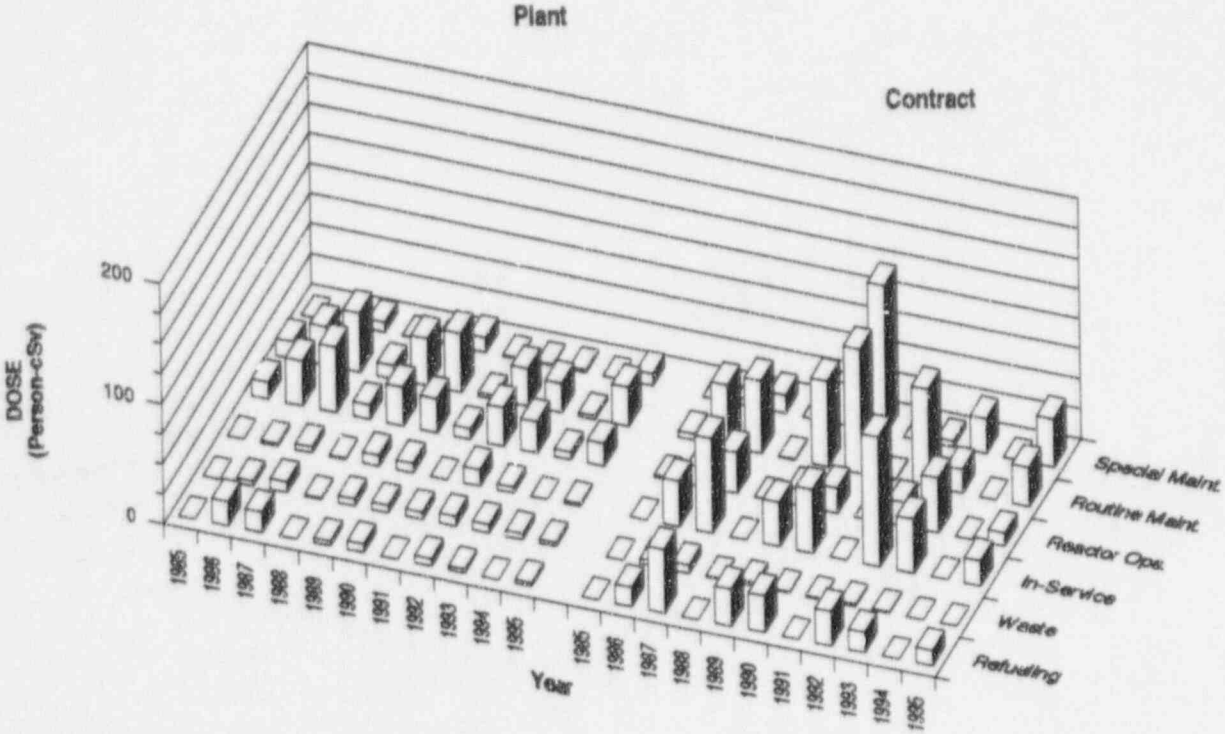
CALLAWAY 1

Dose-Performance Indicators

PWR



Breakdown by Job Function

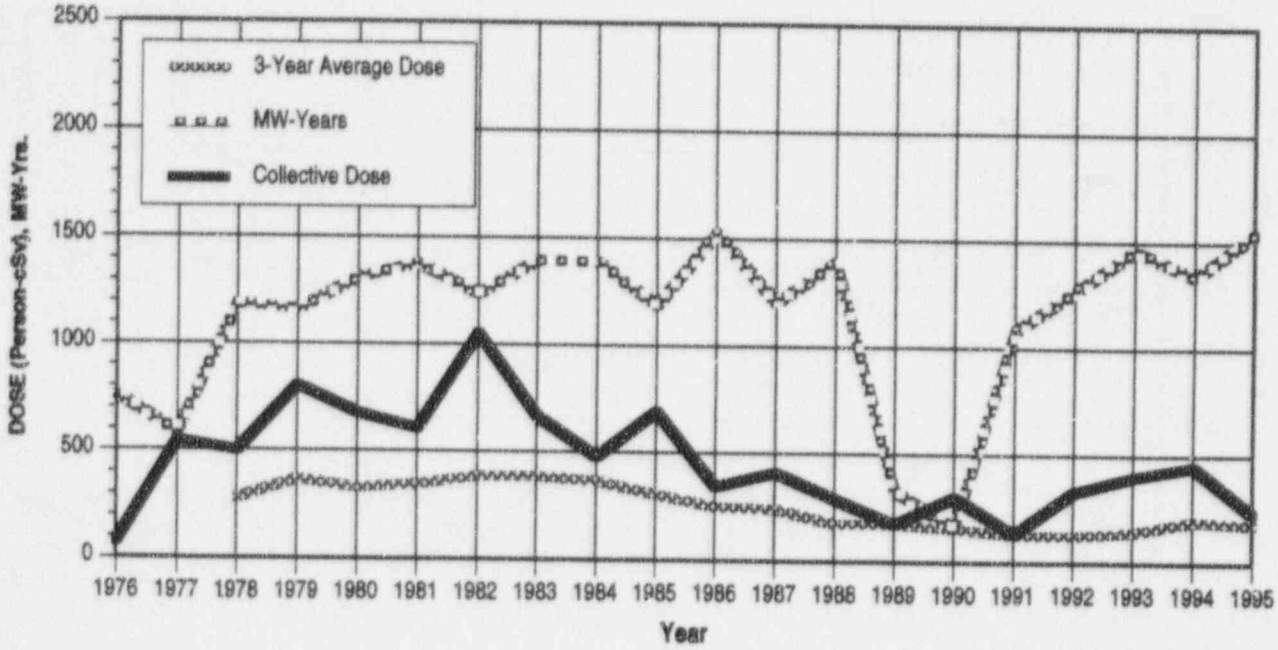


APPENDIX E (continued)

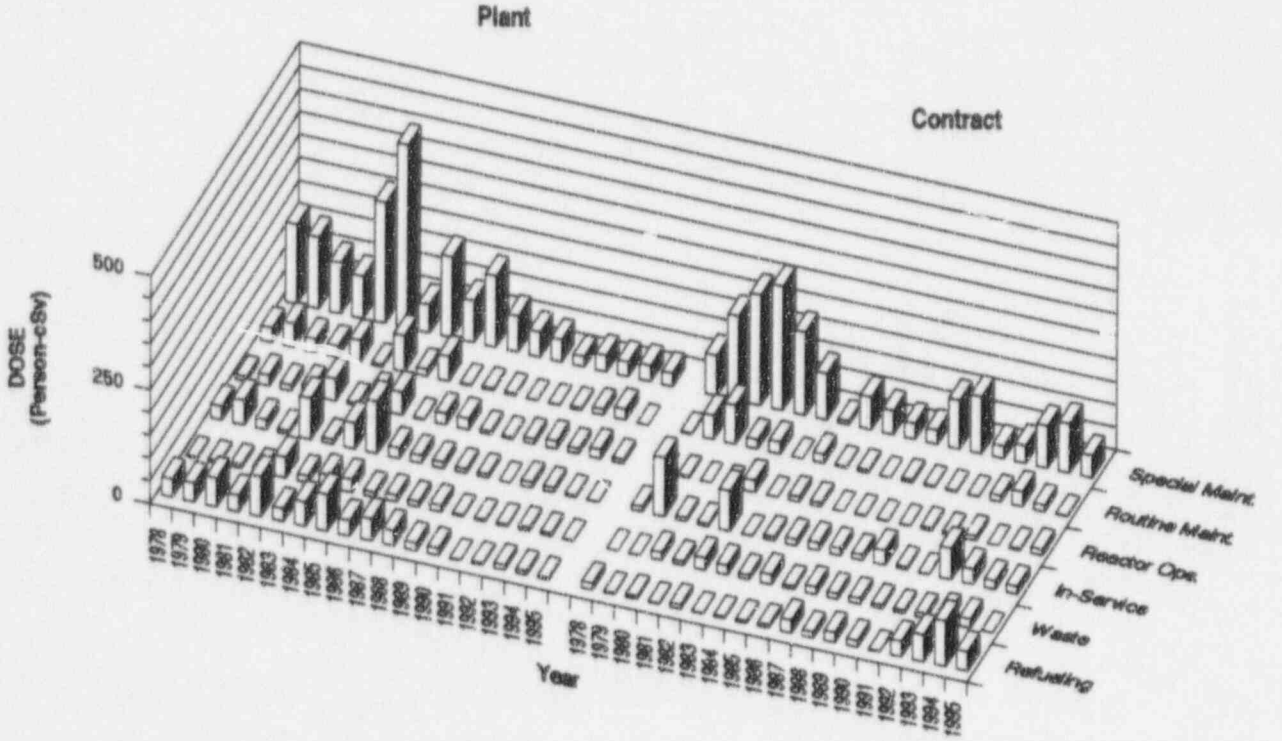
CALVERT CLIFFS 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

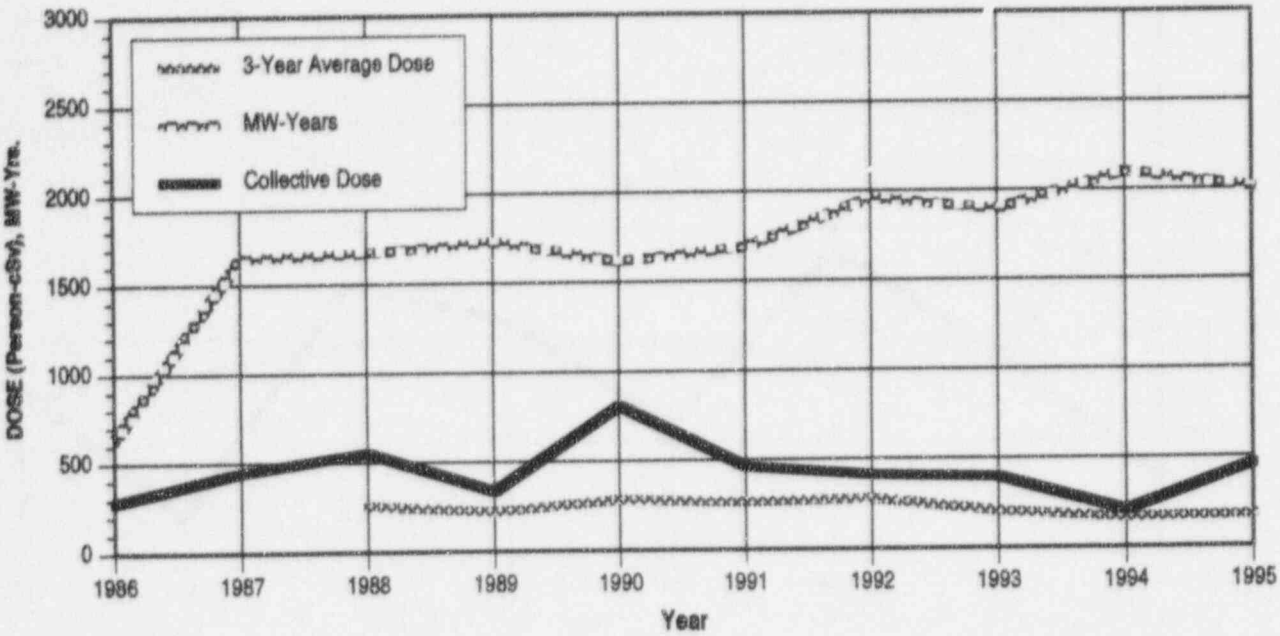


APPENDIX E (continued)

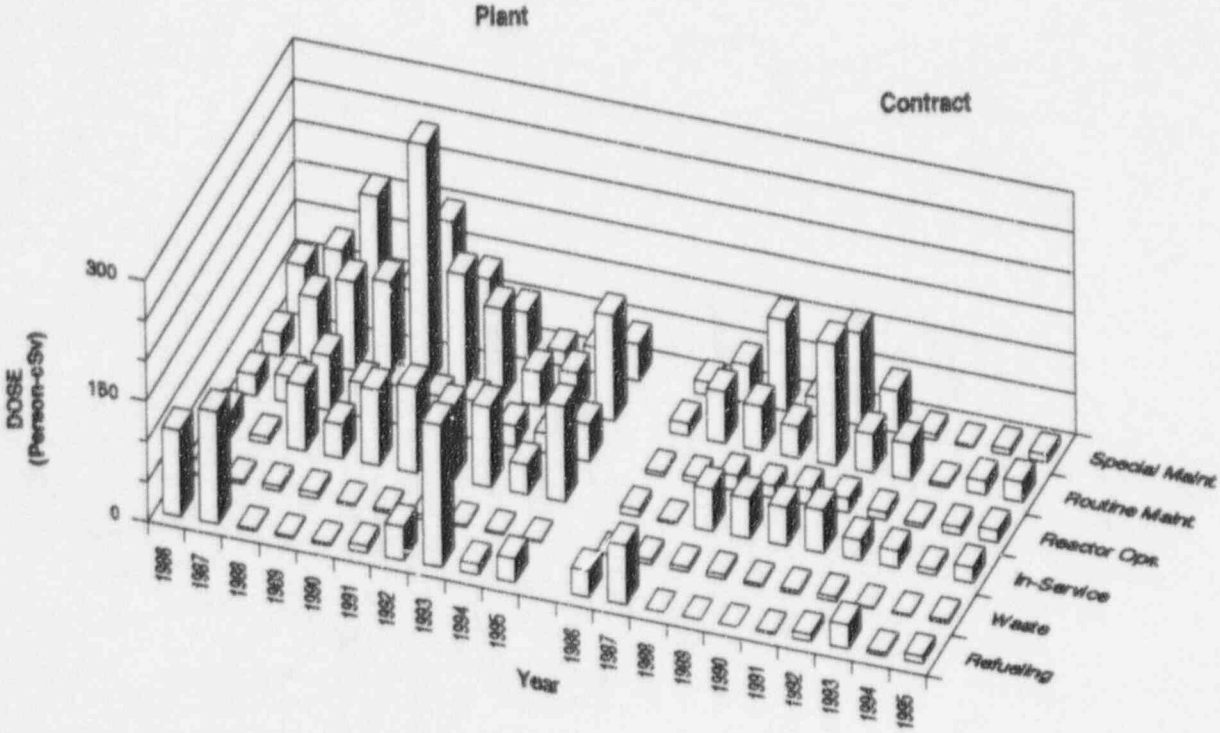
CATAWBA 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

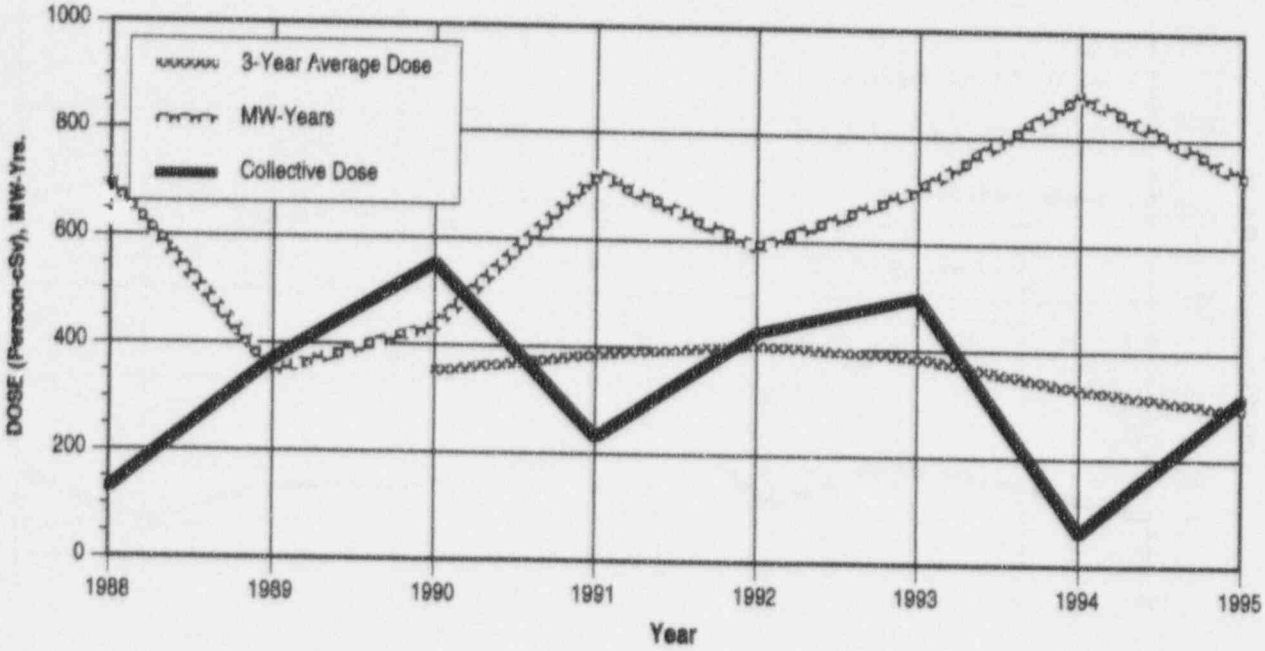


APPENDIX E (continued)

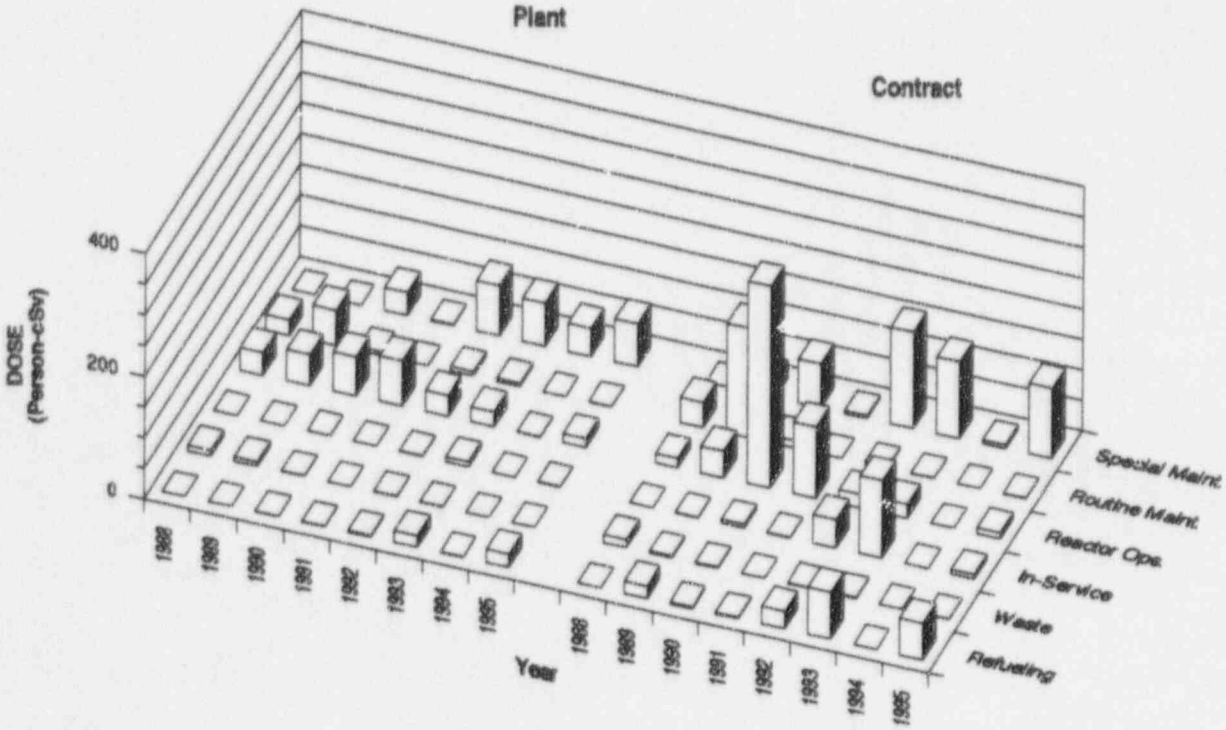
CLINTON

Dose-Performance Indicators

BWR



Breakdown by Job Function

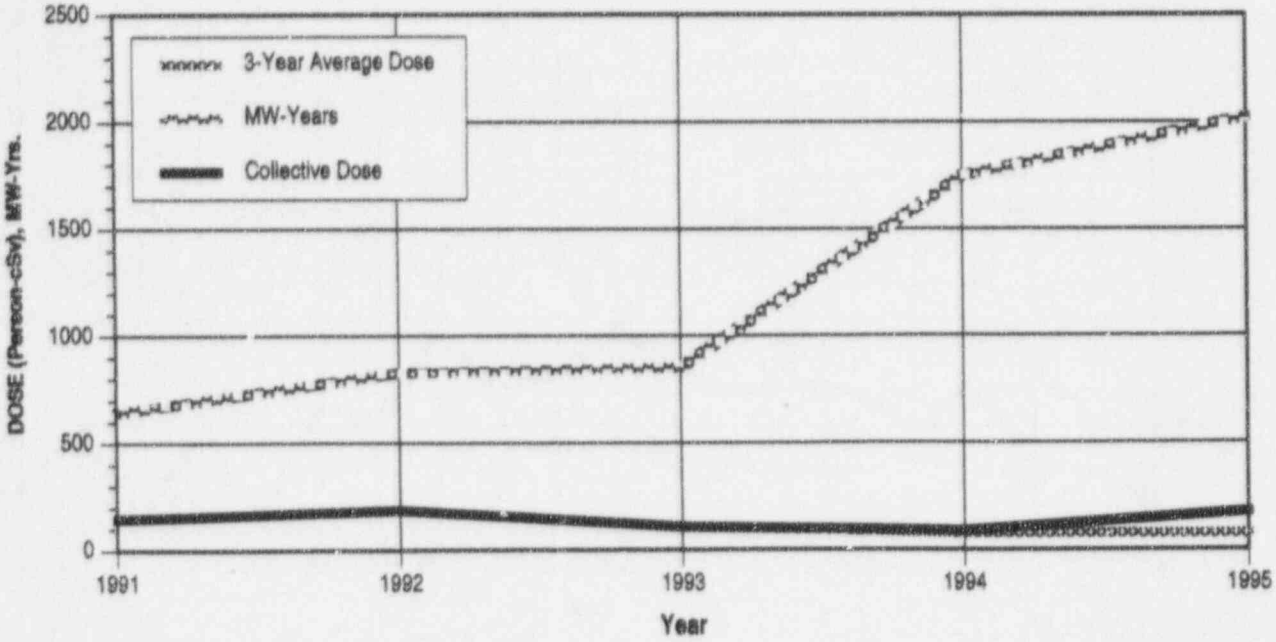


APPENDIX E (continued)

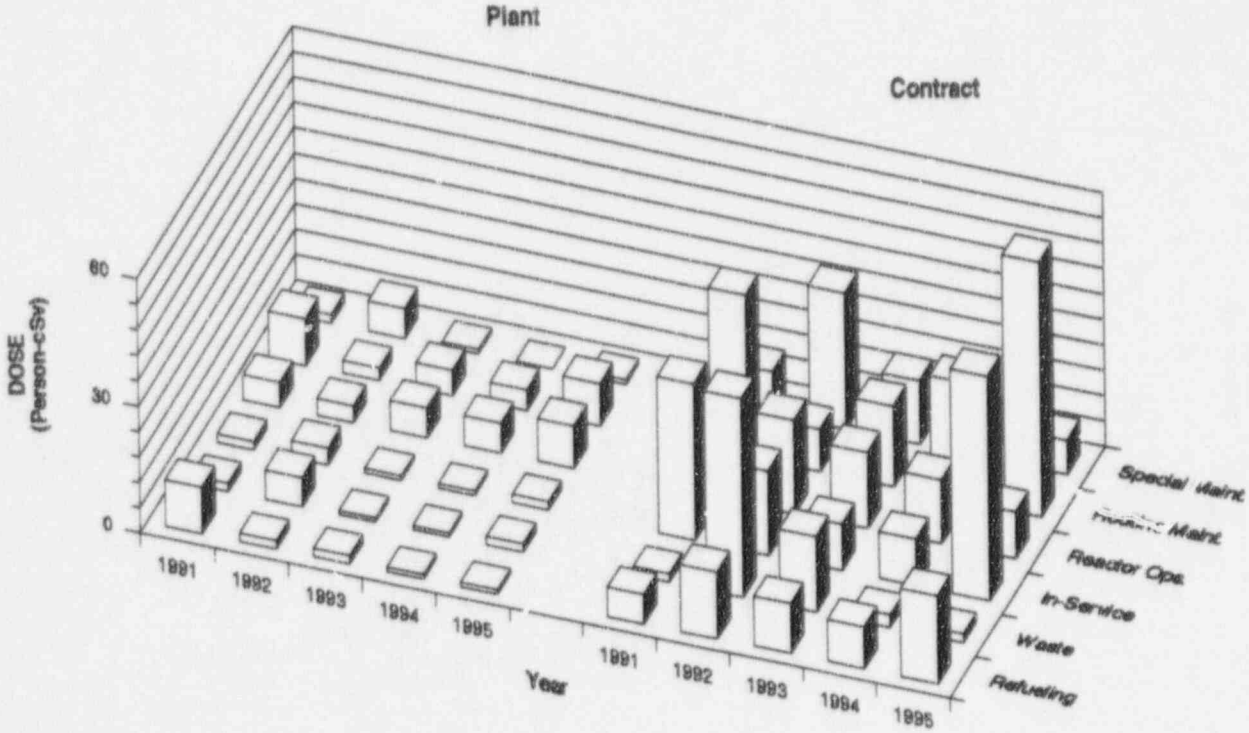
COMANCHE PEAK 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

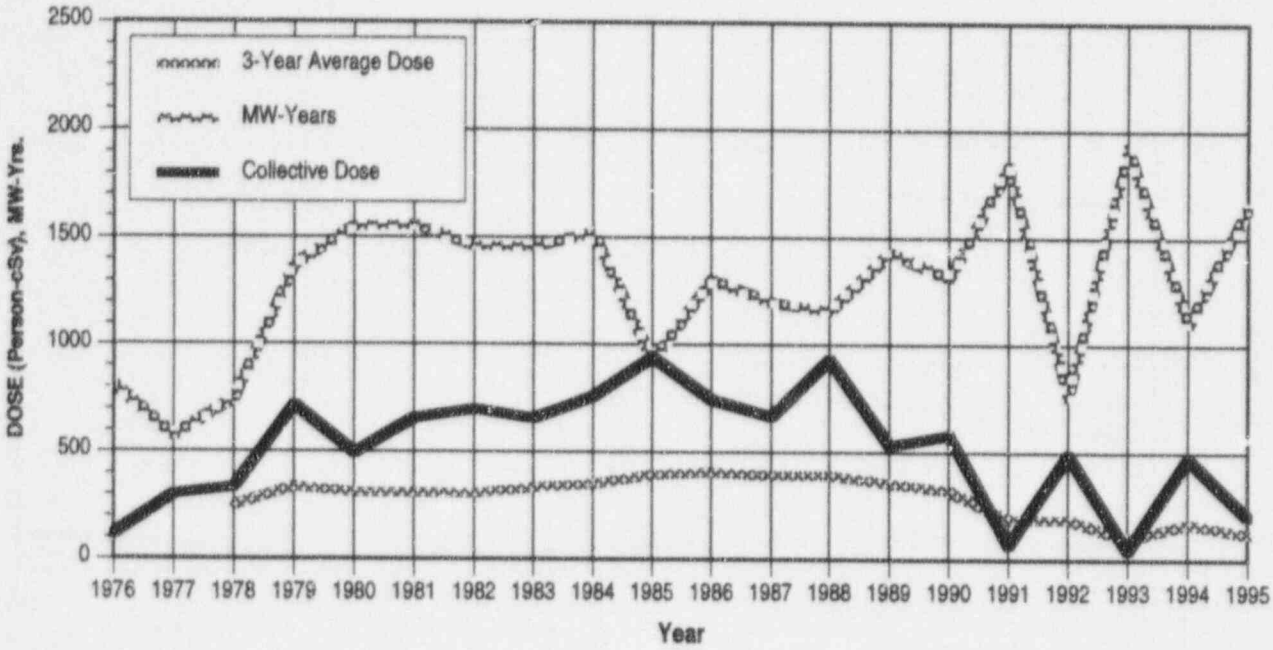


APPENDIX E (continued)

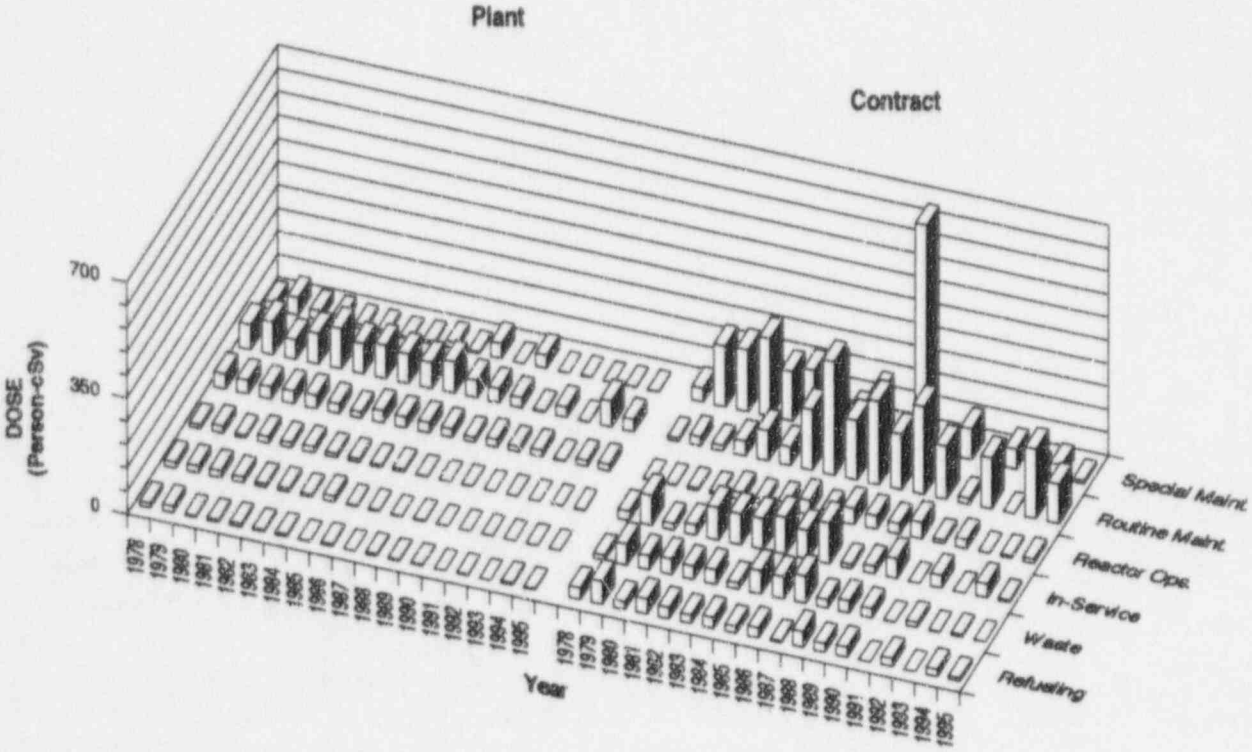
COOK 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

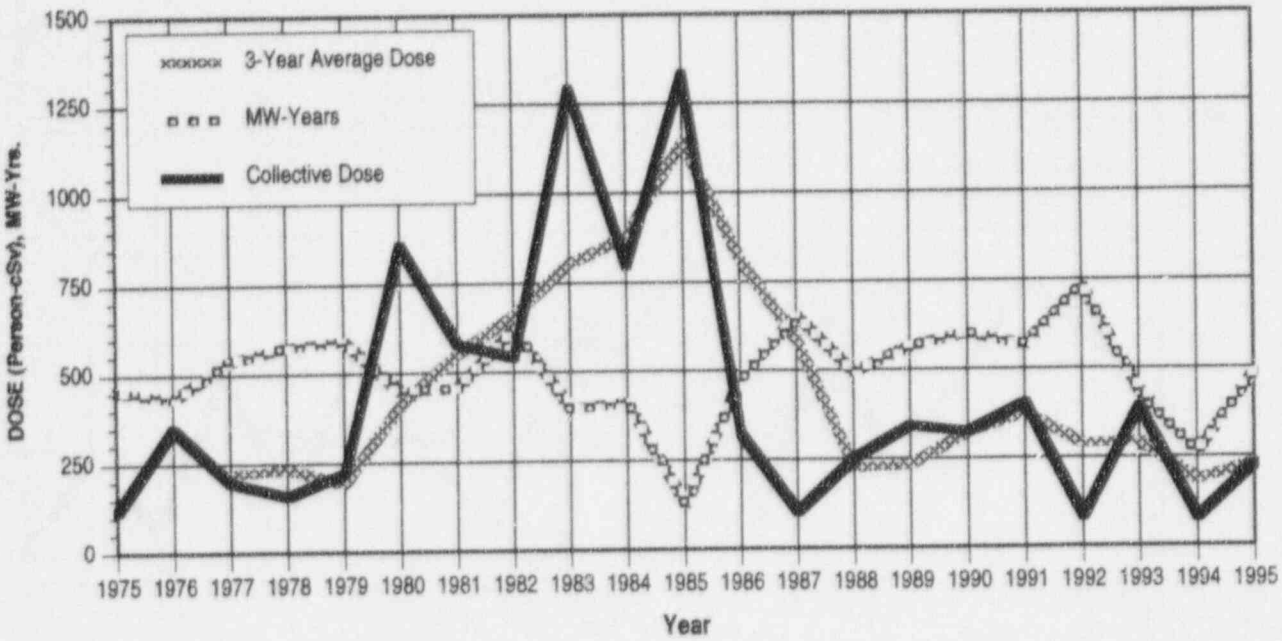


APPENDIX E (continued)

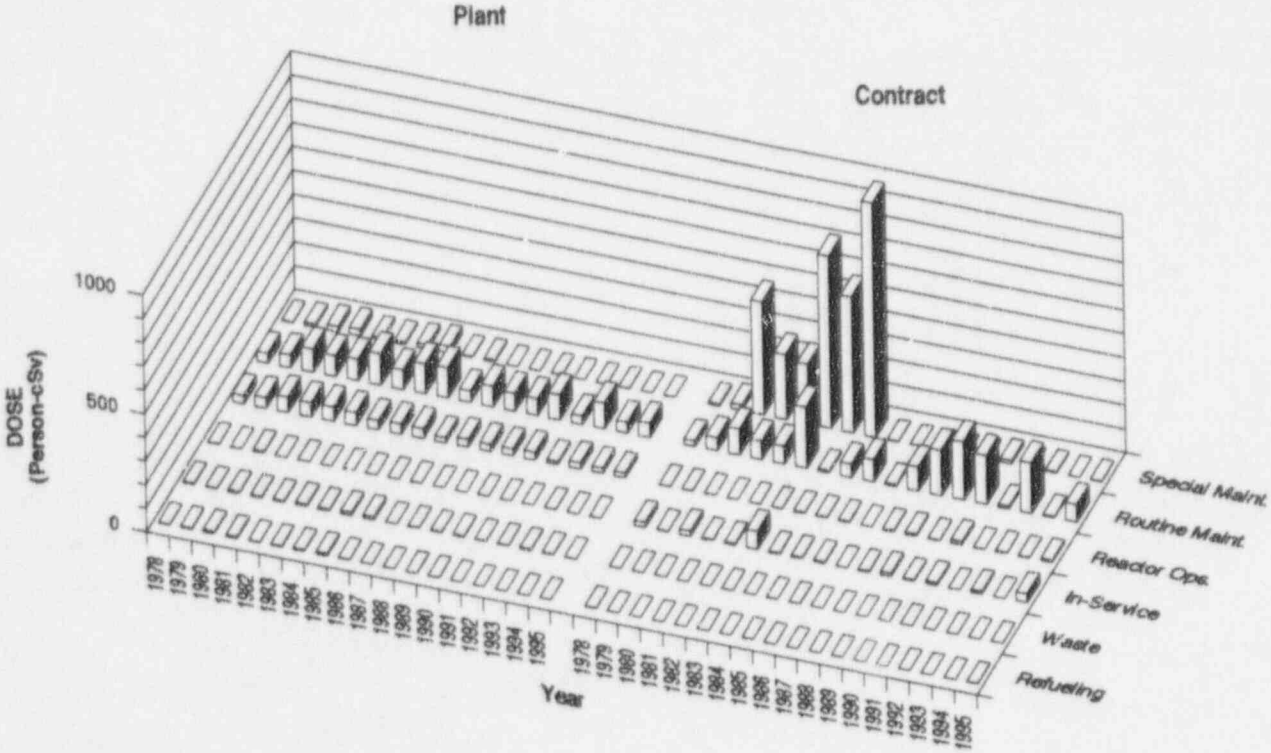
COOPER STATION

Dose-Performance Indicators

BWR



Breakdown by Job Function

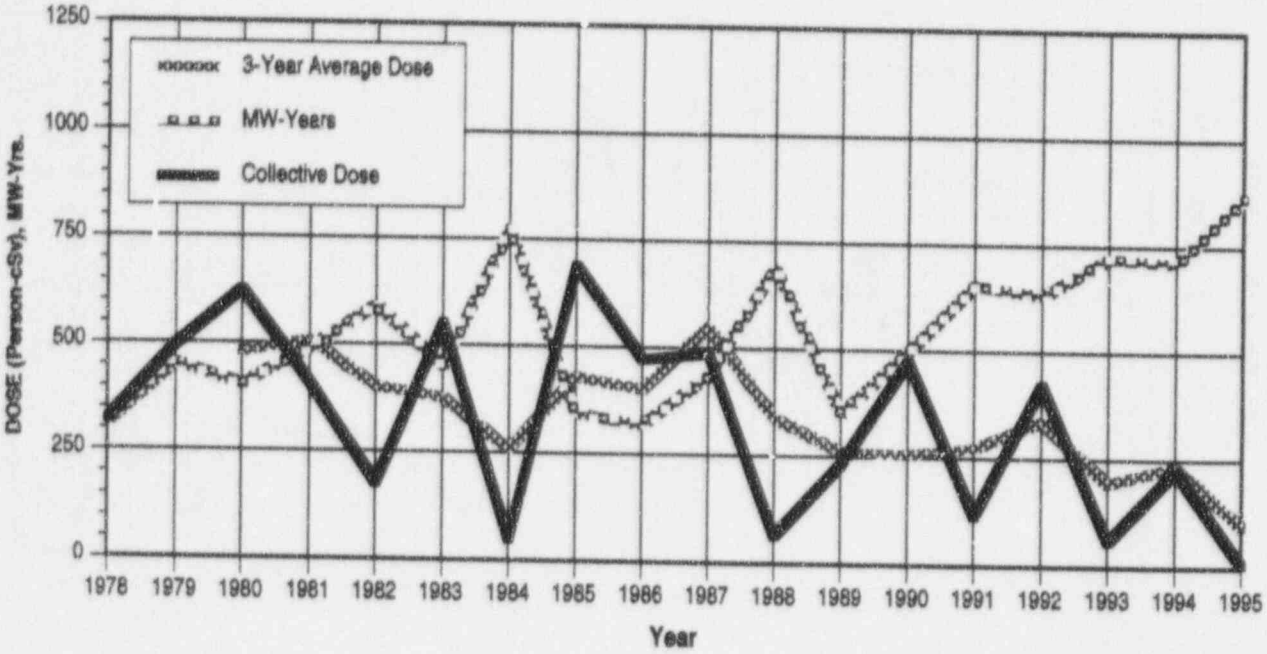


APPENDIX E (continued)

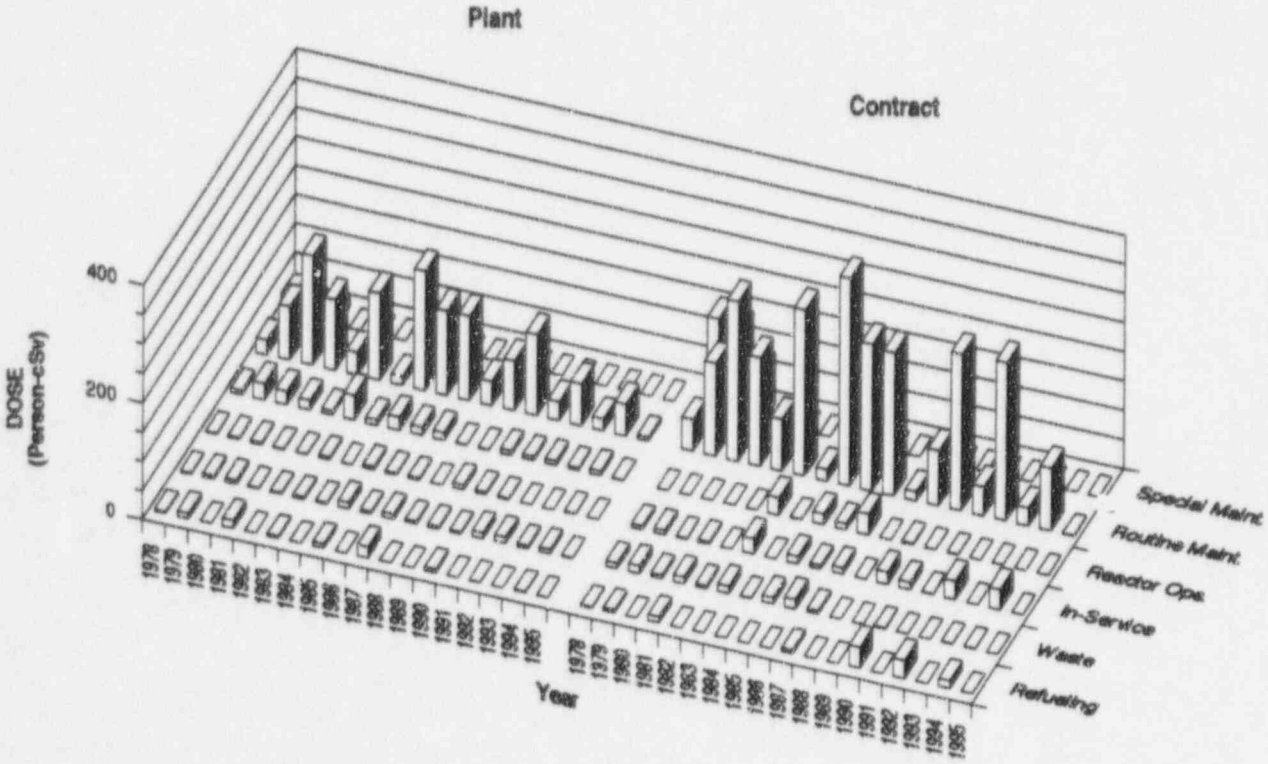
CRYSTAL RIVER 3

Dose-Performance Indicators

PWR



Breakdown by Job Function

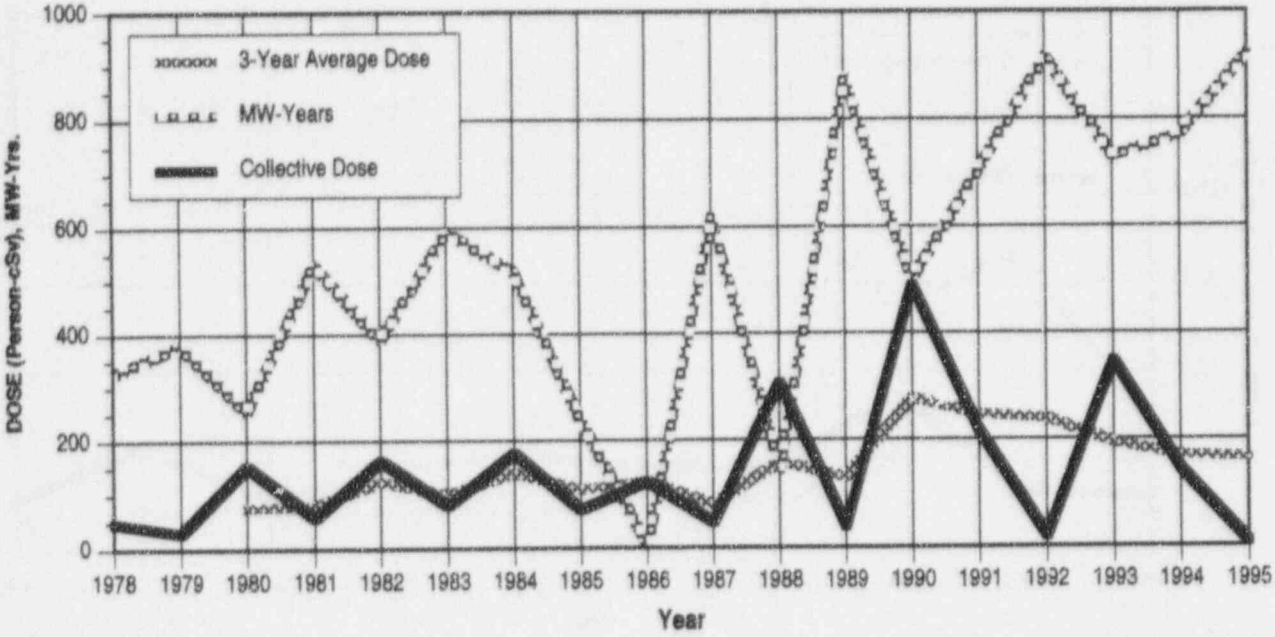


APPENDIX E (continued)

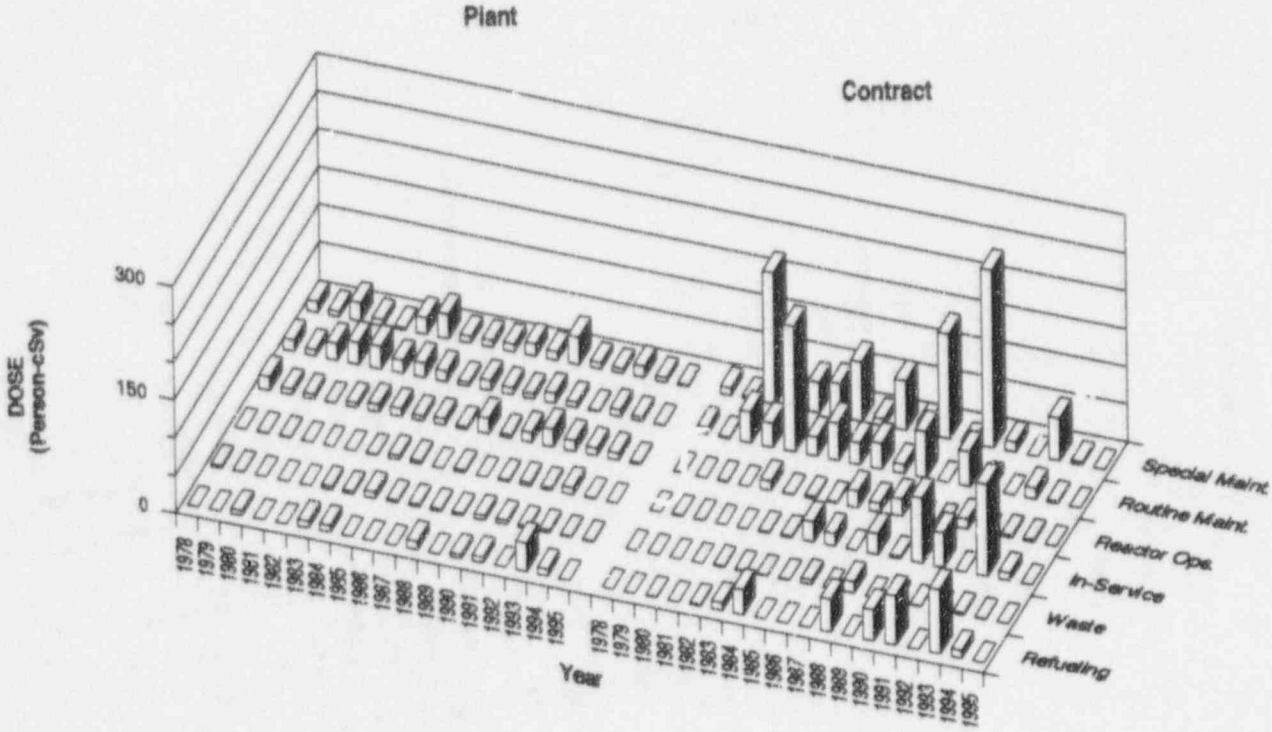
DAVIS-BESSE

Dose-Performance Indicators

PWR



Breakdown by Job Function

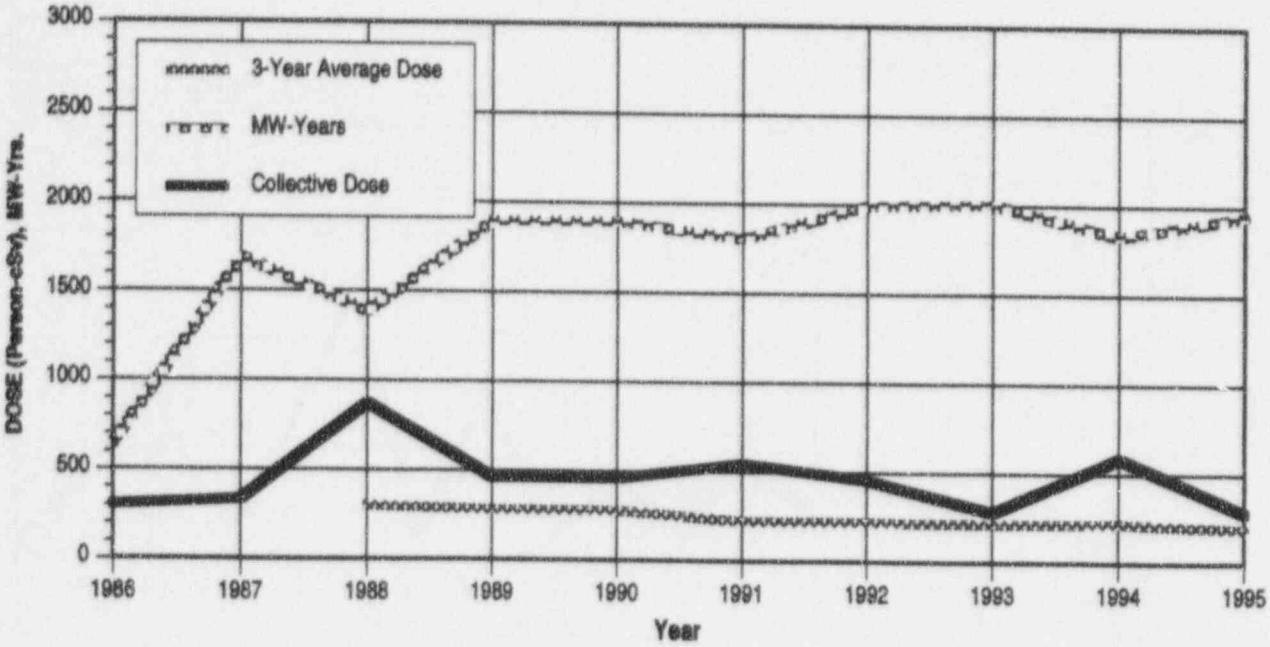


APPENDIX E (continued)

