

Radiation Exposure Monitoring and Information Transmittal (REMIT) System

User's Manual

Prepared by
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Science Applications International Corporation

**Prepared for
U.S. Nuclear Regulatory Commission**

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Manuscript Completed: May 1993
Date Published: June 1993

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NRC FIN L1384

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FOREWORD

The Radiation Exposure Monitoring and Information Transmittal (REMIT) system is designed to assist U.S. Nuclear Regulatory Commission (NRC) licensees in meeting the reporting requirements of 10 CFR Parts 20.1001 through 20.2401 as outlined in Regulatory Guide 8.7, Revision 1, "Instructions for Recording and Reporting Occupational Radiation Exposure Data."

REMIT is a personal computer (PC)-based, menu-driven system, that facilitates the manipulation of data base files to record and report radiation exposure information. REMIT is designed to be user-friendly and contains the full text of Regulatory Guide 8.7, Revision 1, on-line as well as context sensitive help throughout the program. The user can enter data directly from NRC Forms 4 or 5. REMIT allows the user to view the individual's exposure in relation to regulatory or administrative limits and will alert the user to exposures in excess of these limits. The system also provides for the calculation and summation of dose from intakes and the determination of the dose to the maximally exposed extremity for the monitoring year. REMIT can produce NRC Forms 4 and 5 in paper and electronic format. In addition, REMIT can import and export data from ASCII and data base files.

NUREG/CR-6050 is the user's manual for the REMIT software package. This NUREG is not a substitute for NRC regulations, and compliance is not required. The approaches and/or methods described in this NUREG are provided for information only. Publication of this report does not necessarily constitute NRC approval or agreement with the information contained herein. Calculations performed by this software should be verified to the satisfaction of the licensee. Use of the REMIT software alone does not constitute a demonstration of compliance with the requirements of 10 CFR Part 20 for recording and reporting occupational radiation exposure data.



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ABSTRACT

The Radiation Exposure Monitoring and Information Transmittal (REMIT) system is designed to assist U.S. Nuclear Regulatory Commission (NRC) licensees in meeting the reporting requirements of the Revised 10 CFR Part 20 and in agreement with the guidance contained in *Regulatory Guide 8.7, Rev. 1*, "Instructions for Recording and Reporting Occupational Exposure Data."

REMIT is a personal computer (PC)-based menu driven system that facilitates the manipulation of data base files to record and report radiation exposure information. REMIT is designed to be user-friendly and contains the full text of *Regulatory Guide 8.7, Rev. 1*, on-line as well as context-sensitive help throughout the program. The user can enter data directly from NRC Form 5s or Form 4s. REMIT allows the user to view the individual's exposure in relation to regulatory or administrative limits and will alert the user to exposures in excess of these limits. The system also provides for the calculation and summation of dose from intakes and the determination of the dose to the maximally exposed extremity for the monitoring year. REMIT can produce NRC Form 4s and NRC Form 5s in paper and electronic format and can import/export data from ASCII and data base files.

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LIST OF ACRONYMS

ALI	annual limit on intake
BBS	Bulletin Board System
CDE	committed dose equivalent
CEDE	committed effective dose equivalent
CR	carriage return
CSI	Canadian Social Insurance
DAC	derived air concentration
DBMS	data base management system
DDE	deep dose equivalent
IND	INDEX Identification Number
LDE	eye dose equivalent to the lens of the eye
LF	line feed
Max Organ	maximally exposed organ
NC	not calculated
ND	not detectable
NR	not reported
NRC	U.S. Nuclear Regulatory Commission
OTH	other
PC	personal computer
PPN	passport number
PSE	planned special exposure
REIRS	Radiation Exposure Information and Reporting System
REMIT	Radiation Exposure Monitoring and Information Transmittal
SAIC	Science Applications International Corporation
SDE-LL	shallow dose equivalent-lower left extremity
SDE-LR	shallow dose equivalent-lower right extremity
SDE-ME	shallow dose equivalent-maximally exposed extremity
SDE-UL	shallow dose equivalent-upper left extremity
SDE-UR	shallow dose equivalent-upper right extremity
SDE-WB	shallow dose equivalent-whole body
SSN	social security number
TEDE	total effective dose equivalent
TODE	total organ dose equivalent
WPN	work permit number

1. INTRODUCTION

1.1 OVERVIEW

The Radiation Exposure Monitoring and Information Transmittal (REMIT) system is designed to assist U.S. Nuclear Regulatory Commission (NRC) licensees in meeting the reporting requirements of the Revised 10 CFR Part 20 and in agreement with the guidance contained in *Regulatory Guide 8.7, Rev. 1*, "Instructions for Recording and Reporting Occupational Exposure Data."

Regulatory Guide 8.7, Rev. 1 provides guidance to NRC licensees on:

- Maintaining records of the radiation exposures¹ of all individuals for whom personnel monitoring is required.
- Determining the doses¹ in the current monitoring year for all persons who must be monitored and recording them on an NRC Form 5.
- Submitting an annual report to the NRC of the results of individual monitoring (NRC Form 5).
- Acquiring records of prior exposures (NRC Form 4).

REMIT is a personal computer (PC)-based menu driven system that facilitates the manipulation of data base files to record and report radiation exposure information. REMIT is designed to be user-friendly and contains the full text of *Regulatory Guide 8.7, Rev. 1*, on-line as well as context-sensitive help throughout the program. The user can enter data directly from NRC Form 5s or Form 4s. REMIT allows the user to view the individual's exposure in relation to regulatory or administrative limits and will alert the user to exposures in excess of these limits. The system also provides for the calculation and summation of dose from intakes and the determination of the dose to the maximally exposed extremity for the monitoring year. REMIT can produce NRC Form 4s and NRC Form 5s in paper and electronic format and can import/export data from ASCII and data base files.

¹

The terms "exposure" and "dose" are used interchangeably throughout this document and refer to the dose equivalent measured in rem.

1.2 PURPOSE

The fundamental purpose of REMIT is to standardize and facilitate the transmittal of dosimetry information in electronic format. While the submission of Form 5 data to the NRC in electronic format is the primary concern, REMIT also facilitates the transmittal of exposure information from one licensee to another. These objectives are accomplished in the following manner.

Standardization is achieved by controlling the entry of dosimetry information into the REMIT system at the source in conformance with the Revised 10 CFR 20 and *Regulatory Guide 8.7, Rev. 1*. Each entry in REMIT is validated according to established rules. The user is alerted to entries not meeting these criteria, and erroneous records are not accepted. This serves to assist the licensee in the conformance with the requirements and guidelines, while contributing to a higher degree of data quality.

Transmittal of information is facilitated by means of electronic and hardcopy output from REMIT. Electronic format is preferred for submittal to the NRC. REMIT produces the required annual Form 5 submittals for transmittal to the NRC in accordance with Appendix A of *Regulatory Guide 8.7, Rev. 1*. In addition, REMIT is designed to generate electronic Form 4s for transmittal between facilities using the REMIT System. Form 4 records can be exported to diskette at one site and imported at the next. Maintaining data integrity and transmittal authorization is the responsibility of the individuals and licensees involved.

REMIT can also produce NRC Forms 4 and 5 on hardcopy for licensee records management purposes and for individuals to maintain records of their own exposure. Hardcopy printouts of Forms 4 and 5 are generally maintained by an individual even if electronic media is being used to facilitate data transfer between licensees.

REMIT also provides the capability for licensees to import data provided by dosimetry processors in electronic format. Incremental dose information, such as TLD badge readings, can be imported and exposure records for the individual will be updated automatically. A standard format for this type of data transmittal is established and supported by REMIT.

1.3 SCOPE

The REMIT system is limited in scope. As stated above, it is designed to help licensees meet the reporting requirements of the Revised 10 CFR Part 20. The NRC has developed this system in an effort to assist licensees in the transition from the "old" reporting requirements to the new requirements and to facilitate the standardization and electronic transmittal of dosimetry information.

The following system limitations are a direct result of the NRC's objective of producing a system that will assist the widest variety of NRC licensees to the greatest extent possible, while limiting the expended resources of the NRC.

Limitations:

- REMIT is not designed, and cannot be designed, to meet all the requirements and practices concerning dosimetry records for every NRC licensee. Each licensee is solely responsible for its own radiation monitoring and dosimetry record keeping practices.
- The intended "target users" of REMIT are small licensees with up to several hundred monitored personnel per year. While the number of records REMIT can handle is limited only by system hardware considerations, system performance may be degraded as the number of records becomes excessive.
- REMIT is a single-user system that only runs on IBM™ compatible PC systems under DOS and supports only Hewlett Packard LaserJet™ Series II compatible printers. (See Section 2.1 for Equipment Requirements)
- REMIT uses dBASE III™-compatible file structures for all licensee records. The dBASE file structure was chosen due to its wide support and availability. The intent is to facilitate the manipulation of data independent of the REMIT system in order to allow licensees to establish comprehensive data management systems and procedures. ASCII file structures are also supported to a limited extent in that REMIT will produce electronic ASCII files for submittal to the NRC and import/export certain data in electronic format.
- REMIT does not handle bioassay or air sampling data. These issues tend to be complex and the vast majority of monitored individuals do not require these calculations. REMIT will calculate dose from intake for inhalation and ingestion modes based on the methodology of EPA Report #11.

- **REMIT does not handle fetal dose monitoring information. These data are required to be recorded when applicable, but are not reported to the NRC according to 10 CFR 20.1208(a) and 20.2106(e).**

1.4 REMIT DATA

The REMIT data base system is composed of 13 data and related system data bases or "tables." The data base files are dBASE III™-compatible. Each of the data base files contains records composed of a set of fields. The organization of these data bases is shown in Figure 1-1. A brief description of each data base is presented in Table 1-1. Data Base Structures and the Data Dictionary are located in Appendices C and D, respectively. Definitions of technical terms are located in the Glossary (Appendix A).

Data are input to the data base from NRC Form 5s or from NRC Form 4s. Using the data base, you may print Form 5s and Form 4s, or generate an electronically formatted Form 5 for submission to the NRC. An internal dose module calculates the Committed Dose Equivalent (CDE), Committed Effective Dose Equivalent (CEDE), and Maximally Exposed Organ (Max Organ), which are used to calculate the Total Organ Dose Equivalent (TODE) and the Total Effective Dose Equivalent (TEDE). Figure 1-2 shows the data flow of REMIT.

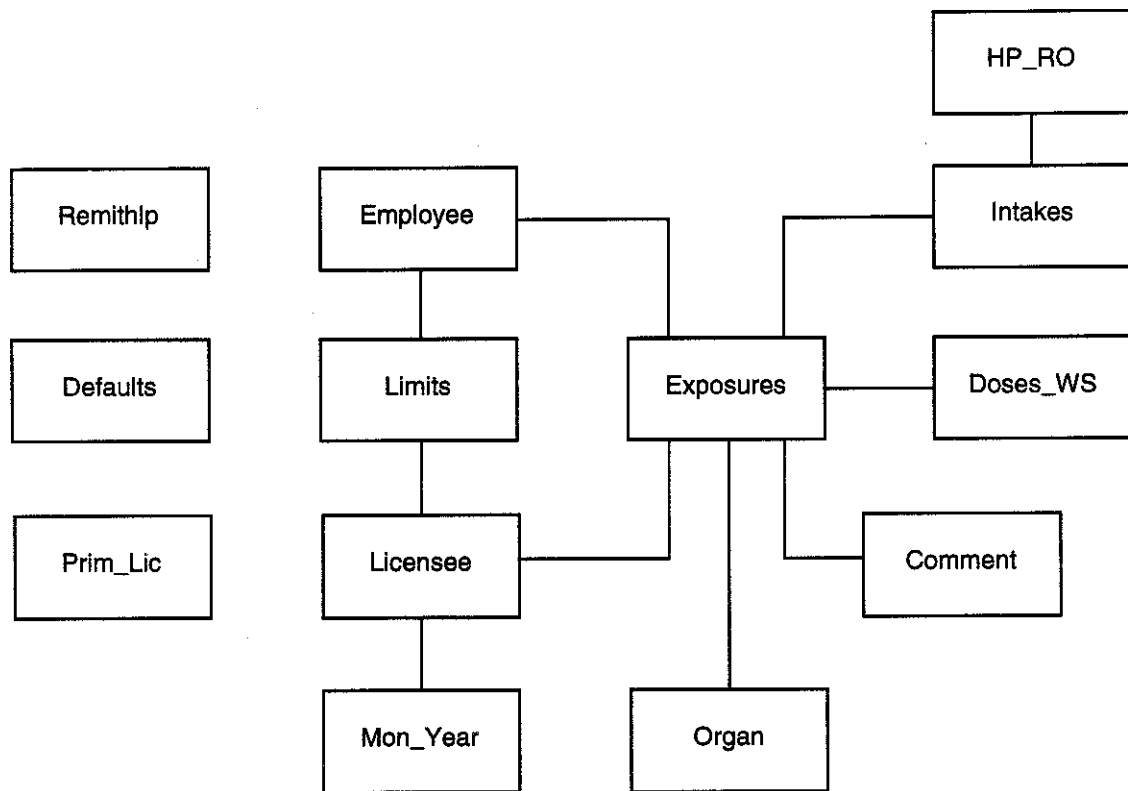


Figure 1-1. Data Base Organization

Table 1-1. REMIT Data Bases

Data Base	Description
REMITHLP	Help information for the REMIT system including Reg. Guide 8.7, Rev. 1.
DEFAULTS	The full path specification for your data base files and printer file destination.
PRIM_LIC	The primary license number, licensee name, contact, and phone number.
EXPOSURE	Previous and current monitoring period dose data for each monitored individual. This data base stores Forms 4 and 5 dose data.
EMPLOYEE	Information that characterizes the individual, including name, sex, date of birth, social security number (SSN) or other form of identification, and ID type.
LIMITS	Licensee-established administrative exposure limits for an individual and also for the licensee. This data base is used to compare the employee's current exposure levels to the limits established by the licensee. NRC limits are used by default. Licensee limits may not exceed current NRC dose limits.
LICENSEE	Licensee name and NRC license number for each licensee's records that are entered into the system.
MON_YEAR	The year, beginning date, and ending date of the licensee-designated monitoring year.
HP_RO	Radionuclides, class, mode, and dose conversion factors for inhalation and ingestion. It is used to calculate dose from intakes. Data for this data base were taken directly from <i>EPA Report 11</i> .
INTAKES	Data on intakes, including radionuclide name, class, mode, and intake in microcuries. Intake data are used by the REMIT internal dose calculation module to calculate organ dose from intakes.
ORGAN	A list of valid codes and description that can be entered for an organ.
DOSES_WS	Dose data entered incrementally (e.g., monthly, quarterly). Fields include the date monitoring began, the date monitoring ended, and doses. These data update the fields in the EXPOSURE data base.
COMMENT	Record identification and comment entered for a specific dose record.

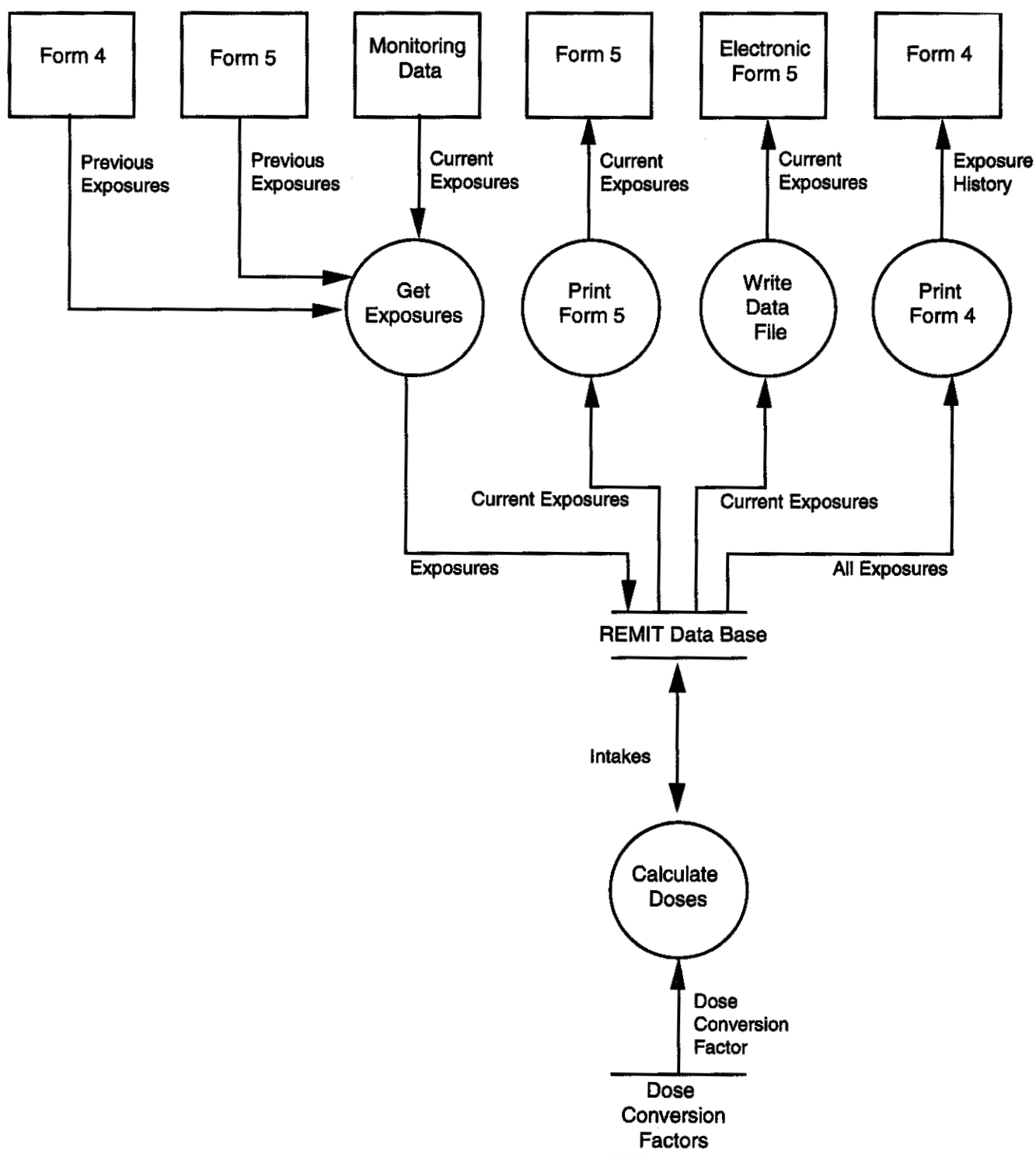


Figure 1-2. REMIT Data Flow

1.5 DOCUMENT CONVENTIONS

In this document, keys will be represented using key icons (e.g., **Return**), commands typed in at the DOS prompt are shown in courier font (e.g., A:INSTALL), push-key options will be enclosed in brackets (e.g., <Save>), and menu options will be italicized (e.g., *File*). For push-key options the bolded capitalized letter denotes that the letter key may be pressed to execute the push-key option. This letter will also be highlighted on the computer screen.

Each section contains information categories such as Purpose, Instructions, Options, Screen Elements, User Notes, **Warnings**, Examples, and a list of related topics under See Also. Screen images are used to show example data wherever possible. Example data are included with the distribution of REMIT to provide further guidance on various aspects of the system.

2. GETTING STARTED

2.1 EQUIPMENT REQUIREMENTS

Instructions:

To install and run REMIT, the following hardware is recommended:

- IBM-compatible 386 or higher computer
- EGA/VGA color monitor
- Mouse
- 3-1/2" high-density disk drive
- Hard disk with at least 5.5 megabytes disk space available
- Hewlett-Packard LaserJet™ series II-compatible printer
- DOS version 5.0 (or later)
- 500 Kilobytes or more of free contiguous base memory (conventional DOS memory)
- 4 megabytes of RAM (extended memory)

The minimum system requirements are:

- IBM-compatible 286
- DOS version 3.0
- 3-1/2" high-density disk drive
- Hard disk with at least 5.5 megabytes disk space available
- Hewlett-Packard LaserJet™ series II-compatible printer
- 500 Kilobytes of free contiguous base memory (conventional DOS memory)
- 2 megabytes of RAM (expanded memory) LIM 4.0 compatible (for 286 machines)

User Notes:

For 286 computers, the system must have at least 2 megabyte LIM 4.0 compatible expanded memory.

For 386 (or higher) computers, the system requires at least 2 megabytes extended memory available and no expanded memory. If expanded memory is present, REMIT will attempt to make use of it instead of the extended memory. Since REMIT uses extended memory much more efficiently than expanded memory on a 386 machine, all references to expanded memory in your CONFIG.SYS file should be removed in order for REMIT to make use of your extended memory. See your DOS manual for information about modifying your CONFIG.SYS file and memory management.

The memory management has been designed to meet the minimum system requirements while making use of more advanced features if they are available.

2.2 INSTALLATION

Instructions:

To install REMIT on your computer, follow these step-by-step instructions.

1. Insert disk #1 into drive A (or drive B).
2. At the DOS prompt, type the following command:

```
A:INSTALL
```

The installation procedure will prompt you to enter the following:

- Destination drive to install REMIT
- Destination directory to install REMIT
- Type of installation

```
[X] Full Installation
[ ] Partial Installation (data files only)
[ ] Test Installation (test data files only)
[ ] Reference Installation (reference data files only)
```

Full installation is intended for first-time use. Partial Installation and Test Installation is for future use if new data files are needed or if the test data set is to be re-installed. Reference Installation installs only the reference tables required by REMIT.

3. Press **(F2)** to continue with installation. The install procedure will copy remaining files from disk #1 to drive and directory specified. Insert disk #2 when prompted. INSTALL will also ask you to modify your AUTOEXEC.BAT and CONFIG.SYS files. For the initial installation, it is suggested that you answer "Y" to these modifications. See "User Notes" below for further information concerning these modifications.
4. The Install module will prompt you to "press any key" when the initial copying of files is complete. REMIT will then proceed to expand the compressed files on your hard drive. You will be returned to the DOS prompt when the installation is complete.
5. You must restart or "reboot" your computer if you answered "Y" to modifying your AUTOEXEC.BAT or CONFIG.SYS files in order for those modifications to take effect. Install will ask you if you would like to reboot your machine. Type "Y" to Reboot. You must remove the disk from your floppy drive before rebooting.

User Notes:**Modified System Files:**

If authorized by the user, AUTOEXEC.BAT is modified to contain the following:

```
SET REMIT = (specified drive and directory)
```

This will allow REMIT to find the necessary data and reference files needed to execute REMIT. If this "environment variable" is not set, the user will need to run REMIT from the directory where the REMIT executable files reside. This setting is for the convenience of the user so that REMIT does not need to ask where to find the data files. It is suggested that you set this environment variable either upon installation or from the DOS prompt. See your DOS user manual for more information on modifying your AUTOEXEC.BAT file and setting environment variables.

If authorized by the user, the installation program will modify your CONFIG.SYS file to contain:

```
FILES=50
```

This command sets the number of open files that DOS will allow an application to access. REMIT makes use of many data, reference, and temporary files and requires this value to be set at 50. REMIT will add this line to your CONFIG.SYS file if you answer "Y" when prompted. If you do not want REMIT to modify this file, you will need to edit CONFIG.SYS and add this line yourself. It is not optional. REMIT will not run properly without this setting.

Full Installation:

This option is intended to be selected the first time REMIT is installed on your computer. Full installation will create directories for a set of empty data files, reference files, and a tutorial test set of data on your computer.

A typical example of a full installation will create the following directories:

C:\REMIT	(user-specified installation directory, contains the executable and reference data files)
C:\REMIT\DBFS	(empty data files)
C:\REMIT\TESTDATA	(tutorial test set of data)

Partial Installation:

This option is used to install the empty data files to be used by the licensee to maintain their dose records. These are intended to be the "working" data files for the licensee that contain the actual dose records of monitored individuals. This may be used at a later date to install a secondary set of working files. The user may maintain several sets of REMIT data files.

Test Installation:

This option is for installing the tutorial test set by itself. The tutorial test set contains sample records for the user to experiment and become familiar with the REMIT system. These files may be re-installed at a later date if they are erased or if a secondary test set is desired.

Reference Installation

This option is for installing the reference tables required by REMIT. These files may be installed at a later date if they are accidentally erased or corrupted. Reference files are listed in Section 2.6.

2.3 STARTING THE SYSTEM

Instructions:

1. The batch file named REMIT.BAT is necessary to run the program. To execute REMIT, type the following commands at the DOS prompt:

```
CD \REMIT Enter  
REMIT Enter
```
2. REMIT will run a check on your system configuration to verify that the memory requirements of REMIT (as specified in Section 2.1) are met. If any problems are identified, a message screen will alert the user of available memory and CONFIG.SYS file settings.
3. REMIT will notify the user whether the "STANDARD" or "EXTENDED" version of REMIT is being executed. The standard version is for 286 machines and requires expanded memory. The extended version is for 386 machines (or higher) and will make use of expanded or extended memory. See Section 2.1 for equipment requirements and memory considerations.
4. After the memory has been checked, REMIT will check for an environment variable or the file DEFAULTS.DBF. If neither is found, the user will be prompted to enter a path where data base files are located. The program will terminate if a data base path is not given. REMIT will then check for primary licensee information, monitoring year definition and printer destination specification, and the user will be informed of any missing information. The user may enter all of these from the setup menu. See Section 4.

User Notes:

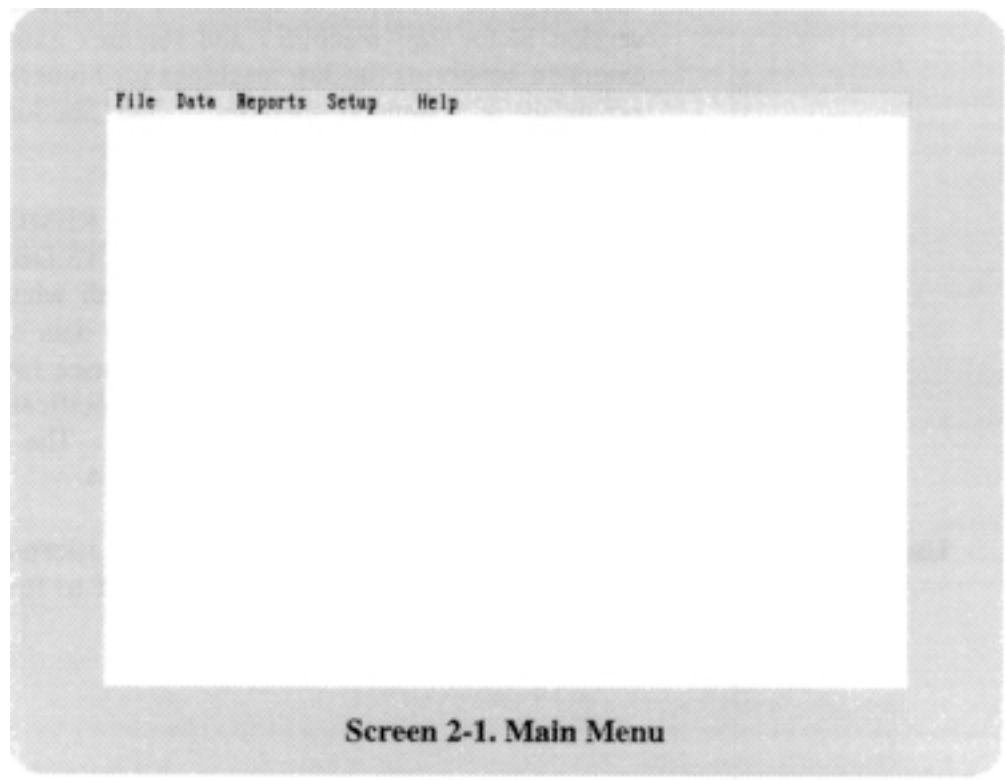
Computer Memory Configuration, Setup, Licensee Information, and Monitoring Years must be correct for REMIT to function properly.

2.4 REMIT MAIN MENU

Once you enter REMIT, the Main Menu (*Screen 2-1*) will appear. The Main Menu is the top line of this screen.

Help is available throughout the REMIT system by pressing **[F1]** or selecting *HELP* from the main menu. For further information on using *HELP*, see Section 3 of this manual.

The first time REMIT is accessed, you need to enter set-up information that establishes licensee information, the directory in which data base files reside, and the printer port or file name. To enter or edit set-up information, see Section 4 of this manual.



2.5 EXITING THE SYSTEM

1. To exit REMIT, press the function keys **Alt F** or use the mouse to select *File* from the Main Menu.
2. Highlight the option *eXit* and press **Enter** or click on the left mouse button.
3. You are returned to the DOS prompt.

2.6 BACKING UP FILES

You should back up data files periodically to safeguard your data in the event of system failure. As a general rule, you should back up any data you cannot afford to lose. Many methods of backing up data are available to PC users such as tape drives and network servers. Only the procedure used to back up to floppy diskettes is discussed below.

The following data tables and indices used by REMIT contain all the data entered through the system. These tables and indices, which are listed below, should be backed up periodically.

Data Tables and Indices

COMMENT	.DBF
COMMENT	.CDX
DEFAULTS	.DBF
EMPLOYEE	.DBF
EMPLOYEE	.CDX
EXPOSURE	.DBF
EXPOSURE	.CDX
INTAKES	.DBF
LICENSEE	.DBF
LICENSEE	.CDX
LIMITS	.DBF
LIMITS	.CDX
MON_YEAR	.DBF
MON_YEAR	.CDX
PRIM_LIC	.DBF

The reference files listed below need not be backed up because they can be restored from the distribution diskettes.

Reference Files

DOSES_WS	.DBF
HP_RO	.DBF
HP_RO	.CDX
HPROINFO	.DBF
ORGAN	.DBF
ORGAN	.CDX
REMITHLP	.DBF
REMITHLP	.FPT

```

REMIT30    .EXE
TITLE      .EXE
REMIT      .BAT

```

Instructions:

1. Type the following at the DOS prompt:

```
BACKUP <source path> <destination drive>
```

The source path is the directory of REMIT files. The destination drive is the drive to which you back up files.

For example, to back up all files (including the reference files) in the C:\REMIT directory onto the disk drive A, type:

```
BACKUP C:\REMIT\*.* A:
```

2. To save only the data tables and indices, you may use the DOS COPY command. However, if the total size of the data tables and indices exceeds the destination drive disk space, all the files will not be copied. You may use the COPY command as long as no file is larger than the free space on your diskette. If the file is too large, another method such as BACKUP must be used.

All diskettes must be formatted first. See your DOS manual for further instructions on formatting diskettes.

For example, to copy all data files and indices to disk drive A, type:

```

COPY COMMENT.*      A:
COPY DOSES_WS.*     A:
COPY EMPLOYEE.*     A:
COPY EXPOSURE.*     A:
COPY INTAKES.*      A:
COPY LICENSEE.*     A:
COPY LIMITS.*       A:
COPY MON_YEAR.*     A:
COPY PRIM_LIC.*     A:

```

User Notes:

These commands may be placed in a batch file to help automate the backup process. The DOS PAUSE command can be inserted between command lines to allow the disk to be changed. See your DOS manual for further information.

2.7 RESTORING FILES

Instructions:

To restore files that you backed up previously using the DOS BACKUP command, use the DOS RESTORE command.

1. Type the following at the DOS prompt:

```
RESTORE <source drive> <destination path>
```

The source drive is the drive to which you restore files.

For example, to restore files from drive A: to C:\REMIT, type:

```
RESTORE A: C:\REMIT\*.* /S
```

2. To restore files that have been copied to diskette, type:

```
COPY A: *.* C:\REMIT
```

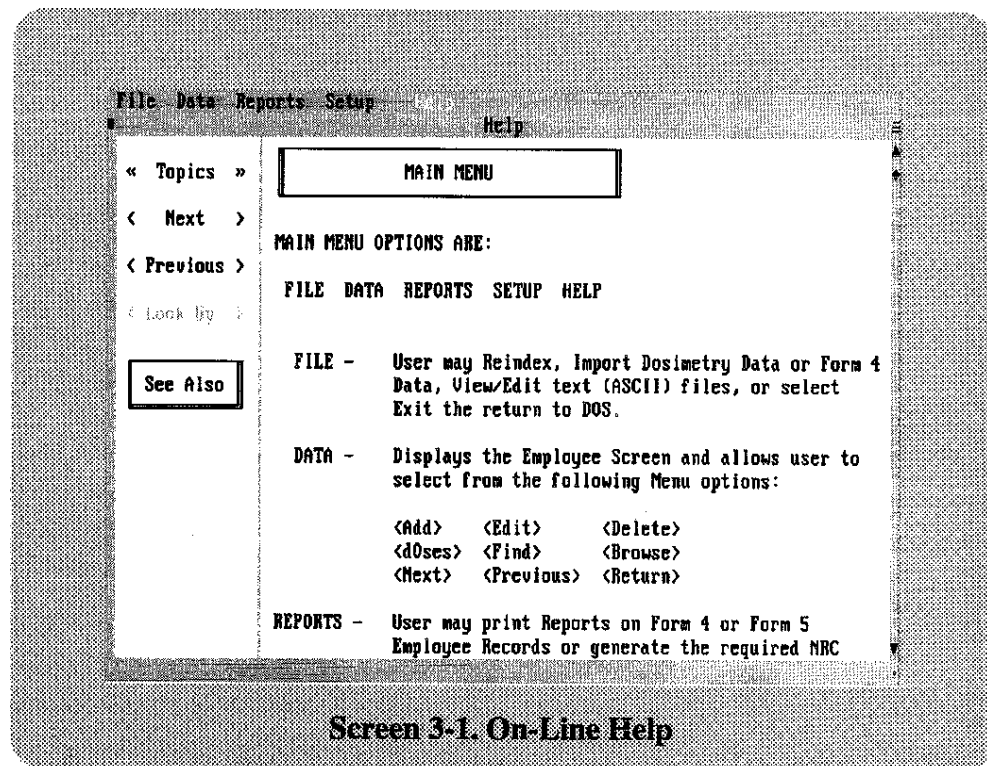
Warning: Any data entered since last backup will be overwritten.

3. HELP

3.1 ON-LINE HELP

Purpose: *Help* gives you access to help on general topics (e.g., requirements and information from the Regulatory Guide 8.7, Rev. 1) and on specific fields.

Instructions: 1. Select *Help* from the Main Menu or press **(F1)** at any time. When you access *Help*, the following screen appears (*Screen 3-1*).



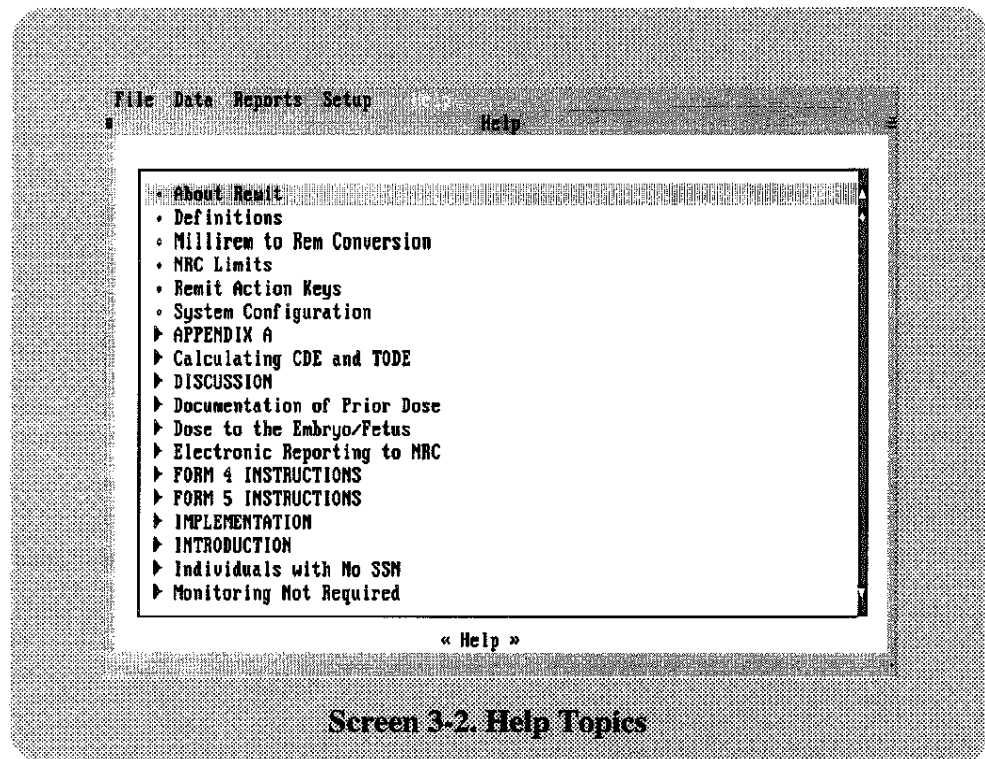
Screen 3-1. On-Line Help

2. The Help window will initially display a context-sensitive message based on where you were when you requested Help. For a complete list of Help topics, select **<Topics>** by pressing **(T)** or selecting the **<Topics>** push button using the left mouse button.

To select from a list of related topics, select **<See Also>** by typing **(S)** or by using the mouse to select the **<See Also>** push button. **<See Also>** is only available for topics that have related sub-topics.

You may also page through the Help messages by using the **<Next>** and **<Previous>** push buttons.

3. Read the information that appears in the *Help* window (Screen 3-2).
4. Press **[Esc]** or click the left mouse button on the "close box" in the upper left portion of the *Help* window to exit Help.



Screen 3-2. Help Topics

Options:

- | | |
|------------|--|
| <Topics> | To select from a complete list of Help topics |
| <Next> | To display the next screen of information |
| <Previous> | To display the previous screen of information |
| <See Also> | To view a list of related <i>Help</i> topics |
| <Help> | To view <i>Help</i> text for highlighted topic |

User Notes:

Press **[F1]** to get specific help for any area in the system in which your cursor resides. Context-specific Help topics are listed in all capital letters. Regulatory Guide 8.7, Rev. 1, help topics are shown in upper/lowercase letters with arrows beside these entries. General help topics have a bullet next to the topic name.

To expand the Help window on the screen, click the mouse on the striped box in the upper right-hand corner of the Help window or press **[Ctrl][F10]**. This will expand the Help window to a full-screen text window. Click again on this icon to reduce window size.

3.2 REMIT ACTION KEYS

User Notes:

Several command-key sequences in REMIT access the Main Menu, navigate through data entry screens, edit data, save data, and exit a screen.

All menu options may be accessed using the **(Alt)** key plus the capitalized letter of the menu selection (usually the first letter). For example, the *File* main menu selection may be accessed by pressing **(Alt)(F)**. You may also access the menu options by pressing the left mouse button on the desired option.

Not all command-key sequences are available on every screen. Table 3-1 presents the full set of command-key sequences and their functions.

Table 3-1. REMIT Action Keys

Function	Command-Key Sequence	Description
Help	F1	Retrieves on-line help.
Select or Save	F2	Selects highlighted record when you browse the data base or saves changes to the data base when you are in Worksheet, Intakes, Other Licenses, or Monitoring Years browse windows.
Add Record	F3	Adds a record to the data base. This sequence is only available in Worksheet, Intakes, Other Licenses, and Monitoring Years browse windows.
Delete/Undelete	F4	Marks/unmarks a record for deletion in Worksheet or Intakes browse windows.
Nuclide Pick list	F5	Accesses EPA-11 nuclide library pick list for Intakes.
Organ Pick list	F6	Accesses organ pick list for max organ and remainder organ in Intakes.
Main Menu	F10	Activates the Main Menu, toggles between Main Menu and the current selected field.
Data Submenu	Alt D	Activates the Data submenu.
File Submenu	Alt F	Activates the File submenu.
Help	Alt H	Retrieves on-line help.
Reports Submenu	Alt R	Activates the Reports submenu.
Setup Submenu	Alt S	Activates the Setup submenu.
Zoom/Unzoom	Ctrl F10	Expands and contracts Help window.
Tab	Tab	Moves to the next menu selection or next field.
Shift Tab	Shift Tab	Moves to previous menu selection or previous field.
Backspace	BackSpace	Deletes one character to left of cursor.

