Let's take a PEEK at the PEAC v5 (5.1) program

CHRIS, NIOSH, ERG 2004 (new) & the V.5.1 Update (new)

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Example of Using the PEAC-WMD application

Last month (March 2005) we deviated some from our previous examples of how information is displayed in the PEAC-WMD application to demonstrate the use of the **Working Entries List** and the **Threat Matrix**. This month we're continuing this diversion and will discuss how the PEAC-WMD application provides access to independent reference resources.

As our customers and others that are familiar with the PEAC-WMD application know, one of the hallmarks of the application is the accessibility to chemical and physical properties associated with specific hazardous materials. In 1996, when the first PEAC application was released as a COTS (commercial-off-the-shelf) product, the intent was to provide the First Responder with a portable information tool that gave access to specific information on a wide array of toxic industrial chemicals (TICs). The concept of WMD agents was not really a focus at that point in time. The database was assembled using different public domain reference sources, plus utilizing our in-house technical staff directed by Dr. John Nordin to referee those instances when reference sources reported different values for a chemical or physical property.[i] The original PEAC database was developed using a wide assortment of hardcopy references plus internet reference sources. Three of the most widely used and significant reference sources in use by the First Responder community and also used in the PEAC application are:

1. the US Department of Transportation's (DOT) Emergency Response Guidebook (**ERG**),
2. the US Coast Guard's Chemical Hazards Response Information System (**CHRIS Manual**), and
3. the US Centers for Disease Control and Prevention's (CDC) National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards (**NIOSH Pocket Guide**).

Many customers have used the PEAC, PEAC-CW, and PEAC-WMD applications as a reference source as outlined in the NFPA 472[ii] where the competencies of a Hazardous Materials Branch Safety Officer are described being able to use three reference sources to determine the magnitude of the problem in terms of safety and identify the health concerns and their potential impact on the safety and health of personnel at an incident. When the recent PEAC-WMDv5 was release in the fall of 2004, AristaTek made the decision to provide the ERG, CHRIS Manual and NIOSH Pocket Guide as separate searchable reference sources available to the user. The discussion this month will focus on how these reference sources are accessed and how the information is displayed.

Before discussing the ERG, it should be noted that the PEAC-WMDv5 release did not contain the recently released ERG2004. The PEAC-WMD database was independently linked to the ERG2000 and there were significant changes between the ERG2000 and the ERG2004. Those changes, which included changed PAD values in the ERG2004 "green pages", dropping of the ERG Guide #147, removal of some hazardous materials from the ERG2000, addition of new hazardous materials to the ERG2004, and changes in the notation of some entries going from the ERG2000 to the ERG2004, has taken time to process because of the manner in which the ERG is integrated into the display of information in the PEAC-WMD application. That task is complete and the ERG2004 as it is integrated into the PEAC-WMD application is ready for release as PEAC-WMDv5.1. In addition, AristaTek has made the Spanish and French versions of the ERG2004 available as separately searchable sources also. The Spanish and French versions are provided as optional database reference files that can be downloaded, if a user doesn't want to display these or have them available, they are not required. AristaTek customers that have registered on our web site will be notified via e-mail when the download is available, and since this is the first new release available via a download, they will also be notified via snail-mail.

US DOT Emergency Response Guidebook

In the PEAC-WMD for Windows application to access the ERG2004, English, Spanish or French, the user clicks on the **Lookup By** field as shown in Figure 1, to display the drop-down list. The first topic to be demonstrated is the ERG2004 as shown in Figure 1, the English version by default is labeled ERG2004. As shown in Figure 1, there are three separate selections for the ERG2004; the Guides or "orange pages", the PADs as displayed in the "green pages", and the water reactive species as displayed in the "green pages." The user selects the desired topic (in Figure 1, the Guides were selected) and list of Guides are displayed in the left side of the window and the information is displayed in the adjacent Data Display on the right side of the window, Figure 2.