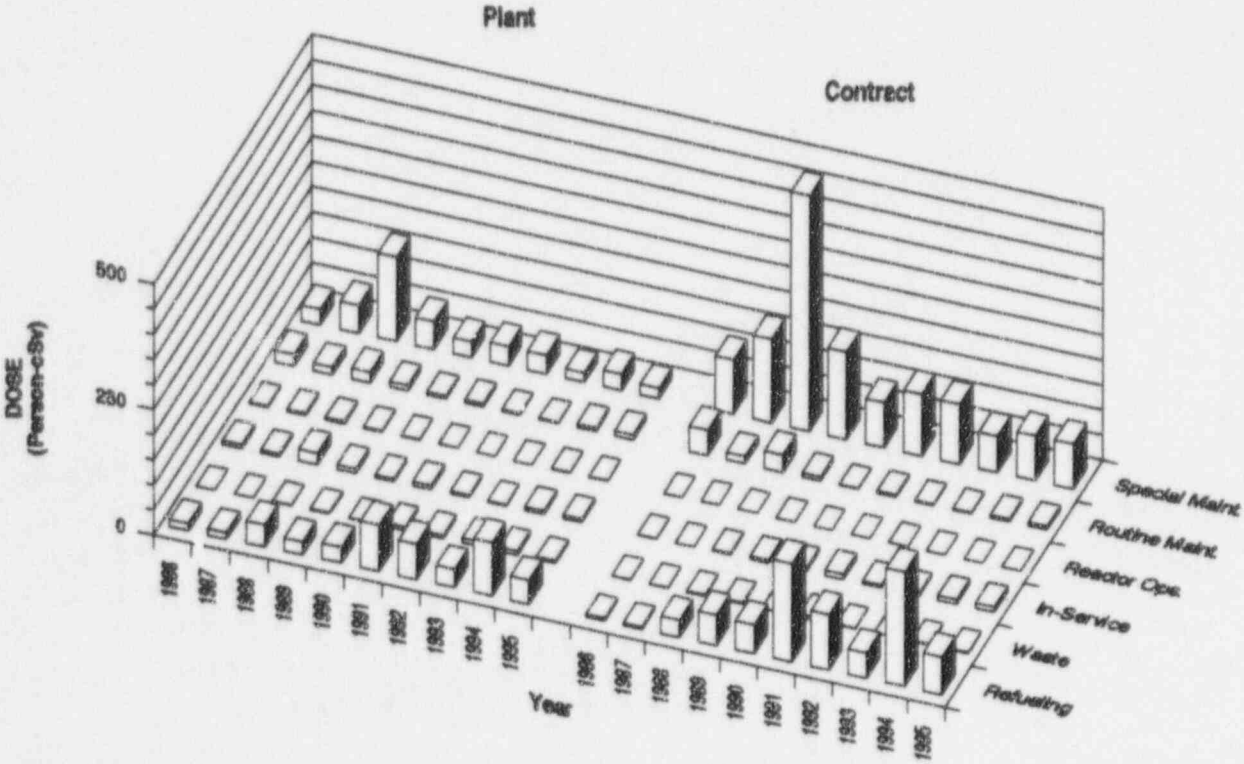
DIABLO CANYON 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

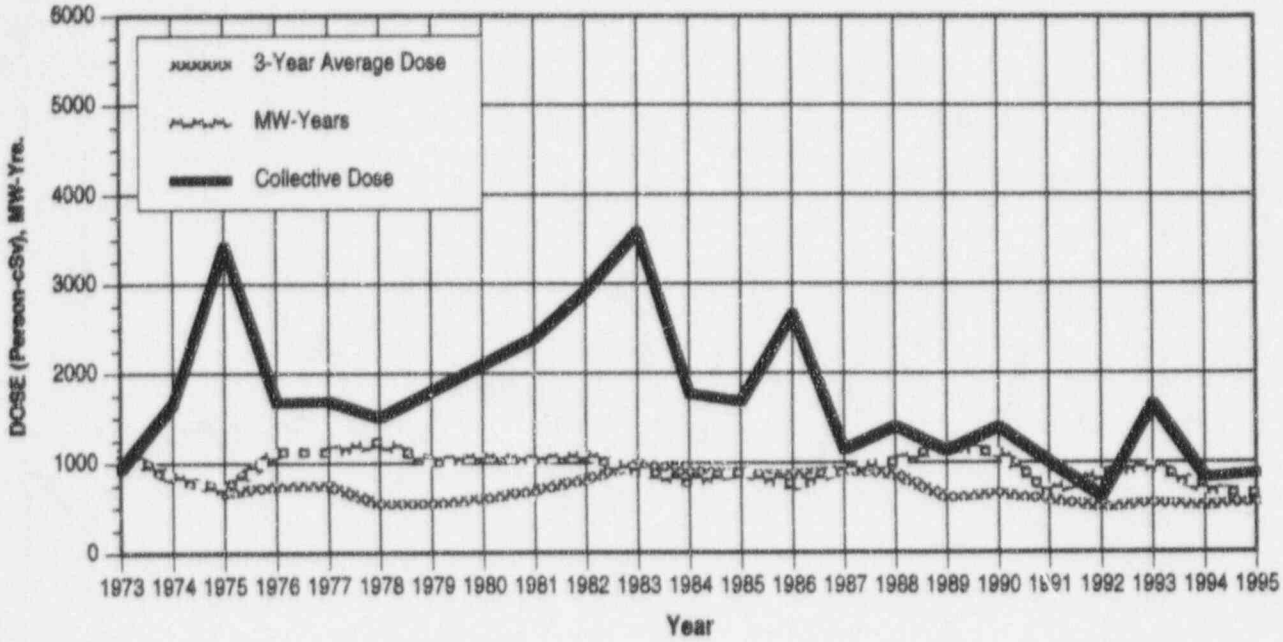


APPENDIX E (continued)

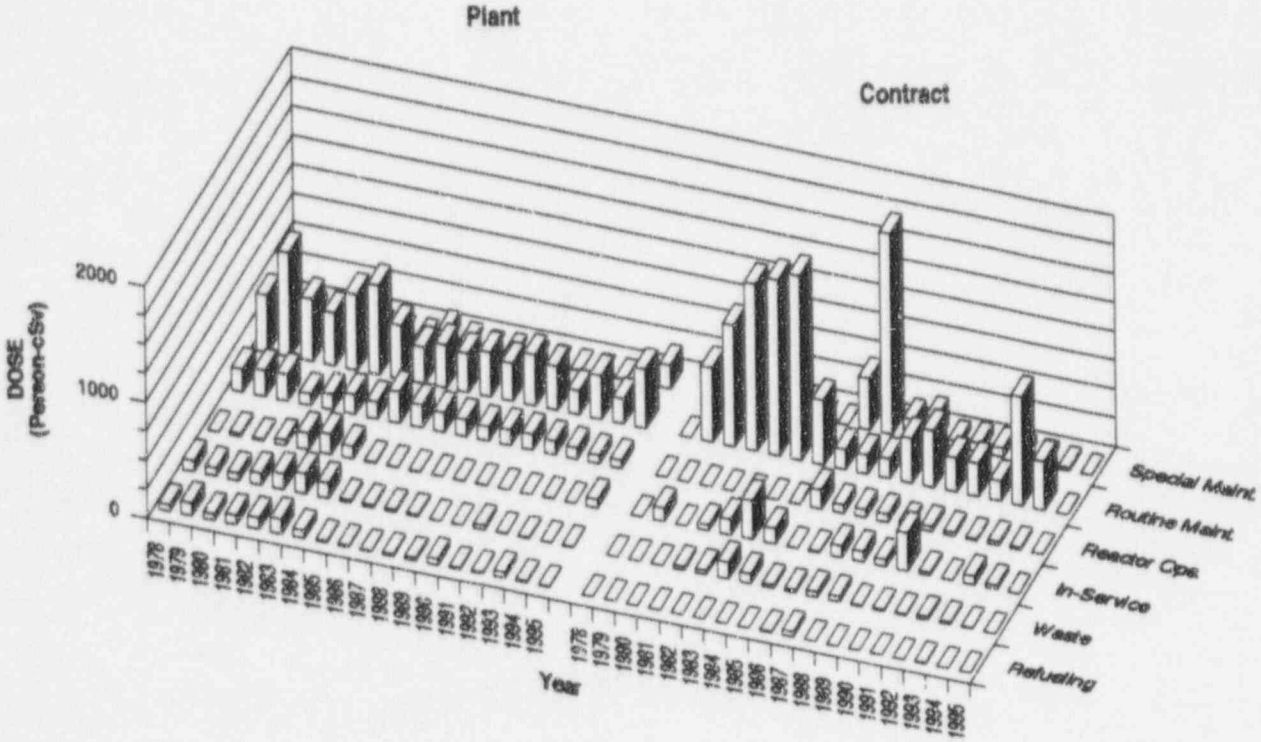
DRESDEN 2, 3

Dose-Performance Indicators

BWR



Breakdown by Job Function

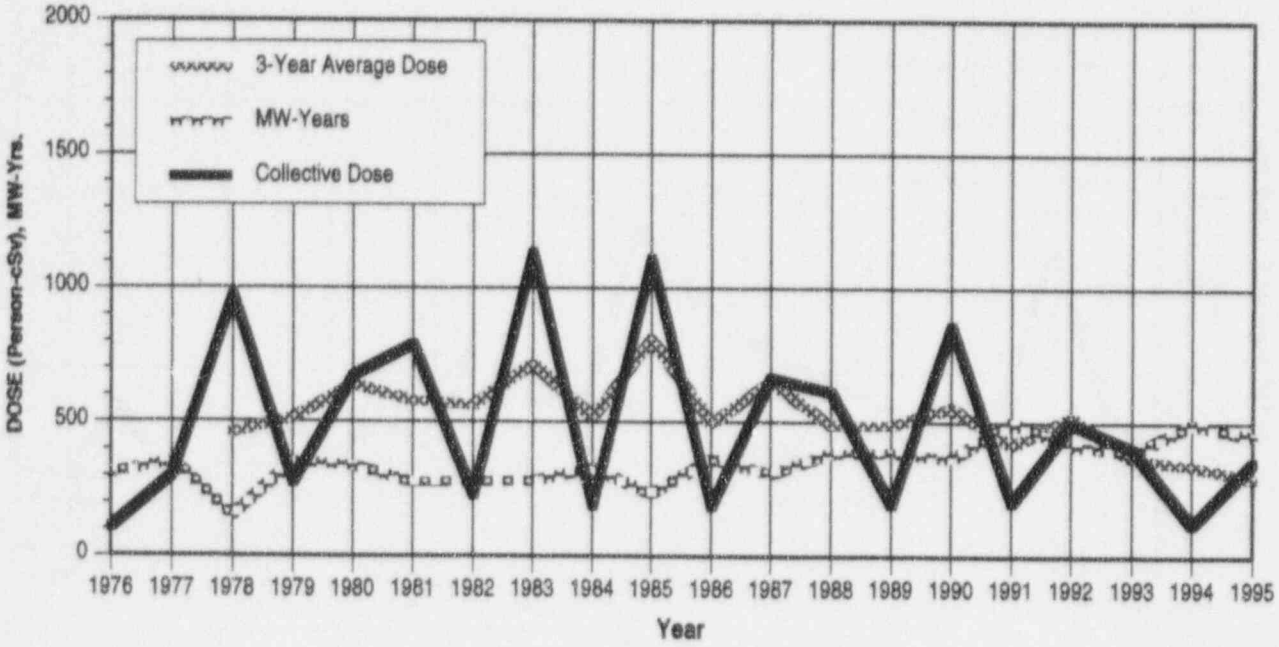


APPENDIX E (continued)

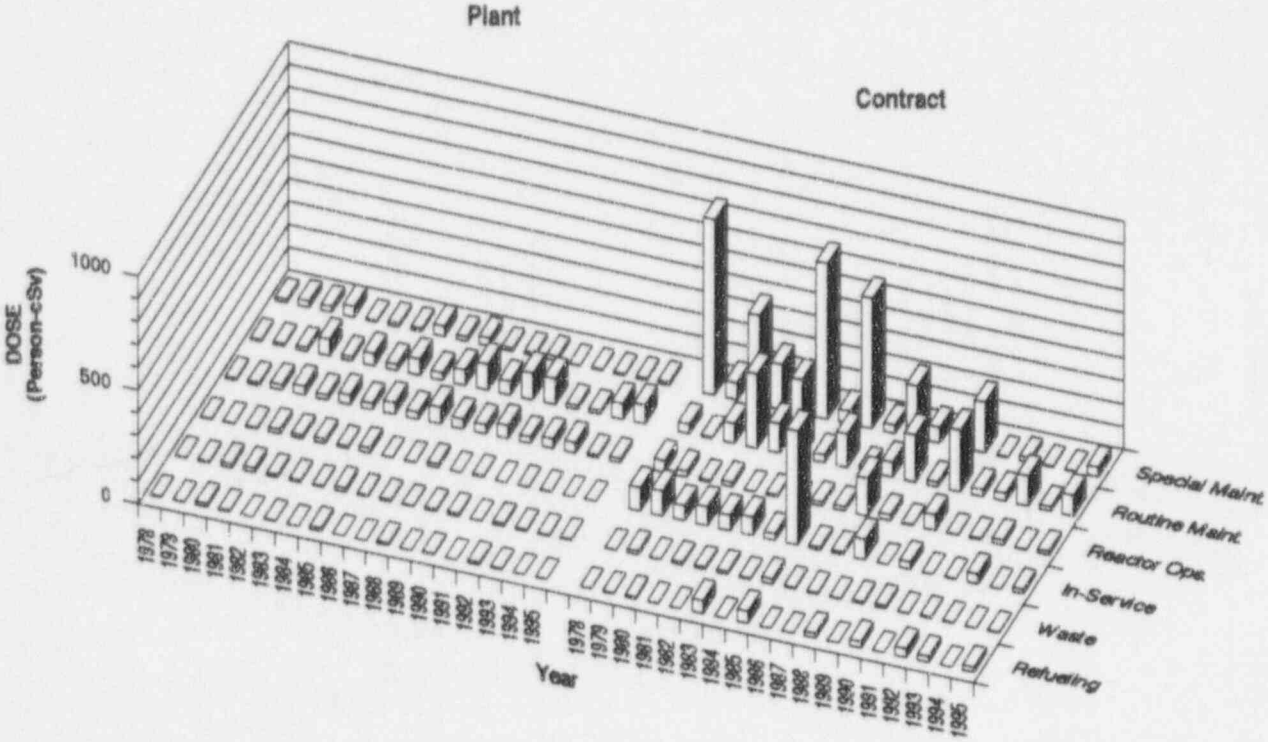
DUANE ARNOLD

Dose-Performance Indicators

BWR



Breakdown by Job Function

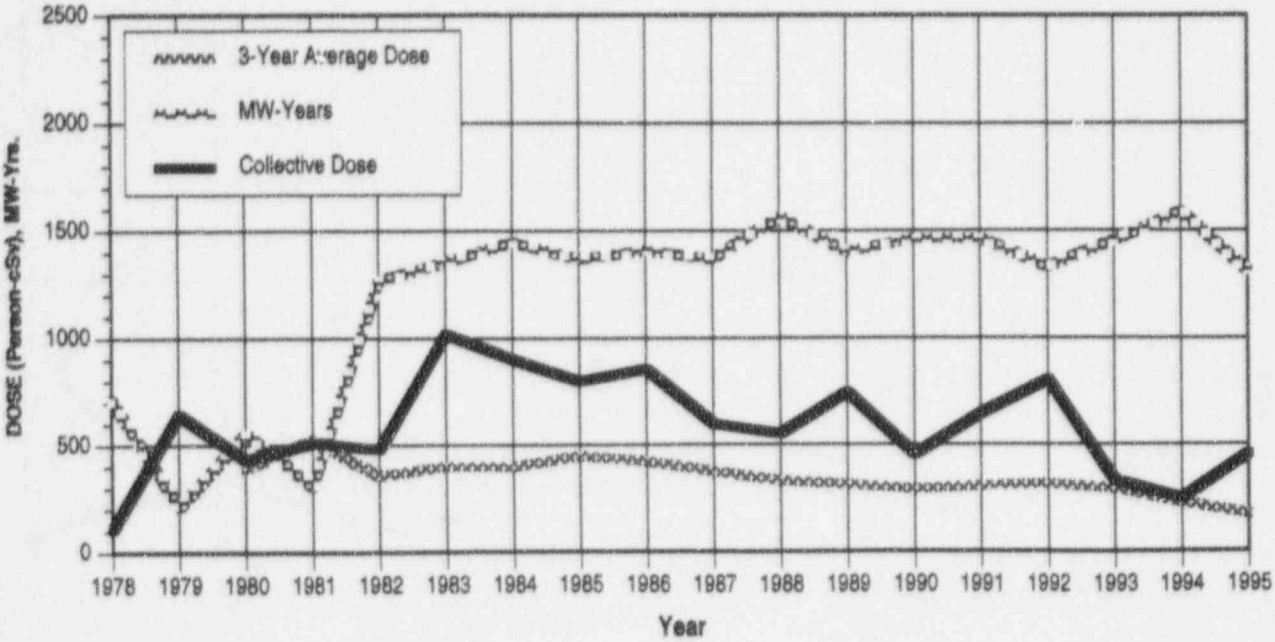


APPENDIX E (continued)

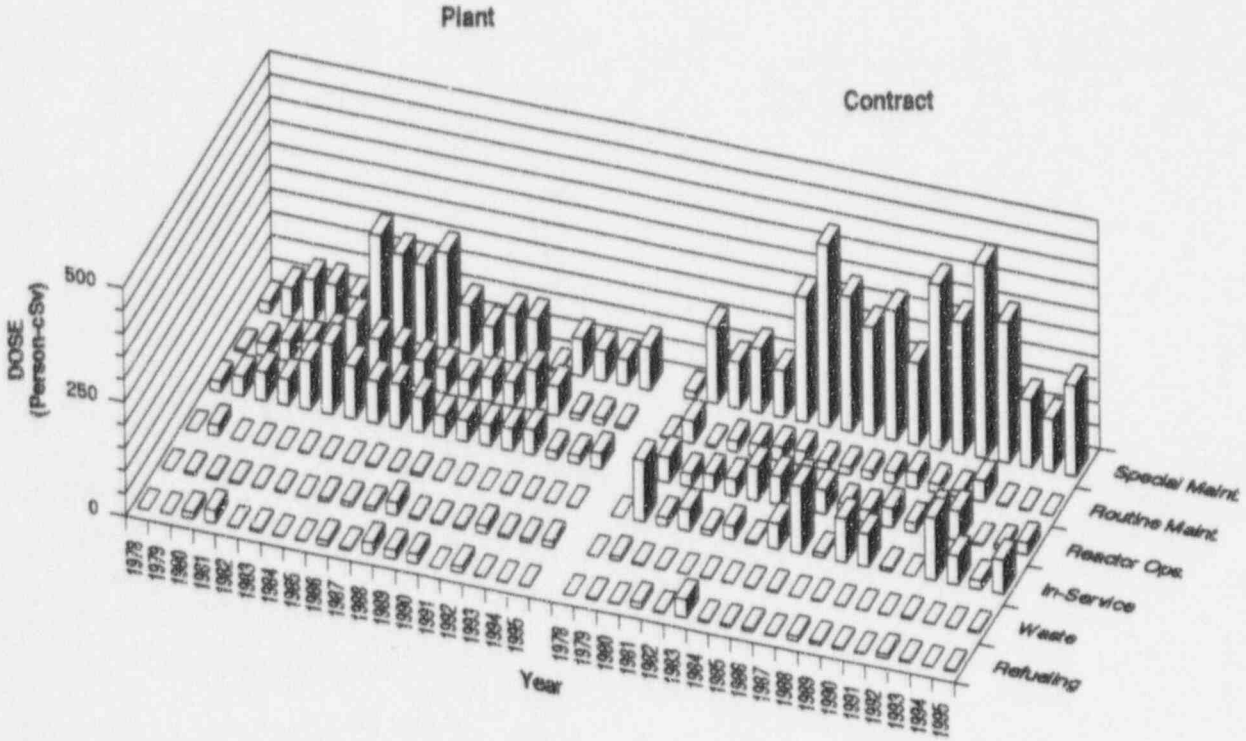
FARLEY 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

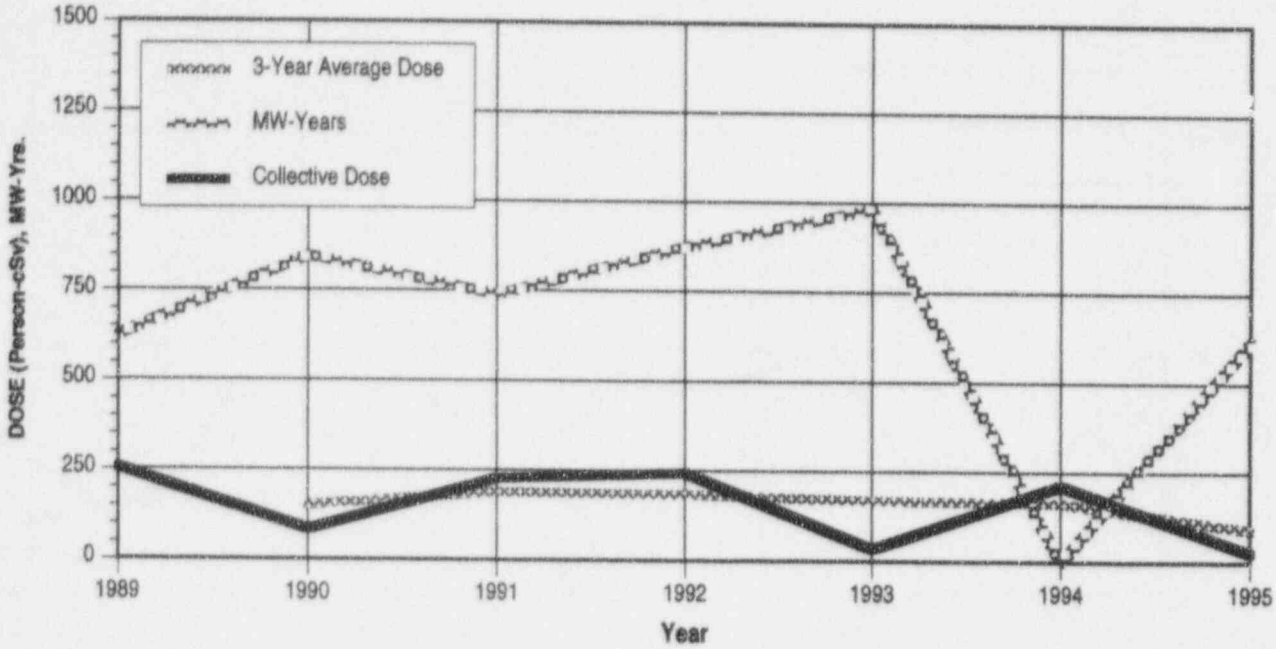


APPENDIX E (continued)

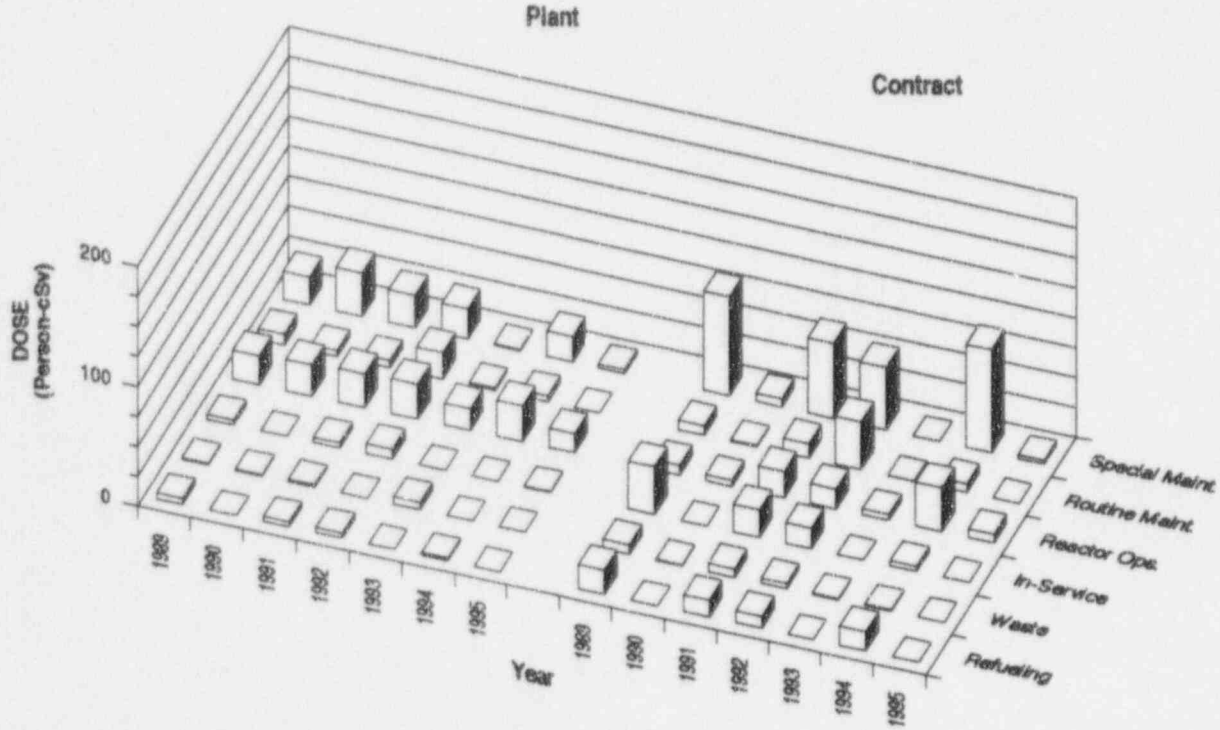
FERMI 2

Dose-Performance Indicators

BWR



Breakdown by Job Function

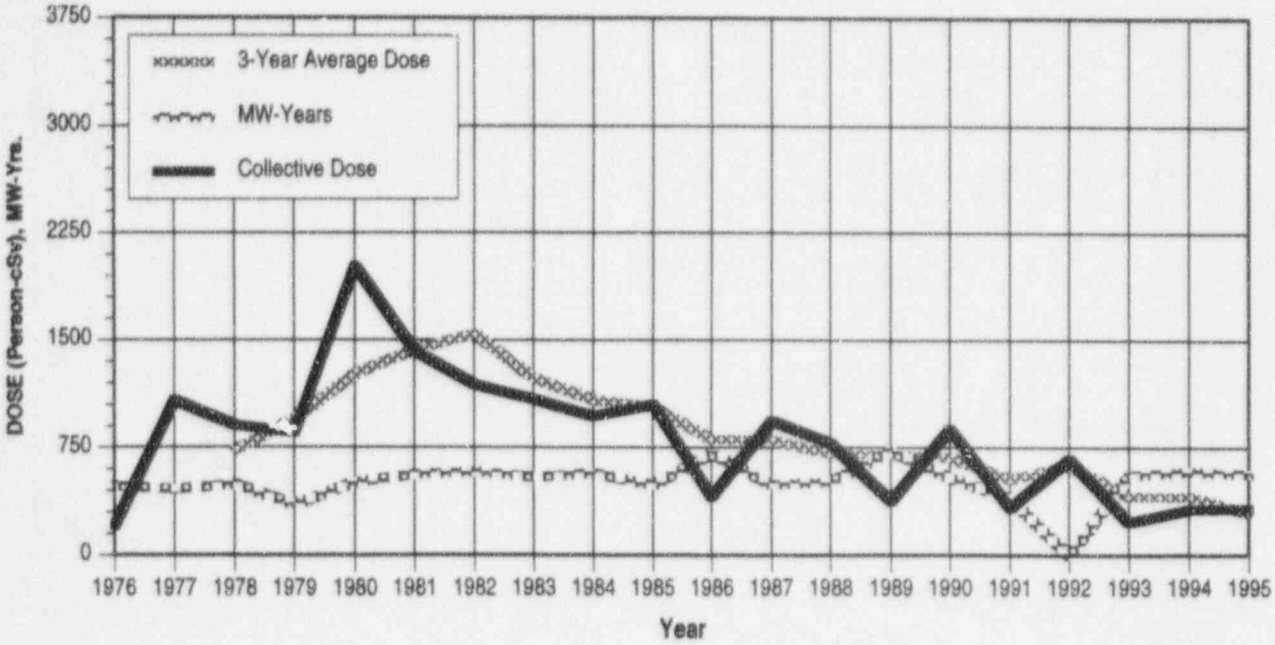


APPENDIX E (continued)

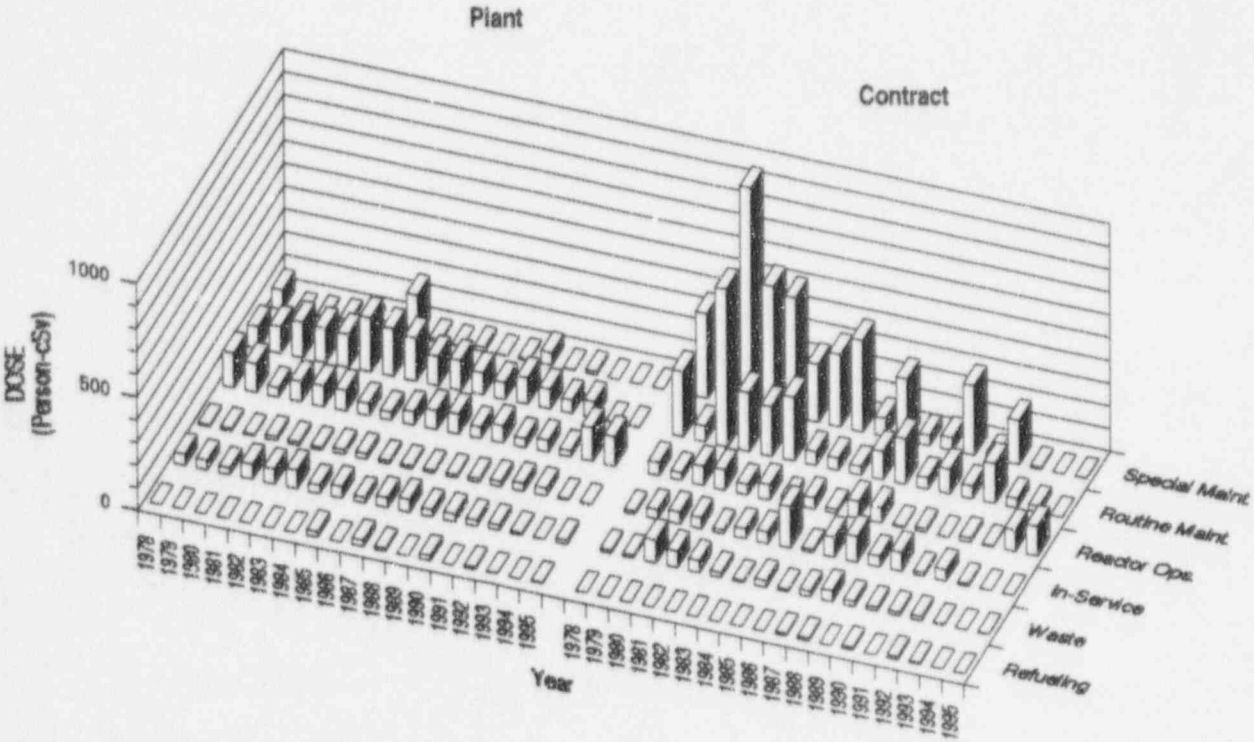
FITZPATRICK

Dose-Performance Indicators

BWR



Breakdown by Job Function

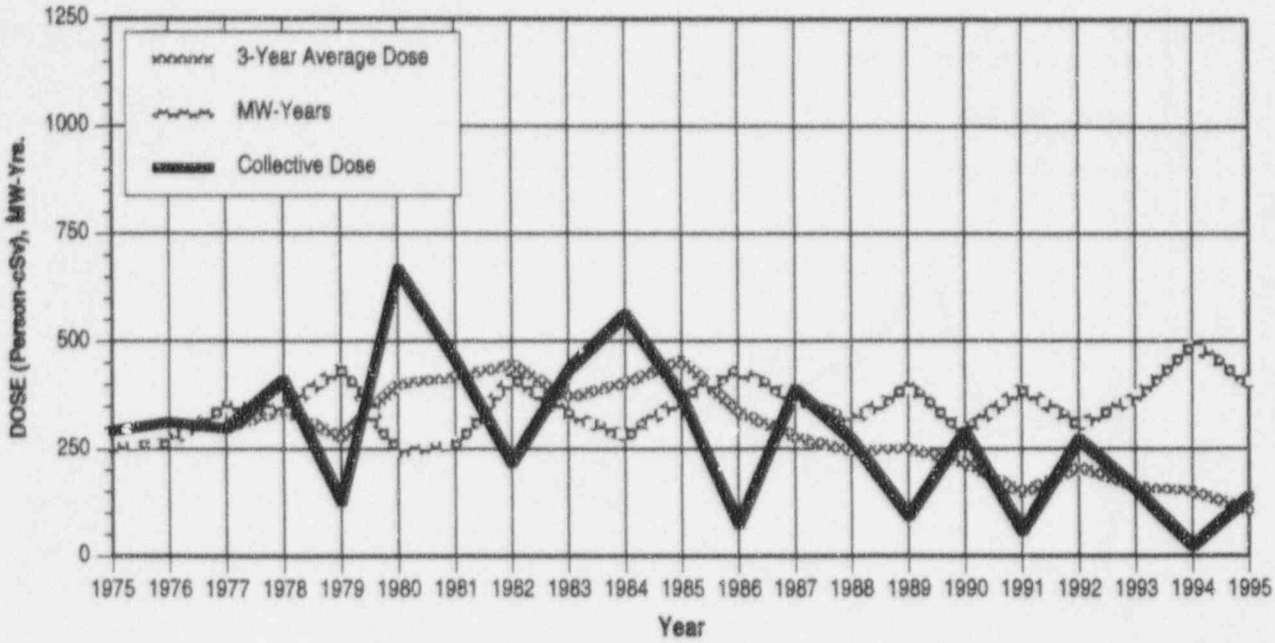


APPENDIX E (continued)

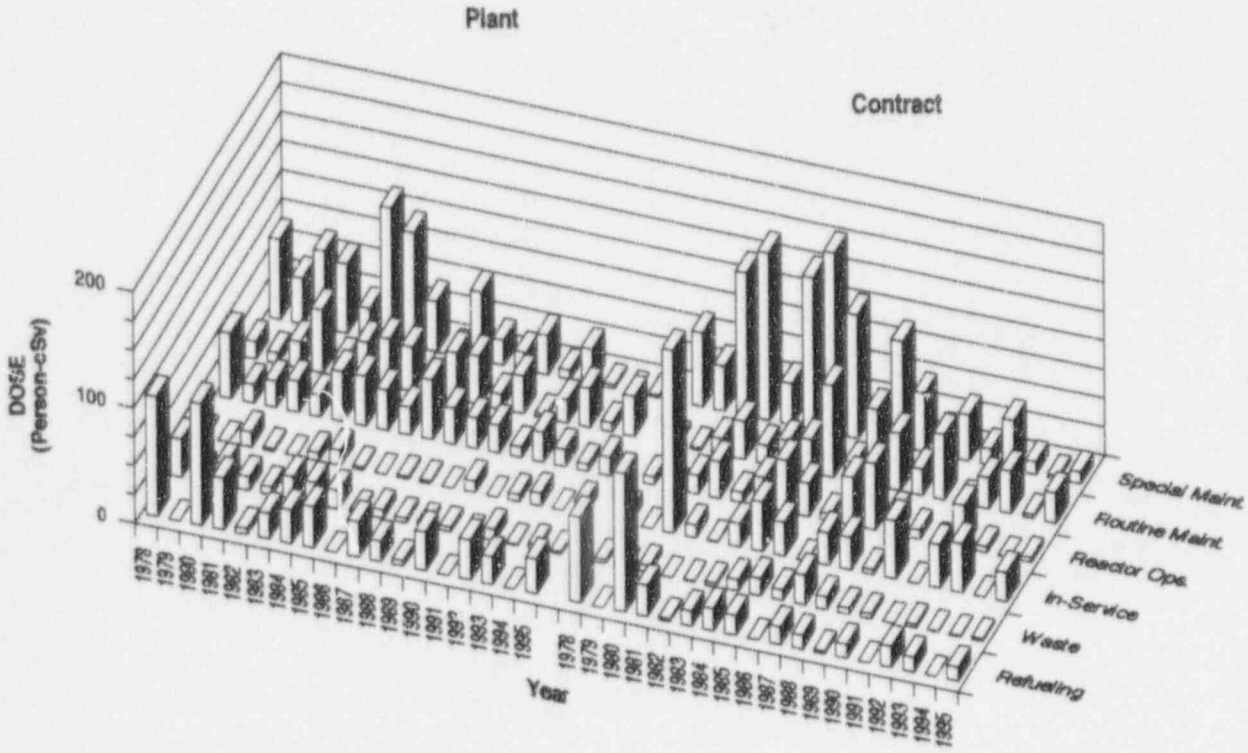
FORT CALHOUN

Dose-Performance Indicators

PWR



Breakdown by Job Function

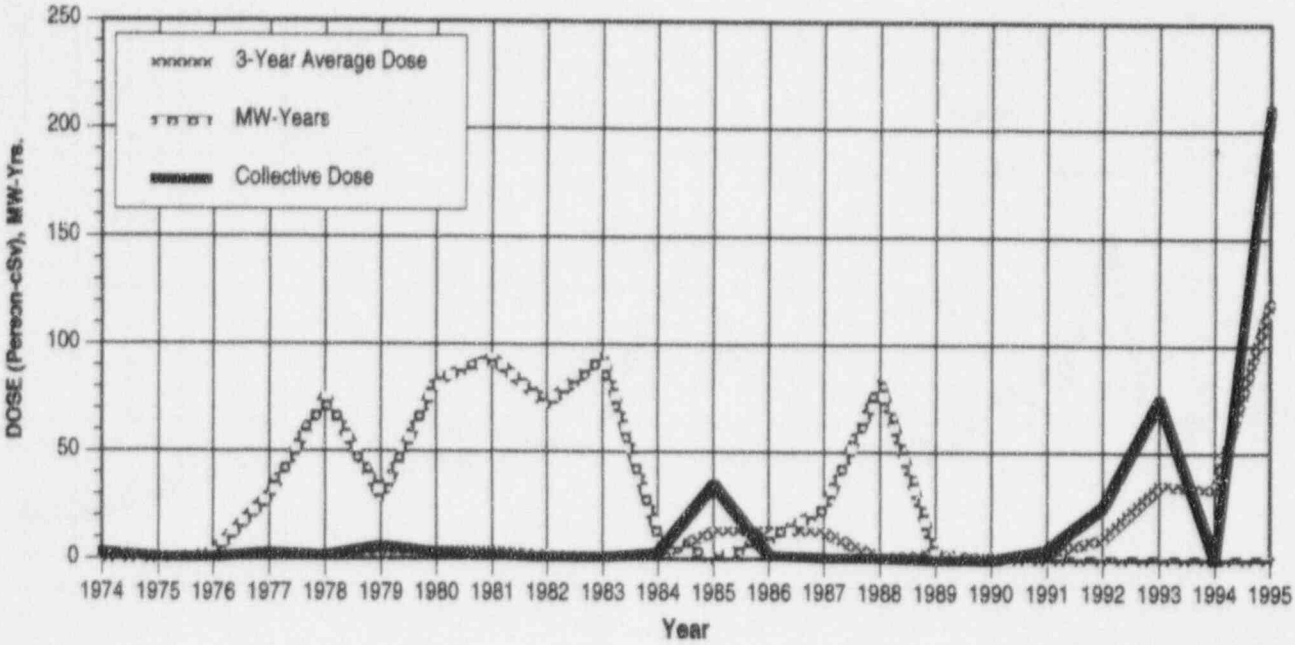


APPENDIX E (continued)

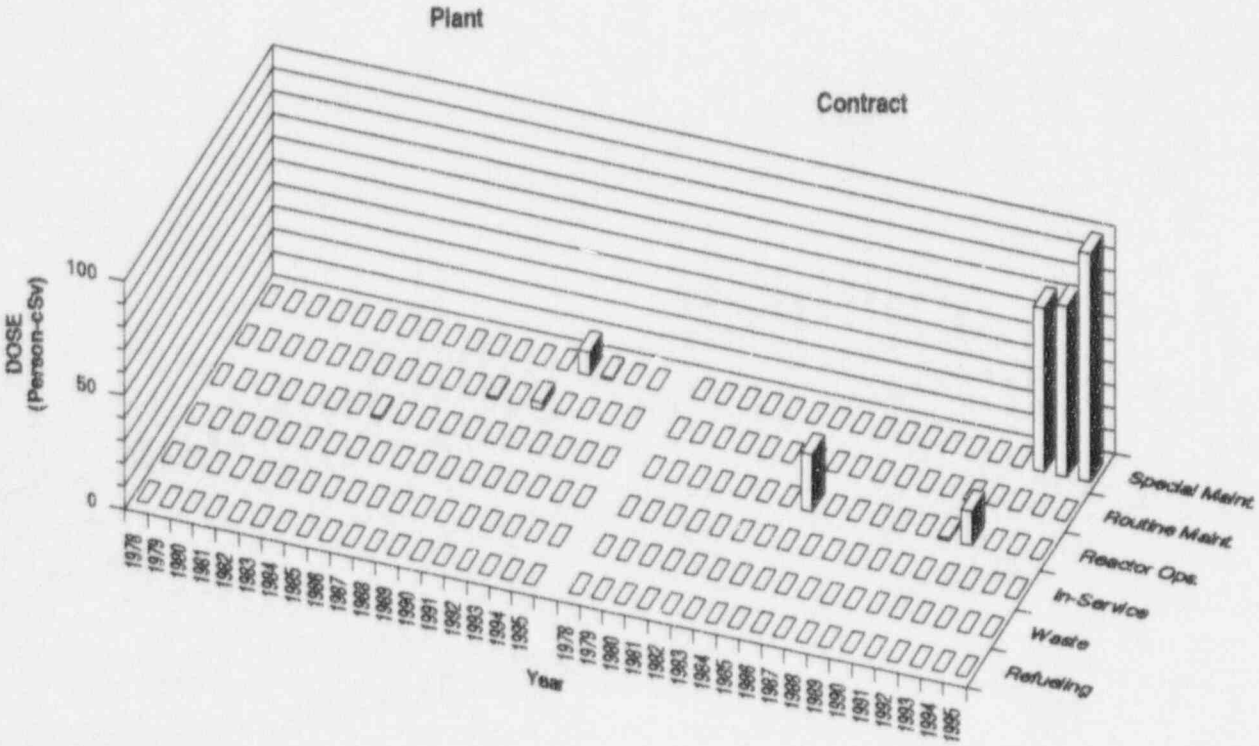
FORT ST. VRAIN

Dose-Performance Indicators

HTGR



Breakdown by Job Function

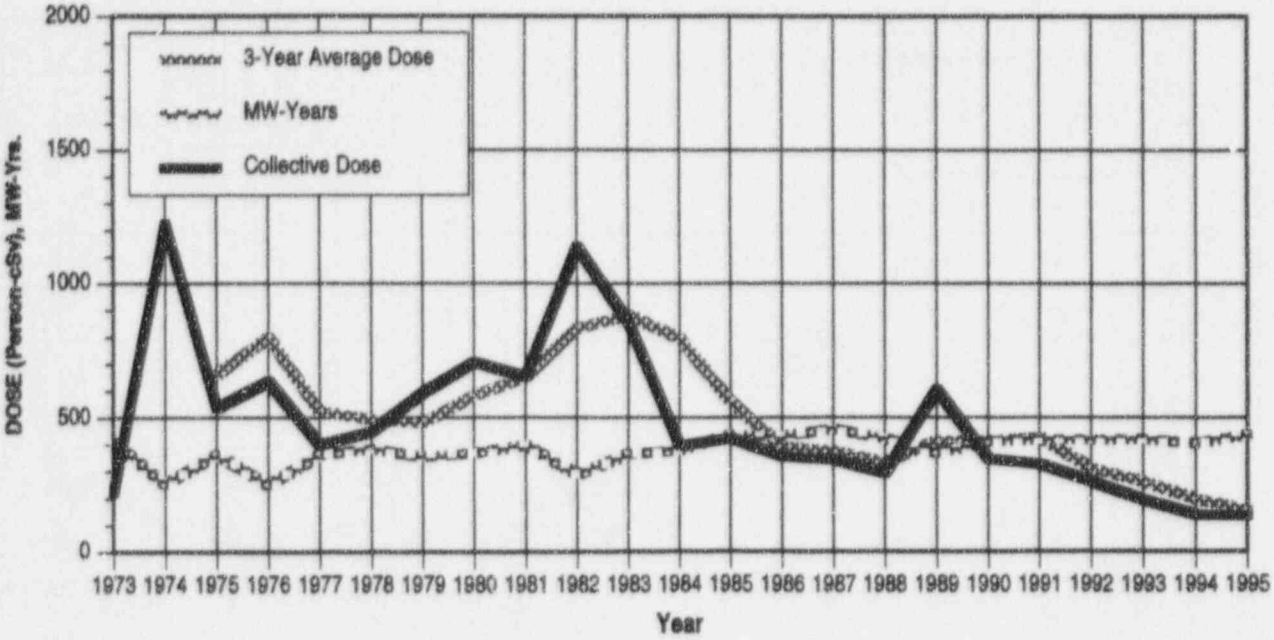


APPENDIX E (continued)

