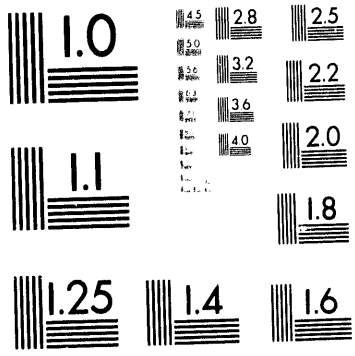
1.0
1.1
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1 of 1

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Hazardous Solvent Substitution Data System Reference Manual

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CONTENTS

FIGURES

FOREWORD

Concern for the environment, in addition to Federal regulation, mandate the replacement of hazardous solvents with safer cleaning agents. Manufacturers are working to produce these replacement solvents. As these products are developed, potential users need to be informed of their availability.

To promote the use of these new products instead of traditional solvents, the Idaho National Engineering Laboratory (INEL) has developed the Hazardous Solvent Substitution Data System (HSSDS). The HSSDS provides a comprehensive system of information on alternatives to hazardous solvents and related subjects, and it makes that information available to solvent users, industrial hygienists, and process engineers.

The HSSDS uses TOPIC®, a text retrieval system produced by Verity, Inc., to allow a user to search for information on a particular subject. TOPIC® produces a listing of the retrieved documents and allows the user to examine the documents individually and to use the information contained in them.

This reference manual does not replace the comprehensive TOPIC® user documentation (available from Verity, Inc.), or the HSSDS Tutorial (available from the INEL). The purpose of this reference manual is to provide enough instruction on TOPIC® so the user may begin accessing the data contained in the HSSDS.

Hazardous Solvent Substitution Data System Reference Manual

1. INTRODUCTION

Successfully replacing hazardous chemicals with less hazardous chemicals is important to preserving our environment and to maintaining a viable business. However, most people are not familiar with the many new products that are available. Furthermore, because these products are relatively new to the market, few persons have practical experience with which product works best in a particular situation. For example, it is common knowledge that gasoline is a fairly effective degreaser, but few people know that there are other products available that are just as good, less toxic, and more environmentally friendly. The purpose of the Hazardous Solvent Substitution Data System (HSSDS) is to make available product information, Material Safety Data Sheets (MSDS's), anecdotal data, and similar information on these less hazardous chemicals. With a little practice any user can get HSSDS to "read" the data and display only those documents that pertain to the current need. The HSSDS does this using a software package called TOPIC®.

Product information from researchers and manufacturers was scanned into the host computer system and checked for completeness. Using TOPIC® data base administrator tools, all the words in every document were indexed to allow for rapid searches.

TOPIC® allows the user to create a query (a set of search criteria) consisting of words and phrases associated with the information sought. The query is then run against the documentation stored in the system. TOPIC® retrieves all documents that meet the search criteria and ranks them according to probable relevance.

Currently HSSDS includes data primarily on solvents. The system will eventually incorporate information on refrigerants, lubricants, and other chemical substances used in manufacturing and maintenance operations. User suggestions are welcomed. Please use the HSSDS Data Correction/ Suggestion Form (Appendix A).

If you find an error in any data (typos, inaccuracies, questionable statements), or if you have material or information you feel may be of value to others, please send a copy of the HSSDS Data Correction/Suggestion Form (Appendix A) or the Usage Data Form (Appendix B) to

Nolan Stucki, MS 3950
EG&G Idaho, Inc.
P.O. Box 1625
Idaho Falls, ID 83415-3950

(208) 526-8096.

If you have technical questions regarding how to access HSSDS or how to retrieve data, please contact HSSDS Technical Support by calling Kevin Twitchell at (208) 526-6956.

2. ACCESSING HSSDS

To gain access to HSSDS, call Nolan Stucki (telephone number and address on page 1) and request the HSSDS information packet. The packet will guide you through required paperwork and initial access instructions. Once your paperwork has been processed, you will receive your user ID, Internet address, modem telephone number, etc.

Figure 4 and Figure 5 in Appendix C show some of the configurations that can be used to access HSSDS. The system can be accessed by other platforms that are not listed. Requests for access on non-listed platforms will be handled on an individual basis.

2.1 Type of User

Two types of users may access HSSDS: INEL personnel and non-INEL personnel. INEL personnel includes all persons reporting, directly or indirectly, to the DOE-Idaho Field Office. Non-INEL personnel includes all others. For both INEL and non-INEL personnel, all applicable forms will be included in the HSSDS information packet.

2.2 Method of Communication

You may choose to access HSSDS via a network (Internet) or a modem. Regardless of which you select, you are responsible for obtaining and installing hardware and software that is compatible with HSSDS. When you make your initial call to request access, a technical consultant will help you determine what you need to be compatible.

2.3 Type of Interface

There are two interfaces through which HSSDS may be accessed: window-based and character-based. The windows-based interface is somewhat faster, allows you to view images of documents, and is easier to use. For a windows-based interface, you will need an X-terminal emulation package (PC-Xview, X-Vision, DESQview/X, Mac-X, etc.) with whatever supporting software is required, or an X-terminal. When logging on, be sure to provide the following data in the client command line:

xtopic -display <your internet address>:0

The character-based interface provides the same quality of information and requires less software, but it does not permit you to view images. For a character-based interface, you must have a character terminal or emulator package, and communications hardware and software appropriate to the method of communication and the terminal or emulator. When logging on, be sure to specify a VT100 terminal or other VT-series terminal.

Depending on the interface you have chosen (which is determined by your hardware and software), you may wish to refer to either Section 3 on the windows interface or Section 4 on the character interface.

3. THE WINDOWS INTERFACE

Windows applications have become very popular, in part because all screens in all applications have approximately the same layout, making it easier for a first-time user to learn a new application. If you are not familiar with windowing applications and are using access options 1 or 2 from Figure 4 or Figure 5, you may find the following discussions, definitions, and descriptions useful. If the windows terminology is unfamiliar, please consult the Windows Glossary in Appendix D.

> **NOTE:** Your windows may be slightly different from what is described. All windows are not **exactly** alike. For the best results, start up HSSDS and continue reading while a window is displayed on your screen.

3.1 The Windows Concept

A window is a picture that appears on your screen and allows you to enter or view commands and data. It may or may not fill up the entire monitor screen. If it does not, you may see parts of other windows behind the one that is currently active. The active window is the one with the highlighted title bar.

Windowing applications are designed to utilize a mouse. They also use icons to represent some commands. To make a selection or execute a command, position the mouse indicator on the appropriate icon and click the left mouse button once or twice (i.e., single-click or double-click).

Executing a command will frequently result in another window being displayed on top of the one from which you executed the command. Typically, these multiple windows are arranged in a cascading effect. This can give the screen a rather cluttered appearance and may make it difficult to locate the active window. As you become more comfortable with the windows interface, this will be less of a hindrance.

3.2 Typical Window Layout

All windows (except menus from which you pick an item) have the same basic layout. Regardless of the application, a title bar (line with a title on it and symbols at each end) appears across the top of the window. If there is more information than can be shown in the window, scroll bars are provided as necessary down the right-hand side of the window for moving up and down and across the bottom of the window for moving right and left. The actual look of these may vary somewhat from machine to machine, but they function the same.

If you move the mouse, notice that the mouse indicator (a large, bolded X or an arrow in some applications) moves. The mouse indicator is used to "point" at commands, icons, or portions of the screen to provide instructions.

When the mouse indicator gets to the border of a window, it changes to indicate that you may change the dimensions of that window. To change the size of the window, hold down the left mouse button and move the mouse up and down or right and left (depending on whether you are moving a horizontal or a vertical edge). When you release the left mouse button, the window is redrawn to fit the

new dimensions. You can change the horizontal and vertical dimensions simultaneously if you initially move the mouse indicator to a corner.