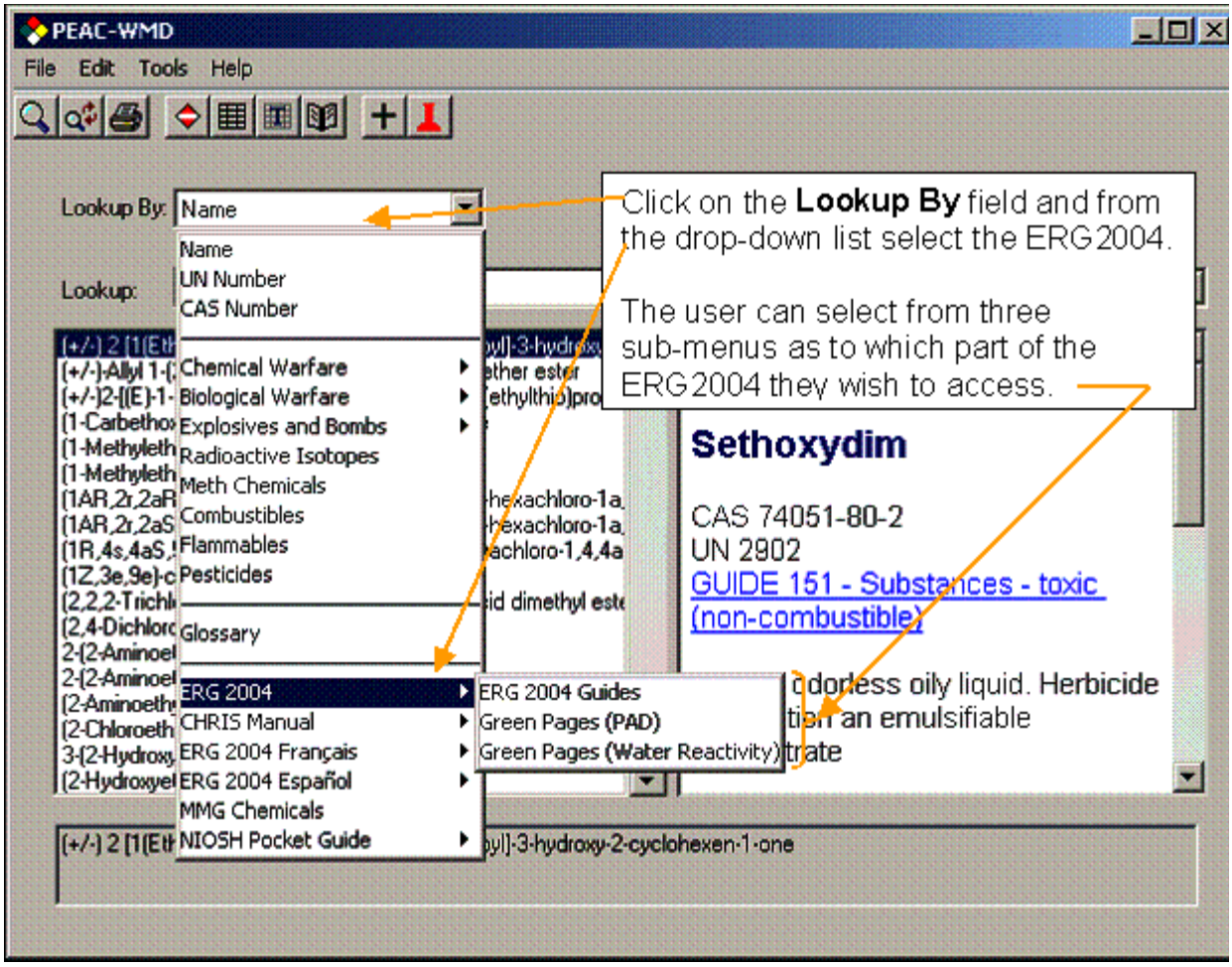

Figure 1 – Accessing the ERG2004 or English version of the ERG2004

The user can select the desired Guide and the corresponding information and recommended procedures are displayed in the right side of the window. The user can zoom or display full screen just the right side by clicking on the **Zoom icon** at the top of the screen, see Figure 3.

The user can toggle back and forth between the full screen (zoomed display) and the split screen display by clicking the **Zoom icon**.