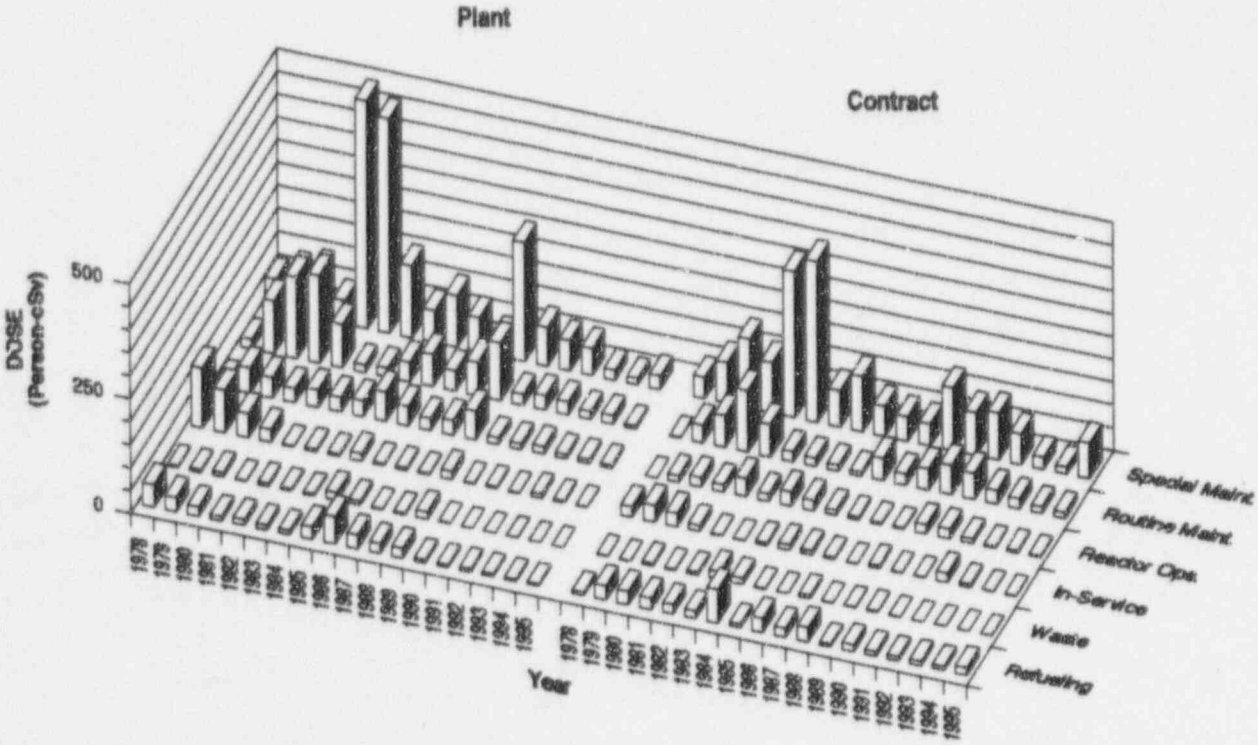
GINNA

Dose-Performance Indicators

PWR



Breakdown by Job Function

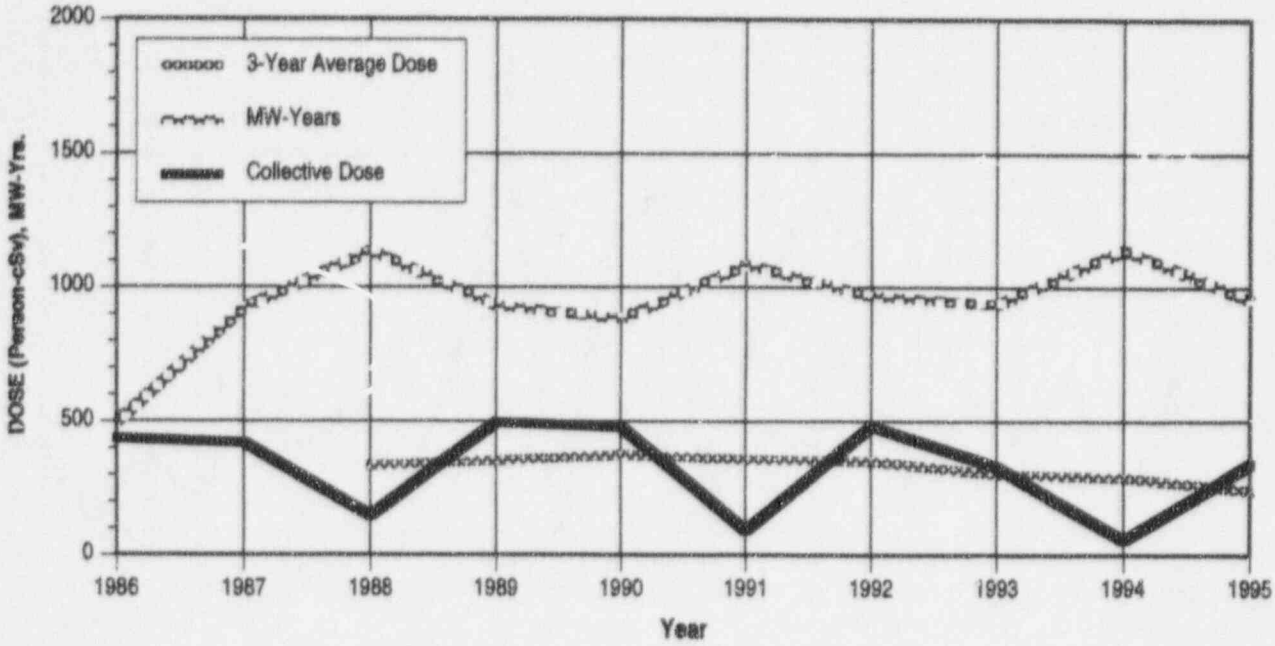


APPENDIX E (continued)

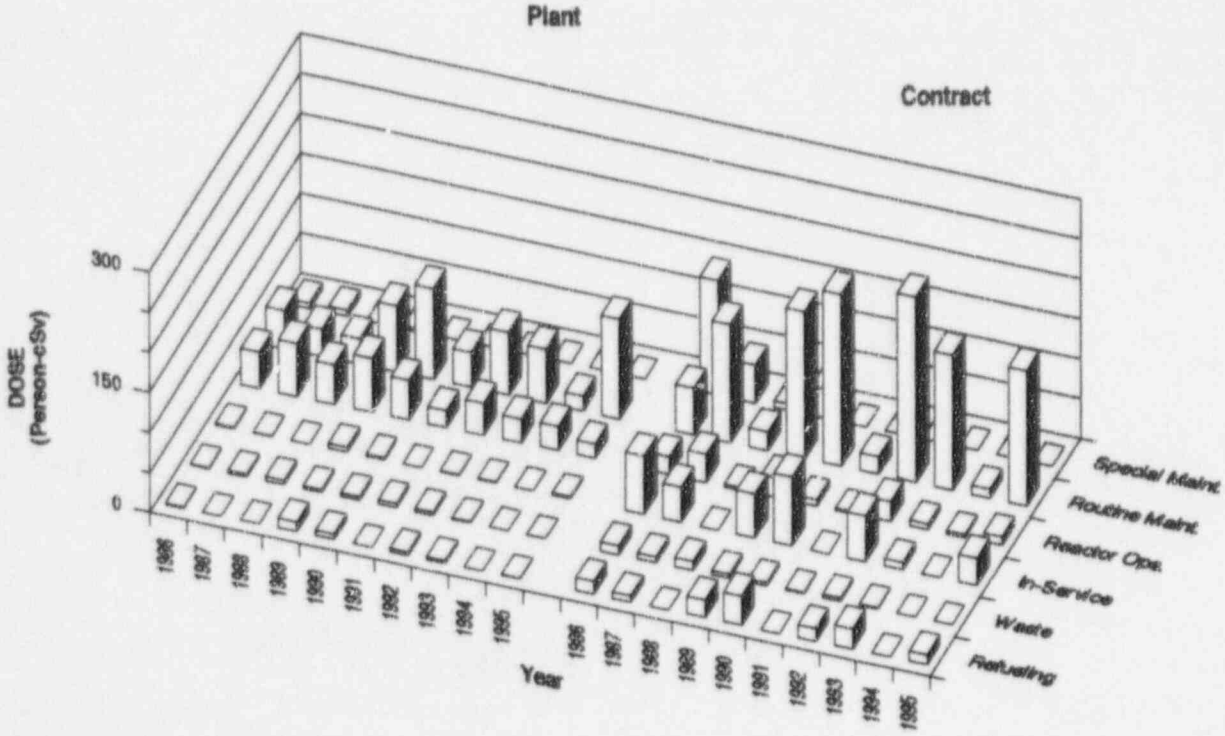
GRAND GULF

Dose-Performance Indicators

BWR



Breakdown by Job Function

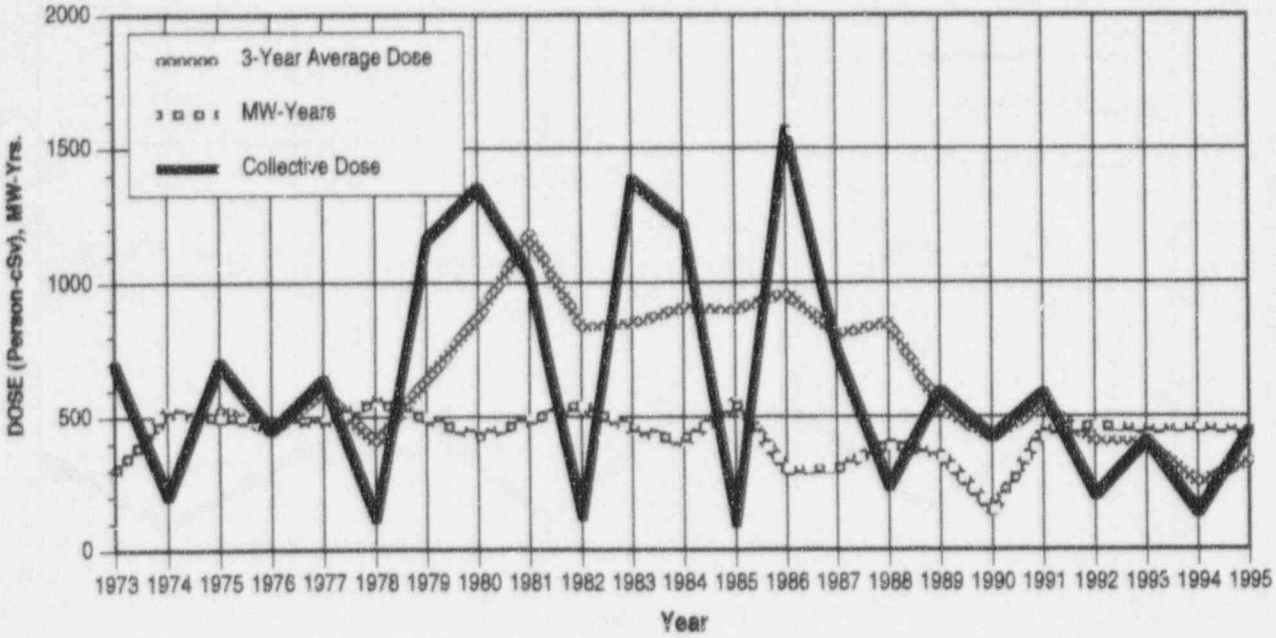


APPENDIX E (continued)

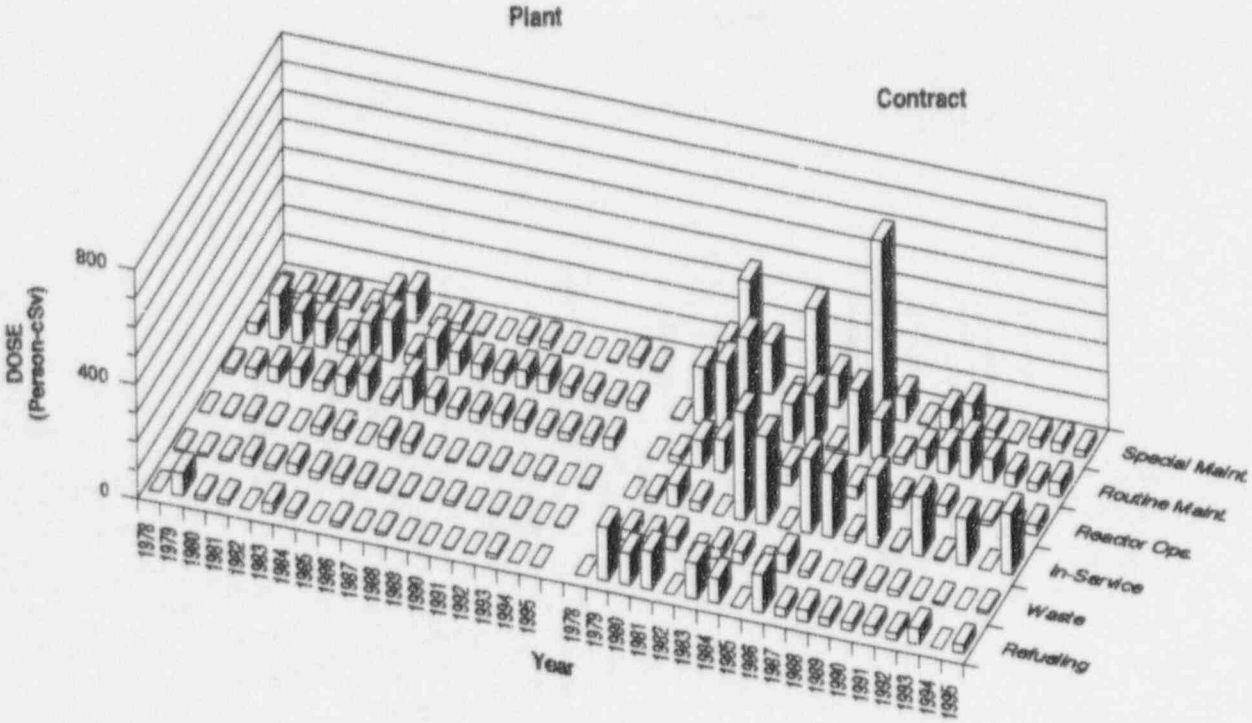
HADDAM NECK

Dose-Performance Indicators

PWR



Breakdown by Job Function

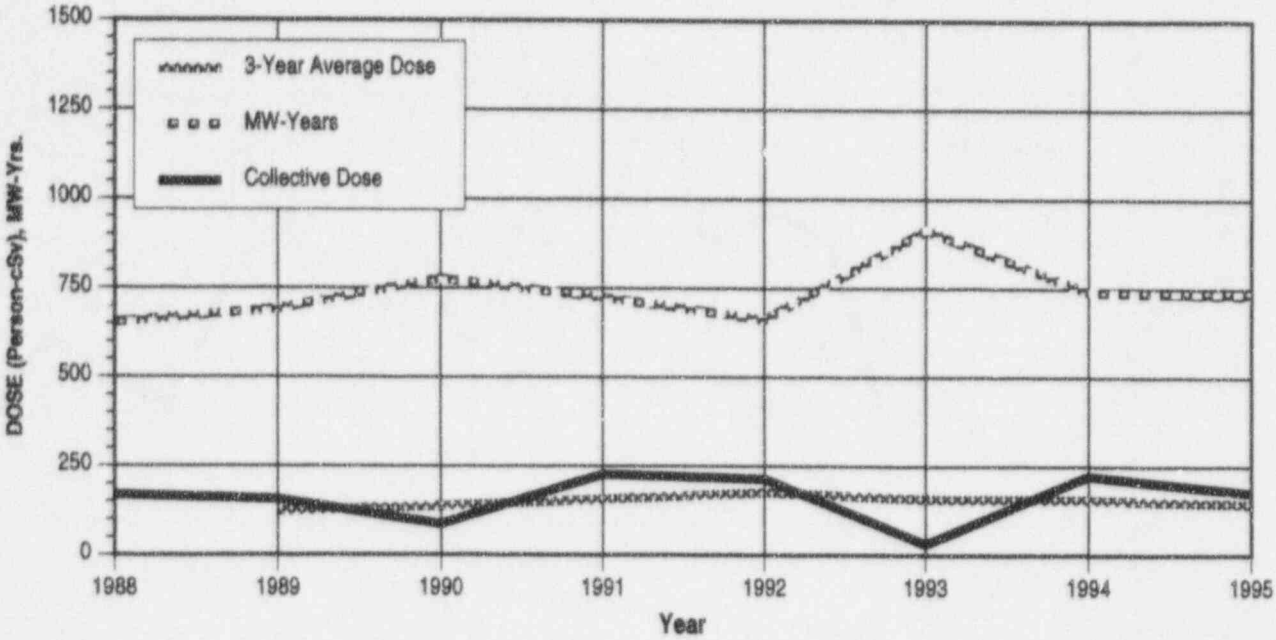


APPENDIX E (continued)

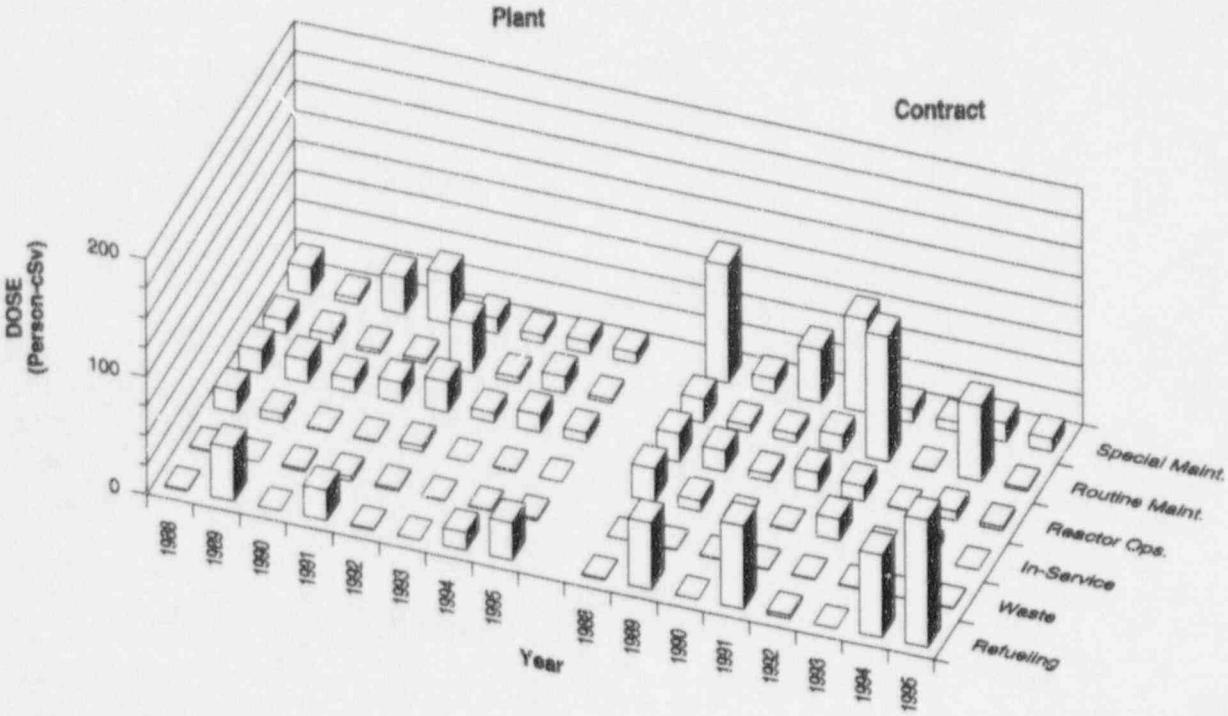
HARRIS

Dose-Performance Indicators

PWR



Breakdown by Job Function

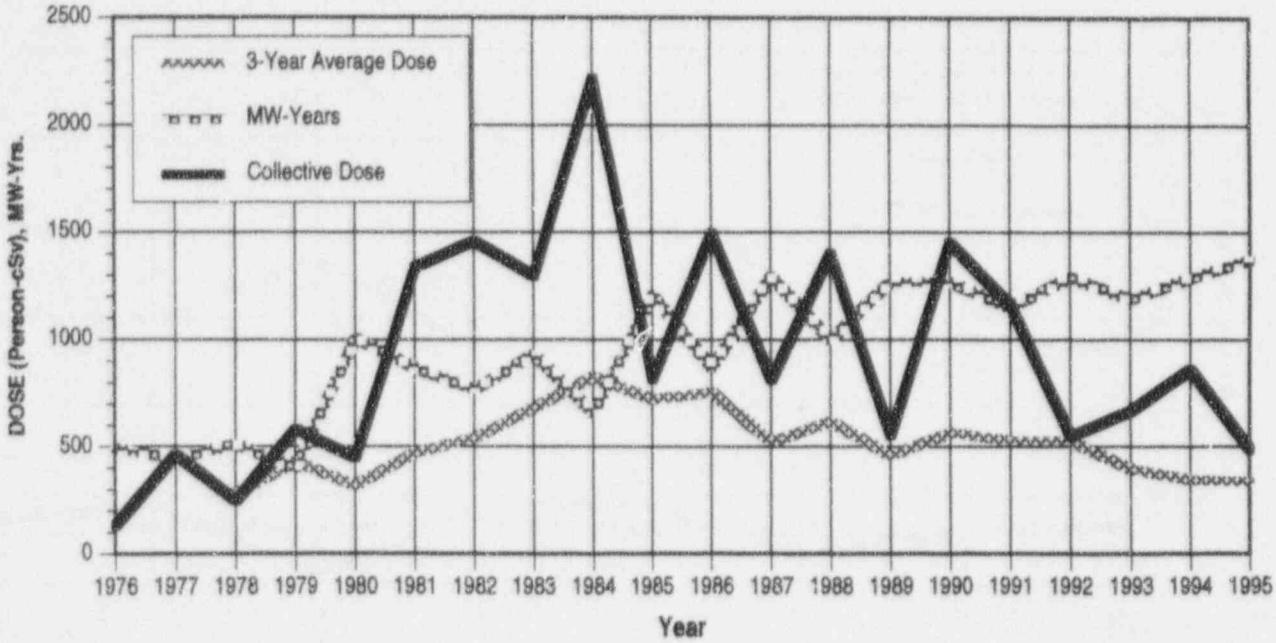


APPENDIX E (continued)

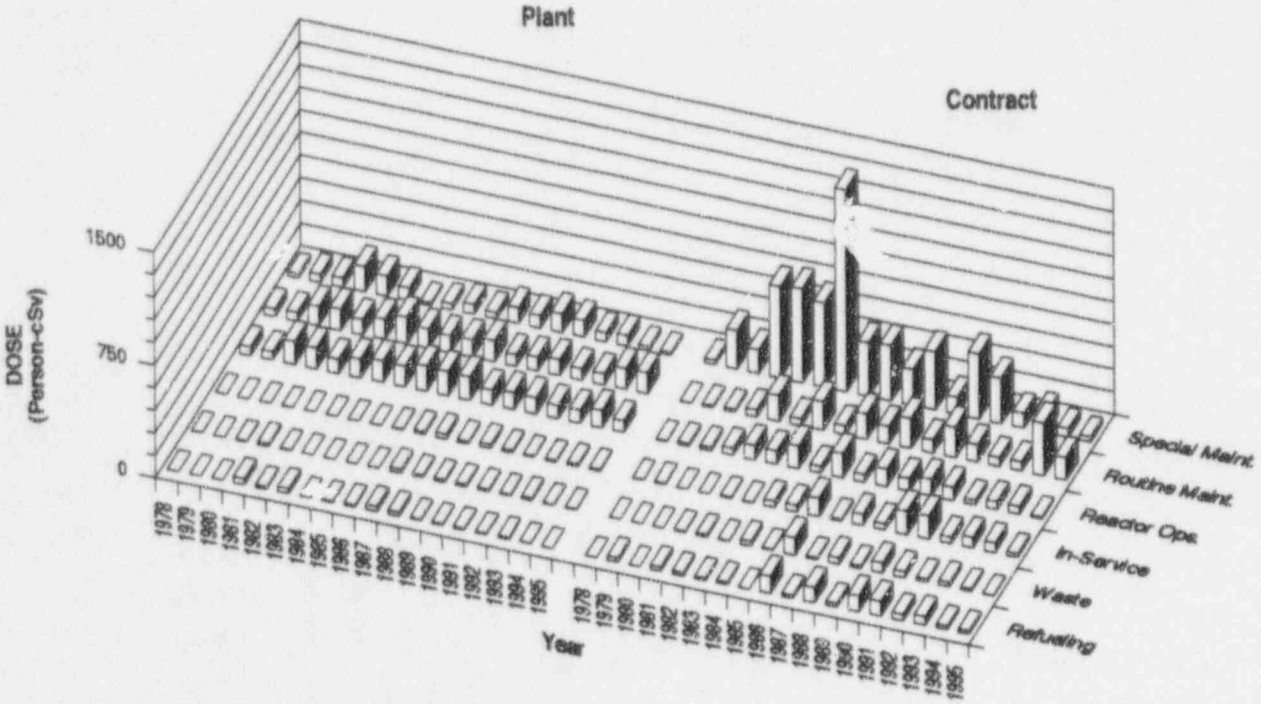
HATCH 1, 2

Dose-Performance Indicators

BWR



Breakdown by Job Function

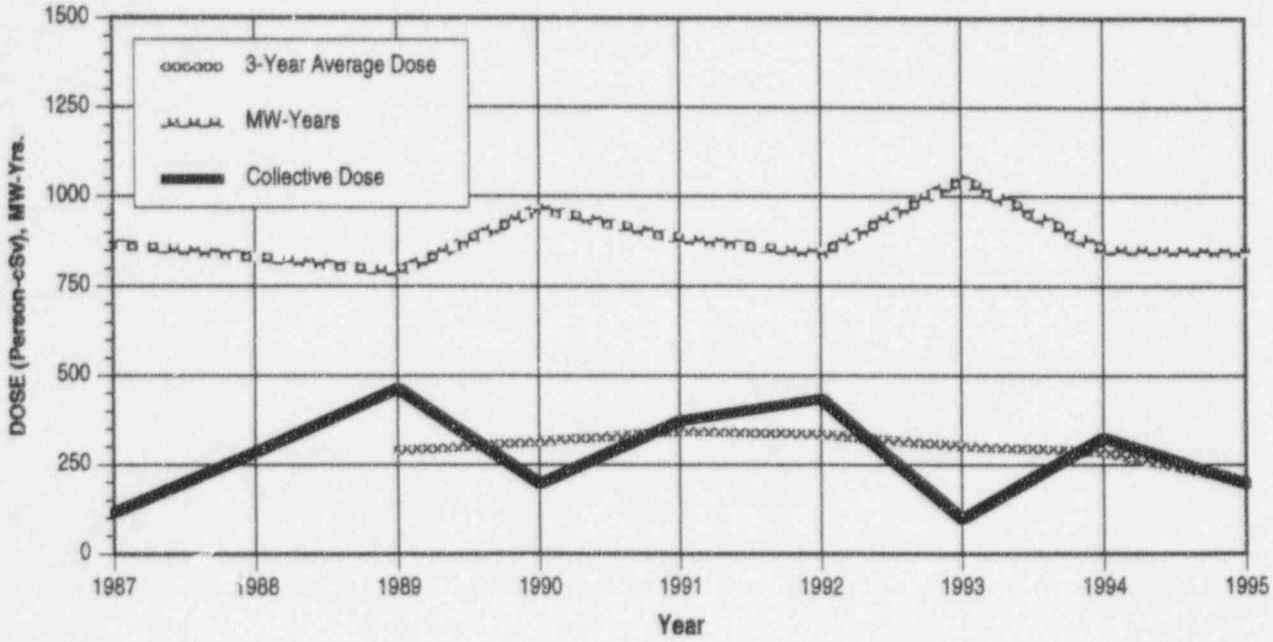


APPENDIX E (continued)

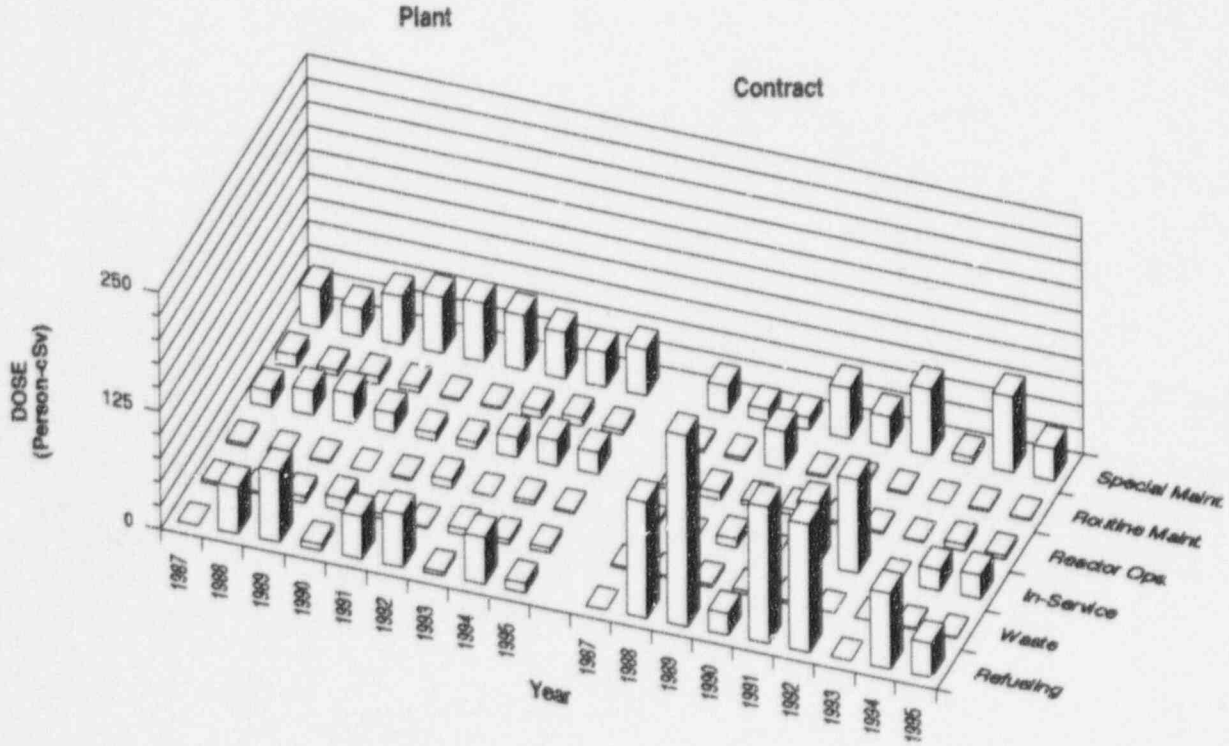
HOPE CREEK 1

Dose-Performance Indicators

BWR



Breakdown by Job Function

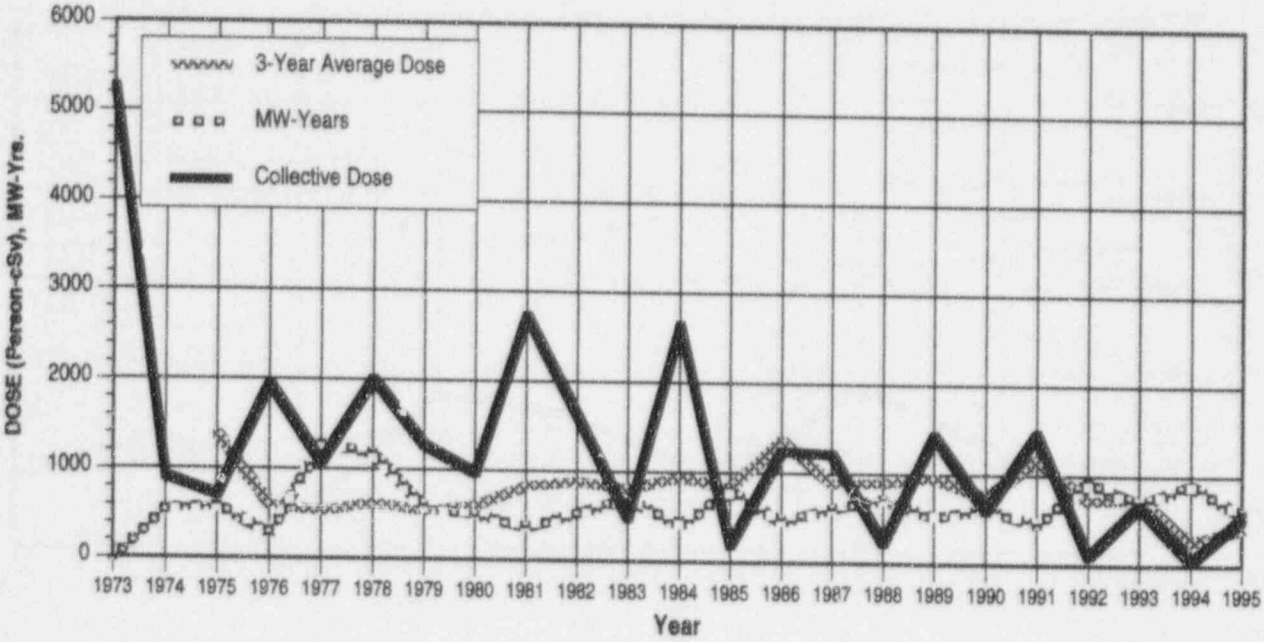


APPENDIX E (continued)

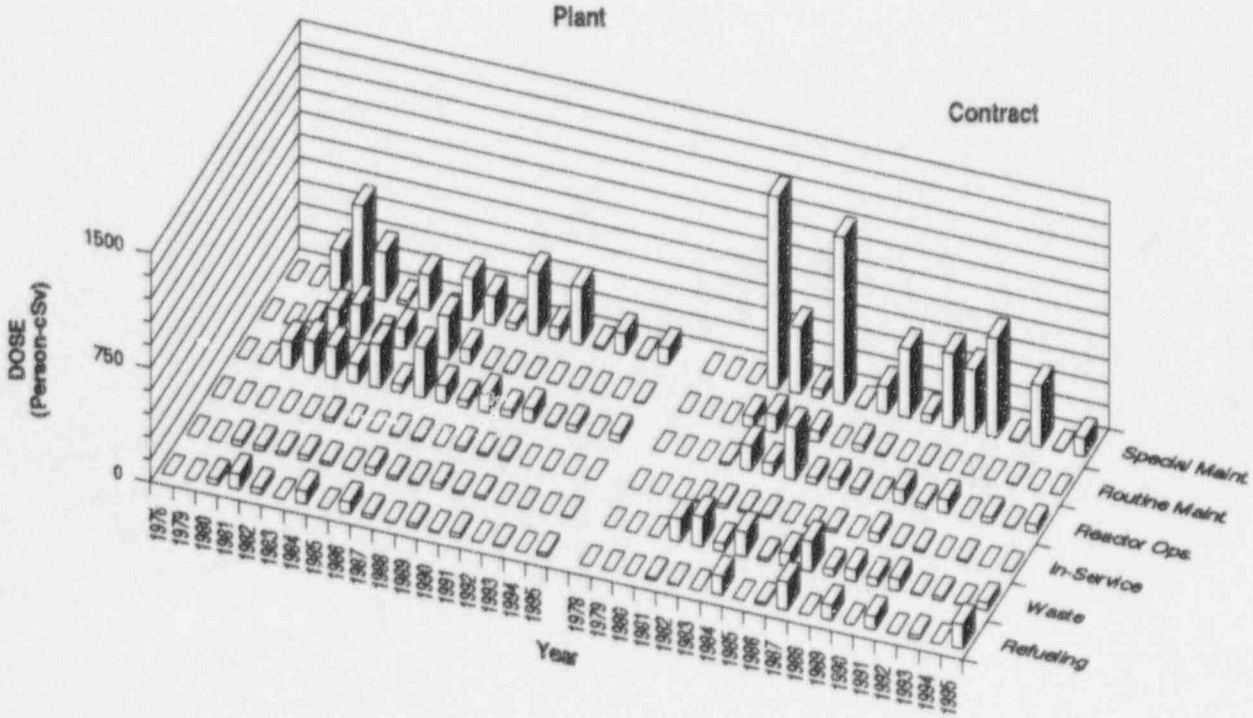
INDIAN POINT 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

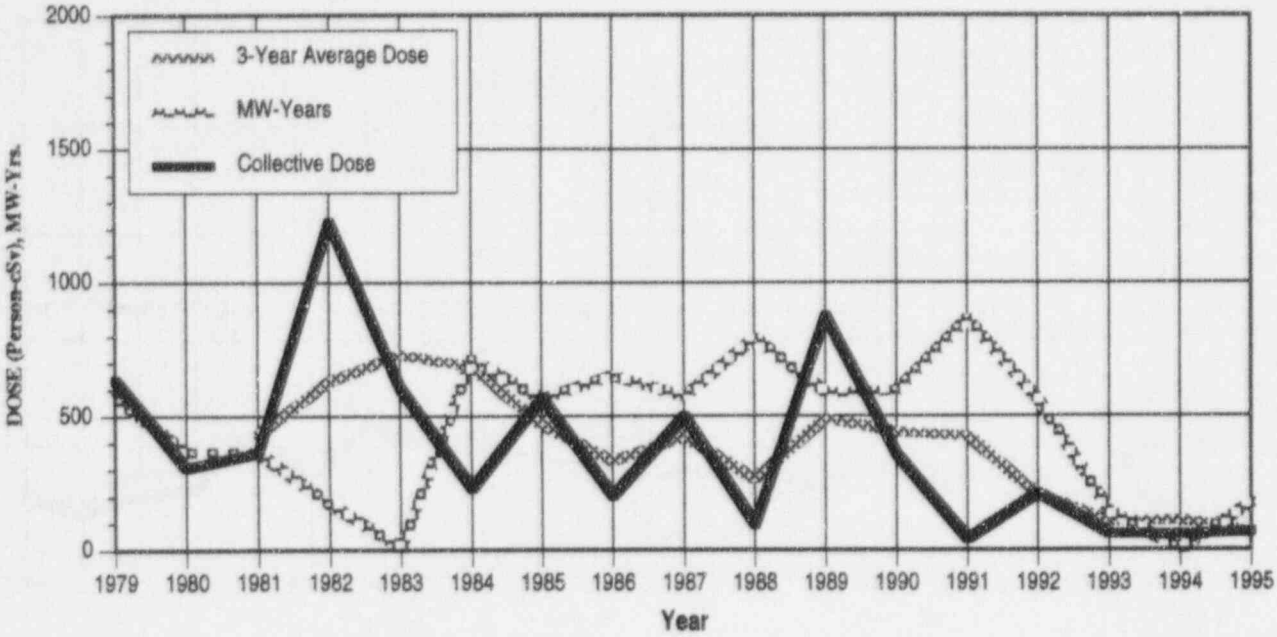


APPENDIX E (continued)

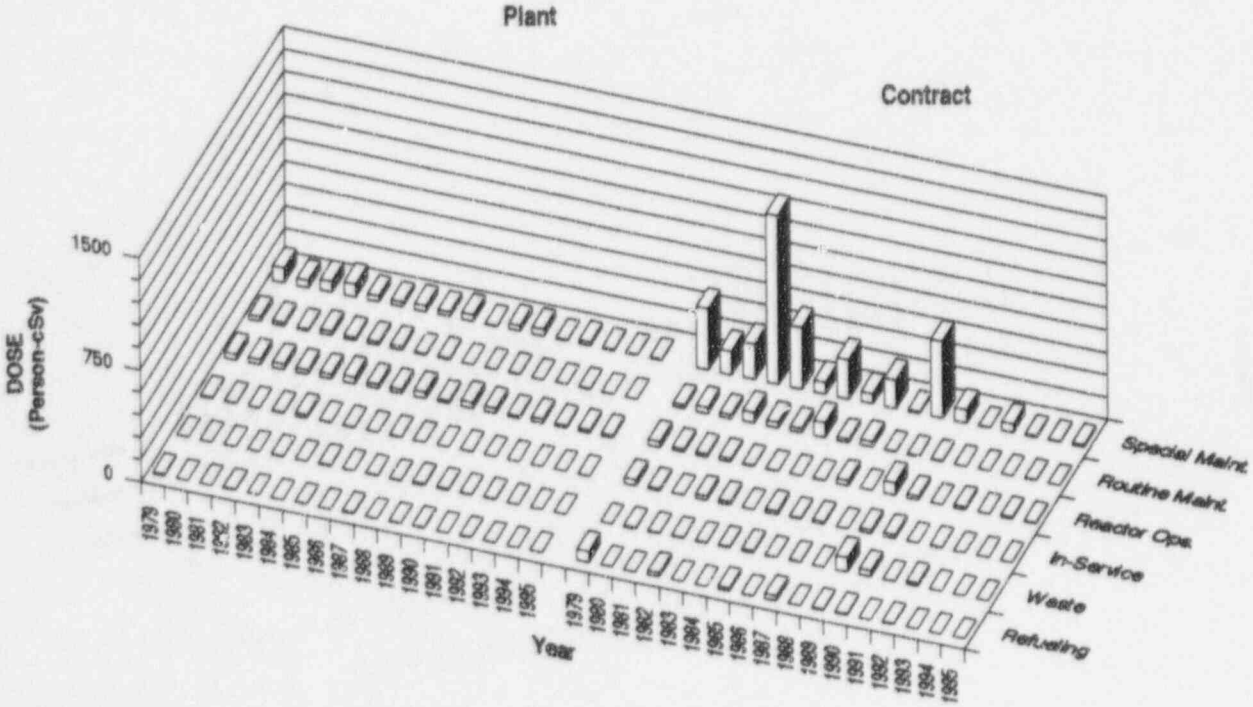
INDIAN POINT 3

Dose-Performance Indicators

PWR



Breakdown by Job Function

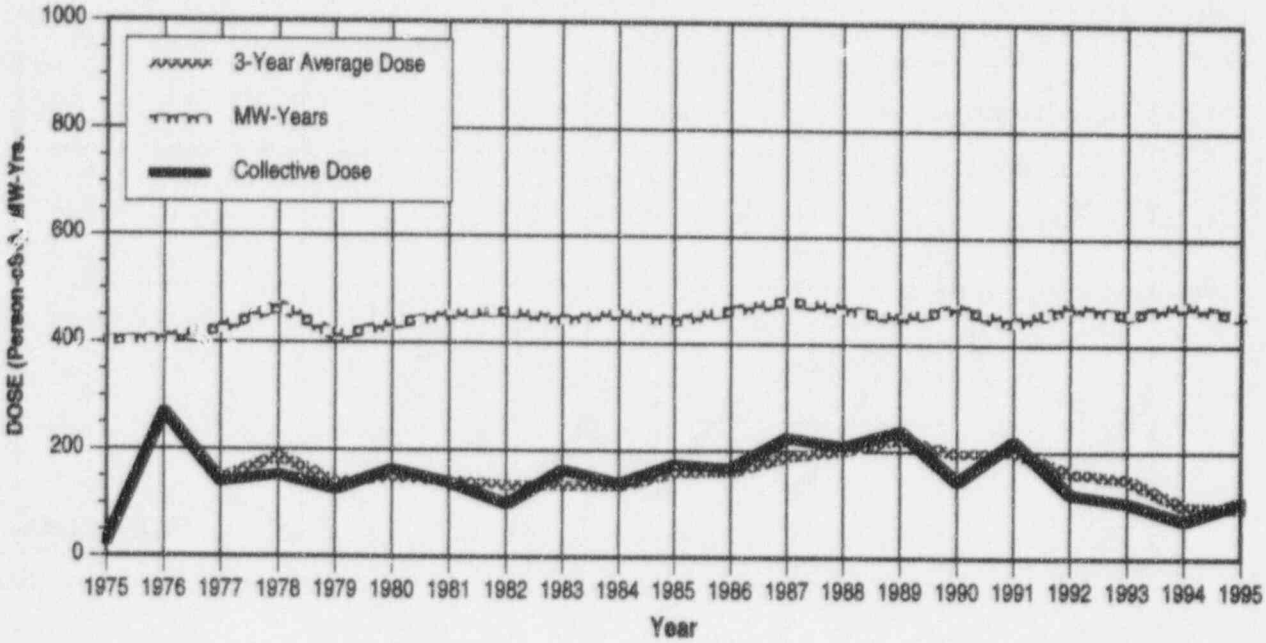


APPENDIX E (continued)

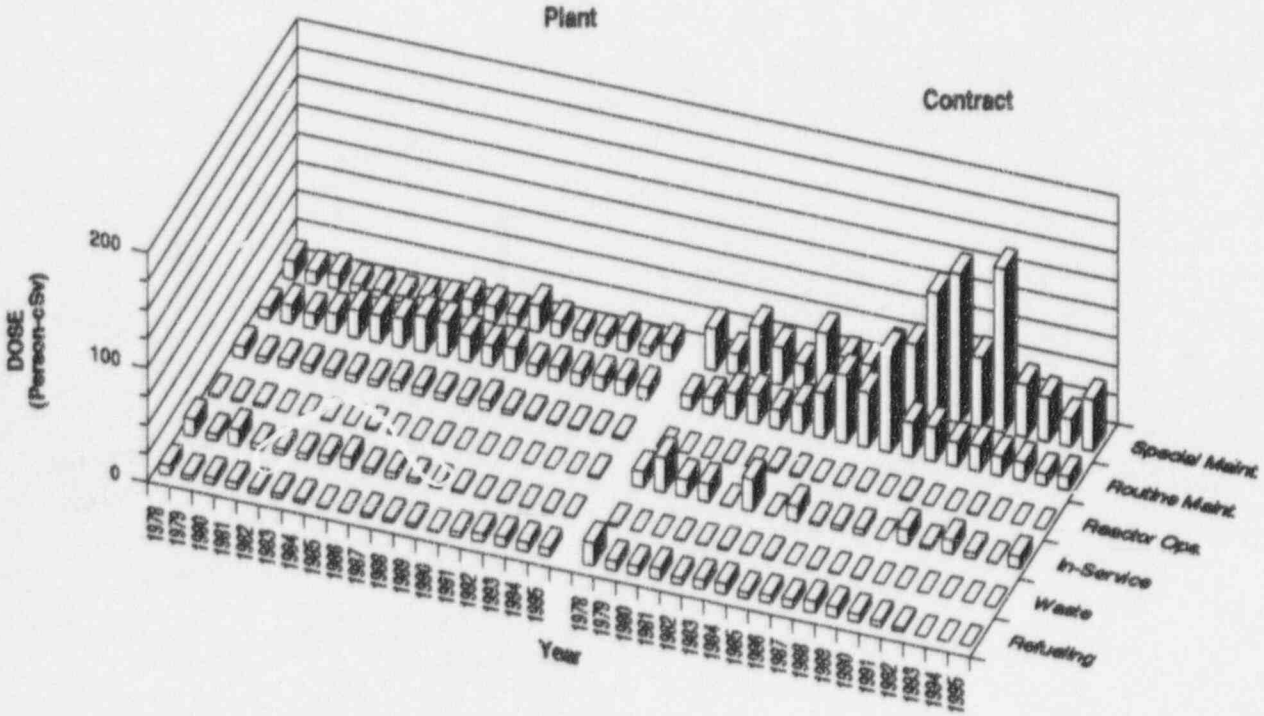
KEWAUNEE

Dose-Performance Indicators

PWR



Breakdown by Job Function

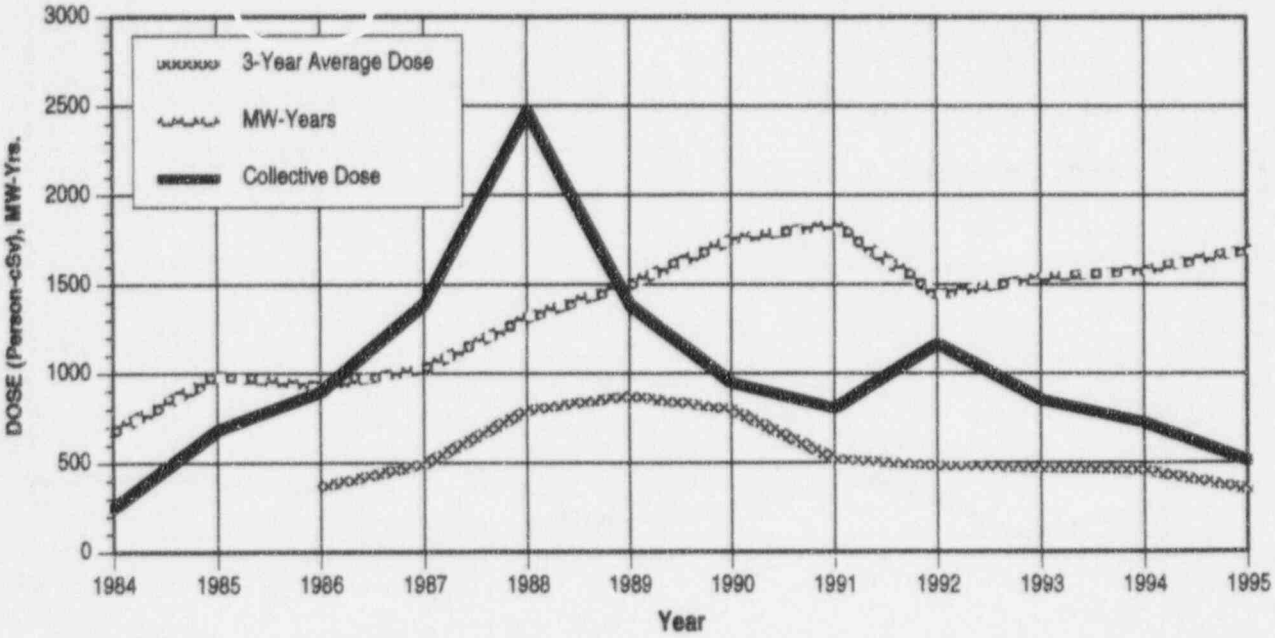


APPENDIX E (continued)