Move the mouse indicator up to the title bar. If you hold down the left mouse button and move the mouse, you can change the location of the window. Note that if the window fills the entire screen its location cannot be changed.

A window can be toggled between full screen size and its current size. Single-click on the right-most button on the title bar. This minimizes the current window into an icon in the bottom left corner of the screen. Double-clicking this icon restores the window.

Just below the title bar is the menu bar. Some of the menu options for HSSDS will be discussed in Sections 5, 6, and 7.2.

4. THE CHARACTER-BASED INTERFACE

Although the format of the screens in character- and windows-based TOPIC® is very similar, if you are using the character-based TOPIC® there are a few differences in operation. Figure 1 lists the key strokes used to perform functions that the mouse would do in a windowing environment. If you are using a terminal emulation package, your keyboard mapping may vary somewhat from the table. Please consult the documentation for the package you are using or ask your local computer support person for assistance in determining the keyboard mapping for your system. One column on the table has been reserved for your notes.

Character-based TOPIC® is slower than its windows counterpart. If you are an average or better typist, you will frequently have typed one or more words for a query before any of those words have been echoed to the screen.

In addition, if you are using a PC keyboard with a terminal emulation package rather than an actual terminal, some keys will occasionally cause TOPIC® to think you wish to exit. If the exit screen appears asking if you want to save or discard changes, and you are not ready to quit, use the Tab key to position on <Cancel> and press <Enter>, or just press <Esc>, and continue. Please report the problem to HSSDS Technical Support (see page 1).

4.1 Typical Screen Layout

The main TOPIC® screen has a title bar (line with a title on it) across the top of the screen. Just below the title bar is the menu bar. Some of the menu options for HSSDS will be discussed in Sections 5, 6, and 7.2.

Keyboard Navigation

Function	VT terminal emulation using FTP PC/TCP® version 2.05 on INEL Ethernet LAN	VT100 emulation using Crosstalk XVI® and a modem	VT320 & VT420 terminals on INEL Ethernet LAN	Your Keyboard
Move cursor to menu bar Select menu item Leave menu bar	Ctrl + \ Highlight, press Enter Esc or Ctrl + C	Ctrl + \ Highlight, press Enter Ctrl + C or Esc	Ctrl + \ Highlight, press Return Ctrl + C	
Move cursor w/in window or menu Execute a menu option	Arrows Highlight, press Enter	Arrows Highlight, press Enter	Arrows Highlight, press Return	
Move cursor w/in dialogue boxes	Tab	Tab	Tab	
Move cursor between window panes	Tab	Tab	Tab	
Delete characters in a query Insert characters in a query	Backspace[1] Default condition	Backspace[1] Default condition	Backspace[1] Default condition	
Execute a query and retrieve documents	Enter or Ctrl + R	Enter or Ctrl + R	Return	
Page up through results or text Page down through results or text	End Page down		Previous Next	
Move to beginning of items or text Move to end of items or text	Insert Delete		Find Select	
Highlight an item or retrieved document Select item, toggle checkboxes	Arrows Space bar	Arrows Space bar	Arrows Space bar	
Open a document	Enter or Ctrl + O	Enter or Ctrl + O	Ctrl + O	
Close a document or window	Esc or Ctrl + C	Ctrl + C or Esc	Ctrl + C	
Exit TOPIC®	Ctrl + X	Ctrl + X	Ctrl + X	

[1]Depending on the emulation software being used, the backspace key may delete the character the cursor is on rather than the character to the left of the cursor. If this is the case for your keyboard mapping, try using Ctrl + H to backspace. For Crosstalk XVI®, try using Ctrl + Backspace.

Figure 1. TOPIC® keyboard navigation with various keyboards for both INEL and non-INEL users.

5. USING TOPIC®

The following is a brief discussion of how to use TOPIC®. More detailed data can be found in the TOPIC® reference manuals. Where instructions differ between the windows-based TOPIC® and the character-based TOPIC®, they will be shown in two columns, separated by a vertical bar: windows on the left and character-based on the right.

5.1 Creating a Simple Query

You've successfully started up TOPIC® and now you want to locate some documents. Let's suppose you need a solvent that is non-carcinogenic. This example will be used for the remainder of this document.

Find the flashing I-beam; if you don't see it, position the mouse indicator in the box under the words "Enter words and phrases, separated by commas:" and single-click. Type *non-carcinogenic* and press <Enter> (or single-click on the **Retrieve** button). The mouse indicator will change to an hour glass to let you know that your request is being processed.	Press <Tab> until the cursor is positioned in the query box under the words "Enter words and phrases, separated by commas:." Type *non-carcinogenic* and press <Enter>.

Notice that no documents are found! This is because punctuation marks (the hyphen) are not indexed. Search for *non carcinogenic* instead. When all the documents have been found, the list of titles will be displayed on the bottom half of the window.

> **NOTE:** The EG&G Idaho standard spelling for words like *non-carcinogenic* is *noncarcinogenic*, leaving out the hyphen. Currently, none of the documents in HSSDS use this second spelling.

5.2 Interpreting the Results

When the results are returned, you'll notice that there is a "Retrieved" line below the query box. The number of documents found and the total number of documents that exist is shown here.

The following headings appear from left to right above the found documents:

- Score -- This number is calculated using a proprietary method developed by Verity, Inc., to give you an idea of the likelihood that a particular document will actually contain information relevant to your query. It is also useful for comparing the relevance of one document to another. **IT INDICATES NOTHING ABOUT THE QUALITY OF A PRODUCT**. Documents are listed in order from highest to lowest score.

- ProdName -- Name of the product.

- CompName -- Name of the company that manufactures the product.

5.2.1 Document Types

TOPIC® can search many difference sources for information. A source is simply a collection of closely related data. Currently, HSSDS has available the following difference sources:

ProdInfo	--	Product information.
ChemList	--	Chemical lists - the chemical makeup of products where this information is available.
Misc	--	Miscellaneous, including journal articles of interest
Usage	--	Anecdotal/lessons learned data of actual use of a product in real situations.
Toxicol	--	Toxicological studies on a product, including Environmental Protection Agency (EPA) toxicity reports.
Biodgrad	--	Biodegradability information on a product.

Product information (ProdInfo) is the default source for HSSDS. To change the source,

Select **Query** from the menu bar and select **Choose Sources** to display the list of sources. To add a source to the current repertoire, single-click on the item you wish to add. You also single-click on a source if you wish to remove it: single-clicking on the source acts as a toggle between include and exclude.	Press <Ctrl/backslash> to move to the menu bar. Press <Q> to activate the **Query** menu. Press <U> to select **Choose Sources**. To add a source to the current repertoire, position the cursor on the desired source and press the space bar. The space bar is also used to deselect a source: it is a toggle between include and exclude. Press <Enter> when you are satisfied with the sources.

Note that selecting more than one source, you may search several sources at the same time.

5.3 Viewing a Document

To view a document,

Position the mouse indicator on the line containing the document you wish to view and double-click. The indicator will change to an hour-glass and the first page of the document will be displayed. Notice that the title bar and scroll bar of the new window are almost identical to the previous window.	If the cursor is not in the results list window, press <Tab> to position it there. Use the arrow keys to highlight the document you wish to view. Press <Enter>.

Each document has a standard header consisting of the product name, company name, product number (generated and tracked by the EG&G Idaho Pollution Prevention Unit), date of the last update to the information, and the type of document.