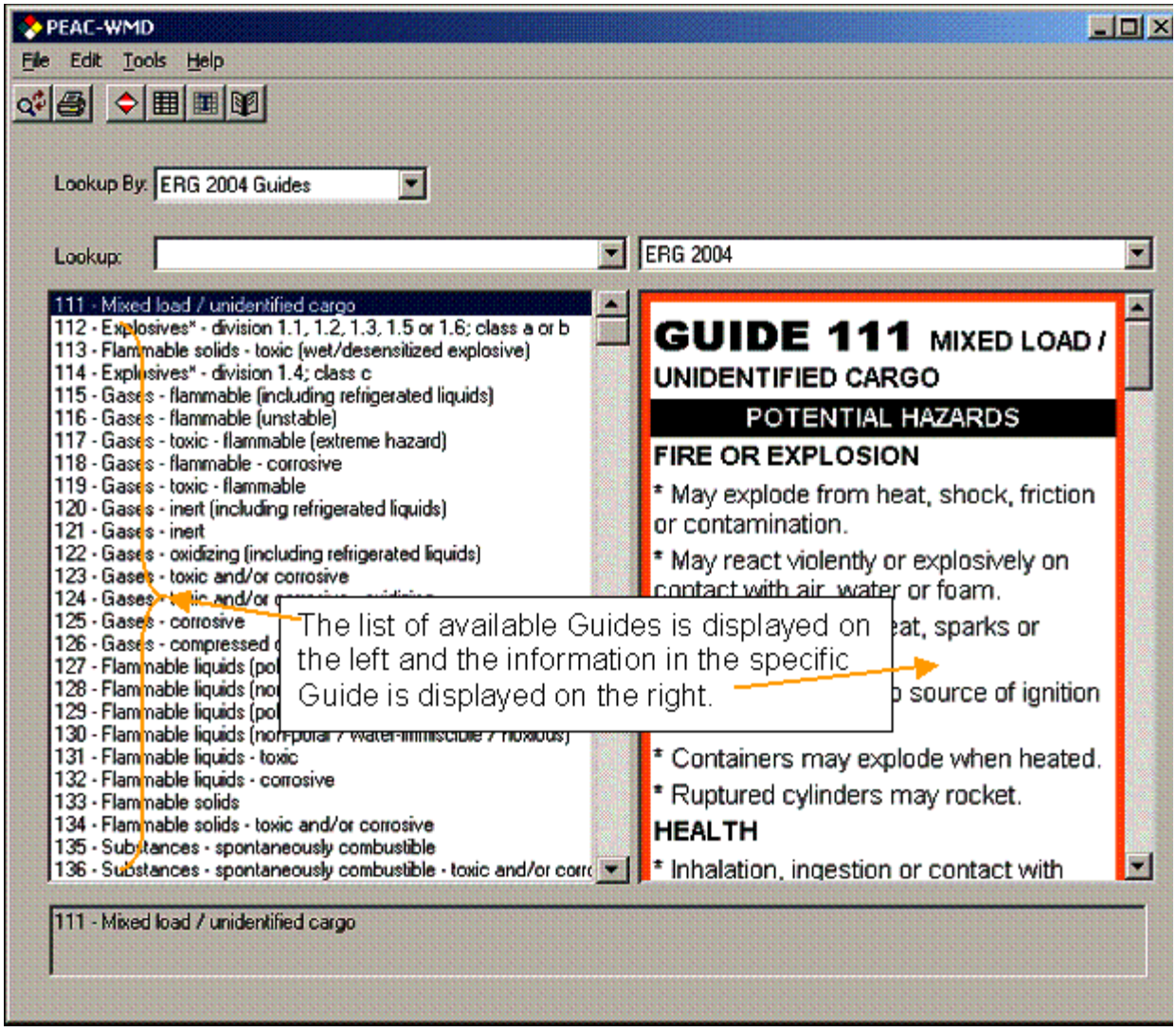

Figure 2 – Displaying the Guides in the English version of the ERG2004

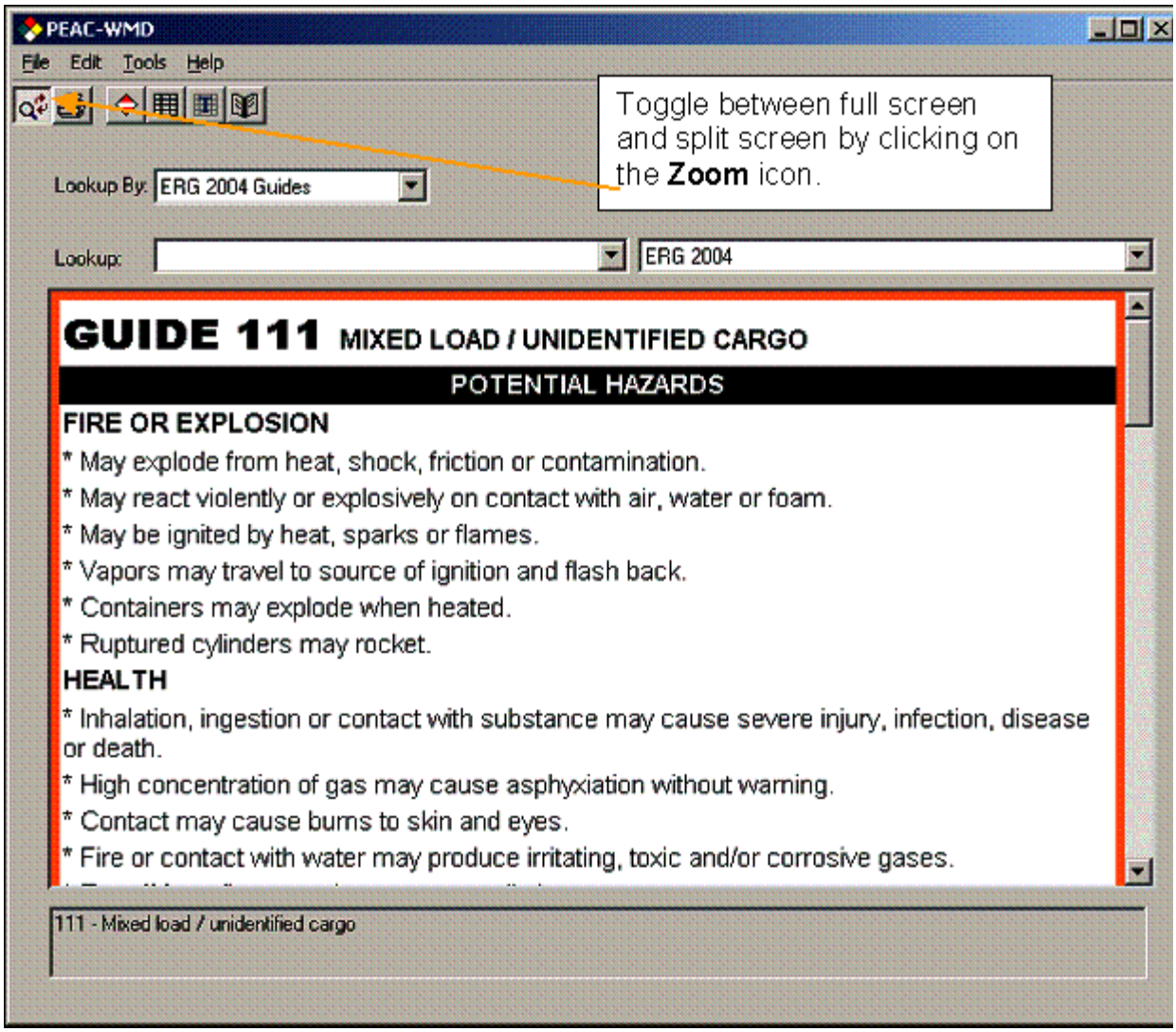

Figure 3 – Toggle to full screen by clicking on the Zoom icon

To display the PAD distances for a specific chemical as shown in the ERG2004, as shown in Figure 1, select the Green Pages (PAD). A window as shown in Figure 4 will be displayed. The list in the left side of the split window provides UN#'s and names of the hazardous material and the right side of the window provides the information for the PADs as found in the ERG2004 green pages. If the user can toggle the windows to full screen by clicking on the **Zoom icon** and the display will fill the window. The values shown in the display are for both metric and English distances and not affected by the metric/English selection under the **Tools|Options** menu.