Table 3-1. REMIT Action Keys (Continued)





Function	Command-Key Sequence	Description										
Page Up	PgUp	Moves highlighted bar up one page while in Worksheet, Intakes, or other licensee browse windows.										
Page Down	PgDn	Moves highlighted bar down one page while in Worksheet, Intakes, or other licensee browse windows.										
Up	Cursor Up 	Highlights previous menu option while in a submenu or moves the cursor up one field in data entry or browse windows.										
Down	Cursor Down 	Highlights next menu option while in a submenu or moves the cursor down one field in data entry or browse windows.										
Left	Cursor Left 	Moves to previous menu selection or moves one character to left.										
Right	Cursor Right 	Moves to previous menu selection or moves one character to right.										
Escape	Esc	Exit function without processing.										
Other	Enter	Functionality depends on the selected object: <table><tr><td><i>Main Menu</i></td><td>Executes the highlighted menu option.</td></tr><tr><td><i>Radio Button</i></td><td>Selects highlighted radio button denoted by · [e.g., (·) Routine].</td></tr><tr><td><i>Push Button</i></td><td>Executes the highlighted push button (e.g., <Save>).</td></tr><tr><td><i>Data Entry</i></td><td>Moves to the next field.</td></tr><tr><td><i>Field</i></td><td></td></tr></table>	<i>Main Menu</i>	Executes the highlighted menu option.	<i>Radio Button</i>	Selects highlighted radio button denoted by · [e.g., (·) Routine].	<i>Push Button</i>	Executes the highlighted push button (e.g., <Save>).	<i>Data Entry</i>	Moves to the next field.	<i>Field</i>	
<i>Main Menu</i>	Executes the highlighted menu option.											
<i>Radio Button</i>	Selects highlighted radio button denoted by · [e.g., (·) Routine].											
<i>Push Button</i>	Executes the highlighted push button (e.g., <Save>).											
<i>Data Entry</i>	Moves to the next field.											
<i>Field</i>												

Table 3-1. REMIT Action Keys (Continued)

Function	Command-Key Sequence	Description
		<i>Browse Windows</i> Moves to the next field while in Worksheet, Intakes, or other licensee browse windows. If the current field has been modified, you must leave the field for the changes to be accepted.
		<i>Pick List</i> Selects highlighted item.

3.3 BROWSE

Purpose:

Whenever browse-style windows are used in REMIT the Browse option will appear in the Main Menu. Browse windows are used in data-input as in <Worksheet>, <Intakes>, <Other Licenses> and <Monitoring Box>; in pick list as in max organ or nuclide; or for record selection as in employee, doses, or report browse windows. The Browse option allows the user to change browse window attributes as described below.

Options:
*Browse/
Change*

Toggles between Browse and Change mode. In the Change mode, the fields in each record are listed one below the other instead of stretching across the window horizontally. **[PgDn]** and **[PgUp]** will advance to the next or previous record, respectively.

Grid Off

Toggles between Grid Off and Grid On, depending on the current grid settings. Removes/places horizontal line between separate fields.

Size Field

Allows the user to change the displayed size of the currently selected field using the cursor keys. Press **[Tab]** to select a new field for sizing. Once the field is selected, use the (Left/Right) arrows to shorten or lengthen the field. Then press **[Enter]**.

The user can also size the field using the mouse by placing the mouse on the grid line between fields, clicking, and dragging the grid line to the desired size.

Move Field

Selects a field so you can move it to a new location. Press **[TAB]** to select a new field for moving. Once the field is selected, use the Left/Right arrows to relocate the field, then press **[Enter]**.

The user can also move a field using the mouse by placing the mouse on the field name, clicking, and dragging the field to the desired location.

Goto

Displays a dialog so you can position the record pointer on a specific record. You can choose Top, Bottom, a certain record number, or skip a certain number of records.

Seek

Allows the user to locate a record based on a search criteria using the index file. Use the dialog to create an expression based on the current index, and select <Ok> to perform the search. If no matching record is found, you are placed at the last record in the data base.

For the *Seek* option to be available, the current data base must have an open index file in use. The expression entered must be consistent with the index expression.

Example:

To search for a particular record in the employee browse window, you must enter the employee i.d. and i.d. type since the index for this browse window is EMP_ID+ID_TYPE. In the expression window type '3434343SSN' and select <Ok> to search. You must include the quotation marks for this search since it is a text string. Partial strings, such as '3434', may be entered to locate the first record matching the partial entry.

Many options are available in *Seek*; however, REMIT is not designed to make use of all these features. The only useful options in REMIT are:

- <Ok> to proceed with search
- <Verify> to check validity of search expression
- <Cancel> to exit seek and return to browse

Seek is included for those users with advanced data base experience. It is not intended to be the primary means of locating a record. The <Find> push button may be used to search for an individual, and the browse window directional keys can be used to move quickly among large numbers of records.

See Also:

Doses Browse, Employee Browse, Worksheet, Intakes

3.4 TUTORIAL TEST SET

Purpose:	<p>This section describes the REMIT Test Set of data that has been provided for licensees to examine various aspects and features of the REMIT system. It is believed that the Test Set provides the best mechanism to experiment and become familiar with REMIT. Users are encouraged to keep the test set on-line for future reference.</p> <p>The Test Set data are used throughout this User Manual for example screens and to illustrate some of the less obvious features of REMIT.</p>
Instructions:	<ol style="list-style-type: none"> 1. Complete all current REMIT operations and return to the main menu. 2. To access the Test Set, select <i>Setup</i> from the main menu. 3. Select <i>System Configuration</i> and <i>File Locations</i> from the Setup menu. 4. Enter the name of the Test Set subdirectory where the test set of data resides. 5. Return to the main menu and proceed to test REMIT capabilities using the Test Set. Add, edit, or view records to "get a feel" for REMIT. You may find it useful to print out a few Forms 4 and 5 for reference. It is recommended that you do not delete records, since you may wish to use the Test Set for training. 6. To return to your working data base files, repeat steps 1 - 4 and enter the name of the directory where your REMIT working data base files reside.
User Notes:	<p>The Test Set of data is automatically installed with REMIT in the TEST_SET subdirectory. The user may move this to another location or delete the contents of this directory in order to save disk space. It is strongly recommended, however, that this Test Set remain accessible to the licensee for reference and testing new procedures before implementation on the active working data base files.</p> <p>The Test Set contains a number of common record types and situations. It also serves to demonstrate some of the less commonly used aspects of REMIT. The following is a list of the employees in the Test Set with a description of the unique aspects of their records.</p>

Table 3-2. Test Set Records

Name	Description
JOE JUMPER	This individual has many exposure records from other licensees for the monitoring year.
WORKER LONGTIME	This individual has long periods of monitoring prior to the new Part 20.
FRAN FOREIGNER	This individual has a passport number.
HIGH DOSE	This individual's dose exceeds the dose limit for the monitoring year under the new Part 20.
LOTS O'INTAKES	This individual has many intake records demonstrating the interrelationship of intakes at different facilities in the calculation of TODE.
MANY OLDDOSES	This individual has many exposure records at the primary licensee for many years. One record involves an exposure in excess of the regulatory limits under the old Part 20.
PLANNED SPECIAL	This individual participated in a Planned Special Exposure.
WALLY WORKSHEET	This individual has several entries in <Worksheet> and a dosimetry processor import file.
NEW TRANSIENT	This individual has Form 4 records to be imported into REMIT.
YOUNG PERSONNEL	This individual is a new hire with no prior exposures, just a personnel record to be imported.

Warning:

Care should be taken not to confuse the Test Set with the working data base files. Test Set records should not contain "real" records of individuals.

See Also:

Setup, TODE Limit

3.5 TECHNICAL SUPPORT

Purpose:	During the first year of release of the REMIT system, Science Applications International Corp. (SAIC), the developers of REMIT, will provide technical support for the software under contract to the NRC. This section describes the scope of this support and how to contact SAIC.
Note:	The user should read the User Manual before contacting technical support. In many cases the User Manual contains specific information and guidance on program functions and regulatory issues. The User Manual is intended to be used as the primary reference tool.
Scope:	Technical Support for REMIT is limited in extent and scope. SAIC is under contract to offer phone support for technical problems encountered with REMIT. The support does not extend to site visits, and does not include customization of REMIT for specific licensee needs. The NRC has allocated limited resources for this support during the first year and intends for the industry in general to establish and provide additional support beyond that provided by the NRC.
Options:	SAIC will provide several means of support during the first year. They include, in order of preference: <ul style="list-style-type: none"> • Electronic Bulletin Board • Mail • Facsimile (FAX) • Phone
User Notes:	<p>Electronic Bulletin Board</p> <p>SAIC has established an electronic Bulletin Board System (BBS) to be used as an open forum for sharing information on the REMIT system. Notices may be posted describing problems or comments for review by the SAIC technical staff and the NRC. Messages may be designated as confidential or shared among the system users. Electronic mail may be sent to other users, SAIC staff, or the NRC Project Officer.</p> <p>In addition to posting messages, the BBS allows users to upload files for analysis by SAIC staff. These files will be located in user-specific directories to maintain the confidentiality of the data. Users will only be allowed access to their own directories.</p>

The BBS may be accessed via modem through three main nodes on SAIC's nation-wide computer network, SAICnet:

- Oak Ridge, TN
- McLean, VA (Washington, D.C. area)
- San Diego, CA

These nodes may be accessed locally to reduce long distance phone charges and to maximize the quality of data communication. SAICnet is also connected to the world-wide Internet network, so licensees with Internet access may "telnet" to the BBS.

Licensee System Requirements:

The system requirements for contacting the REMIT BBS are minimal:

- Modem (2400, 9600, or 19200 baud)
- Communications software supporting "Kermit" protocol and VT100 terminal emulation

Access:

In order to maintain the confidentiality of the system, licensees are required to mail (or FAX) a REMIT BBS Access Request Form to SAIC. SAIC will review the request, and upon approval by the NRC, contact the licensee by phone to issue the required phone numbers, user name, and password for the BBS. Several layers of security are provided for confidentiality of the data.

For access to the REMIT BBS, please fill out the enclosed form and FAX it to the number listed under the FAX Support Section, or mail it to the address given in the Mail Support section.

Mail

Problems or questions that require lengthy documentation should be addressed through the mail. For prompt attention, express mail packages may be used. Licensees are encouraged to make use of other media, particularly the electronic bulletin board, when possible.

Mail Address:

Science Applications International Corp.
REMIT Project Manager
Attn: Derek A. Hagemeyer
P.O. Box 2501
Oak Ridge, TN 37831-2501

Express Packages:

SAIC
REMIT Project Manager
Attn: Derek A. Hagemeyer
301 Laboratory Road
Oak Ridge, TN 37830

FAX Support

Occasionally licensees may find it necessary to send a facsimile transmittal to further explain a problem or situation involving REMIT. These transmittals should be limited to one or two pages, and only for those problems that require immediate attention. Licensees are encouraged to make use of other media, particularly the electronic bulletin board when possible.

To: Derek A. Hagemeyer
REMIT Project Manager
FAX: 615-482-6828
Verify: 615-481-2148

Phone Support

The phone support will primarily consist of voice mail. Licensees may leave a message and a brief description of the problem and a member of the SAIC REMIT technical staff will return their call as soon as possible. Licensees are encouraged to make use of other media, particularly the electronic bulletin board when possible.

Phone: 615-481-8565

See Also: NRC Submittal

REMIT BBS ACCESS REQUEST FORM

LICENSEE INFORMATION:

NRC License Number: _____

Licensee Name: _____

Address: _____

Licensee Phone: _____

CURRENT SYSTEM:

Communication: ☐ Modem
 ☐ Internet
 ☐ Other _____ (specify)

If Modem, which SAICnet node do you wish to contact:

☐ Oak Ridge, TN
 ☐ McLean, VA (Washington, D.C.)
 ☐ San Diego, CA

Communication Software: _____

Terminal Emulation: _____

Protocol: ☐ Kermit
 ☐ Other _____ (specify)

Preferred User Name: _____

(May be 4-12 characters)

QUESTIONS/COMMENTS:

PLACE
STAMP
HERE

Science Applications International Corporation
301 Laboratory Road
P.O. Box 2501
Oak Ridge, Tennessee 37831

Attention: Mr. Derek Hagemeyer

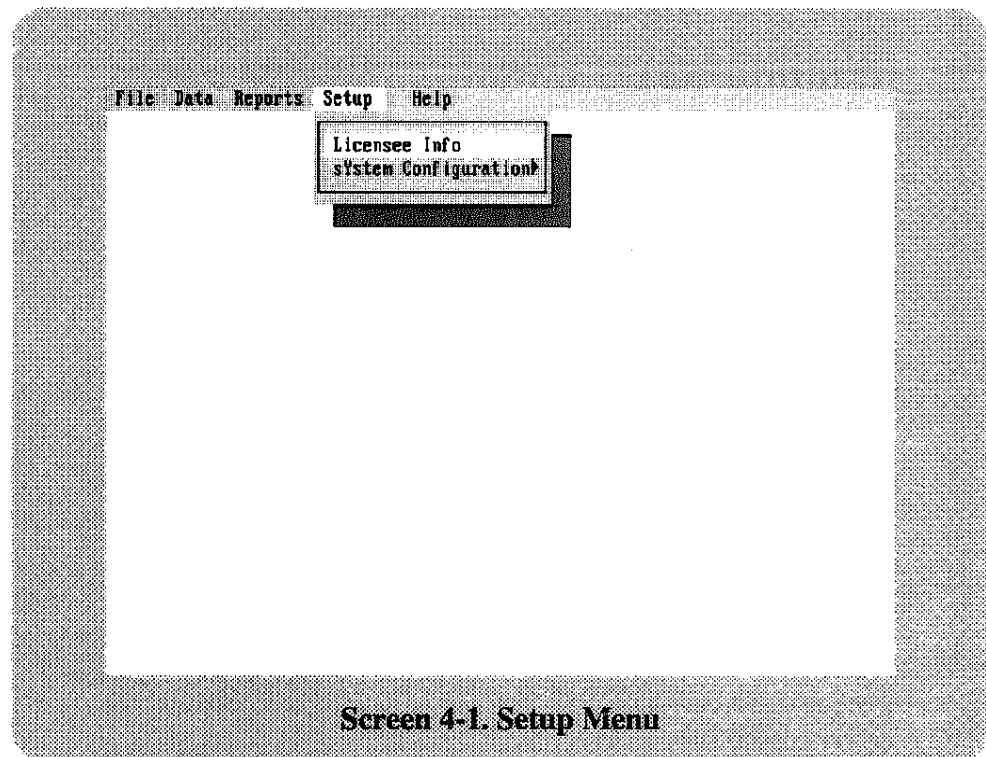
4. SETUP

Purpose:

Setup allows you to input and edit licensee information, monitoring periods, and licensee exposure limits as well as to specify printer and file locations.

Instructions:

1. Select *Setup* from the Main Menu (*Screen 4-1*).
2. Select one of two options:
 - Licensee Information*
 - System Configuration*

**Options:***Licensee Information*

To edit licensee-specific information, such as the licensee name and contact as well as licensee dose limits and monitoring year definitions

System Configuration

To edit information concerning your PC system configuration

See Also:

Licensee Information, System Configuration

4.1 LICENSEE INFORMATION

Purpose: This option allows you to enter or modify licensee information, monitoring periods, or exposure limits for the licensee.

- Instructions:**
1. Select *Licensee Information* from the *Setup* menu (*Screen 4-2*).
 2. Select <Edit> to enter or change primary licensee information or <Return> to return to the Main Menu without changing the data.

File Edit Help

Primary Licensee Information

1 License # 12-12121-12

2 Licensee WORLD-WIDE NUCLEAR CORP.

3 Contact JOE DOSE

4 Phone 999-999-9999 EXT:9999

< Edit > < Limits > < Return >

< Other Licenses > < Monitoring Years >

License #	Year	Begin Date	End Date
23-23232-23AP	1993	01/01/1993	12/31/1993
DPR-99	1994	01/01/1994	01/05/1995
NPF-43	1995	01/06/1995	01/05/1996
	1996	01/06/1996	01/05/1997
	1997	01/06/1997	01/10/1998

Screen 4-2. Primary Licensee Information

- Screen Elements:**
- ① License Number: License number of the reporting organization. [Required]
 - ② Licensee: Name of the licensee. [Required]
 - ③ Contact: Point of contact at the reporting organization (licensee). [Required]
 - ④ Phone: Phone number of the licensee contact. [Required]

Options:	<Edit>	To enter or edit licensee information
	<Limits>	To enter or edit licensee assigned administrative dose limit information
	<Return>	To close the screen and return to the previous screen
	<Other Licenses>	To enter or edit associated NRC license numbers
	<Monitoring Years>	To define licensee monitoring years
See Also:	Edit, Limits, Other Licenses, Monitoring Years	

4.1.1 Licensee Edit

Purpose:	This function enables you to enter or edit licensee information such as license number, licensee name, contact, and phone number.				
Instructions:	<ol style="list-style-type: none">1. Select <Edit> from the Primary Licensee Information screen.2. Enter or edit licensee information.3. Press <Save> to save licensee information or <Cancel> to return to the Primary Licensee Information screen without saving.				
Options:	<table><tr><td><Save></td><td>To save new or edited licensee information</td></tr><tr><td><Cancel></td><td>To cancel editing</td></tr></table>	<Save>	To save new or edited licensee information	<Cancel>	To cancel editing
<Save>	To save new or edited licensee information				
<Cancel>	To cancel editing				
See Also:	Other Licenses, Monitoring Years, Licensee Limits				

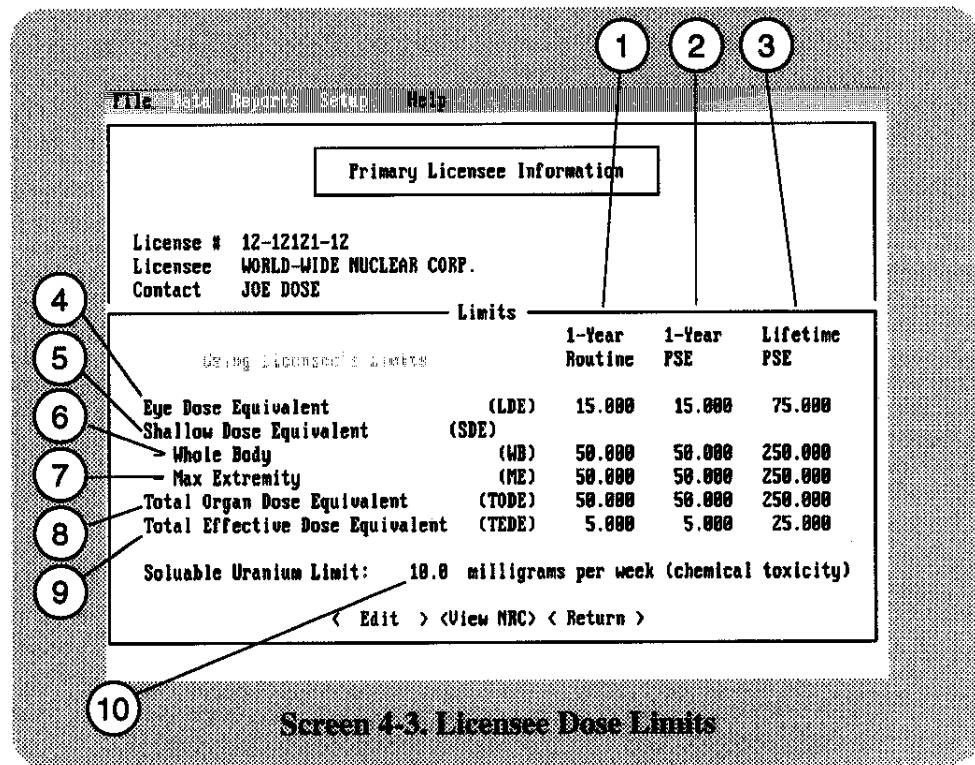
4.1.2 Licensee Limits

Purpose:

This option allows you to enter or edit licensee-assigned administrative dose limits and to view NRC limits.

Instructions:

1. Select <Limits> from the Primary Licensee Information screen (Screen 4-2). The Licensee Exposure Limits screen (Screen 4-3) will be displayed.
2. Select <Edit> to change these limits or <Return> to exit without changing these limits. <View NRC> allows reference to NRC Regulatory dose limits per 10 CFR 20.1201.
3. If you selected <Edit>, enter the new limits in the highlighted fields.
4. Press <Save> to save the new limits or <Cancel> to cancel the new limits and return to the previous screen.


Screen Elements:

NOTE: Limits are presented in four different cases: One-Year Routine, One-Year Planned Special Exposure (PSE), Lifetime PSE, and Uranium Toxicity.

- ① One-Year Routine: Total routine dose received at all licensees in one monitoring year.
- ② One-Year PSE: Total PSE dose received at all licensees in one monitoring year.
- ③ Lifetime PSE: Total lifetime PSE dose at all licensees.
- ④ LDE: Eye dose equivalent to the lens of the eye; measurement in rem for dose equivalent at a tissue depth of 0.3 cm; applies to the external exposure of the lens of the eye.
- ⑤ SDE: Shallow Dose Equivalent, measurement in rem.
- ⑥ SDE-WB: Shallow Dose Equivalent, Whole Body; measurement in rem.
- ⑦ SDE-ME: Shallow Dose Equivalent, Maximally Exposed Extremity; measurement in rem.
- ⑧ TODE, Total Organ Dose Equivalent: Measurement in rem; sum of the DDE, deep dose equivalent, (for external exposures) and the CDE (for internal exposures).
- ⑨ TEDE, Total Effective Dose Equivalent: Measurement in rem; sum of the DDE (for external exposures) and the CEDE (for internal exposures).
- ⑩ Uranium Toxicity: Measurement in milligrams; limit of total uranium intake per monitoring period calculated from intake activity in microcuries.

Options:

- | | |
|------------|---|
| <Edit> | To edit licensee exposure limits |
| <Return> | To return to the Primary Licensee Information screen |
| <Save> | To save edited licensee exposure limits |
| <Cancel> | To cancel input of licensee exposure limits, exit <Edit>, and return to the Limits screen |
| <View NRC> | To view the NRC Regulatory limits from 10 CFR 20.1201 |

User Notes:

These licensee exposure limits represent licensee limits against which employee doses are compared. If licensee limits are being used, pressing <Limits> will produce the following message: "Using Licensee's Limits."

When licensee dose limits do not exist, the limits default to the NRC limits as specified in 10 CFR 20.1201. If the limits default, a message appears saying "Using NRC Limits." In any case, the REMIT system does not allow licensee or individual dose limits to be set in excess of current NRC regulatory dose limits as listed in 10 CFR 20.1201. If license limits are lowered, the lower limits are also reflected in all employee administrative dose limits.

See Also:

Employee Limits, Uranium Toxicity Limit

4.1.2.1 Uranium Toxicity Limit

Purpose:

10 CFR 20.1201(e) limits the intake of soluble uranium by an individual to 10 milligrams in a week in consideration of chemical toxicity. The licensee may set an administrative limit up to 500 milligrams since the monitoring period may be up to a year. REMIT will screen uranium entries in the <Intakes> module for potential intakes in excess of the licensee limit and alert the user.

User Notes:

The data needed to fully assess uranium toxicity exposures, such as the solubility, amount in grams, and period for each intake, are not maintained by REMIT. However, the activity of each uranium intake (in microcuries) is entered by the user. REMIT calculates the amount (in milligrams) from the specific activity of each uranium intake and totals the amount (in milligrams).

The following data are used to calculate the total intake of uranium in milligrams:

Table 4-1. Uranium Conversion Factors

Uranium Isotope - Class D, W, or Ingestion mode, G	Half-life (in years)	mg/uCi ¹
U-233	1.59E+05	1.04E-01
U-234	2.44E+05	1.59E-01
U-235	7.04E+08	4.63E+02
U-236	2.34E+07	1.55E+01
U-238	4.47E+09	2.98E+03
Uranium-Other ²	4.47E+09	2.98E+03

¹ Calculated using methods presented in the "Radiological Health Handbook, Revised Edition," U.S. Dept. of Health Education and Welfare, U.S. Government Printing Office, January 1970.

² Data for U-238 were used as a conservative assumption. This category covers uranium intakes entered that are not in the EPA-11 nuclide library.

The conversion factors for "Uranium-Other" are applied to any radionuclide entry that begins with the letter "U" but is not contained in the EPA-11 library. This is designed to handle any entry for natural uranium such as "U-Nat" or "Uranium" where the isotopic abundance is unspecified. It does not apply to entries, such as "U-230" and "U-231," which are in the EPA-11 library but have such short half-lives as to be inconsequential for the chemical toxicity calculations applied in this module.

The regulatory limit for soluble uranium is 10 milligrams per week as stated in 10 CFR 20.1201(e). The licensee may wish to set an "administrative limit" different from the regulatory limit in order to be alerted to intakes approaching the regulatory limit. The user can enter this administrative limit in the *SETUP, Licensee Information, <Limits>* screen. Since the maximum monitoring period entered into REMIT is 1 year, REMIT allows the administrative limit to be set up to 500 milligrams (10 mg/week x 50 work weeks/year = 500 mg/year). It is suggested that most licensees leave the limit at 10 mg.

If the total amount of uranium exceeds the licensee administrative limit, the user is alerted to a possible exposure in excess of the limits and the calculated amount of uranium in milligrams is displayed on screen. The user is directed to Footnote 3 in Appendix B of 10 CFR 20 for further instructions on the determination of the chemical toxicity levels for uranium. If the uranium intakes are subsequently found to be in excess of the chemical toxicity limit, the user should enter a note in <Comment> for the exposure record referencing further documentation or reports submitted to the NRC pursuant to 10 CFR 20.2203 concerning this exposure event. Entering a <Comment> is in addition to, and not a replacement for proper notification of such an incident to the NRC under 10 CFR 20.2202 and 20.2203.

Warning:

The uranium toxicity limit is only checked on entry in <Intakes>. It is not checked when employee <Limits> is selected.

REMIT only checks intakes for possible uranium toxicity exposures in excess of limits. REMIT makes conservative assumptions from the uranium intakes to alert the user to possible exposures in excess of limits, but does not maintain the necessary data to fully assess the chemical toxicity with regard to the regulatory limits. Users should be aware of the assumptions and limitations of this function.

If the uranium intakes are subsequently calculated by the licensee to be in excess of the chemical toxicity limit, it is suggested that the user enter a note in <Comment> for the exposure record. This comment

will be included on Form 5 and the NRC Electronic Submittal to assist the NRC in reviewing the exposure event. The comment should reference further documentation or reports submitted to the NRC pursuant to 10 CFR 20.2203 concerning this exposure event.

See Also:

Doses Comments, Intakes, Licensee Limits

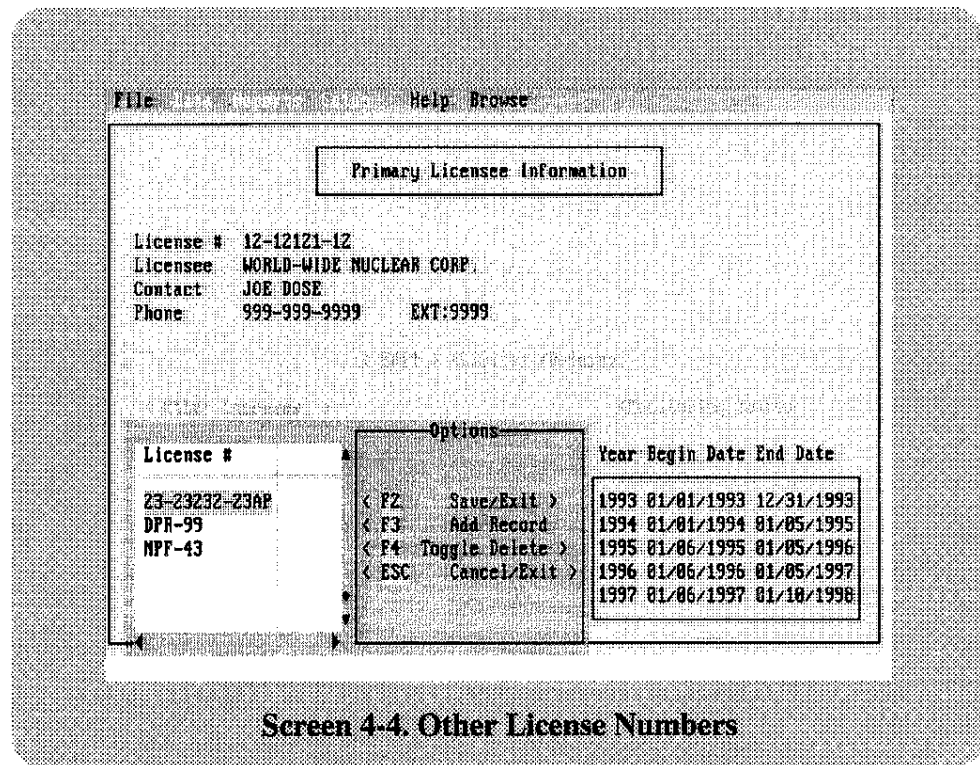
4.1.3 Other Licenses

Purpose:

This option allows you to enter or edit other NRC license numbers that are associated with, and will be reported with, the primary NRC license number.

Instructions:

1. Select <Other Licenses> (*Screen 4-4*) from the Primary Licensee Information screen.
2. Press **F3** to add associated NRC license numbers or press **F4** to delete associated NRC license numbers.
3. Press **F2** to save or **Esc** to cancel.



Options:

- F2** To save changes to license numbers and return
- Esc** Cancel changes and return
- F3** Add new record
- F4** Delete/undelete record

User Notes:

This option is used to record all license numbers associated with a particular facility licensed by the NRC. Some facilities have several NRC license numbers. Such a facility may choose to report dose information

under one primary NRC license number but must inform the NRC of all license numbers reporting under the primary license number. This option allows for reporting exposure monitoring information from other associated license numbers, and they will be included in the electronic NRC submittal.

Once an associated license number has been entered into <Other Licenses> that license number should be used for any individual who receives any dose at that facility. Although the primary license number may be used, the NRC prefers licensees to use the license number for the facility where the dose was accrued.

<Other Licenses> entries may be edited as follows:

1. Modified as long as exposure records have not been entered for this license number.
2. Deleted as long as exposure records have not been entered for this license number.
3. Added to long as exposure records have not been entered for this license number. If exposure record exist, the user will be prompted to continue or cancel.

Warning:

If a licensee does not report all associated license numbers, the associated license numbers may be considered delinquent in reporting to the NRC and may not be in compliance with the reporting requirements of 10 CFR 20.

4.1.4 Monitoring Years

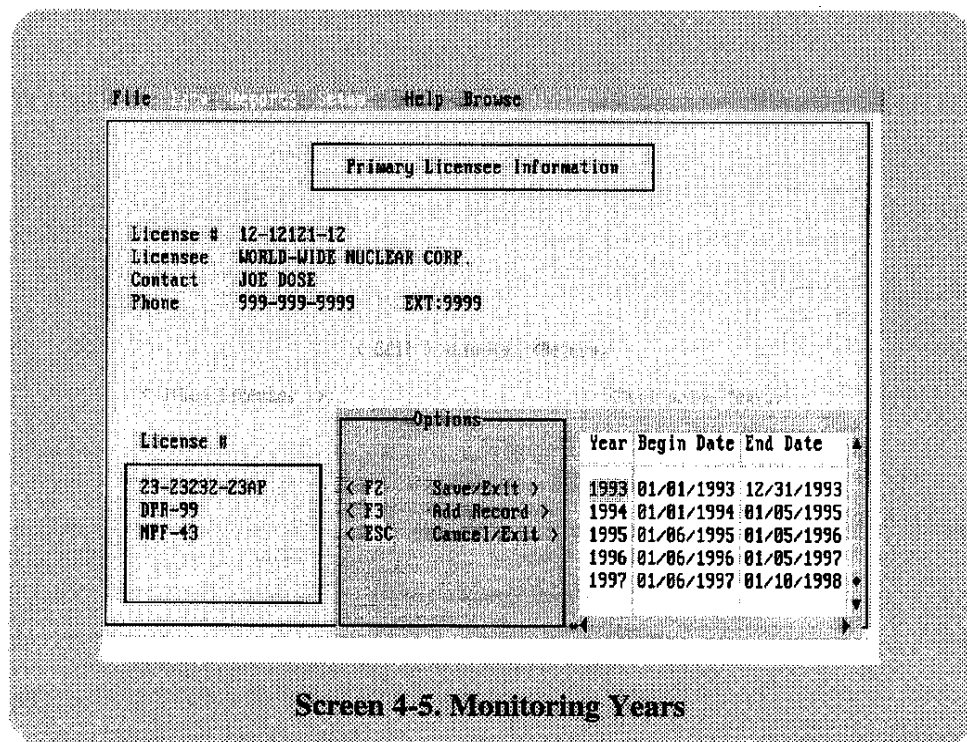
Purpose:	<Monitoring Years> allows the licensee to specify the reporting periods for each monitoring year used for NRC submittals.
Instructions:	<ol style="list-style-type: none"> 1. Select <Monitoring Years> (<i>Screen 4-5</i>). 2. Enter F3 to append a record. 3. Press F2 to exit and save changes and Esc to exit without saving changes.
Options:	F2 To exit and save changes F3 To add a new record Esc To exit without saving changes
Useful Notes:	<p>A licensee may assign specific dates for a monitoring year that are convenient for records management purposes. The <Monitoring Year> function allows the licensee to define monitoring years for reporting data to the NRC.</p> <p><u>Implementation Date:</u></p> <p>The first year entered under <Monitoring Years> should be the year the licensee implemented the new 10 CFR 20 requirements. This implementation year will be used by REMIT to determine which dose records must comply with the Revised 10 CFR 20. Monitoring year dates <u>must</u> run from January to January according to 10 CFR 20.1003.</p> <p>If the licensee begins to use REMIT some time after implementing the Revised Part 20, the licensee should enter the year of implementation as the first monitoring year, and each year up to the current monitoring year. This will allow REMIT to correctly identify records that must comply with the revised regulations.</p> <p>If a licensee begins operation some years after the Revised Part 20 has been implemented, the first year of operation may be entered as the first monitoring year. However, if employee records of prior exposures are to be entered into REMIT, the licensee should enter default monitoring years back to the year of implementation at other facilities.</p>

Monitoring Years Must be Defined

Monitoring years must be defined before new dose records are entered for that year. Each monitoring year must run from January to January of the following year. Each monitoring year must be consecutive and must not overlap.

In order to relate the dose records to the proper reporting year, all dose records' monitoring periods must be within a valid monitoring year. This is not true for data prior to implementation of the new 10 CFR 20. Dose records with dates prior to the new 10 CFR 20 implementation may be entered into the REMIT system since this data will not be reported to the NRC and does not have to meet the new 10 CFR 20 reporting requirements. See Section 5.2.2.

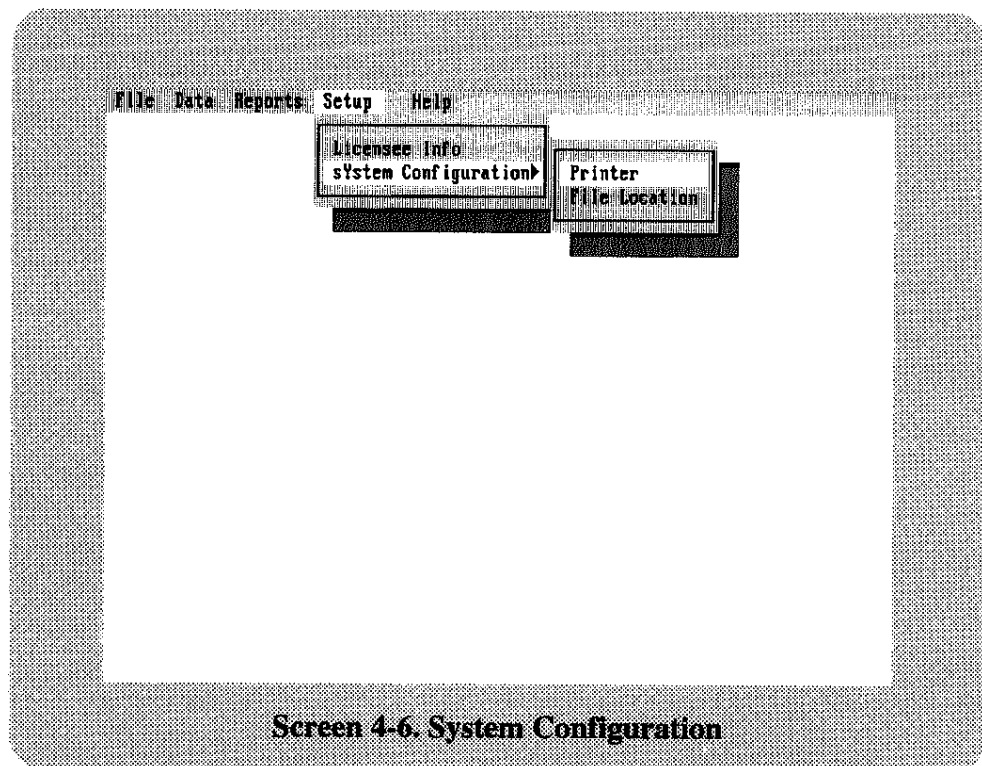
<Monitoring Years> may be edited as long as no exposure records conflict with the new dates. REMIT will alert the user to conflicts between monitoring years and exposure records.



4.2 SYSTEM CONFIGURATION

Purpose: This option allows you to enter, edit, or view your choice of printer port or file location, both of which are usually specified in the initial system setup.

- Instructions:**
1. Select *System Configuration* from the *Setup* menu (*Screen 4-6*).
 2. Choose from two options:
 - Printer*
 - File Locations*



See Also: Printer, File Locations

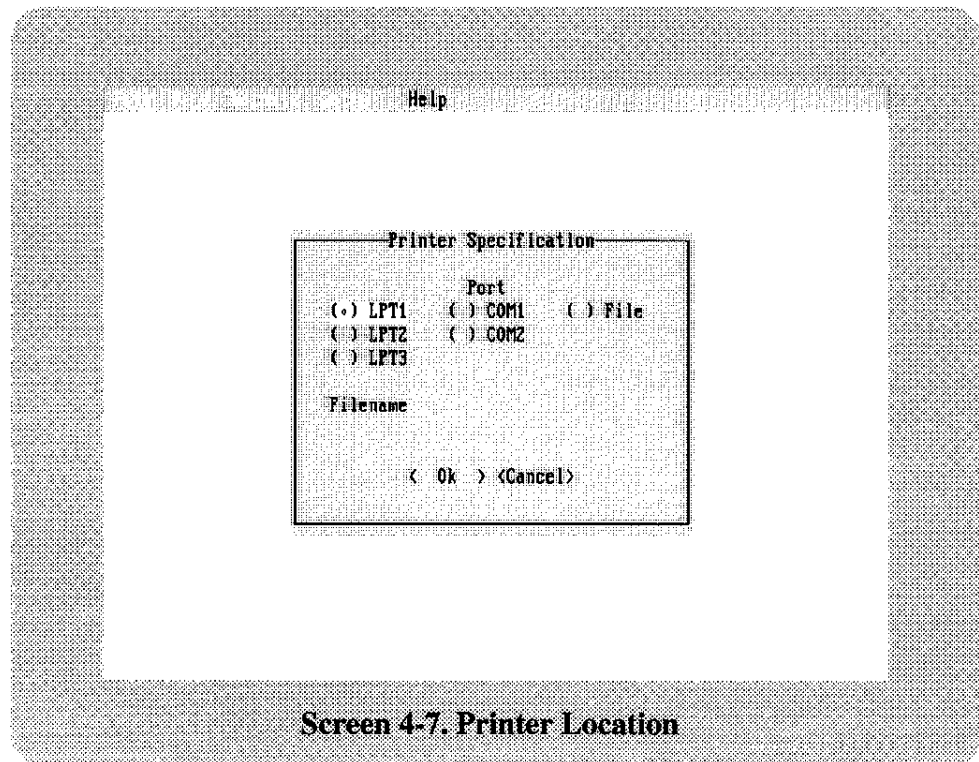
4.2.1 Printer

Purpose:

This option allows you to set, edit, or view your printer port setting.

Instructions:

1. Choose *Printer* from the *System Configuration* menu. The Printer Specification screen (*Screen 4-7*) will be displayed.
2. Select any of the printer designations. (Usually you will need to specify the LPT1 printer; most printers are attached to this port.)
3. If your printer port is a file, select the file and enter the full path specification file name (e.g., C:\NRC_RPT\FORMS.RPT).
4. Select <Ok> to save your printer specification, or select <Cancel> to close the window without saving.