The header section may be followed by a section listing additional sources of information, including MSDS's, chemical lists, usage data, and toxicology studies.

If you are using a windows-based TOPIC®, you may want to look at the scanned images of the MSDS (indicated by *[M###-##A]* where # represents any digit) and the product information sheets (indicated by *[P###-##A]* where # represents any digit). Although graphs, figures, and tables from original product information documents are read by the scanner, the optical character recognition (OCR) software does not put them into the text files. To view an image, double-click on the image icon.

Most product information documents will also be linked to their chemical list (indicated by *[CL###S]* where # represents any digit) and anecdotal usage data (indicated by *[U###S]* where # represents any digit). Double-click on the icon of the data you wish to view.

If you are viewing a document from your results list and wish to move to the next or previous document in the list,

Single-click on **Navigate** on the menu bar and select either **Next Document** or **Previous Document**.	Press <Ctrl/backslash> to move to the menu bar. Press <N> to activate the **Navigate** menu. Press <D> to view the next document in the results list, <O> to view the previous.

If you are viewing a document from your results list and wish to quickly locate the words that caused TOPIC® to select that document,

Single-click on **Navigate** on the menu bar and select **Next Highlight** or **Previous Highlight**.	Press <Ctrl/backslash> to move to the menu bar. Press <N> to activate the **Navigate** menu. Press <H> to view the next highlighted word, <E> to view the previous.

To locate text,

Single-click on **Navigate** on the menu bar and select **Find Text**. Type the character string (a portion of a word, or a phrase) you wish to find, and single-click on the **Find Next** or **Find Previous** button. When finished, single-click on the **Dismiss** button.	Press <Ctrl/backslash> to move to the menu bar. Press <N> to activate the **Navigate** menu. Press <F>. Type the character string (portion of a word or a phrase) you wish to find, and press <Enter>.

NOTE: Do not use wildcard characters ("?" and "*") in the search string of a Find Text operation.

When you are finished with the document,

Close it by clicking on the document window's **File** menu and selecting **Close**.	Close it by pressing <Ctrl/C>.

Please note that the operation of scanning documents into HSSDS is not 100% accurate. For example, where temperatures are specified, the scanner sometimes interprets the degree symbol (superscript O) as a zero. Thus 100°F may become 1000F. Looking at the image of the original document can clarify the text in these cases. Please report all errors using the HSSDS Data Correction/Suggestion Form in Appendix A.

5.4 Operators and TOPIC® Terminology

In your search for a product that is non-carcinogenic, you queried on a single phrase and probably did not get all the products that are non-carcinogenic. To ensure that you get all the documents, you could query on the word *carcinogen*, but this would give you more documents than you really want (finding carcinogenic as well as non-carcinogenic products). You could have used the phrase *not a carcinogen* in addition to *non carcinogen*, but this still would have left out several of the documents you may want.

You could have TOPIC® search on *not a cancer causing agent* and *contains no carcinogens*, but the person who composed the document for a particular product may have written "Product XXX is not considered a carcinogen" or some other variation on the theme. Clearly, you cannot hope to guess the exact wording of every document which meets your criteria, but you can still form a query that will retrieve most or all of the information you need and none of the data you do not want.

To refine your query, you need to understand the meaning of the following terms and operators. These are arranged approximately in order from simplest to most complex. Note that there are several terms whose meanings vary somewhat from customary usage.

TOPIC® -- When spelled with all upper-case letters, this indicates the name of the software product being used.

Word -- A word is sometimes referred to as a literal word and is enclosed in double-quotation marks. TOPIC® searches for an exact match with no variations as in stem.

Stem -- Stem is the default for entering terms and is similar to the concept of a *root word*. If you enter *clean*, TOPIC® searches for *clean*, *cleans*, *cleaned*, and *cleaning*.

Phrase -- A phrase may be any combination of stems and words, but may not include topics.

Query -- A simple query is a word, phrase, or a combination that defines some search criteria.

Topic -- A query that is judged to be of use to many people can be saved under a single term and made available to all users. Topics are composed of words and phrases, and operators that define the relationship between the words and phrases so that they describe a complete concept, subject,

or idea. For example, *metal* is defined as a topic: a query on *metal* will search for steel, copper, silver, iron, gold, metal, aluminum, ferrous, and non ferrous.

You are not restricted to a single term in your queries: queries are frequently quite involved in order to retrieve meaningful data. Terms (i.e., stems, words, phrases, and topics) in a query can be connected by operators that include the following:

AND -- Both terms must be found somewhere in the document.

OR -- One or both of the terms must be found in the document.

, -- (Comma) Same as an OR but is scored (see Score in Section 5.2) differently than the OR. The "," is the preferred operator in most situations.

NOT -- The converse of what follows, e.g., *<NOT> carcinogenic* would find only documents that do not include the stem *carcinogenic.*

() -- Group words and operators so that the query is carried out in a particular order. For example, *<NOT> (carcinogen <OR> grease)* will find documents that contain **neither** the word *carcinogen* **nor** the word *grease*. *(<NOT> carcinogen) <OR> grease* will find documents that either do not contain the word *carcinogen* or that **do** contain the word *grease*. A parenthetical grouping may be contained within another parenthetical grouping (i.e., you may nest parentheses).

? -- A wildcard representing exactly one character. For example, *no?* could be *nob*, *nod*, *nog*, *non*, *nor*, *not*, or *now*. *No?l* could be *Noel* or *noil*.

* -- A wildcard representing zero or more characters. For example, *no** could be any of the words listed in the previous entry plus numerous others: *nowhere*, *notwithstanding*, *Nottingham*, *no*, etc.

<sentence> -- Two terms joined by this operator must be found in the same sentence.

<case> -- Case-sensitive search for the term. For example, a search on *carcinogen* will find *carcinogen*, *Carcinogen*, *CARCINOGEN*, and randomly mixed-case spelling. *<CASE> Carcinogen* will find only *Carcinogen*.

<paragraph> -- Two terms joined by this operator must be found in the same paragraph.

<thesaurus> -- Search for the word indicated plus any synonyms of that word that are in the TOPIC® thesaurus.

5.5 Refining the Approach

Now to build on our original query, begun in Section 5.1. We want solvents that are non-carcinogenic. The following are several possible queries and a discussion of their results. Try them out and note the differences in results.

non carcinogenic <OR> not carcinogenic -- Because *not* is a word that TOPIC® recognizes and uses for a special purpose, this query will actually become *non carcinogenic <OR> <NOT> carcinogenic*. This is probably not what you want. The query will find documents that contain the phrase *non carcinogen* or that do not contain the word *carcinogen.* This would locate almost all the documents. If you enclose *not* in quotation marks, TOPIC® will not interpret it as an operator. See next example.

non carcinogenic <OR> "not" carcinogenic -- This query is too narrow. It does not allow for variations in wording such as *not a carcinogen, no evidence that it is carcinogenic*, or *does not cause cancer.*

*carcinogen** -- This query is too broad. Although it will allow for most of the variations of the previous entry, it will also allow phrases such as *contains known carcinogens* -- just the opposite of what is needed.

non carcinogen <OR> ("not" <SENTENCE> carcinogen*) <OR> ("not" <SENTENCE> cancer*)* -- This query will probably get you pretty close to what you actually want. This query allows for three distinct wordings and several variations within each case.

non carcinogen , ("not" <SENTENCE> carcinogen*) , ("not" <SENTENCE> cancer*)* -- This query is preferred over the previous entry because it uses the comma (",") rather than the <OR>. This format will produce more valid scores.