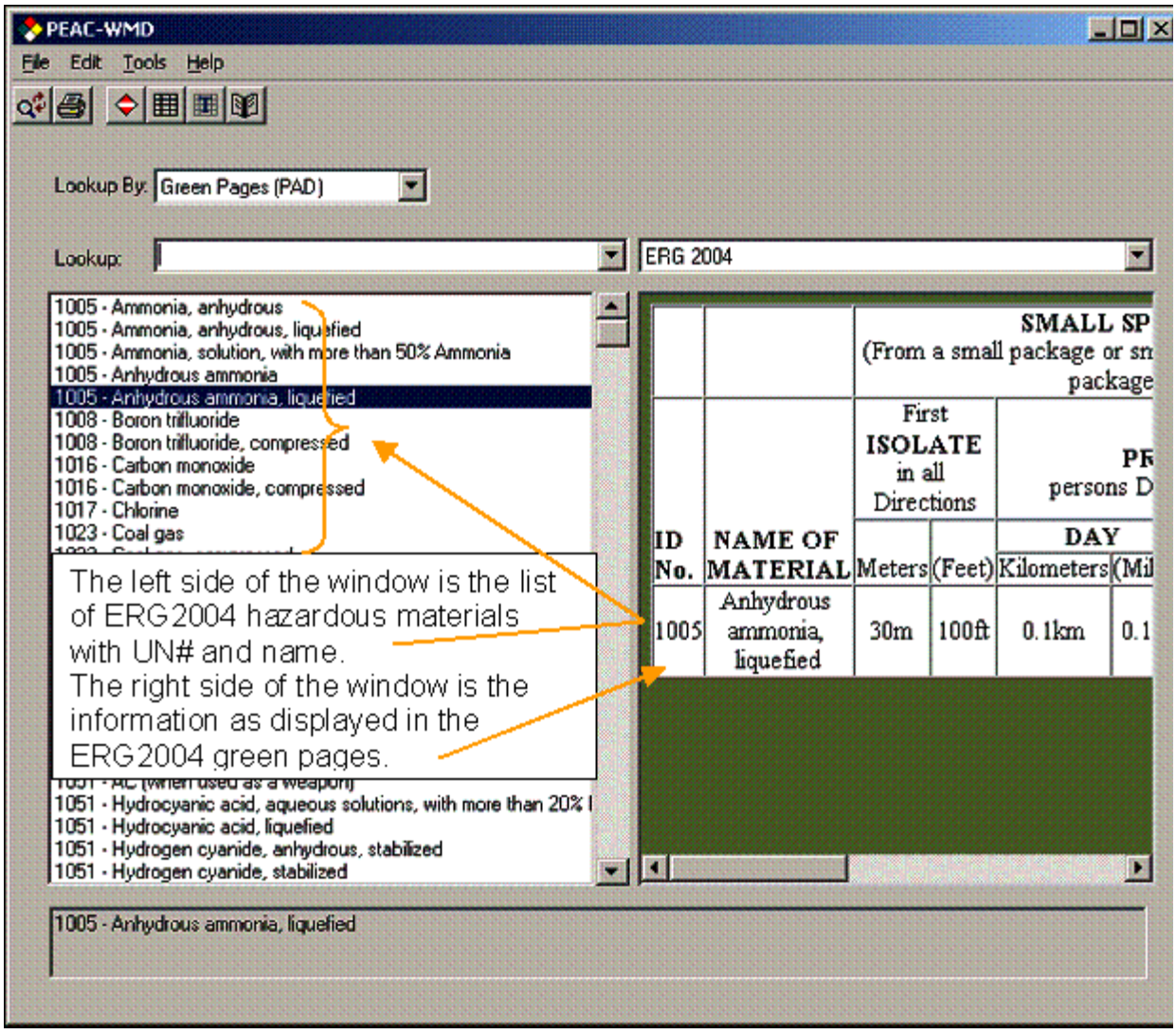

Figure 4 – Displaying the ERG2004 PAD values

The final selection, Green Pages (Water Reactivity), is demonstrated in Figure 5. The entries on the left side of the window are listed similar to that provided for the PADs entries, the UN#'s and the names of the chemicals. The right side of the window provides the information as displayed in the ERG2004 green pages for the water reactive chemicals. As before, the **Zoom icon** allows toggling between the full and split window display.