Screen 4-7. Printer Location

Options:

- | | |
|----------|---|
| <Ok> | To save the printer specification |
| <Cancel> | To close the window without saving entered data |

See Also:

File Locations, Reports

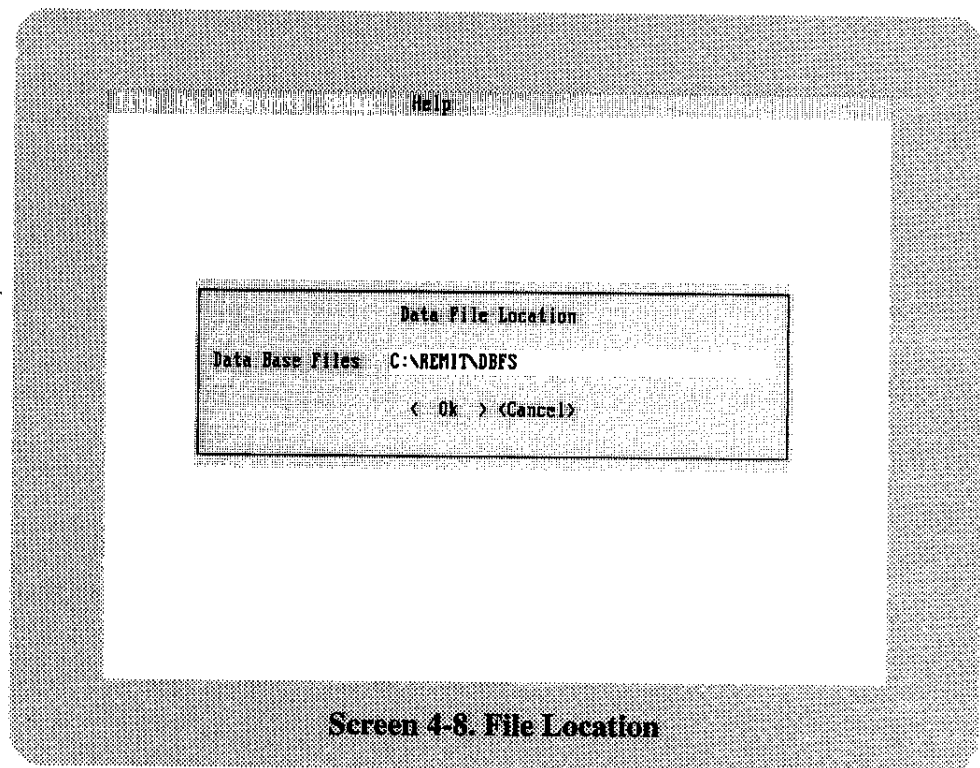
4.2.2 File Locations

Purpose:

Using this option, you may enter, edit, or view your file location. REMIT will use the data base files that reside in the specified file location.

Instructions:

1. Select *File Locations* from the *System Configuration* menu (*Screen 4-8*).
2. Enter or edit the full path specification for your data base files. This specification should include the drive and directory (e.g., C:\REMIT).
3. Select <Ok> to save, or select <Cancel> to close the window without saving.



Screen 4-8. File Location

Options:

- <Ok> To save your full path specification for data base files
<Cancel> To close the window without saving

User Notes:

This feature can be used to access the Tutorial Test Set of data. See Section 3.4.

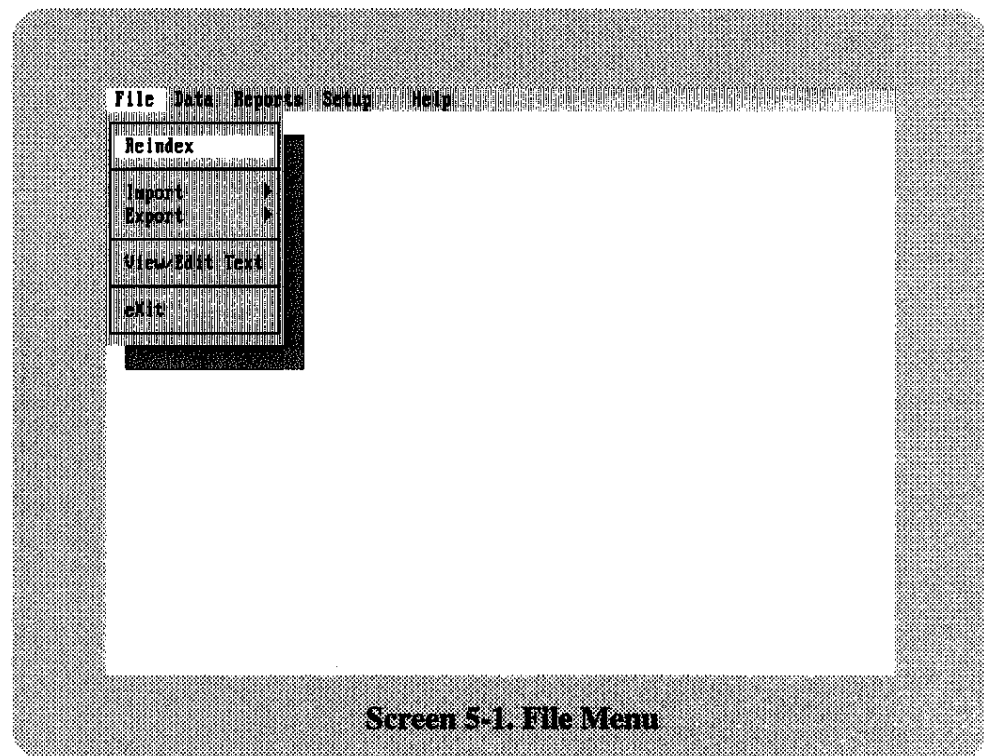
5. FILE

Purpose:

This section describes all of the options available under the Main Menu option *File*, which includes the screens and elements that are used to perform routine file maintenance and exit REMIT.

Instructions:

1. Select *File* from the Main Menu (*Screen 5-1*).
2. Select one of these options:
 - Reindex* To rebuild all data base indexes
 - Import* To import Form 4 or dosimetry processor data into REMIT
 - Export* To export Form 4 data to electronic format
 - View/Edit Text* To view or edit ASCII files from within REMIT
 - Exit* To exit the system

**See Also:**

Reindex, Import, Export, View/Edit Text, Exit, Setup

5.1 REINDEX**Purpose:**

This function reindexes all your data bases. *Reindex* rebuilds all indexes in all of the REMIT data base tables.

Instructions:

1. Select *Reindex* to reindex your data bases.

User Notes:

Reindexing should be done when the data base tables are manipulated outside the REMIT system or when data base tables are restored from backup. It rebuilds outdated, corrupted, or missing indexes.

5.2 IMPORT

The REMIT Import feature facilitates the importing of dosimetry processor data and Form 4 data into the REMIT system. The following sections describe the intended use and functionality of these features. The intent and assumptions of these features are explained in Sections 5.2.1 and 5.2.3 and then step-by-step user instructions are given in Sections 5.2.2 and 5.2.4.

5.2.1 Information on Importing Dosimetry Processor Data

Purpose:

This section explains the intended use and assumptions of the *Import Dosimetry Processor Data* feature. See Section 5.2.2 for a functional description of this feature.

Import - Dosimetry Processor Data uploads dosimetry processor results into incremental (weekly, monthly, quarterly, etc.) dose records from dosimetry processors in .DBF or ASCII file formats. The dose record for the monitoring year for the individual will be updated automatically from these data.

User Notes:

This function is only available for importing dosimetry results for the primary NRC license number entered in *Licensee Information*. This function **cannot** be used for importing incremental dose (<Worksheet>) information for other licensees.

Coordinate with your dosimetry processor to establish procedures and data file format for receiving dosimetry information. The REMIT data base file DOSES_WS.DBF can be modified to allow importing of additional data fields from your dosimetry processor. See Additional Data Fields below.

Dose Limits

Dose limits will not be checked for imported data. The only checks that will be performed are described under "Data Verification." It is the licensee's responsibility to ensure that the imported dose records are correct and to monitor dose limits. Once the data is loaded into REMIT, the user will need to review the individual's dose record using the <Limits> option to determine the individual's dose versus the applicable administrative or NRC limits.

Additional Data Fields

Dosimetry processors currently provide much more data than is needed by REMIT. REMIT is able to handle extended data base structures that allow the licensee to view and edit more fields in the "browse" mode than are required by REMIT.

These additional fields may be imported into <dOses> <Worksheet> if they are provided by your dosimetry processor. The licensee will be responsible for modifying and maintaining the extended data base. The extended data base structure will need to be created before data is imported and must match the import file structure. The REMIT DOSES_WS data base file structure may be modified by adding additional fields using any dBASE III compatible data base management software package. REMIT-required DOSES_WS fields shown in Appendix C, page C-3, should not be modified under any circumstances. See Appendix E concerning modified data base structures.

Rejected Data

REMIT will not load the file if any records are rejected based on the rules set forth under Data Verification. REMIT will report specific problems with the data to the file WRK_ERRS.TXT. The user will be alerted that the file cannot be loaded. Users will need to perform corrective measures before the data will be accepted.

Corrective Measures

An error message for each rejected record will be sent to the file WRK_ERRS.TXT. The user should review this file, using the *View/Edit Text* selection under the *File* main menu option, to gain information on why a file was not loaded, and for the list of records that have overlapping dates that may cause REMIT to calculate dose totals incorrectly.

In order to load data that has been rejected by REMIT, the user must modify the import file. For data base files, this may be done using any dBASE compatible data base management package. For ASCII files, an ASCII text editor should be used. An ASCII text editor is provided with REMIT from the *View/Edit Text* selection under the *File* main menu option. Eight-bit word processing packages, such as WordPerfect, should not be used to edit ASCII files unless the file is then saved in ASCII or "DOS text" format.

Since manipulating files in this manner can be time consuming, it is suggested that the licensee coordinate data loading procedures with the dosimetry processor to ensure that data files received from the processor can be loaded into REMIT. Procedures should be developed to handle data that cannot be loaded into REMIT. For example, the processor could issue "exception" reports to the licensee for questionable data so that the licensee could resolve problems before attempting to load data into REMIT.

Example:

The Test Set includes an individual named "Wally Worksheet." This individual has a Form 5 dose record for monitoring year 1993 in REMIT. Dosimetry processor data for this individual for 1993 exists in an ASCII text included with the Test Set called WS_IMPRT.TXT. This file contains quarterly TLD and finger badge readings for this individual. REMIT allows the user to import these incremental dose records directly into REMIT, updating the Form 5 dose record. Try the following exercise.

1. Review the dose record for 1993 for Wally Worksheet. Note that this dose record does not have <Worksheet> records (no asterisk next to the <Worksheet> push button).
2. Complete all current REMIT operations and return to the main menu.
3. Select *File* from the main menu, and then *View/Edit Text*.
4. Highlight the file WS_IMPRT.TXT and select <<Open>> using the file selection dialog, or double click the left mouse button.
5. View the contents of this file. Note the format and that this file contains quarterly dose records and extremity monitoring results. Most dosimetry processors can produce electronic files that are compatible with REMIT.
6. Close the file by selecting *File, Close*, or clicking on the close box in the upper left corner of the edit window.
7. Select *File* from the main menu, and then *Import, Dosimetry Processor Data*.
8. Select the ASCII (Text) file type.
9. Enter the WS_IMPRT.TXT as the import file name.
10. REMIT will proceed to import the dose records in this file and assign them to Wally Worksheet's dose record for 1993. The dose totals for

the year will be updated automatically. Since this record set contains overlapping dates for extremity monitoring, REMIT will alert the user that dates overlap, but will accept the records. A message will be sent to WRK_ERRS.TXT identifying any problem records.

11. Select *File* from the main menu, and then *View/Edit Text* to view the contents of the WRK_ERRS.TXT file. The records with overlapping dates are identified. Close this file.
12. Select *Data* and locate Wally Worksheet. Select the <dOses*> push button to view the dose record. Note that <Worksheet*> now appears with the asterisk to denote that worksheet records exist. Also note that the dose totals have been updated to reflect the imported dosimetry data.
13. Select <Worksheet*> to view the incremental dose records now loaded into REMIT. These records could have been entered directly into <Worksheet>, but REMIT provides the added capability of importing electronic records as demonstrated here.

5.2.2 Import Dosimetry Processor Data

Purpose:

This section describes the functionality of the *Import Dosimetry Processor Data* feature. See Section 5.2.1 for information on the intended use and assumptions of this feature.

Import - Dosimetry Processor Data uploads dosimetry processor results into incremental (weekly, monthly, quarterly, etc.) dose records from dosimetry processors in .DBF or ASCII file formats. The dose record for the monitoring year for the individual will be updated automatically from these data.

Instructions:

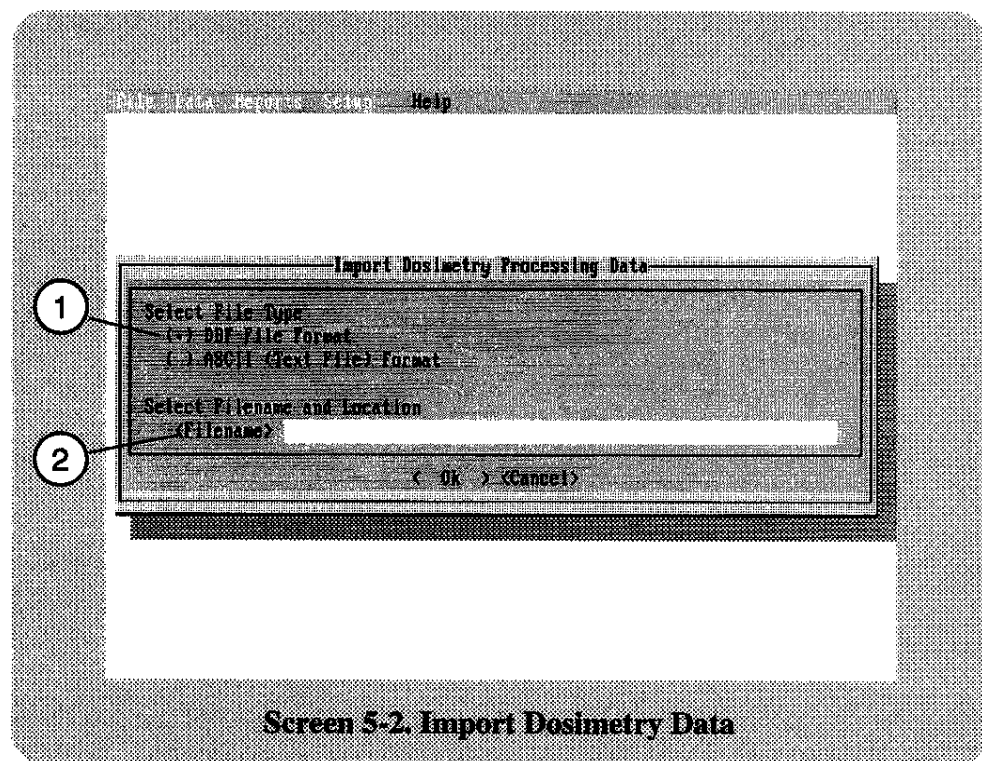
1. *Import* is only available when other REMIT operations have been completed and the employee and exposure data bases are not in use. Complete all operations and return to the main menu.
2. Select *File* from the main menu.
3. Select *Import* from the *File* menu.
4. Select *Dosimetry Processor Data* from the *Import* menu.
5. Select file type, ASCII (.TXT) or dBASE III-compatible data base (.DBF).
6. Enter the file names for the dosimetry processor data file to be imported. The user may type in the file names, or use the file selection dialog.

To access the file selection dialog, highlight the <Filename> push button and press return or click the left mouse button on the push button.

The user may specify the drive and directory. The file list will contain all files with extension .TXT or .DBF depending on the file type selected. Users may list all file extensions by clicking on the [] *All Files* option. Only ASCII and dBASE-compatible file types are supported.

Highlight the file to be imported and press Enter to open the highlighted file. The user may also highlight the file to be imported and select <<Open>>, or double click on the file to be imported. This will terminate the dialog and return the selected file name to the import screen.

7. Select <Ok> to import data from the selected file(s).
8. REMIT will tell the user if the import was successful. Errors or inconsistencies found in the import file will be output to WRK_ERRS.TXT files. Review this file after import, **even if the import was successful**, for information concerning the load process. You may find the text editor provided with REMIT (*File - Edit/View Text*) to be useful for viewing these files.
9. If errors were found that are considered required for a successful import, the file will not be loaded. The user must correct all errors found in the import data file before the file will be imported.



Screen Elements:

1. File type: ASCII (.TXT) or dBASE-compatible data base (.DBF)
2. File name: Enter the DOS file name (with extension) or use the file selection dialog.

Options:**Import Options:**

<Ok> To proceed with the file import
 <Quit> Cancel file import and return

File Selection Dialog Options:

[X] *All Files* File selection dialog will display all files regardless of file name extension
 <<Open>> Open highlighted file to import
 <Cancel> Cancel file selection dialog and return to import file type selection window

User Notes:

Records are verified according to "Data Verification" rules described below. If all records pass the Data Verification requirements, the data is appended to existing REMIT files. If any records fail the required conditions, the data file will not be loaded, and error messages will be sent to the WRK_ERRS.TXT error file.

If the required conditions were not met, the user will need to perform corrective measures before the file can be loaded. For ASCII files, the user may find it convenient to use the file editor included with REMIT (*File - Edit/View Text*).

Warning:

REMIT will attempt to calculate dose totals for the parent EXPOSURE record based on all worksheet records. The calculation assumes that dose entries are not duplicates. This may be a problem when 'Estimated' dose records have been entered and are to be updated by dosimetry processor data at a later date. Since the monitoring dates may overlap, REMIT may not calculate dose totals correctly. Records with overlapping dates will be identified in the WRK_ERRS.TXT file.

Data Verification:

Field values must be within the ranges specified in Tables 5-1 and 5-2. Additional conditions are as follows:

1. Each dosimetry processor record must have an EXPOSURE record for the monitoring year that encompasses the monitoring period in the import file.
2. Incoming DOSES_WS record will **automatically replace** existing DOSES_WS record for the exact same monitoring period and EXP_TYPE.

3. The SDE-ME may be given without dose entries for the individual extremities. If individual extremity doses are not given, the ASCII import file columns for these fields must be padded with spaces. Data base files should contain null fields.

If individual extremity doses are given, The SDE-ME for the worksheet record must equal the maximally exposed extremity dose. A matrix of acceptable entries for SDE_WB, SDE_ME, and individual extremities is given in Table 5-3.

File Structures:

The file types supported by REMIT are ASCII and dBASE III-compatible files. File structures for ASCII (.TXT) and dBASE III-compatible (.DBF) are shown in Tables 5-1 and 5-2, respectively. The structure of an incoming file must match one of these structures.

Additional Fields:

REMIT data base file structures may be modified to include additional fields for use by the licensee as described in Appendix E. These additional or "extended" fields may be loaded using *Import*. However, it is the responsibility of the user to ensure that the incoming file structures and existing data base structures include the same extended fields. REMIT will not load data in incompatible file formats. Memo fields are often not compatible among data base management software packages and are not supported by REMIT. REMIT *Export* does not export "extended" fields.

For ASCII files, the fields are position-sensitive. If the user does not wish to load data for a field ("skip" a column), the column must be padded with spaces.

For data base (.DBF) files with "extended" fields, the user must modify the REMIT DOSES_WS.DBF file to include the same extended fields as the import file.

See Also:

View/Edit Text, Import Form 4 Data, Worksheet, Appendix E

ASCII Import File Format:

Each record contains only ASCII characters and is terminated with a Carriage Return (CR) and a Line Feed (LF). All empty space in a field is padded with spaces, including null fields. Text strings are expected to be left-justified in a field.

Table 5-1. Dosimetry Processor ASCII Import File Structure

Field	Width	Start Col.	End Col.	Description
EMP_ID	12	1	12	Employee ID number. ID numbers should contain no punctuation (hyphens)
ID_TYPE	3	13	15	SSN, PPN, CSI, WPN, IND, or OTH
RPT_TYPE	1	16	16	Report type, 'R' = Record, or 'E' = Estimate
EXP_TYPE	1	17	17	Exposure type, 'R' = Routine, or 'P' = PSE (Planned Special Exposure)
BEG_DATE	8	18	25	Date monitoring began YYYYMMDD
END_DATE	8	26	33	Date monitoring ended YYYYMMDD
DDE	8	34	41	Deep Dose Equivalent in rems. ND, NR, or numeric > 0.000
LDE	8	42	49	Lens Dose Equivalent to the lens of the eye in rems. ND, NR, or numeric > 0.000
SDE_WB	8	50	57	Shallow Dose Equivalent, Whole Body in rems. ND, NR, or numeric > 0.000
SDE_ME	8	58	65	Shallow Dose Equivalent, Maximally exposed Extremity in rems. ND, NR, or numeric > 0.000
SDE_UR	8	66	73	Shallow Dose Equivalent, Upper Right extremity in rems. ND, NR, numeric > 0.000, or null (8 spaces)
SDE_UL	8	74	81	Shallow Dose Equivalent, Upper Left extremity in rems. ND, NR, numeric > 0.000, or null (8 spaces)
SDE_LR	8	82	89	Shallow Dose Equivalent, Lower Right extremity in rems. ND, NR, numeric > 0.000, or null (8 spaces)
SDE_LL	8	90	97	Shallow Dose Equivalent, Lower Left extremity in rems. ND, NR, numeric > 0.000, or null (8 spaces)

**Table 5-1. Dosimetry Processor ASCII Import File Structure
(Continued)**

Field	Width	Start Col.	End Col.	Description
OPTIONAL¹				
EXT_FLD_1 (User defined)	-	98	-	Extended field 1. These fields must match the "extended" fields contained in EMPLOYEE.DBF if they are to be imported
EXT_FLD_2 (User defined)	-	-	-	Extended field 2
EXT_FLD_#... (User defined)	-	-	-	Other extended fields

¹ Additional fields may be imported as long as each field in DOSES_WS.DBF has a corresponding field in the ASCII file to be imported. See Appendix E for information on modified data base structures.

.DBF Import File Structure:

The .DBF file structure must be compatible with dBASE III.

Table 5-2. Dosimetry Processor DBF Import File Structure

Field	Format	Description
EMP_ID	CHAR(12)	Employee ID number. ID numbers should contain no punctuation (hyphens)
ID_TYPE	CHAR(3)	SSN, PPN, CSI, WPN, IND, or OTH
RPT_TYPE	CHAR(1)	Report type, 'R' = Record, or 'E' = Estimate
EXP_TYPE	CHAR(1)	Exposure type, 'R' = Routine, or 'P' = PSE (Planned Special Exposure)
BEG_DATE	CHAR(8)	Date monitoring began, including century
END_DATE	CHAR(8)	Date monitoring ended, including century
DDE	CHAR(8)	Deep Dose Equivalent in rems. ND, NR, or numeric > 0.000
LDE	CHAR(8)	Lens Dose Equivalent to the lens of the eye in rems. ND, NR, or numeric > 0.000
SDE_WB	CHAR(8)	Shallow Dose Equivalent, Whole Body in rems. ND, NR, or numeric > 0.000
SDE_ME	CHAR(8)	Shallow Dose Equivalent, Maximally exposed Extremity in rems. ND, NR, or numeric > 0.000
SDE_UR	CHAR(8)	Shallow Dose Equivalent, Upper Right extremity in rems. ND, NR, numeric > 0.000, or null
SDE_UL	CHAR(8)	Shallow Dose Equivalent, Upper Left extremity in rems. ND, NR, numeric > 0.000, or null
SDE_LR	CHAR(8)	Shallow Dose Equivalent, Lower Right extremity in rems. ND, NR, numeric > 0.000, or null
SDE_LL	CHAR(8)	Shallow Dose Equivalent, Lower Left extremity in rems. ND, NR, numeric > 0.000, or null
OPTIONAL ²		
EXT_FLD_1 (User defined)	User defined	Extended field 1. These fields must match the "extended" fields contained in DOSE_WS.DBF if they are to be imported
EXT_FLD_2 (User defined)	User defined	Extended field 2
EXT_FLD_#... (User defined)	User defined	Other extended fields

² Additional fields may be imported as long as each field in DOSES_WS.DBF has a corresponding field in the database file to be imported. See Appendix E for information on modified data base structures.

**Table 5-3. Matrix of Valid Shallow Dose Values
for Each Worksheet Record**

SDE_WB	SDE_ME	SDE_UR	SDE_UL	SDE_LR	SDE_LL	REMIT Interpretation
NR or ND	NR	NR, Null	NR, Null	NR, Null	NR, Null	If SDE_ME is NR, extremities must be NR or Null.
NR or ND	ND	ND, Null	ND, Null	ND, Null	ND, Null	If SDE_ME is ND, extremities must be ND or Null.
Num>0	NR	NR, Null	NR, Null	NR, Null	NR, Null	No extremity monitoring required. 'NR' will be returned as the SDE_ME for this period. The SDE_WB <u>will</u> be added to the total for each extremity.
Num>0	ND	ND, Null	ND, Null	ND, Null	ND, Null	Extremity monitoring was provided but it was not detectable. 'ND' will be returned as the SDE_ME for this period. The SDE_WB <u>will not</u> be added to the total for each extremity.
Num>0, NR, or ND	Num>0	Null	Null	Null	Null	The results of individual extremities are not provided, but the SDE_ME was recorded. The value of SDE_ME for this period <u>will</u> be added to the total for each extremity.
Num>0, NR, or ND	Num = the value of the highest extremity dose	At least one maximum extremity: Num>0	ND, NR, Null, or Num>0	ND, NR, Null, or Num>0	ND, NR, Null, or Num>0	Extremity monitoring was provided for <u>at least</u> one extremity. Max. extremity dose will be returned as SDE_ME for this period.

Num = Numeric, greater than zero

NR = Not Required

ND = Not Detectable (also used for zero dose)

5.2.3 Information on Importing Form 4 Data

Purpose:

This section explains the intended use and assumptions of the *Import Form 4 Data* feature. See Section 5.2.4 for a functional description of this feature.

The *Import Form 4 Data* feature allows the licensee to perform two functions: 1) the initial loading of the REMIT data bases with past dosimetry and employee information, and 2) importing Form 4 data for new employees and temporary workers. Employee and exposure records are loaded into the EMPLOYEE.DBF and EXPOSURE.DBF data base files. Employee and exposure data files may be loaded at one time or separately. If all records of previous exposures for an individual have been loaded, completed Form 4s can be produced by REMIT.

User Notes:

Initial Load:

Import Form 4 Data allows the licensee to load all existing employee and exposure records for this licensee. The initial loading into the REMIT data bases requires the licensee to format existing employee information and to convert old dosimetry information to conform with the new Part 20 exposure definitions and REMIT file format as described below.

Site-to-Site:

As required by 10 CFR 20.2104, new employees or temporary workers must bring with them documentation of current year exposures received at other facilities. In addition, 10 CFR 20.2104(a)(2) requires that licensees attempt to obtain the records of lifetime cumulative exposure information. Form 4 records could be electronically transferred from one facility to another using the *Import* and *Export* features of REMIT.

The user/licensee is responsible for ensuring that imported data are in the correct format as described in Section 5.2.4, Import File Specifications. The licensee has the additional burden of ensuring that the exposure records for the individuals involved are accurate and complete.

Employee Records:

Licensees may import existing employee records into the REMIT system if employee records already exist in electronic format. See Section 5.2.4 for detailed information on importing employee information.

Prior Exposure Records:

Licensees may import records of prior exposure into the REMIT system if exposure records already exist in electronic format. REMIT does not require exposure records prior to implementation of the Revised Part 20, but if they were loaded, completed Form 4s could be generated using REMIT.

Exposure records prior to the implementation of the Revised Part 20 must be converted in order to be incorporated into REMIT since exposure definitions have changed over the years. According to Regulatory Guide 8.7, Rev. 1 Section 1.3, "for the purposes of assessing prior dose, whole body dose in rem as reported on the old (1981 or earlier) NRC Forms 4 and 5 can be considered equivalent to total effective dose equivalent (TEDE)." This means that prior whole body doses may be loaded as the TEDE. The Deep Dose Equivalent (DDE) and TEDE should include neutron dose along with X-ray or gamma dose. The definitions of Shallow Dose Equivalent Whole Body and Maximally exposed Extremity (SDE-WB and SDE-ME) remain essentially unchanged and these records are therefore directly readable into REMIT.

The dose to the lens of the eye (LDE), Committed Dose Equivalent (CDE), Committed Effective Dose Equivalent (CEDE), and Total Organ Dose Equivalent (TODE) should be recorded as "NR" unless prior monitoring records exist that meet the Revised Part 20 definitions.

Records of internal exposure prior to the implementation of the Revised Part 20 are not consistent with the new regulations and should not be incorporated into the REMIT system.

Note: All records of prior external and internal monitoring should be retained according to the licensee's radiation exposure monitoring information records retention requirements.

Table 5-4 Dose Correlations Between Old and Revised Part 20

Old Part 20 Definitions	New Part 20 Definitions
Whole body dose (X-ray, Gamma and Neutron)	DDE - Deep Dose Equivalent, and TEDE - Total Effective Dose Equivalent.
Shallow dose to the whole body (Skin)	SDE-WB - Shallow Dose Equivalent to the Whole Body.
Shallow dose to the extremities (Extremity)	SDE-ME - Shallow Dose Equivalent to the Maximally exposed Extremity.
Lens of the eyes	LDE - Dose Equivalent to the Lens of the eye.
Internal exposures	Intakes in uCi, CDE - Committed Dose Equivalent, CEDE - Committed Effective Dose Equivalent, TODE - Total Organ Dose Equivalent.

Example:

The following exercise demonstrates how to import records for "New Transient" and "Young Personnel." These individuals do not exist in the original Test Set records. These records are kept in two ASCII files that contain employee and exposure records. New Transient has past records to be imported, while Young Personnel has never been monitored prior to being hired at this facility. As a demonstration, complete the following exercise.

1. Complete all current REMIT operations and return to the main menu.
2. Select *File* from the main menu, and then *View/Edit Text*.
3. Highlight the file EMP_IMPT.TXT and select <<Open>> using the file selection dialog.
4. View the contents of this file. Note the format and that this file contains employee information such as name and birth date.
5. Close the file by selecting *File, Close*, or clicking on the close box in the upper left corner of the edit window.

6. Repeat steps 2 - 5 for the file EXP_IMPT.TXT. This file contains exposure records for New Transient. See Section 5.2.4 for further information on importing Form 4 data and REMIT compatible file formats.
7. Select *File* from the main menu, and then *Import, Form 4 Data*.
8. Enter the file name EMP_IMPT.TXT as the employee import file, EXP_IMPT.TXT as the exposure import file name.
9. Select <Ok> to proceed to import these records. REMIT will add the employee information contained in EMP_IMPT.TXT into the EMPLOYEE.DBF data base file and the exposure data in EXP_IMPT.TXT in the EXPOSURE.DBF file. Any errors or inconsistencies found with the employee or exposure records are reported to EMP_ERRS.TXT and EXP_ERRS.TXT, respectively.
10. Select *Data* and locate New Transient. Select the <dOses*> push button to view the dose record. Select <Return> to return to the employee data and locate Young Personnel. Note that the <dOses> push button does not have an asterisk, meaning that no dose records exist for this individual.

This exercise demonstrates how the user can import Form 4 and employee data into REMIT. See Section 5.2.2 for more information on importing Form 4 data.

Prior Exposures in Excess of Limits:

Certain records of prior exposure may have exceeded the applicable dose limits for that time period. The dose received in excess of the limits needs to be subtracted from the lifetime PSE dose total for this individual under the new Part 20. REMIT can accomplish this only if the information is entered accordingly:

1. The dose in excess of the applicable limit for the exposure period must be determined. The monitored individual and monitoring licensee may need to provide additional information about the exposure in order to make this determination.
2. Enter the maximum allowable dose for the monitoring period as a "Routine" exposure into REMIT.

3. Enter the dose in excess of the applicable limit (total dose minus dose limit) as a PSE for the monitoring period.
4. REMIT will treat this record as a PSE under the new regulations and subtract this dose from the lifetime PSE dose total.

Example:

There is an individual in the test set of records named "Many Olddoses" that includes an exposure in excess of the applicable limits in 1961. At that time the total whole body limit was 12 rem per year for individuals with a completed Form 4 on file. This individual received 15.5 rem in a calendar year.

Under the Revised Part 20, the dose in excess of the applicable limit must be applied to the individual's lifetime PSE dose total. It is the responsibility of the licensee and the individual involved to determine the portion of the dose in excess of the limits at that time. In this case, 3.5 rem was accrued in excess of the applicable limit (total - limit = dose in excess).

In order for the 3.5 rem to be applied correctly to the lifetime PSE dose total, REMIT requires that this exposure record be entered in the following manner:

1. Enter the exposure up to the limit as a 'Routine' exposure record in REMIT. In this case, 12 rem TEDE was entered as a 'Routine' record for 1961.
2. Enter the dose in excess of limits as a 'PSE' record. 3.5 rem was entered as a 'PSE' dose for 1961 in addition to the 12 rem 'Routine' record. Even though PSEs were not part of the regulations at the time, this exposure applies to the individual's lifetime PSE total.
3. Selecting <Limits> for this individual shows that 3.5 rem were applied to the lifetime PSE dose total.

Transfer of Exposure Records from Site-to-Site:

As required by 10 CFR 20.2104, new employees or temporary workers must bring with them documentation of current year exposures received at other facilities. In addition, 10 CFR 20.2104(a)(2) requires that licensees attempt to obtain the records of lifetime cumulative exposure information.

One method to obtain this information would be to transfer records of previous exposures electronically. As described above, *Import Form 4*

Data allows the user to import records of prior exposure for an individual into REMIT if the data files are formatted correctly. REMIT supports site-to-site transferral of information using the *Import* and *Export* features of REMIT. Files may be generated at one site using REMIT *Export*, and *Imported* at the next site. In this manner, REMIT eliminates file structure compatibility problems.

Warning:

With electronic transfer from one site to another, the licensees still have the responsibilities of verification, and privacy. Form 4 records must be verified and signed by the monitored individual. Records for an individual must be handled in accordance with 5 U.S.C. 552a(e)(3), enacted into law by Section 3 of the Privacy Act of 1974 (Public Law 93-579). In addition, facilities may countersign a Form 4 denoting that this licensee or employer possesses documentation of all the information on the NRC Form 4. These responsibilities are beyond the intended scope of REMIT and remain the responsibilities of the licensees and monitored individuals accordingly.

Related Records:

REMIT does not support the loading of related records such as <Comment>, <Intake>, <Limits>, or <Worksheet> records through *Import Form 4 Data*. However, REMIT does support the loading of <Worksheet> records for your facility through *Import Dosimetry Processor Data*. If needed, exposure record comments could be entered after exposure records are loaded. Intakes received at other facilities generally do not need to be transferred from site to site. See Section 6.4, Intakes, and Section 6.5.2, TODE Limits. Intake records prior to the implementation of the Revised Part 20 are not consistent with the new regulations and should not be incorporated into the REMIT system. Limits are licensee-specific and are therefore not supported by *Import/Export*.

Report Type:

If any monitoring periods are loaded with the RPT_TYPE designated as "N" meaning that "No Record" exists for the time period, or "E" for "Estimate", the individual cannot participate in PSEs and REMIT assigns a PSE dose limit of zero (0) for the individual.

Organ Code:

This field contains the organ code for the maximally exposed organ for records where the CDE has been calculated. This field should be left blank (padded with spaces for ASCII files) if no internal exposure was recorded.

Defined Monitoring Year:

The field DEF_MY identifies the monitoring year to which the exposure record belongs. The Revised Part 20 allows the licensee to define a monitoring year for reporting exposure information. The monitoring year can be defined by a licensee from any day in January to any day in January of the following year. This means that certain exposure records reported from other facilities for the month of January may be included in either of the consecutive monitoring years. This is not a concern for the exposure records of the primary licensee, since the monitoring years must be defined in REMIT under *Licensee Information*. The problem is which monitoring year to assign to records from another licensee.

REMIT will attempt to assign a monitoring year for exposure records from another licensee that does not have a defined monitoring year in the DEF_MY field of the import file. The following example illustrates the process whereby REMIT assigns a monitoring year. If you do not wish REMIT to automatically assign a monitoring year, you may assign DEF_MY for the appropriate records in the import file.

Example:

Table 5-5 provides examples for the various cases for monitoring periods and the appropriate value assigned by REMIT if DEF_MY is zero (not defined). It is important to note that DEF_MY is not assigned (remains zero) for exposure periods prior to the primary licensee's implementation of the Revised Part 20. In this example, the primary licensee's implementation date is 01/01/94.

Table 5-5. REMIT-Assigned Values for Defined Monitoring Year (DEF_MY)

Begin Monitoring	End of Monitoring	REMIT-Assigned Monitoring Year	Explanation
01/01/93	12/31/93	0	Prior to implementation.
05/01/93	04/01/94	0	Prior to implementation.
01/01/94	12/31/94	1994	
01/04/94	02/03/94	1994	
01/05/94	01/08/94	1994	Could be assigned to 1993 by the user.
12/10/94	01/10/95	1994	
05/01/94	04/01/95	Invalid record.	Monitoring periods must be from January to January after implementation.

This example demonstrates how REMIT would assign a monitoring year for imported records where the monitoring year was not given. Note that the only case where it is unclear as to which monitoring year is to be assigned is where the monitoring period begins and ends in January. In this case, the user may designate the monitoring year to override REMIT's automatic assignment.

Rejected Data

REMIT will not load the file if any records are rejected based on the rules set forth under Data Verification. REMIT will report specific problems with the data to the files EMP_ERRS.TXT and EXP_ERRS.TXT. The user will be alerted that the file cannot be loaded. Users will need to perform corrective measures before the data will be accepted.

Corrective Measures

An error message for each rejected record will be sent to the files EMP_ERRS.TXT and EXP_ERRS.TXT for employee and exposure records respectively. The user should review these files, using the *View/Edit Text* selection under the *File* main menu option, to gain information on why a file was not loaded.

In order to load data that has been rejected by REMIT, the user must modify the import file. For data base files, this may be done using any dBASE compatible data base management package. For ASCII files, an ASCII text editor should be used. An ASCII text editor is provided with REMIT from the *View/Edit Text* selection under the *File* main menu option. Eight-bit word processing packages, such as WordPerfect, should not be used to edit ASCII files unless the file is then saved in ASCII or "DOS text" format.

Import Form 4 Data, Import Dosimetry Processor Data, Export Form 4 Data, Edit/View Text, Monitoring Years

5.2.4 Import Form 4 Data

Purpose:

This section specifies the functionality of *Import Form 4 Data*. See Section 5.2.3 for information on the intended use and assumptions of *Import Form 4 Data*.

Instructions:

1. *Import* is only available when other REMIT operations have been completed and the employee and exposure data bases are not in use. Complete all operations and return to the main menu.
2. Select *File* from the main menu.
3. Select *Import* from the *File* menu.
4. Select *Form 4 Data* from the *Import* menu.
5. Select file type, ASCII (.TXT) or dBASE III-compatible data base (.DBF).
6. Enter the file names for the employee and exposure data files to be imported. Employee and exposure data may be imported independently of one another. If only one file is desired, the other file name should be left blank. The user may type in the file names, or use the file selection dialog.

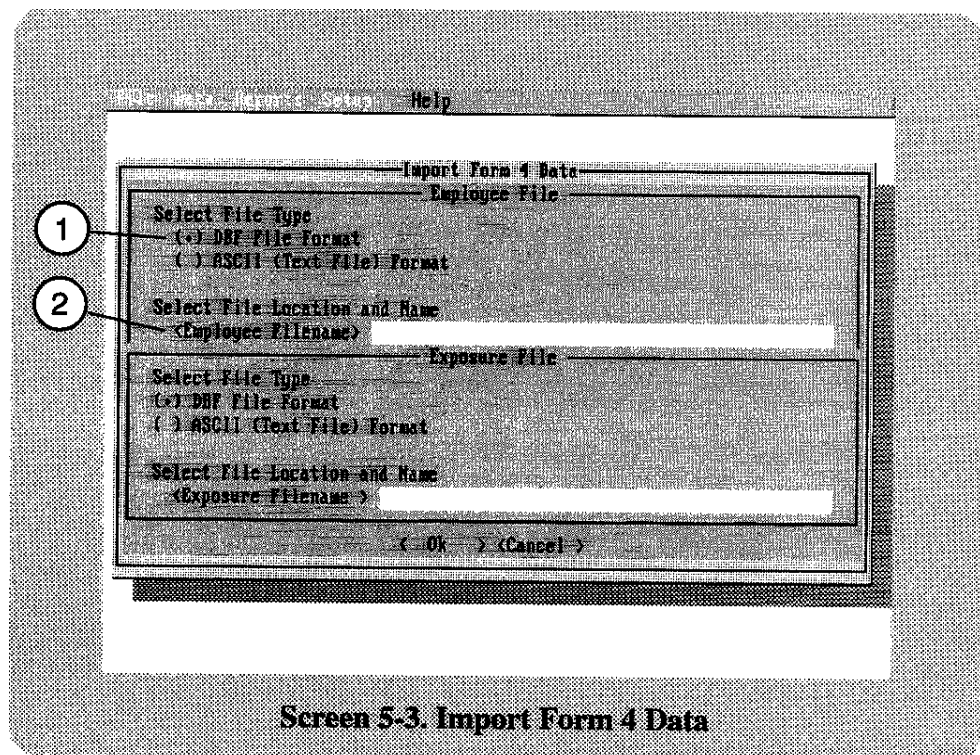
To access the file selection dialog, highlight the <Employee Filename> or <Exposure Filename> push button and press return or click the left mouse button on the appropriate push button.