(no <SENTENCE> carcinogen*) , (no* <SENTENCE> cancer*)* -- This query is a bit broader than the previous two, yet will not retrieve unwanted data. This query will allow such phrases as "contains no carcinogens," "non carcinogenic," and "None of the known carcinogens are used in this product."

Remember, throughout this process you are trying to find information on products that will not cause cancer in the person using them. However, TOPIC® is simply searching for words that fulfill the criteria you specify. TOPIC® attaches no meaning or context to those words; therefore, it is essential to examine what data you want. Initially it will take several attempts to refine your query to get just the literature you want. As you become more comfortable with TOPIC® and get a better "feel" for what is in HSSDS, you will be able to compose queries that will produce the desired data on the first or second attempt.

Being able to find all the documents that meet the requirements of the last query is fine, but you are still going to have quite a few documents. To avoid getting extra documents, you must be more specific about how you ask for things. For example, do you want a non-carcinogenic degreaser for use on plastic? Or on high-carbon steel? Must it also be non-flammable? What if the person who wrote a document misspelled the word--carsinogenic? (Although an explanation of its use is beyond the scope of this document, you might try the Soundex Assist for the misspelled word. Refer to a TOPIC® manual or to the on-line help.)

You can use these additional conditions and situations to create a more specific query. Writing good, detailed queries is not difficult, but it does take some thought!

5.6 Additional Help

TOPIC® Assists are a special type of on-line help designed to facilitate the creation of good queries. They provide ideas for words to use, list topics that already exist, and show what you'll get if you use a wildcard.

Single-click on **Query** on the menu bar. Single click on **Assists**. This will bring up the topic assists. Single-click on **Topics** to get the complete list of assists. The following bolded items are the more commonly used of those assists:	Press <Ctrl/backslash> to move to the menu bar. Press <Q> to activate the **Query** menu. Select **Assists**. This will bring up the topic assists. Press <Tab> twice to get to the **Topics** button, then <Enter> to see the complete list of assists. The following bolded items are the more commonly used of those assists:

Topics -- Presents a list of already-created topics. A topic is a simple term that represents many words and phrases that have been previously joined so that they represent a complete concept. For example, if you do a search on *metal* (which is a topic), you will get documents that include the words *steel, copper, silver, iron, gold, metal, aluminum, ferrous,* and *non-ferrous.*

When you first enter the assist, a list of existing topics is displayed.

Double-click on a topic to see its composition. Double-click on the topic again to recompose it. To see the other assists available, single-click on the button below the menu bar that says "Topics."	Use the tab key to position to the portion of the window containing topic names. Position on a topic using the arrow keys, and highlight the desired topic by pressing the space bar. Press <Enter> to see the composition of the highlighted topic. Press <Enter> again to recompose it.

Words -- Contains a listing of all the words and numbers in all the documents in the HSSDS data base. This is useful if you want to see if a word exists in any of the documents. For example, the word *uranium* is not found in this list, which means it is not included in any of the documents.

Stems -- Looks for words that start with the same letters that you typed in. You may be more familiar with the term "root word," which is the same general concept. The stems assists tells you which variations of the root word TOPIC® will search for. For example, endings may include "s," "es," "ed," and "ing" but not "er" and "est."

Thesaurus -- Type the word for which you wish to find a synonym. When the word appears on the list,

Double-click on the word to display a list of synonyms for that word.	Highlight a word and press <Enter> to display a list of synonyms for that word.

Wildcard -- The word list from the Words Assist is displayed. Type the letters you wish to match using an "*" to represent a multiple character string, and "?" to represent a single character. Press <Enter>. Once the search is completed,

Double-click on your entry in the found list.	Press <Enter> after typing in the word to search on.

This will display all the words matching your template. Do not use an "*" in the first position of your search string.

Some of these options may seem very closely related, e.g., stems and wildcards. Knowing when and how to use each is a matter of experience. Try writing several variations of the same query using different assists, using <OR> rather than ",", and grouping character strings and operators differently using parentheses. For example, try the following queries:

*non carcin** versus *non <STEM> carcin*

no <SENTENCE> carcin* <OR> no* <SENTENCE> cancer** versus
no <SENTENCE> carcin* , no* <SENTENCE> cancer**

(no <SENTENCE> carcin*) <OR> (no* <SENTENCE> cancer*)* versus
no <SENTENCE> (carcin* <OR> no*) <SENTENCE> cancer**

The last query will generate an error message--it cannot be done. The sentence operator cannot join complex terms such as those enclosed in parentheses.

5.7 Exiting TOPIC®

Single-click on **File** on the menu bar and select **Exit**. Several windows will appear asking if you want to save your work, if you are certain you want to quit, etc. Single-click on the button that indicates your preference.	Press <Ctrl/backslash> to move to the menu bar. Press <F> to activate the **File** menu. Press <X> to exit. Several windows will appear asking if you want to save your work, if you are certain you want to quit, etc. Use the tab key to select you preferences and press <Enter>.

5.8 Troubleshooting Under Windows

If portions of the screen are hard to read, minimize the window, then double-click on its icon. If the window does not redraw itself completely, exit the system. Consider installing more memory.

TOPIC® may lock up for no apparent reason. This is probably due to insufficient memory (see Figures 4 and 5 for information on memory requirements). If this happens, minimize whatever window you are in, then double-click on its icon. If the window does not redraw itself completely, exit the system. Consider installing more memory.

If you try to view an image and are not successful, it may be because you did not properly close the previous one. Close whatever windows you are not actually using and try it again. If your machine locks up and nothing happens when you click on anything, reboot your machine.

When you first enter the HSSDS, sometimes the screen will be blank except for a menu bar. Single-click on File and then on New Query to open a query window. You may have to repeat this operation two or three times.

Another problem arises when the system doesn't respond to any command. Nothing gets retrieved and you can't view a document; you can't even type anything in the query portion of the window. Close or minimize your windows. You may have inadvertently selected another window before closing the previous one. If this happens too many times, TOPIC® runs out of memory. Assist windows seem to be particularly prone to being left open.

6. CREATING A TOPIC

A well-designed topic query is much more powerful than the simple queries presented thus far. It is also much more complex. We will introduce the basics of constructing a topic by turning our simple query into a topic query. This is an advanced subject area, presented to give you an idea of the flexibility of TOPIC®. It is not necessary to understand this chapter in order to use either TOPIC® or HSSDS.

6.1 Creating the Topic Tree or Outline

We've been looking for solvents that are non-carcinogenic. So far our query looks like this:

(no <SENTENCE> carcinogen*) , (no* <SENTENCE> cancer*)*

This can be expanded to

(no <SENTENCE> carcinogen*) , (no* <SENTENCE> cancer*) ,*
(no <SENTENCE> tumor*) , (no* <SENTENCE> malign*)*

The easiest way to create a topic is to type the query as you would normally. If you are working in the windows-based TOPIC®, you may select either a tree structure or an outline. If you are working in the character-based mode, only outlines are available. Once you have entered the query, enlarge the query box.

There is an up/down scroll bar to the right of the query box. Just below that is another button. Position the mouse indicator on that button so that the mouse indicator changes to cross-hairs. Click and drag to enlarge the box.

Press <Ctrl/backslash> to move to the menu bar. Press <W> to activate **Windows** menu. Select the **Flip** option to change the size of the various parts of the screen. Repeated execution of **Flip** selects through the three available window sizes.

When you start TOPIC® initially, you are in Simple Query mode. To create a topic from your simple query, select the Query option from the menu bar, select Query Type, and then Topic Query. Your query will be converted to a topic tree or topic outline (if in character mode). The default mode of operation in TOPIC® is whatever mode you were in the last time you used TOPIC®.

6.2 Definitions

Before you can begin editing your topic, you should be familiar with the following terms.