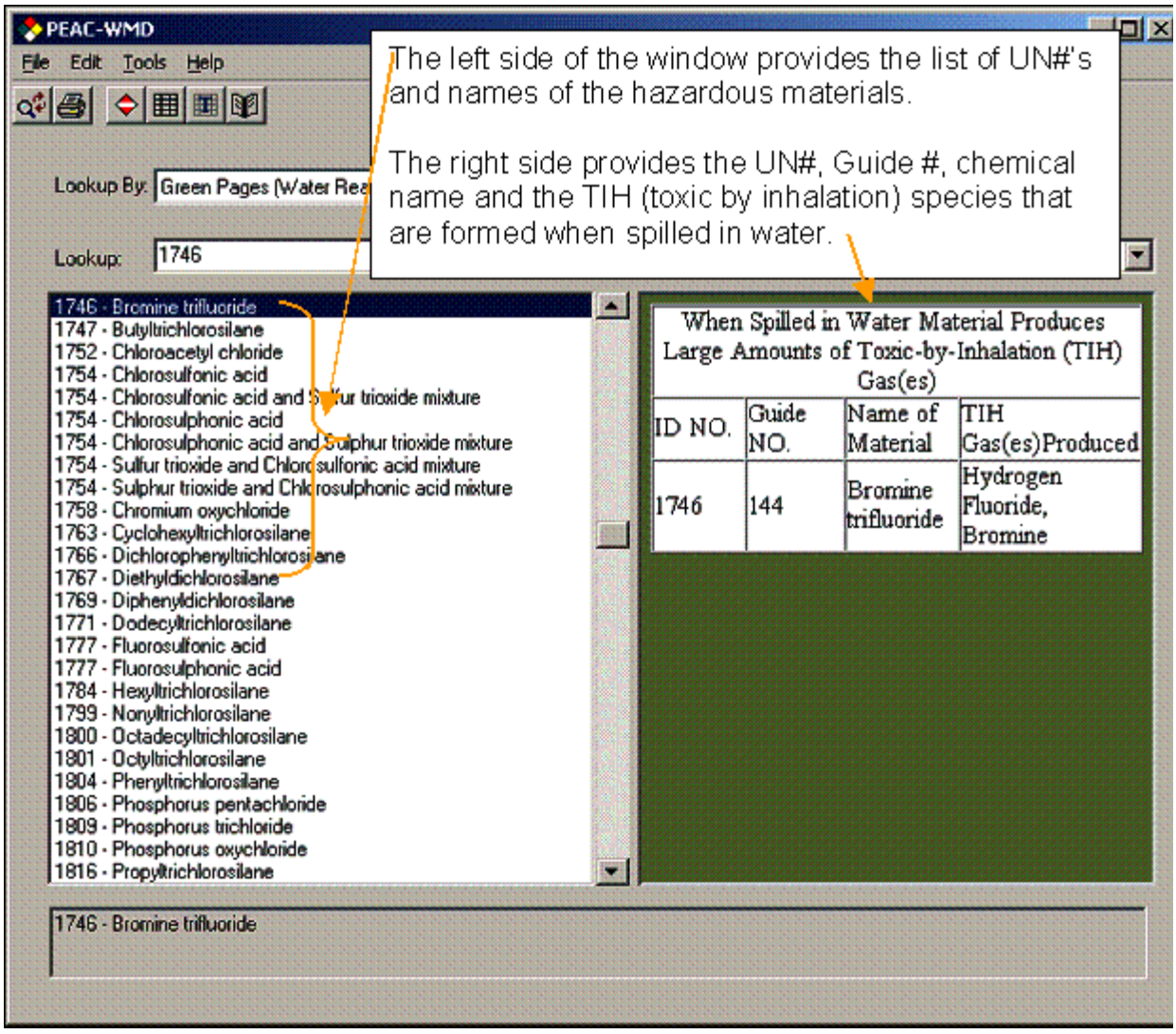

Figure 5 – Displaying the ERG2004 water reactive hazardous materials

As one would expect the French version of the ERG2004 is accessed the same way by clicking on the **ERG2004 Français** selection and the Spanish version of the ERG2004 is accessed by clicking on the **ERG2004 Español** selection. The information displayed whether in the list of Guides, PADs or Water Reactive materials are displayed in the proper language and font.

Two of the best references a First Responder can have access to, in addition to the PEAC-EMD application, are the CHRIS Manual and the NIOSH Pocket Guide. AristaTek has found both references to be rigorously assembled, and only rare discrepancies have been observed over the years.

US Coast Guard's CHRIS Manual

To access these reference sources as separate stand-alone sources the user simply selects the desired reference as shown in Figure 6 for the CHRIS Manual. As with the ERG2004, click on the **Lookup By** field and from the drop-down list highlight the CHRIS Manual selection. Two submenus are displayed, the CHRIS Chemicals or the CHRIS Codes. The CHRIS Chemicals will list the full chemical names in alphabetical order. The CHRIS Codes are the 3-letter codes used in the CHRIS Manual that some users may be familiar with and they represent a specific chemical name in the CHRIS Manual.