The user may specify the drive and directory. The file list will contain all files with extension .TXT or .DBF depending on the file type selected. Users may list all file extensions by clicking on the [] *All Files* option. Only ASCII and dBASE-compatible file types are supported.

Highlight the file to be imported and press Enter to open the highlighted file. The user may also highlight the file to be imported and select <<Open>>, or double click on the file to be imported. This will terminate the dialog and return the selected file name to the import screen.

7. Select <Ok> to import data from the selected file(s).

8. REMIT will tell the user if the import was successful. Errors or inconsistencies found in the import files will be output to EMP_ERRS.TXT and EXP_ERRS.TXT files. Review these files after import, even if the import was successful, for information concerning the load process. You may find the text editor provided with REMIT (*File - Edit/View Text*) to be useful for viewing these files.
9. If errors were found that are considered required for a successful import, neither employee nor exposure files will be loaded. The user must correct all errors found in the import data files before the files will be imported.



Screen 5-3. Import Form 4 Data

Screen Elements:

1. File type: ASCII (.TXT) or dBASE-compatible data base (.DBF)
2. File name: Enter the DOS file name (with extension) or use the file selection dialog.

Options:**Import Options:**

<Ok> Proceed with the file import
 <Cancel> Cancel import and return to main menu

File Selection Dialog Options:

Drive: Select the disk drive where the import file resides
 Directory: Select the directory where the import file resides
 [X] *All Files* File selection dialog will display all files regardless of file name extension
 <<Open>> Open the highlighted file to be imported
 <Cancel> Cancel file selection dialog and return to import screen

User Notes:

Records are verified according to "Data Verification" rules described below. Errors are listed to EMP_ERRS.TXT and EXP_ERRS.TXT for the employee and exposure files respectively. If all records pass the Data Verification requirements, the data is appended to existing REMIT files. If any records fail the required conditions, neither data file will be loaded, and error messages will be sent to the appropriate error file.

If the required conditions were not met, the user will need to perform corrective measures before the files can be loaded. For ASCII files, the user may find it convenient to use the file editor included with REMIT (*File - Edit/View Text*).

Data Verification:

Field values must be within the ranges specified in Tables 5-6 through 5-9. Additional conditions are as follows:

1. A record for the EMP_ID and ID_TYPE must exist in the incoming employee file or in EMPLOYEE.DBF for each incoming exposure record.
2. If an incoming employee record already exists in REMIT, the existing employee record will be retained and the incoming employee record will not be loaded. A notice of any conflicting employee information will be sent to the EMP_ERRS.TXT error file.
3. If an incoming exposure record matches an existing exposure record exactly, then the incoming duplicate will be ignored. If an incoming exposure record has the same license number, exposure type, and monitoring period, but different doses, no employee or exposure

records will be loaded, and an appropriate message will be sent to the error files. This condition would imply that incoming exposure records have been modified and no longer match existing exposure records for this period. REMIT will not make a determination of which record is correct; this will be the responsibility of the licensee and the monitored individual.

File Structures:

The file types supported by REMIT are ASCII and dBASE III-compatible files. File structures for ASCII (.TXT) and dBASE III-compatible (.DBF) are shown in Tables 5-6 through 5-9. The structure of an incoming file must match one of these structures. ASCII file fields are position-sensitive as shown in Tables 5-6 and 5-7.

Additional Fields:

REMIT data base file structures may be modified to include additional fields for use by the licensee as described in Appendix E. These additional or "extended" fields may be loaded using *Import*. However, it is the responsibility of the user to ensure that the incoming file structures and existing data base structures include the same extended fields. REMIT will not load data in incompatible file formats. Memo fields are often not compatible among data base management software packages and are not supported by REMIT. REMIT *Export* does not export "extended" fields.

For ASCII files, the fields are position-sensitive. If the user does not wish to load data for a field ("skip" a column), the column must be padded with spaces. For example, if "extended" fields are to be loaded into EMPLOYEE, the fields RPT_FLG, DOSES_FLG, and LIMITS_FLG should be padded with one space each. These fields will be reset when data is loaded in any event.

For data base (.DBF) files with "extended" fields, the user must modify the REMIT EMPLOYEE.DBF and/or EXPOSURE.DBF files to include the same extended fields.

See Also:

Import Form 4 Data, Export Form 4 Data, Appendix C Data base Structures, Appendix D Data Dictionary, Appendix E Extending REMIT Data bases

ASCII Import File Formats:

Each record contains only ASCII characters and is terminated with a CR and a LF. All empty space in a field is padded with spaces, including null fields. Text strings are expected to be left justified in a field.

Table 5-6. Employee ASCII Import File Structure

Field	Width	Start Col.	End Col.	Description
EMP_ID	12	1	12	Employee ID number. ID numbers should contain no punctuation (hyphens)
ID_TYPE	3	13	15	SSN, PPN, CSI, WPN, IND, or OTH
FIRST_NAME	25	16	40	Full first name of monitored individual
MIDDLE	1	41	41	Middle initial
LAST_NAME	25	42	66	Last name of monitored individual
SEX	1	67	67	Sex of monitored individual (M,F)
DOB	8	68	75	Date of birth of monitored individual, format: YYYYMMDD
OPTIONAL ³				
(Flags)	3	75	77	These columns are reserved for REMIT. The ASCII import file must contain these columns (padded with spaces) if "extended" fields are to be imported
EXT_FLD_1	-	77	-	Extended field 1. These fields must match the "extended" fields contained in EMPLOYEE.DBF if they are to be imported
EXT_FLD_2	-	-	-	Extended field 2
EXT_FLD_3	-	-	-	Extended field 3

³ Additional fields may be imported as long as each field in EMPLOYEE.DBF has a corresponding field in the ASCII file to be imported. See Appendix E for information on modified data base structures.

Table 5-7. ASCII Exposure Import File Structure

Field	Width	Start Col.	End Col.	Description
EMP_ID	12	1	12	Employee ID number. ID numbers should contain no punctuation (hyphens)
ID_TYPE	3	13	15	SSN, PPN, CSI, WPN, IND, or OTH
LICENSE_NO	13	16	28	NRC License number of the facility where the exposure occurred
RPT_TYPE	1	29	29	Report type, 'R' = Record, 'E' = Estimate, or 'N' = No Record
EXP_TYPE	1	30	30	Exposure type, 'R' = Routine, or 'P' = PSE (Planned Special Exposure)
MON_BEG	8	31	38	Date monitoring period began, format: YYYYMMDD
MON_END	8	39	46	Date monitoring period ended, format: YYYYMMDD
DDE	8	47	54	Deep Dose Equivalent in rem. ND, NR, or numeric > 0.000
LDE	8	55	62	Eye Dose Equivalent to the lens of the eye in rem. ND, NR, or numeric > 0.000
SDE_WB	8	63	70	Shallow Dose Equivalent, Whole Body in rem. ND, NR, or numeric > 0.000
SDE_ME	8	71	78	Shallow Dose Equivalent, Maximally exposed Extremity in rem. ND, NR, or numeric > 0.000
CDE	8	79	86	Committed Dose Equivalent, Maximally exposed Organ in rem. ND, NR, NC, or numeric > 0.000
CEDE	8	87	94	Committed Effective Dose Equivalent in rem. ND, NR, or numeric > 0.000
MO	2	95	96	Organ code for Maximally exposed Organ. Field should be padded with spaces if no CDE recorded, or the maximally exposed organ is not recorded.
TODE	8	97	104	Total Organ Dose Equivalent, sum of CDE and DDE, in rem. ND, NR, or numeric > 0.000
TEDE	8	105	112	Total Effective Dose Equivalent, sum of CEDE and DDE, in rem. ND, NR, or numeric > 0.000
DEF_MY	4	113	116	Monitoring year for this record defined by monitoring licensee, format: YYYY, or zero if unknown

Table 5-7. ASCII Exposure Import File Structure (Continued)

Field	Width	Start Col.	End Col.	Description
OPTIONAL⁴				
(Flags)	9	117	125	These columns are reserved for REMIT. The ASCII import file must contain these columns (padded with spaces) if "extended" fields are to be imported
EXT_FLD_1 (User-defined)	-	126	-	Extended field 1. These fields must match the "extended" fields contained in EXPOSURE.DBF if they are to be imported
EXT_FLD_2 (User-defined)	-	-	-	Extended field 2
EXT_FLD_#... (User-defined)	-	-	-	Other extended fields

⁴ Additional fields may be imported as long as each field in EXPOSURE.DBF has a corresponding field in the ASCII file to be imported. See Appendix E for information on modified data base structures.

DBF Import File Formats:**Table 5-8. DBF EMPLOYEE Import File Structure**

Field	Format	Description
EMP_ID	CHAR(12)	Employee ID number. ID numbers should contain no punctuation (hyphens)
ID_TYPE	CHAR(3)	SSN, PPN, CSI, WPN, IND, or OTH
FIRST_NAME	CHAR(25)	Full first name of monitored individual
MIDDLE	CHAR(1)	Middle initial
LAST_NAME	CHAR(25)	Last name of monitored individual
SEX	CHAR(1)	Sex of monitored individual (M,F)
DOB	CHAR(8)	Date of birth of monitored individual, format: YYYYMMDD
OPTIONAL⁵		
EXT_FLD_1 (User-defined)	User-defined	Extended field 1. These fields must match the "extended" fields contained in EMPLOYEE.DBF if they are to be imported
EXT_FLD_2 (User-defined)	User-defined	Extended field 2
EXT_FLD_3 (User-defined)	User-defined	Extended field 3

⁵ Additional fields may be imported as long as each field in EMPLOYEE.DBF has a corresponding field in the DBF file to be imported. See Appendix E for information on modified data base structures.

Table 5-9. DBF EXPOSURE Import File Structure

Field	Format	Description
EMP_ID	CHAR(12)	Employee ID number. ID numbers should contain no punctuation (hyphens)
ID_TYPE	CHAR(3)	SSN, PPN, CSI, WPN, IND, or OTH
LICENSE_NO	CHAR(13)	NRC License number of the facility where the exposure occurred
RPT_TYPE	CHAR(1)	Report type, 'R' = Record, 'E' = Estimate, or 'N' = No Record
EXP_TYPE	CHAR(1)	Exposure type, 'R' = Routine, or 'P' = PSE (Planned Special Exposure)
MON_BEG	CHAR(8)	Date monitoring period began, format: YYYYMMDD
MON_END	CHAR(8)	Date monitoring period ended, format: YYYYMMDD
DDE	CHAR(8)	Deep Dose Equivalent in rem. ND, NR, or numeric > 0.000
LDE	CHAR(8)	Lens Dose Equivalent to the lens of the eye in rem. ND, NR, or numeric > 0.000
SDE_WB	CHAR(8)	Shallow Dose Equivalent, Whole Body in rem. ND, NR, or numeric > 0.000
SDE_ME	CHAR(8)	Shallow Dose Equivalent, Maximally exposed Extremity in rem. ND, NR, or numeric > 0.000
CDE	CHAR(8)	Committed Dose Equivalent, Maximally exposed Organ in rem. ND, NR, NC, or numeric > 0.000
CEDE	CHAR(8)	Committed Effective Dose Equivalent in rem. ND, NR, or numeric > 0.000
MO	CHAR(2)	Organ code for Maximally exposed Organ. Field should be padded with spaces if no CDE recorded, or the maximally exposed organ is not recorded
TODE	CHAR(8)	Total Organ Dose Equivalent, sum of CDE and DDE, in rem. ND, NR, or numeric > 0.000
TEDE	CHAR(8)	Total Effective Dose Equivalent, sum of CEDE and DDE, in rem. ND, NR, or numeric > 0.000
DEF_MY	NUM(4,0)	Monitoring year for this record defined by monitoring licensee, format: YYYY, or zero if unknown

Table 5-9. DBF EXPOSURE Import File Structure (Continued)

Field	Format	Description
OPTIONAL⁶		
EXT_FLD_1 (User-defined)	User-defined	Extended field 1. These fields must match the "extended" fields contained in EXPOSURE.DBF if they are to be imported
EXT_FLD_2 (User-defined)	User-defined	Extended field 2
EXT_FLD_# (User-defined)	User-defined	Other extended fields

⁶ Additional fields may be imported as long as each field in EXPOSURE.DBF has a corresponding field in the DBF file to be imported. See Appendix E for information on modified data base structures.

5.3 EXPORT FORM 4 DATA

Purpose:

This function allows the user to export employee and exposure information in electronic format for use at another facility. This feature is designed to facilitate the transmittal of Form 4 information in electronic format between NRC licensed facilities. REMIT also provides the capability to *Import Form 4 Data* that was generated using *Export*.

Instructions:

1. *Export* is only available when other REMIT operations have been completed and the employee and exposure data bases are not in use. Complete all operations and return to the main menu.
2. Select *File* from the main menu.
3. Select *Export* from the *File* menu.
4. Select *Form 4 Data* from the *Export* menu. The Export screen will be displayed (see Screen 5-3).
5. Select record set to export; select records, or all records.
6. Select file type, ASCII (.TXT) or dBASE III-compatible data base (.DBF).
7. Enter the file names for the employee and exposure data files to be exported. Employee data may be exported independently of exposure data, but exposure data cannot be exported by itself. If only employee data is to be exported, the exposure file name should be left blank.

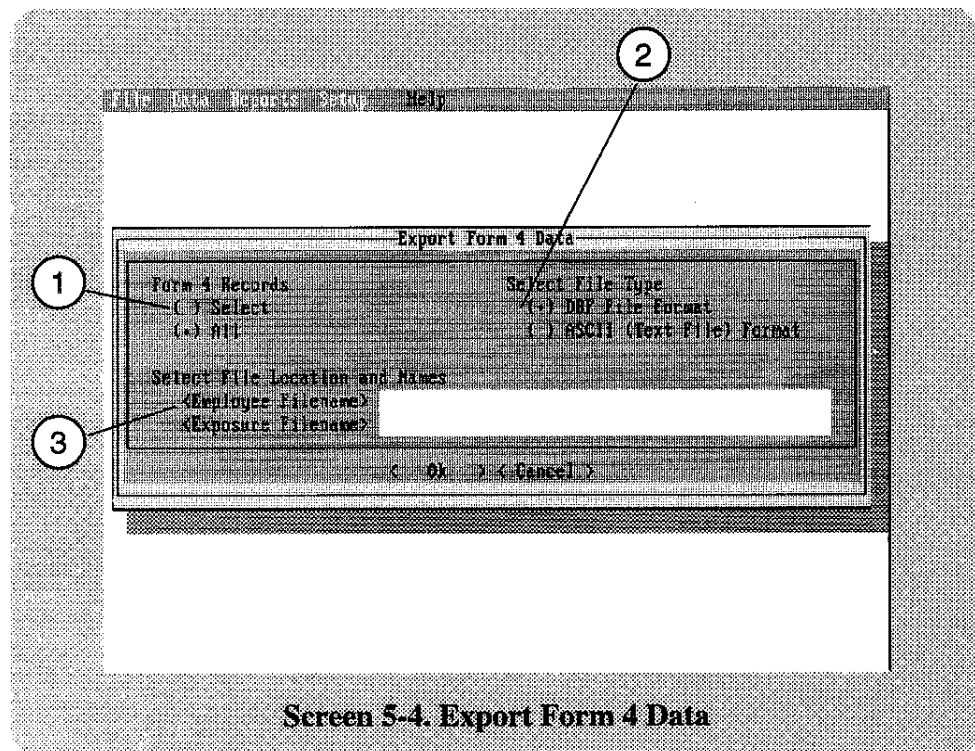
The user may type in the file names or use the file selection dialog. The file selection dialog may be useful for identifying the drive, directory, and file name if you intend to overwrite an existing file.

To access the file selection dialog, highlight the <Employee Filename> or <Exposure Filename> push button and press return or click the left mouse button on the appropriate push button.

The user may specify the drive and directory. The file list will contain all files with extension .TXT or .DBF depending on the file type selected. Users may list all file extensions by clicking on the [] *All Files* option. Only ASCII and dBASE-compatible file types are supported.

Highlight the file to be exported and press Enter to save the highlighted file name. The user may also highlight the file name to be exported and select <<Save>>, or double click on the file to be exported using the mouse. This will terminate the dialog and return the selected file name to the export screen.

8. Select <Ok> to export data to the selected file(s).
9. The export files will be created in the directory specified. For ASCII files, you may find the text editor provided with REMIT (*File - Edit/View Text*) to be useful for viewing the export files.



Screen 5-4. Export Form 4 Data

Screen Elements:

1. Form 4 Records: Select specific employees to export, or export all employees.
2. File type: ASCII (.TXT) or dBASE-compatible data base (.DBF)
3. File Location and Names: Enter the DOS file name (with extension) or use the file selection dialog.

Options:**Export Options:**

- () Select Select specific employees to export Form 4 records
- () All Export Form 4 records for all employees
- () DBF File Format Create dBASE III-compatible (.DBF) data base files containing Form 4 data
- () ASCII Format Create ASCII (.TXT) data base files containing Form 4 data
- <Ok> Proceed with the file export
- <Cancel> Cancel export and return to main menu

File Selection Dialog Options:

- Drive: Select the disk drive where the export file is to be created, use the TAB key to move from one item to the next within dialog
- Directory: Select the directory where the export file is to be created
- [X] *All Files* File selection dialog will display all files regardless of file name extension
- <<Save>> Save the highlighted file name for export
- <Cancel> Cancel file selection dialog and return to export screen

User Notes:

The intended function of *Export* is to generate electronic files that can be transmitted to another facility and imported into REMIT at that facility. The licensee may also find it useful to "communicate" with other computer systems or software packages being used by the licensee. The ASCII and DBF file formats were chosen due to their wide support in the software industry.

ASCII and data base file (.DBF) formats for *Export* are the same as for *Import* and are shown in Tables 5-6 through 5-9. However, the "extended" fields shown in these tables are not supported using *Export*. These additional fields are licensee-specific and would not be of use to another facility. For more information on extended fields, see Appendix E Extending REMIT Data bases.

Note:

With electronic transfer from one site to another, the licensees still have the responsibilities of verification, and privacy. Form 4 records must be verified and signed by the monitored individual. Records for an individual must be handled in accordance with 5 U.S.C. 552a(e)(3), enacted into law by Section 3 of the Privacy Act of 1974 (Public Law 93-579). In addition, facilities may countersign a Form 4 denoting that

this licensee or employer possesses documentation of all the information on the NRC Form 4. These responsibilities are beyond the intended scope of REMIT and remain the responsibilities of the licensees and monitored individuals accordingly.

Warning:

Export Form 4 Data should not be used to send monitoring information to the NRC. The information contained in the exported files is not sufficient to meet the reporting requirements of the Revised 10 CFR 20. The intended use of this function is for transmittal of Form 4 information from one facility to another, not to the NRC.

See Also:

Import Form 4 Data, Form 4 File Specifications, View/Edit Text

5.4 VIEW/EDIT TEXT

Purpose:

To allow users to view or edit ASCII text files from within REMIT.

Instructions:

1. Select *View/Edit Text* from the *File* main menu option.
2. The text *Edit* menu will replace the main menu, and the file selection dialog box will appear.
3. Highlight the file to view or edit from the dialog box provided. The user may change the drive or directory. Select <<Open>> or double click on the file name to open the highlighted file. **See Warning**
4. View or edit ASCII file contents. Use the cursor keys to scroll through the file, or use the mouse to scroll by clicking on the arrows located along the bottom and right side of the edit window.
5. Select *Close* from the *Edit* menu to save the file under the same filename, or *Save as...* to save the contents with a new filename. Press [Esc] to abort edit. You will be asked to confirm that the file is to be saved as modified, or that changes are to be abandoned.

Options:

File Selection Dialog Options:

- <<Open>> Open highlighted file to edit - **see Warning**
 <Cancel> Cancel file selection dialog and return to import screen
 [] *All Files* File selection dialog will display all files regardless of file name extension - **see Warning**

File Menu:

<i>Close</i>	Save modifications, close file, and exit <i>Edit</i> . You can also click on the close button in the upper left corner of the edit window.
<i>Save</i>	Save modifications to file, resume edit
<i>Save as...</i>	Save text to another file
<i>Revert</i>	Discard all changes, restore file to original version

Edit Menu:

Function	Command-Key Sequence	Description
<i>Undo</i>	Ctrl U	Cancel last modification and restore
<i>Redo</i>	Ctrl R	
<i>Cut</i>	Ctrl X	Extract selected text and save to the text "buffer"
<i>Copy</i>	Ctrl C	Copy selected text to the text "buffer"
<i>Paste</i>	Ctrl V	Insert text from text "buffer" at cursor location. Select text and then Paste to replace text with text currently in the text "buffer"
<i>Clear</i>		Clear text "buffer"
<i>Select All</i>	Ctrl A	Select all text
<i>Goto Line...</i>		Place cursor at a specific line in text
<i>Find...</i>	Ctrl F	Find a text string
<i>Find Again</i>	Ctrl G	Find next location of text string
<i>Replace and Find Again</i>	Ctrl E	Replace "Look For" text string with the "Replace With" string entered in the Find dialog, and then locate the next occurrence of the text string
<i>Replace All</i>		Replace all "Look For" text strings with the "Replace With" text string entered in the Find dialog
<i>Preferences...</i>		Set text window attributes as follows:
<i>Wrap words</i>		Set word wrap on in window
<i>Auto indent</i>		When cursor moves to new line it indents to the same position as previous line
<i>Make backup</i>		Automatically stores the previous version as (filename).BAK
<i>Add line feeds</i>		Saves files using a carriage return and line feed at the end of all lines
<i>Status line</i>		Adds status line at top of window giving cursor location and modification status

Function	Command-Key Sequence	Description
Add Ctrl-Z		Adds a Ctrl-Z character to act as the end of file marker
Justify		Left, right, or center justify all text lines
Use preferences		Use these preferences when editing
Save preferences		Save preferences to user file for next edit session

Window Menu:

Function	Command-Key Sequence	Description
<i>Hide</i>		Hides current edit window from site. For use with multiple edit windows; however, REMIT does not support multiple edit windows
<i>Clear</i>		Clear current window
<i>Move</i>	Ctrl F7	Selects the current window and allows the user to move the window using cursor keys
<i>Size</i>	Ctrl F8	Selects the current window and allows the user to change the size of the window using cursor keys
<i>Zoom^</i>	Ctrl F10	Makes the window full-screen. You can also click on the box in the upper right corner of the edit window
<i>Zoom</i>	Ctrl F9	Minimizes window to just the file name. You can also click on the box in the upper right corner of the edit window
<i>Cycle</i>	Ctrl F1	Cycle through open windows; however, REMIT does not support multiple windows
<i>Windows</i>		A list of windows appears at the bottom of the <i>Window</i> menu. Select a window to make it current

Key Press and Mouse Functions:Cursor Movement

Home	To beginning of line
End	To end of line
PgUp	Up one window of text
PgDn	Down one window of text
Ctrl →	One word to the right
Ctrl ←	One word to the left
Ctrl Home	To beginning of text
Ctrl End	To the end of text

Select Text Using Cursor

Shift →	Select a range of characters
Shift Ctrl →	Select a range of words
Shift Ctrl Home	Select from cursor to beginning of text
Shift Ctrl End	Select from cursor to end of text
Ctrl A	Select entire text

Select Text With Mouse

Drag	Select a range of characters
Double-click	Select a word
Double-click and drag	Select a range of words
Triple-click	Select a line
Triple-click and drag	Select a range of lines

To Delete and Replace

Place cursor to the right of the character, press Backspace, or place cursor at the character, press Delete	Deletes a character
Place cursor anywhere in the word and press Ctrl-Backspace	Deletes a word
Select and press Backspace	Deletes selected text
Select text to be replaced, type new text (or <i>Paste</i>)	Replaces existing text

User Notes:

This feature allows users to view the results of ASCII files generated by REMIT such as the NRCFORM5.DAT output, or message files generated by REMIT such as WRK_ERRS.TXT, EMP_ERRS.TXT or EXP_ERRS.TXT.

To view NRCFORM5.DAT, the user must select the [] *All Files* option from the file selection dialog. Care should be taken when using this option. File types other than ASCII text should not be edited using this editor. See **Warning**.

Warning:

File types other than ASCII text should not be edited using this editor. The default file extension from the dialog box is .TXT so that other file types will not be listed. Editing data base files (.DBF) will corrupt the data bases. The data will be lost and any application attempting to access the data will fail.

See Also:

NRC Submittal, Import Worksheet, Import Form 4 Data, Export

5.5 EXIT

Purpose:

This function allows you to exit the system and return to DOS.

Instructions:

1. Select *Exit* to exit REMIT.

6. DATA

Using this option, you can input and edit employee and dose records. The data elements specified in this section are all that are necessary to comply with the reporting guidelines of *Regulatory Guide 8.7, Rev. 1*.

6.1 EMPLOYEE DATA

Purpose:

This function allows you to add, edit, or delete employee information.

Instructions:

1. Select *Data* from the Main Menu. When you select *Data*, you will see the Employee information screen (*Screen 6-1*).
2. If there are no existing employee records, you will automatically be placed in Add mode.
3. If there are existing employee records, use <Find>, <Browse>, <Next>, or <Previous> to find and to display the appropriate employee record. The employees are listed by employee ID number and ID type.

The screenshot shows the 'Employee' data entry screen. At the top is a menu bar with 'File', 'Reports', 'Setup', and 'Help'. Below this is a form with several fields: 'Identification Number' (121-21-2121), 'ID Type' (SSN), 'MI' (J), 'Sex' (M), and 'Birthdate' (10/13/1957). The 'Last Name' field contains 'JUMPER' and the 'First' field contains 'JOE'. A large empty box is below these fields. At the bottom of the screen is a control bar with the following options: '< Add > < Edit > < Delete > < d0ses* >', '< Find > < Browse > < Next > < Previous > < Return >'. Numbered callouts point to: 1. 'File' menu, 2. 'Reports' menu, 3. 'Last Name' field, 4. 'First' field, 5. 'MI' field, 6. 'Sex' field, and 7. 'Birthdate' field.

Screen 6-1. Employee Data

Screen Elements:

- ① **Identification Number:** An individual identification number, usually the SSN. [Required]
- ② **ID Type:** Type of identification number indicated by the following codes: SSN, PPN, CSI, WPN, IND, or OTH. The default value of SSN is entered but can be changed. [Required]
- ③ **Last Name:** Last name of the monitored individual. [Required]
- ④ **First:** First name of the monitored individual. [Required]
- ⑤ **MI:** Middle initial of the monitored individual.
- ⑥ **Sex:** Gender of the monitored individual, indicated by (M)ale or (F)emale. [Required]
- ⑦ **Birthdate:** Date of birth of the monitored individual (format: MM/DD/YYYY). [Required]

Options:

<Add>	To add a new employee record
<Edit>	To edit employee information
<Delete>	To delete all records for the employee displayed
<dOses>	To access the doses screen and relevant dose functions
<Find>	To find an employee record
<Browse>	To list and select a specific employee record
<Next>	To display the next record in the employee data base
<Previous>	To display the preceding record in the employee data base
<Return>	To return to the Main Menu

See Also:

Employee: Add, Edit, Delete, Doses, Find, Browse, Next/Previous, Return, Appendix E

6.1.1 Employee Add

Purpose:	Using this function, you can add a new employee record.				
Instructions:	<ol style="list-style-type: none">1. Select <Add>.2. Enter information in the fields, pressing Tab to move from field to field or clicking the left button of the mouse in a specific field. All screen fields are initially blank except ID Type, which defaults to SSN.3. When all of the fields have been entered, select <Save> to save your employee information in the data base.				
Options:	<table><tr><td><Save></td><td>To save employee information for an added record</td></tr><tr><td><Cancel></td><td>To cancel employee information entered for a record</td></tr></table>	<Save>	To save employee information for an added record	<Cancel>	To cancel employee information entered for a record
<Save>	To save employee information for an added record				
<Cancel>	To cancel employee information entered for a record				
User Notes:	<p>When you select <Save>, a message appears: "VALIDATING EMPLOYEE RECORD. . . PLEASE WAIT." The employee record is validated for required and valid fields as well as the uniqueness of the employee record. A unique employee record has a unique employee ID and ID type.</p> <p>To cancel the employee information you entered, select <Cancel>. A message appears: "ADDING EMPLOYEE RECORD CANCELED."</p>				
See Also:	Employee Edit, Employee Delete				

6.1.2 Employee Edit

Purpose:	Using this function, you can edit employee information such as name, ID number, and ID type.
Instructions:	<ol style="list-style-type: none"> 1. Select <Edit>. The key fields and their corresponding information are highlighted. 2. Change selected fields, pressing (Tab) to move from field to field or clicking the left button of the mouse in a specific field. 3. When you finish editing the fields, select <Save> to save your employee information in the data base.
Options:	<p><Save> To save your employee information</p> <p><Cancel> To cancel employee information changes</p>
User Notes:	<p>When you select <Save>, a message appears, "VALIDATING EMPLOYEE RECORD. . . PLEASE WAIT." The employee record is then validated for required and valid fields as well as the uniqueness of employee record. A unique employee record has a unique employee ID and ID type.</p> <p>To cancel the changes you made to the employee information, select <Cancel>. A message appears: "EDITING EMPLOYEE RECORD CANCELED".</p>
See Also:	Employee Add, Employee Delete

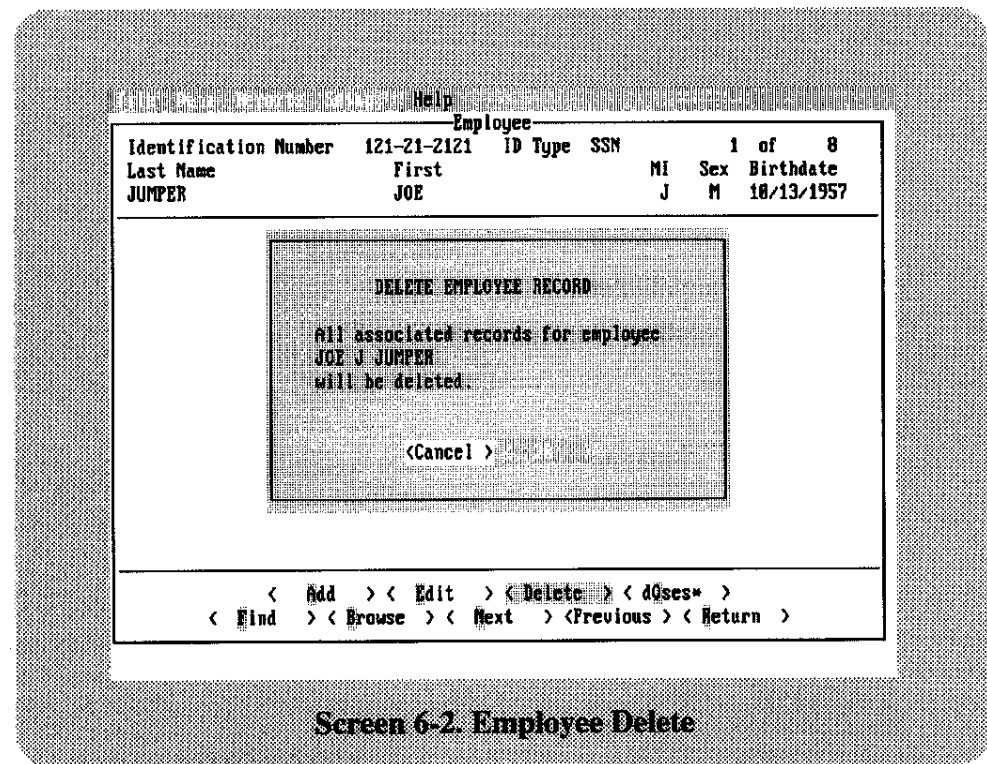
6.1.3 Employee Delete

Purpose:

The <Delete> push-key option allows you to delete all records, including dose records, for the employee whose record is displayed.

Instructions:

1. Select <Delete> (Screen 6-2).
2. Choose <Ok> to delete all dose records for the displayed individual.
3. Choose <Cancel> to return to the previous screen and access other push-key options.



Options:

- <Ok> To delete all dose records for the individual
 <Cancel> To return to the previous screen

User Notes:

When <Delete> is selected, all records in the data base for this individual are deleted (based on the individual's identification number and ID type).

See Also:

Employee Add, Employee Edit, Exit

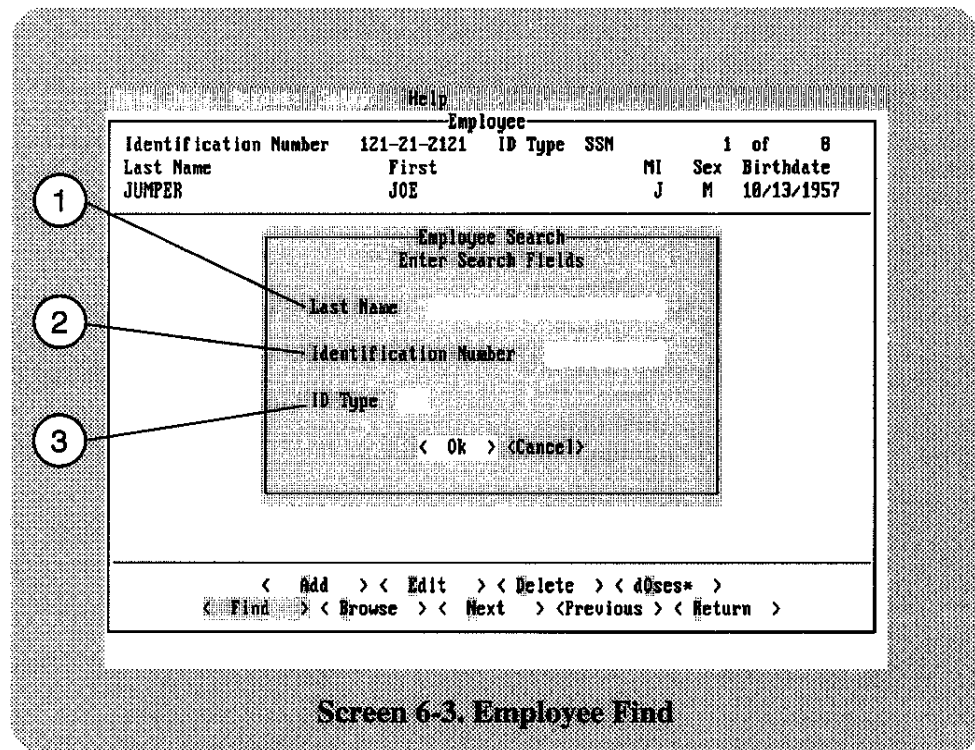
6.1.4 Employee Find

Purpose:

This function allows you to search the data base for an employee.

Instructions:

1. Select <Find>. When you select this function, *Screen 6-3* appears.
2. To search, enter the employee's last name, SSN, ID type, or any combination of these items, and select <Ok>.



Screen 6-3. Employee Find

Screen Elements:

- ① Last Name of the individual for which to search
- ② Identification Number
- ③ ID Type

Options:

- <Ok> To execute the query
- <Cancel> To cancel the query and return to the Employee Information screen
- [F2] To select employee record from subsequent browse window
- [Esc] To cancel subsequent browse window

User Notes:

You can search on any or all of these fields by entering your criteria and selecting <Ok>. Press <Cancel> to return to the employee information screen. If your search results in a single dose record, that record is displayed. If more than one record is retrieved, you may select an employee record from a browse window using **F2** (see Section 6.1.5). The browse window will show all records meeting the specified criteria. Press **Esc** to cancel the browse window.

See Also:

Employee Browse, Browse

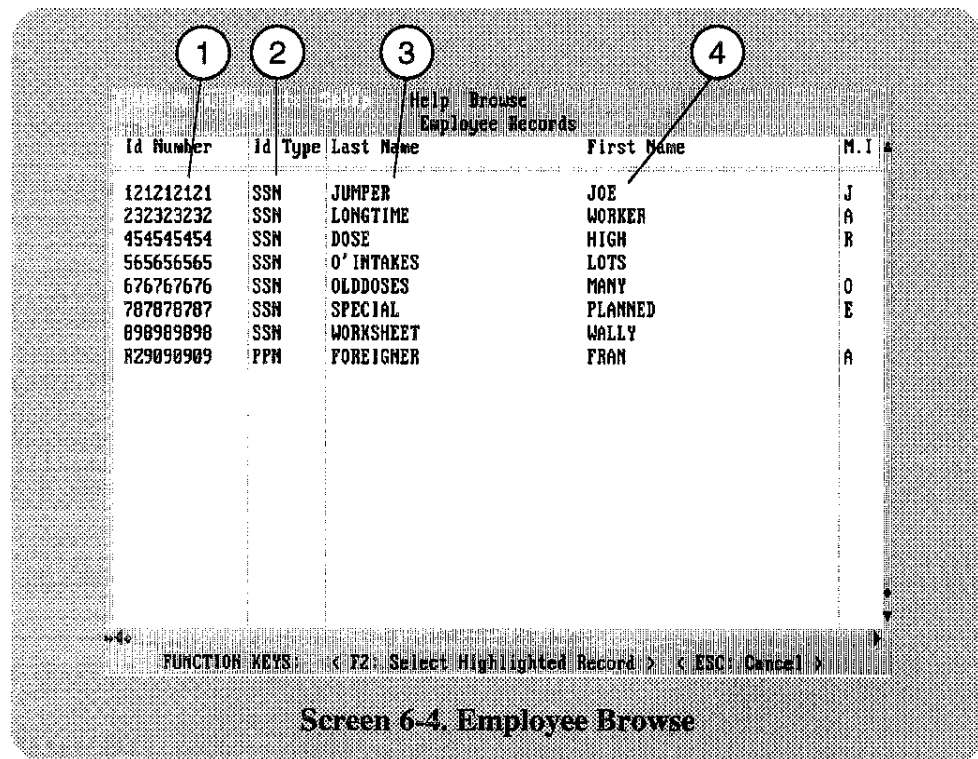
6.1.5 Employee Browse

Purpose:

Using this function, you can browse and select a specific employee's record.

Instructions:

1. Select <Browse>. *Screen 6-4* lists all monitored individuals in the data base by employee ID number and ID type.
2. Move to a record by using the cursor keys or by clicking with the left mouse button on the arrows in the right-hand side of the screen.
3. Press **F2** to select the highlighted employee's record, or click on the appropriate message at the bottom of the screen, or double click on the highlighted record.
4. Press **Esc** to exit browse without selecting an employee, or click on the appropriate message at the bottom of the screen.



Screen Elements:

- ① **Identification Number:** An individual identification number. If the individual has no SSN, a PPN, CSI number, WPN, IDN, or other identification will be shown.
- ② **ID Type:** Type of identification, indicated by the following codes: SSN, PPN, CSI, WPN, IND, or OTH.
- ③ **Last Name:** Last name of the monitored individual.
- ④ **First Name:** First name of the monitored individual.

Options:

- F2** To select a highlighted record to view or edit, or click on the appropriate push button at the bottom of the screen.
- Esc** To cancel and exit browse, or click on the appropriate push button at the bottom of the screen.

User Notes:

REMIT-required fields may not be edited in <Browse>.

"Extended" fields added to the EMPLOYEE.DBF file by the user can be accessed using <Browse>. Extended fields can be edited. See Appendix E for information on extending the REMIT data bases.

The employee <Browse> window activates the Browse option in the main menu. This option can be used to re-arrange the field order and define window specifications. See Section 3.3.

See Also:

Employee Find, Appendix E, Browse

6.1.6 Employee Next/Previous

Purpose:	You can view one record at a time by selecting <Next> or <Previous>.
Instructions:	<ol style="list-style-type: none">1. Select <Next> to view the next record.2. Select <Previous> to view the previous record.
User Notes:	Employee records are in order of identification number and ID type. When you are at the beginning of the data base records, the <Previous> push button is unavailable. Likewise, at the end of the data base, the <Next> push button is unavailable.
See Also:	Employee Find, Employee Browse

6.1.7 Employee Return**Purpose:**

Selecting <Return> returns you to the Main Menu.

Instructions:

1. Select <Return> to return to the Main Menu.

6.2 DOSES

Purpose:	By selecting <dOses>, you can add, edit, or delete a dose record for the individual whose employee information is currently displayed.
Instructions:	<ol style="list-style-type: none"> 1. Select <dOses> (<i>Screen 6-5</i>). You may access all push-key options highlighted on this screen. 2. If there are no existing dose records for this employee, you will automatically be placed in the <Add> mode. 3. If there are existing dose records for this employee, you may view or edit the records. The most recent dose record is displayed; dose records are in reverse chronological order (the most recent first). 4. You can enter DDE, LDE, SDE_WB, and SDE_ME values on the Doses screen or in incremental monitoring periods using the Doses <Worksheet> screen. 5. You can enter CDE, CEDE, and Max Organ on the Doses screen, or use REMIT to calculate these doses based on the individual intakes using <Intakes>. 6. If you enter data in the <Worksheet> or <Intakes> screens, the corresponding fields for that data will be overwritten on the Doses screen. The total doses for the monitoring period are displayed on the Doses screen. 7. If you edit CDE or CEDE, an asterisk is displayed to the right of the screen entry indicating that these doses were entered by the user and were not calculated using the REMIT <Intakes> module.