Node -- An individual entry on the topic tree or outline.

Root -- The very first node of the tree or the first item in the outline. On a topic tree, this is the node at the far left of the tree.

Child -- A node branching off from a node closer to the root.

Parent -- A node that has at least one child. The root node has children but no parent.

Siblings -- Two nodes that have the same parent.

Leaf -- A node that has a parent but no children.

Topic Handle -- Solid, black diamond to the left of the topic name or word.

Open/close icon -- Half-diamond to the right of the node operator.

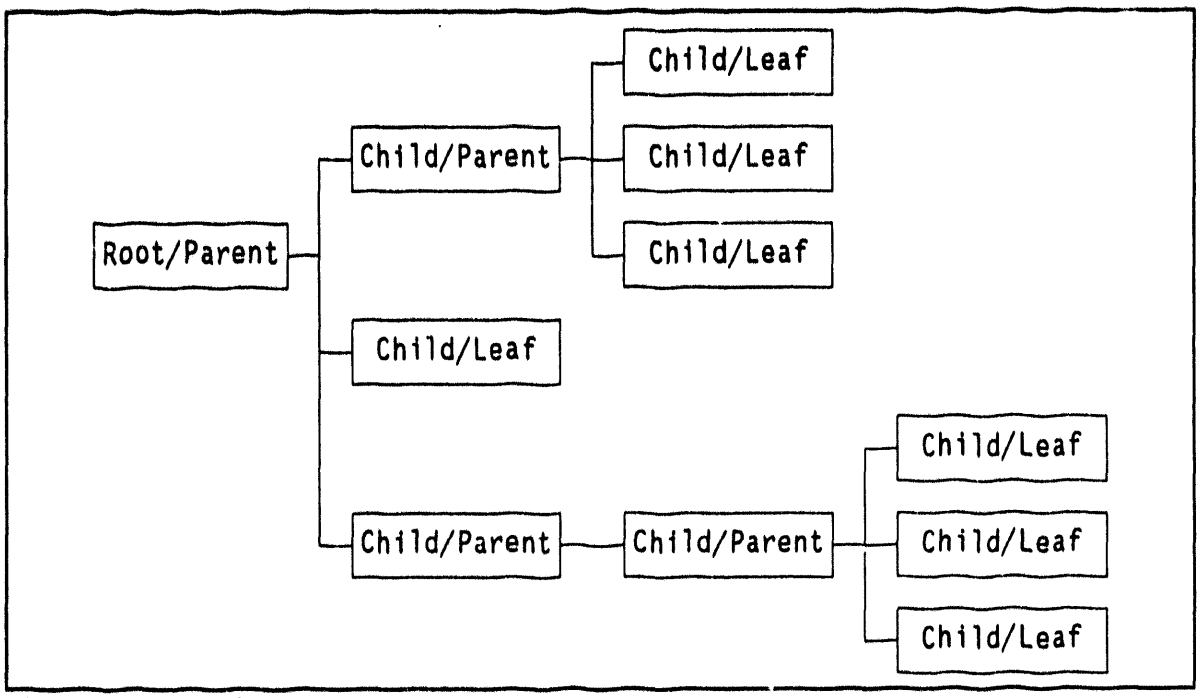

Figure 2. A sample tree structure.

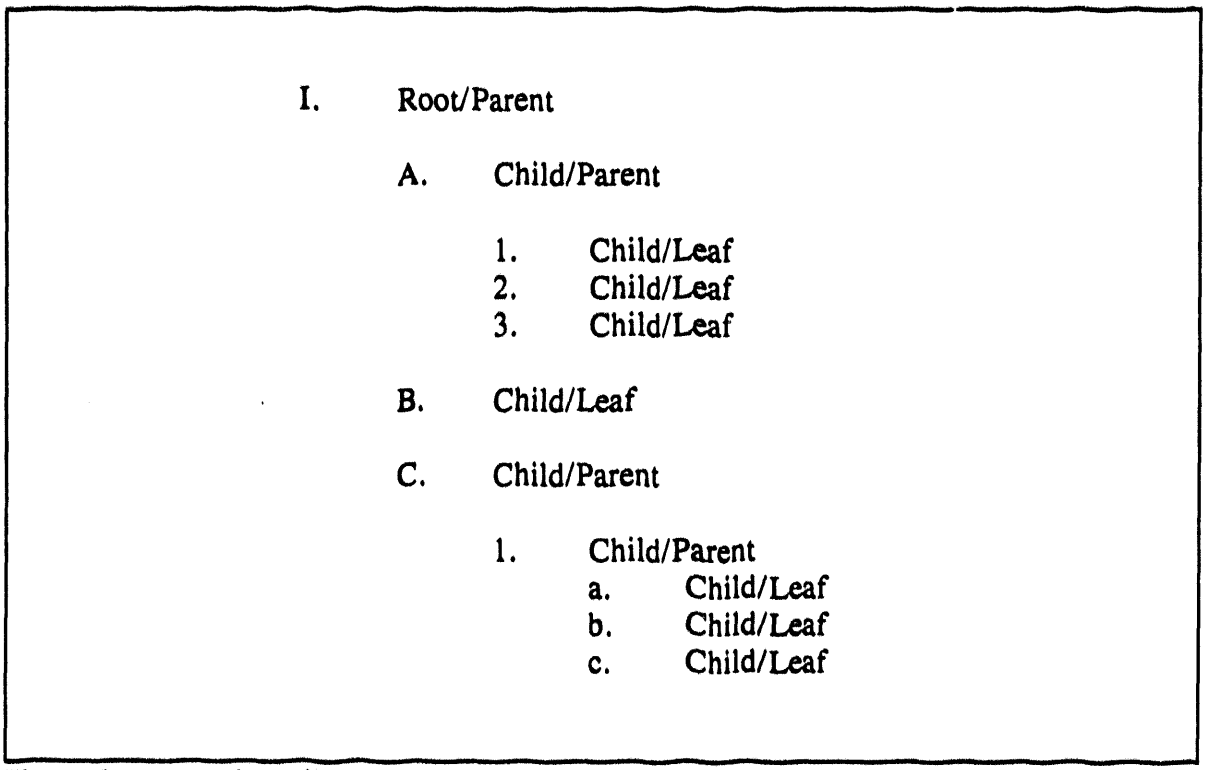

Figure 3. A sample outline.

6.3 Editing the Topic Tree or Outline

You will probably want to edit your topic. Below are some of the most common editing commands. The TOPIC® manuals contain additional details.

6.3.1 Name the Topic

Between the left-most topic handle and the operator of the root there is a narrow rectangle. Single-click on this and type the name of your topic. It will appear that you are typing over other portions of the tree, but you aren't. When you are finished typing, press <Enter> to refresh the tree. Any node that displays the narrow rectangle may be named to create a topic; thus, a topic may contain many subtopics.

Use <Tab> to highlight the small edit box to the left of the operator in effect. Type the name of your topic. It will appear that you are typing over other portions of the outline, but you aren't. When you are finished typing, press <Enter> to refresh the outline. Any entry that displays the square brackets may be named to create a topic; thus, a topic may contain many subtopics.

6.3.2 Move a Node

With your query in a tree format you may find it desirable to rearrange parts for ease of reading or to modify the logic. To move a node, single-click on its handle, press and hold the left mouse button and drag the node to its new location. When you release the left mouse button, the tree will redraw itself with the node **and its children** in the new location. This function is not available for character-based TOPIC®.