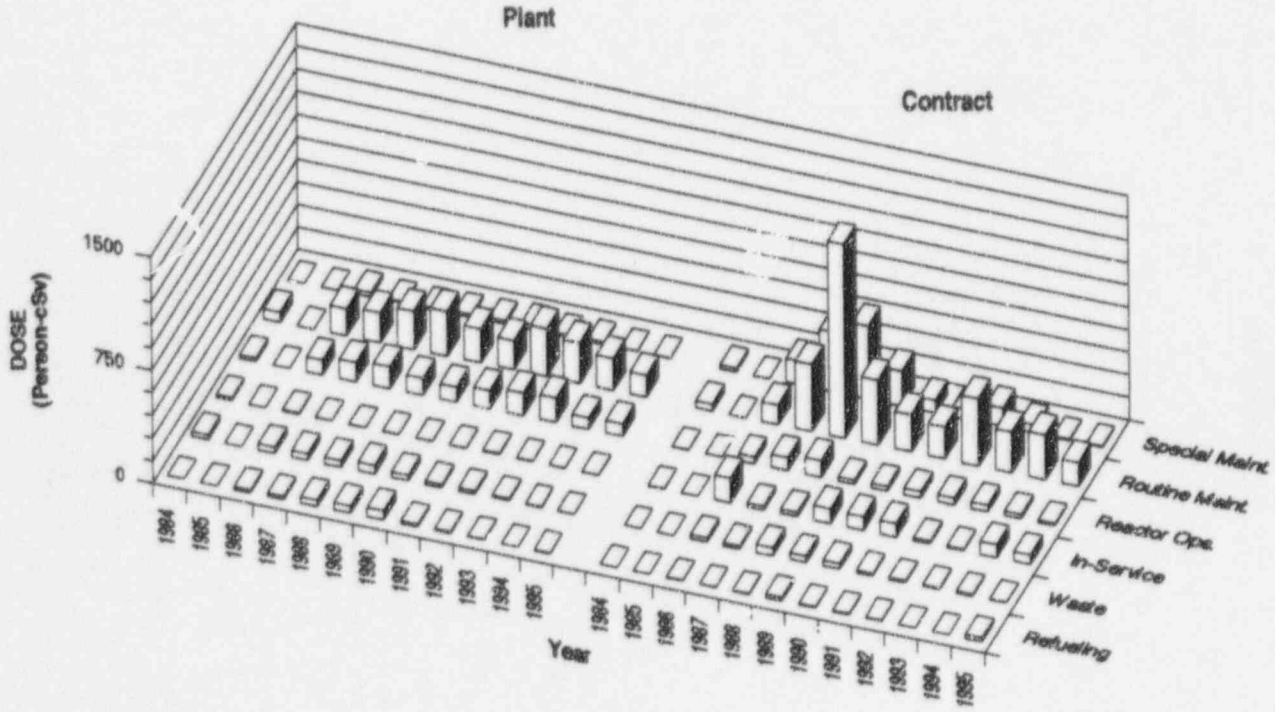
LASALLE 1, 2

Dose-Performance Indicators

BWR



Breakdown by Job Function

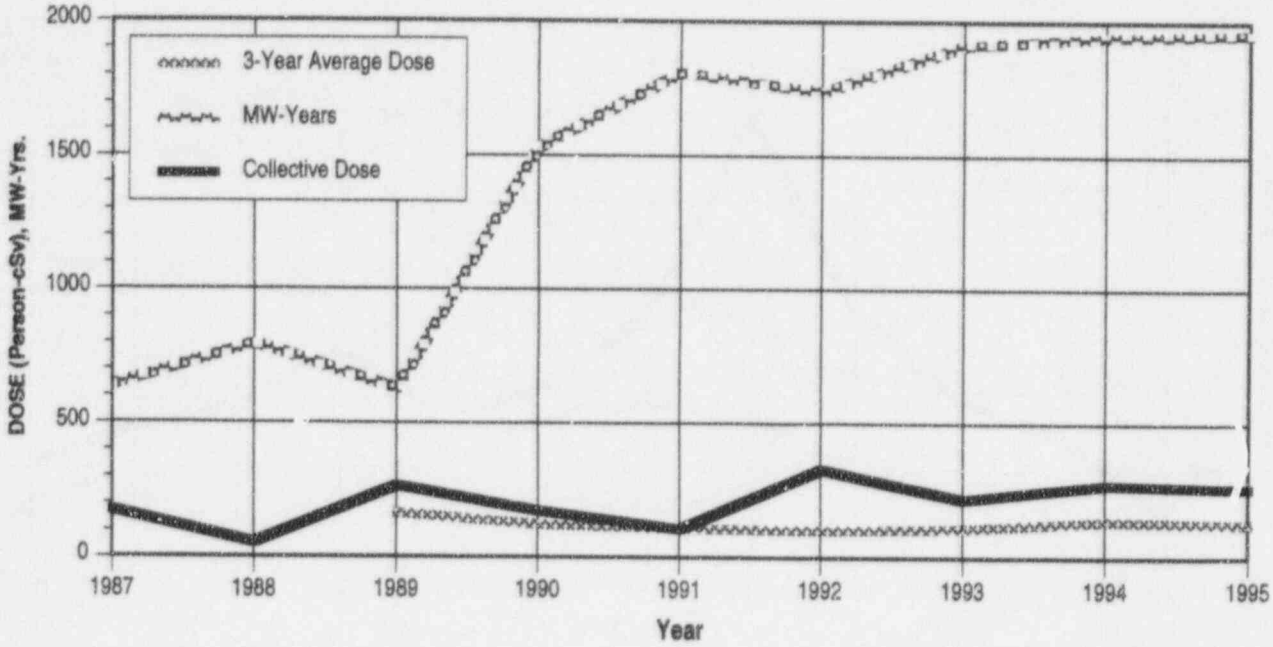


APPENDIX E (continued)

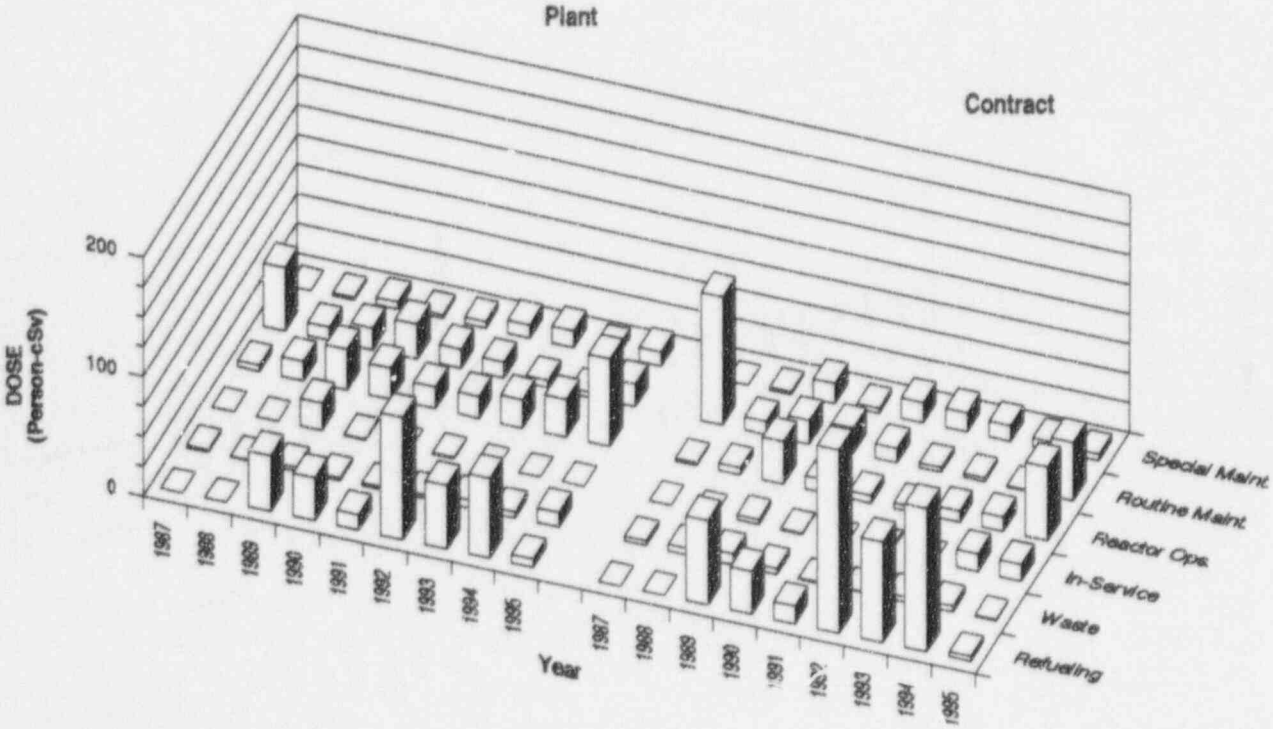
LIMERICK 1, 2

Dose-Performance Indicators

BWR



Breakdown by Job Function

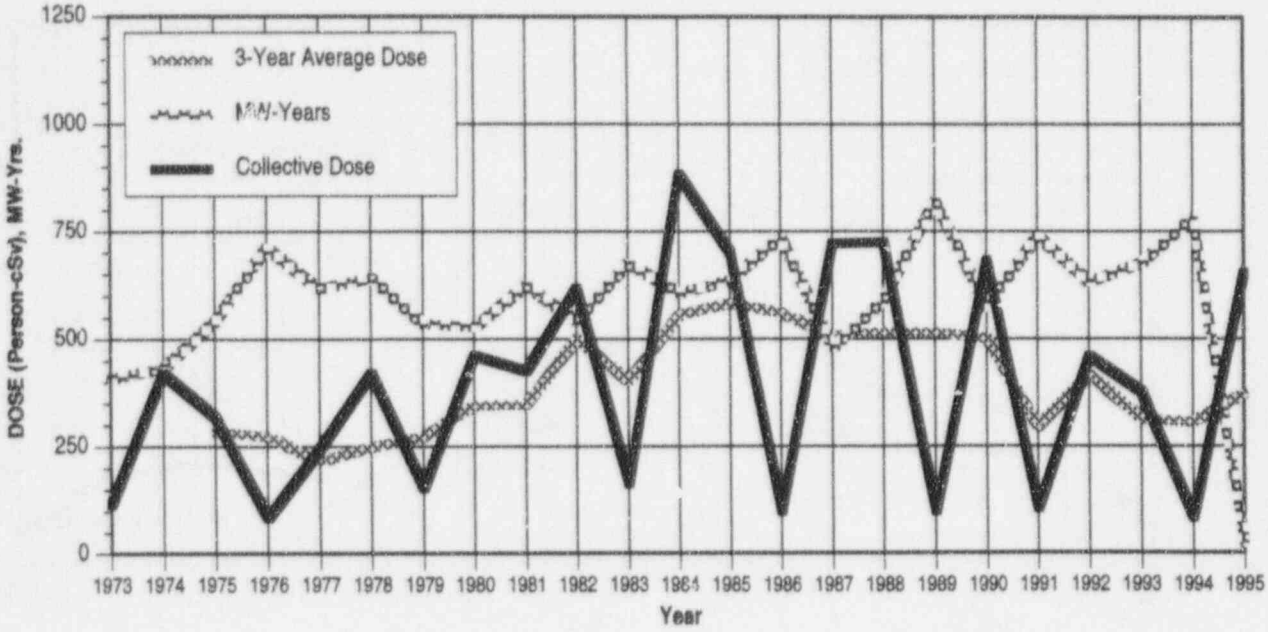


APPENDIX E (continued)

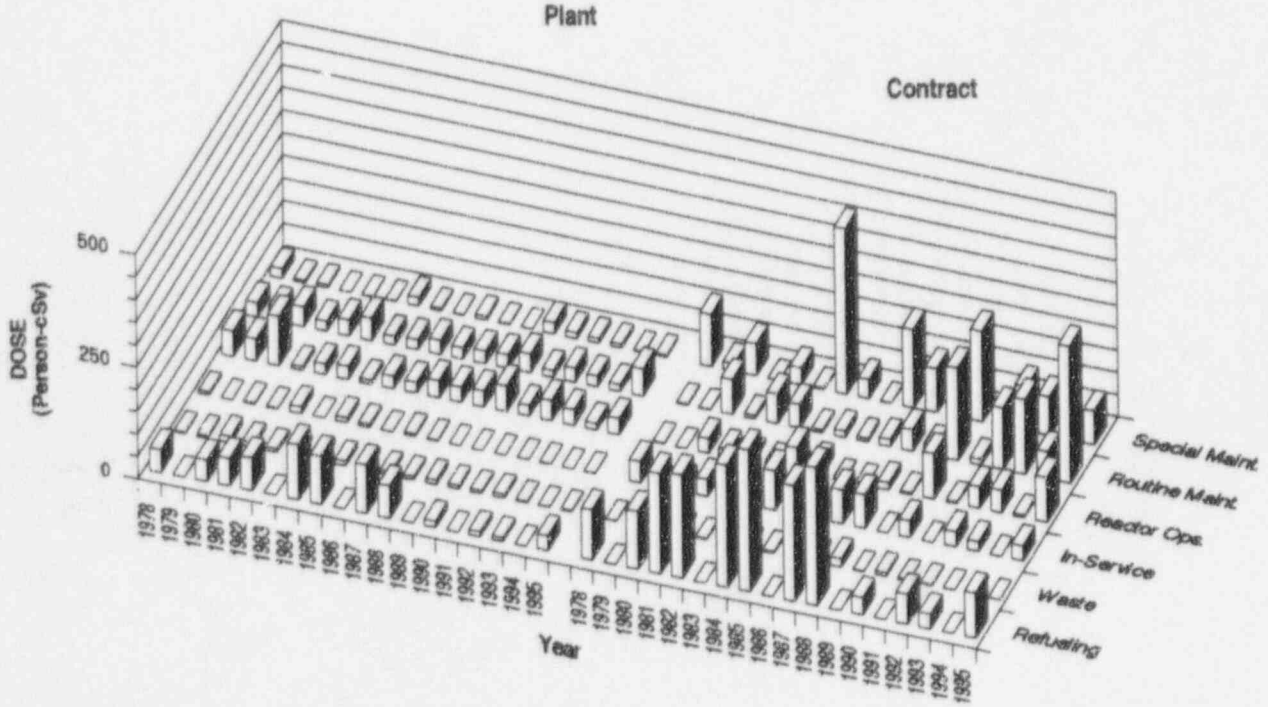
MAINE YANKEE

Dose-Performance Indicators

PWR



Breakdown by Job Function

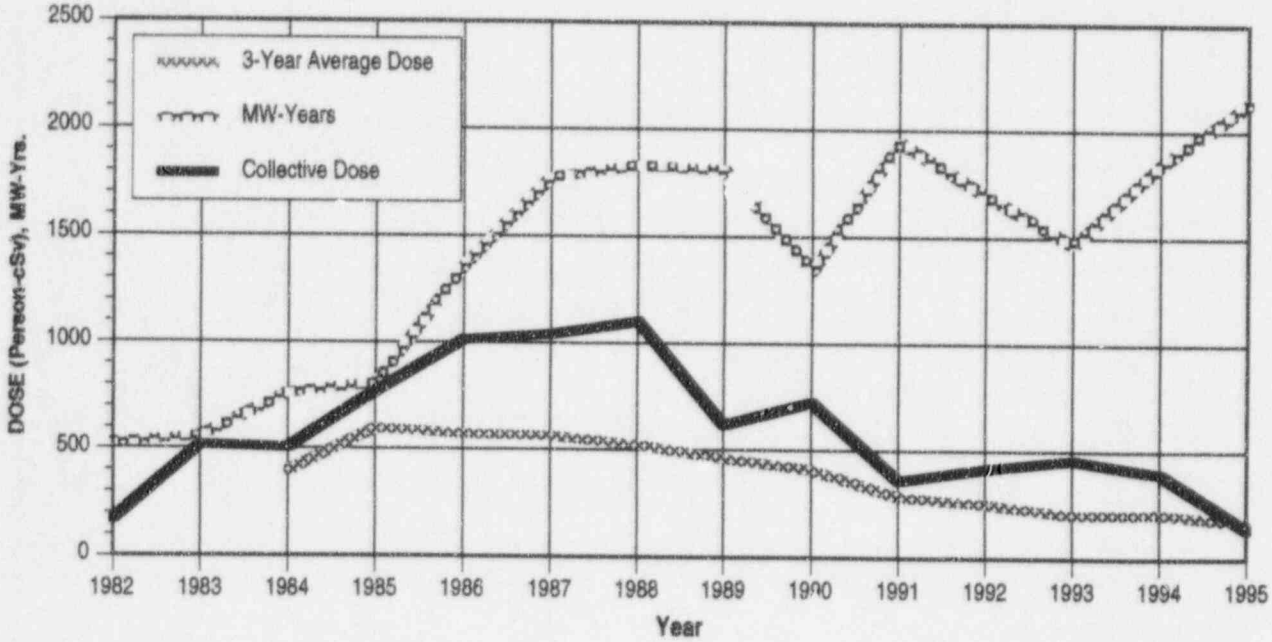


APPENDIX E (continued)

MCGUIRE 1, 2

Dose-Performance Indicators

PWR



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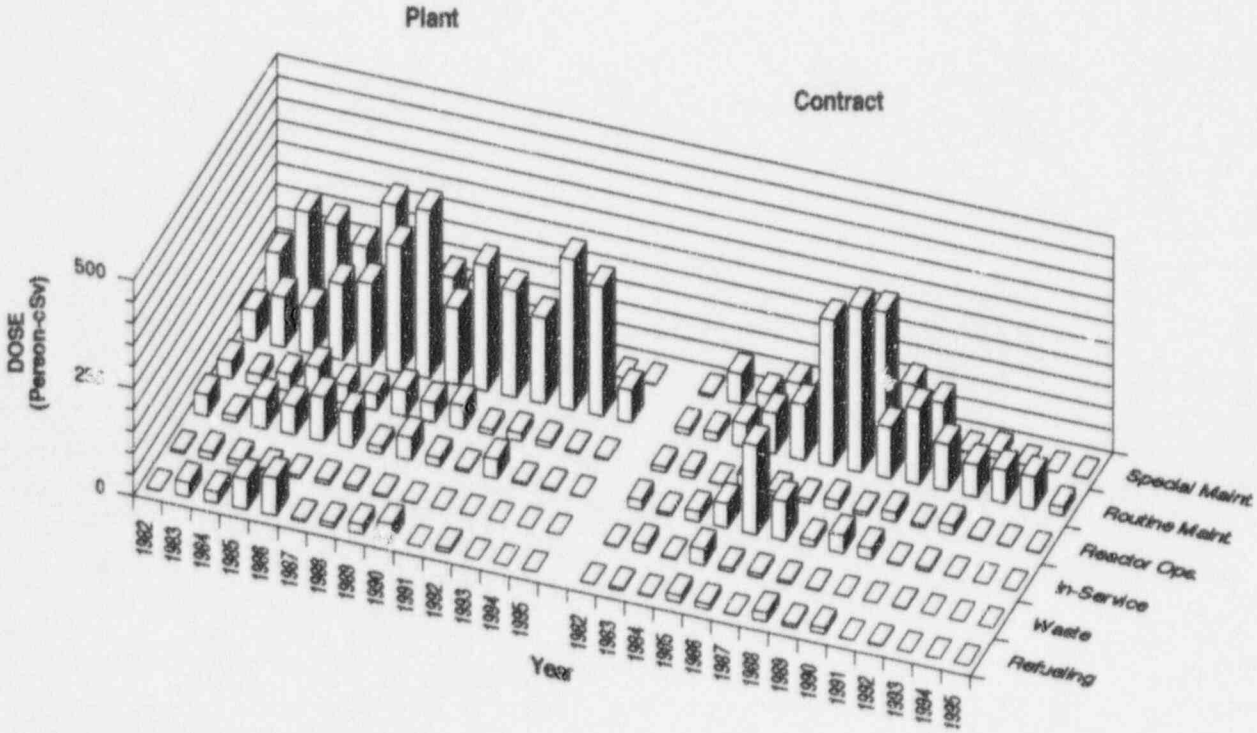
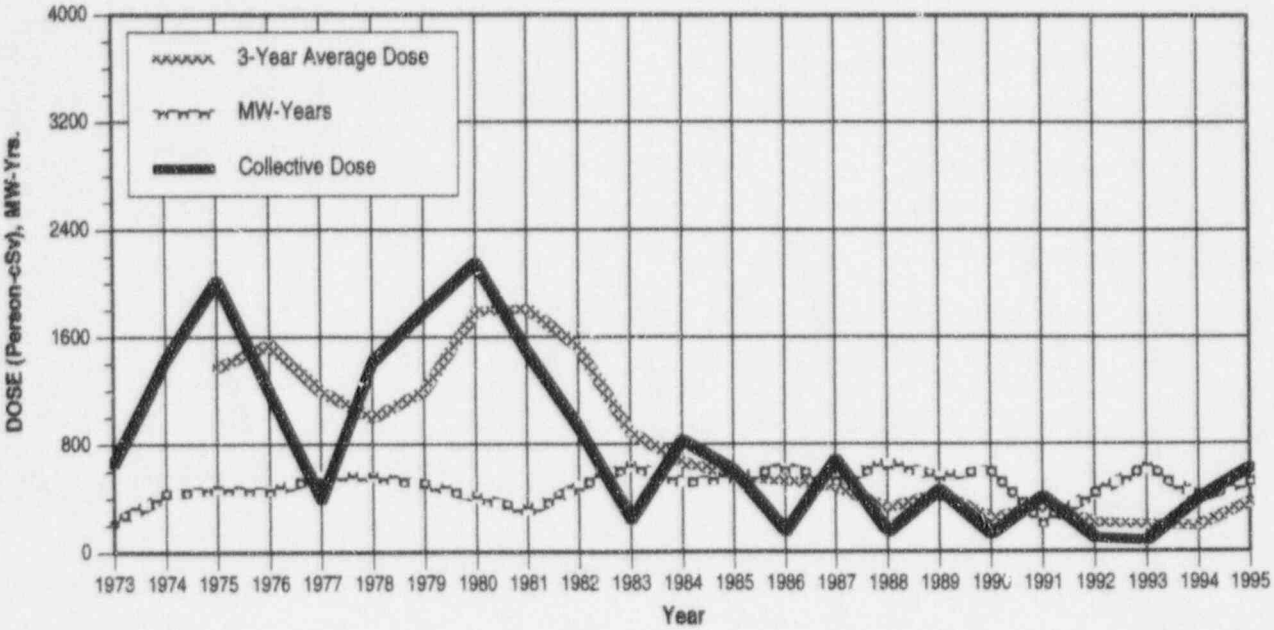


APPENDIX E (continued)

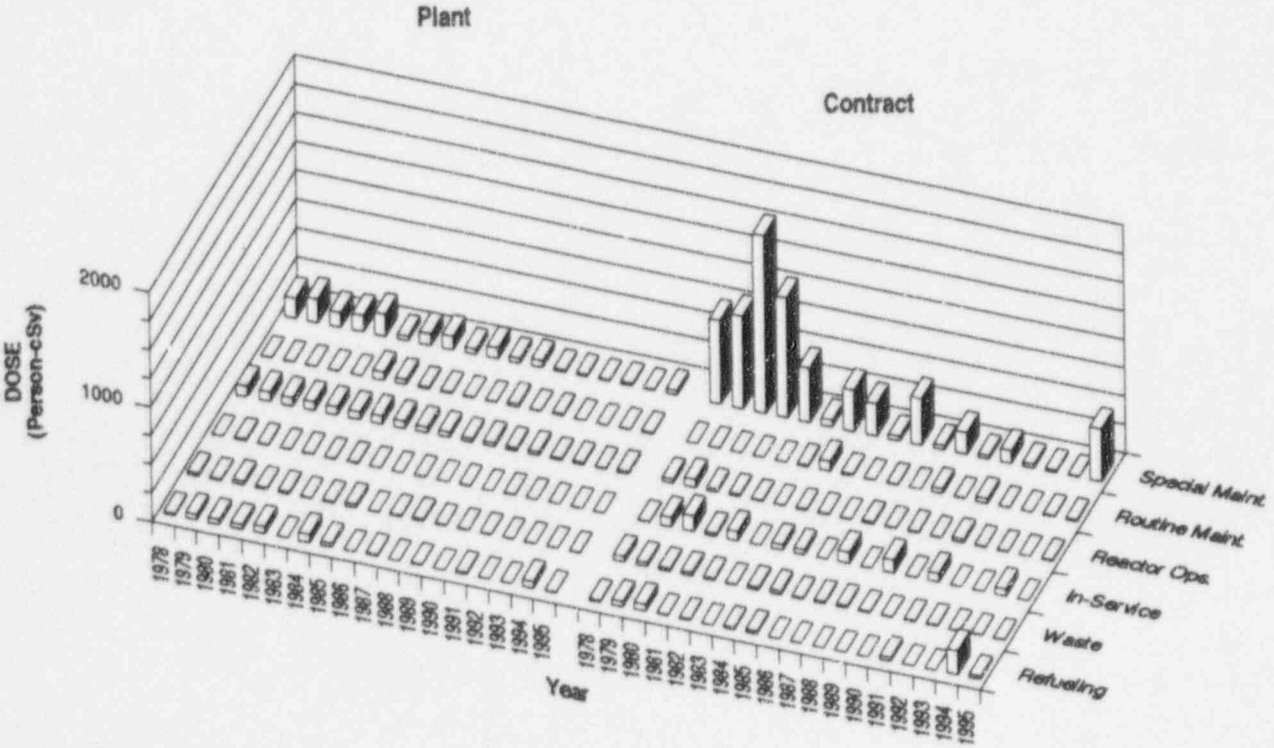
MILLSTONE POINT 1

Dose-Performance Indicators

BWR



Breakdown by Job Function

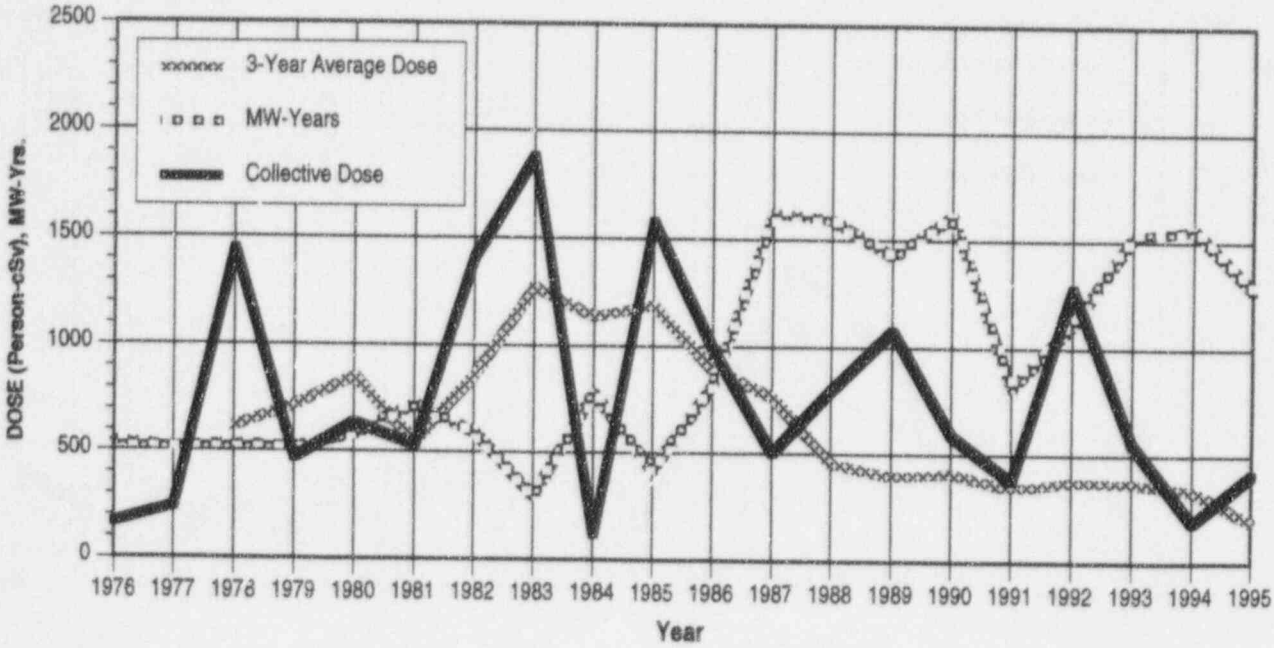


APPENDIX E (continued)

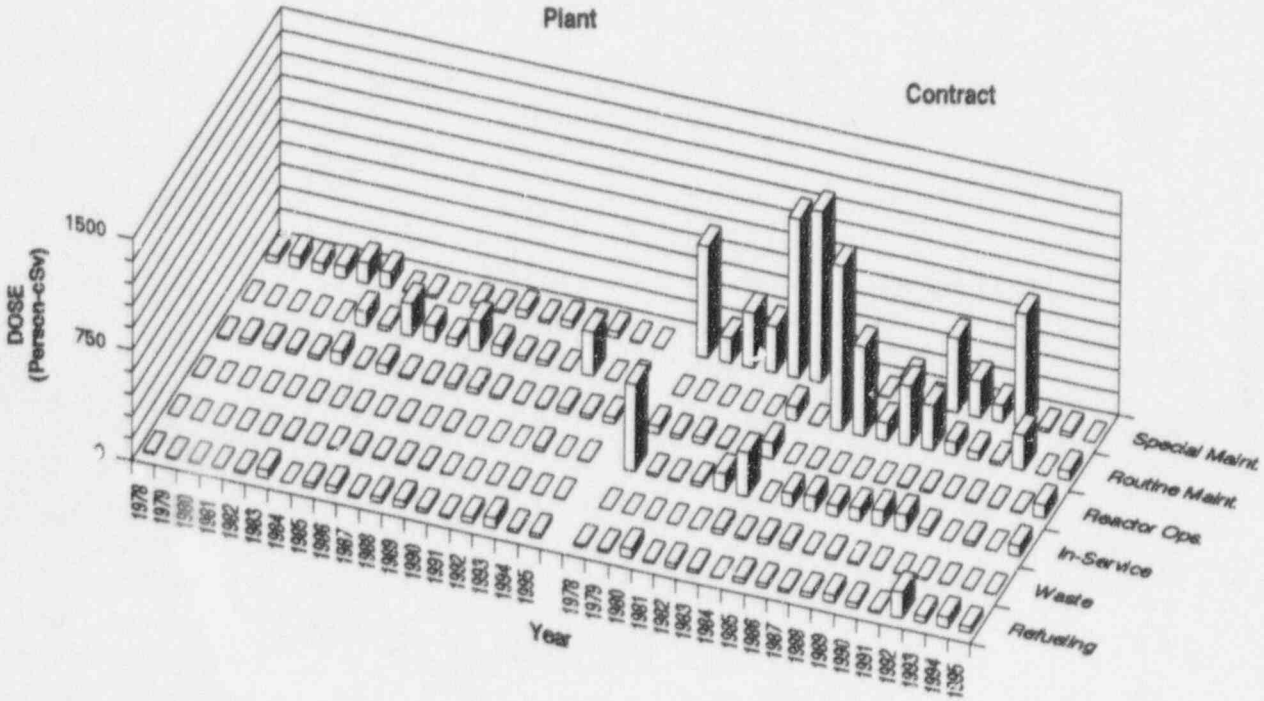
MILLSTONE POINT 2, 3

Dose-Performance Indicators

PWR



Breakdown by Job Function

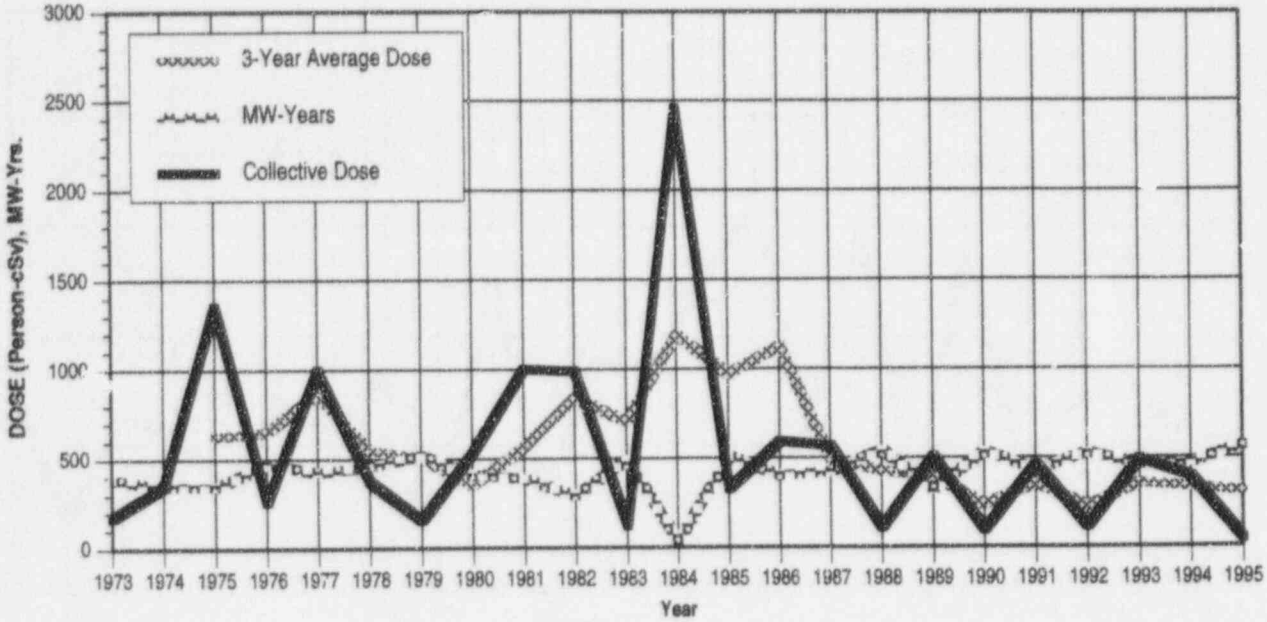


APPENDIX E (continued)

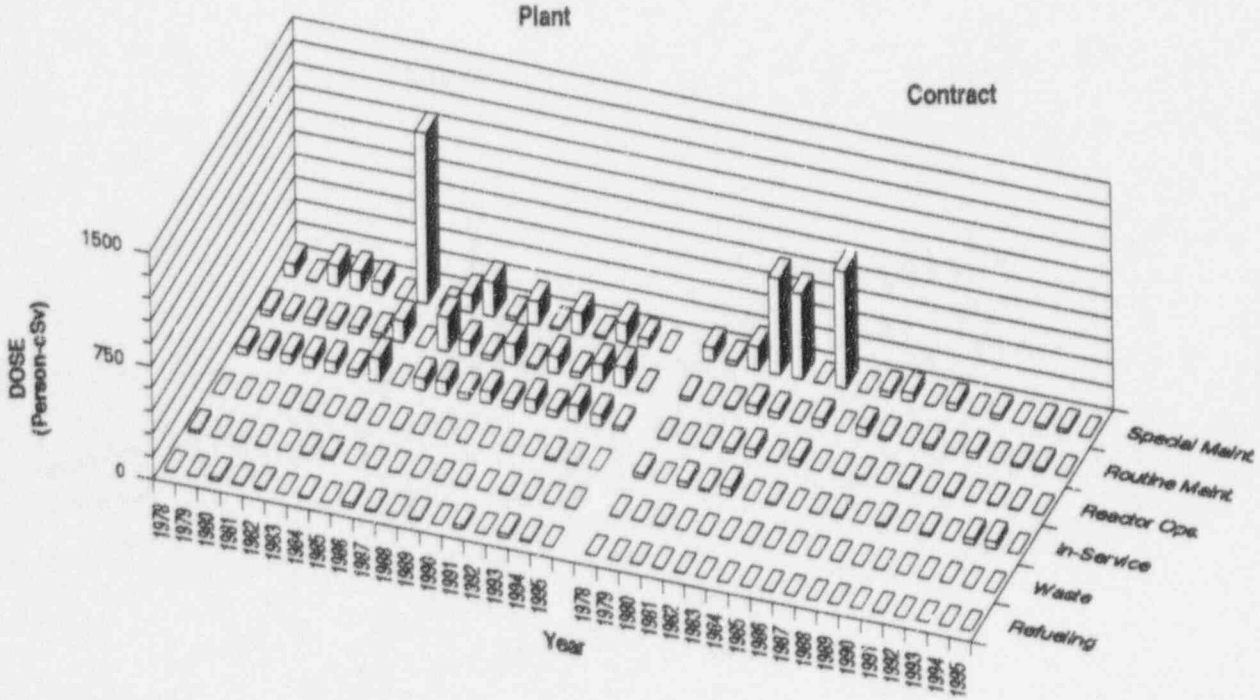
MONTICELLO

Dose-Performance Indicators

BWR



Breakdown by Job Function

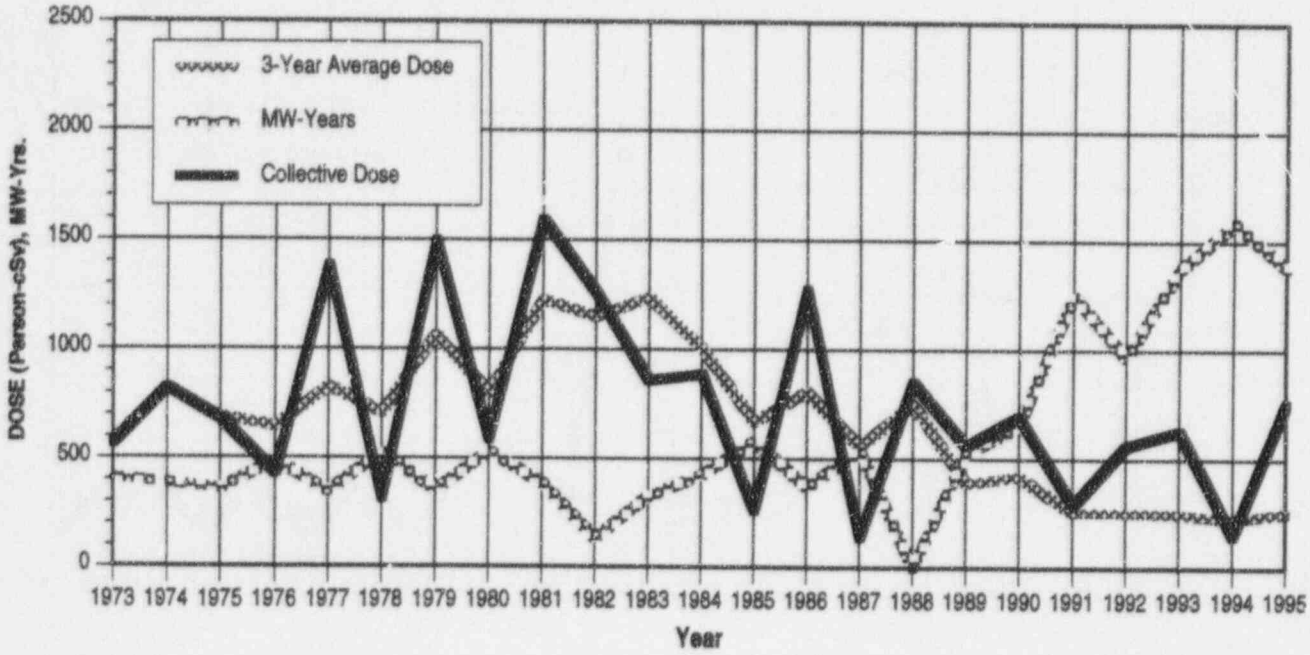


APPENDIX E (continued)

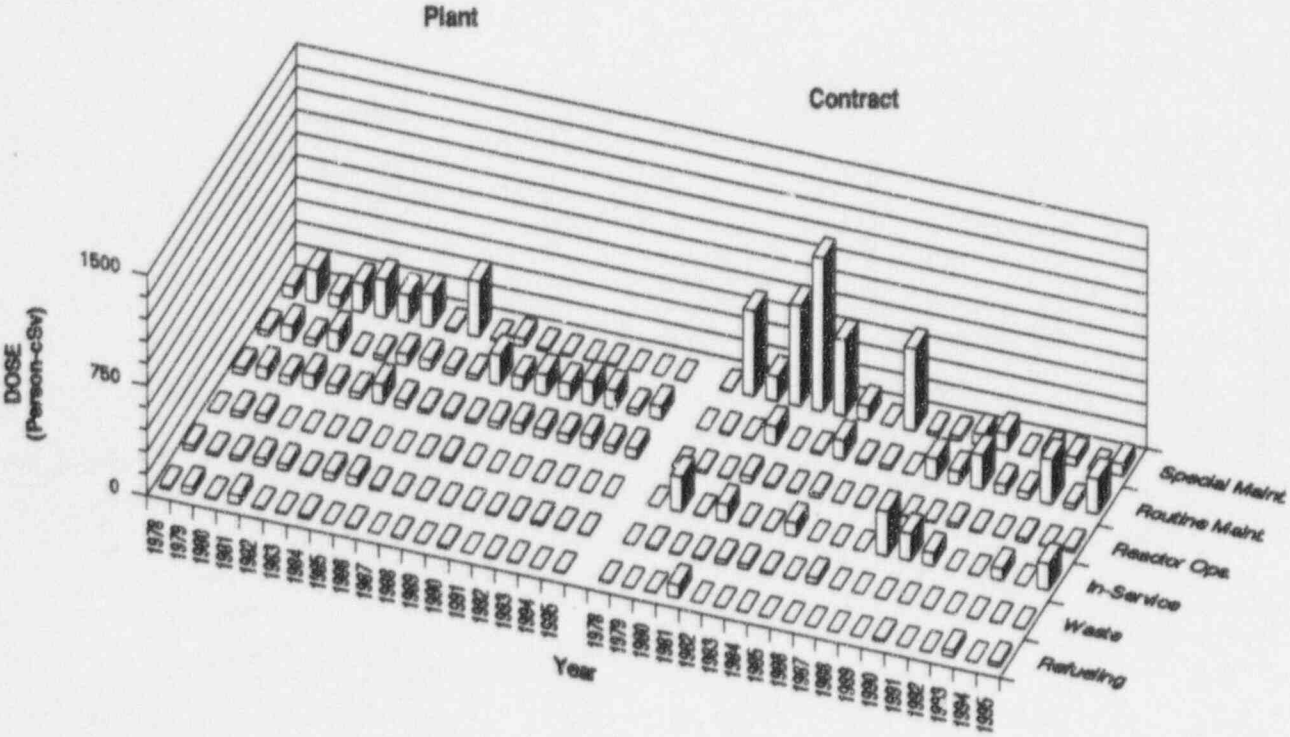
NINE MILE POINT 1, 2

Dose-Performance Indicators

BWR



Breakdown by Job Function

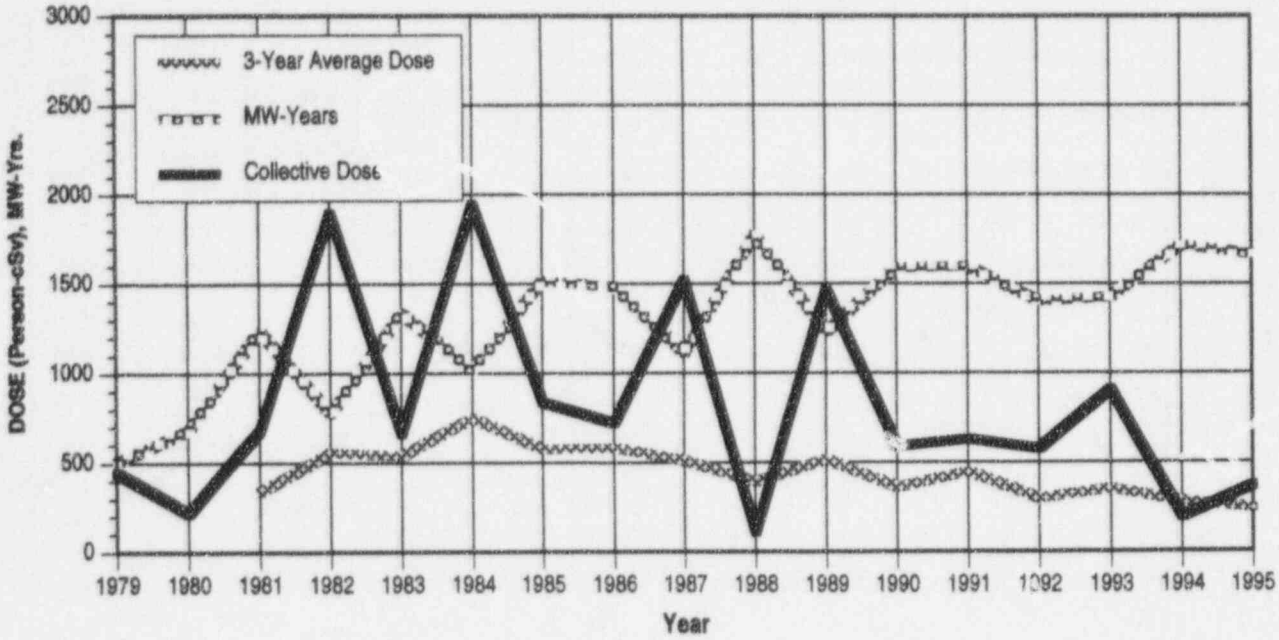


APPENDIX E (continued)

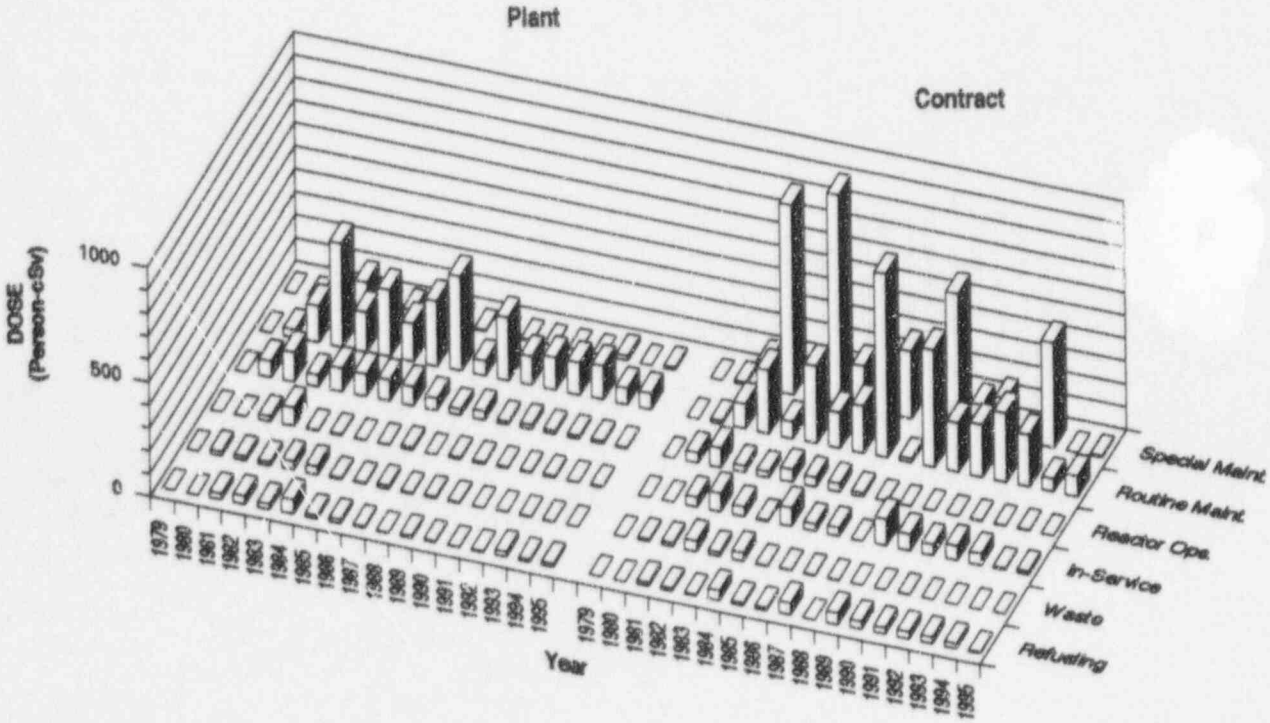
NORTH ANNA 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