The screenshot shows the 'Doses' screen with the following fields and controls:

- Menu Bar:** File, Reports, Setup, Help
- Employee Section:**
 - Identification Number: 121-21-2121
 - Last Name: JUMPER
 - First Name: JOE
 - ID Type: SSN
 - MI: J
 - Sex: M
 - Birthdate: 10/13/1987
- Doses Section:**
 - License Number: 12-12121-12
 - Licensee Name: WORLD-WIDE NUCLEAR CORP.
 - Monitoring Period: 10/15/1993 - 12/20/1993
 - Mon. Year: 1993
 - Record Type: () Record, () Estimate, () No Record
 - Record Type: () Routine, () PSE
- Dose Equivalents Table:**

Dose Equivalent	Value
Deep Dose Equivalent (DDE)	0.340
Eye Dose Equivalent to the Lens of the Eye (LDE)	NR
Shallow Dose Equivalent, Whole Body (SDE,WB)	0.430
Shallow Dose Equivalent, Max Extremity (SDE,ME)	0.430
Committed Effective Dose Equivalent (CEDE)	NR
Committed Dose Equivalent to Max Organ (CDE)	NR
Total Effective Dose Equivalent (TEDE)	0.340
Total Organ Dose Equivalent (TODE)	0.340
- Navigation Controls:**
 - < Add >
 - < Edit >
 - < Delete >
 - < Browse >
 - < Next >
 - < Previous >
 - < Worksheet >
 - < Intakes >
 - < Limits >
 - < Comments* >
 - < Return >

Screen 6-5. Doses

Screen Elements:

- ① License Number: NRC License number of the facility where the dose was accrued. [Required]
- ② Monitoring Period: The monitoring period (format: MM/DD/YYYY - MM/DD/YYYY). [Required]
- ③ Monitoring Year: Reporting year defined for this licensee. (See section 4.1.4, Monitoring Years.)
- ④ Licensee Name: Name of the licensee.

Record Type: Type of dose report. Valid types of records are Record, Estimate, and No Record. This field defaults to Record. [Required]

- ⑤ Record: Report that contains the final determination of dose.
- ⑥ Estimate: Report that contains preliminary dose data. It will be superseded by a final determination resulting in a subsequent report.

- ⑦ **No Record: For Form 4 records only.** This denotes that a prior dose record is unavailable (see Section 6.5 for information on PSE dose limits if records are unavailable). No dose amounts can be entered if "no record."

Exposure Type: Type of exposure. Valid types of exposure are Routine and PSE. This field defaults to Routine.

- ⑧ **Routine:** Contains data from monitoring routine exposures.
- ⑨ **PSE:** Contains data from monitoring PSEs.
- ⑩ **Deep Dose Equivalent (DDE):** Measurement in rem for dose equivalent at a tissue depth of 1 cm; applies to whole-body exposure. Values are numeric, NR (not required), or ND (not detectable). [Required]
- ⑪ **Eye Dose Equivalent to the Lens of the Eye:** Measurement in rem for dose equivalent at a tissue depth of 0.3 cm; applies to the external exposure of the lens of the eye. Values are numeric, NR (not required), or ND (not detectable). [Required]
- ⑫ **Shallow Dose Equivalent, Whole Body (SDE-WB):** Measurement in rem; shallow dose equivalent for the whole body. Values are numeric, NR (not required), or ND (not detectable). [Required]
- ⑬ **Shallow Dose Equivalent, Max Extremity (SDE-ME):** Measurement in rem; shallow dose equivalent for the maximally exposed extremity. Values are numeric, NR (not required), or ND (not detectable). [Required]
- ⑭ **Committed Effective Dose Equivalent (CEDE):** Sum of the products of the weighting factors and dose equivalent to each of the body organs or tissues that are irradiated. Values are numeric, NR (not required), or ND (not detectable), and can be calculated using <Intakes>. [Required]
- ⑮ **Committed Dose Equivalent to Max Organ (CDE):** Dose equivalent to organs or tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50-year period following the intake. Values are numeric, NR (not required), NC (not calculated), or ND (not detectable), and can be calculated using <Intakes>. [Required]

- ⑩ Max Organ: Maximally exposed organ. A pick list of valid organs will be displayed. This field is optional. <Intakes> will return a calculated Max Organ.
- ⑪ Total Organ Dose Equivalent (TODE): Measurement in rem; sum of the DDE and CDE. This field is for display only.
- ⑫ Total Effective Dose Equivalent (TEDE): Measurement in rem; sum of the DDE and the CEDE. This field is for display only.

Options:

<Add>	To add dose information to a record
<Edit>	To edit dose information for a record
<Delete>	To delete the dose record
<Browse>	To find a specific exposure record or to view all exposure records for the currently displayed employee
<Next>	To view the next dose record
<Previous>	To view the previous dose record
<Worksheet>	To access the dose worksheet (Available only on <Edit> or <Add>)
<Intakes>	To access intakes (Available only on <Edit> or <Add>)
<Limits>	To compare individual dose information with limits (Available only for dose records after new Part 20 implementation date, see Section 4.1.4)
<Comments>	To enter a comment or explanation about the currently displayed record
<Return>	To return to the employee information screen

User Notes:

Calculations are automatically performed to obtain the TODE and TEDE:

$$\begin{aligned} \text{TODE} &= \text{DDE} + \text{CDE} \\ \text{TEDE} &= \text{DDE} + \text{CEDE} \end{aligned}$$

There are two general methods that may be used when entering dose information for an individual for a given monitoring period. The first method is to input dose summary information using the doses screen. This summary information consists of the dose totals listed on NRC Form 4 or the dose totals listed under "Doses" on NRC Form 5.

The second method is to have REMIT calculate the total dose for the entire monitoring period from incremental external dose entries and/or internal intake data. External dose information can be entered in incremental periods of exposure, such as monthly or quarterly, using <Worksheet>. Internal intake data can be entered using <Intakes>, and the REMIT

software will calculate dose from these intakes and enter the results into the dose record for the monitoring period. You can use <Worksheet>, <Intakes>, or both to calculate data for a dose record. Use of the <Worksheet> and <Intakes> functions will be described in detail in later sections of this document.

See Also:

Worksheet, Intakes, Licensee Limits, Doses Limits

6.2.1 Doses Add

Purpose:	<Add> a new dose record for the currently displayed employee.								
Instructions:	<ol style="list-style-type: none"> 1. Select <Add>. 2. Enter information in the required fields, pressing (Tab) to move from field to field or clicking the left mouse button on a specific field. 3. You may edit fields that have already been filled in with default values; these fields include license number, licensee name, monitoring period, monitoring year (at other facilities), report type, and exposure type. 4. You may not edit TEDE and TODE; these fields are totaled from the dose information you enter and are for display only. 								
Options:	<table> <tr> <td><Save></td><td>To save the dose information you entered</td></tr> <tr> <td><Cancel></td><td>To cancel the dose information you entered</td></tr> <tr> <td><Worksheet></td><td>To enter incremental external doses</td></tr> <tr> <td><Intakes></td><td>To enter intakes calculational module</td></tr> </table>	<Save>	To save the dose information you entered	<Cancel>	To cancel the dose information you entered	<Worksheet>	To enter incremental external doses	<Intakes>	To enter intakes calculational module
<Save>	To save the dose information you entered								
<Cancel>	To cancel the dose information you entered								
<Worksheet>	To enter incremental external doses								
<Intakes>	To enter intakes calculational module								
User Notes:	<p>You may enter cumulative year-to-date exposure doses on this screen. However, if you are entering doses in increments (e.g., monthly or quarterly), you must enter them in <Worksheet> (see Section 6.3).</p> <p>The REMIT system checks the doses entered against the applicable dose limits when you save dose information. You will see a message saying "Checking Limits." If you have entered a dose in excess of these limits, you will see a warning message and will be informed of which entries exceeded the limits.</p> <p>When you select <Save>, a message appears: "VALIDATING DOSE RECORD . . . PLEASE WAIT." The dose record is then validated for:</p> <ul style="list-style-type: none"> • required fields • invalid field values • uniqueness of the dose record <p>If the validation fails, an appropriate message is given and the cursor is positioned after the field in question.</p>								

Monitoring Periods

A "unique dose" record is defined as: one dose record for an individual at a licensee per monitoring period for a particular exposure type.

A licensee may submit more than one dose record for an individual in a monitoring year if the individual was not in continuous employment throughout the monitoring year. This may be the case for a temporary or transient worker. In such a case, the monitoring periods would not be adjoining because there would be gaps between the monitoring periods. REMIT will accept such records. For example, monitoring periods may run from 02/03 to 04/15 and 07/11 to 10/02 for an individual during the monitoring year.

In no case, however, should monitoring records overlap for an individual at one facility. Monitoring periods must be consistent with the monitoring years as defined in <Monitoring Years> in the Licensee Information (see Section 4.1.4).

For dose records prior to the implementation of the new 10 CFR 20 (such as old Form 4 records), the only requirement is that monitoring periods do not overlap for an individual at a given licensee. The <Limits> function will not be available for dose records prior to implementation (see Section 4.1.2).

Monitoring Year

The monitoring year will be assigned by REMIT according to the monitoring years defined in <Monitoring Years> in the Licensee Information (see Section 4.1.4). For the primary or associated licensees, this value is for display only since the monitoring year dates are clearly defined. For dose records at other facilities, REMIT will attempt to assign a monitoring year. Monitoring periods beginning and ending in January may be assigned to the current or previous year.

Maximally Exposed Organ

When you access the Max Organ field, *Screen 6-6* is displayed. You may select from an alphabetical list of organs, and the software automatically enters this organ in the field. If no organ is desired, select the first record, which is blank.

If you edit CDE or CEDE, an asterisk is displayed to the right of the screen entry indicating that these doses were entered by the user and were not calculated using the REMIT <Intakes> module.

The screenshot shows the following data:

Employee			
Identification Number	121-21-2121	ID Type	SSN
Last Name	First	MI	Sex Birthdate
JUMPER	JOE	J	M 10/13/1957

Doses			
License Number	Licensee Name	1 of 5	
12-12121-12	WORLD-WIDE NUCLEAR CORP.		
Monitoring Period	Mon. Year	(.) Record	(.) Routine
10/15/1993 - 12/20/1993	1993	() Estimate	() PSE
		() No Rec	Pick

Organ
ADRENAL GLANDS
BONE SURFACES
BREAST
GI TRACT-STOMACH
GONADS
KIDNEYS
LIVER
LOWER LARGE INTESTINE
LUNG

Navigation options at the bottom: < Save > < Cancel > < Delete > < Browse > < Worksheet > < Intakes > < Limits > < Com

Screen 6-6. Max. Organ Pick List

See Also:

Doses Edit, Doses Delete, Worksheet, Intakes, Licensee Limits, Doses Limits

6.2.2 Doses Edit

Purpose:	<Edit> dose information for a record.								
Instructions:	<ol style="list-style-type: none"> 1. Select <Edit>. All dose information fields are highlighted. 2. Edit information in the required fields, pressing Tab to move to the next field. 								
Options:	<table> <tr> <td><Save></td><td>To save changes to dose information</td></tr> <tr> <td><Cancel></td><td>To cancel changes to dose information</td></tr> <tr> <td><Worksheet></td><td>To enter/edit incremental external doses</td></tr> <tr> <td><Intakes></td><td>To enter intakes module</td></tr> </table> <p>You may enter cumulative year-to-date exposure doses on this screen. If you enter doses in increments (e.g., monthly, quarterly), you must enter them in <Worksheet> (see Section 6.3).</p> <p>When you save dose information, the REMIT software validates the record and checks the doses entered against the applicable dose limits. If you have entered a dose in excess of these limits, you will receive a warning message and will be informed of which entries have exceeded the limits.</p> <p>If you edit CDE or CEDE, an asterisk is displayed to the right of the screen entry indicating that these doses were entered by the user and were not calculated using the REMIT <Intakes> module.</p>	<Save>	To save changes to dose information	<Cancel>	To cancel changes to dose information	<Worksheet>	To enter/edit incremental external doses	<Intakes>	To enter intakes module
<Save>	To save changes to dose information								
<Cancel>	To cancel changes to dose information								
<Worksheet>	To enter/edit incremental external doses								
<Intakes>	To enter intakes module								
User Notes:	When you access the Max Organ field, <i>Screen 6-6</i> is displayed. You may select from the list of organs, and the software automatically enters this organ in the highlighted field.								
See Also:	Doses Add, Doses Delete, Worksheet, Intakes, Licensee Limits								

6.2.3 Doses Delete

Purpose: The <Delete> push-key option allows you to delete the dose record currently displayed.

- Instructions:**
1. Select <Delete> to delete the currently displayed record (*Screen 6-7*).
 2. Select <Ok> to delete or <Cancel> to return to the Doses screen without deletion.

Screen 6-7. Doses Delete

Options:

<Ok>	To confirm deletion
<Cancel>	To cancel and return to the Doses screen

See Also: Doses Add, Doses Edit

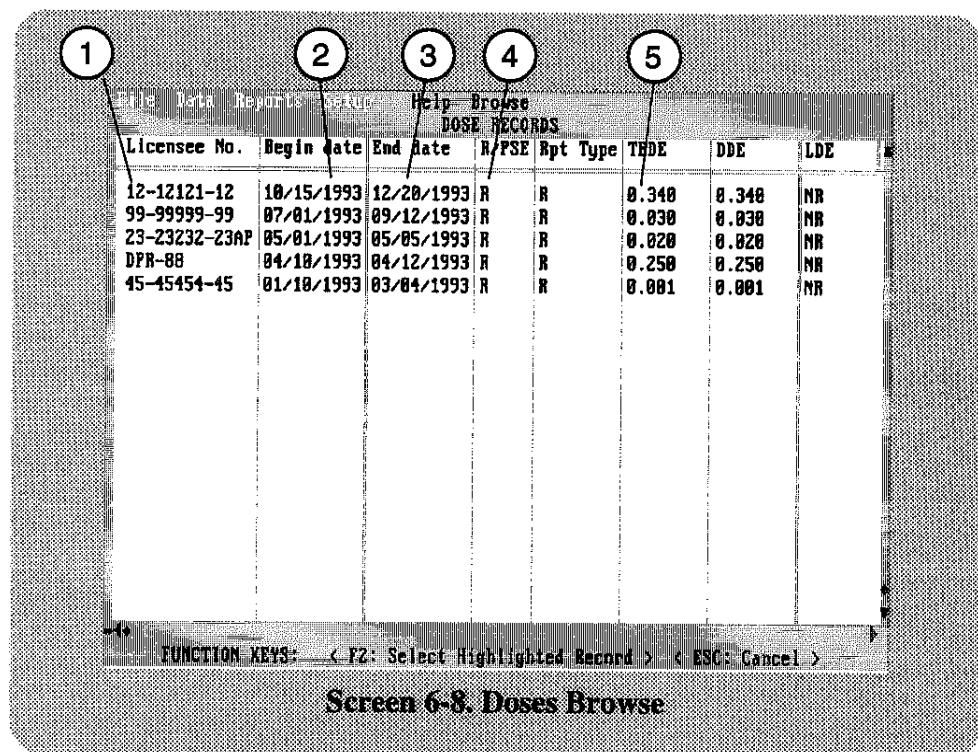
6.2.4 Doses Browse

Purpose:

<Browse> allows you to find a specific exposure record or to view all of the dose records for the currently displayed employee.

Instructions:

1. Select <Browse>. *Screen 6-8* appears. This screen lists the license number, monitoring period, exposure type, and TEDE.
2. Use the cursor keys or the mouse to scroll through the dose records.
3. Press **F2** or the right mouse button to select the highlighted dose record and return to the Doses screen, or click on the appropriate message at the bottom of the screen.
4. Press **Esc** to exit browse without selecting a dose record, or click on the appropriate message at the bottom of the screen.



Screen Elements:

- ① License #: License number of the reporting organization.
- ② Monitor Beg: The beginning of the monitoring period (format: MM/DD/YYYY).
- ③ Monitor End: The end of the monitoring period (format: MM/DD/YYYY).
- ④ R/PSE: Exposure type; routine or PSE.
- ⑤ TEDE: Total Effective Dose Equivalent for monitoring period.

Options:

- F2** To select the highlighted record to view or edit, or click on the appropriate push button at the bottom of the screen.
- Esc** To cancel and return to the Doses screen, or click on the appropriate push button at the bottom of the screen.

User Notes:

REMIT-required fields may not be edited in <Browse>.

"Extended" fields added to the EXPOSURE.DBF file by the user can be accessed using <Browse>. Extended fields can be edited. See Appendix E for information on extending REMIT data bases.

The doses <Browse> window activities the Browse option in the main menu. This option can be used to re-arrange the field order and define window specifications. See Section 3.3.

See Also:

Employee Find, Doses Next/Previous, Browse, Appendix E

6.2.5 Doses Next/Previous

Purpose:	<Next> and <Previous> allow you to view one dose record at a time. <Next> displays the next dose record, and <Previous> displays the preceding record.
Instructions:	<ol style="list-style-type: none">1. Select <Next> to view the next dose record2. Select <Previous> to view the preceding dose record.
User Notes:	When you reach the end of the employee's dose records, <Next> becomes unavailable. At the beginning of the employee's dose records, <Previous> becomes unavailable for selection.
See Also:	Dose Browse, Employee Find

6.2.6 Doses Comments

Purpose:

Using this option, you can enter comments about the currently displayed dose record.

Instructions:

1. Select <Comments> (Screen 6-9).
2. Enter your comments.
3. Select <Ok> to save and exit.

The screenshot shows a menu-driven interface. At the top, there are menu options: 'Data', 'Reports', 'Setup', and 'Help'. The main content is divided into sections: 'Employee', 'Doses', and 'Comments'.

Employee Section:

Identification Number	121-21-2121	ID Type	SSN	1 of 8
Last Name	First	MI	Sex	Birthdate
JUMPER	JOE	J	M	10/13/1957

Doses Section:

License Number	Licensee Name	1 of 5
12-12121-12	WORLD-WIDE NUCLEAR CORP.	
Monitoring Period	Mon. Year	(.) Record
10/15/1993 - 12/20/1993	1993	(.) Routine
		() Estimate
		() No Record
Deep Dose Equivalent	(DDE)	0.340
Eye Dose Equivalent to the Lens of the Eye	(LDE)	NR
Shallow Dose Equivalent, Whole Body	(SDE, WB)	0.430
Shallow Dose Equivalent, Max Extremity	(SDE, ME)	0.430

Comments Section:

Comments: This individual worked at many licensees throughout 1993.

At the bottom of the screen, there is an '<Ok>' button.

Options:

<Ok> To save comments and return to the Doses screen

User Notes:

An asterisk appears next to the <Comments> push button on the dOses screen if a comment record exists for this dose record. <Comments> is to be used primarily for additional references or information needed by the NRC to evaluate the dose record, such as in the case of an exposure in excess of limits or extenuating circumstances surrounding an intake. Up to 240 characters may be entered in the comments field.

Another suggested use of <Comment> is to provide additional information to the NRC on doses from "hot particles." The portion of the skin dose

resulting from the hot particle, or references to additional documentation submitted to the NRC regarding this exposure incident, may be recorded in this field.

See Also:

Intakes, Limits

6.2.7 Doses Return

Purpose:

<Return> to the Employee information screen.

Instructions:

1. Select <Return>.

6.3 WORKSHEET

Purpose:

The <Worksheet> function allows you to enter incremental dose records such as weekly, monthly, or quarterly monitoring periods. Incremental doses are not required to be reported to the NRC and, therefore, need not be entered into the REMIT system if dose totals for the monitoring period are used instead.

Most dosimetry records are maintained on a monthly or quarterly basis. <Worksheet> allows you to enter these incremental periods directly; the REMIT system will then calculate totals and store them in the appropriate fields of the dose record for the entire monitoring period.

Instructions:

1. Select <Add> or <Edit> on Doses screen.
2. Select <Worksheet> (Screen 6-10).
3. Enter data or change existing dose data. Press **F3** to add a record, **F4** to delete a record.
4. Press **F2** to save and return to the Doses screen.
5. Press **Esc** to cancel changes and return to the Doses screen.

The screenshot shows the 'Doses Worksheet' screen with the following data:

Begin Date	End Date	R/E	DDE	LDE	SDE-WB	SDE-ME	SDE-UR	SDE-U
10/15/1993	10/31/1993	R	0.120	NR	0.160	0.160		
11/01/1993	11/30/1993	R	0.020	NR	0.070	0.070	0.070	
12/01/1993	12/20/1993	R	0.200	NR	0.200	0.200		0.200

Numbered callouts on the screen:

- 1: Points to the 'Begin Date' column header.
- 2: Points to the 'End Date' column header.
- 3: Points to the 'R/E' column header.
- 4: Points to the 'DDE' column header.
- 5: Points to the 'LDE' column header.
- 6: Points to the 'SDE-WB' column header.
- 7: Points to the 'SDE-ME' column header.
- 8: Points to the 'SDE-UR' column header.

Screen 6-10. Worksheet

Screen Elements:

- ① **Begin Date:** Beginning of the incremental monitoring period (format: MM/DD/YYYY). The monitoring periods for each incremental dose record must be within the monitoring period entered on the Doses record. [Required]
 - ② **End Date:** End of the incremental monitoring period (format: MM/DD/YYYY). [Required]
 - ③ **Record Type:** Type of report. Valid types are Record and Estimate. [Required]

Record: Type of report containing the final determination of dose.

Estimate: Type of report containing preliminary dose data. It will be superseded by a final determination resulting in a subsequent report.
 - ④ **DDE:** Deep Dose Equivalent; incremental measurement in rem for dose equivalent at a tissue depth of 1 cm; applies to whole-body exposure. [Required]
 - ⑤ **LDE:** Lens Dose Equivalent to the lens of the eye; incremental measurement in rem for dose equivalent at a tissue depth of 0.3 cm; applies to the external exposure of the lens of the eye. [Required]
 - ⑥ **SDE-WB:** Shallow Dose Equivalent, Whole Body; incremental measurement in rem. [Required]
 - ⑦ **SDE-ME:** Shallow Dose Equivalent, Maximally exposed Extremity; incremental measurement in rem. [Required] You may either use the SDE_ME field or enter the dose to each extremity as follows:
 - ⑧ **SDE-UR:** Shallow Dose Equivalent, Upper Right extremity; incremental measurement in rem.
- SDE-UL: Shallow Dose Equivalent, Upper Left extremity; incremental measurement in rem.
- SDE-LR: Shallow Dose Equivalent, Lower Right extremity; incremental measurement in rem. Field may not be displayed on screen. Scroll or **(Tab)** over to the right to view or edit field.

SDE-LL: Shallow Dose Equivalent, Lower Left extremity; incremental measurement in rem. Field may not be displayed on screen. Scroll or **Tab** over to the right to view or edit field.

Options:

- F2** To save/exit: saves changes and returns to Doses screen
- Esc** To cancel/exit: cancels changes and returns to Doses screen
- F3** To add record: adds blank incremental dose record
- F4** To delete/undelete: toggles delete attribute on or off for the highlighted record. Records marked for deletion have a dot (•) in the left margin of the screen.

These options are also activated by clicking the left mouse button on the appropriate push button in the Options window.

User Notes:

An asterisk will appear next to the <Worksheet> push button if worksheet records exist for this dose record. This will allow you to determine from the Doses screen whether incremental dose records exist for a dose record monitoring period. To use <Worksheet>, you should NOT manually enter summary dose totals into the Doses screen. Dose totals calculated by <Worksheet> would overwrite any previously entered totals. The REMIT software will warn you against such activities before you enter <Worksheet> doses if manually entered summary dose totals exist. Dosimetry processor records can be imported into the <Worksheet> from ASCII or dBASE-compatible files. See Section 5.2.1.

"Extended" fields added to the DOSES_WS.DBF file by the user can be accessed using <Worksheet>. See Appendix E for information on extending REMIT data bases.

<Worksheet> activates the Browse option in the main menu. This option can be used to re-arrange the field order and define window specifications. See Section 3.3.

Dose to Individual Extremities

In addition to the dose fields contained in the dose record, four additional fields are included for each record. They may not appear on the screen at first, but if you scroll to the right with the cursor key, tab key, or mouse, they will appear. These fields, shown on *Screen 6-10*, are:

- SDE-UR (shallow dose equivalent-upper right extremity)
- SDE-UL (upper left extremity)
- SDE-LR (lower right extremity)
- SDE-LL (lower left extremity)

These fields may be used if individual extremities were monitored. If any of these fields are used, the SDE-ME (shallow dose extremity-maximally exposed extremity) should be left blank. The REMIT system will automatically determine the maximally exposed extremity, total the dose for this extremity, and store it in the SDE-ME field in the Doses record. SDE-ME for the incremental period may be entered manually if desired. If this is done, REMIT will use this dose when calculating total SDE-ME dose.

It should be noted that if the SDE-UR, SDE-UL, SDE-LR, and SDE-LL fields are not used, the maximally exposed extremity dose total may be greater than the true dose for any one extremity. Entering each extremity dose individually more accurately represents the true dose to the maximally exposed extremity.

Record Type

The Record field is used to enter the record type [Estimate (E) or Record (R)]. If any <Worksheet> record is noted as Estimate, the parent Doses record is noted as an Estimate. Estimate is only to be used when the dose data are preliminary and will be superseded by a final determination. A record that is changed from Estimate to Record after the data have been submitted to the NRC constitutes a revised report that should be resubmitted to the NRC.

See Also:

Doses, Intakes, Import Dosimetry Processor Data

6.4 INTAKES

Purpose:	Using the <Intakes> function, you can record each intake and calculate the dose from these intakes. The calculational model is based on the dose conversion factors listed in EPA Report #11, "ALIs, DACs and Dose Conversion Factors," September 1988.
Instructions:	<ol style="list-style-type: none"> 1. An asterisk will appear in the <Intakes> push button if intake information exists for this dose record. Select <Intakes> to enter or edit intakes associated with a particular dose record for a monitoring period (<i>Screen 6-11</i>). 2. Add, edit, or delete intake information from this screen. 3. Press F3 to add a new record, F4 to delete a record. 4. Press F5 to list radionuclide, class, and mode entries from EPA Report #11. 5. Highlight a radionuclide-class-mode combination from the list by using the cursor keys or mouse to scroll through the list. You may type in characters to "speed search" through the list of radionuclides to locate the first entry that matches. Press Enter, F2, or double click on them left mouse button to select the highlighted entry. 6. Enter the activity of the intake in microcuries. 7. Press F2 to save changes and exit the Intakes screen, or press Esc to cancel changes and exit.

Screen 6-11. Intakes

Screen Elements:

- ① Radionuclide: Name of the radionuclide for the intake. [Required]
- ② Class: Class of intake; values are D (Day), W (Week), Y (Year), V (Vapor), G (InGestion mode), or O (Other). [Required]
- ③ Mode: Mode of intake; values are B (aBsorption through the skin, through a wound, or by injection), G (oral inGestion), and H (inHalation). [Required]
- ④ Intake: Amount of intake of each radionuclide in microcuries. Values are numeric. [Required]
- ⑤ Test Number: Number you assign to identify an intake record.
- ⑥ EPA-11 Nuclide: Validation check against EPA-11 library.

Effective: User-calculated CEDE in rem.

Gonad: User-calculated CDE for gonad in rem.

Breast: User-calculated CDE for breast in rem.

Lung: User-calculated CDE for lung in rem.

Rmarrow: User-calculated CDE for red bone marrow in rem.

Bone Surface: User-calculated CDE for bone surface in rem.

Thyroid: User-calculated CDE for thyroid in rem.

Remainder organ dose: User-calculated CDE (in rem) for an organ not listed above. If the highest CDE is for an organ not listed above, this field should be entered.

Organ Code: Two-letter organ code representing the affected organ relevant to the Remainder organ number. This field is only required if Remainder organ number is entered.

Options:

- F2** To save/exit: saves changes and returns to Doses screen
- F3** To add a record: adds blank intake record
- F4** To delete/undelete: toggles delete attribute on or off for the highlighted record. Records marked for deletion have a dot (•) in the left margin of the screen.
- F5** Nuclide Pick List
- F6** Organ List for remainder organ
- Esc** To cancel/exit: cancels changes and returns to Doses screen

These options are also activated by clicking the left mouse button on the appropriate push button in the Options windows.

User Notes:

As previously mentioned (see Section 6.2), the REMIT system is capable of calculating the CEDE, CDE, and the maximally exposed organ from intakes for inhalation and ingestion modes. Unlike the <Worksheet> function, individual intakes for a monitoring period **are required** to be reported to the NRC on Form 5.

If you edit CDE or CEDE, an asterisk is displayed to the right of the screen entry indicating that these doses were entered by the user and were not calculated using the REMIT <Intakes> module.

"Extended" fields added to the INTAKES.DBF file by the user can be accessed using <Intakes>. See Appendix E for information on extending REMIT data bases.

<Intakes> activities the Browse option in the main menu. This option can be used to re-arrange the field order and define window specifications. See Section 3.3.

The EPA-11 Library

The REMIT software contains a complete library of radionuclides, class, mode, and dose conversion factors from EPA Report 11 for inhalation (H) and ingestion (G). For any nuclide-class-mode combination in this library, the REMIT system will calculate dose from intake.

To access this library, press **[F5]** within <Intakes> and make your selection using the cursor keys or the mouse to move about in the list. Press **[Return]** to select an entry. The nuclide, class, and mode will be entered into the intake record. You may press the first letter of the nuclide abbreviation and the record pointer will advance to the first record beginning with this letter. You may also begin the intake by partially completing the nuclide abbreviation and then by pressing **[F5]**; the pick list will advance the first record matching your entry.

Once you have selected or entered values for nuclide, class, and mode, enter the intake in microcuries. You may enter the value in decimal or scientific notation (i.e., 0.0123 or 1.23E-2).

If the nuclide-class-mode values you have entered are among the EPA-11 library, a check mark (✓) will appear in the field "EPA-11 Nuclide." If every intake you have entered is marked in this manner, you may press **[F2]** to have the REMIT system calculate the dose from these intakes.

Non-EPA-11 Intakes

If any intake entry is not among the EPA-11 library, the check mark will not appear and the REMIT system will require that you enter doses for each organ resulting from this specific intake. The REMIT system will combine these doses with the doses it calculates for the other intakes. There are additional fields for the remainder dose and remainder organ that are optional (see EPA Report 11). This is to account for the possibility that the dose to a remainder organ may become limiting in combination with other intake doses. The doses to each organ are stored in the data base for calculational and records retention purposes but are **not** reported to the NRC.

If any intake entries are made that do not exist in the EPA-11 library, it is suggested that a <Comment> be entered for this dose record explaining or

referencing further documentation on the dose calculation model used in this dose assessment. This is optional, but it will facilitate the NRC's evaluation of this dose record.

This internal dose calculation module is designed to assist the user in calculating dose from intake by incorporating the EPA-11 library and calculation model while allowing the user to enter non-EPA-11 intakes as long as the doses to each organ are entered. While 10 CFR Part 20 does not require the recording of doses to each organ for each intake, these intermediate calculations would need to be performed in any event to meet the overall requirements of calculating dose from intakes. Therefore, the REMIT system facilitates this activity without the addition of any undue burden.

Calculating CEDE, CDE, and Max Organ

When you have finished your intake entries and saved your data, the records will be passed to the REMIT internal dose calculation module. This module will return the CEDE, CDE, and maximally exposed organ for these intakes. These values will be stored in the currently displayed dose record. The maximally exposed organ field is not required by the NRC but may be useful for dose evaluation purposes.

The Test Number field is to be used to identify a specific intake record. It is not required and is not reported to the NRC. Several intakes may occur throughout the monitoring period, and it may be necessary to uniquely identify an intake to avoid duplicate entries. An example of its use would be to enter a test date or laboratory sample number.

An asterisk will appear next to the <Intakes*> push button on the Doses screen if intake records exist for this dose record.

6.4.1 Intake Modes

Inhalation Mode

A pulmonary clearance class designation of D, W, Y, or V is required for each isotope in inhalation mode. Classes D, W, and Y refer to pulmonary clearance half-times of less than 10 days, 10 to 100 days, or greater than 100 days, respectively. Class V references the special case for some isotopes inhaled as a vapor (see EPA Report 11).

Ingestion Mode

Ingestion is not an expected mode of intake for normal operations and usually indicates the need for an investigation or other clarification of why an ingestion intake is being reported (see Section 6.2.6). The software calculates dose equivalents for ingestion intakes as follows: The user designates an ingestion intake by entering "G" in the mode field for each reported isotope. A class designation is not required for ingestion mode but defaults to "G." For the minority of isotopes for which EPA Report 11 lists differing conversion factors distinguished by different f_1 values, the software uses worst-case dose factors based upon the lowest stochastic or non-stochastic annual limits on intake (ALIs).

Absorption, Injection, or Other Modes

With the exception of tritium absorption through intact skin, the REMIT system does not calculate dose equivalents for these intake modes. Dose equivalents for any significant intakes should be calculated by other methods. If you enter an intake with one of these modes, REMIT will require that you enter the doses to each organ resulting from this intake. You may also enter the remainder dose and the remainder organ if desired. The software will calculate the total CEDE, CDE, and maximally exposed organ from these doses (plus the contributions from the intakes entered) in accordance with the EPA-11 nuclide library as described in Section 6.4.

6.4.2 Special Case Isotopes

Inhalation of Tritium

10 CFR 20, Appendix B reports a derived air concentration (DAC) value for tritium that accounts not only for inhalation but also for absorption through intact skin. The REMIT system follows the same convention by applying a skin absorption factor of 1.5 to any tritium inhalation.

Inhalation of Class D Isotopes of Mercury

REMIT does not distinguish between inhalation of Class D organic isotopes and mercury isotopes in sulphate form. Selection of Class D for any mercury isotope returns a value for the worst case of the two chemical forms, based upon comparison of the respective ALIs.

Inhalation of Carbon-11, Carbon-14

These isotopes represent a special case because their chemical forms are not distinguished by classes D, W, or Y, but as carbon monoxide, carbon dioxide, or labeled organic compounds. The REMIT system returns calculations for the worst case, based upon the respective ALIs for these chemical forms.

Noble Gases

The dose conversion factors in EPA Report 11 for noble gases reflect a predominant dosimetric effect from submersion in a semi-infinite gaseous cloud which delivers an external dose. Submersion exposures should be measured directly and reported as external dose equivalents. The REMIT system, therefore, does not calculate an internal dose for noble gas isotopes.

Isomeric Forms

EPA Report 11 distinguishes certain isotopes by their isomeric form, identified by differing radiological half-lives. The REMIT system distinguishes between isomeric forms, but returns a worse-case calculation based upon the lowest of the respective ALIs.

6.5 EMPLOYEE LIMITS

Purpose:

Limits allows the user to compare an individual's total dose to the applicable dose limits. A dose remainder is displayed (the dose limit minus the total dose accrued). If the dose limits are exceeded, the user will be alerted.

Instructions:

1. Select <Limits> (Screen 6-12) to view an individual's dose remainder and dose limits.
2. Select <Edit Limits> to set dose limits for an individual, if desired.
3. Select <Return> to return to the Doses screen.

Screen 6-12. Employee Limits

Employee		Doses		
Identification Number	121-21-2121	ID Type	SSN	1 of 8
Last Name	First	MI	Sex	Birthdate
JUMPER	JOE	J	M	10/13/1957

	1993 Routine	1993 PSE	Lifetime PSE
LDE	15.000 / 15.000	15.000 / 15.000	75.000 / 75.000
SDE	49.570 / 50.000	50.000 / 50.000	250.000 / 250.000
WD	49.570 / 50.000	50.000 / 50.000	250.000 / 250.000
ME	49.359 / 50.000	50.000 / 50.000	250.000 / 250.000
TEDE	4.359 / 5.000	5.000 / 5.000	25.000 / 25.000

<Edit Limits> < Return >

Screen Elements:

Remainder/Limits are compared in three different cases: One-Year Routine, One-Year PSE, and Lifetime PSE.

- ① One-Year Routine: Total routine dose received at all licensees in 1 year.
- ② One-Year PSE: Total PSE dose received at all licensees in 1 year.

- ③ Lifetime PSE: Total lifetime PSE dose.
- ④ LDE: Eye dose equivalent limit to the lens of the eye; measurement in rem for dose equivalent at a tissue depth of 0.3 cm; applies to the external exposure of the lens of the eye.
- ⑤ SDE: Shallow dose equivalent limit, whole body or maximum extremity; measurements in rem.
- ⑥ WB: Shallow dose equivalent limit, whole body; measurement in rem.
- ⑦ ME: Shallow dose equivalent limit, maximally exposed extremity; measurement in rem.
- ⑧ TODE: Total organ dose equivalent in rem.
- ⑨ TEDE: Total effective dose equivalent in rem.

Options:

<Edit Limits> To set dose limits for an individual
 <Return> To return to the Doses screen

User Notes:

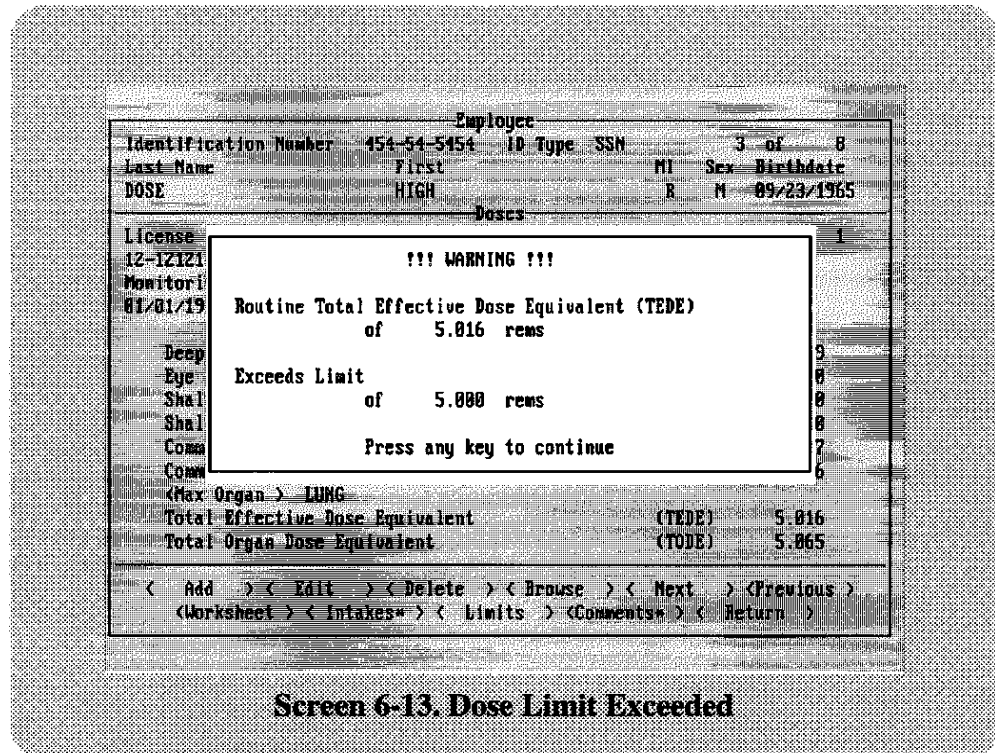
There are dose limits for three categories: 1-year routine (R) doses, 1-year PSEs, and lifetime PSEs. One-year routine doses are those accrued during routine occupational activities at all licensees for a calendar year. One-year PSEs are those doses accrued during special activities at all licensees for a calendar year. PSE doses are in addition to routine doses and must be authorized in advance by the NRC. Lifetime PSEs are similar to PSEs but are totaled over the career of the individual at all licensees, not just during a specific calendar year. For further details on PSEs, see *Regulatory Guide 8.35, "Planned Special Exposures."*

If any dose records exist in the REMIT table that are marked as "No Record" for an individual, the 1-year PSE and lifetime PSE limits will be set to zero. In accordance with Regulatory Guide 8.7, Rev. 1, and 8.35, PSEs are not permitted for individual with incomplete dose records.

For dose limit calculations, "One-Year" is defined as January 1st of the year to January 31st of the following calendar year. Actually a 13-month time period, these calculations contain a 1-month overlap that may result in a false indication of an exposure in excess of limits. This overlap is inherent in 10 CFR 20.