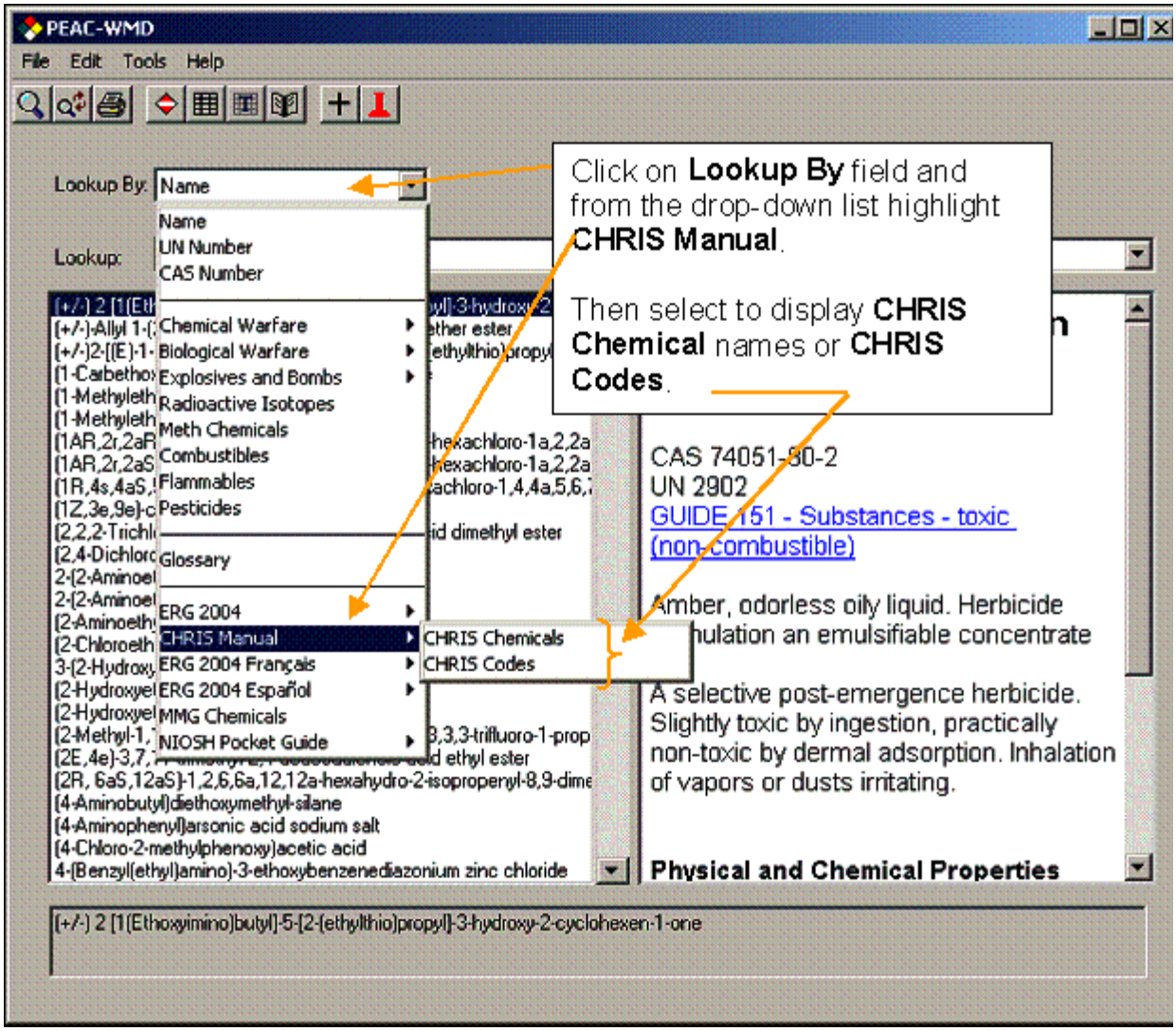

Figure 6 – Accessing the CHRIS Manual by Chemical names or Chemical codes

Once the selection is made, the user can scroll to a desired hazardous material or type in the hazardous material name in the Lookup field, as shown in Figure 7, and the right side of the windows will display the information from the CHRIS Manual for that entry. As with all other information display windows the **Zoom icon** can be clicked and the full window display will be displayed as in Figure 8.