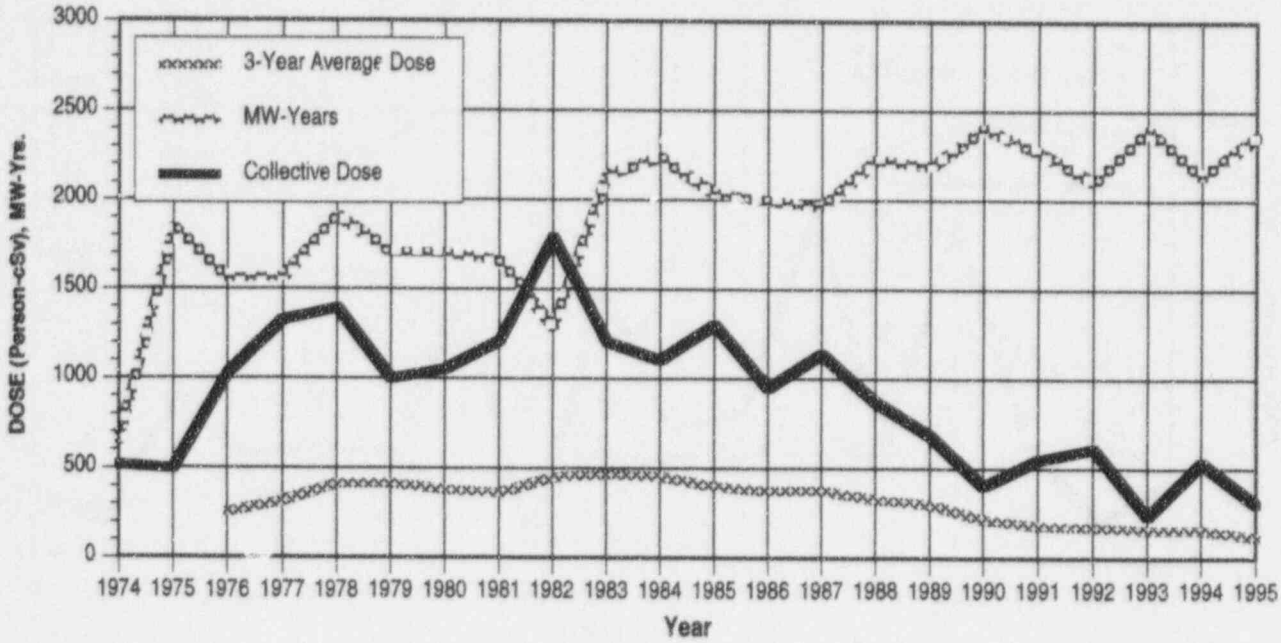


APPENDIX E (continued)

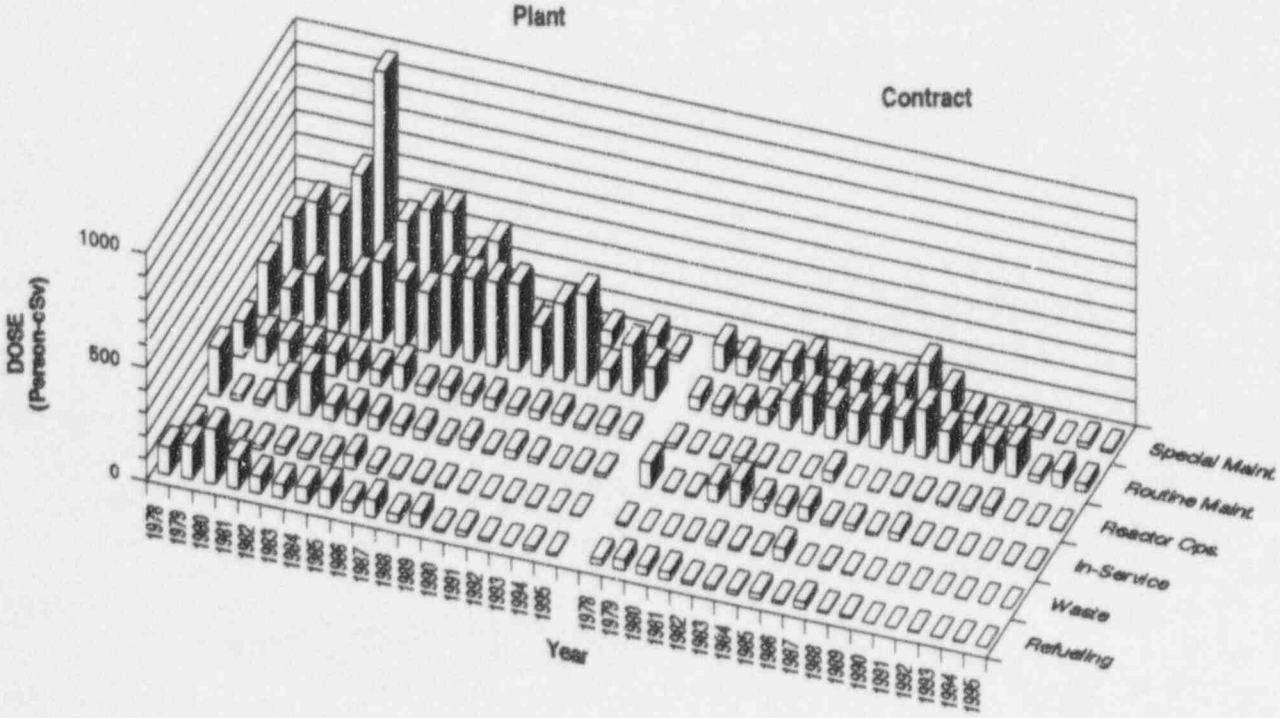
OCONEE 1, 2, 3

Dose-Performance Indicators

PWR



Breakdown by Job Function

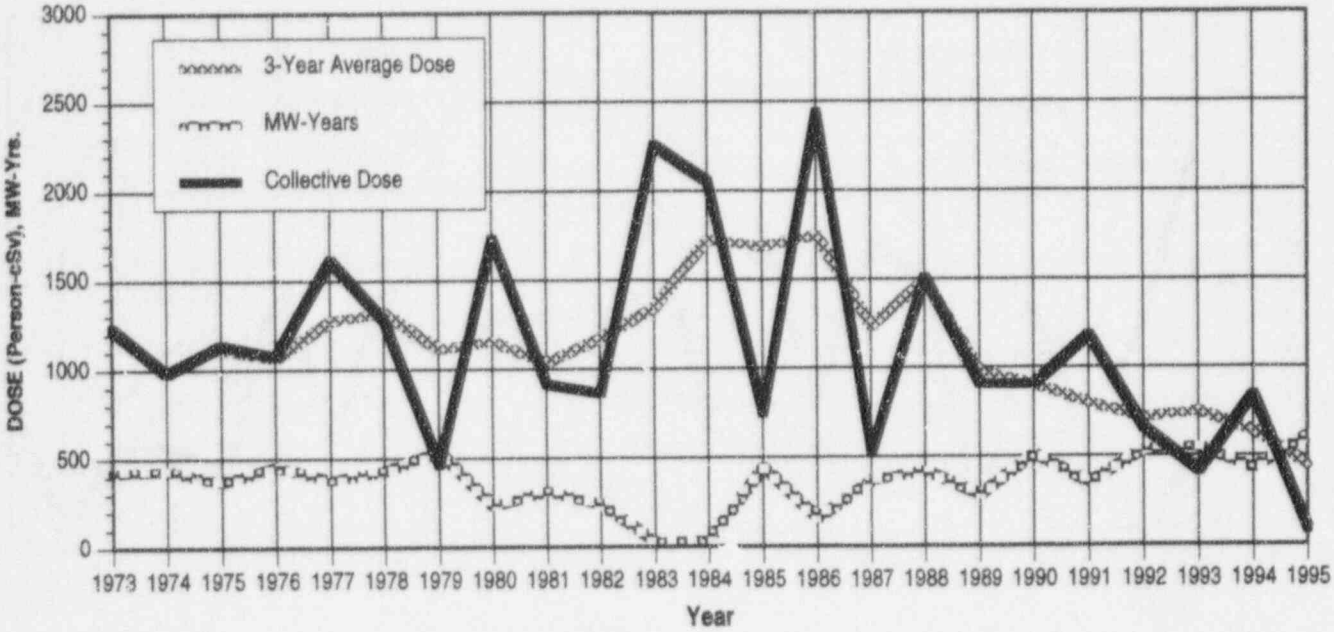


APPENDIX E (continued)

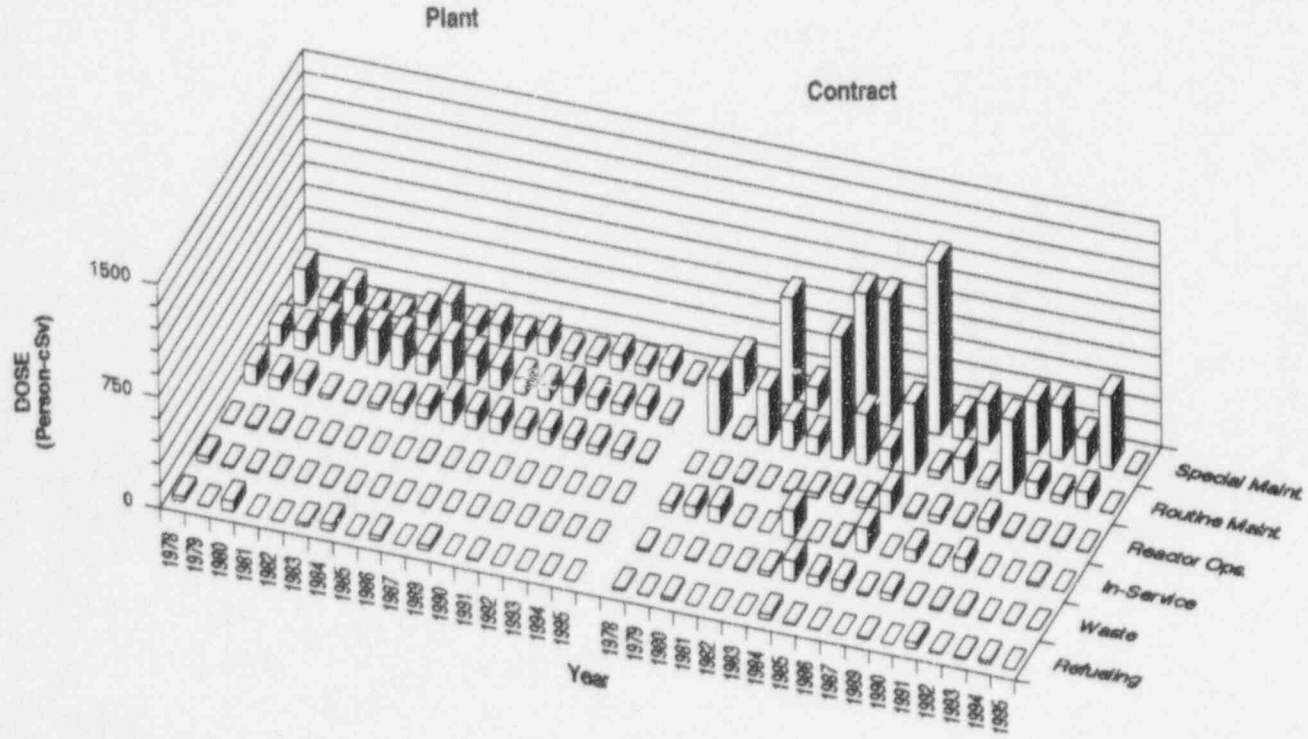
OYSTER CREEK

Dose-Performance Indicators

BWR



Breakdown by Job Function

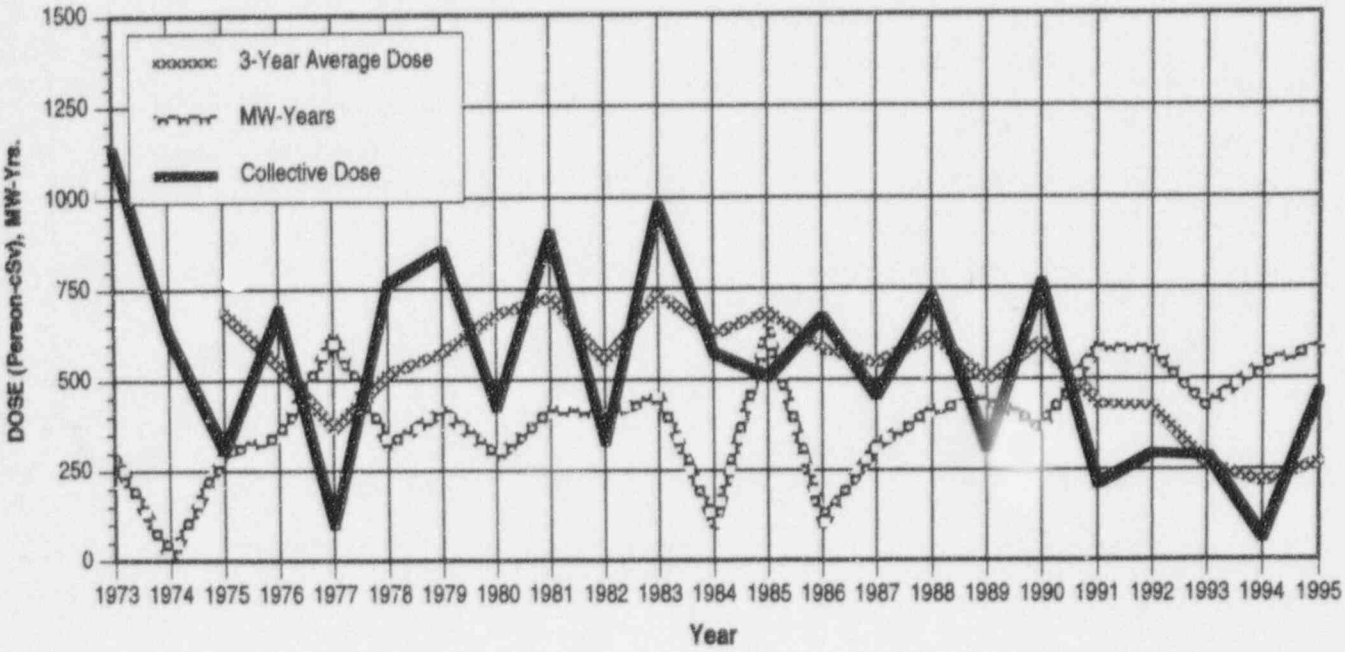


APPENDIX E (continued)

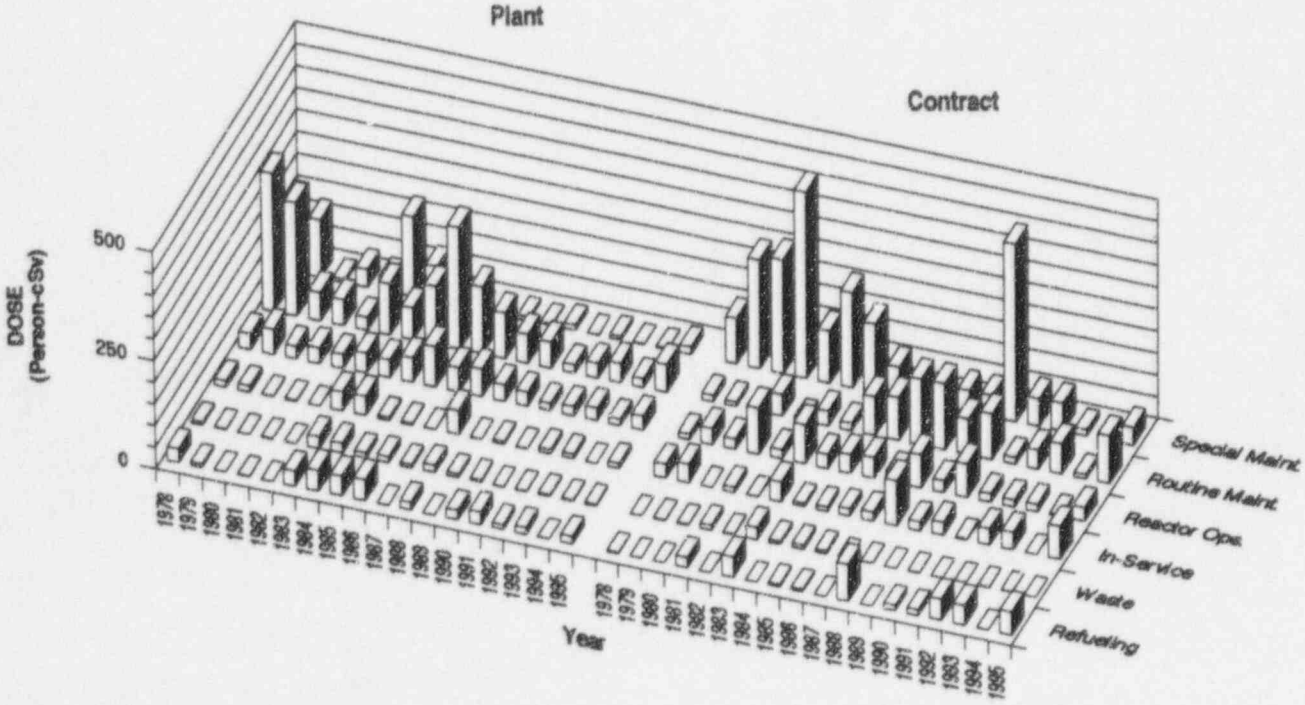
PALISADES

Dose-Performance Indicators

PWR



Breakdown by Job Function

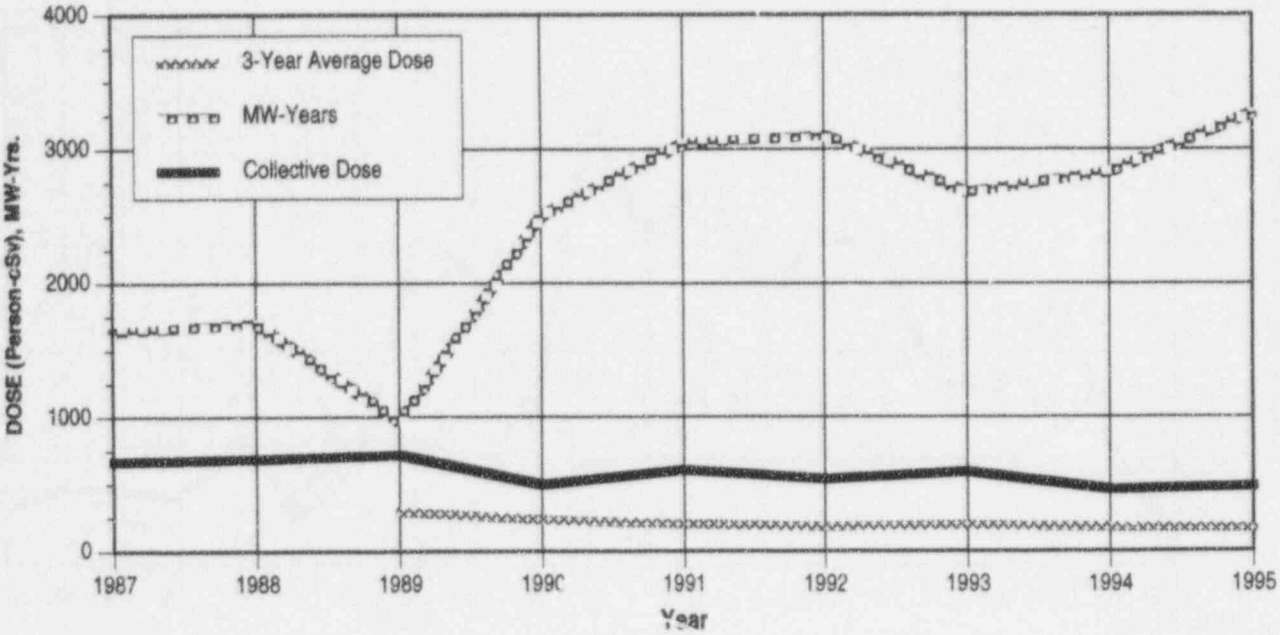


APPENDIX E (continued)

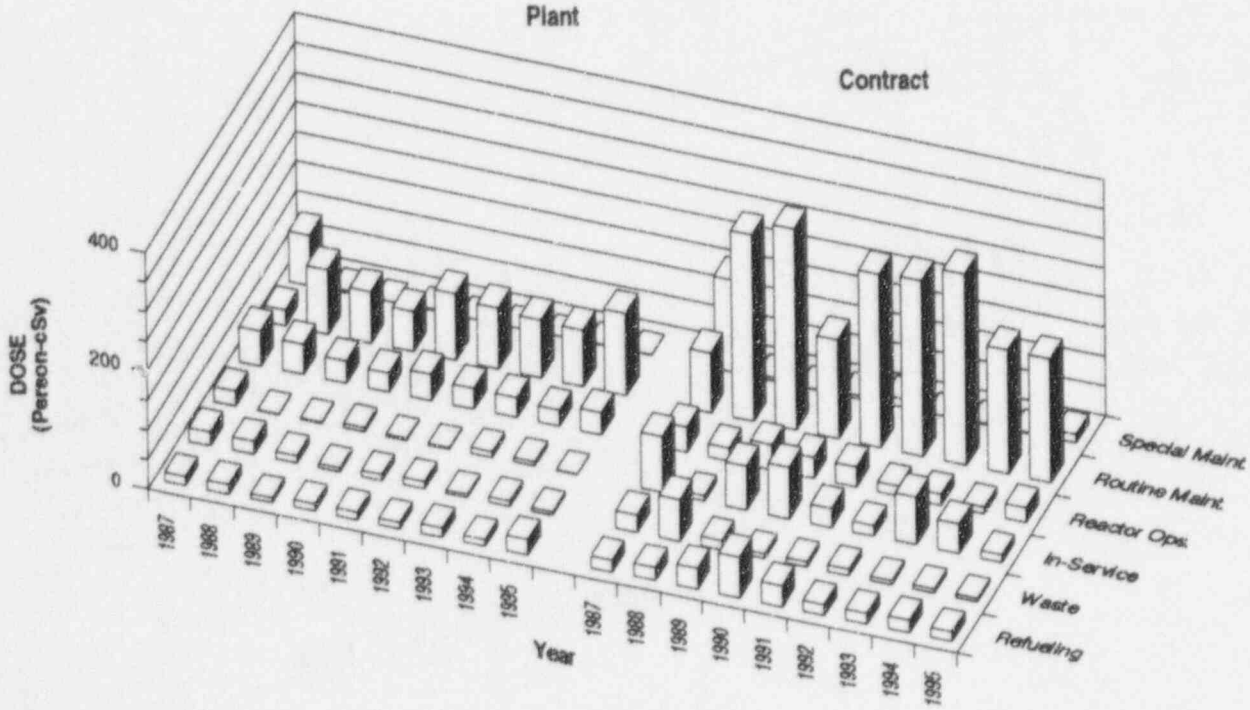
PALO VERDE 1, 2, 3

Dose-Performance Indicators

PWR



Breakdown by Job Function

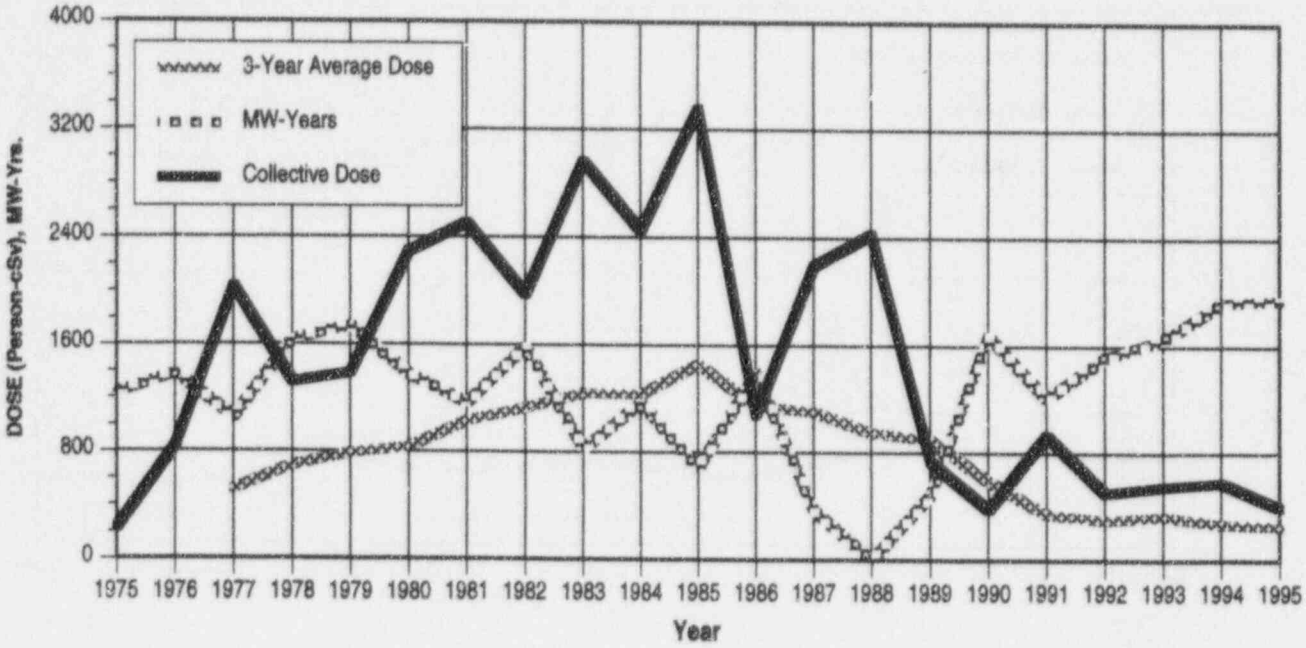


APPENDIX E (continued)

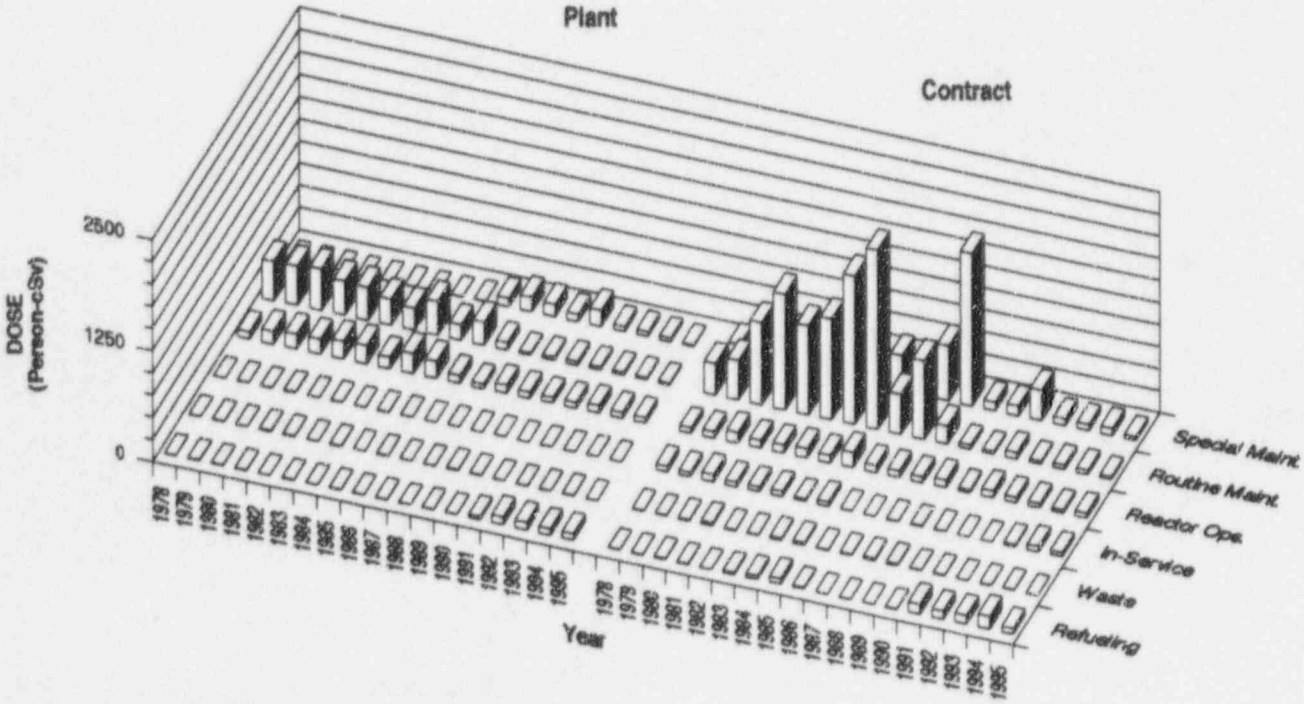
PEACH BOTTOM 2, 3

Dose-Performance Indicators

BWR



Breakdown by Job Function

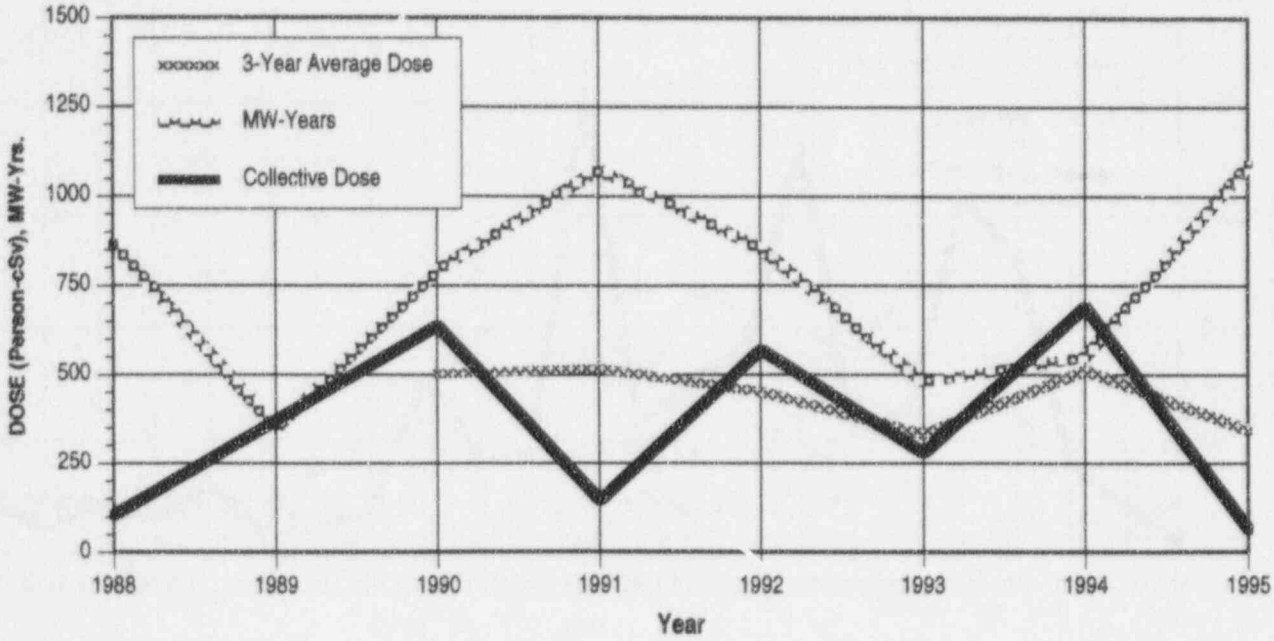


APPENDIX E (continued)

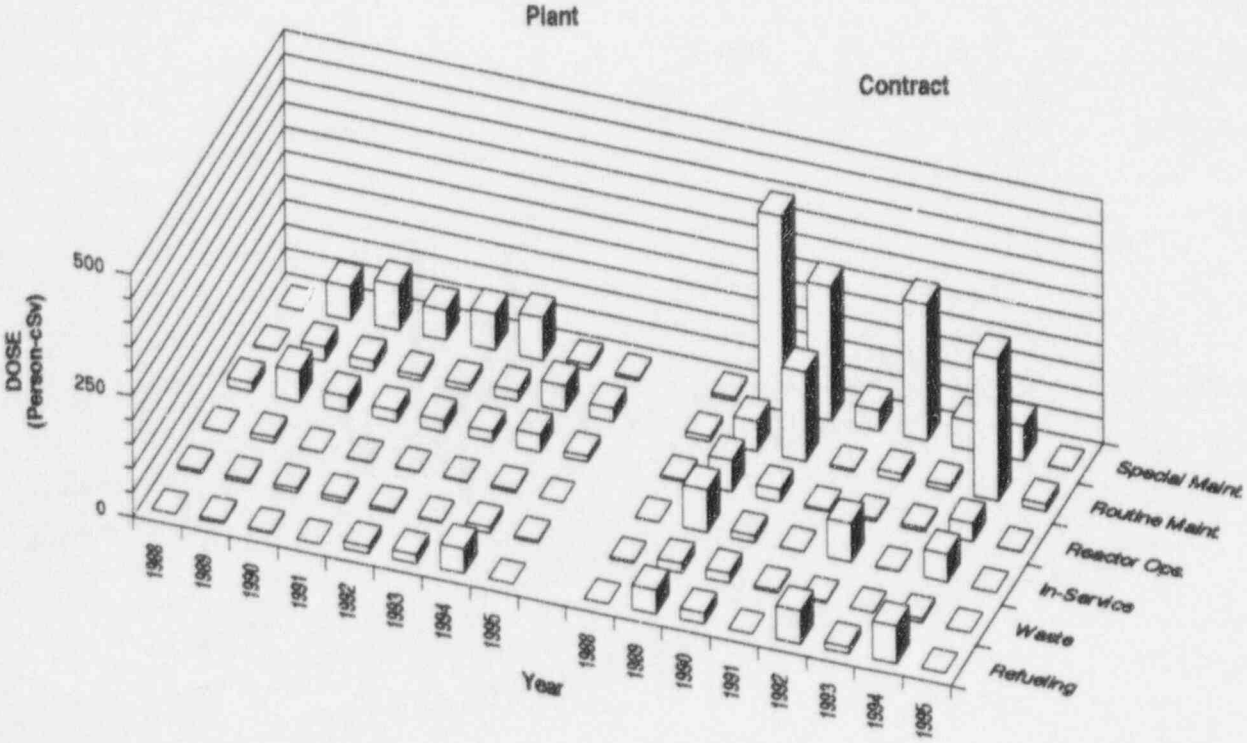
PERRY

Dose-Performance Indicators

BWR



Breakdown by Job Function

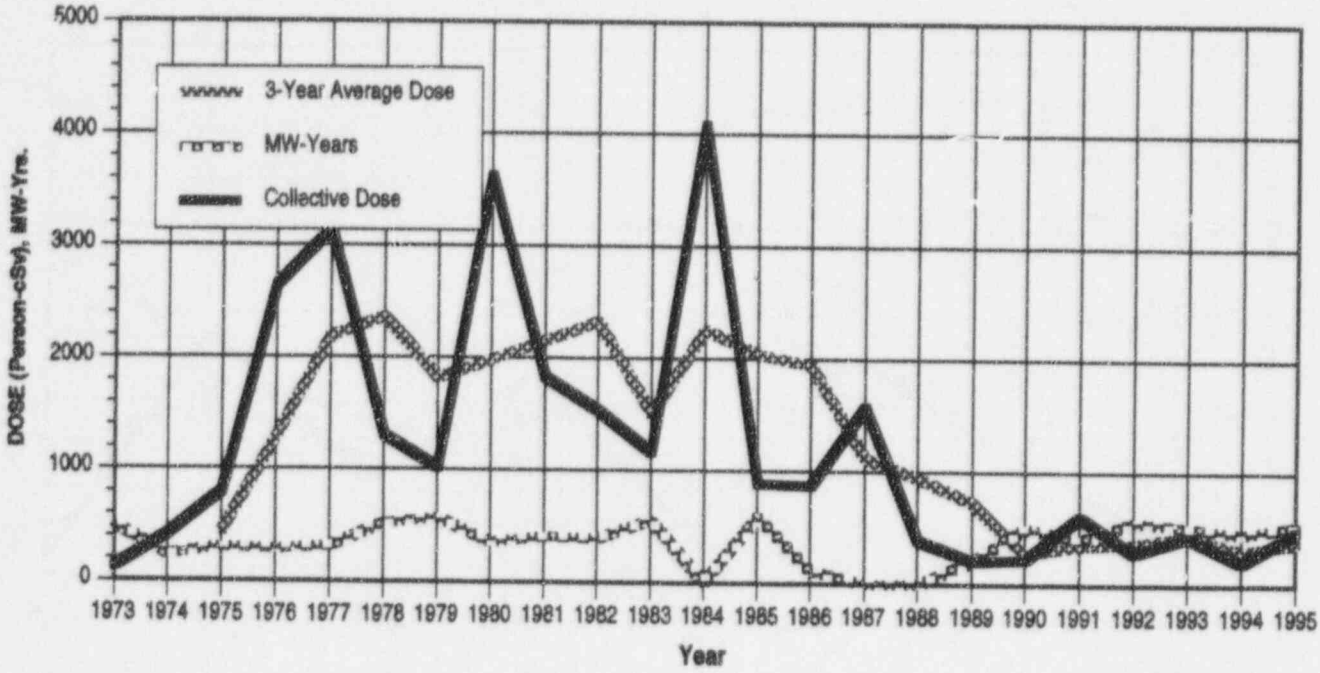


APPENDIX E (continued)

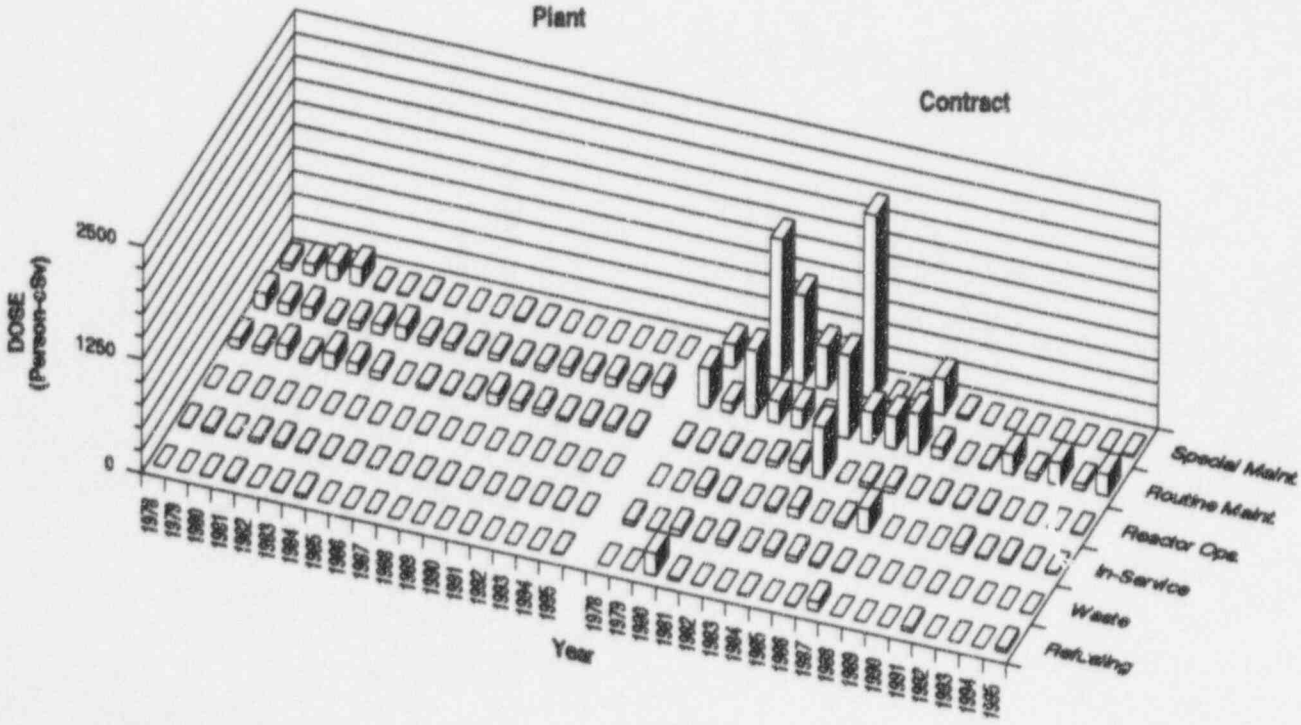
PILGRIM

Dose-Performance Indicators

BWR



Breakdown by Job Function

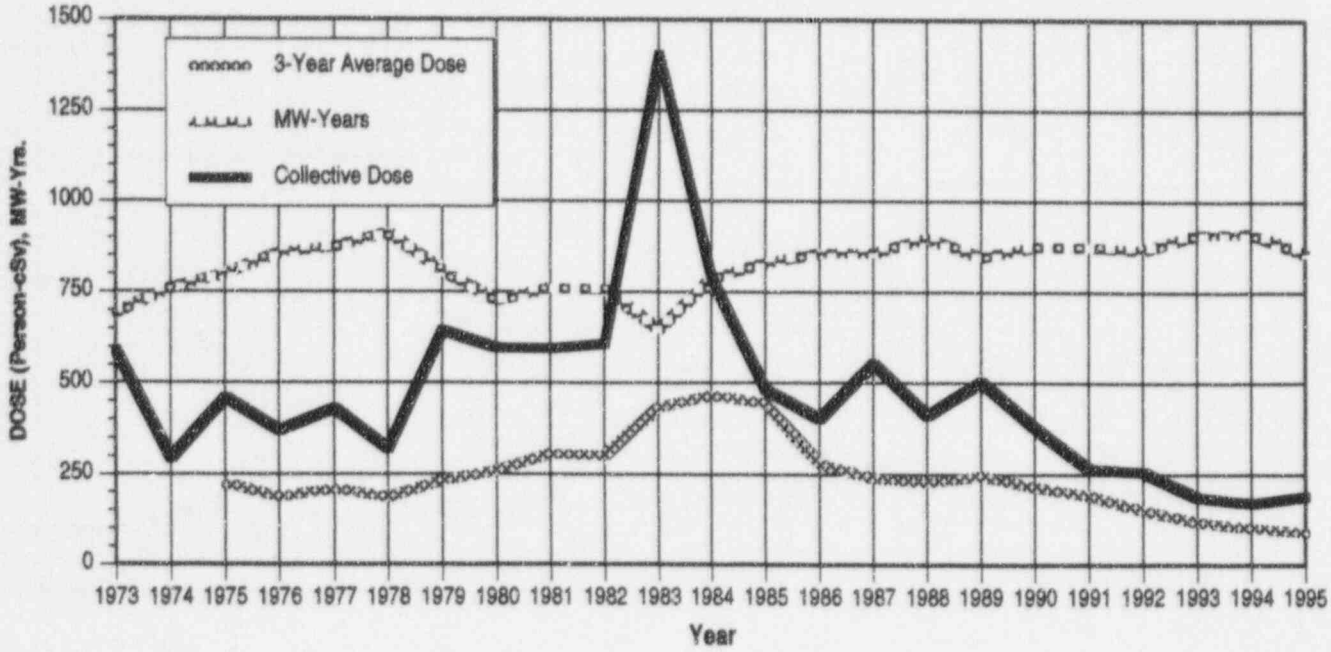


APPENDIX E (continued)

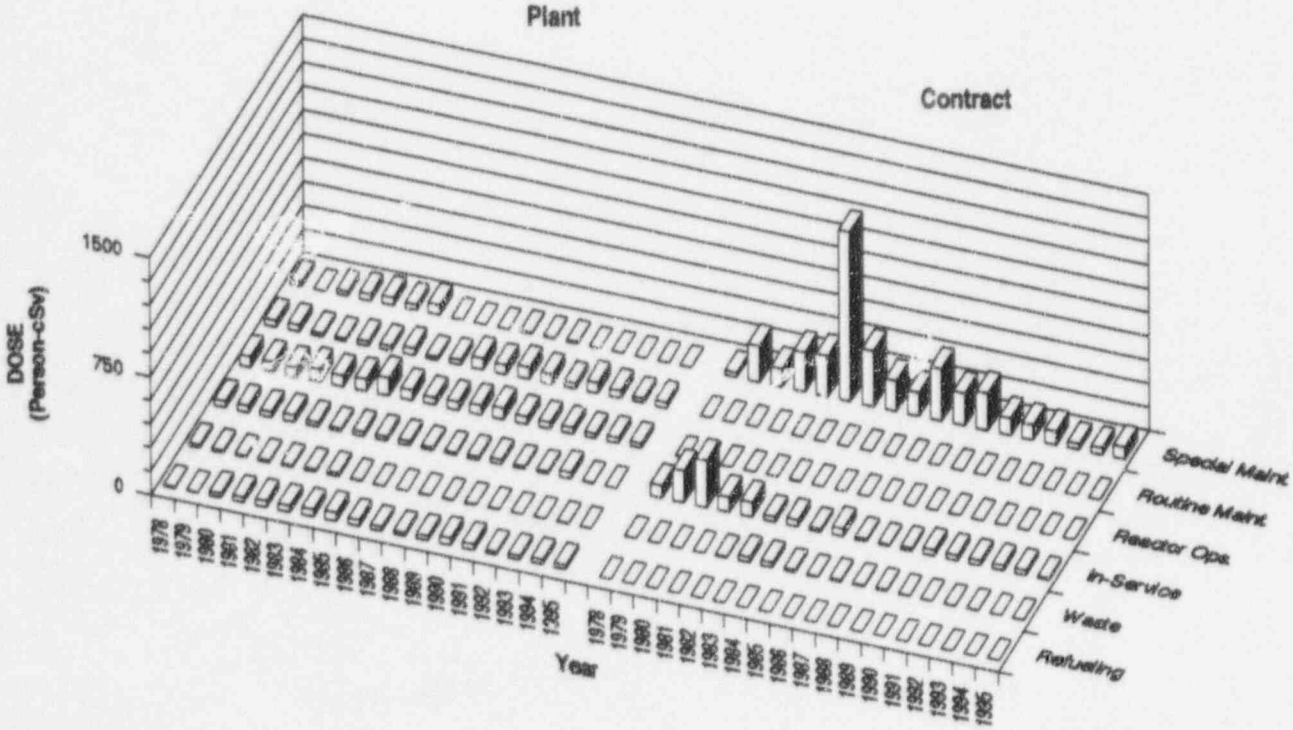
POINT BEACH 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

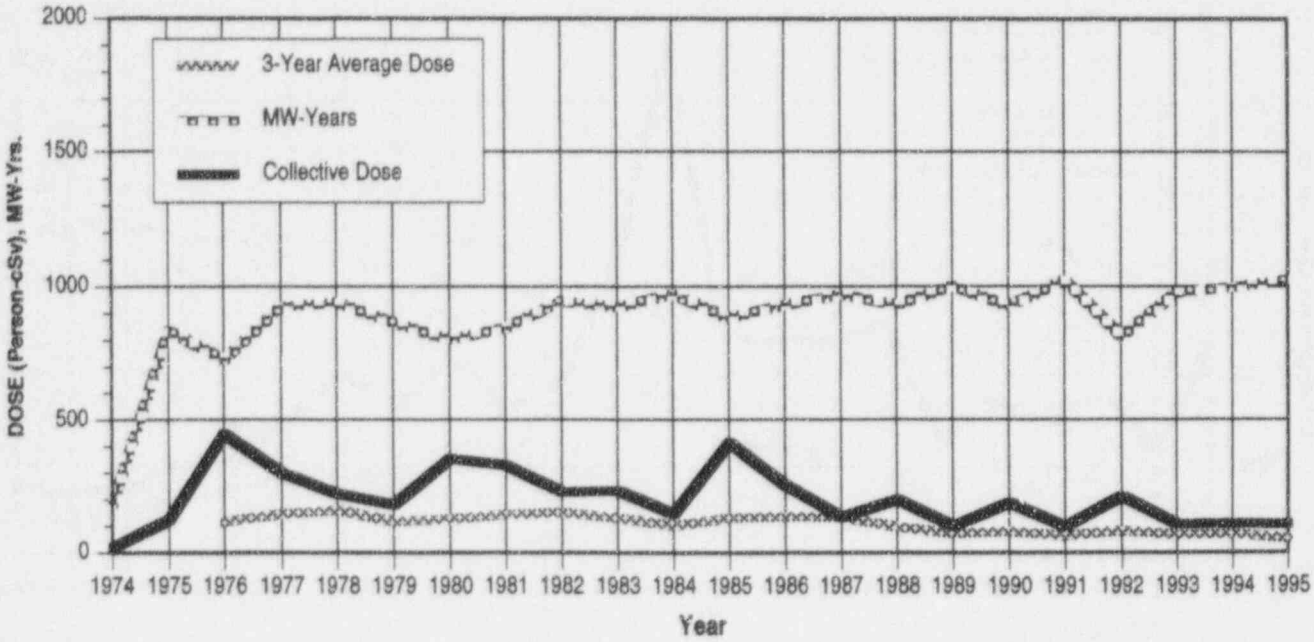


APPENDIX E (continued)