Dose limits are checked by REMIT at two points: (1) when dose records are entered and (2) when <Limits> is selected.

If any dose limit has been exceeded, a warning message appears that specifies the dose and the limit that was exceeded. *Screen 6-13* shows an example of an exceeded dose warning:



See Also:

Licensee Limits

6.5.1 Edit Limits

Purpose:	<Edit Limits> allows you to set dose limits for an individual.
Instructions:	<ol style="list-style-type: none"> 1. Select <Edit Limits>. 2. Edit or set new dose limits, pressing (Tab) to move from field to field or clicking the left mouse button on a specific field. 3. Select <Save> to save the individual's dose limits, or select <Cancel> to exit without saving.
Options:	<p><Save> To save individual dose limits</p> <p><Cancel> To exit the Limits screen without saving changes</p>
User Notes:	<p>If you select <Save> or <Cancel> when the dose limits exceed the NRC regulatory limits, you will not be allowed to exit until the limits are set equal to or below the NRC regulatory limits as defined in 10 CFR 20.1201.</p> <p>The REMIT system also allows you to set licensee-wide dose limits (see Section 4.1.2). You may set licensee or individual dose limits lower than the current NRC regulatory limits for administrative purposes, but REMIT does not allow you to set them higher than the current NRC limits. If the licensee does not choose to set limits, the default will be the current NRC regulatory limits as defined in 10 CFR 20.1201. In this case, a message appears on screen saying "USING NRC LIMITS."</p>

6.5.2 TODE Limit

User Notes:

TODE (Total Organ Dose Equivalent) requires special attention and is treated separately by REMIT. In some cases, licensees may not be receiving information on intakes from previous employers for an individual. Only the TODE for the monitoring period will be provided on an NRC Form 4. These TODEs will be summed to determine the individual's TODE as if all doses were to the same organ. This may not be the case. Each intake may contribute dose in varying degrees to different organs. The TODE may not, therefore, represent the true dose to the maximally exposed organ. This will usually make little difference if the TODE is small in comparison with the TODE dose limit. However, as the TODE approaches the dose limit for an individual, the licensees may wish to determine the true TODE to the maximally exposed organ from all intakes to ensure that the TODE limit is not exceeded.

The REMIT system handles this situation in the following manner. If the TODE for routine or PSE dose exceeds the TODE limit, the REMIT system will alert you to a possible organ dose in excess of limits. The warning message will suggest that you enter all intakes at all licensees for this individual for the monitoring year in question. This will require the licensee to obtain the NRC Form 5s for this individual from other licensees that have reported a TODE. The REMIT system will then be able to calculate the true TODE for the maximally exposed organ from the dose contributions from all intakes. If all available intake records have been entered and the TODE is still in excess of limits, you will be alerted that an exposure in excess of limits has occurred.

If an exposure in excess of limits occurs, it is suggested that you enter a comment for the dose record using <Comments>, possibly referencing further documentation on the incident. This is meant to be in addition to, and not as a substitute for, proper notification of such incidents to the NRC under 10 CFR 20.2202 and 20.2203.

Example:

An individual named "LOTS O'INTAKES" in the Test Set has several <Intake> entries at different licensees. This record set demonstrates how REMIT will handle the calculation of the TODE. The user may find it instructive to go through the following exercise.

Typically, individuals and licensees are not expected to transfer intake information from site to site. Only the information on Form 4 will be transferred. This information includes the TODE for the individual, but does not identify the maximally exposed organ or the specific dose contributions to each organ from each intake. As a result, the total of

TODE for the monitoring year for this individual may not accurately reflect the TODE for the maximally exposed organ. If a number of nuclides are involved, the total of TODE may be higher than the TODE calculated from all intakes. This situation is described in detail in section 6.5.2. For most licensees this will not be a concern since intakes usually do not contribute significantly to the TODE or TEDE. However, as the TODE approaches the dose limit, the licensee may wish to further assess the dose from intakes to calculate the true TODE.

Lots O'Intakes in the Test Set has several intakes at different facilities. The following will demonstrate REMIT's treatment of TODE.

1. Access the Test Set as described above and locate Lots O'Intakes using <Browse> or <Find>.
2. Select <dOses> to view the record set for this individual. Review these records and note that one dose record has <Intakes*> denoted with an asterisk, and one does not. This means that one record has a TODE value without the associated intake records. Also note that the dose record with the intake records resulted in a high dose to the THYROID.
3. Select <Limits>. A warning screen will alert the user of the possibility that this individual has exceeded the TODE limit. Since a record exists without detailed intakes, REMIT will suggest that the user enter in a complete list of intakes for all dose records in order to accurately calculate TODE.
4. Now go back to the dose record (using <Next>/<Previous>) that did not have the asterisk next to the <Intakes> push button. Select <Intakes> and enter in an intake that results in a dose to another organ besides THYROID. For example:

Am-241 W H 4.0E-04 uCi

Select **(F2)** Save/Exit. This results in a dose of 3.212 rem to the bone surface, not the thyroid.

5. Select <Limits> and you will see that REMIT now accesses all intake records for the monitoring year at all licensees to calculate the true TODE. The TODE is no longer in excess of the limit, since the missing intakes were provided and contributed most of the dose to an organ other than the thyroid.

Once again, it is anticipated that most individuals and licensees will not transfer intake data from site to site. This should not significantly impact the exposure monitoring practices at the licensee, unless the TODE approaches the dose limit. At that point the licensee may want to enter the intake records to more accurately reflect the true TODE for this individual.

Without full intake records the TODE calculation will be conservatively high. Since each licensee is required to report all intakes at their facility to the NRC on Form 5 or the electronic submittal, the NRC will be able to accurately assess the TODE for each individual without adding the burden for licensees to maintain intake records at other facilities.

Note:

The above discussion outlines one possible scenario and is only presented in order to demonstrate a functional aspect of REMIT. It is the responsibility of the licensee to determine how to monitor and maintain exposure information in accordance with the Revised Part 20.

See Also:

Doses Comments

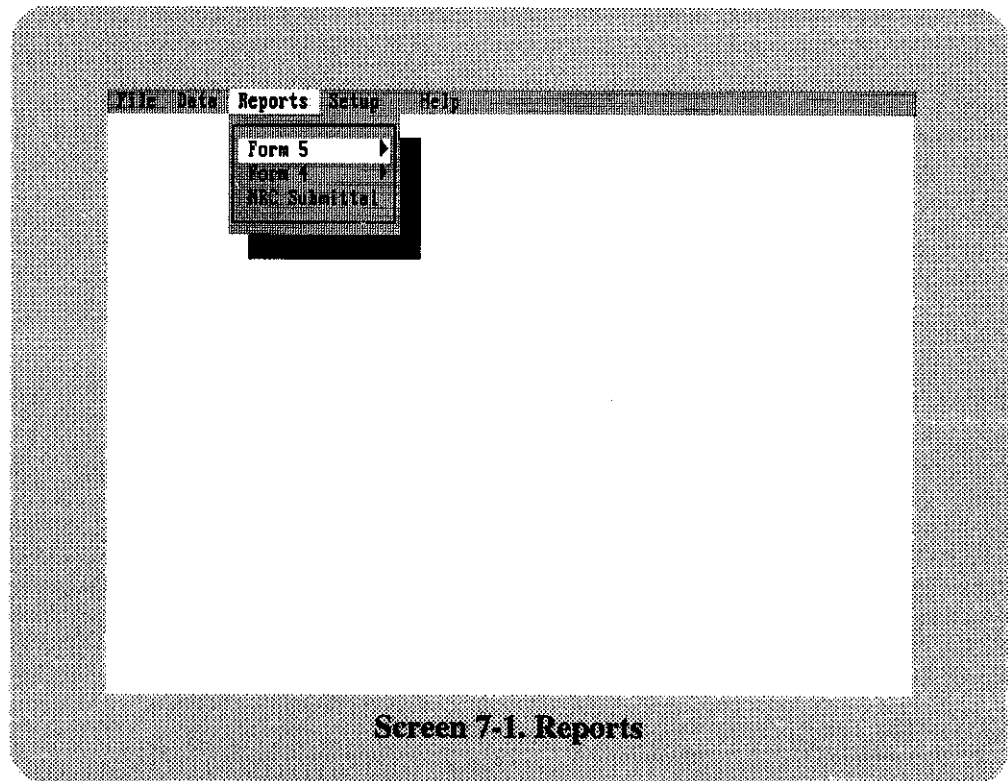
7. REPORTS

Purpose:

Reports allows you to prepare hard-copy reports for NRC Forms 4 and 5 and electronic reports for NRC Form 5 submittal.

Instructions:

1. Select *Reports* from the Main Menu (*Screen 7-1*).
2. Choose from three options:
 - Form 5*
 - Form 4*
 - NRC Submittal*



Screen 7-1. Reports

User Notes:

Any reports submitted for printing may be terminated by pressing (**Esc**). A pop-up window will be displayed allowing the user to continue or quit the print job. Highlight the desired selection and press (**Enter**).

See Also:

Form 5, Form 4, NRC Submittal

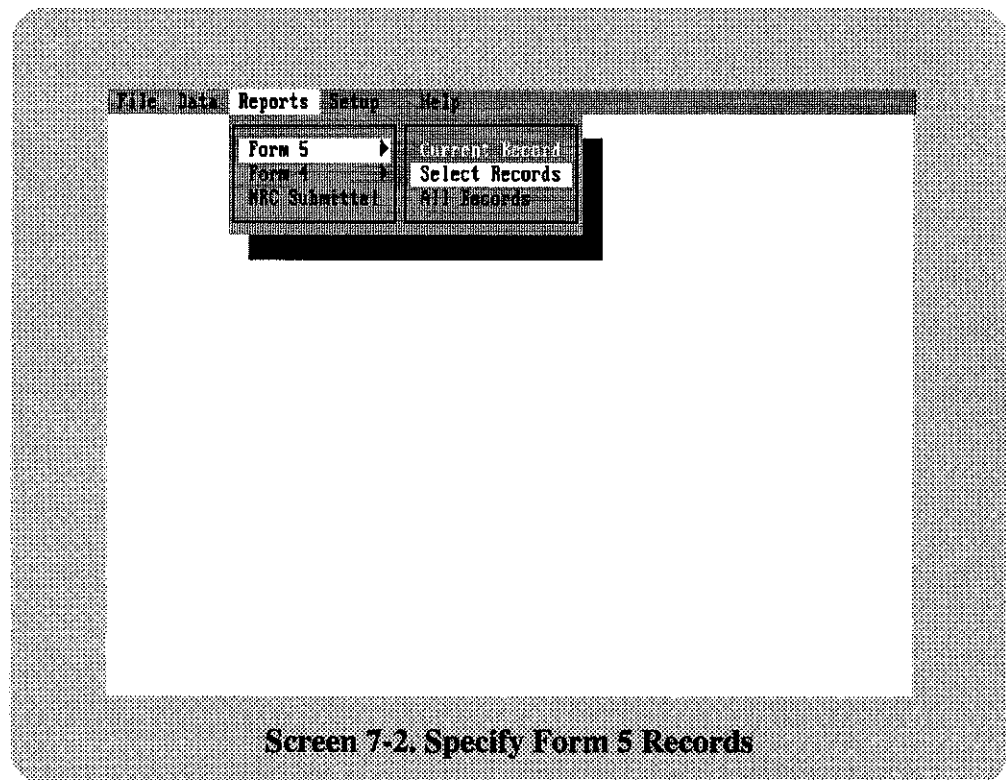
7.1 FORM 5

Purpose:

This function allows you to print Form 5s to the printer.

Instructions:

1. Select *Form 5* (Screen 7-2).
2. Choose which records to print—(1) *Current Record*, (2) *Select Records*, or (3) *All Records*.



Screen 7-2. Specify Form 5 Records

Options:

- | | |
|-----------------------|--|
| <i>Current Record</i> | To print a Form 5 report for the currently displayed dose record. |
| <i>Select Record</i> | To select dose records from a browse window for which to print Form 5 reports. |
| <i>All Records</i> | To print Form 5 reports for all individuals for the specified monitoring year. |

See Also:

Current Record, Select Record, All Records, Printer

7.1.1 Current Record

Purpose:	<i>Current Record</i> allows you to print a Form 5 report for an individual whose dose record is currently displayed.
Instructions:	<ol style="list-style-type: none">1. Select <i>Data</i> from the Main Menu.2. Select an employee report using the <Find>, <Browse>, <Next>, or <Previous> push-keys.3. Choose <dOses> from the Employee Information screen.4. Select desired dose record using the <Next>, <Previous>, or <Browse> push-keys.5. Select <i>Reports</i> from the Main Menu.6. Select <i>Current Record</i> from the <i>Reports</i> submenu.
User Notes:	You are automatically returned to the <i>Reports</i> menu when the report is finished printing. The <i>Current Record</i> option is not available unless you are currently displaying a dose record.
See Also:	Select Record, All Records, Printer

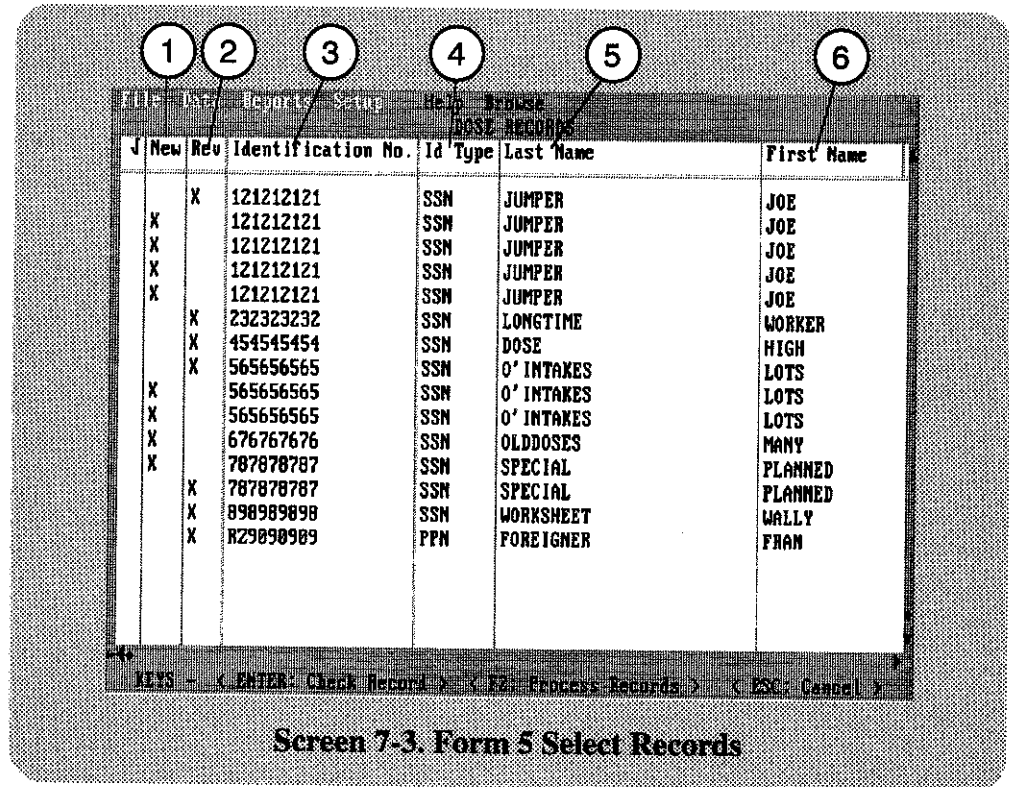
7.1.2 Select Records

Purpose:

This function allows you to select specific dose records and print Form 5 reports for those records.

Instructions:

1. Choose *Select Records*.
2. Specify the order to display records, and monitoring year for selection.
3. Select from the available records (*Screen 7-3*) by moving the cursor to the record, then pressing **Enter** or pressing the right mouse button to check the record. Multiple records may be selected.
4. Press **F2** to print the checked records, or press **Esc** to cancel and return to the *Reports* menu.



Screen 7-3. Form 5 Select Records

Screen Elements:

- ① New: Denotes that the record has been added since the last NRC submittal.
- ② Rev.: Denotes the record has been modified since the last NRC submittal.

③ Identification Number: An individual identification number; usually an SSN. If the individual has no SSN, a PPN, CSI number, WPN, IND, or other identification is used.

④ ID Type: Type of identification number indicated by the following codes: SSN, PPN, CSI number, WPN, or IND.

⑤ Last Name: Last name of monitored individual.

⑥ First Name: First name of monitored individual.

R/PSE: Type of exposure; it concerns data from monitoring routine exposures. Values are R (routine) or PSE (planned special exposure).

License Number: License number of the reporting organization.

Begin: Date monitoring began.

End: Date monitoring ended.

TEDE: Total Effective Dose Equivalent for monitoring period.

Options:

- Enter** To select a record
- F2** To print checked records (denoted by a ✓ in the first column)
- Esc** To cancel and return to the *Reports* menu

These options are also activated by clicking the left mouse button on the appropriate push button at the bottom of the screen.

User Notes:

The user can specify the order to display the records for selection. Enter the desired year and record order.

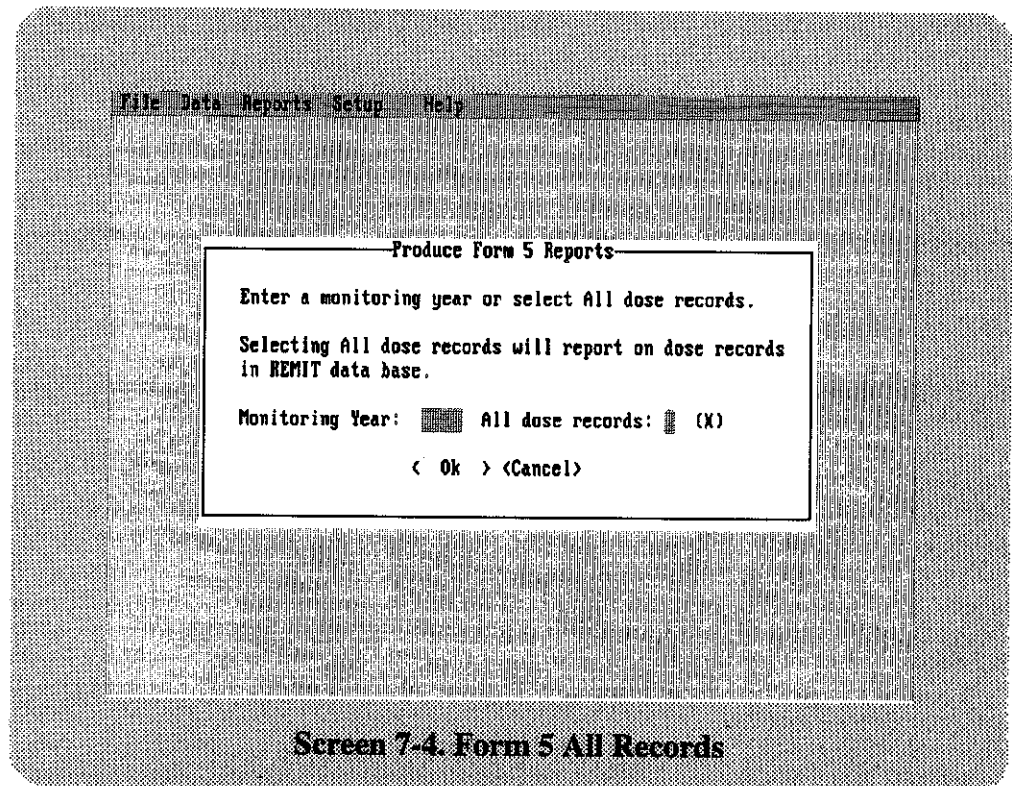
See Also:

Current Record, All Records, Printer

7.1.3 All Records

Purpose: The *All Records* option allows you to print Form 5 reports for all individuals whose records appear in the data base for a specific monitoring year.

- Instructions:**
1. Select *All Records* (Screen 7-4).
 2. Enter monitoring year, or enter "X" for all records.
 3. Choose <Ok> to print reports or <Cancel> to return to the *Reports* menu.



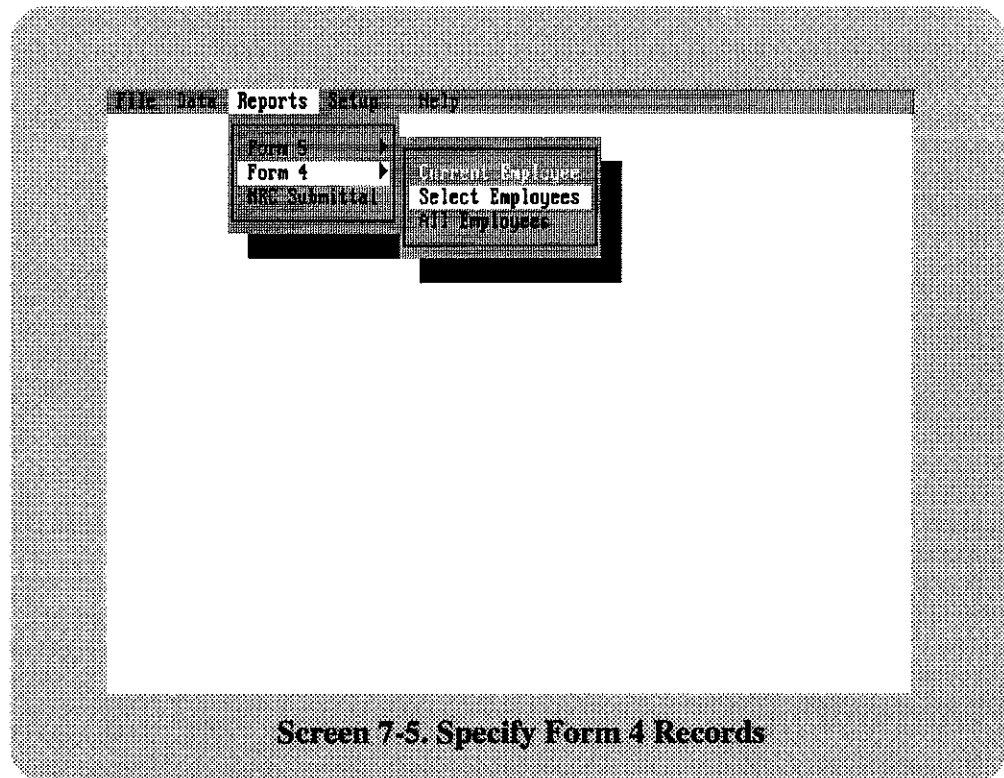
User Notes: You are automatically returned to the *Reports* menu when the reports have finished printing. Monitoring year must be previously defined from the *Licensee Information* selection under the *Setup* option from the Main Menu.

See Also: Current Record, Select Record, Monitoring Years, Printer

7.2 FORM 4

Purpose: *Form 4* allows you to print a career dose history for an employee.

- Instructions:**
1. Select *Form 4* (Screen 7-5).
 2. Choose which employee's *Form 4* to print—(1) *Current Employee*, (2) *Select Employee*, or (3) *All Employees*.



Screen 7-5. Specify Form 4 Records

- | | |
|-----------------|---|
| Options: | <p><i>Current Employee</i> To print a Form 4 report for the currently displayed employee record.</p> <p><i>Select Employee</i> To specify the employees for which to print Form 4 reports.</p> <p><i>All Employees</i> To print Form 4 reports for all individuals in the data base.</p> |
|-----------------|---|

See Also: Current Employee, Select Employee, All Employees, Printer

7.2.1 Current Employee

Purpose:	This option allows you to print a Form 4 for the currently displayed employee record.
Instructions:	<ol style="list-style-type: none">1. Select <i>Data</i> from the Main Menu.2. Select desired employee record using the <Find>, <Browse>, <Next>, and <Previous> push-keys.3. Select <i>Reports</i> from the Main Menu.4. Select <i>Current Employee</i> from the <i>Reports</i> submenu.
User Notes:	You are automatically returned to the <i>Reports</i> menu when the report is finished printing. You can print a report from the Employee or Doses screens by accessing <i>Reports</i> , but the <i>Current Employee</i> option is not available unless you are displaying an employee record or an associated dose record.
See Also:	Select Employee, All Employees

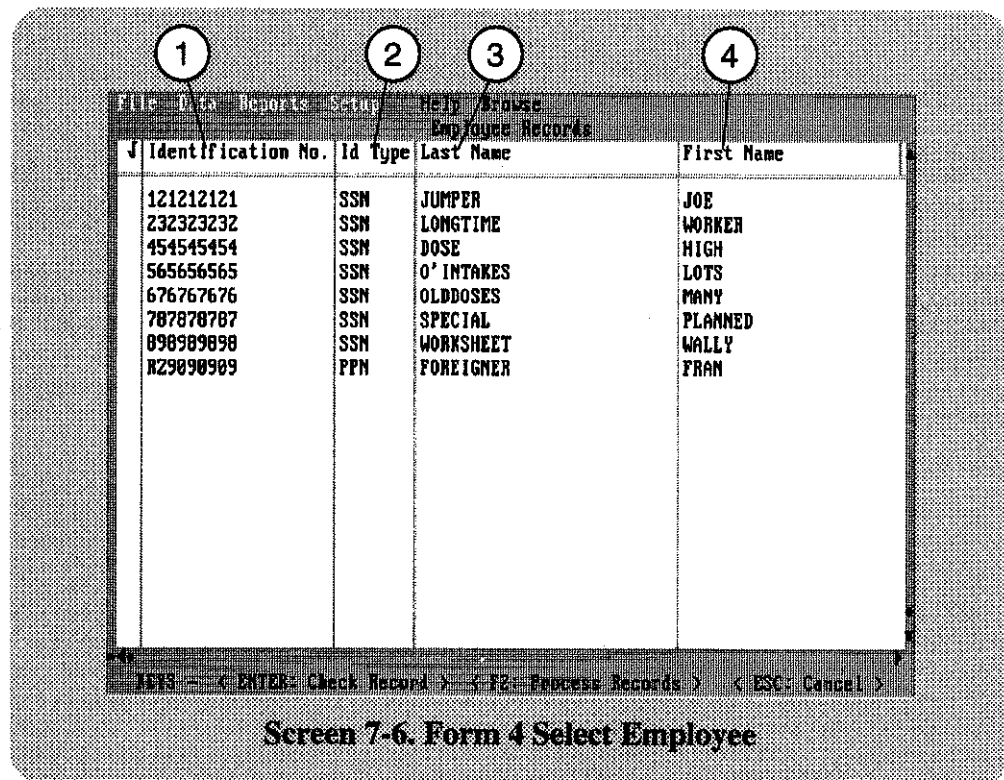
7.2.2 Select Employee

Purpose:

This function allows you to select specific employees and print Form 4 reports for those employees.

Instructions:

1. Choose *Select Employee* (Screen 7-6) from the *Report - Form 4* submenu.
2. Select from the available records by moving the cursor to the record, then pressing **(Enter)** or pressing the right mouse button to check the record. Multiple employees may be selected.
3. Press **(F2)** to print the checked records, or press **(Esc)** to cancel and return to the *Reports* menu.



Screen Elements:

- ① **Identification Number:** An individual identification number; usually a SSN. If the individual has no SSN, a PPN, CSI number, WPN, IND, or other identification must be used.
- ② **ID Type:** Type of identification indicated by the following codes: SSN, PPN, CSI number, WPN, IND, or OTH. [Display only]
- ③ **Last Name:** Last name of the monitored individual. [Display only]
- ④ **First Name:** First name of the monitored individual. [Display only]

M.I.: Middle initial of monitored individual.

Birthdate: Date of birth of monitored individual.

Sex: Sex of monitored individual (M, F).

Options:

- Enter** To select a record
- F2** To print all selected records (denoted by a ✓ in the left column)
- Esc** To cancel the selection and return to the *Reports* menu

These options are also activated by clicking the left mouse button on the appropriate push button at the bottom of the screen.

See Also:

Current Employee, All Employees

7.2.3 All Employees

Purpose:	<i>All Employees</i> allows you to print Form 4 reports for all individuals whose records appear in the data base.
Instructions:	<ol style="list-style-type: none">1. Select <i>All Records</i>.2. You are automatically returned to the <i>Reports</i> menu.
See Also:	Current Employee, Select Employees

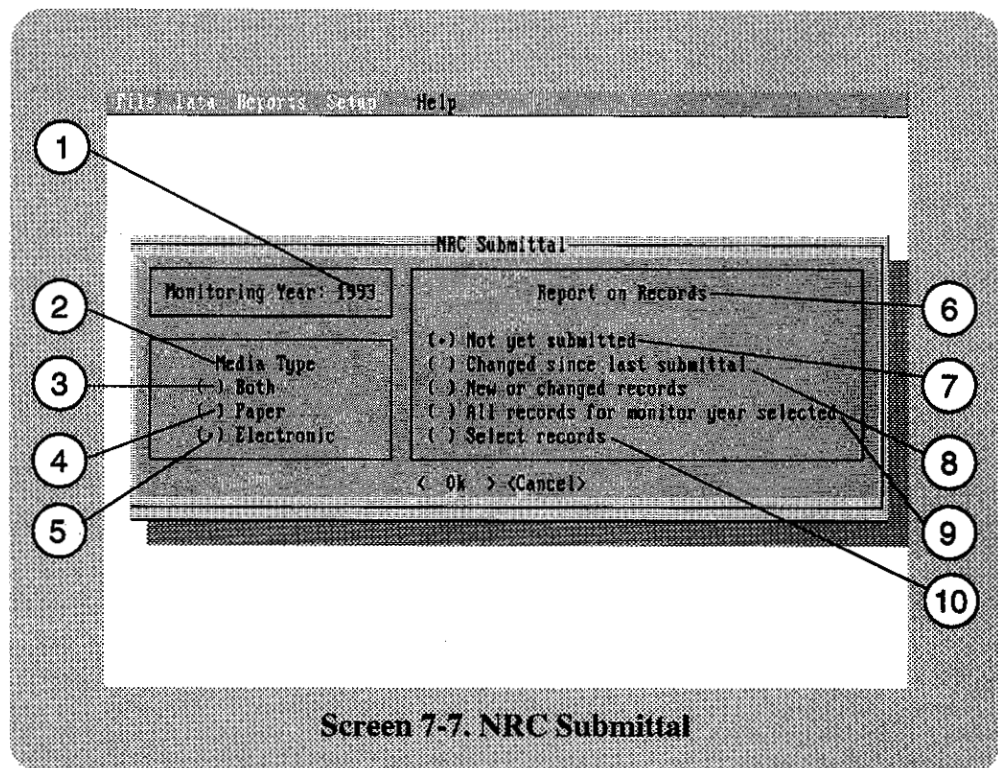
7.3 NRC SUBMITTAL

Purpose:

The REMIT system produces Form 5 reports for each monitored individual. These reports are required by 10 CFR 20.2206 to be submitted to the NRC and are produced on paper or electronic media in the format specified by *Regulatory Guide 8.7, Rev. 1*. The NRC prefers licensees to submit Form 5s on electronic media.

Instructions:

1. Select *NRC Submittal* (Screen 7-7) from the *Reports* submenu.
2. Specify the monitoring year, the media type, and the records to be reported.
3. Choose <Ok> to write the reports to NRC Form5.DAT or <Cancel> to exit.



Screen 7-7. NRC Submittal

Screen Elements:

- ① Monitoring Year: The monitoring year in which records are to be reported (format: YYYY). Under certain circumstances, the licensee may need to resubmit reports for a prior year that have been added to or changed since the last submittal. [Required]

- ② **Media Type:** The media type in which the reports are to be generated. You may select Both to keep hard-copy records on file while simultaneously generating an electronic submittal for the NRC. The licensee should not submit both media to the NRC. Both, Paper, or Electronic must be indicated. [Required].
- ③ **Both:** Report generated in both paper and electronic media.
- ④ **Paper:** Report generated on paper.
- ⑤ **Electronic:** Report generated electronically to file NRCFORM5.DAT. This is the NRC preferred method for submitting data.
- ⑥ **Report on Records:** Status of record currently being input. Not yet submitted, Changed since last submittal, Both not submitted and changed, All records for monitoring year, or Select records must be indicated. [Required]
- ⑦ ***Not Yet Submitted:*** Reports that have never been submitted using the REMIT system.
- ⑧ ***Changed Since Last Submittal:*** Previously existing reports that have been edited since they were last submitted.
- ⑨ ***All Records for Monitoring Year:*** All records currently in the data base for the monitoring year indicated.
- ⑩ ***Select Records:*** Select specific Form 5 records to be processed from a browse window. If a monitoring year has been entered, only those Form 5 records will be available for selection.

User Notes:

The *NRC Submittal* selection should only be used to submit data to the NRC. The REMIT system will flag all records to indicate submission to the NRC. This report tracking function should not be used for any other purpose since this may interfere with the correct operation of the REMIT system.

The monitoring year must be previously defined through *Setup*. See Section 4.1.4, Monitoring Years, for guidance.

Electronic Submittal

If you select the media types Electronic or Both, the REMIT system creates a file named NRCFORM5.DAT that contains your annual monitoring data in the format specified in Appendix A of *Regulatory Guide 8.7, Rev. 1*. The file is created in the current directory of your hard disk. If NRCFORM5.DAT already exists, the REMIT system will ask you if you want to overwrite the existing file. It is important that any previously reported data be backed up prior to selecting this option. The file is produced on the hard disk to allow you to make backup copies and to allow you to copy the file to a formatted floppy diskette for submittal to the NRC. Refer to Appendix A of *Regulatory Guide 8.7, Rev. 1*, for details on magnetic media reporting requirements.

To submit the file to the NRC:

1. Exit REMIT.
2. Insert a DOS-formatted floppy diskette in drive A and type:

```
C:\REMIT> COPY NRCFORM5.DAT A:*. * /V Enter
```

Note: If using drive B, replace A: with B: in the above command.

In this example, the DOS verify (/V) copy command is used to ensure proper transfer of data to the floppy drive. Most licensees should be able to fit the entire NRCFORM5.DAT file onto one floppy diskette. If the data file will not fit on one diskette, you may use multiple floppy disks with the DOS backup command or other archival software. Be sure to (1) include the means by which NRC can extract the files if other archival software is used and (2) provide instructions for extraction.

Once the file is copied to diskette(s), you should label the diskette with information such as your primary NRC license number and the date. You should also complete a transmittal letter as specified in Appendix A of *Regulatory Guide 8.7, Rev. 1*. The transmittal letter should contain the file name, date created, operating system used, name of a technical contact knowledgeable about the file, phone number of the contact, special instructions, signature, and the date the letter was signed.

The floppy diskette should be protected by using a commercially available floppy diskette mailer. In some cases, it may be possible to include the letter inside the diskette mailer. If not, enclose both the letter and diskette in an appropriate mailing package. Treat the diskette with care and do not

force more than one diskette or bulky correspondence into a mailer. The outside of the package should be marked "DISKETTE ENCLOSED—DO NOT X-RAY OR EXPOSE TO MAGNETIC FIELDS" or a similar message.

Mail the package to the address specified in *Regulatory Guide 8.7, Rev. 1* Section 2.4:

REIRS Project Manager
Office of Nuclear Reactor Research
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

See Also: Form 5, Form 4

8. REFERENCES

1. U.S. Nuclear Regulatory Commission, "Standards for Protection Against Radiation; Final Rule (10 CFR Part 20 etal.)," *Federal Register*, Vol. 56, No. 98, May 21, 1991.
2. U.S. Nuclear Regulatory Commission, "Instructions for Recording and Reporting Occupational Radiation Exposure Data," Regulatory Guide 8.7, Rev. 1, June 1992.
3. U.S. Environmental Protection Agency, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submission, and Ingestion," Federal Guidance Report No. 11.

APPENDIX A. GLOSSARY OF REMIT TERMS

Cursor: a visual position indicator on a display terminal that moves along with each character as it is entered from the keyboard; it is usually a short highlighted line that appears underneath the space where a character is to be entered or replaced.

Default: a value, parameter, attribute, or option that the program or system assigns when the user does not specify another.

Destination drive: the drive to which the data is being sent.

Directory: a table containing the keys to the records in a file and the locations where they are stored.

Field: any of the units of storage that are grouped together to form a record.

Full path specification: complete destination information, consisting of the drive letter and the directory name of the data base file; for example, C:\REMIT.

Menu: a displayed list of the various functions the user can select.

Pad: an arbitrary character, such as a blank or zero, used to complete a field, or record.

Printer port: a connection between the central processing unit (CPU) and the printer that permits data to be printed.

Push button: a list of available actions that a user can select to perform, denoted by brackets <>.

Radio button: a list of information options from which the user can select only one. Radio button is denoted by (·).

Scratch file: a temporary file for future use, created by copying all or part of a data set to an auxiliary memory device.

Submenu: a menu accessible only from within another menu.

Toggle: a two-option, on-off function of a highlighted area. For instance, if a highlighted area is marked to be deleted, using the toggle will mark it to be undeleted; using the toggle again will mark it to be deleted again.

Window: a selected portion of an image displayed on a computer screen.

APPENDIX B. WINDOW MESSAGES

The following is a full listing of the message windows that may appear when using the REMIT system. A description of each message is given along with further references where applicable. Several of the longer text messages are listed at the end of this section.

<u>Message</u>	<u>Description</u>
Adding employee record canceled.	Addition of the employee information was canceled. Changes are not saved.
Addition of dose record canceled.	The addition of a dose record for this individual was canceled. Changes are not saved.
All doses are required when nuclide is not in EPA-11	If the intake entry does not correspond to a nuclide-class-mode combination found in EPA Report #11, the dose to <u>at least</u> one organ must be entered. See Section 6.4.
Begin and End dates must both be entered.	Complete monitoring dates must be given.
Begin date cannot be > monitoring end date.	Monitoring dates must be chronologically consistent.
Begin date is required.	Monitoring dates must be provided.
Begin date must be between ...	Monitoring dates must be within monitoring period for the dose record.
Begin Date must be >= ...	Monitoring dates must be within monitoring period for the dose record.
Begin date must start in January.	Monitoring years must be defined from January to January. See Section 4.1.4.
Beginning of File	At the first record of the data base.
Birthdate must be before today's date	The date of birth for the individual must be before the computer's system date. See your DOS manual if system date is incorrect.

<u>Message</u>	<u>Description</u>
Can not change: dose records exist for this period.	User cannot edit a monitoring year if it has associated dose records. User must first modify all dose records to be consistent with new monitoring year. See Section 4.1.4.
Can not edit licensee for associated license numbers.	License number has been entered as an Other License reporting with the Primary Licensee. See Section 4.1.3.
Can not enter primary license # as Other License #.	Primary License number has already been defined. Other Licenses cannot be the same license number as the Primary License number.
Can not save : CDE must be 'NC', 'ND', 'NR' or greater than or equal to 0.001.	Dose values should conform to Reg. Guide 8.7, Rev. 1. CDE may be NC - Not Calculated if CEDE is less than 1 rem. Zero doses should be entered as ND - Not Detected. NR - Not Required denotes that results are not required to be reported.
Can not save : ... must be 'ND', 'NR' or greater than or equal to 0.001.	Dose values should conform to Reg. Guide 8.7, Rev. 1. Zero doses should be entered as ND - Not Detected. NR - Not Required denotes that results are not required to be reported.
Can not save: Birthday must be before today	The date of birth for the individual must be before the computer's system date. See your DOS manual if system date is incorrect.
Can not save: ... dose invalid with no record	When Record Type = "N"; dose information cannot be entered. This record type indicates that exposure information has not been obtained.
Can not save: Contact is required.	The name of an individual knowledgeable about the licensee's dose records must be entered in order to include this information in the NRC Submittal in accordance with Reg. Guide 8.7 Rev. 1.
Can not save: Duplicate Dose Record	Dose record already exists for this individual for this monitoring period for this licensee. User must modify monitoring period, license number, or cancel entry and review the dose records to determine the reason for the discrepancy.
Can not save: Duplicate entry for Employee ID and ID type	Employee record already exists for this individual's ID number and ID type. User must cancel entry or modify ID number and ID type.

<u>Message</u>	<u>Description</u>
Can not save: Employee ID is required	Identification number is a required field.
Can not save: First name is required	First name is a required field.
Can not save: ID type is required	Type of identification is required. See Section 6.1.
Can not save: Intakes invalid with no record	When Record Type = "N"; intake records can not be entered. This record type indicates that exposure information has not been obtained.
Can not save: Last name is required	Last name is a required field.
Can not save: LDE dose invalid with no record	When Record Type = "N"; dose amounts cannot be entered.
Can not save: License number is required.	NRC license number is a required field.
Can not save: Max Organ invalid with no record.	When Record Type = "N"; dose information cannot be entered. This record type indicates that exposure information has not been obtained.
Can not save: Monitor period end date must be before ...	Monitoring period dates must be chronologically consistent.
Can not save: Monitoring Dates inconsistent with worksheet	Worksheet exposure monitoring dates must fall within the dose record monitoring period.
Can not save: Monitoring Period begin date is required.	Monitoring period dates are required fields.
Can not save: Monitoring Period end date is required.	Monitoring period dates are required fields.