6.3.3 Expand/Contract a Node or Level

An intricate query will generate an intricate topic tree or outline. If you want to examine a branch of a tree more closely without the clutter of the other branches or levels:

Single-click on the open/close icon for a node. The tree will **appear** to be truncated from that point on out to the leaf nodes. To re-expand a contracted node, single-click again on the open/close icon.	Use the arrow keys to highlight the topic to be expanded or contracted. Then select the Expand Topic or the Collapse Topic option from the View menu.

6.3.4 Change an Operator

Position on the operator you want to change and hold down the left mouse button. A list of valid operators will appear. Position on the operator you want and release the mouse button. Your topic tree will be redrawn with the new operator in place.	Use the arrow keys to select the topic. Use the tab key to highlight the operator to be changed. Type in the new operator. Press <Enter>.

6.3.5 Change a Word

Position the mouse indicator on the word to change and single-click. Backspace to delete the old word and type the new word. When finished, press <Enter> to redraw the tree with the new word.	Use the arrow keys to select the word to change, and highlight it with the tab key. Type in the new word. Press <Enter>.

6.3.6 Delete a Node or Level

To delete a node **and its children**,

Single-click on the topic handle of the node. Move up to the menu bar and select **Edit**. Single-click on the **Delete Topic** option.

Use the arrow keys to select the topic to be deleted. Press <Ctrl/backslash> to move to the menu bar. Press <E> to activate the **Edit** menu, and then select the **Delete Topic** option.

6.3.7 Add a Node or Level

To add a node, single-click on the parent node's handle icon. Move up to the menu bar and select **Query**. Single-click on the **Add Operator** option; a list of operators will appear. Position on the operator you want and single-click. Enter a name for the node or the word for which TOPIC® will search (see Name the Topic above).

Another way of adding a node is as follows. Single-click on the parent node's handle icon. Move up to the menu bar and select **Query**. Single-click on the either the **Add Child** or **Add Sibling** option. Type the word or simple query that you want for the node. Press <Enter> to redraw the topic tree.

To add a level to the outline, use the arrow keys to select the topic to which to add the level. Press <Ctrl/backslash> to move to the menu bar. Press <Q> to activate the **Query** menu. Select the **Add Operator** option, and then select the operator to be assigned to the new level. Enter the topic name for the new level as explained in Section 6.3.1 above.

Another way of adding a node is as follows. Use the arrow keys to select the topic to which to add the level. Press <Ctrl/backslash> to move to the menu bar. Press <Q> to activate the **Query** menu. Select either the **Add Child** or **Add Sibling** option. Type the word or simple query that you want for the node. Press <Enter> to redraw the topic outline.

7. OPENING LINKS

There are two kinds of links. The first is document-to-document and is represented by a page icon in windows and a [D] in character-based mode. The chemical list is accessed using the document-to-document link. The second is an image link and is represented by a sun and mountains icon in windows and a [I] in character-based mode. Material safety data sheets are viewed using the image link.

7.1. Opening Documents

Document to document links are available from product information to other information wherever a document link is present. For windows-based interfaces, linked documents will display a page icon. For character-based interfaces, linked documents will display a capital letter in square brackets. In both instances the symbol or letter will be next to the document reference number (Section 5.3, page 9).

To open a document for viewing,

Double-click on the page icon. To close a document, single-click on **File** from the menu bar and select **Exit**.	Press <Ctrl/backslash> to move to the menu bar. Press <Q> to activate the **Query** menu. Select **Next Link** until the link for the document you want to view is highlighted, then press <Enter>. To close a document, press <Esc>.

7.2. Viewing Images

Images cannot be viewed using the character-based interface.

NOTE: When viewing images, it is important to remember not to open too many images at a time. Each image consumes substantial memory, which may quickly use all of a personal computer's resources.

Images are available for product information, MSDS's, and other information whenever an image icon is present. In product information documents, the MSDS and product identification numbers are associated with a sun and mountains icon. Documents (e.g., chemical lists) which are linked to the current one are associated with a page icon. Double-click on the icon of the image you wish to see.

NOTE: The image viewer is slow. It may take 2-3 minutes for some images to appear after the hour glass disappears.

When the first page of the image comes up initially, it will be too small to read. There are several ways to enlarge it. The quickest way to enlarge the entire page is to single-click on the maximize window button. This will enable you to read most of the page, but it does cause some distortion as the image viewer is trying to fit something that is longer than it is wide onto a screen that is wider than it is long.

Another way to enlarge the image is to click the **right** mouse button while in the image window. This will bring up the control window. Now single-click on the Maxspect button. This will enlarge the page as much as possible without changing the proportions. A majority of the screen will still be too small to read and you will need to zoom in on a specific area.

To zoom in on a portion of a page, position the mouse indicator in the middle of the area you wish to enlarge. Hold down the <Ctrl> key and press the left mouse button (if you have a two-button mouse), or click the middle mouse button (if you have a three-button mouse). To zoom out, click the right mouse button to bring up the control window and single-click on the Uncrop button, or single-click on the maximize window button.

There are additional sizing options available from the control window (right mouse button), but explanations of all of them are beyond the scope of this document. Feel free to experiment with them.

To close an image, double-click on the close window button.

8. EXERCISES

Following are some exercises for you to try on your own. There are no "right" answers, although some solutions will result in more accurate searches than others. See Section 9 for our solutions.

1. How many documents identify a product as a replacement for something?

2. Find a cleaning agent that will clean germs.

3. Find a cleaning agent to safely clean magnesium.

4. Find a cleaning agent that is effective against the virus that causes Acquired Immune Deficiency Syndrome (AIDS).

5. Find a cleaning agent that removes hard water deposits.

6. Find a cleaning agent that cleans blood from fabric.

7. Find a cleaner that will safely remove common dirt and grease from electrical components in a high voltage area.

8. Find a substitute for methylene chloride (commonly used as a paint stripper).

9. Find a replacement for dry cleaning solvent that can be used in a confined space (i.e., it has a low vapor pressure or is not highly volatile).

10. Find a biodegradable solvent for thinning paints.

11. Find a replacement for freon refrigerants.

9. SOLUTIONS

Following are our solutions to the exercises in Section 8. These are not the only solutions, no r are they necessarily the best solutions. They are intended only to show you how we solved the problem.

1. How many documents identify a product as a replacement for something?
   substitut, replac, replacement, alternate

   Note that the final "e" is not necessary because of the stem capability of TOPIC®. It is not necessary to omit the final "e," either.

2. Find a cleaning agent that will kill germs.
   germ, virus, bacteria, microbe, disinfect, germicide

3. Find an agent that safely cleans magnesium.
   magnesium <sentence> safe

   Remember that the order of the words is not important with the sentence operator. This query will find both "safe on magnesium" and "cleans magnesium safely."

4. Find a cleaning agent that is effective against the virus that causes AIDS.
   <case> AIDS, hiv

5. Find a cleaning agent that removes hard water deposits.
   remove <sentence> hard water

6. Find an agent that cleans blood from fabric.
   blood <sentence> fabric

7. Find a cleaner that will safely remove common dirt and grease from electrical components in a high voltage area.
   (grease <AND> dirt) <AND> (electri, spark, (high <sentence> voltage))*

   Note that the parentheses enclosing *grease <AND> dirt* are not required for a correct query; they can be omitted. However, the query is easier to read with grease and dirt grouped together.

8. Find a substitute for methylene chloride (commonly used as a paint stripper).
   *methylene chlori**

9. Find a replacement for dry cleaning solvent that can be used in a confined space (i.e., it has a low vapor pressure or is not highly volatile).
   low vapor pressure, confined, dry clean

10. Find a biodegradable solvent for thinning paints.
    paint <AND> thin* <AND> biodegra* <AND> clean*

11. Find a replacement for freon.
    freon, trichlor, CFC, chlorofl**

10. BIBLIOGRAPHY

Microsoft® Windows™ User's Guide for the Windows Graphical Environment, V3.0 (Microsoft Corporation, Redmond, WA, 1990).