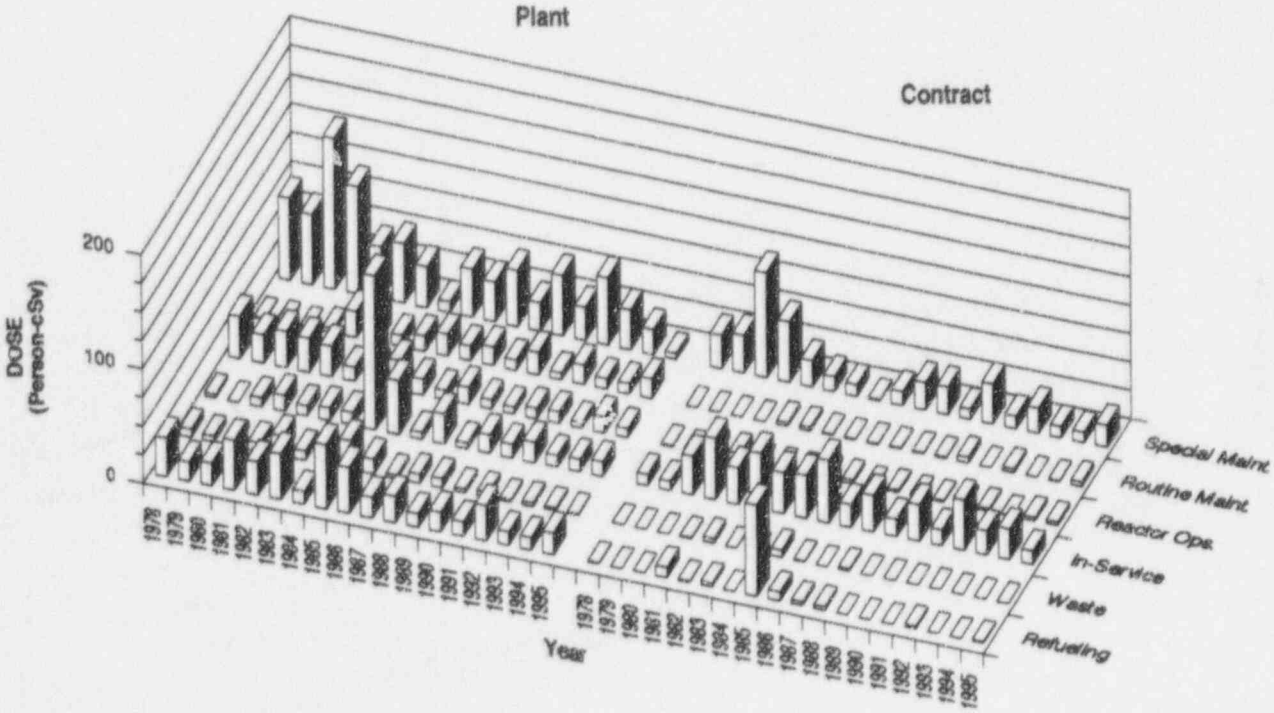
PRAIRIE ISLAND 1, 2

Dose-Performance Indicators

PWR



Breakdown by Job Function

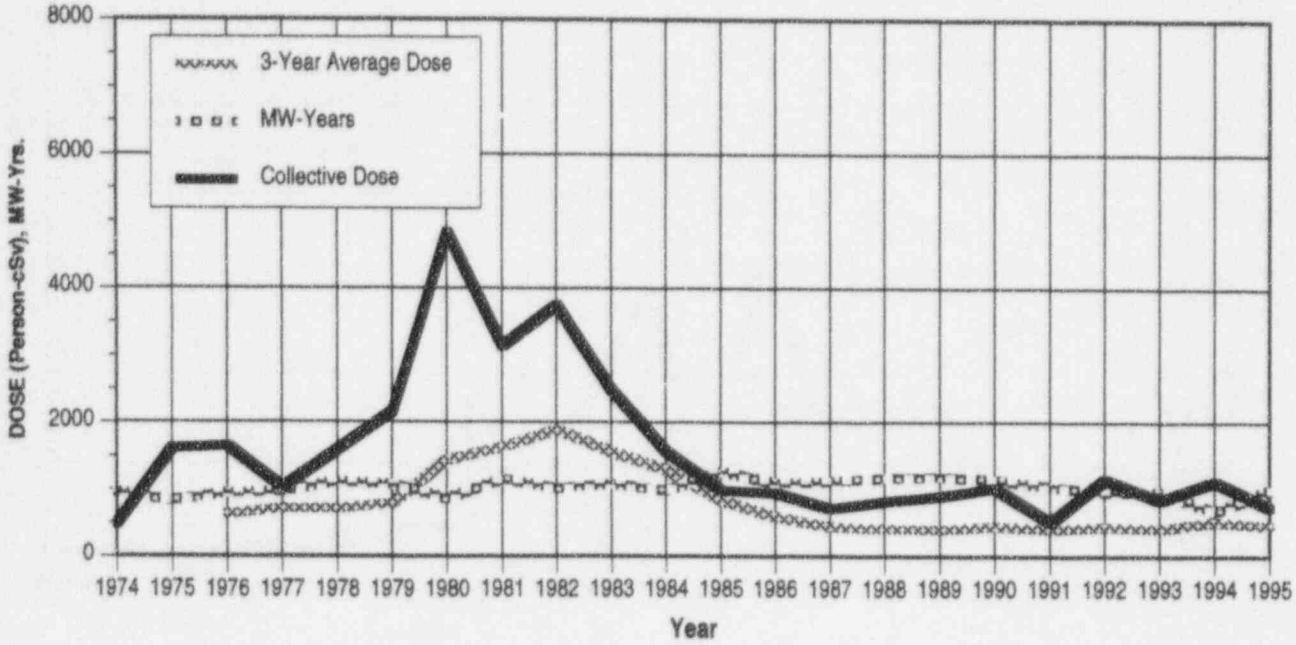


APPENDIX E (continued)

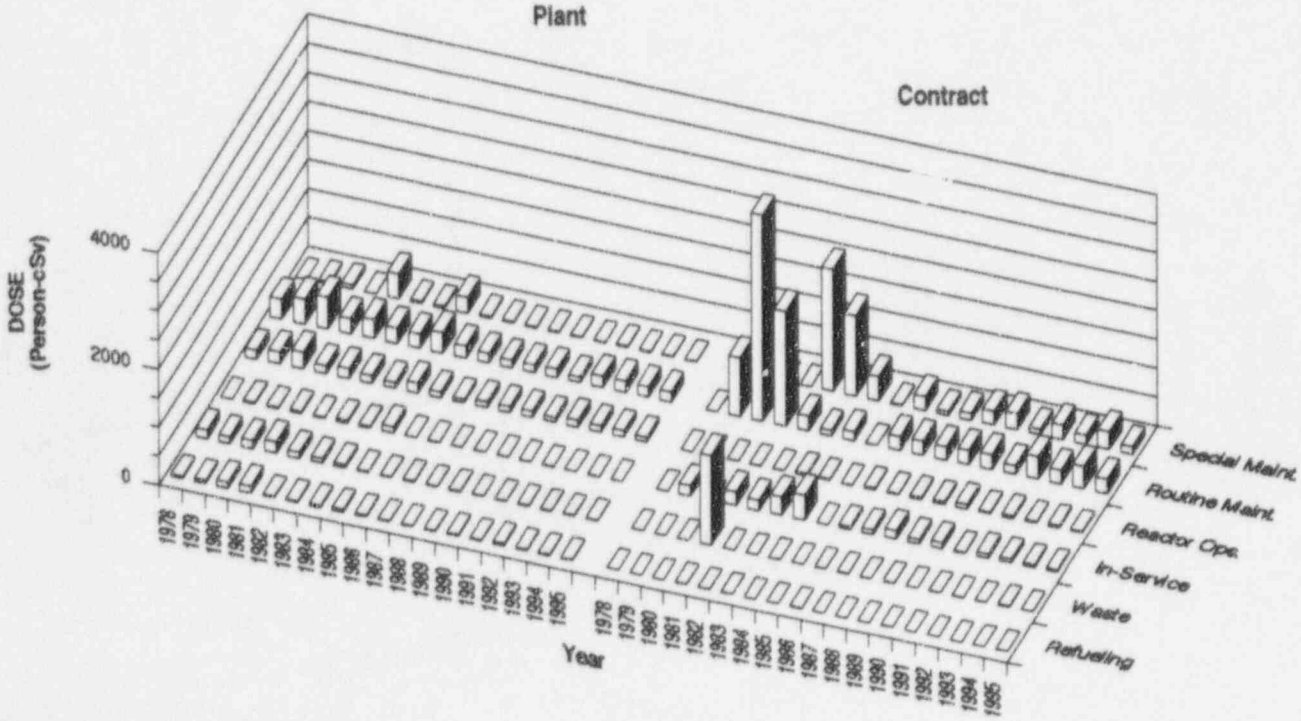
QUAD CITIES 1, 2

Dose-Performance Indicators

BWR



Breakdown by Job Function

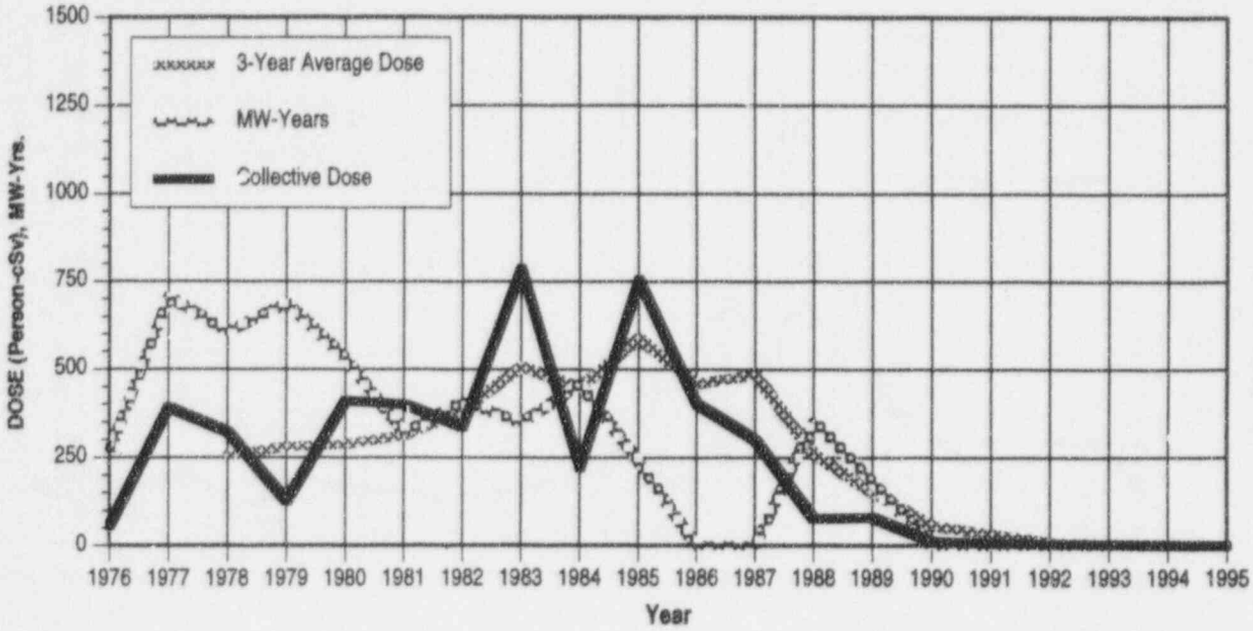


APPENDIX E (continued)

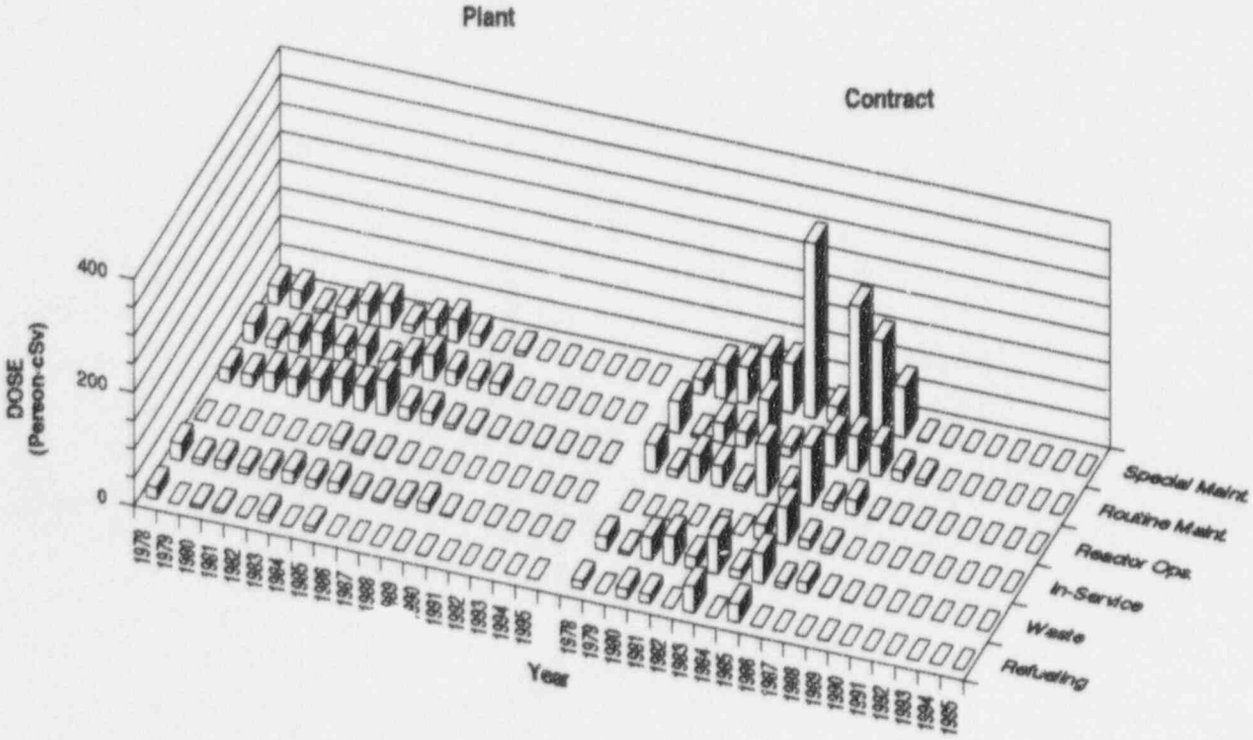
RANCHO SECO

Dose-Performance Indicators

PWR



Breakdown by Job Function

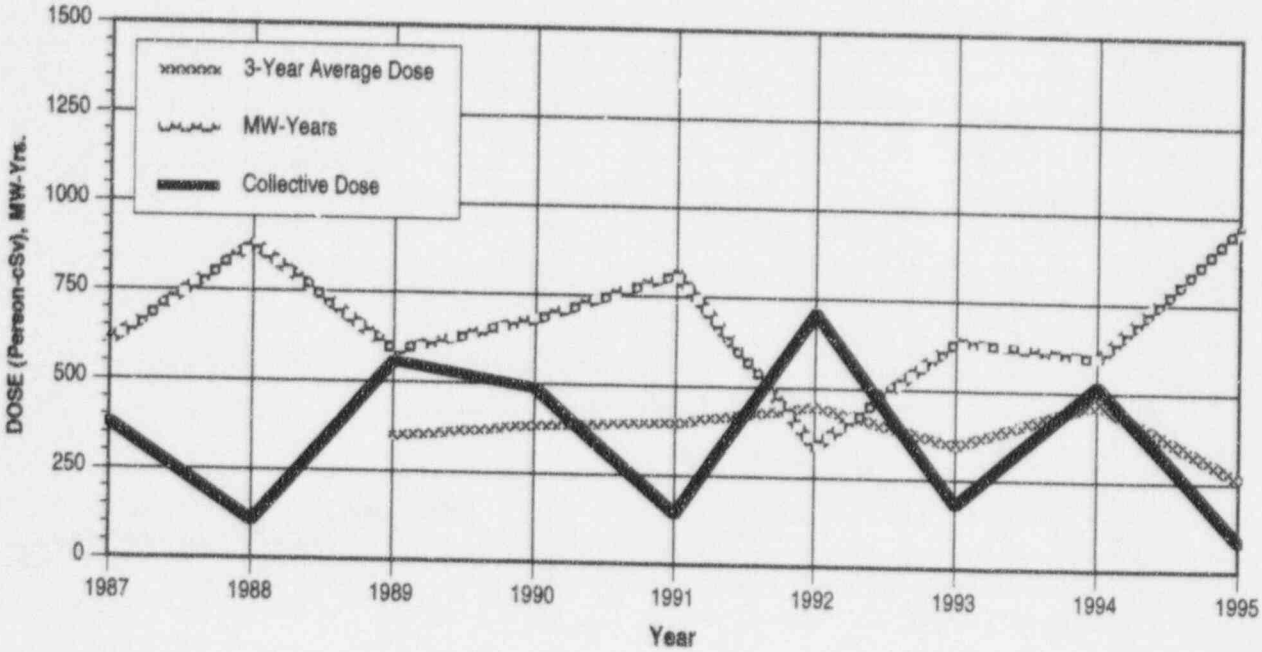


APPENDIX E (continued)

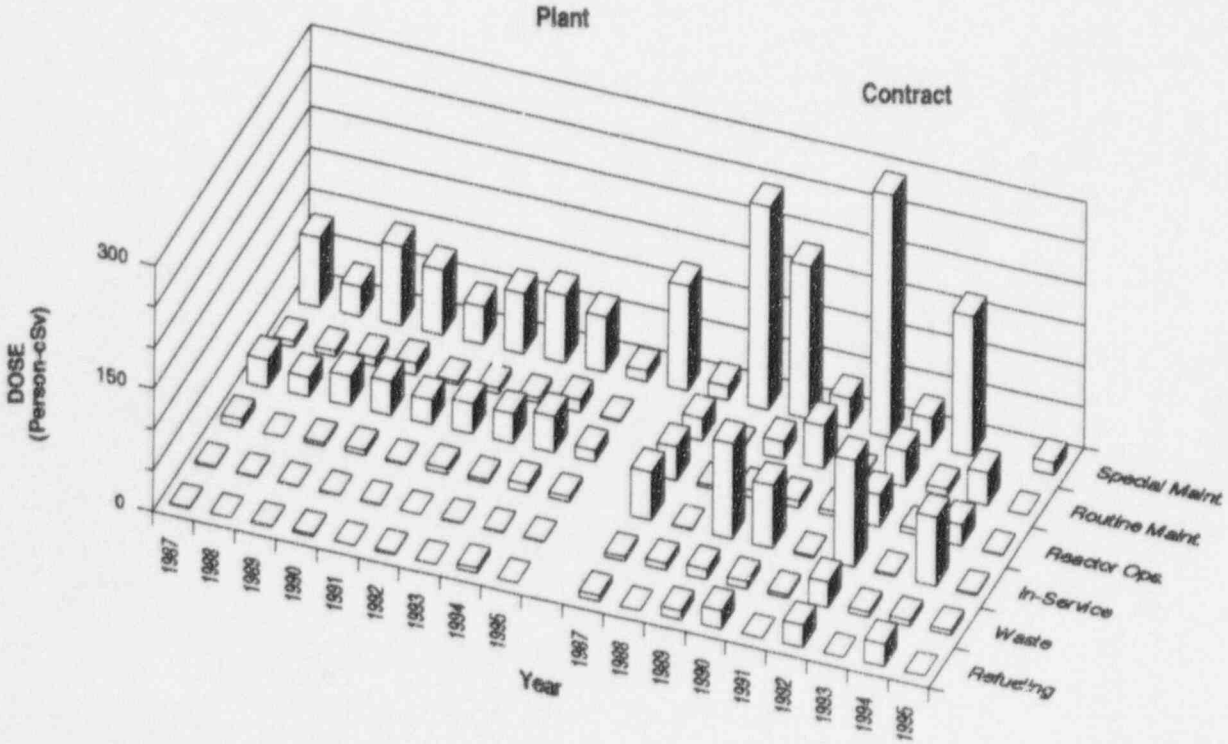
RIVER BEND 1

Dose-Performance Indicators

BWR



Breakdown by Job Function

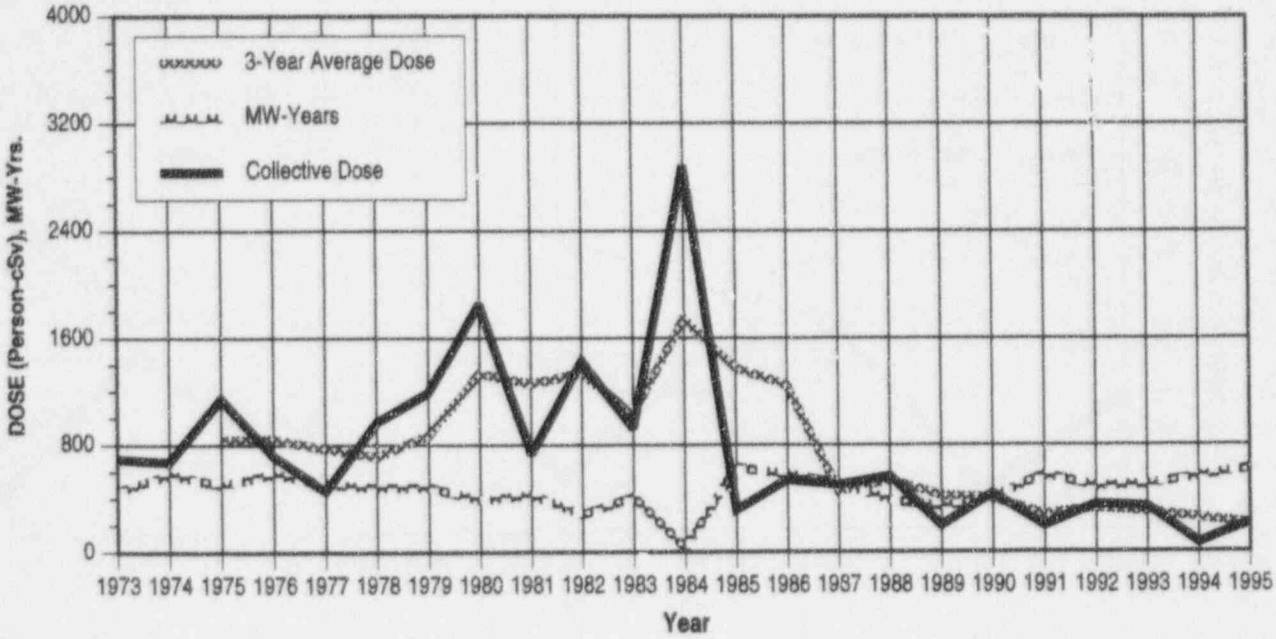


APPENDIX E (continued)

ROBINSON 2

Dose-Performance Indicators

PWR



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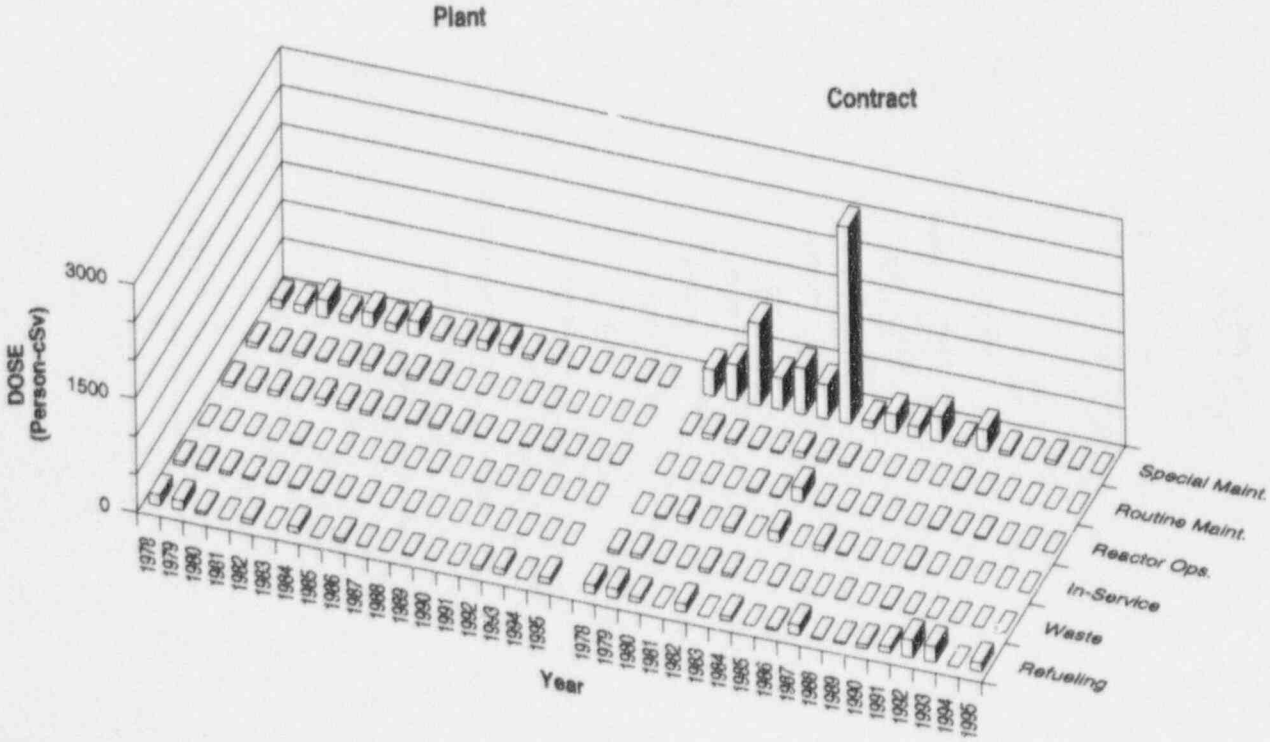
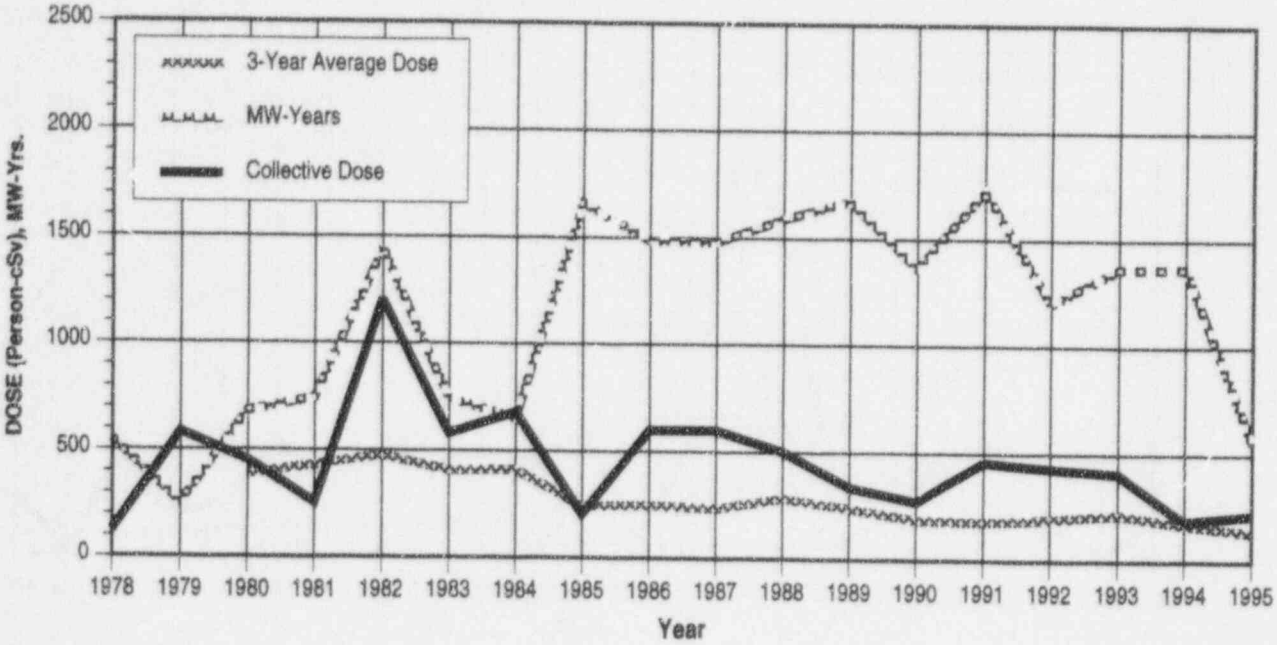


APPENDIX E (continued)

SALEM 1, 2

Dose-Performance Indicators

PWR



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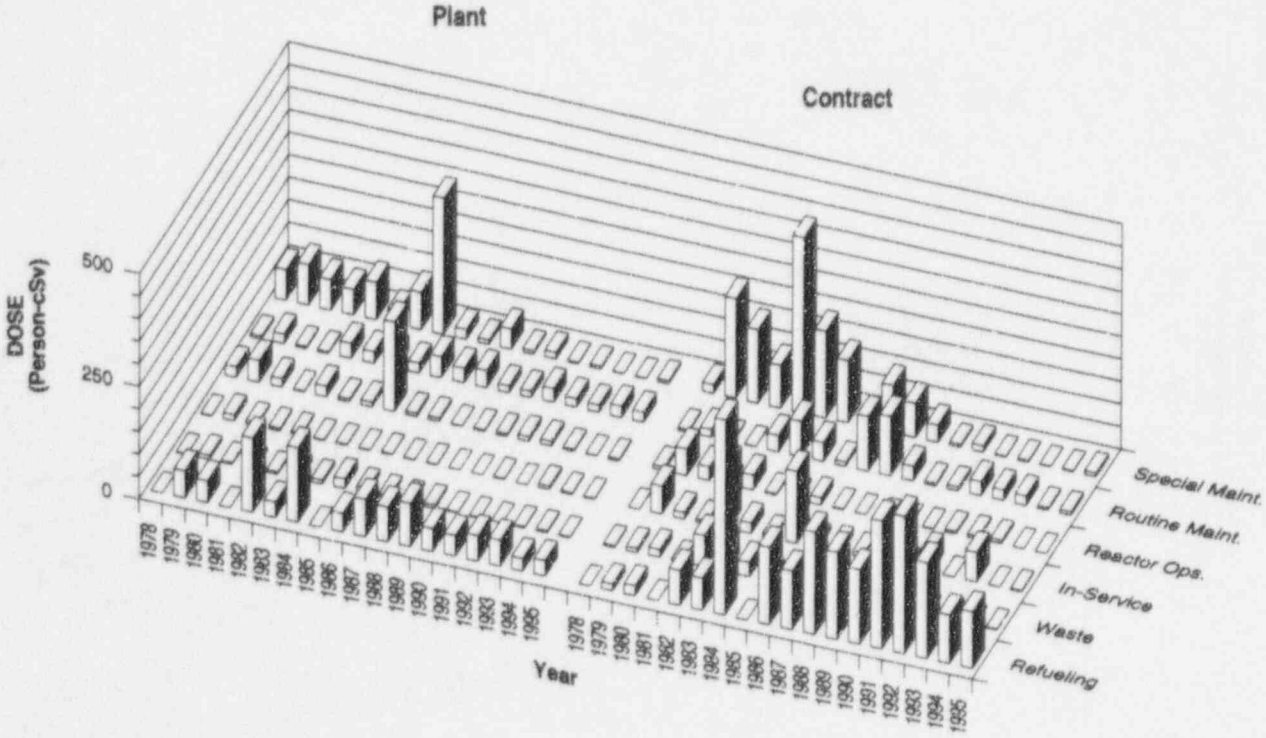
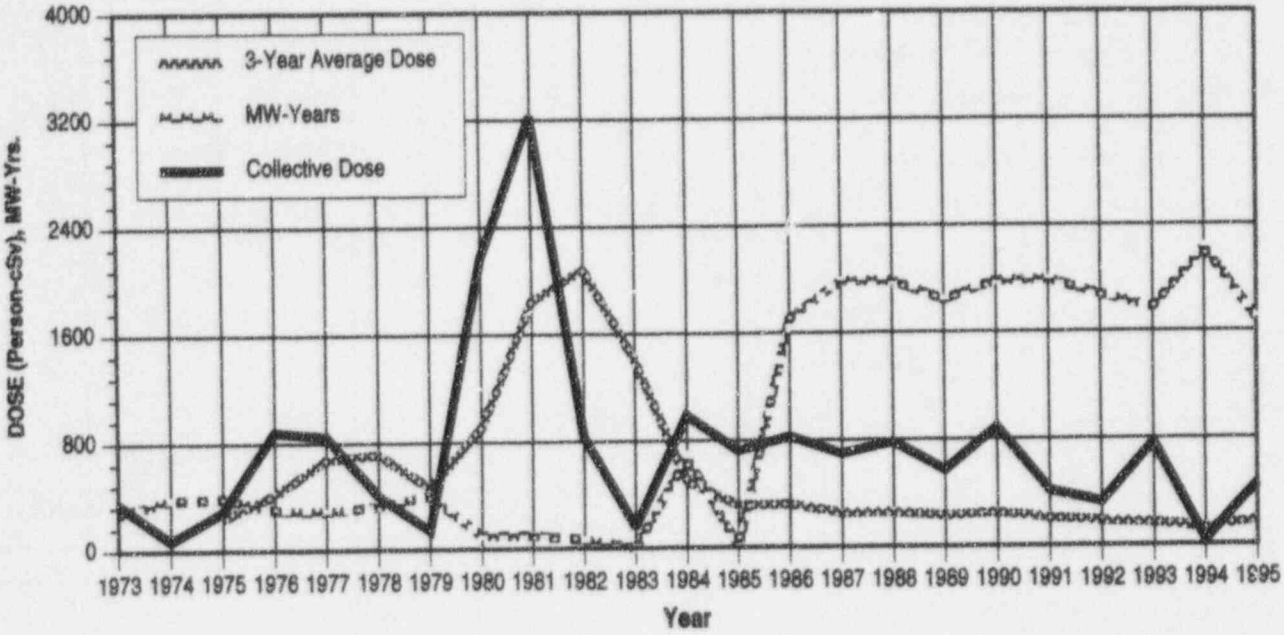


APPENDIX E (continued)

SAN ONOFRE 1, 2, 3

Dose-Performance Indicators

PWR



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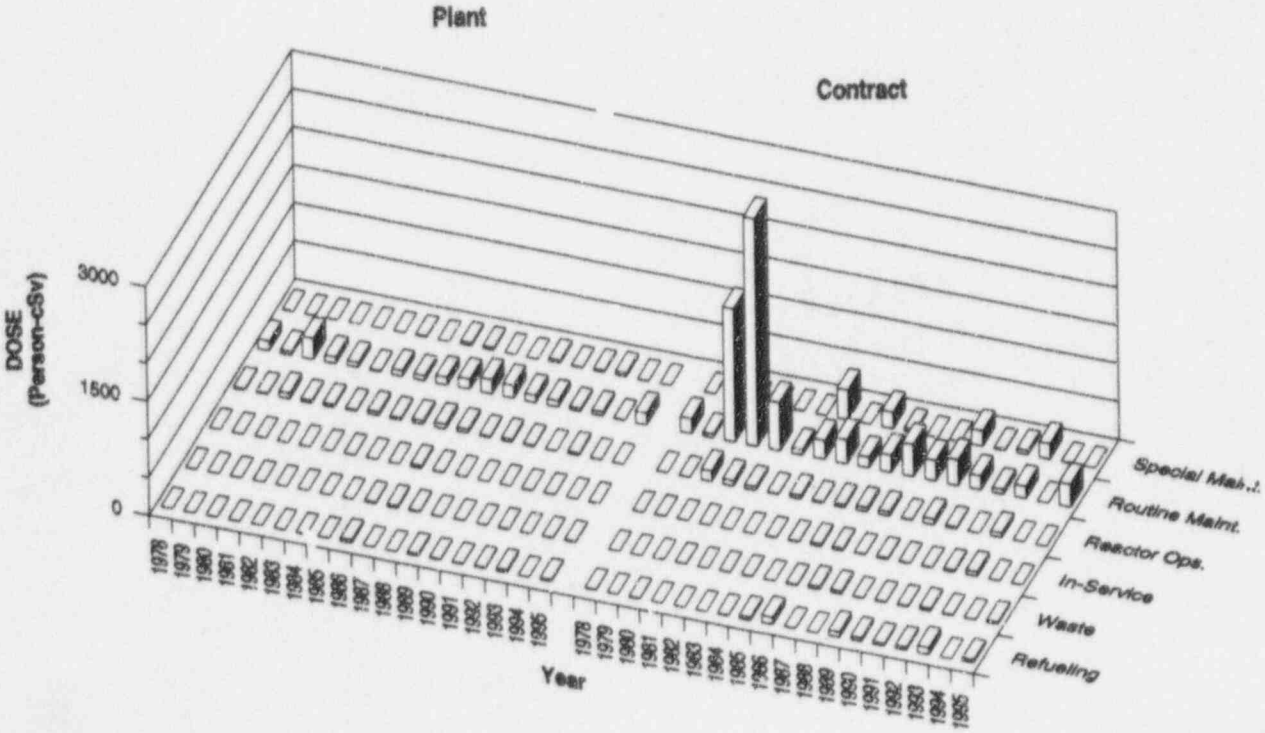
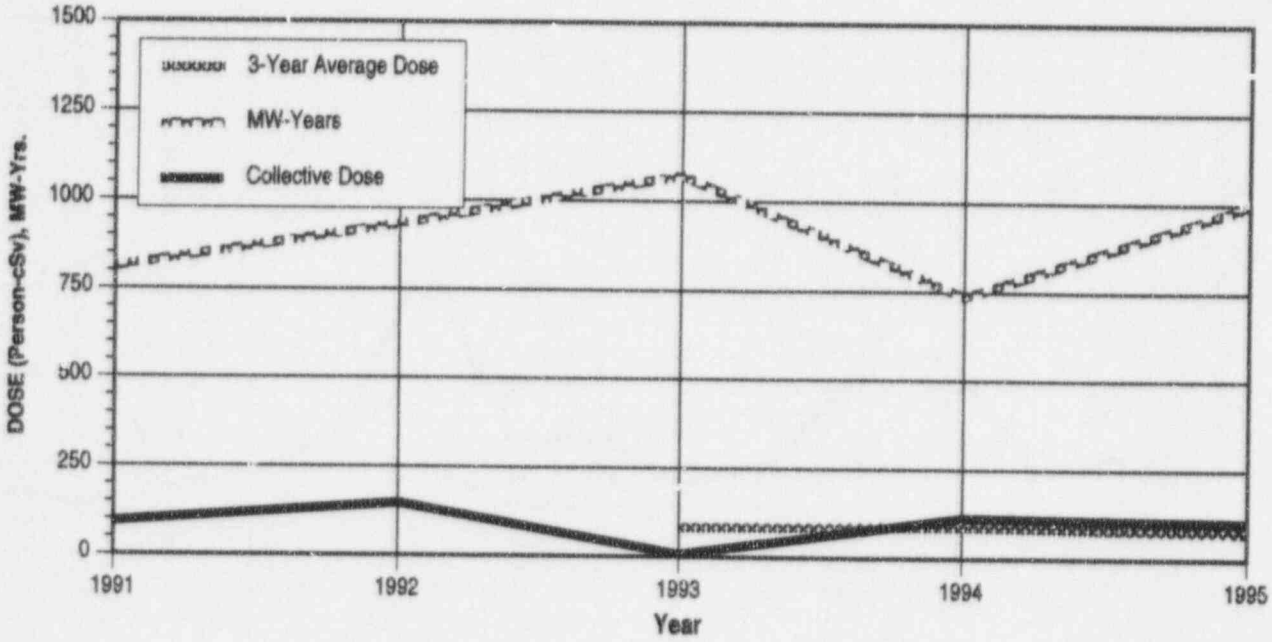


APPENDIX E (continued)

SEABROOK

Dose-Performance Indicators

PWR



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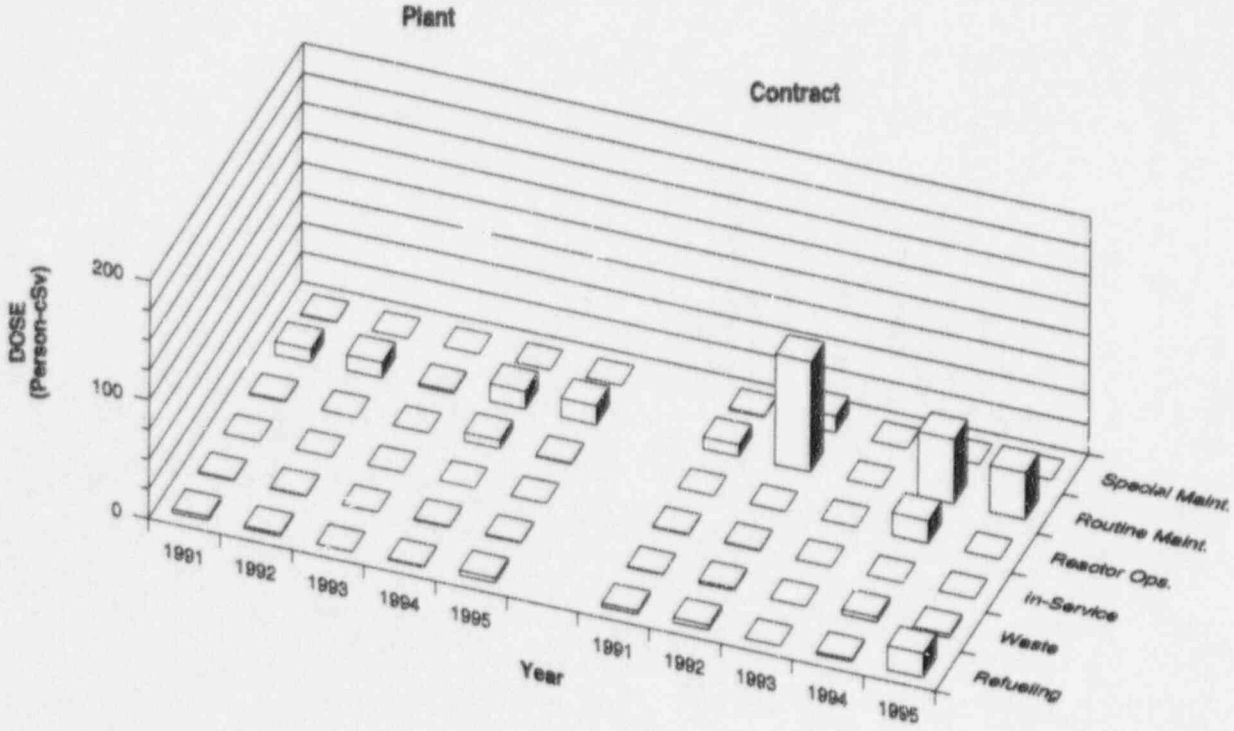
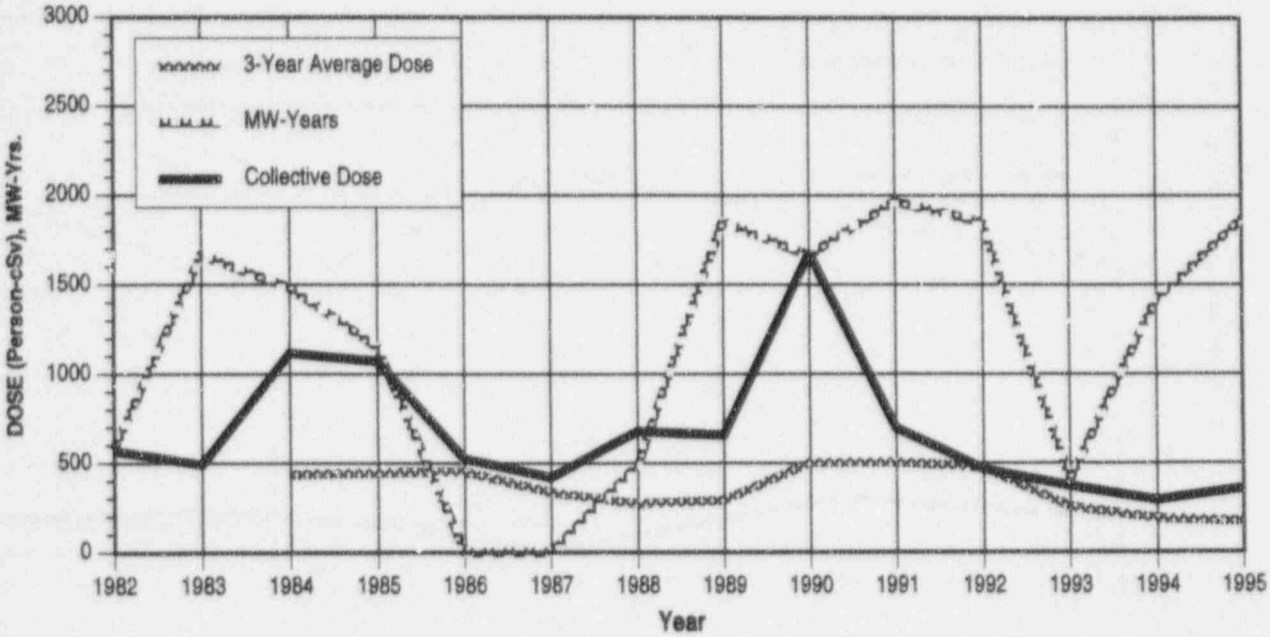


APPENDIX E (continued)