<u>Message</u>	<u>Description</u>
Can not save: must enter CDE on dose screen or enter intakes.	Dose record must be complete before saving. You must make an entry for CDE or enter the intakes to have REMIT calculate the CDE. See Section 6.4.
Can not save: must enter CEDE on dose screen or enter intakes.	Dose record must be complete before saving. You must make an entry for CEDE or enter the intakes to have REMIT calculate the CEDE. See Section 6.4.
Can not save: must enter DDE on dose screen or on the worksheet.	Dose record must be complete before saving. You must make an entry for DDE or enter incremental doses in Worksheet. See Section 6.2.
Can not save: must enter LDE on dose screen or on the worksheet.	Dose record must be complete before saving. You must make an entry for LDE or enter incremental doses in Worksheet. See Section 6.2.
Can not save: must enter SDE-ME on dose screen or on the worksheet.	Dose record must be complete before saving. You must make an entry for SDE-ME or enter incremental doses in Worksheet. See Section 6.2.
Can not save: must enter SDE-WB on dose screen or on the worksheet.	Dose record must be complete before saving. You must make an entry for SDE-ME or enter incremental doses in Worksheet. See Section 6.2.
Can not save: Phone number is required.	Phone number of licensee contact knowledgeable about the dose records is required.
Can not save: Primary license number is required.	Primary NRC License number is a required field. See Section 4.1.
Can not save: Report Type on dose screen must be consistent with worksheet.	Record (R) or Estimate (E) has been entered in Worksheet that is inconsistent with the Record Type entered for the dose record. See Section 6.3.
Can not save: SDE ME dose invalid with no record.	When Record Type = "N"; dose information cannot be entered. This record type indicates that exposure information has not been obtained.
Can not save: SDE WB dose invalid with no record.	When Record Type = "N"; dose information cannot be entered. This record type indicates that exposure information has not been obtained.
Can not save: Sex must be 'F' or 'M' .	Sex is a required field.

<u>Message</u>	<u>Description</u>
Can not save: Worksheet invalid with no record.	When Record Type = "N"; intake records can not be entered. This record type indicates that exposure information has not been obtained.
Canceled Printing.	Print job has been canceled by the user.
Canceling changes ... Please wait.	Restoring initial values prior to modification. Please be patient.
Cannot create output file.	Output file cannot be created, may be DOS or device error. Check and retry.
Cannot save: SSN must have 9 numeric digits only.	ID type of social security number must be entered as a nine digit numeric value.
CDE dose invalid with no record.	When Record Type = "N"; dose information cannot be entered. This record type indicates that exposure information has not been obtained.
CEDE dose invalid with no record.	When Record Type = "N"; dose information cannot be entered. This record type indicates that exposure information has not been obtained.
Checking for consecutive monitoring periods ... Please wait.	Monitoring periods should not be consecutive for the same individual at the same licensee within a monitoring year. See Section 4.1.4.
Checking limits ... Please wait.	Dose record is being compared to the applicable dose limits. You will be alerted if dose limits are exceeded. See Section 6.5.
Class is a required field.	Pulmonary clearance class is required for intake records.
Class must be D, W, Y, V or O for mode = H.	Pulmonary clearance class designation for inhalation mode (H) according to EPA Report #11.
Class must be D,W,Y,V,G or O	Pulmonary clearance class according to EPA Report #11 including a code of 'G' used to denote ingestion mode.
Completed writing report NRCFORM5.DAT.	File generation completed.

<u>Message</u>	<u>Description</u>
Data errors exist in import file, see ... file.	Import file is checked according to the Data Validation requirements specified in Section 5.2. All inconsistencies are reported to the appropriate error file. The user must review these errors and perform corrective measures before data will be loaded.
Data not loaded, See EMP_ERRS.TXT and EXP_ERRS.TXT files.	The user should reference these files in order to review the inconsistencies found in the import file. The ASCII text editor provided with REMIT may be used to view these files.
DDE dose invalid with no record.	When Record Type = "N"; dose information cannot be entered. This record type indicates that exposure information has not been obtained.
Deleting ALL records for this employee... Please wait.	Employee, Dose, Worksheet, and Intake records for this individual are being deleted. Please be patient.
Deleting dose record ... Please wait.	The currently displayed dose record is being deleted along with associated Worksheet and Intake records. Please be patient.
Deletion ... completed.	Deletion completed.
Dose Monitoring end date inconsistent with Monitoring Period.	Monitoring Dates must be chronologically consistent.
Dose Monitoring Period outside period defined in setup.	Monitoring Period must be within Monitoring Year dates defined under Setup - Licensee Information. See Section 4.1.4.
Dose Monitoring Period overlaps Implementation Date.	The first monitoring year date entered under Monitoring Years should be the date of implementation of the Revised Part 20. Monitoring years under the Revised Part 20 must run from January to January and must not overlap. See Section 4.1.4.
DOSES_WS.DBF cannot have memo fields.	REMIT data base files do not support the use of memo fields.
Edit of dose record canceled.	Changes to dose record was canceled by user and will not be saved.

<u>Message</u>	<u>Description</u>
Editing employee record canceled.	Changes to employee record will not be saved.
Employee ID is required.	The employee identification number is a required field. See Section 6.1.
EMPLOYEE.DBF cannot have memo fields.	REMIT data base files do not support the use of memo fields.
End date ... cannot be less than ...	Monitoring dates must be consistent.
End date is required.	Monitoring end date must be provided.
End date must be between ...	Worksheet incremental monitoring periods must be consistent with dose record monitoring period.
End of File	At the end of data base records.
EPA-11 library table has been modified.	The date and size of the HP_RO EPA-11 library has changed since distribution from the NRC. This indicates that the file has been edited and that the dose conversion factors may no longer be correct. This may result in incorrect dose calculations from intakes. Reload HP_RO.* from distribution diskette. The licensee is ultimately responsible for ensuring that proper dose records are reported to the NRC.
Error ...	An error has been detected. Note error number or message and contact technical support.
Errors in worksheet, cannot save.	Inconsistencies were detected in Worksheet entries. The user must correct each error before proceeding.
ESC Option not available ...	The escape key (Esc) has been disabled. The current operation must be completed or canceled.
Export filename cannot be a *.dbf	File type ASCII (.TXT) was selected for export.
Export filename cannot be a REMIT dbf.	REMIT data base file names are reserved and must not be used for export.
Export filename must be a *.dbf	Data base file type (.DBF) was selected.

<u>Message</u>	<u>Description</u>
Exposure sequence not found.	Exposure records cannot be located by REMIT. Complete current activities and return to the main menu and run Reindex from the File menu.
EXPOSURE.DBF cannot have memo fields.	REMIT data base files do not support the use of memo fields.
(file) ... is empty, abort load.	Specified import file contains no records, no data can be loaded.
(file) is empty	Data file contains no records.
File ... does not exist.	File necessary for the operation of REMIT has not been located. Enter another drive or directory.
Filenames can not be the same.	File names must be unique in order to correctly process the information.
Finished export for ... data to ...	Export complete.
Finished processing intakes.	Intake calculations are finished. Proceed with dose record editing.
Finished processing worksheet.	Worksheet calculations are finished. Proceed with dose record editing.
Finished recalculating ... CDE doses.	CDE calculation completed. Proceed with dose record editing.
ID type is required	ID type is a required field and must be entered in the employee record.
ID type must be 'SSN', 'WPN', 'IDL', 'CSI', 'PPN', 'IND', or 'OTH'.	Valid entry for ID type required. See Section 6.1.
Import canceled by user.	Import terminated by user with no records loaded.
Import filename cannot be a *.dbf	File type ASCII (.TXT) was selected.
Import filename cannot be a REMIT dbf.	REMIT data base file names are reserved.
Improper filename, must be in the form ...	Filename specification is not recognized. See Section 6.2.2 or your DOS manual for further instructions.

<u>Message</u>	<u>Description</u>
Index does not match data base files.	Index files have been corrupted or accessed outside the REMIT software. Select Reindex from the File main menu option to recreate index files.
Initializing "EXTENDED" version of REMIT... Please wait.	The EXTENDED version of REMIT is loaded if the computer is a 386 machine or higher. See Section 2.1.
Initializing "STANDARD" version of REMIT... Please wait.	The STANDARD version of REMIT is loaded if the computer is a 286 machine. See Section 2.1.
Intake is a required field	Intake in microcuries (uCi) must be entered.
Intake is a required field, value must be > 0.000	Intake in microcuries (uCi) must be entered.
Intakes canceled.	Changes to Intakes will not be saved.
Invalid call to program, too many parameters	REMIT does not recognize parameters entered. Call technical support listed in the User Manual.
Invalid ... records exist for ...	Records do not meet criteria for REMIT data validation.
Invalid entry for committed dose equivalent.	Dose must be numeric (in rem), NC - Not Calculated, ND - Not Detectable, NR - Not Reported.
Invalid entry for ... dose equivalent.	Dose must be numeric > 0 (in rem), ND - Not Detectable, NR - Not Reported.
Invalid intake: Correct errors in record.	Errors must be corrected before record can be saved.
Invalid number of parameters.	REMIT does not recognize parameters entered. Call technical support listed in the User Manual.
Invalid or missing dbfs for dbpath specification ...	REMIT required data base files are missing or are not correctly formatted for use by REMIT. See Section 4.2.2.
Invalid organ code.	Organ codes must be valid and can be selected using the <F6> Organ Pick List.

<u>Message</u>	<u>Description</u>
Invalid period: Non consecutive monitoring periods	Monitoring year records must be consecutive. See Section 4.1.4.
Invalid period: Overlap of monitoring periods	Monitoring periods may not overlap for an individual at the same licensee. Monitoring periods must be corrected in order to save this record.
Invalid reporting ending period for this year	Monitoring years must be consistent. See Section 4.1.4.
LDE dose invalid with no record.	When Record Type = "N"; dose information cannot be entered. This record type indicates that exposure information has not been obtained.
Licensee record not found.	REMIT cannot locate licensee information. Licensee information is required in order to operate.
Limit must be less than ... limits.	Individual dose limits must be lower than the licensee administrative dose limits or the NRC dose limits.
Limits can not be greater than NRC limits	The administrative dose limits may not exceed the dose limits set forth in 10 CFR 20.1201. See Section 4.1.2.
Limits cannot be negative	Dose limits cannot be entered as a negative number.
Limits checked.	Dose records have been checked against applicable limits. If doses were in excess of limits, user would be alerted to the specific doses in excess of limits.
Limits saved.	Dose limits have been verified against NRC limits and have been saved.
LIMITS.DBF limits has been modified to exceed NRC limits.	Data base containing dose limits has been accessed outside of REMIT and an attempt has been made to modify dose limits to a higher value than the NRC limits. REMIT will not operate until dose limits are modified to comply with NRC dose limits.
Missing ... file	A file required for the operation of REMIT has not been found. See Section 4.2.2 or your DOS manual for file location considerations.
Missing ... records ...	Expected records cannot be found. Data may need to be recovered from backup. See Sections 2.6 and 2.7.

<u>Message</u>	<u>Description</u>
Missing REMIT ... files.	Files required for the operation of REMIT have not been found. See Section 4.2.2 or your DOS manual for file location considerations.
Mode is a required field.	Intake mode is a required field.
Mode must be B,G, or H	Intake mode must be a valid entry. B - for aBsorption, G - for inGestion, H - for inHalation.
Monitor period end date must be later than begin date	Monitoring dates must be chronologically consistent.
Monitor end date must be after the monitor begin date.	Monitoring dates must be chronologically consistent.
Monitoring Period end date is later than year of system date.	The monitoring period for the dose record must be before the computer's system date. See your DOS manual if system date is incorrect.
Monitoring Period has not be entered in setup.	Monitoring Years must be defined prior to entry of dose records. See Section 4.1.4.
Monitoring Year (YYYY) is required	The monitoring year in the four digit numeric format must be entered.
Monitoring Year is a required field.	The monitoring year in the four digit numeric format must be entered.
Must enter a contact.	The name of an individual knowledgeable about the licensee's dose records must be entered in order to include this information in the NRC Submittal in accordance with Reg. Guide 8.7 Rev. 1.
Must enter a directory for dbpath.	REMIT must be able to locate necessary data base files (See Section 2.6 for data files). A data base file path is required to locate files. Example: C:\REMIT\DBFS
Must enter a directory for reference DBFS.	REMIT must be able to locate necessary data base reference files (See Section 2.6 for reference files). A data base file path is required to locate files. Example: C:\REMIT
Must enter a first name.	Monitored individual's first name is required.
Must enter a last name.	Monitored individual's first name is required.

<u>Message</u>	<u>Description</u>
Must enter a license number.	Monitoring licensee's NRC license number is required.
Must enter a monitor period begin date.	Monitoring dates are required.
Must enter a monitor period end date.	Monitoring dates are required.
Must enter a phone number.	The phone number of the licensee contact knowledgeable about the dose records must be entered.
Must enter filename.	A valid DOS filename is required.
Must enter printer specification.	The printer location must be specified in order to produce reports.
Must specify files to export.	A valid DOS filename is required.
No ASCII File Selected...	A valid DOS filename is required in order to process ASCII file.
No Database Selected...	A valid DOS filename is required in order to process data base file.
No Dose records for selected year, cannot produce report.	The monitoring year has no associated dose records within this time period. Reports for this monitoring year cannot be generated.
No Dose records meeting criteria.	No dose records meet the user-specified criteria. Edit dose records and/or criteria in order to process records.
No dose records to produce Form 5 reports.	Form 5 reports cannot be generated until dose records have been entered.
No Dose records were selected.	Selection criteria has not been entered. Enter another selection criteria.
No Employee records found meeting criteria.	No employee records match the ID number, ID type, and/or last name search criteria entered into <Find> dialogue. Enter new criteria or select <Browse> to scroll through the employee data base.
No Employee records to produce Form 4 reports.	Form 4 reports cannot be generated until employee and dose records have been entered.

<u>Message</u>	<u>Description</u>
No Employee records were selected.	No selection criteria was entered.
No intake records, process completed.	No intake records were entered.
No primary licensee number found, please add one.	NRC primary license number for this licensed facility must be entered. See Section 4.1.
No Selection entered	Selection must be made for required information.
No Worksheet records, data base updates completed.	No Worksheet records were processed.
Nuclide ... Class ... Mode ... is not in EPA-11 library.	Nuclide and class combinations were not identified among EPA Report #11 library. Re-enter nuclide, class, and mode from Pick List, or enter dose to organs from intake. See Section 6.4.
Nuclide is a required field.	The radionuclide abbreviation must be entered. Format 'Xx-999x'. Enter nuclide or choose from Pick List.
Organ code ... not found in organ table.	Organ code entered was not found among the valid organ codes in reference table. Re-enter organ code or choose from Organ Code Pick List.
Organ code is required with remainder organ dose.	If the dose to the remainder organ is to be included in the dose calculation, the organ code for the organ receiving the highest remainder dose must be entered. See Section 6.4. See EPA Report #11 for remainder calculational method.
Please CORRECT entry ... or Press ESC to CANCEL.	Entry must meet validation criteria before it can be saved. Press <Cancel> to cancel without saving changes.
Primary license information saved.	Information for the NRC Primary Licensee has been saved and will be used for the default licensee for entering dose records.
Print job canceled.	Print job canceled by user by pressing Escape.
Printer destination not found	Printer destination must be entered under System Configuration. See Section 4.2.1.
Printing ... Please wait	Reports now being sent to printer. You may interrupt printing by pressing Escape.

<u>Message</u>	<u>Description</u>
Printing Completed.	Printing is complete. Resume REMIT application.
Processing employee records...	Employee records are being processed, please be patient.
Processing intakes... Please wait.	Dose calculations from intakes are now being performed. See Section 6.4.
Processing Worksheet ... Please wait	Worksheet data are now being saved and dose totals are being stored in dose record. See Section 6.3.
Recalculating ... CDE based on all Intakes ... Please wait	REMIT has determined that intakes at other licensees exist for this monitoring period and is calculating CDE from all intakes to determine the true TODE for the monitoring year. See Section 6.5.2.
Record for this Employee ID and ID type already exist	Duplicate employee records may not be entered. Each ID number and ID type combination must be unique.
Reindexing ... Please wait.	REMIT index files are being updated or re-created. See Section 5.1.
Reindexing completed.	Reindexing data base files has been completed.
Remainder organ ... must be between 1.0e-14 - 1.0e11 or 0.00.	If the remainder organ dose calculational method is used, the organ dose received by this remainder organ must be entered. See EPA Report #11 for remainder calculational method. The remainder organ dose must be within the numeric calculational limits of REMIT.
Remainder organ dose is required with organ code.	If the remainder organ dose calculational method is used, the organ dose and remainder organ code must be entered. Organ code is invalid without organ dose. See Section 6.4. See EPA Report #11 for remainder calculational method.
REMIT reference tables are missing or invalid.	The REMIT reference tables cannot be located or are not valid. See Section 2.6 for the list of reference tables. If reference tables have been deleted or corrupted, they will have to be re-installed from the distribution diskettes. See Section 2.2.
Report not submitted.	NRC submittal report generation canceled by user.

<u>Message</u>	<u>Description</u>
Reporting Year must be after implementation date.	Dose records should not be submitted prior to implementation of the Revised Part 20. The first monitoring year date entered under <Monitoring Year> under Setup - Licensee Information is taken to be the date of implementation. See Section 4.1.4.
Required fields in DOSES_WS.DBF have been modified, abort load.	REMIT will not function if required fields have been modified. See Appendix E on Extending REMIT Data Bases.
Saved ...	Changes have been saved. Resume REMIT application.
Saving ... Please wait	Changes are being saved to data base. Please be patient.
SDE-ME dose invalid with no record.	When Record Type = "N"; dose information cannot be entered. This record type indicates that exposure information has not been obtained.
SDE-WB dose invalid with no record.	When Record Type = "N"; dose information cannot be entered. This record type indicates that exposure information has not been obtained.
Searching employee records for matching import records...	ID number and ID type must exist in employee records in order to load exposure records. Duplicate ID number and ID type records will be ignored. See Section 5.2.
Searching exposure records for matching import records...	ID number, ID type, license number, exposure type, and monitoring period identify a unique dose record. Incoming dose records must be consistent with existing dose records. See Section 5.2.
Sex: must be 'F' or 'M'	Valid sex code must be entered.
SSN must have 9 numeric digits only.	ID type of "SSN" must be nine numeric digits.
The directory ... does not exist.	The entered directory is not a DOS recognized directory, check and re-enter.

<u>Message</u>	<u>Description</u>
This license number has already been entered.	The entered license number in <Other Licenses> has previously been entered in a dose record or has already been entered as an Other License. Review dose records to resolve discrepancy.
Unable to create working file...	REMIT has been unable to create one of the working files needed for operation. Please review your available disk space, memory, and computer configuration. Check to be sure that your CONFIG.SYS file contains the line Files=50. Call technical support if problem is unresolved.
Updates finished.	Changes have been saved to data files.
Updating changes ... Please wait.	Changes are being saved, please be patient.
Uranium toxicity can not be over 5000.0.	The regulatory limit for soluble uranium intake is 10 milligrams per week per 10 CFR 20.1201(e). This is equal to 5,000 milligrams per year. REMIT makes general assumptions about uranium intakes to alert the user to possible intakes in excess of the toxicity limits. See Section 4.1.2.1.
Using Licensee's limits as default	Licensee administrative dose limits have been entered and being used in comparison with dose records. Licensee dose limits may not exceed dose limits set forth in 10 CFR 20.1201.
Using NRC limits as default	NRC default dose limits are being used in comparison with dose records.
Valid entries are ND, NR or numeric >= 0.001.	Dose values must be numeric in rem or ND - Not Detectable, NR - Not Reported.
Validating ... Please wait.	Data are being validated in accordance with applicable data validation and range checking. Please be patient.
Validating ... completed.	Data validation completed. Resume REMIT operations.
Writing NRCFORM5.DAT to the current directory... Please wait	NRC electronic submittal file NRCFORM5.DAT is being generated. Please be patient.

Message

Worksheet Import file contains incremental dose records with overlapping monitoring periods. You may wish to review those records, see **WRK_ERRS.TXT** for a list of records with overlapping monitoring periods.

Year of begin date must be same as year.

Description

REMIT will attempt to calculate dose totals from incremental dose records loaded from Import - Dosimetry Processor Data. Monitoring periods may overlap for different parts of body and are accepted in worksheet import file. If dates overlap for the same part-of-body, REMIT may not calculate the correct dose totals. This message is to alert the user to possible overlapping doses so that the user may review the records. Each overlapping dose record is recorded in the **WRK_ERRS.TXT** file. See Section 5.2.1 and 5.2.2.

The monitoring year is determined by the year of the monitoring year beginning date. See Section 4.1.4.

Message	Description
<p>The following information has not been entered:</p> <p>Primary Licensee Information. Monitoring Year Information. Printer Specification.</p> <p>This information can be entered from the SETUP menu.</p>	<p>This information is required and must be entered in order for REMIT to function. See Section 4.</p>
<p>The REMIT data files can not be located. See User Manual for list of data files.</p> <p>Specify the drive and directory of the location of the REMIT data files in the format:</p> <p style="text-align: center;">C:\REMIT\NDBFS</p>	<p>REMIT must be able to access data files. Data files are listed in Section 2.6. See Section 4.2.2 for information on specifying file location.</p>
<p>The REMIT reference files can not be located. See User Manual for list of reference files.</p> <p>Specify the drive and directory of the location of the REMIT reference files in the format:</p> <p style="text-align: center;">C:\REMIT</p>	<p>REMIT must be able to access the reference files. Reference files are listed in Section 2.6. See Section 4.2.2 for information on specifying file location.</p>
<p>Remaining DOS memory available below 640 ... Upper Memory available ... REMIT requires the following:</p> <ol style="list-style-type: none"> 1. Files = 50 in Config.sys 2. 480 Kbytes of DOS memory <p>before executing REMIT</p> <p>REMIT may not function properly, press any key to continue</p>	<p>Memory and CONFIG.SYS Files setting does not meet REMIT requirements. REMIT may still function if limited activities are performed, particularly if <Intakes> module is not accessed. See Section 2.1 for system requirements.</p>

Message	Description
<p>FATAL ERROR</p> <p>Something has gone dreadfully wrong with the REMIT application. FoxPro has detected an error condition from which no recovery was planned. You are currently in the ERRORSYS procedure and will be returned to DOS as soon as the system condition is recorded.</p> <p>All information is being recorded to a file in this directory called "ERRORSYS.TXT". Please contact technical support.</p> <p>Press any key to exit..</p>	<p>Contact NRC technical support as listed in Section 3.5.</p>
<p>!!! WARNING !!!</p> <p>You have reached the maximum value for the record_id.</p> <p>In order to be able to add additional dose records, modify the record_id contained in the exposure, intakes and doses_ws tables.</p>	<p>The REMIT record_id number is a REMIT generated number used to cross-relate data files. For each new record, the next number is used in sequence. Numbers are not re-used. Space has been allocated for up to a billion record_id numbers. Licensees should not modify or enter record_id numbers outside of the REMIT package for any reason unless this warning message appears. Contact technical support if problem cannot be resolved.</p>

Message	Description
<p>!!! WARNING !!!</p> <p>Intake entries for Uranium of ... mg indicate that this individual may have exceeded the ... milligram/week chemical toxicity limit as specified in 10CFR20.1201(e).</p> <p>See 10CFR20 Appendix B footnote 3 for further instructions on assessing chemical toxicity.</p> <p>Press (C)ontinue or (R)eturn</p>	<p>REMIT calculates the amount of uranium for the intake from the specific activity of the isotope. The user is alerted to possible intakes in excess of the chemical toxicity limit for uranium. See Section 4.1.2.1.</p>
<p>!!! WARNING !!!</p> <p>NRCFORM5.DAT EXISTS</p> <p>Overwrite ? (Y)es, (N)o, (B)ackup</p>	<p>The NRC electronic submittal file NRCFORM5.DAT already exists in the current directory. This file should be copied to a floppy and submitted to the NRC before being erased or overwritten. User may select (Y)es for overwrite, (N)o for cancel and return without processing, or (B)ackup to create a backup file (extension .BAK) before generating new file. See Section 7.3.</p>
<p>!!! WARNING !!!</p> <p>Potential Overexposure of ... rems</p> <p>Exceeds Limit of ... rems</p> <p>Suggestion: Enter Intakes for all dose records for this individual for ... year.</p>	<p>The total TODE for the monitoring year has exceeded the applicable TODE limit, but all intake records have not been entered for all dose records. True TODE may be less than the limit if calculated from all intakes. See Section 6.5.2.</p>
<p>!!! WARNING !!!</p> <p>.... of ... rems</p> <p>Exceeds Limit of ... rems</p>	<p>Dose total for monitoring year exceeds applicable limit. See Sections 4.1.2 and 6.5. If dose is in excess of regulatory limit it is suggested that a <Comment> be entered to reference further documentation submitted to the NRC concerning this incident. See Section 6.2.6.</p>

Message	Description
!!! WARNING !!! Dose records exists with this NRC License Number ...	The user cannot enter a license number in <Other Licenses> if dose records exist for this license number. Other license numbers for Primary Licensee must be defined prior to entry of dose records. Review dose records to ensure that correct license number was used.
!!! WARNING !!! (Filename) EXISTS Overwrite ? (Y)es or (N)o	The specified file name already exists in the specified directory. Answer (Y)es to overwrite this file, or (N)o to cancel operation.

APPENDIX C. DATA BASE STRUCTURE

Compound Structural Indices use by REMIT

COMMENT.	CDX
EMPLOYEE.	CDX
EXPOSURE.	CDX
HP RO.	CDX
LICENSEE.	CDX
LIMITS.	CDX
MON YEAR.	CDX
ORGAN.	CDX

These index files should not be modified or used by software other than REMIT.

Structure for database: COMMENT.DBF

Field	Field Name	Type	Width	Dec	Index
1	RECORD_ID	Numeric	9		
2	COMMENT	Character	240		
** Total **			250		

Index Filename: Comment.cdx

Tag Name	Key	Order No.
=====	===	=====
Rec	RECORD_ID	1

Structure for database: DEFAULTS.DBF

Field	Field Name	Type	Width	Dec	Index
1	DBPATH	Character	60		
2	REFPATH	Character	60		
3	PRINT_DEST	Character	64		
** Total **			185		

Structure for database: DOSES_WS.DBF

Field	Field Name	Type	Width	Dec	Index
1	RECORD_ID	Numeric	9		
2	EMP_ID	Character	12		
3	ID_TYPE	Character	3		
4	RPT_TYPE	Character	1		
5	EXP_TYPE	Character	1		
6	BEG_DATE	Date	8		
7	END_DATE	Date	8		
8	DDE	Character	8		
9	LDE	Character	8		
10	SDE_WB	Character	8		
11	SDE_ME	Character	8		
12	SDE_UR	Character	8		
13	SDE_UL	Character	8		
14	SDE_LR	Character	8		
15	SDE_LL	Character	8		
** Total **			107		

Structure for database: EMPLOYEE.DBF

Field	Field Name	Type	Width	Dec	Index
1	EMP_ID	Character	12		
2	ID_TYPE	Character	3		
3	FIRST_NAME	Character	25		
4	MIDDLE	Character	1		
5	LAST_NAME	Character	25		
6	SEX	Character	1		
7	DOB	Date	8		
8	RPT_FLG	Logical	1		
9	DOSES_FLG	Logical	1		
10	LIMITS_FLG	Logical	1		
** Total **			79		

Index Filename: Employee.cdx

Tag Name	Key	Order No.
=====	===	=====
Emp	EMP_ID + ID_TYPE	1

Structure for database: EXPOSURE.DBF

Field	Field Name	Type	Width	Dec	Index
1	RECORD_ID	Numeric	9		
2	EMP_ID	Character	12		
3	ID_TYPE	Character	3		
4	LICENSE_NO	Character	13		
5	RPT_TYPE	Character	1		
6	EXP_TYPE	Character	1		
7	MON_BEG	Date	8		
8	MON_END	Date	8		
9	DDE	Character	8		
10	LDE	Character	8		
11	SDE_WB	Character	8		
12	SDE_ME	Character	8		
13	CDE	Character	8		
14	CEDE	Character	8		
15	MO	Character	2		
16	TODE	Character	8		
17	TEDE	Character	8		
18	DEF_MY	Numeric	4		
19	REV_FLG	Logical	1		
20	RPT_FLG	Logical	1		
21	NEW_FLG	Logical	1		
22	WS_FLG	Logical	1		
23	INTAKE_FLG	Logical	1		
24	CMNT_FLG	Logical	1		
25	EDT_FLG	Logical	1		
26	CALC_FLG	Logical	1		
27	EDT_CD_FLG	Logical	1		
** Total **			135		

Index Filename: Exposure.cdx

Tag Name	Key	Order No.
=====	===	=====
Rec	RECORD_ID	1
Emp	EMP_ID + ID_TYPE	2
Emp_Date	EMP_ID + ID_TYPE + DTOC(MON_BEG, 1) + DTC(MON_END, 1)	3

Structure for database: HP_RO.DBF

Field	Field Name	Type	Width	Dec	Index
1	NUCLIDE	Character	7		
2	MODE	Character	1		
3	CLASS	Character	1		
4	EFFECTIVE	Character	8		
5	GONAD	Character	8		
6	BREAST	Character	8		
7	LUNG	Character	8		
8	RMARROW	Character	8		
9	BSURFACE	Character	8		
10	THYROID	Character	8		
11	REMAINDER	Character	8		
12	REMORGAN	Character	8		
13	REMORGANNO	Character	8		
14	ORGANCODE	Character	2		

** Total **	92
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Index Filename: Hp_Ro.cdx

Tag Name	Key	Order No.
=====	===	=====
Nuc_Clas	NUCLIDE + CLASS	1
Nu_Mo_Cl	TRIM(UPPER(NUCLIDE)) + TRIM(UPPER(MODE)) + TRIM(UPPER(CLASS))	2
Nuc_Clas	TRIM(UPPER(NUCLIDE)) + TRIM(UPPER(CLASS))	3

Structure for database: HPROINFO.DBF

Field	Field Name	Type	Width	Dec	Index
1	DATE	Date	8		
2	TIME	Character	8		
3	SIZE	Numeric	10		
** Total **			27		

Structure for database: INTAKES.DBF

Field	Field Name	Type	Width	Dec	Index
1	RECORD_ID	Numeric	9		
2	EMP_ID	Character	12		
3	ID_TYPE	Character	3		
4	EXP_TYPE	Character	1		
5	TEST_NO	Character	10		
6	NUCLIDE	Character	7		
7	CLASS	Character	1		
8	MODE	Character	1		
9	INTAKE	Character	9		
10	FLAG	Logical	1		
11	EFFECTIVE	Character	7		
12	GONAD	Character	7		
13	BREAST	Character	7		
14	LUNG	Character	7		
15	RMARROW	Character	7		
16	BSURFACE	Character	7		
17	THYROID	Character	7		
18	REMAINDER	Character	7		
19	REMORGANNO	Character	7		
20	ORGANCODE	Character	2		
** Total **			120		

Structure for database: LICENSEE.DBF

Field	Field Name	Type	Width	Dec	Index
1	LICENSE_NO	Character	13		
2	LICENSEE	Character	72		
3	PRIM_LIC	Character	13		
** Total **			99		

Index Filename: Licensee.cdx

Tag Name	Key	Order No.
=====	===	=====
Lic	LICENSE_NO	1

Structure for database: LIMITS.DBF

Field	Field Name	Type	Width	Dec	Index
1	EMP_ID	Character	12		
2	ID_TYPE	Character	3		
3	R_TEDE	Numeric	5	3	
4	R_TODE	Numeric	6	3	
5	R_LDE	Numeric	6	3	
6	R_SDE_WB	Numeric	6	3	
7	R_SDE_ME	Numeric	6	3	
8	PSE_TEDE	Numeric	5	3	
9	PSE_TODE	Numeric	6	3	
10	PSE_LDE	Numeric	6	3	
11	PSE_SD_WB	Numeric	6	3	
12	PSE_SD_ME	Numeric	6	3	
13	LPSE_TEDE	Numeric	6	3	
14	LPSE_TODE	Numeric	7	3	
15	LPSE_LDE	Numeric	6	3	
16	LPSE_SD_WB	Numeric	7	3	
17	LPSE_SD_ME	Numeric	7	3	
18	U_TOXIC	Numeric	4	1	
** Total **			111		

Structure for database: MON_YEAR.DBF

Field	Field Name	Type	Width	Dec	Index
1	YEAR	Numeric	4		Asc
2	DEF_BEG	Date	8		
3	DEF_END	Date	8		

** Total ** 21

Index Filename: Mon_Year.cdx

Tag Name	Key	Order No.
=====	===	=====
Year	YEAR	1

Structure for database: ORGAN.DBF

Field	Field Name	Type	Width	Dec	Index
1	MO	Character	2		
2	ORGAN	Character	23		Asc
** Total **			26		

Index Filename: Organ.cdx

Tag Name	Key	Order No.
=====	===	=====
Organ	MO	1
Desc	ORGAN	2

Structure for database: PRIM_LIC.DBF

Field	Field Name	Type	Width	Dec	Index
1	PRIM_LIC	Character	13		
2	LICENSEE	Character	72		
3	CONTACT	Character	72		
4	PHONE_NO	Character	25		
** Total **			183		

Structure for database: REMITHLP.DBF

Field	Field Name	Type	Width	Dec	Index
1	TOPIC	Character	30		
2	DETAILS	Memo	10		
3	CLASS	Character	20		
** Total **			61		

APPENDIX D. DATA DICTIONARY

The following is a complete list of data fields used by the REMIT System. The list is ordered by field name and includes detailed specifications for each field. The Range category includes ranges for numerics and domain information for other data types. The Validated category identifies whether a field is verified or compared to other data during program execution. If a data field is validated, the data set with which it is compared is specified in the Range or Description listings.

Field Name	:	BEG_DATE
Table Name	:	DOSES_WS
Data Type	:	DATE
Units	:	N/A
Range	:	MON_BEG <= BEG_DATE < MON_END
Required	:	Y
Validated	:	Y
Label	:	Beginning of reporting period
Description	:	Beginning of the reporting period.

Field Name	:	BREAST
Table Name	:	HP_RO
Data Type	:	CHAR(8)
Units	:	Rem
Range	:	0, 1.0E-14 - 1.0E+11
Required	:	N
Validated	:	N
Label	:	Breast
Description	:	EPA-11 dose conversion factor for the breast in mrem/uCi.

Field Name	:	BREAST
Table Name	:	INTAKES
Data Type	:	CHAR(7)
Units	:	Rem
Range	:	0, 1.0E-14 - 1.0E+11
Required	:	N
Validated	:	Y
Label	:	Breast
Description	:	Dose amount (rem) to the breast.

Field Name : BSURFACE
 Table Name : HP_RO
 Data Type : CHAR(8)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : N
 Label : Bone Surface
 Description : EPA-11 Dose Conversion Factor for the bone surface in mrem/uCi.

Field Name : BSURFACE
 Table Name : INTAKES
 Data Type : CHAR(7)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : Y
 Label : Bone Surface
 Description : Amount of dose (rem) to the bone surface.

Field Name : CALC_FLG
 Table Name : EXPOSURE
 Data Type : LOGICAL(1)
 Units : N/A
 Range : .T. or .F.
 Required : N
 Validated : N
 Label : Calculated flag.
 Description : Flag that denotes whether individual has edited either CDE or CEDE.

Field Name : CDE
 Table Name : EXPOSURE
 Data Type : CHAR(8)
 Units : Rem
 Range : NR, ND, or numeric
 Required : Y
 Validated : Y
 Label : Committed Dose Equivalent (CDE)
 Description : Dose equivalent to organs or tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50-year period following the intake. Values are numeric, NR (not reported), ND (not detectable), or NC (not calculated).

Field Name	:	CEDE
Table Name	:	EXPOSURE
Data Type	:	CHAR(8)
Units	:	Rem
Range	:	NR, ND, or numeric
Required	:	Y
Validated	:	Y
Label	:	Committed Effective Dose Equivalent (CEDE)
Description	:	Sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to these organs or tissues. Values are numeric, NR (not reported), or ND (not detectable).

Field Name	:	CLASS
Table Name	:	HP_RO
Data Type	:	CHAR(1)
Units	:	N/A
Range	:	D, W, Y, O
Required	:	Y
Validated	:	Y
Label	:	Class
Description	:	Pulmonary clearance class

Field Name	:	CLASS
Table Name	:	INTAKES
Data Type	:	CHAR(1)
Units	:	N/A
Range	:	D, W, Y, O
Required	:	N
Validated	:	Y
Label	:	Class
Description	:	Pulmonary clearance classes are (D)ay, (W)eek, (Y)ear, (V)apor, and (O)ther.

Field Name	:	CLASS
Table Name	:	REMITHLP
Data Type	:	CHAR(20)
Units	:	N/A
Range	:	Any
Required	:	N
Validated	:	N
Label	:	Class
Description	:	Code used to group or classify help topics.

Field Name : CMNT_FLG
 Table Name : EXPOSURE
 Data Type : LOGICAL(1)
 Units : N/A
 Range : .T. or .F.
 Required : Y
 Validated : N
 Label : Comment flag
 Description : Flag to determine if individual has entered a comment for a particular exposure record. If .T., an asterisk will appear on screen next to the <Comment*> push button.

Field Name : COMMENT
 Table Name : COMMENT
 Data Type : CHAR(240)
 Units : N/A
 Range : N/A
 Required : N
 Validated : N
 Label : COMMENT
 Description : A brief comment about an exposure record. For example, if the field CDE was edited after it was calculated by the intake calculation module, the individual would state why or reference further documentation on calculation method.

Field Name : CONTACT
 Table Name : PRIM_LIC
 Data Type : CHAR(72)
 Units : N/A
 Range : Any
 Required : Y
 Validated : N
 Label : Name of Licensee
 Description : Name of a person knowledgeable about the licensee's exposure information.

Field Name : DATE
 Table Name : HPROINFO
 Data Type : DATE
 Units : N/A
 Range : N/A
 Required : Y
 Validated : N
 Label : Date of HP_RO.DBF
 Description : Date which HP_RO.DBF table was created. Used to determine if HP_RO.DBF has been modified.

Field Name	:	DBPATH
Table Name	:	DEFAULTS
Data Type	:	CHAR(60)
Unit	:	N/A
Range	:	Existence of directory is verified
Required	:	N
Validated	:	Y
Label	:	Full path specification of data base files.
Description	:	The full path specification of data base file locations. Should include the drive letter and path. If the data base files reside on drive C in REMIT subdirectory, then the full path is: C:\REMIT\
		This is set in the <i>File Location</i> submenu under the <i>Setup</i> menu bar.

Field Name	:	DDE
Table Name	:	DOSES_WS
Data Type	:	CHAR(8)
Units	:	Rem
Range	:	NR, ND, or numeric
Required	:	Y
Validated	:	Y
Label	:	Deep dose equivalent (DDE)
Description	:	Dose equivalent at a tissue depth of 1 cm; applies to external whole-body exposure.

Field Name	:	DDE
Table Name	:	EXPOSURE
Data Type	:	CHAR(8)
Units	:	Rem
Range	:	NR, ND, or numeric
Required	:	Y
Validated	:	Y
Label	:	Deep dose equivalent (DDE)
Description	:	Dose equivalent at a tissue depth of 1 cm; applies to external whole-body exposure.

Field Name	:	DEF_BEG
Table Name	:	MON_YEAR
Data Type	:	DATE
Units	:	N/A
Range	:	
Required	:	Y
Validated	:	Y
Label	:	Default monitoring begin date
Description	:	Beginning monitoring date MM/DD/YY.

Field Name : DEF_END
 Table Name : MON_YEAR
 Data Type : DATE
 Units : N/A
 Range :
 Required : Y
 Validated : Y
 Label : Default monitoring end date
 Description : Ending monitoring date MM/DD/YY.

Field Name : DEF_MY
 Table Name : EXPOSURE
 Data Type : NUMERIC(4)
 Units : N/A
 Range : 0, or date after implementation date for monitoring licensee
 Required : N
 Validated : Y
 Label : Defined Monitoring Year
 Description : Defined monitoring year for the monitoring licensee. This field is automatically assigned by REMIT dose records.

Field Name : DETAILS
 Table Name : REMITHLP
 Data Type : CHAR(10)
 Units : N/A
 Range : Any
 Required : N
 Validated : N
 Label : Details
 Description : Narrative on help topic.