Simple Query QuickStart (Verity Education Center, Verity, Inc., Mountain View, CA, 1992).

TOPIC® for Macintosh QuickStart (Verity Education Center, Verity, Inc., Mountain View, CA, 1992).

TOPIC® for MOTIF QuickStart (Verity Education Center, Verity, Inc., Mountain View, CA, 1992).

TOPIC® for Windows™ QuickStart (Verity Education Center, Verity, Inc., Mountain View, CA, 1992).

TOPIC® User's Guide for Microsoft® Windows™ V3.1 (Verity, Inc., Mountain View, CA, 1992).

TOPIC® Student Workbook Version 3 (Education Services, Verity, Inc., Mountain View, CA, 1992).

Windowing QuickStart (Verity Education Center, Verity, Inc., Mountain View, CA, 1992).

Appendix A

Correction/Suggestion Form

Hazardous Solvent Substitution Data System
Data Correction/Suggestion Form

Submitter information

Name _____

Address _____

(include bldg., grid, and MS if INEL employee)

Telephone _____

Please describe the problem.

Please describe your suggestion or solution to the problem.

Please fold in thirds, staple, and return to address on reverse side.

Nolan Stucki, MS 3950
EG&G Idaho, Inc.
P.O. Box 1625
Idaho Falls, ID 83415-3950

Appendix B

Product Use Information

Date: _____

Chemical Name _____

Chemical Company _____ Address _____
Phone # _____

User's Name _____ Phone # _____

User's Organization _____

Is Your Process In A Radiation Area? _____ Yes
_____ No

What Type Of Material Do You Clean?

_____ Metal Type _____ Plastics

_____ Other (Describe) _____

What is being cleaned From The Material?

_____ Grease _____ Grime

_____ Oil _____ Paint

_____ Adhesives _____ Stains

_____ Other (Describe) _____

Describe The Cleaning Process. (Check All That Apply)

_____ Spray _____ Wipe With Cloth

_____ Immersion _____ Scrub With Brush

_____ Other _____

How Did It Work?

_____ Excellent

_____ Good

_____ Not So Good - Why? _____

_____ Too Hard To Use

_____ Didn't Like Odor

_____ Didn't Get The Material Clean

_____ Other (Describe) _____

Would You Feel Comfortable Using This Product For this Purpose From Now On?

Yes _____ No _____

Would This Product Work For Other Cleaning Jobs You Have? _____ Yes _____ No

If So, What? _____

Send Information to: Nolan D. Stucki
EG&G Idaho, Inc.
PO Box 1625
Idaho Falls, ID 83415
MS 3950

Appendix C

Access Information

Hazardous Solvent Substitution Data System
Access Questionnaire

Name _____ INEL User ID

Organization/Company _____ Mail Stop _____ Telephone

Please use Figure 4 (INEL users) or Figure 5 (non-INEL users) and the information below to determine the option that will work best for you. If you are uncertain, contact the individual who usually assists you or who manages your computer. If there is no one who normally performs these services, contact Kevin Twitchell at (208) 526-6956.

For INEL users:

- All options require an INEL user ID (Form 1722).
- Options 1 and 2 require TCP/IP access on the INEL Ethernet LAN (sen) (Form 1721).
- Options 3 and 7 require an NCC user ID (Form 1700).

For non-INEL users, all options require an INEL user ID (Form 1722) and NCC/NSFnet user ID (Form 1700).

HSSDS can be accessed by other platforms not specifically identified in Figures 5 and 6. Requests for access from non-listed platforms will be handled on an individual basis. If your platform is not listed, please call Kevin Twitchell at (208) 526-6956 for assistance.

What option will work best for you? _____

Where is your computer physically located? _____

When will you be ready (i.e., have the required hardware and software for the option you selected) to be connected to HSSDS?

_____

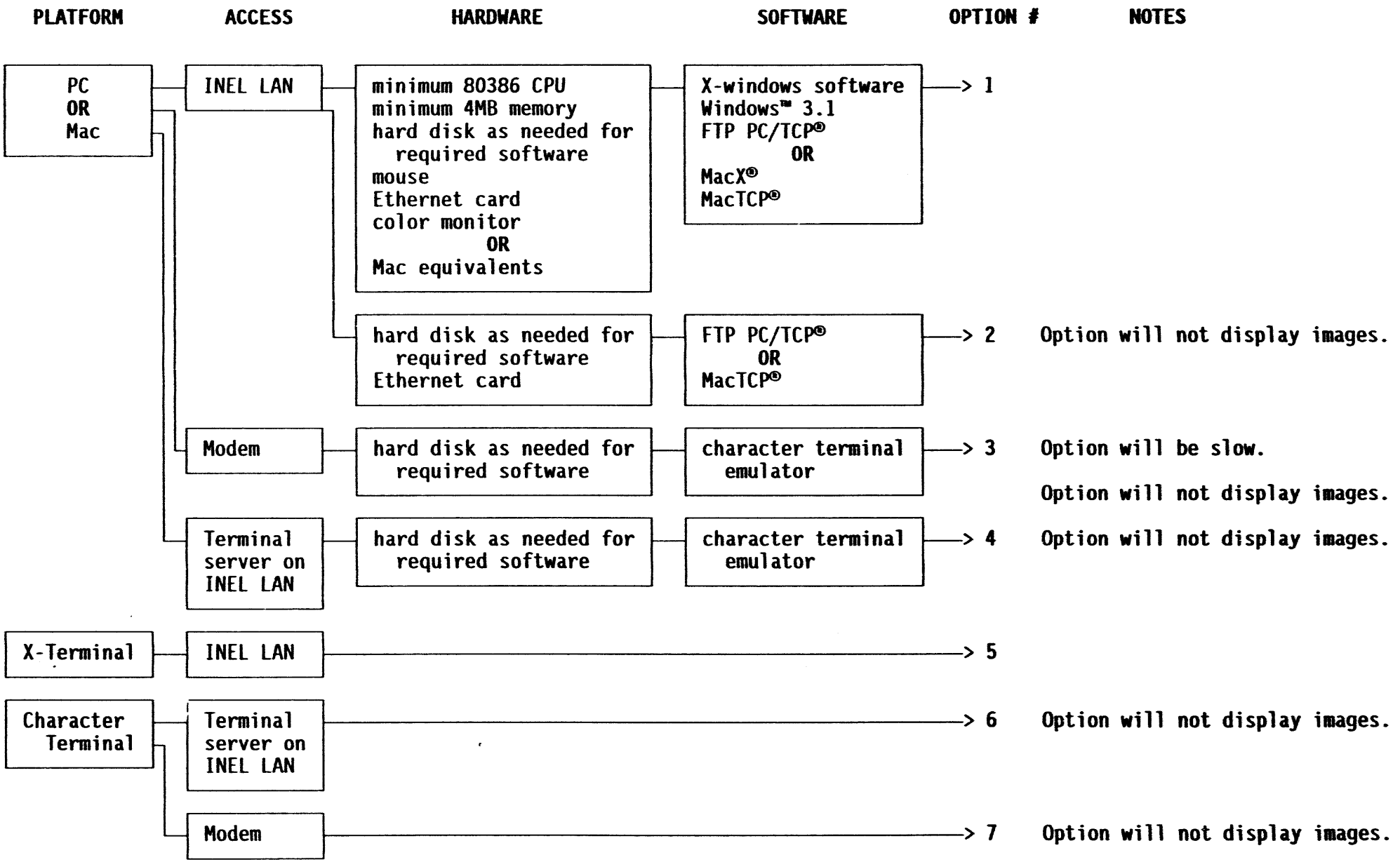

Figure 4. Hazardous Solvent Substitution Data System access for persons at the INEL.