SEQUOYAH 1, 2

Dose-Performance Indicators

PWR



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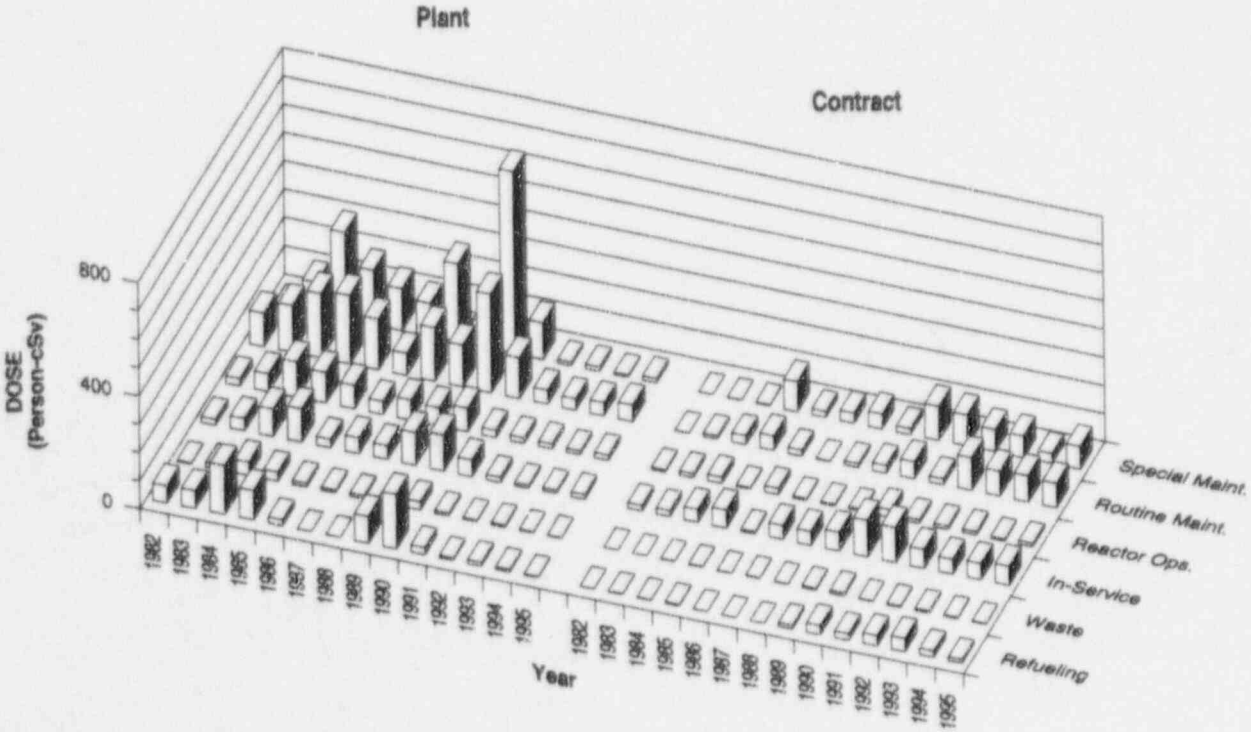
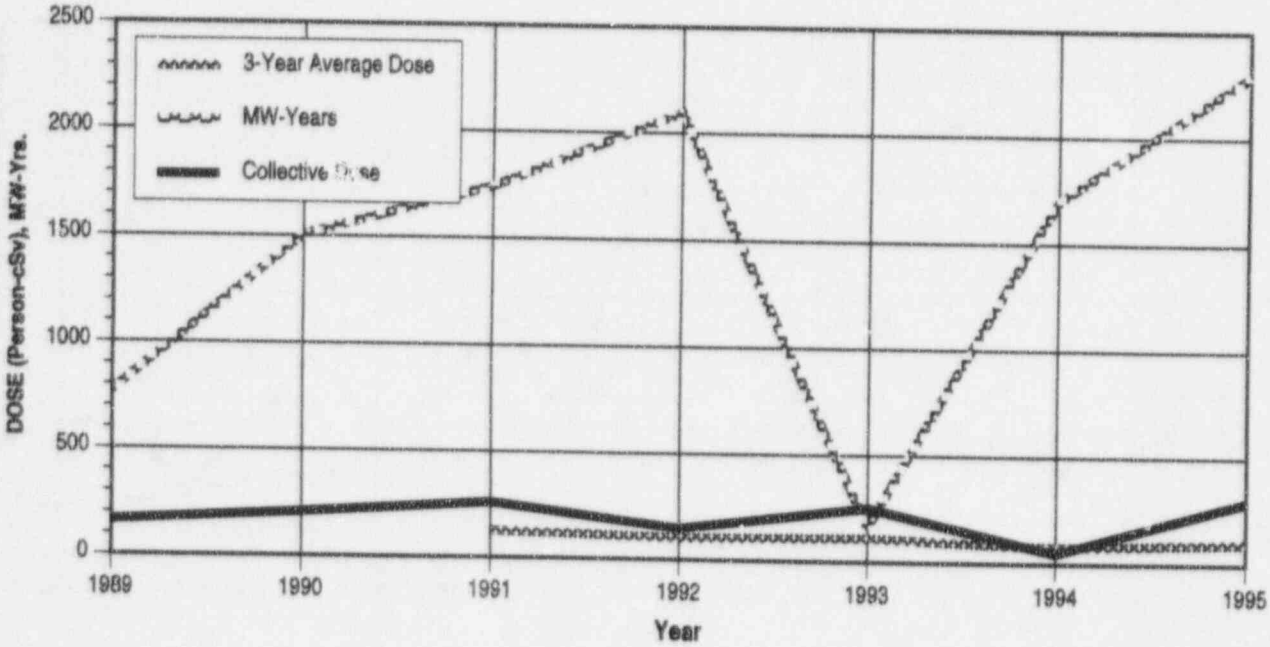


APPENDIX E (continued)

SOUTH TEXAS 1, 2

Dose-Performance Indicators

PWR



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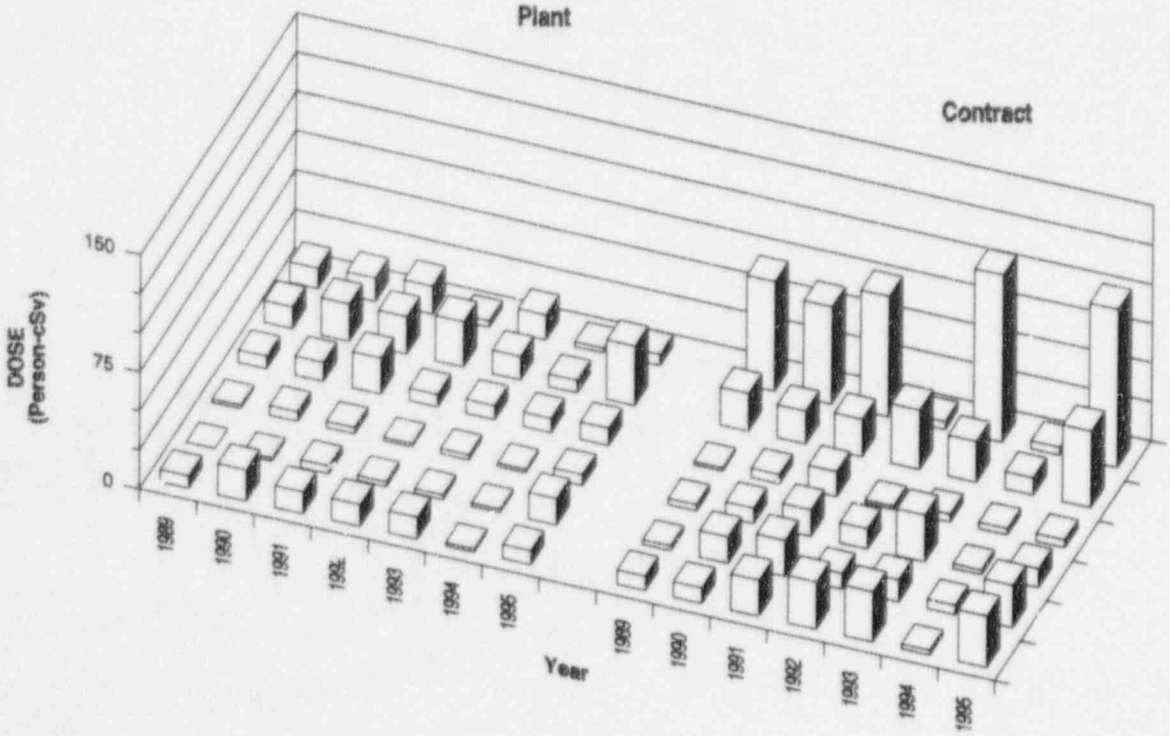
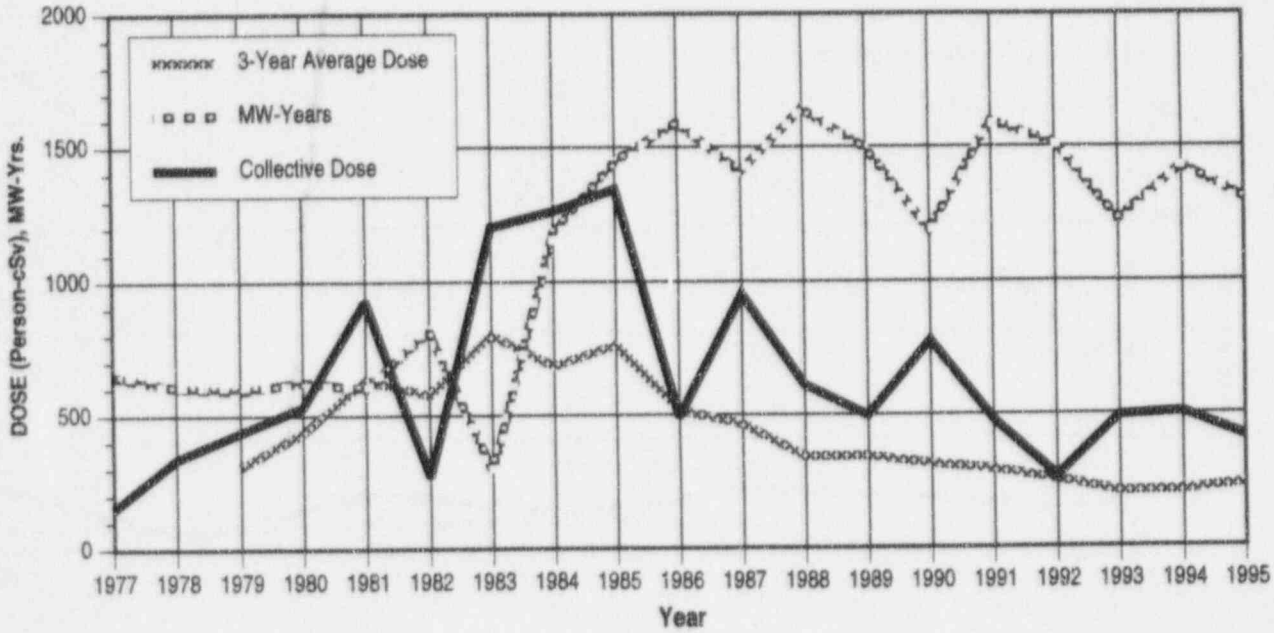


APPENDIX E (continued)

ST. LUCIE 1, 2

Dose-Performance Indicators

PWR



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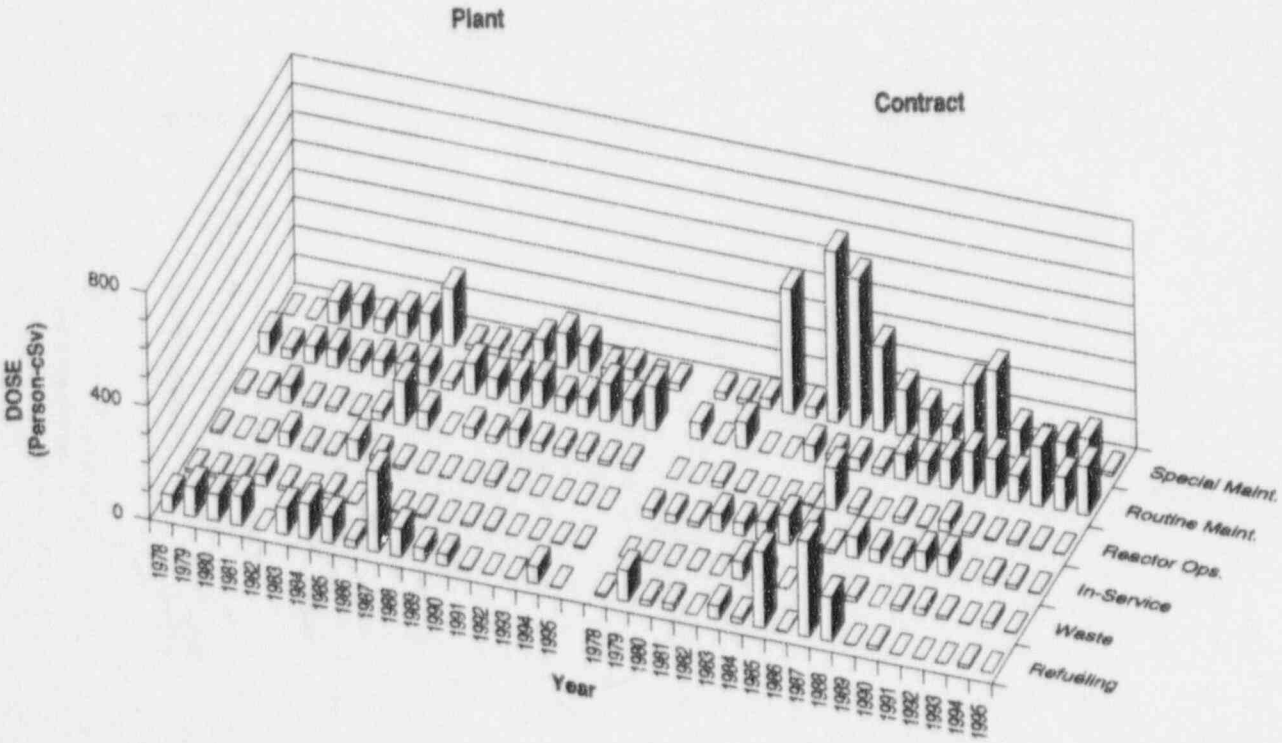
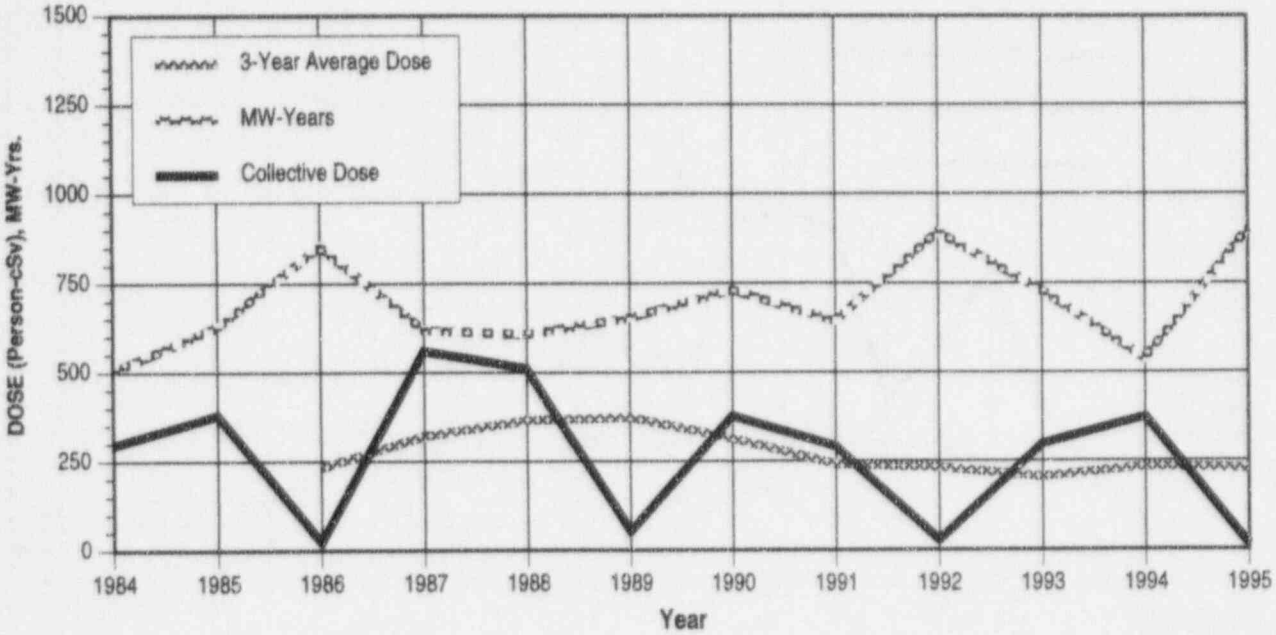


APPENDIX E (continued)

SUMMER 1

Dose-Performance Indicators

PWR



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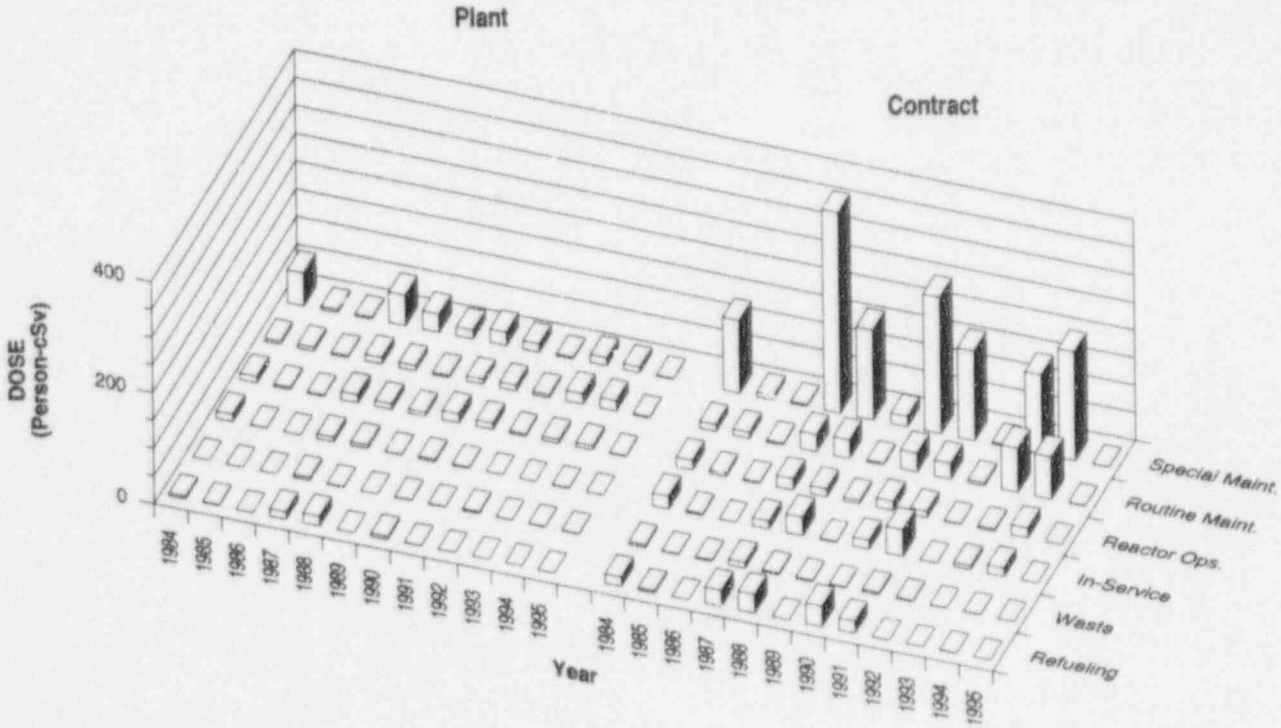
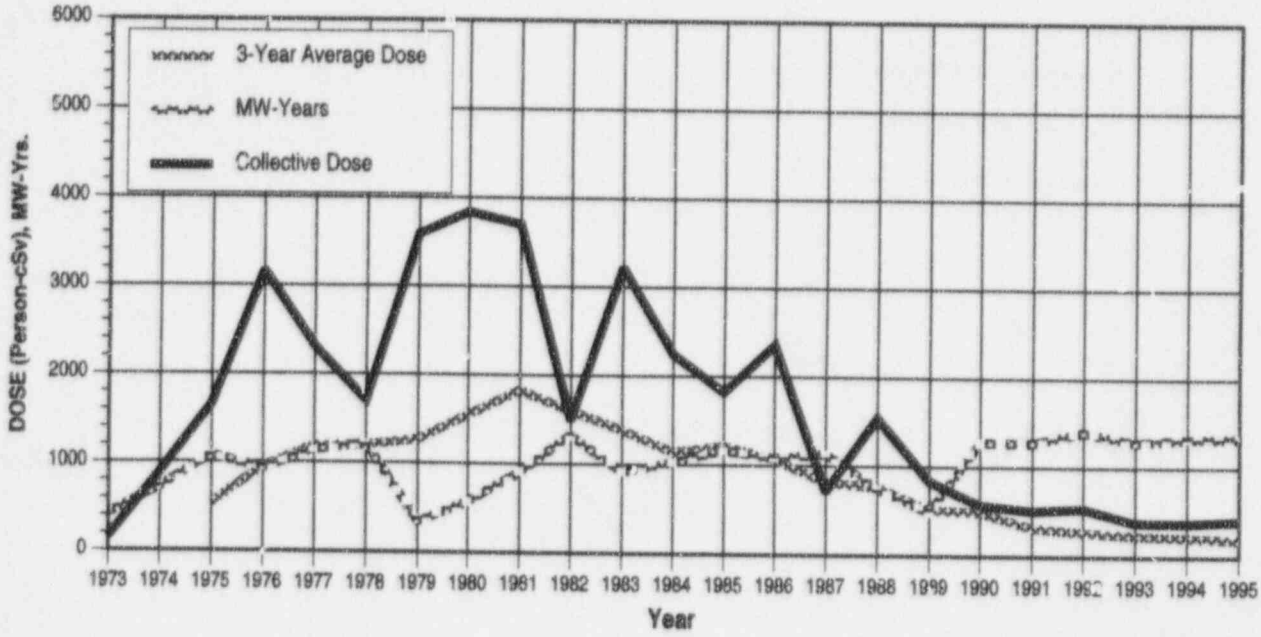


APPENDIX E (continued)

SURRY 1, 2

Dose-Performance Indicators

PWR



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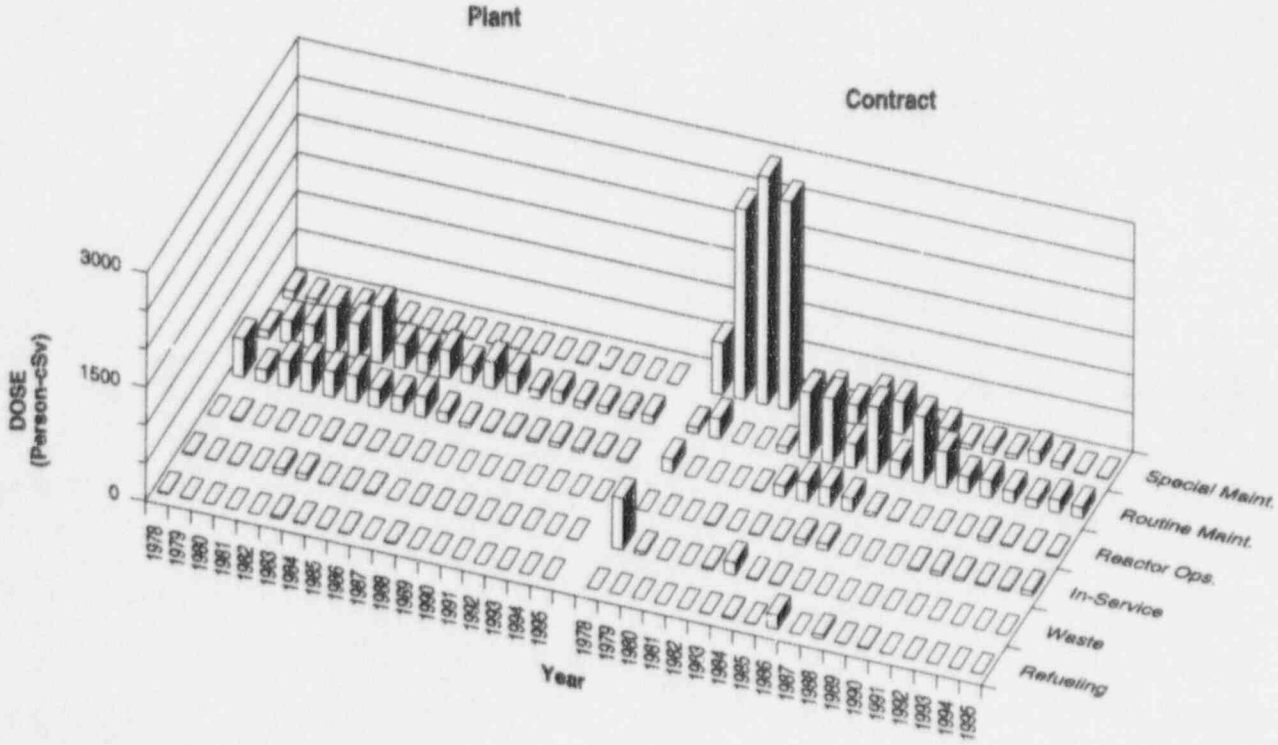
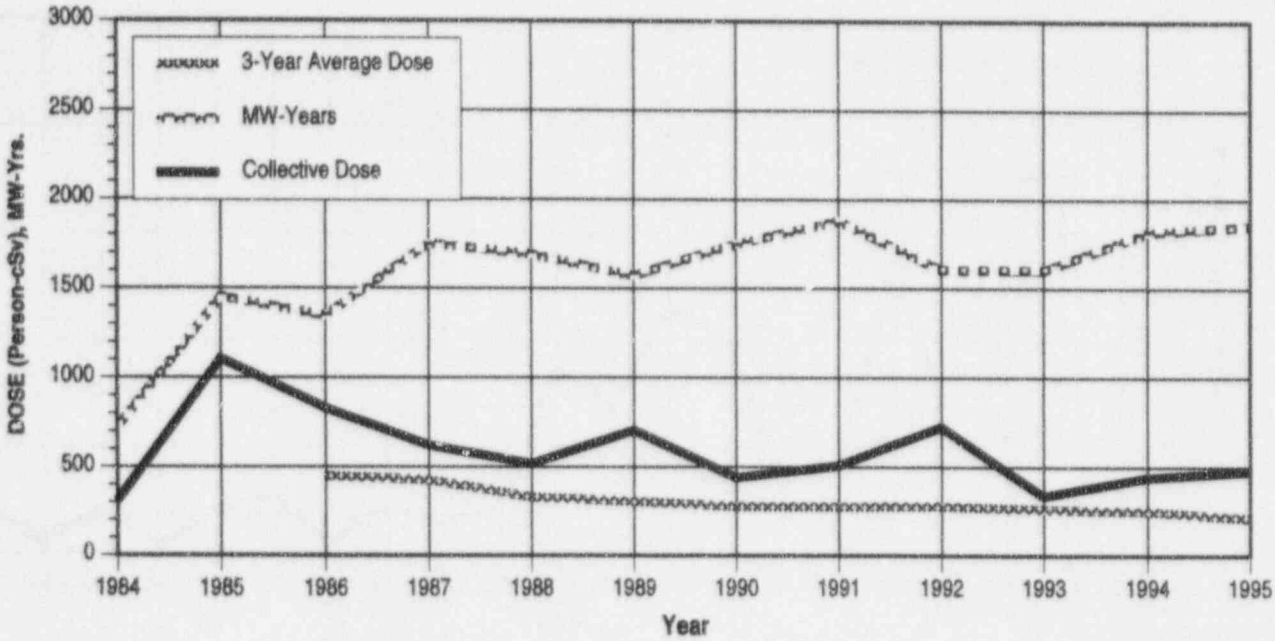


APPENDIX E (continued)

SUSQUEHANNA 1, 2

Dose-Performance Indicators

BWR



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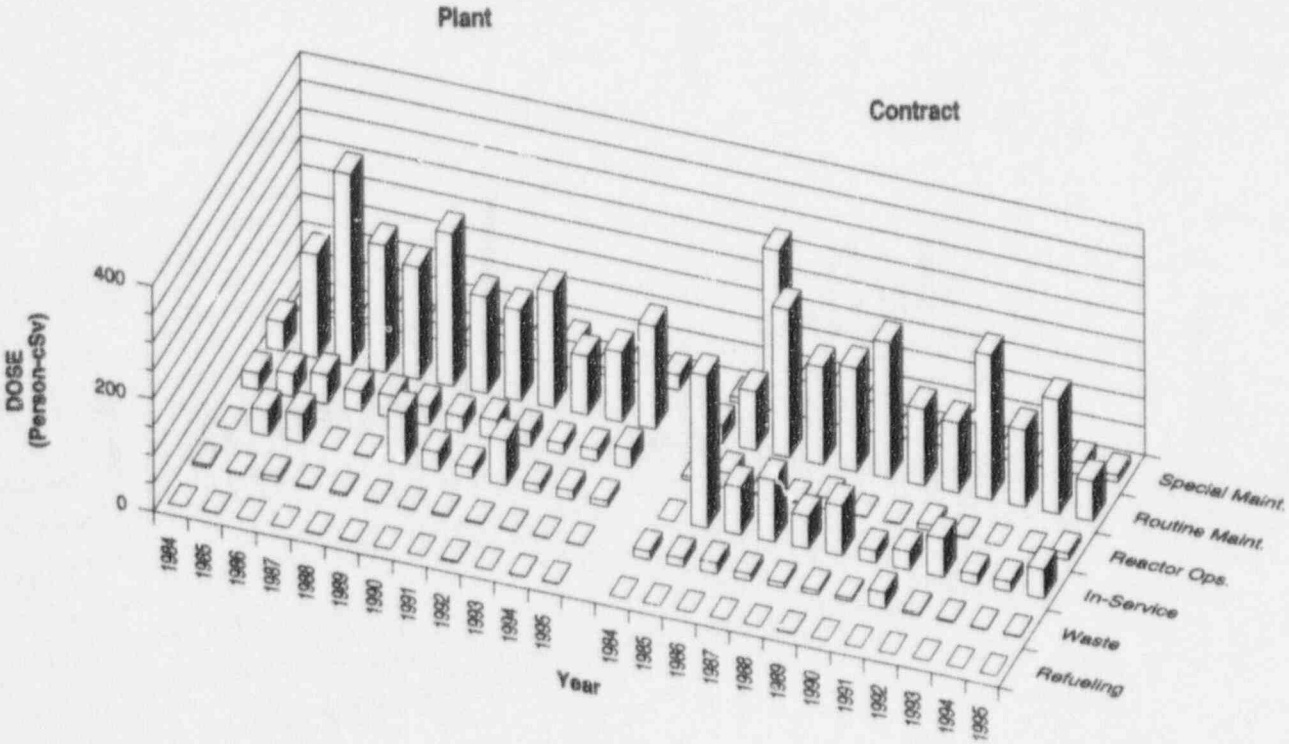
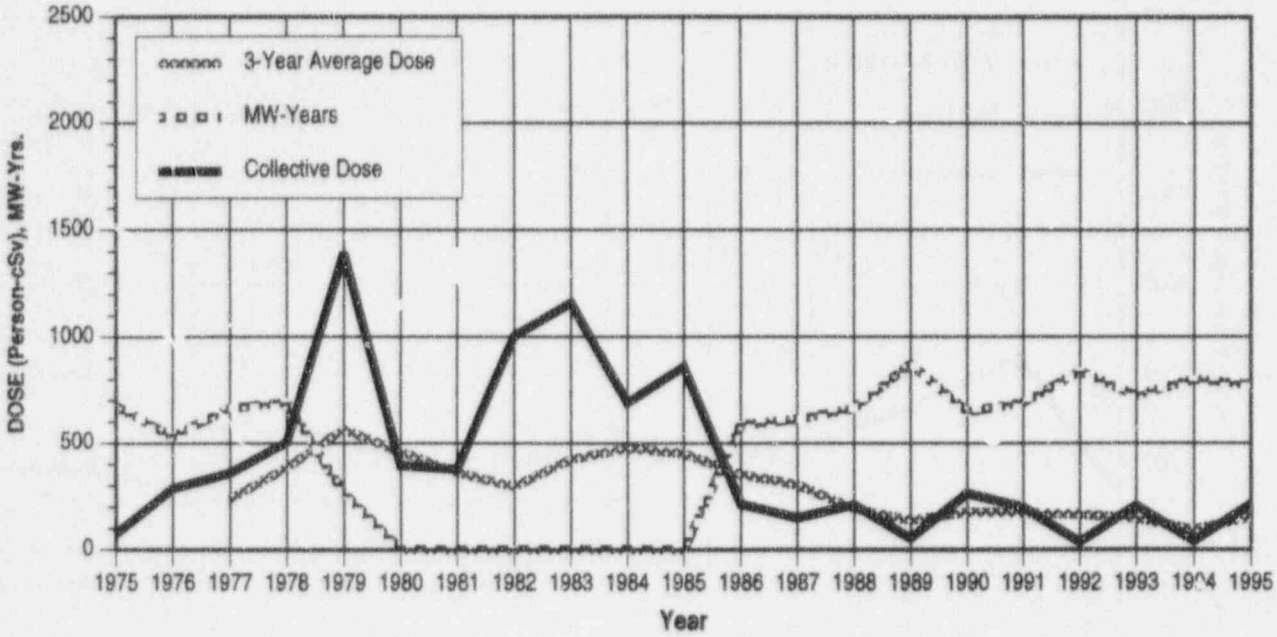


APPENDIX E (continued)

THREE MILE ISLAND 1

Dose-Performance Indicators

PWR



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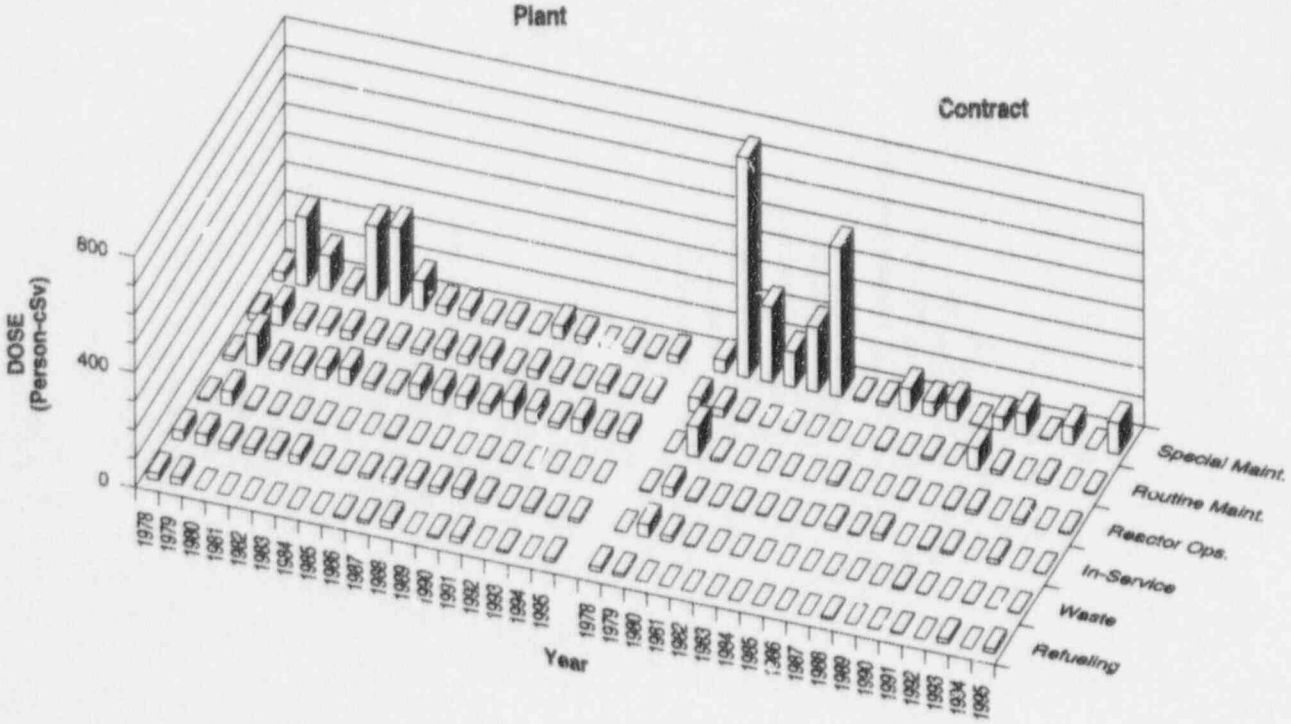
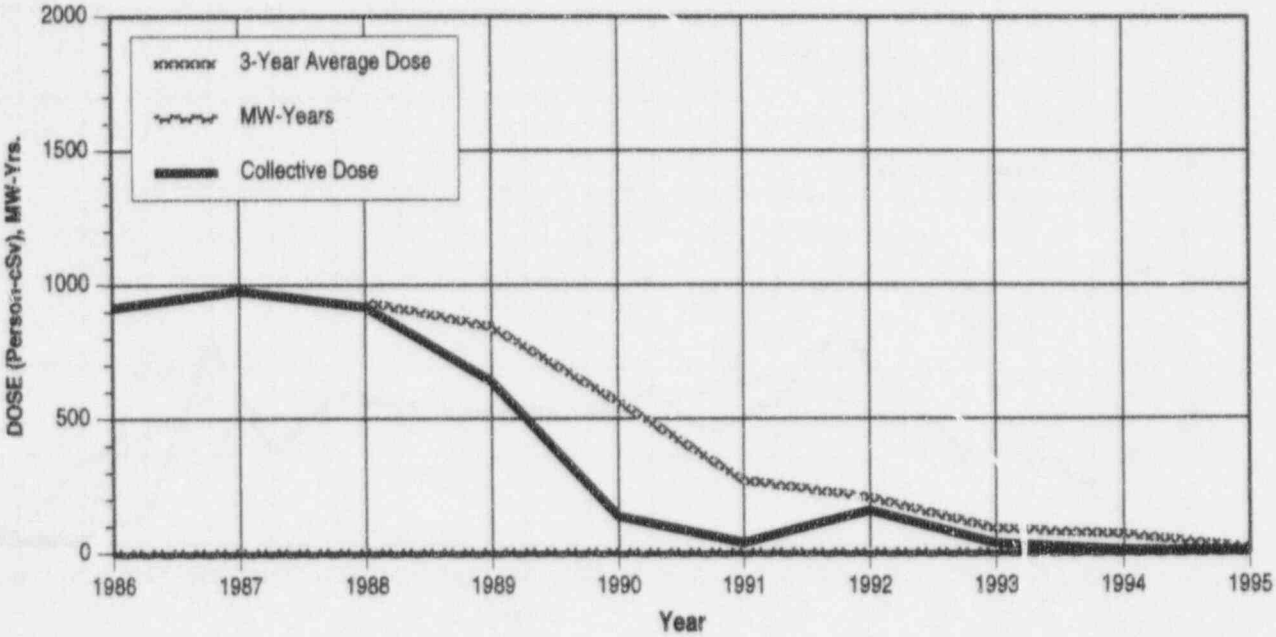


APPENDIX E (continued)

THREE MILE ISLAND 2

Dose-Performance Indicators

PWR



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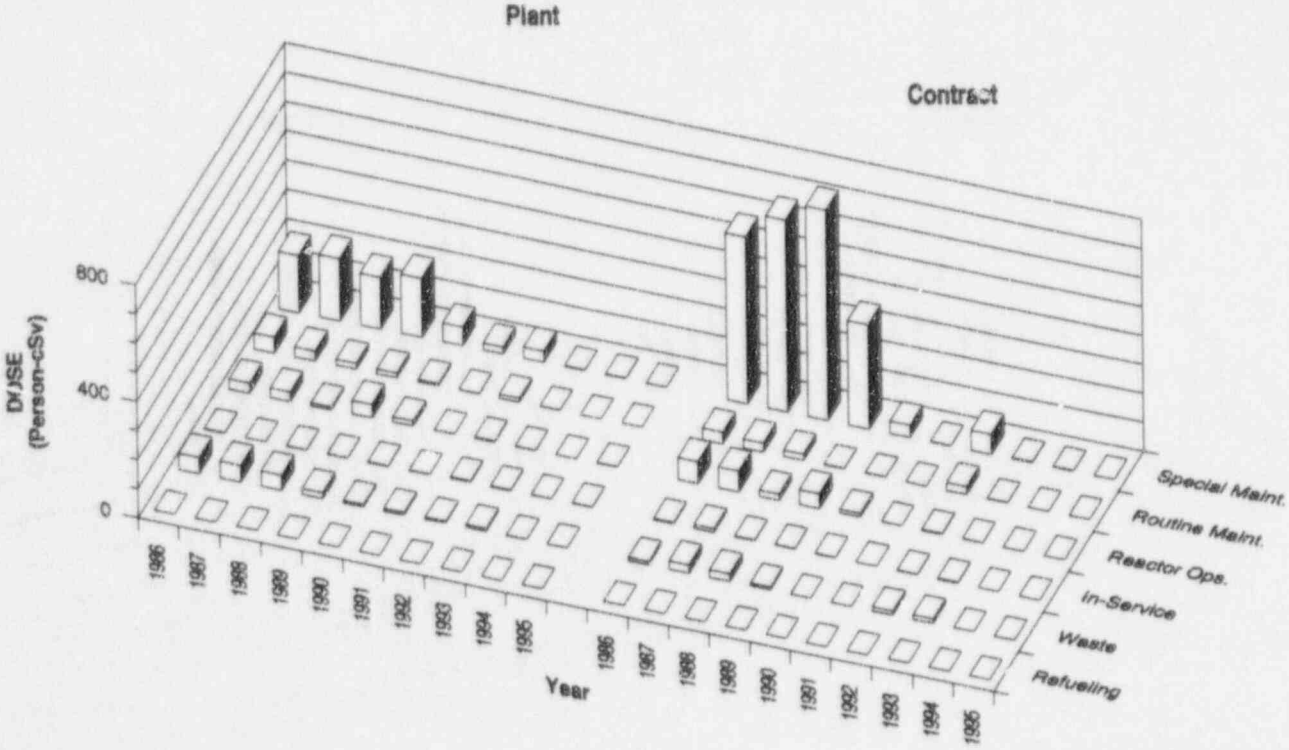
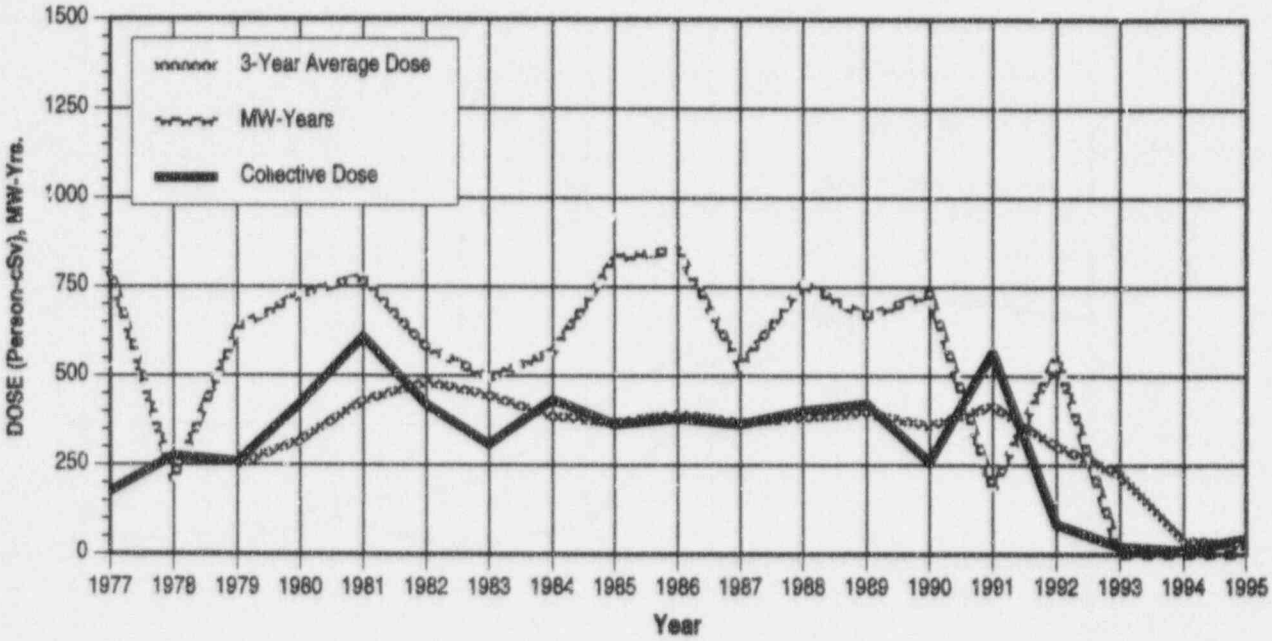


APPENDIX E (continued)

TROJAN

Dose-Performance Indicators

PWR



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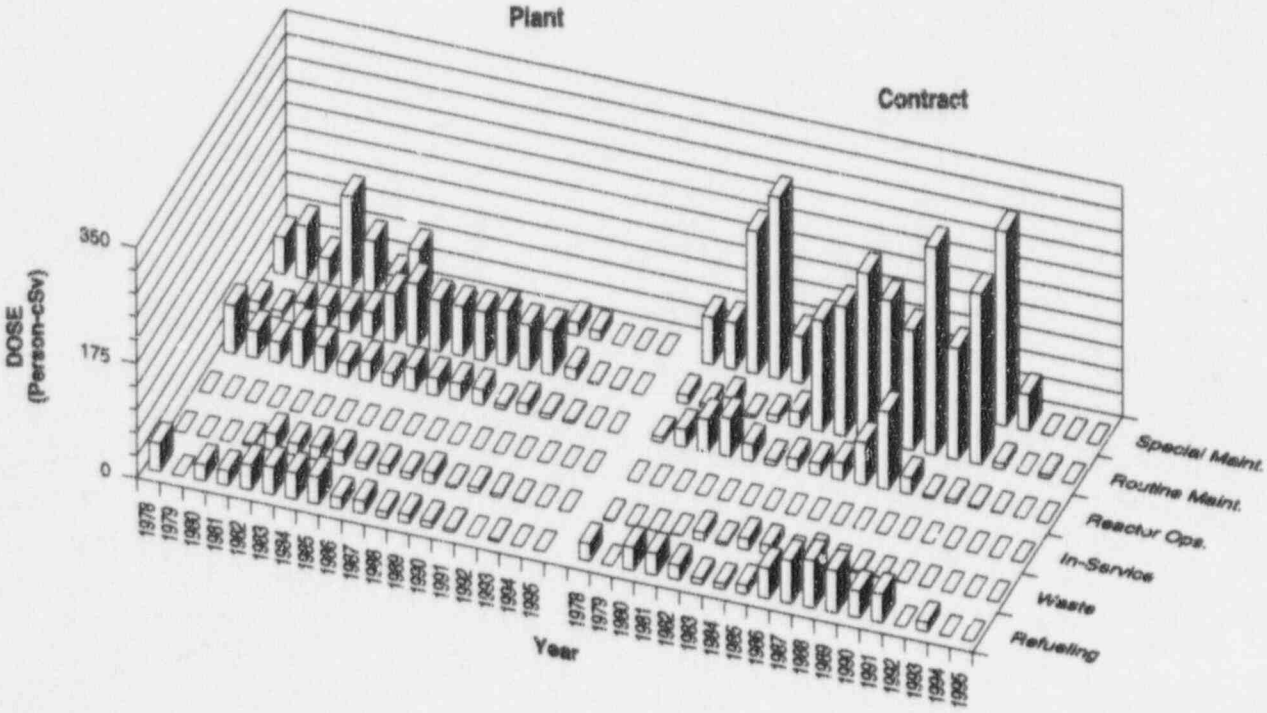
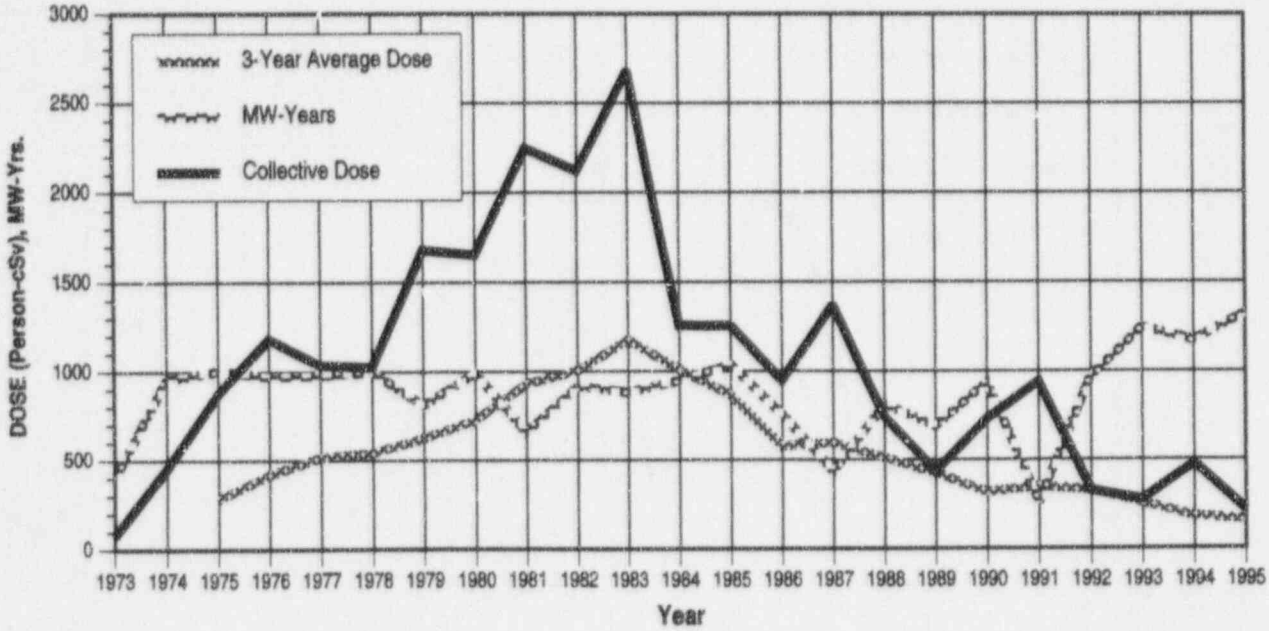


APPENDIX E (continued)