Field Name : DOB
 Table Name : EMPLOYEE
 Data Type : DATE
 Units : N/A
 Range : N/A
 Required : Y
 Validated : N
 Label : Date of birth
 Description : Date of birth of the monitored individual.

Field Name : DOSES_FLG
 Table Name : EMPLOYEE
 Data Type : LOGICAL(1)
 Units : N/A
 Range : .T. or .F.
 Required : Y

Validated : N
 Label : Doses flag
 Description : Flag that determines if employee has exposure records. If .T., an asterisk will appear on screen next to the <dOses*> push button.

Field Name : EDT_CD_FLG
 Table name : EXPOSURE
 Data Type : LOGICAL(1)
 Units : N/A
 Range : .T. or .F.
 Required : Y
 Validated : N
 Label : Edit CDE or CEDE flag
 Description : Flag to determine if individual has edited CDE or CEDE on the dose screen.

Field Name : EDT_FLG
 Table Name : EXPOSURE
 Data Type : LOGICAL(1)
 Units : N/A
 Range : .T. or .F.
 Required : Y
 Validated : N
 Label : Edit flag
 Description : Flag that indicates an individual has entered doses for DDE, LDE, SDE-WB, and SDE-ME on the doses screen and not in the worksheet.

Field Name : EFFECTIVE
 Table Name : HP_RO
 Data Type : CHAR(8)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : N
 Label : Effective
 Description : The EPA-11 Dose Conversion Factor for the CEDE in mrem/uCi.

Field Name : EFFECTIVE
 Table Name : INTAKES
 Data Type : CHAR(7)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : Y
 Description : The CEDE in rem.

Field Name : EMP_ID
 Table Name : EMPLOYEE, EXPOSURE, DOSES_WS, INTAKES
 Data Type : CHAR(12)
 Units : N/A
 Range : Any
 Required : Y
 Validated : N
 Label : Social Security number (SSN) or other unique ID
 Description : Individual identification number; usually a SSN. If the individual has no SSN, a passport number (PPN), Canadian Social Insurance number (CSI), work permit number (WPN), INDEX identification number (IND), or other identification number (OTH) is required.

Field Name : EMP_ID
 Table Name : LIMITS
 Data Type : CHAR(12)
 Units : N/A
 Range : Any
 Required : Y
 Validated : N
 Label : SSN or other unique ID.
 Description : Individual identification number; usually a SSN. If the individual has no SSN, a PPN, CSI, WPN, IND, or OTH is required.

Field Name : END_DATE
 Table Name : DOSES_WS
 Data Type : DATE
 Units : N/A
 Range : BEG_DATE < END_DATE <= MON_END
 Required : Y
 Validated : Y
 Label : End of incremental reporting period
 Description : End of incremental reporting period.

Field Name : EXP_TYPE, DOSES_WS, INTAKES
 Table Name : EXPOSURE
 Data Type : CHAR(1)
 Units : N/A
 Range : R, P
 Required : Y
 Validated : Y
 Label : Exposure type
 Description : Value used to distinguish exposure types.
 (R)outine - dose recorded for routine exposures
 (P)SE - Planned Special Exposure Monitoring results.

Field Name : FIRST_NAME
 Table Name : EMPLOYEE
 Data Type : CHAR(25)
 Units : N/A
 Range : N/A
 Required : Y
 Validated : N
 Label : First Name
 Description : First name of the monitored individual.

Field Name : FLAG
 Table Name : INTAKES
 Data Type : LOGICAL
 Units : N/A
 Range : T/F
 Required : Y
 Validated : N
 Label : FLAG
 Description : REMIT flag set to "T" rue if nuclide, class, and mode exist in HP_RO table

Field Name : GONAD
 Table Name : HP_RO
 Data Type : CHAR(7)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : N
 Label : Gonad
 Description : The EPA-11 Dose Conversion Factor for the gonads in mrem/uCi.

Field Name : GONAD
 Table Name : INTAKES
 Data Type : CHAR(8)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : Y
 Label : Gonad
 Description : Amount of dose (rem) to the gonads.

Field Name : ID_TYPE
 Table Name : EMPLOYEE, EXPOSURE, INTAKES
 Data Type : CHAR(3)
 Units : N/A
 Range : SSN, PPN, CSI, WPN, IND, OTH
 Required : Y
 Validated : Y
 Label : Type of employee ID used
 Description : Type of identification is indicated by the following codes:

<i>ID Type</i>	<i>Code</i>
U.S. Social Security number	SSN
Passport number	PPN
Canadian Social Insurance number	CSI
Work permit number	WPN
INDEX identification number	IND
Other	OTH

Field Name : ID_TYPE
 Table Name : LIMITS
 Data Type : CHAR(3)
 Units : N/A
 Range : SSN, PPN, CSI, WPN, IND, OTH
 Required : Y
 Validated : Y
 Label : Type of employee ID used
 Description : Type of identification is indicated by the following codes:

<i>ID Type</i>	<i>Code</i>
U.S. Social Security number	SSN
Passport number	PPN
Canadian Social Insurance number	CSI
Work permit number	WPN
INDEX identification number	CSI
Other	OTH

Field Name : INTAKE
 Table Name : INTAKES
 Data Type : NUMERIC(9)
 Units : m Curies
 Range : 1.0E-14 - 1.0E+15
 Required : Y
 Validated : Y
 Label : Reported dose in microcuries
 Description : Amount of each radionuclide in microcuries (uCi).

Field Name : INTAKE_FLG
 Table Name : EXPOSURE
 Data Type : LOGICAL(1)
 Units : N/A
 Range : .T. or .F.
 Required : Y
 Validated : N
 Label : Intake flag
 Description : Flag to determine if individual has entered intakes. If .T., an asterisk (*) appears next to the <Intakes*> push button.

Field Name : LAST_NAME
 Table Name : EMPLOYEE
 Data Type : CHAR(25)
 Units : N/A
 Range : Any
 Required : Y
 Validated : N
 Label : Last name
 Description : Last name of monitored individual. Sr., Jr., III, etc. should be included as part of the last name.

Field Name : LDE
 Table Name : DOSES_WS, EXPOSURE
 Data Type : CHAR(8)
 Units : Rem
 Range : NR, ND, or numeric
 Required : Y
 Validated : Y
 Label : Eye dose equivalent to the lens of the eye (LDE)
 Description : Dose equivalent at a tissue depth of 0.3 cm; applies to the external exposure of the lens of the eye. Values are numeric, NR (not reported), or ND (not detectable).

Field Name : LICENSEE
 Table Name : LICENSEE, PRIM_LIC
 Data Type : CHAR(72)
 Units : N/A
 Range : Any
 Required : Y
 Validated : N
 Label : Name of licensee
 Description : Company name associated with the NRC license number.

Field Name : LICENSE_NO
 Table Name : EXPOSURE
 Data Type : CHAR(13)
 Units : N/A
 Range : N/A
 Required : Y
 Validated : Y
 Label : License number of reporting organization
 Description : NRC license number of the reporting organization.

Field Name : LICENSE_NO
 Table Name : LICENSEE
 Data Type : CHAR(13)
 Units : N/A
 Range : N/A
 Required : Y
 Validated : Y
 Label : License number of reporting organization
 Description : Primary NRC license number.

Field Name : LIMITS_FLG
 Table Name : EMPLOYEE
 Data Type : LOGICAL(1)
 Units : N/A
 Range : .T. OR .F.
 Required : Y
 Validated : N
 Label : Limits flag
 Description : Flag used to determine if the user has set individual dose limits.
 If .T., an asterisk (*) will appear on-screen next to the <Limits*>
 push-button.

Field Name : LPSE_LDE
 Table Name : LIMITS
 Data Type : NUMERIC(7,3)
 Units : Rem
 Range : 0 - 75
 Required : N
 Validated : Y
 Label : Maximum lifetime PSE eye dose equivalent (LDE) limits
 Description : Maximum lifetime PSE eye dose equivalent (LDE) limits. If life-
 time PSE LDE is in excess of this limit, the user is alerted.

Field Name : LPSE_SD_ME
 Table Name : LIMITS
 Data Type : NUMERIC(6,3)
 Units : Rem
 Range : 0 - 250
 Required : N
 Validated : Y
 Label : Maximum lifetime PSE shallow dose equivalent to maximally exposed extremity (SDE-ME) limit.
 Description : Maximum lifetime PSE SDE-ME limit.

Field Name : LPSE_SD_WB
 Table Name : LIMITS
 Data Type : NUMERIC(7,3)
 Units : Rem
 Range : 0 - 250
 Required : N
 Validated : Y
 Label : Lifetime PSE shallow dose equivalent for the whole body limit.
 Description : Maximum lifetime PSE shallow dose equivalent to the whole body (SDE-WB) limit.

Field Name : LPSE_TEDE
 Table Name : LIMITS
 Data Type : NUMERIC(6,3)
 Units : Rem
 Range : 0 - 25
 Required : N
 Validated : Y
 Label : Maximum lifetime PSE total effective dose equivalent (TEDE) limit.
 Description : Maximum lifetime PSE TEDE limit.

Field Name : LPSE_TODE
 Table Name : LIMITS
 Data Type : NUMERIC(7,3)
 Units : Rem
 Range : 0 - 250
 Required : N
 Validated : Y
 Label : Maximum Lifetime PSE total organ dose equivalent (TODO) to any organ limits.
 Description : Maximum Lifetime PSE TODE for the maximally exposed organ limit.

Field Name : LUNG
 Table Name : HP_RO
 Data Type : NUMERIC(8)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : Y
 Validated : N
 Label : Reported dose in Rem
 Description : EPA-11 for the lungs in mrem/uCi.

Field Name : LUNG
 Table Name : INTAKES
 Data Type : CHAR(7)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : Y
 Description : Amount of external dose (rem) to the lungs.

Field Name : MIDDLE
 Table Name : EMPLOYEE
 Data Type : CHAR(1)
 Units : N/A
 Range : Any
 Required : Y
 Validated : N
 Label : Middle initial
 Description : Middle initial of the monitored individual.

Field Name : MO
 Table Name : EXPOSURE
 Data Type : CHAR(2)
 Units : N/A
 Range : Must exist in Organ Table
 Required : N
 Validated : Y
 Label : Code for the maximally exposed organ
 Description : Code for the maximally exposed organ. Codes are verified against Organ Table entries.

Field Name : MO
 Table Name : ORGAN
 Data Type : CHAR(2)
 Units : N/A
 Range : N/A
 Required : Y
 Validated : N
 Label : Code for the maximally exposed organ
 Description : Code for the maximally exposed organ.

Field Name : MODE
 Table Name : HP-RO
 Data Type : CHAR(1)
 Units : N/A
 Range : H,G,B,J
 Required : Y
 Validated : Y
 Label : Mode
 Description : Mode of intake:
 H = Inhalation J = Injection
 B = Absorption G = Ingestion

Field Name : MODE
 Table Name : INTAKES
 Data Type : CHAR(1)
 Units : N/A
 Range : H,G,B,J,O
 Required : Y
 Validated : Y
 Label : Mode
 Description : Mode of intake:
 H = Inhalation G = Ingestion
 B = Absorption O = Other
 J = Injection

Field Name : MON_BEG
 Table Name : EXPOSURE
 Data Type : DATE
 Units : N/A
 Range :
 Required : Y
 Validated : Y
 Label : Beginning of the monitoring period
 Description : Beginning of the monitoring period.

Field Name : MON_END
 Table Name : EXPOSURE
 Data Type : DATE
 Units : N/A
 Range : N/A
 Required : Y
 Validated : Y
 Label : Ending of the monitoring period
 Description : Ending of the monitoring period.

Field Name : NEW_FLG
 Table Name : EXPOSURE
 Data Type : LOGICAL(1)
 Units : N/A
 Range : .T. or .F.
 Required : N
 Validated : N
 Label : New flag
 Description : Logical field indicating whether a record has been
 previously submitted to REIRS.
 F = not submitted
 T = submitted

Field Name : NUCLIDE
 Table Name : HP_RO
 Data Type : CHAR(7)
 Units : N/A
 Range : Look up table
 Required : Y
 Validated : N
 Label : Radionuclide
 Description : Symbol of radionuclide in the following format:
 Xx - ###x

Field Name : NUCLIDE
 Table Name : INTAKES
 Data Type : CHAR(7)
 Units : N/A
 Range : Look up table (HP_RO)
 Required : Y
 Validated : Y
 Label : Radionuclide
 Description : Symbol of radionuclide that resulted in a dose recorded for the
 individual in the following format:
 Xx - ###x

Field Name	:	ORGAN
Table Name	:	ORGAN
Data Type	:	CHAR(23)
Units	:	N/A
Range	:	N/A
Required	:	Y
Validated	:	N
Label	:	Name of maximally exposed organ
Description	:	Full text name of the organ from the Organ Table.
Field Name	:	ORGANCODE
Table Name	:	HP_RO
Data Type	:	CHAR(2)
Units	:	N/A
Range	:	
Required	:	N
Validated	:	N
Label	:	ORGAN CODE
Description	:	Two character code denoting the name of the organ exposed. Two character code is validated against organ.dbf.
Field Name	:	ORGANCODE
Table Name	:	INTAKES
Data Type	:	CHAR(2)
Units	:	N/A
Range	:	Look up table ORGAN.DBF
Required	:	N
Validated	:	Y
Description	:	Two character code that represents the organ exposed. Two character code is validated in organ.dbf.
Field Name	:	PHONE_NO
Table Name	:	PRIM_LIC
Data Type	:	CHAR(25)
Units	:	N/A
Range	:	N/A
Required	:	Y
Validated	:	N
Label	:	Phone number of licensee contact
Description	:	Phone number for the licensee contact.

Field Name	:	PRIM_LIC
Table Name	:	LICENSEE, PRIM_LIC
Data Type	:	CHAR(13)
Units	:	N/A
Range	:	N/A
Required	:	Y
Validated	:	N
Label	:	License number of reporting licensee
Description	:	Primary NRC license number.
Field Name	:	PRINT_DEST
Table Name	:	DEFAULTS
Data Type	:	CHAR(64)
Units	:	N/A
Range	:	If destination is a file then existence of directory is verified
Required	:	N
Validated	:	Y
Label	:	Printer Destination
Description	:	File name of where reports will be submitted. File name can be LPT1, LPT2, LPT3, COM1, COM2, or any legal DOS filename, e.g., "C:\REMIT\FORM 5.RPT".
Field Name	:	PSE_LDE
Table Name	:	LIMITS
Data Type	:	NUMERIC(6,3)
Units	:	Rem
Range	:	0 - 15
Required	:	N
Validated	:	Y
Label	:	Maximum PSE eye dose equivalent (LDE) limit.
Description	:	Maximum 1-year limit for the PSE eye dose equivalent (LDE).
Field Name	:	PSE_SD_ME
Table Name	:	LIMITS
Data Type	:	NUMERIC(6,3)
Units	:	Rem
Range	:	0 - 50
Required	:	N
Validated	:	Y
Label	:	Maximum PSE shallow dose equivalent to extremity (SDE) limit.
Description	:	Maximum 1-year limit PSE shallow dose equivalent to maximally exposed extremity (SDE-ME).

Field Name : PSE_SD_WB
 Table Name : LIMITS
 Data Type : NUMERIC(6,3)
 Units : Rem
 Range : 0 - 50
 Required : N
 Validated : Y
 Label : PSE shallow dose equivalent for the whole body limit.
 Description : Maximum 1-year limit PSE shallow dose equivalent to the whole body (SDE-WB).

Field Name : PSE_TEDE
 Table Name : LIMITS
 Data Type : NUMERIC(5,3)
 Units : Rem
 Range : 0 - 5
 Required : N
 Validated : Y
 Label : Maximum PSE total effective dose equivalent (TEDE) limit.
 Description : Maximum 1-year limit PSE.

Field Name : PSE_TODE
 Table Name : LIMITS
 Data Type : NUMERIC(6,3)
 Units : Rem
 Range : 0 - 50
 Required : N
 Validated : Y
 Label : Maximum PSE total organ dose equivalent (TODE) limit.
 Description : Maximum 1-year limit PSE TODE.

Field Name : RECORD_ID
 Table Name : COMMENT
 Data Type : NUMERIC(9)
 Units : N/A
 Range : 0 to 999999999
 Required : Y
 Validated : Y
 Label : Record Id.
 Description : Internal system record ID; links comment record to parent Exposure record.
 Warning: RECORD_ID is for REMIT use only. This field should not be edited outside the REMIT system.

Field Name : RECORD_ID
 Table Name : DOSES_WS
 Data Type : NUMERIC(9)
 Units : N/A
 Range : 0 to 999999999
 Required : Y
 Validated : Y
 Label : Internal report ID generated by DEIRS
 Description : Internal system record ID; links worksheet record to parent Exposure record.
 Warning: RECORD_ID is for REMIT use only. This field should not be edited outside the REMIT system.

Field Name : RECORD_ID
 Table Name : EXPOSURE
 Data Type : NUMERIC(9)
 Units : N/A
 Range : 0 to 999999999
 Required : Y
 Validated : N
 Label : Internal report ID generated by DEIRS
 Description : Internal system record ID; links associated records to parent Exposure record.
 Warning: RECORD_ID is for REMIT use only. This field should not be edited outside the REMIT system.

Field Name : RECORD_ID
 Table Name : INTAKES
 Data Type : NUMERIC(9)
 Units : N/A
 Range : 0 to 999999999
 Required : Y
 Validated : Y
 Label : Internal report ID generated by system
 Description : Internal system record ID; links intake records to parent Exposure record.
 Warning: RECORD_ID is for REMIT use only. This field should not be edited outside the REMIT system.

Field Name : REFPATH
 Table Name : DEFAULTS
 Data Type : CHAR(60)
 Units : N/A
 Range : N/A
 Required : Y
 Validated : Y
 Label : Reference files location
 Description : DOS directory location where reference files are located. See Section 2.6.

Field Name : REMAINDER
 Table Name : HP_RO
 Data Type : CHAR(8)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : N
 Label : REMAINDER
 Description : EPA-11 Dose Conversion Factor for the remainder.

Field Name : REMAINDER
 Table Name : INTAKES
 Data Type : CHAR(7)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : Y
 Label : REMAINDER
 Description : Amount of dose (rem) for the remainder.

Field Name : REMORGANNO
 Table Name : HP_RO
 Data Type : CHAR(8)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : N
 Label : REMAINDER ORGAN NO
 Description : EPA-11 Dose Conversion Factor for the remainder organ receiving the highest dose (mrem/uCi).

Field Name : REMORGANNO
 Table Name : INTAKES
 Data Type : CHAR(7)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : Y
 Label : REMAINDER ORGAN NO
 Description : Amount of dose (rem) to the remainder organ receiving the highest dose.

Field Name : REV_FLG
 Table Name : EXPOSURE
 Data Type : LOGICAL
 Units : N/A
 Range : 0, 1
 Required : Y
 Validated : N
 Label : Revision flag
 Description : Logical indicating whether a record has been revised since last submittal:
 T = revised
 F = not revised

Field Name : RMARROW
 Table Name : HP_RO
 Data Type : CHAR(8)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : Y
 Label : Red Bone Marrow
 Description : EPA-11 Dose Conversion Factor for the red bone marrow (rem/uCi).

Field Name : RMARROW
 Table Name : INTAKES
 Data Type : CHAR(7)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : Y
 Label : RMarrow
 Description : Amount of dose (rem) to the red bone marrow.

Field Name : RPT_FLG
 Table Name : EMPLOYEE
 Data Type : LOGICAL
 Units : N/A
 Range : T, F
 Required : N
 Validated : N
 Label : Report flag
 Description : Flag to denote selection of record for printing.

Field Name : RPT_FLG
 Table Name : EXPOSURE
 Data Type : LOGICAL
 Units : N/A
 Range : T, F
 Required : N
 Validated : N
 Label : Report Flag
 Description : Indicates whether an exposure has been selected for printing.

Field Name : RPT_TYPE
 Table Name : DOSES_WS
 Data Type : CHAR(1)
 Units : N/A
 Range : R,E
 Required : Y
 Validated : Y
 Label : Report Type: (R)ecord or (E)stimate
 Description : Record Type:
 (R)ecord represents a final determination of the dose received.
 (E)stimate represents preliminary data that will be superseded by
 a final determination.

Field Name	:	RPT_TYPE
Table Name	:	EXPOSURE, DOSES_WS
Data Type	:	CHAR(1)
Units	:	N/A
Range	:	R, E, N
Required	:	Y
Validated	:	Y
Label	:	Report Type
Description	:	Record Type

Forms have 3 record types:

(R)ecord = final determination of the dose received.

(E)stimate = used if listed dose data are preliminary and
will be superseded by a final determination
resulting in a subsequent report.

(N)o record = for Form 4 only. Denotes that no record for this
period is available but individual may have been
exposed. Planned Special Exposures for this
individual will not be allowed.

Field Name	:	R_LDE
Table Name	:	LIMITS
Data Type	:	NUMERIC(6,3)
Units	:	Rem
Range	:	
Required	:	N
Validated	:	Y
Label	:	Maximum 1-year routine eye dose equivalent (LDE) limit.
Description	:	Maximum 1-year routine eye dose equivalent (LDE) limit.

Field Name	:	R_SDE_ME
Table Name	:	LIMITS
Data Type	:	NUMERIC(6,3)
Units	:	Rem
Range	:	0 - 50
Required	:	N
Validated	:	Y
Label	:	Maximum routine shallow dose equivalent to maximally exposed extremity limit for 1 year.
Description	:	Maximum 1-year routine shallow dose equivalent to maximally exposed extremity (SDE-ME) limit.

Field Name : R_SDE_WB
 Table Name : LIMITS
 Data Type : NUMERIC(6,3)
 Units : Rem
 Range : 0 - 50
 Required : N
 Validated : Y
 Label : Maximum limit for 1-year routine shallow dose equivalent for the whole body
 Description : Maximum 1-year routine shallow dose equivalent to the whole body (SDE-WB).

Field Name : R_TEDE
 Table Name : LIMITS
 Data Type : NUMERIC(5,3)
 Units : Rem
 Range : 0 - 5
 Required : N
 Validated : Y
 Label : Maximum routine total effective dose equivalent (TEDE) limit.
 Description : Maximum routine TEDE limit.

Field Name : R_TODE
 Table Name : LIMITS
 Data Type : NUMERIC(6,3)
 Units : Rem
 Range : 0 - 50
 Required : N
 Validated : Y
 Label : Maximum 1-year routine total organ dose equivalent (TODE) limit.
 Description : Maximum 1-year routine TODE limit.

Field Name : SDE_LL
 Table Name : DOSES_WS
 Data Type : CHAR(8)
 Units : Rem
 Range : NR, ND, or numeric
 Required : Y
 Validated : Y
 Label : Shallow dose equivalent lower left extremity (SDE-LL)
 Description : Shallow dose equivalent to the SDE-LL.

Field Name : SDE_LR
 Table Name : DOSES_WS
 Data Type : CHAR(8)
 Units : Rem
 Range : NR, ND, or numeric
 Required : Y
 Validated : Y
 Label : Shallow dose equivalent lower right extremity (SDE-LR)
 Description : Shallow dose equivalent to the SDE-LR.

Field Name : SDE_ME
 Table Name : DOSES_WS
 Data Type : CHAR(8)
 Units : Rem
 Range : NR, ND, or numeric
 Required : Y
 Validated : Y
 Label : Shallow dose equivalent max extremity (SDE-ME)
 Description : Shallow dose equivalent to the maximally exposed extremity (SDE-ME).

Field Name : SDE_ME
 Table Name : EXPOSURE
 Data Type : CHAR(8)
 Units : Rem
 Range : NR, ND, or numeric
 Required : N
 Validated : N
 Label : Shallow dose equivalent max extremity (SDE-ME)
 Description : Shallow dose equivalent to the maximally exposed extremity (SDE-ME).

Field Name : SDE_UL
 Table Name : DOSES_WS
 Data Type : CHAR(8)
 Units : Rem
 Range : NR, ND, or numeric
 Required : Y
 Validated : Y
 Label : Shallow dose equivalent upper left extremity (SDE-UL)
 Description : Shallow dose equivalent to the upper left extremity (SDE-UL).

Field Name : SDE_UR
 Table Name : DOSES_WS
 Data Type : CHAR(8)
 Units : Rem
 Range : NR, ND, or numeric
 Required : Y
 Validated : Y
 Label : Shallow dose equivalent upper right extremity (SDE-UR)
 Description : Shallow dose equivalent to the upper right extremity (SDE-UR).

Field Name : SDE_WB
 Table Name : DOSES_WS
 Data Type : CHAR(8)
 Units : Rem
 Range : NR, ND, or numeric
 Required : Y
 Validated : Y
 Label : Shallow dose equivalent whole body (SDE-WB)
 Description : Shallow dose equivalent to the whole body (SDE-WB).

Field Name : SDE_WB
 Table Name : EXPOSURE
 Data Type : CHAR(8)
 Units : Rem
 Range : NR, ND, or numeric
 Required : N
 Validated : N
 Label : Shallow dose equivalent whole body (SDE-WB)
 Description : Shallow dose equivalent whole body (SDE-WB)

Field Name : SEX
 Table Name : EMPLOYEE
 Data Type : CHAR(1)
 Units : N/A
 Range : (M)ale, (F)emale
 Required : Y
 Validated : Y
 Label : Sex
 Description : Sex of the monitored individual (M, F).

Field Name : SIZE
Table Name : HPROINFO
Data Type : NUMERIC(10)
Units : Bytes
Range : Greater than 0
Required : Y
Validated : N
Label : Size in bytes of hp_ro.dbf
Description : Size in bytes of hp_ro.dbf table. Used to determine if hp_ro.dbf has been modified.

Field Name : TEDE
Table Name : EXPOSURE
Data Type : CHAR(8)
Units : Rem
Range : N/A
Required : N
Validated : N
Label : Total effective dose equivalent (TEDE)
Description : Sum of the deep dose equivalent (for external exposures) and the committed effective dose equivalent (from internal exposures).

Field Name : TEST_NO
Table Name : INTAKES
Data Type : CHAR(10)
Units : N/A
Range : N/A
Required : N
Validated : N
Label : Test Number
Description : Optional ID number used to uniquely identify intake record.

Field Name : THYROID
Table Name : HP_RO
Data Type : CHAR(8)
Units : Rem
Range : 0, 1.0E-14 - 1.0E+11
Required : N
Validated : N
Label : THYROID
Description : EPA-11 Dose Conversion Factor for the thyroid in mrem (uCi).

Field Name : THYROID
 Table Name : INTAKES
 Data Type : CHAR(8)
 Units : Rem
 Range : 0, 1.0E-14 - 1.0E+11
 Required : N
 Validated : Y
 Label : THYROID
 Description : Amount of dose (rem) to the thyroid.

Field Name : TIME
 Table Name : HPROINFO
 Data Type : CHAR(8)
 Units : N/A
 Range : N/A
 Required : Y
 Validated : N
 Label : Time HPRO.DBF file revised
 Description : Time which HP_RO.DBF table was created. Used to determine if HP_RO.DBF has been modified.

Field Name : TODE
 Table Name : EXPOSURE
 Data Type : CHAR(8)
 Units : Rem
 Range : N/A
 Required : Y
 Validated : N
 Label : Total organ dose equivalent (TODE)
 Description : Total organ dose equivalent TODE=DDE+CDE.

Field Name : TOPIC
 Table Name : REMITHLP
 Data Type : CHAR(30)
 Units : N/A
 Range : Any
 Required : N
 Validated : N
 Label : Help Topic
 Description : Help topic names.

Field Name	:	U_TOXIC
Table Name	:	LIMITS
Data Type	:	NUMERIC(4,1,)
Units	:	milligrams
Range	:	0-5,000
Required	:	N
Validated	:	Y
Label	:	Uranium toxicity limit
Description	:	Limit set by licensee to screen for possible intakes in excess of the soluble uranium toxicity limit specified in 10 CFR 20.1201(e)

Field Name	:	WS_FLG
Table Name	:	EXPOSURE
Data Type	:	LOGICAL(1)
Units	:	N/A
Range	:	.T. or .F.
Required	:	Y
Validated	:	N
Label	:	Worksheet flag
Description	:	Flag to determine if user has entered doses into worksheet.

Field Name	:	YEAR
Table Name	:	MON_YEAR
Data Type	:	NUMBER (4)
Units	:	N/A
Range	:	
Required	:	Y
Validated	:	Y
Label	:	Monitoring Year
Description	:	Monitoring year in YYYY format.

APPENDIX E. EXTENDING REMIT DATA BASES

PURPOSE

The purpose of the Appendix is to describe how additional data may be manipulated and added to the REMIT system to allow the user added flexibility in maintaining dosimetry information. However, it is important to keep in mind that REMIT is **limited in scope** as stated in Section 1.2. REMIT is not intended to satisfy every records management need or requirement for every potential user. It is not the intent of this Appendix to specify how data should be maintained, only that the potential exists for additional information to be recorded and manipulated.

Data base STRUCTURES

REMIT was developed using FoxPro 2.0 and makes use of XBASE-compatible data base files (extension .DBF) to maintain all records of radiation monitoring and licensee information. It is anticipated that users will require manipulation of this information independently of the REMIT System. The dBASE-compatible file structure was chosen specifically with this manipulation in mind. This file structure is widely supported in the software industry. This structure also provides certain data integrity features not supplied by "flat file" structures such as ASCII. However, since ASCII data are also widely supported, REMIT supports importing data for this file type. Finally, dBASE III is a data base management system (DBMS) officially supported by the NRC.

Index Files

Index files are used to manipulate the order with which data is listed or searched within a data base. Index files do not contain data, just the order of the data base records. REMIT uses FoxPro (extension .CDX) index files. While it is true that the index files used by REMIT are not dBASE-compatible, these index files are not necessary to manipulate the data independent of REMIT. The .CDX index files were specifically designed for use by REMIT. They can be recreated or updated whenever the data has been manipulated independently of REMIT by selecting REINDEX from the FILE menu within REMIT.

Fields and Records

The term "fields" is used throughout this manual to mean a data element or "column" in a data base. The term "record" refers to a "row" in the data base. In ASCII terminology, a field can be described as the data contained between to specified columns in the same line of the file, and each line is said to be a record.

Fields are defined by a field name, type, width, and decimal places (for numerics). The field name is usually descriptive of the field contents. There are five basic field types: character, numeric, date, logical, and memo. Character fields generally contain text, numerics consist of numbers, date fields contain only valid calendar dates, logical fields are either true or false, and memo fields contain large text blocks.

Each field type has specifications on acceptable input depending upon the DBMS. Consult your dBASE III-compatible data base management reference manual for further information about field specifications for your package.

The following are field and record restrictions on data bases that are to be used by REMIT. See your DBMS manual for further limitations.

- Maximum of 4,000 characters per record
- Maximum of 255 fields per record
- Maximum of 254 characters per field
- Maximum numeric field width of 20
- Date fields are a width of 8
- Logical fields are a width of 1

Memo Fields

Memo fields are actually small fields that contain record "pointer" information that references where blocks of text are stored in "memo files." Memo fields are often not compatible between various DBMS. The import features included in REMIT will not function if memo fields are used.

Memo fields should not be used in association with the REMIT system.

Structure

The following is a typical listing of a dBASE III-compatible data base file structure. The file shown is the structure for the REMIT employee information as originally distributed. These fields are required by REMIT. This file structure will be used to demonstrate how the user may add additional information to the REMIT data bases.

```

Structure for data base: C:\REMIT\EMPLOYEE.DBF
Number of data records:
Date of last update   :
Field  Field Name  Type      Width  Dec
-----
1  EMP_ID    Character  12
2  ID_TYPE   Character  3
3  FIRST_NAME Character  25
4  MIDDLE    Character  1
5  LAST_NAME Character  25
6  SEX       Character  1
7  DOB       Date       8
8  RPT_FLG   Logical    1
9  DOSES_FLG Logical    1
10 LIMITS_FLG Logical    1
** Total **                78

```

Figure E-1. REMIT Employee Data Base Structure

A complete description of each field is contained in the Data Dictionary, Appendix D.

ADDITIONAL FIELDS

The fields required by REMIT are the minimum needed to process the data. The user may modify the structure of the REMIT data bases to include additional fields. REMIT is designed to allow access to these additional fields through certain browse windows. In this manner, detailed information for each record may be maintained. This allows the user to access additional information in order to further assess the data for records management or health physics purposes.

These additional fields are not reported to the NRC. REMIT will not produce printed or electronic reports that contain this additional information.

Modifying .DBF Files

Typically, a data base management package has a command for modifying data base structures. In dBASE the command is "MODIFY STRUCTURE". Each data base management package contains its own syntax. Consult your DBMS manual for instructions.

Warning: When modifying the structure of a REMIT data base, it is important that you do not modify the required fields in any way. REMIT will not function if required fields are modified.

- AND -

HP_RO.DBF should not be edited or modified in any way. REMIT will not function properly if HP_RO.DBF has been edited or modified.

When modifying the structure, it is suggested that fields should only be added to the end of the records. REMIT does not depend on the order of the fields, but changing the order may cause difficulty when importing ASCII data.

Using "MODIFY STRUCTURE," the user can add any fields that will assist the user in maintaining information handled by REMIT. For example, if it is desired that additional personnel information be maintained in the EMPLOYEE.DBF file, add fields such as hire date, termination date, and home phone number. Figure E-2 shows an example of possible additions to EMPLOYEE.DBF.

```
Structure for data base: C:\REMIT\EMPLOYEE.DBF
Number of data records:
Date of last update   :
Field  Field Name  Type      Width  Dec
  1  EMP_ID      Character  12
  2  ID_TYPE     Character   3
  3  FIRST_NAME  Character  25
  4  MIDDLE      Character   1
  5  LAST_NAME   Character  25
  6  SEX         Character   1
  7  DOB         Date        8
  8  RPT_FLG     Logical     1
  9  DOSES_FLG   Logical     1
 10  LIMITS_FLG  Logical     1
 11  HIRE_DATE   Date        8
 12  TERM_DATE   Date        8
 13  HOME_PHONE  Character  12
** Total **                107
```

Figure E-2. Modified Employee Data Base Structure

Once these fields have been added to the data base structure, the fields may be left blank or may be entered using the DBMS.

The example shown here indicates how the EMPLOYEE data base may be modified to maintain additional employee information. The other REMIT data base files can be modified using the method described above.

It is important to note again that these additional fields will not be used by REMIT, and the additional fields will not be verified or reported. However, the data can be viewed and edited from within REMIT.

Viewing and Editing the Data Within REMIT

All REMIT data bases can be extended to include additional fields. However, only the following data bases can be modified such that additional fields can be viewed and edited within REMIT:

- EMPLOYEE.DBF
- EXPOSURE.DBF
- DOSES_WS.DBF
- INTAKES.DBF

REMIT allows for viewing and editing of fields that have been added to these REMIT data bases. These fields are only accessible through the browse-style windows. The EMPLOYEE and EXPOSURE data bases have the browse push-button option <Browse> in REMIT. The DOSES_WS and INTAKES data bases use browse-style windows for the <Worksheet> and <Intakes> features. These browse-style windows activate the main menu Browse option (see Section 3.3).

Table E-1. Accessing Added Fields

File:	Added Fields are Accessible Using:
EMPLOYEE.DBF	Data, <Browse>
EXPOSURE.DBF	Data, <dOses>, <Browse>
DOSES_WS.DBF	Data, <dOses>, <Edit>, <Worksheet>
INTAKES.DBF	Data, <dOses>, <Edit>, <Intakes>

Within the appropriate browse window, the additional fields will be displayed for viewing and editing to the right of the REMIT required fields. This often places them off-screen. Use the cursor keys, tab key, or use the mouse and click on the right arrow in the lower right-hand corner of the screen to access these fields. The fields will be listed from left to right in the order that they are encountered in the data base structure.

Warning: No verification or validation will be provided within REMIT for the editing of these fields.

RELATIONAL DATA BASES

The term "relational" in data base terminology means that data may be connected from multiple tables to produce a listing, report, or calculation. Two (or more) data bases may be related by sharing a common field or expression for reference. One of the data bases is required to have an index on the shared field. The relation allows the user to access all the fields from both data bases. For example, the REMIT system relates DOSES_WS and INTAKES records to the parent EXPOSURE record using the RECORD_ID field.

Users may want to set up relational data base schemes outside of the REMIT system for report generation or data base management purposes. For example, the EMPLOYEE data base may be related to a file containing employee addresses, or training certifications held by the employee. The dBASE command for relating data bases is "SET RELATION TO....".

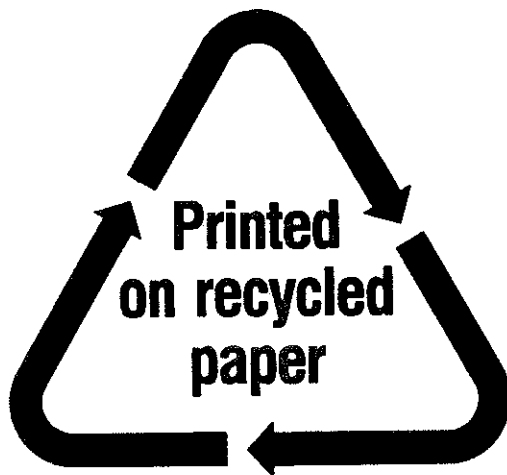
REMIT will not make use of relations established independently of the REMIT system. See a dBASE-compatible DBMS reference manual for further instructions on relational data bases.

PRODUCING REPORTS

Most data base management packages include the capability to create user-defined reports. Other software packages are available that deal exclusively with creating custom-designed reports.

It is the intent of the NRC that REMIT data can be accessed independent of REMIT to produce reports and manage the data according to the licensees needs and requirements. Therefore, the production of printed reports other than Forms 4 and 5 is beyond the scope of REMIT.

NRC FORM 335 (2-89) NRCM 1102, 3201, 3202		U.S. NUCLEAR REGULATORY COMMISSION					
BIBLIOGRAPHIC DATA SHEET <i>(See instructions on the reverse)</i>							
2. TITLE AND SUBTITLE Radiation Exposure Monitoring and Information Transmittal (REMIT) System User's Manual		1. REPORT NUMBER <i>(Assigned by NRC. Add Vol., Supp., Rev., and Addendum Numbers, if any.)</i> NUREG/CR-6050 SAIC-93/1310-01					
		3. DATE REPORT PUBLISHED <table border="1"> <tr> <td>MONTH</td> <td>YEAR</td> </tr> <tr> <td>June</td> <td>1993</td> </tr> </table>		MONTH	YEAR	June	1993
		MONTH	YEAR				
		June	1993				
4. FIN OR GRANT NUMBER L1384							
6. TYPE OF REPORT User's Manual							
5. AUTHOR(S) R. Cale, T. Clark, R. Dixon, D. Hagemeyer		7. PERIOD COVERED <i>(Inclusive Dates)</i> N/A					
8. PERFORMING ORGANIZATION - NAME AND ADDRESS <i>(If NRC, provide Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address; if contractor, provide name and mailing address.)</i> Science Applications International Corporation 301 Laboratory Road Oak Ridge, TN 37830							
9. SPONSORING ORGANIZATION - NAME AND ADDRESS <i>(If NRC, type "Same as above"; if contractor, provide NRC Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address.)</i> Division of Regulatory Applications Office of Nuclear Regulatory Research U.S. Nuclear Regulatory Commission Washington, DC 20555							
10. SUPPLEMENTARY NOTES							
11. ABSTRACT <i>(200 words or less)</i> The Radiation Exposure Monitoring and Information Transmittal (REMIT) system is designed to assist U.S. Nuclear Regulatory Commission (NRC) licensees in meeting the reporting requirements of the revised 10 CFR 20 and in agreement with the guidance contained in R.G. 8.7, Rev. 1, "Instructions for Recording and Reporting Occupational Exposure Data." REMIT is a personal computer (PC) based menu driven system that facilitates the manipulation of data base files to record and report radiation exposure information. REMIT is designed to be user-friendly and contains the full text of R. G. 8.7, Rev. 1, on-line as well as context-sensitive help throughout the program. The user can enter data directly from NRC Forms 4 or 5. REMIT allows the user to view the individual's exposure in relation to regulatory or administrative limits and alerts the user to exposures in excess of these limits. The system also provides for the calculation and summation of dose from intakes and the determination of the dose to the maximally exposed extremity for the monitoring year. REMIT can produce NRC Forms 4 and 5 in paper and electronic format and can import/export data from ASCII and data base files.							
12. KEY WORDS/DESCRIPTORS <i>(List words or phrases that will assist researchers in locating the report.)</i> NRC Form 4 NRC Form 5 occupational radiation exposure REIRS electronic format REMIT		13. AVAILABILITY STATEMENT Unlimited					
		14. SECURITY CLASSIFICATION <i>(This Page)</i> Unclassified					
		<i>(This Report)</i> Unclassified					
		15. NUMBER OF PAGES					
		16. PRICE					



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