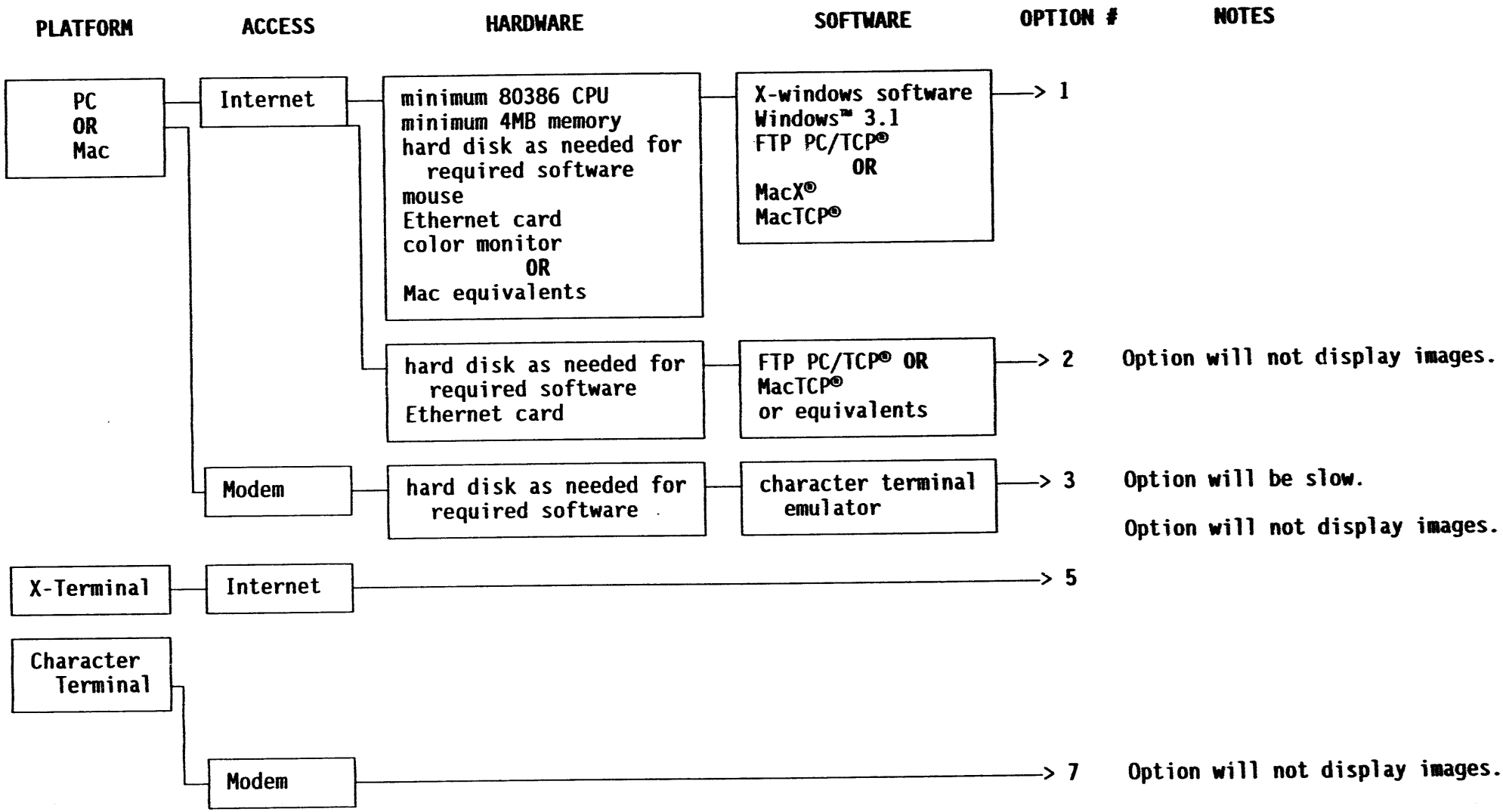

Figure 5. Hazardous Solvent Substitution Data System access for persons NOT at the INEL.

Appendix D

Windows Glossary

Windows Glossary

Click and drag -- A method of moving something from one place to another. Position the mouse indicator on the item to be moved. Hold down the left mouse button. Move the mouse indicator to the new location. Release the mouse button. You can move icons and change window dimensions using this technique.

Close window button -- This button is located at the top, left corner of the window and has a large hyphen on it. If you are finished using a window, double-clicking on this button will close the current window and exit to the previous window. If you are currently sitting at the first window in the application, double-clicking on this button will exit the application. If you click once, a menu will appear. See your windows manual for meanings.

Double-click -- Position the indicator on an item (icon, menu item, button) to open (or access) and press the left mouse button twice in succession. The two clicks must be relatively close together.

Maximize window button -- This button is located at the top, right corner of the window and has an arrow head pointing up. If you single-click on this button, the window will be redrawn to fill the entire monitor screen.

Menu bar -- This is the line below or above the title bar. It lists the processing options available. Single-click on a menu option to select it. Frequently, this will bring up a submenu to further define your request.

Minimize window button -- This button is located at the top, right corner of the window, to the left of the maximize window button and has an arrow head pointing down. If you single-click on this button, the window will be made into an icon and moved to the bottom of the monitor screen. Whatever processing was going on will continue, but now you can start another process. When you want to check on the status of the first process, double-click on its icon. **This is not recommended for new users. Unless you are an experienced user, please run only one process at a time and close each window before exiting.** Running several processes simultaneously requires a great deal of memory. If that memory is not available you may get unexpected results (i.e., your machine may lock up).

Hour glass -- This icon indicates that the application is processing your request. Please wait.

I-beam -- An I-beam will be found in any portion of a window where you are permitted to type data. It indicates where letters will appear when you begin typing.

Icon -- This is a small symbol, usually with an associated title, that represents the applications and options available to you (if on a window) or the processes you are currently running (if sitting at the bottom of your monitor screen). Use a single-click to select an option, a double-click to open (or reopen) something. For example, single-click on a menu item to select it; double-click on a document title or process to open and view it.

Point and click -- This is a type of interface between a computer and a user. It allows the user to use a mouse or a track ball to position on the command the user wishes to execute ("point"). The user then presses a button once or twice to notify the computer that it must do something ("click").

Single-click -- Position the indicator on an item to select (icon, menu item, button) and press the left mouse button once.

Title bar -- The first line of a window. Typically the title bar has the name of the window in the middle, the close window button on the left, and the minimize and maximize window buttons on the right.

Wildcard -- A character used to represent zero or more letters in a word.

READER'S COMMENTS - HSSDS REFERENCE MANUAL

Please share your comments and suggestions to help us improve this reference manual.

What I like best about this manual: _____

_____

_____

What I like least about this manual: _____

_____

_____

Additional comments or suggestions: _____

_____

_____

I found the following errors in this manual:

Page Description

_____

_____

_____

_____

Do you have previous experience with graphical user interfaces?

Do you have previous experience with TOPIC®?

Did you attend any of the HSSDS training sessions?

Name _____

Company _____

Address/Building location _____

Phone _____ Date _____

Please fold in thirds, staple, and return to address on reverse side.

Nolan Stucki, MS 3950
EG&G Idaho, Inc.
P.O. Box 1625
Idaho Falls, ID 83415-3950

DATE

FILMED

12/17/93

END