TURKEY POINT 3, 4

Dose-Performance Indicators

PWR



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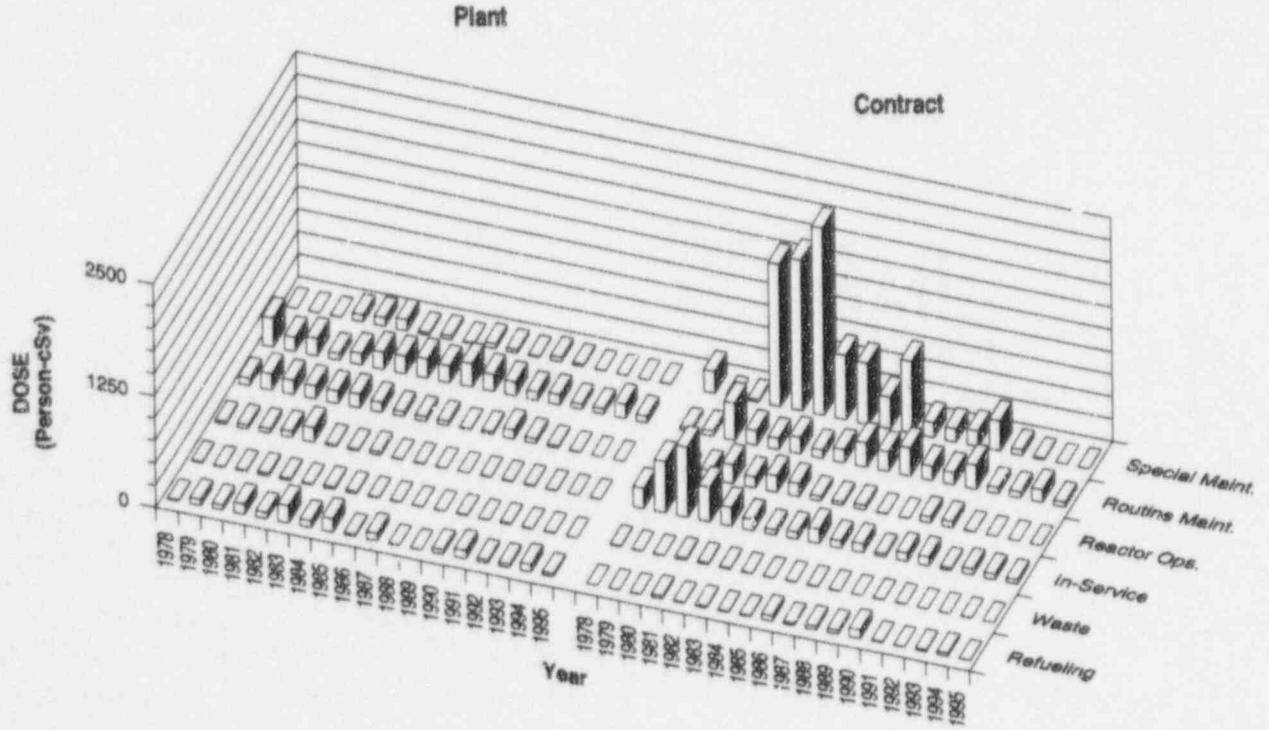
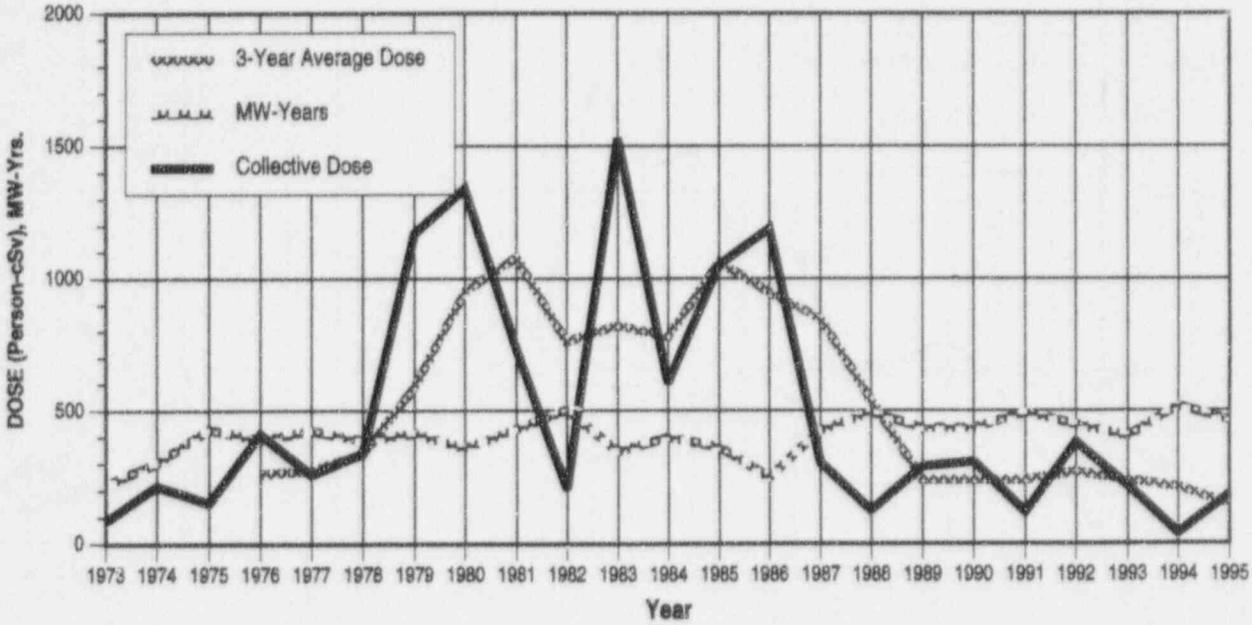


APPENDIX E (continued)

VERMONT YANKEE

Dose-Performance Indicators

BWR



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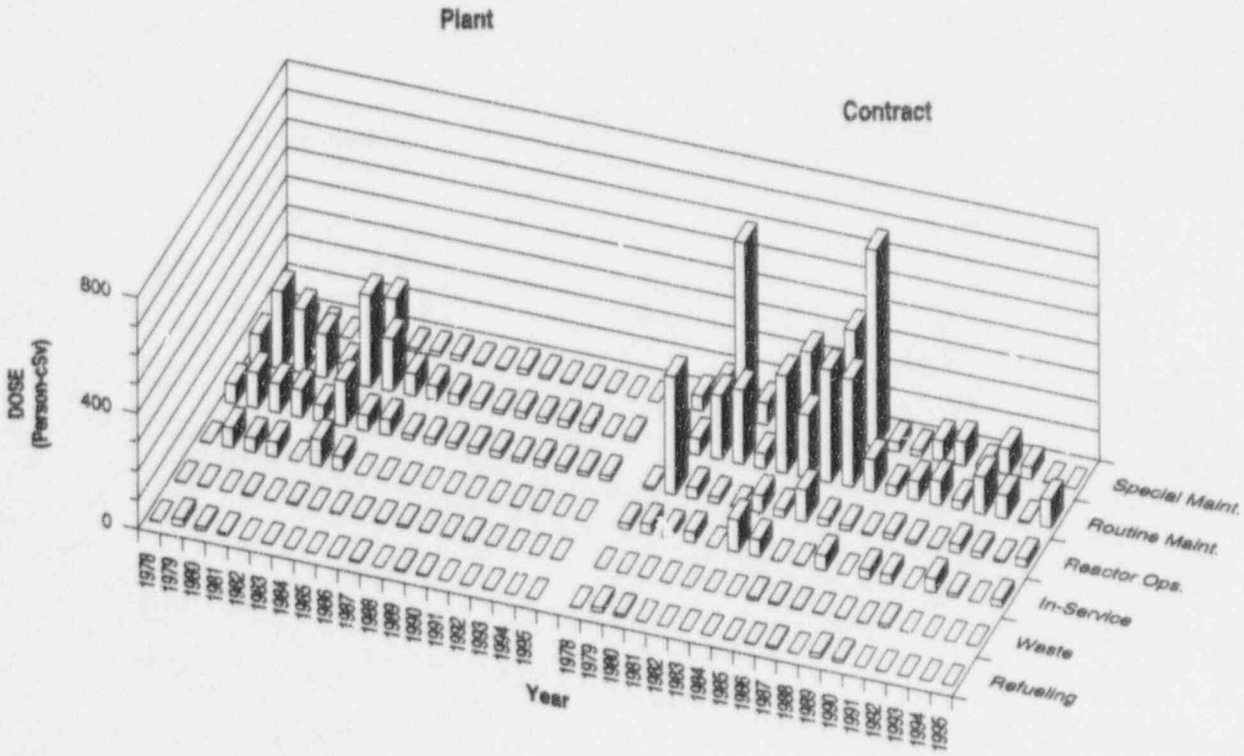
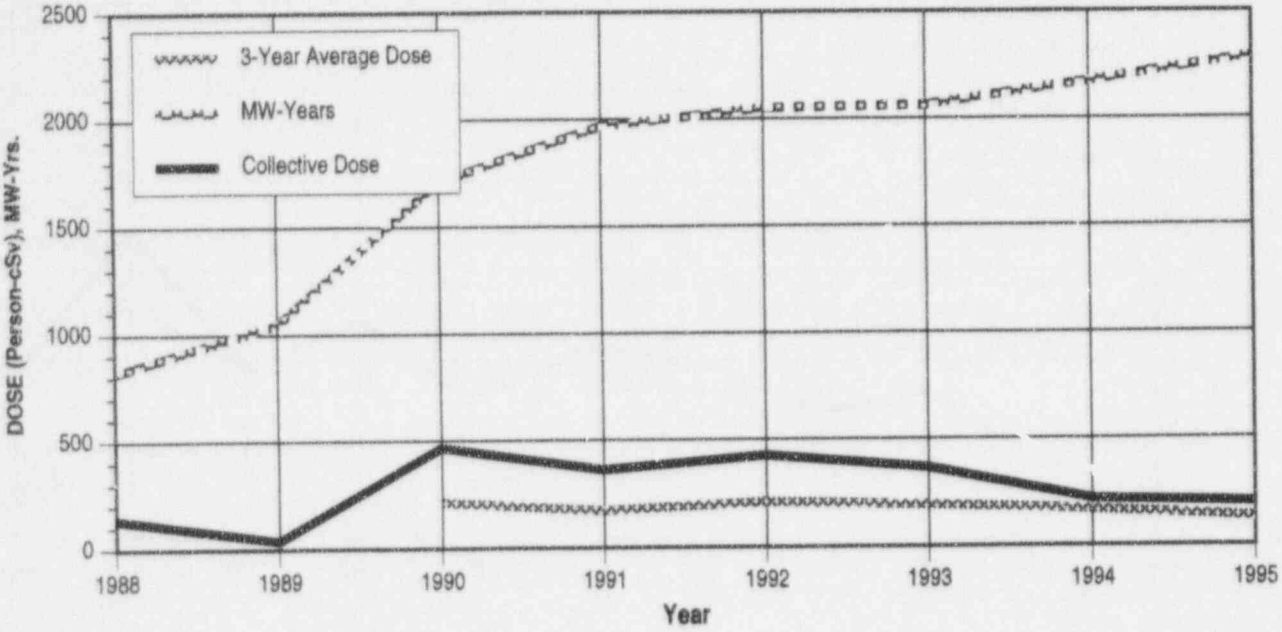


APPENDIX E (continued)

VOGTLE 1, 2

Dose-Performance Indicators

PWR



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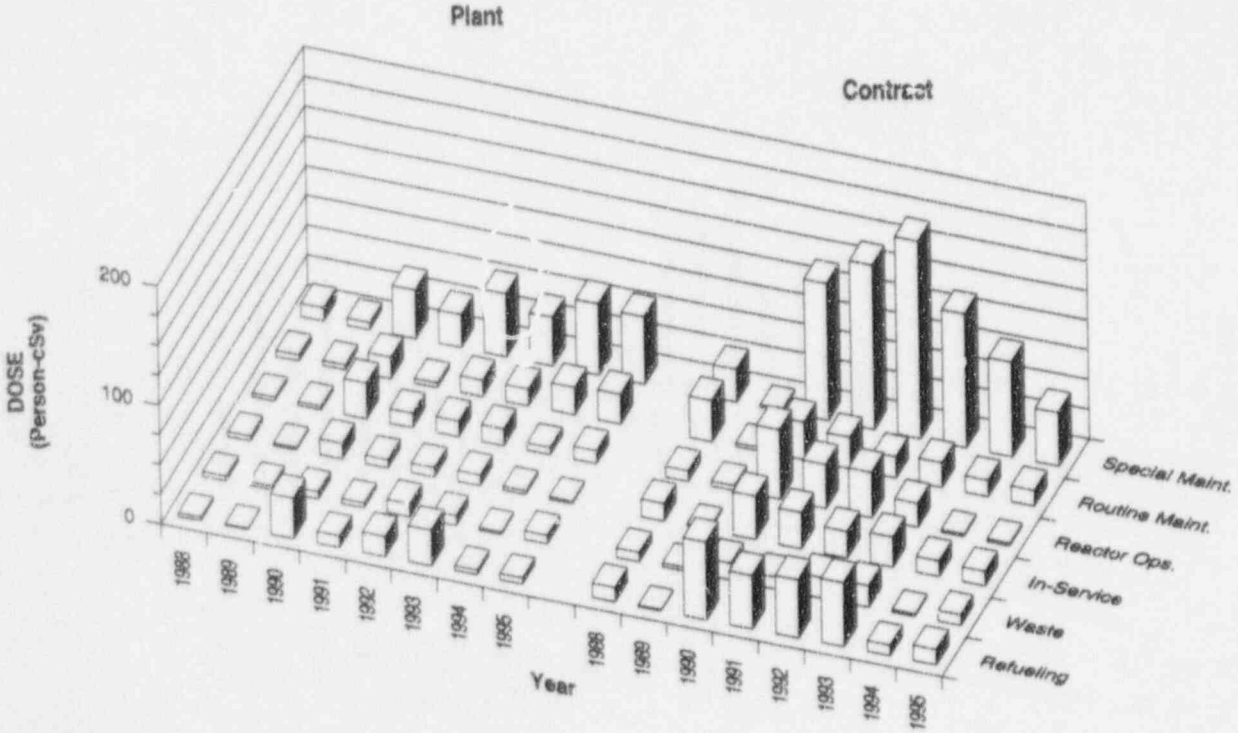
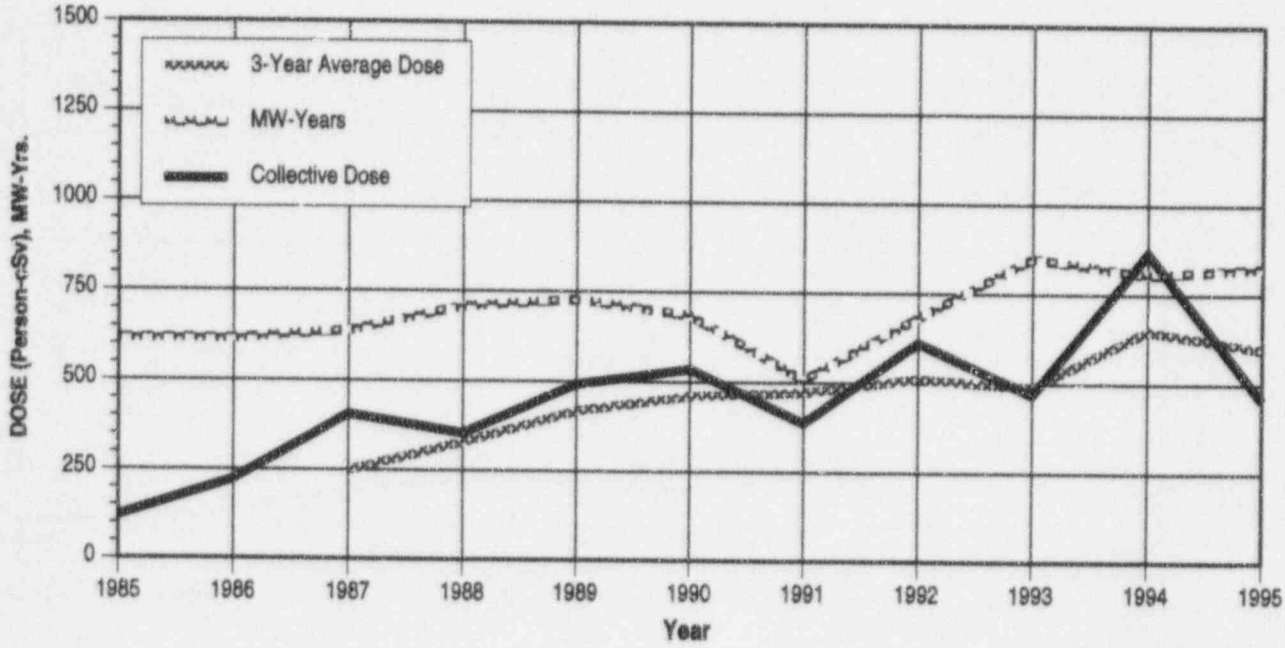


APPENDIX E (continued)

WASHINGTON NUCLEAR 2

Dose-Performance Indicators

BWR



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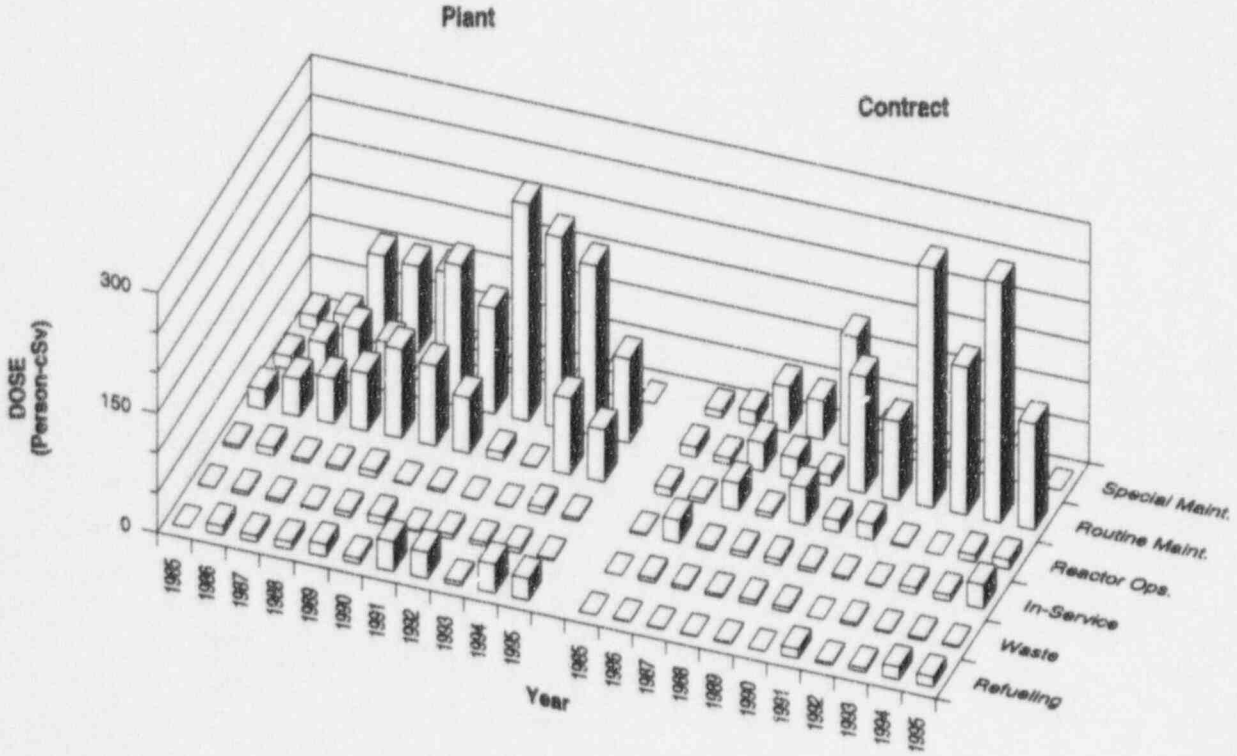
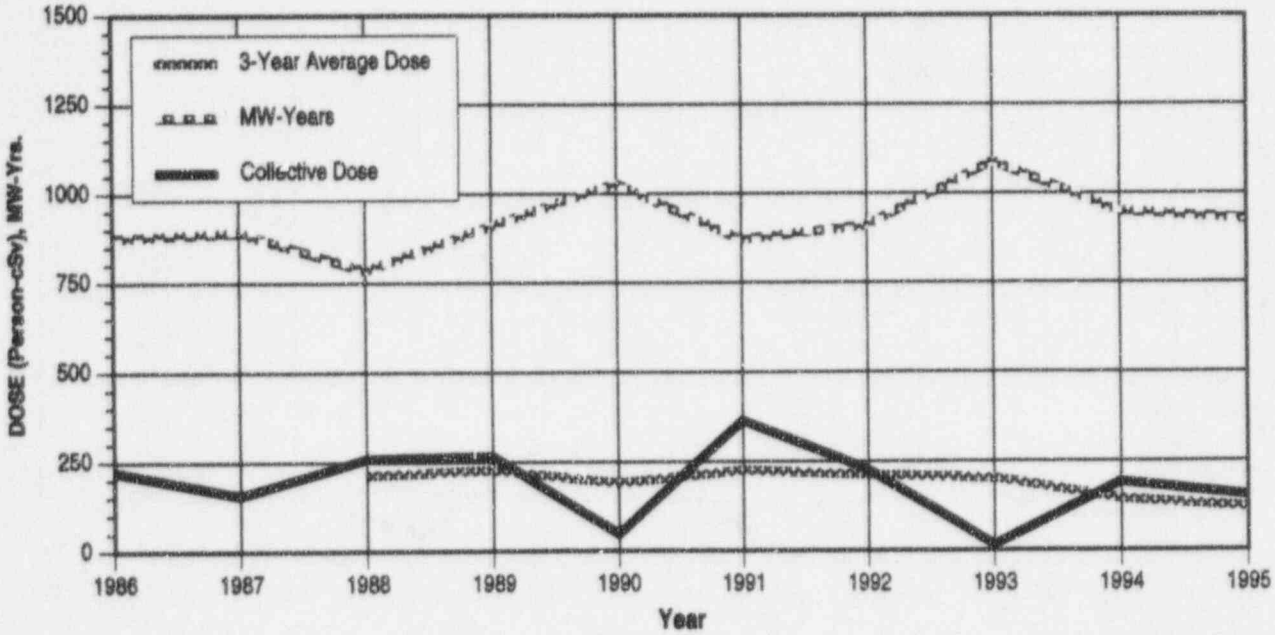


APPENDIX E (continued)

WATERFORD 3

Dose-Performance Indicators

PWR



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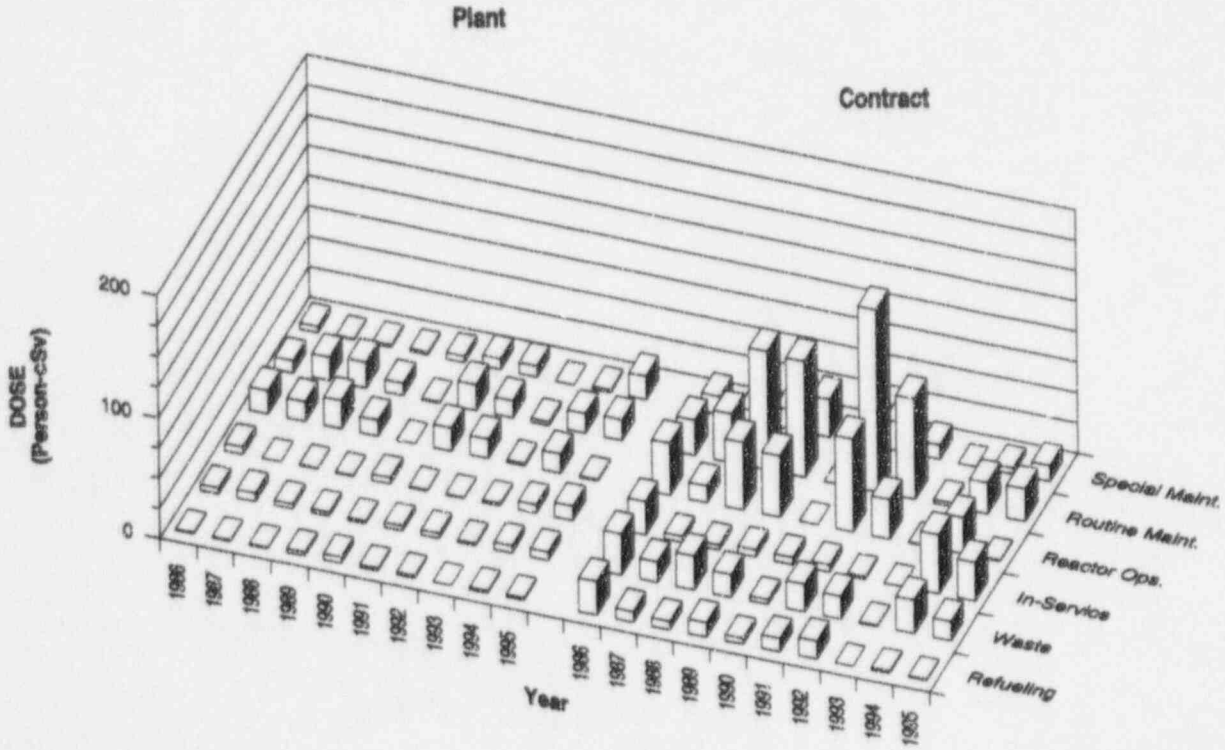
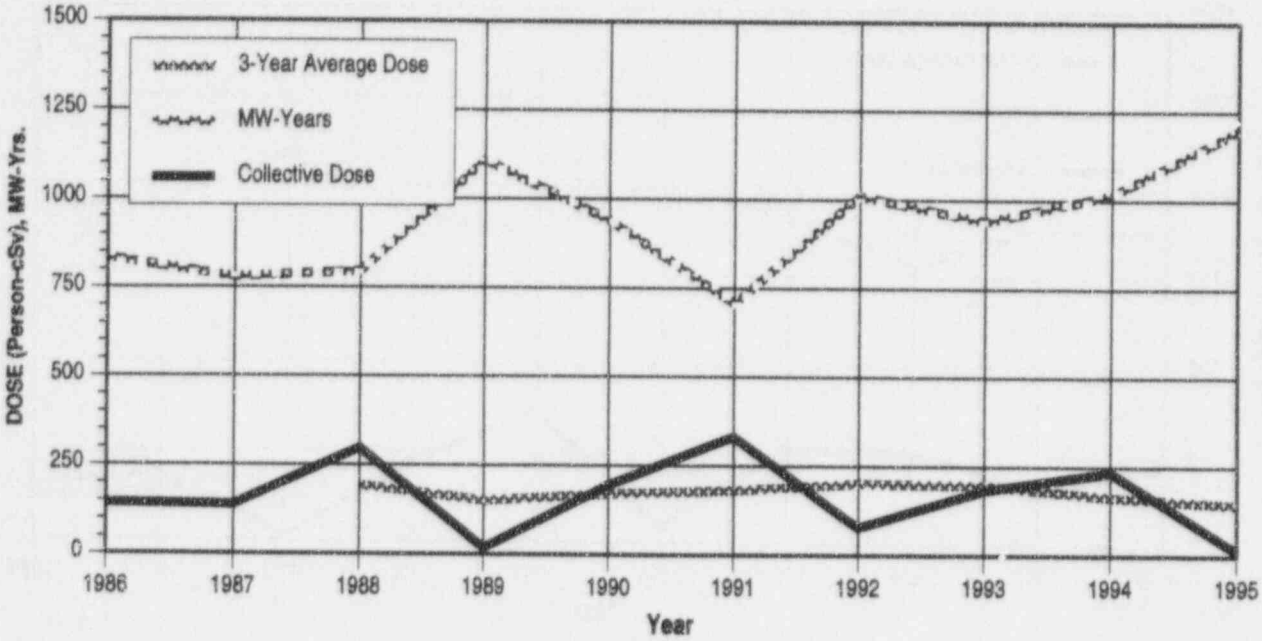


APPENDIX E (continued)

WOLF CREEK 1

Dose-Performance Indicators

PWR



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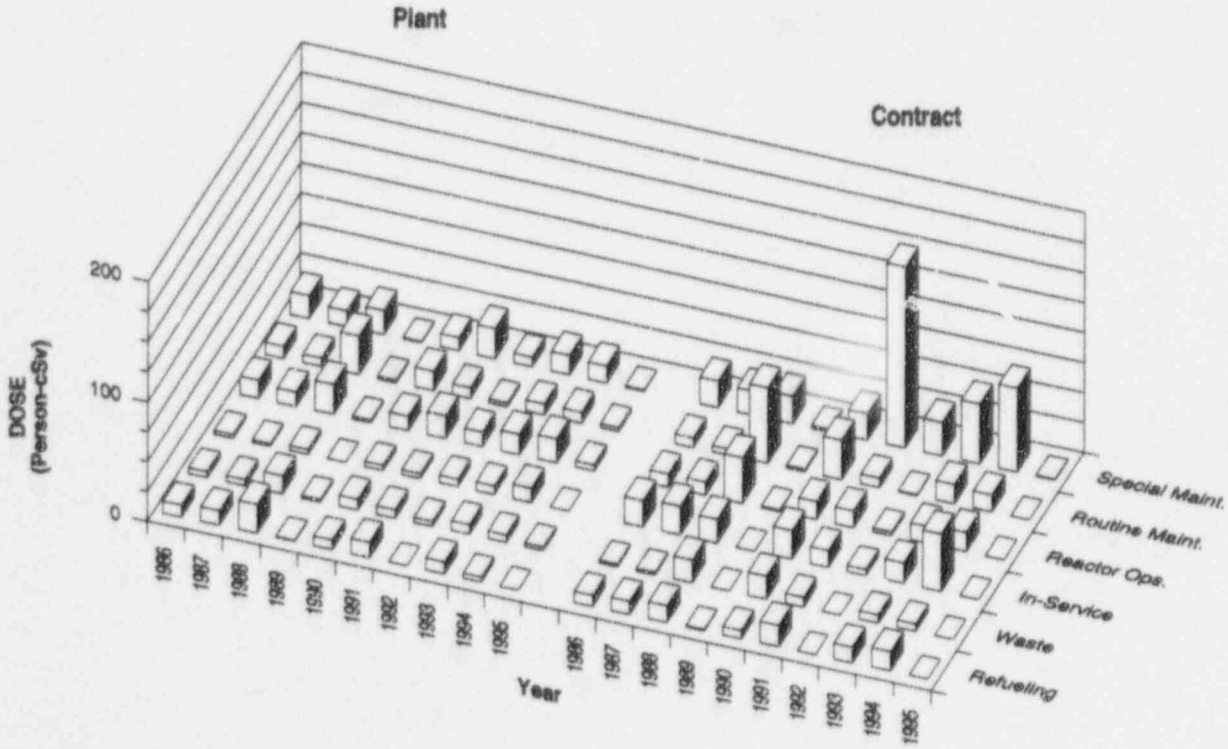
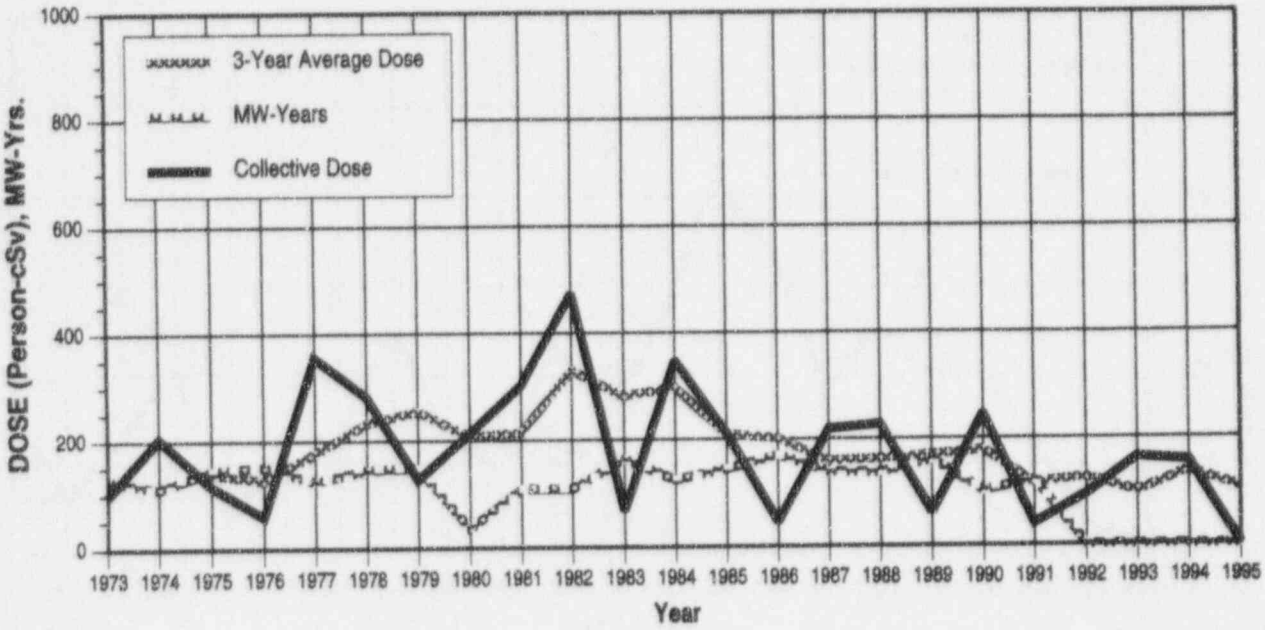


APPENDIX E (continued)

YANKEE-ROWE

Dose-Performance Indicators

PWR



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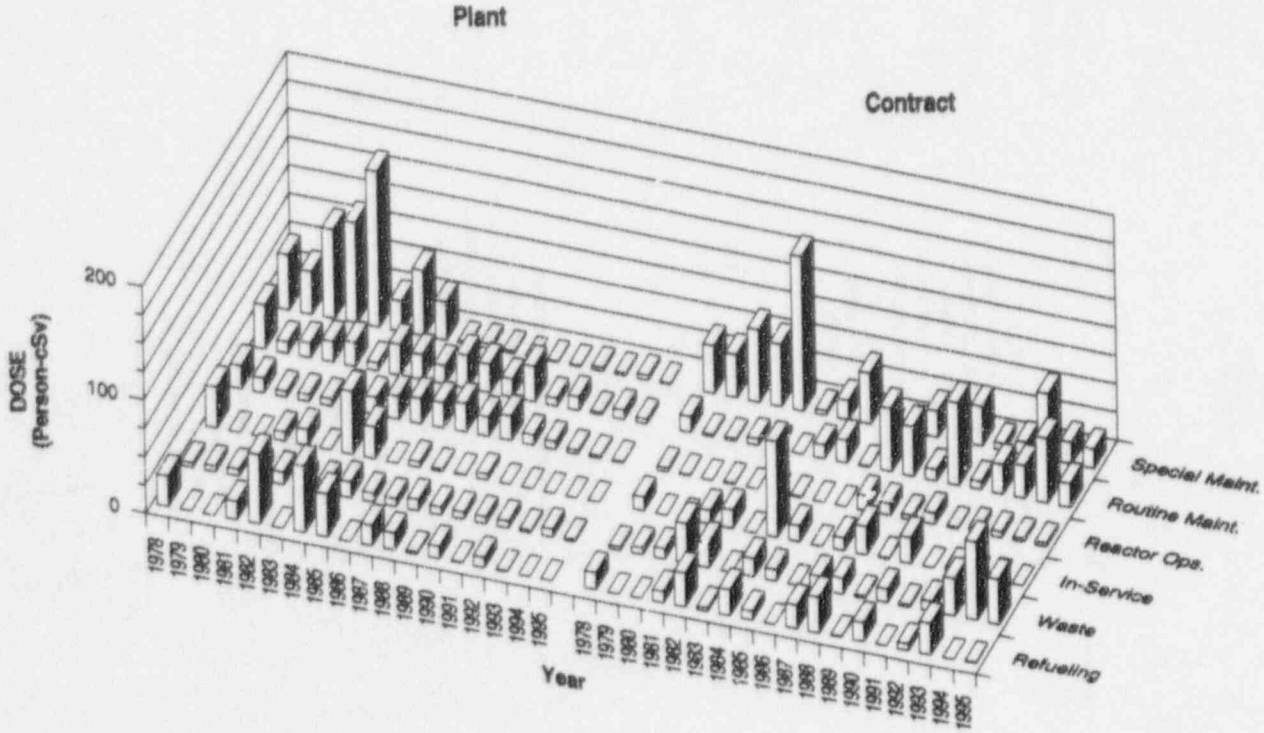
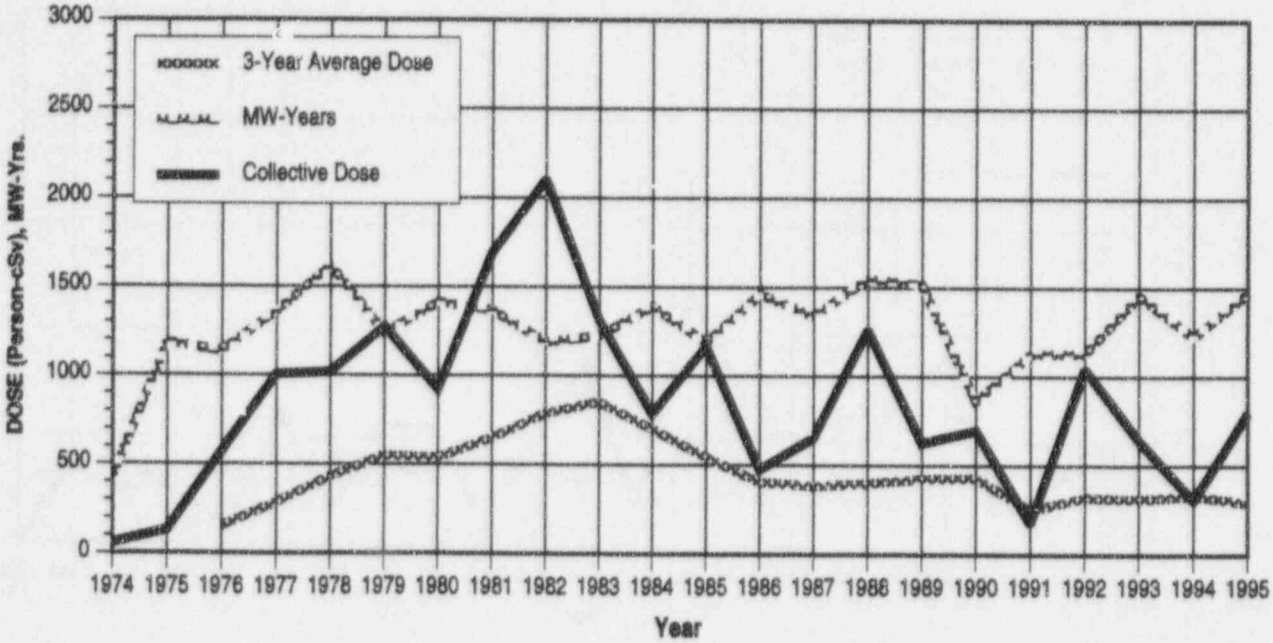


APPENDIX E (continued)

ZION 1, 2

Dose-Performance Indicators

PWR



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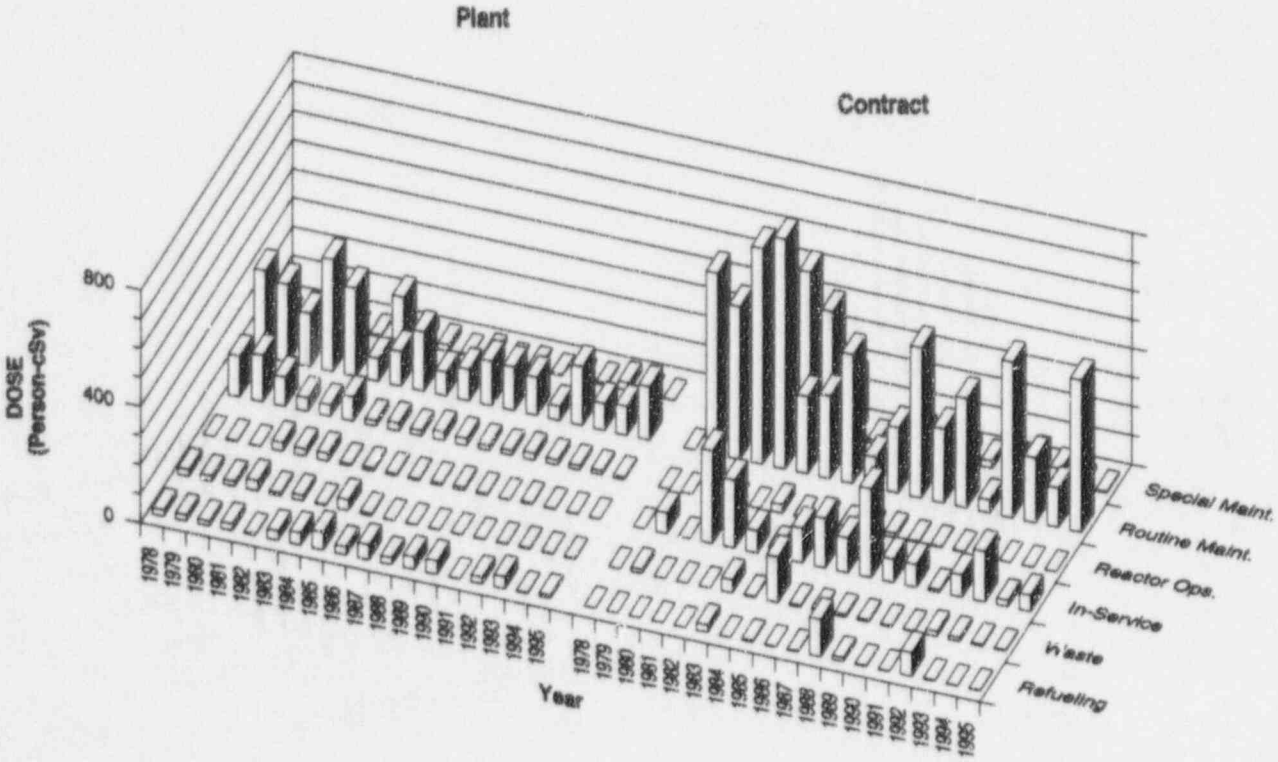

APPENDIX F

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

1987-1995

APPENDIX F*

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

1987- 1995

YEAR AND REACTOR TYPE	Number of Reac.	Number of Individuals with Whole Body Doses in the Ranges (rems or cSv)																		TOTAL NUMBER MONI-TORED	NUMBER WITH MEAS. EXPOSURE	TOTAL COLLECTIVE DOSE (Person-rem,cSv)
		No Meas urable	Meas. <0.10	0.10-0.25	0.25-0.50	0.50-0.75	0.75-1.0	1.0-2.0	2.0-3.0	3.0-4.0	4.0-5.0	5-6	6-7	7-8	8-9	9-10	10-11	11-12	>12			
1995 - PWR	72	49,697	23,311	12,259	8,947	3,767	1,789	1,717	93	4										101,564	51,867	12,207
1995 - BWR	37	31,335	15,264	7,986	6,332	3,117	1,587	1,380	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	38,781	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	18,340	7,845	6,400	3,728	2,224	2,662	151	1	1									75,131	39,352	12,221
1993 - LWR	108	92,985	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	45,060	20,597	17,142	8,881	4,626	5,468	449	17	3									199,596	103,143	29,294
1991 - PWR	74	57,815	28,514	11,876	9,387	4,657	2,462	2,972	371	30										118,084	60,269	16,510
1991 - BWR	37	37,527	17,384	7,076	5,732	3,409	1,975	2,602	299	14	1									76,019	38,492	12,005
1991 - LWR	111	95,342	45,898	18,952	15,119	8,066	4,437	5,574	670	44	1									194,103	98,761	28,515
1990 - PWR	73	53,935	29,669	12,957	10,591	5,601	3,267	4,363	590	43										121,016	67,081	20,812
1990 - BWR	37	39,102	17,210	7,336	5,992	3,717	2,493	4,162	625	41	1									80,679	41,577	15,780
1990 - LWR	110	93,037	46,879	20,293	16,583	9,318	5,760	8,525	1,215	84	1									201,695	108,658	36,592
1989 - PWR	71	51,701	29,419	11,591	9,336	5,061	2,997	4,739	674	66	11									115,595	63,894	20,381
1989 - BWR	36	40,951	19,343	7,887	6,323	3,753	2,544	3,962	515	33										85,311	44,360	15,549
1989 - LWR	107	92,652	48,762	19,478	15,659	8,814	5,541	8,701	1,189	99	11									200,906	108,254	35,930
1988 - PWR	68	47,866	27,177	11,014	9,260	5,563	3,541	5,405	829	127	4		1							110,787	62,921	22,786
1988 - BWR	34	47,679	16,044	6,736	5,679	3,311	2,307	4,859	1,129	215	5									87,984	40,305	17,983
1988 - LWR	102	95,545	43,221	17,750	14,369	8,874	5,933	10,264	1,958	342	9		1							198,771	103,226	40,769
1987 - PWR	64	48,870	27,070	10,796	8,828	5,152	3,442	6,187	988	124	10									111,467	62,597	23,684
1987 - BWR	32	43,688	17,711	7,027	5,739	3,447	2,383	4,578	723	117	12									85,425	41,737	16,717
1987 - LWR	96	92,558	44,781	17,823	14,567	8,599	5,825	10,765	1,711	241	22									196,892	104,334	40,401

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

NRC FORM 335 (2-89) NRCM 1102, 3201, 3202

U.S. NUCLEAR REGULATORY COMMISSION

BIBLIOGRAPHIC DATA SHEET

(See instructions on the reverse)

1. REPORT NUMBER (Assigned by NRC, Add Vol., Supp., Rev., and Addendum Numbers, if any.)

NUREG-0713, Volume 17

2. TITLE AND SUBTITLE

Occupational Radiation Exposure at Commerical Nuclear Power Reactors and Other Facilities 1995.

Twenty-eighth Annual Report

3. DATE REPORT PUBLISHED

MONTH	YEAR
January	1997

4. FIN OR GRANT NUMBER

W6089

5. AUTHOR(S)

M.L. Thomas
D. Hagemeyer*

6. TYPE OF REPORT

Annual

7. PERIOD COVERED *(Inclusive Dates)*

01/01/95-12/31/95

8. PERFORMING ORGANIZATION - NAME AND ADDRESS *(If NRC, provide Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address; if contractor, provide name and mailing address.)*

Division of Regulatory Applications
Office of Nuclear Regulatory Applications
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

*SAIC
301 Laboratory Road
Oak Ridge, TN 37830

9. SPONSORING ORGANIZATION - NAME AND ADDRESS *(If NRC, type "Same as above"; if contractor, provide NRC Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address.)*

Same as above

10. SUPPLEMENTARY NOTES

M.L. Thomas, NRC Project Manager

11. ABSTRACT *(200 words or less)*

This report summarizes the occupational exposure data that are maintained in the U.S. Nuclear Regulatory Commission's Radiation Exposure Information and Reporting System (REIRS). The bulk of the information contained in the report was compiled from the 1995 annual reports submitted by the classes of NRC licensees subject to the reporting requirements of 10 CFR 20.2206.

Annual reports for 1995 were received from a total of 294 NRC licensees, of which 109 were operators of nuclear power reactors in commercial operation. Compilations of the reports submitted by the 294 licensees indicated that 142,518 individuals were monitored, 76, 822 of whom received a measurable dose. The collective dose incurred by these individuals was 24,536 person-cSv (person-rem) which represents a 1% decrease from the 1994 value. The number of workers receiving a measurable dose also decreased, resulting in the average measurable dose of 0.32 cSv (rem) for 1995. The average measurable dose is defined to be the total collective dose divided by the number of workers receiving a measurable dose. The figures have been adjusted to account for transient reactor workers. In 1995, the annual collective dose per reactor for light water reactor licensees was 199 person-cSv (person-rem). This is the same value that was reported for 1994. The annual collective dose per reactor for boiling water reactors was 256 person-cSv (person-rem) and, for pressurized water reactors it was 170 person-cSv (person-rem). Analyses of transient worker data indicated that 17,153 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 1995, the average measurable dose calculated from reported data was 0.26 cSv (rem). The corrected dose distribution resulted in an average measurable dose of 0.32 cSv (rem).

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

occupational
radiation exposure
nuclear
reactor
dose
transient

13. AVAILABILITY STATEMENT

unlimited

14. SECURITY CLASSIFICATION

(This Page)

unclassified

(This Report)

unclassified

15. NUMBER OF PAGES

16. PRICE

Printed on recycled paper

Federal Recycling Program

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

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