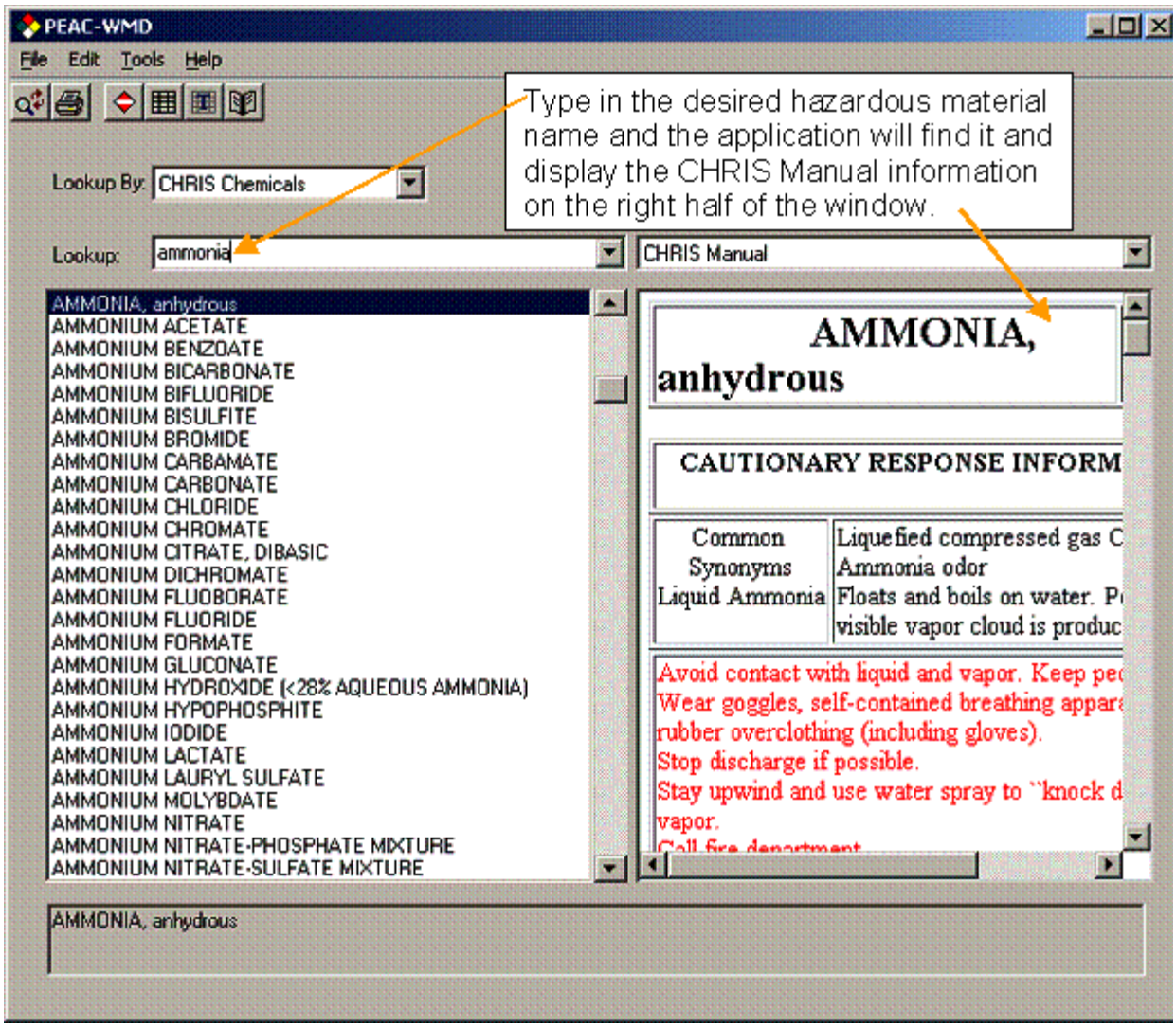

Figure 7 – Finding and displaying information from the CHRIS Manual

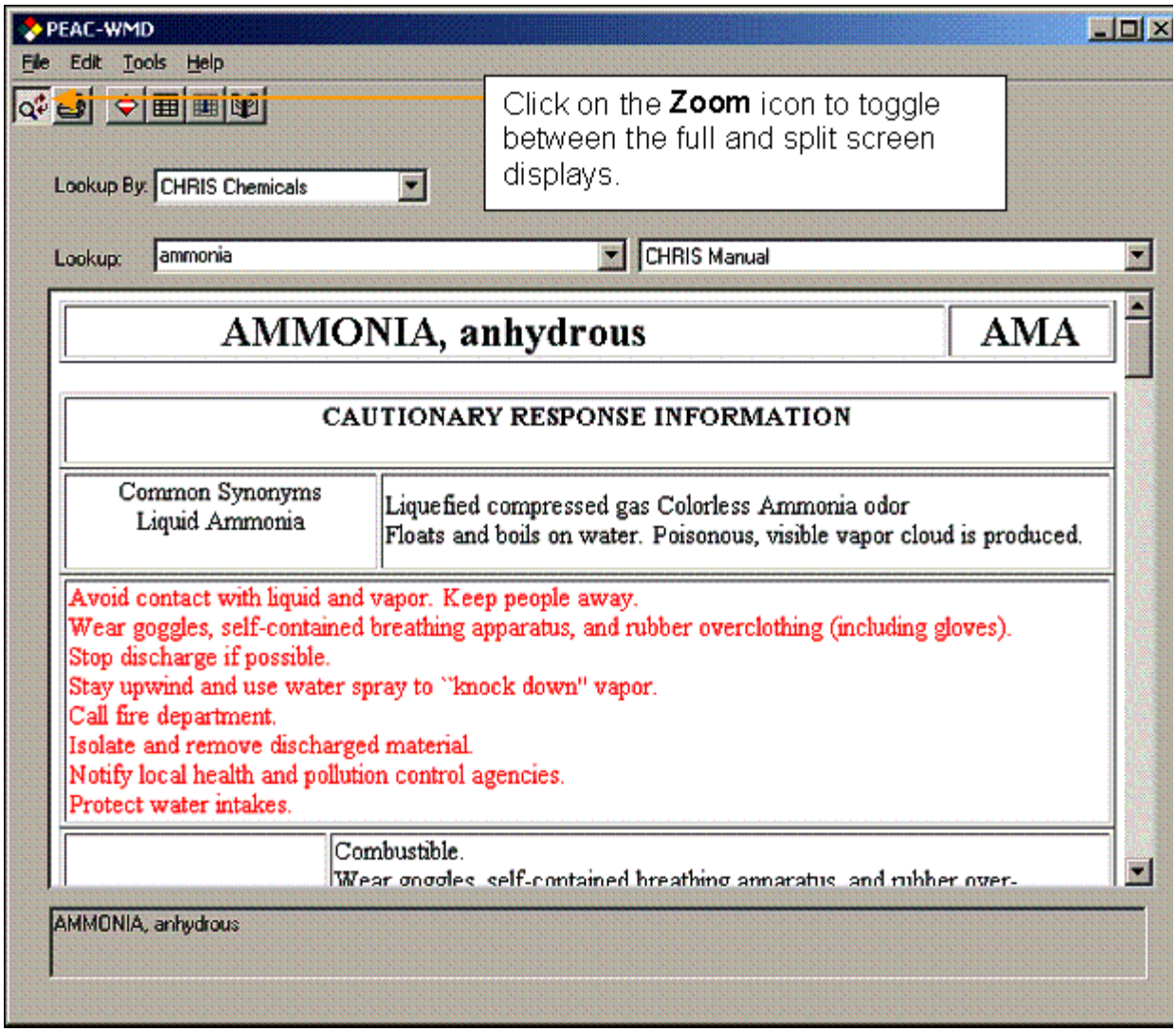

Figure 8 – Full screen display for CHRIS Manual information

The CHRIS Codes will provide similar information but the list displays only the 3-letter codes assigned by the US Coast Guard to the various hazardous materials in the CHRIS Manual, see Figure 9.

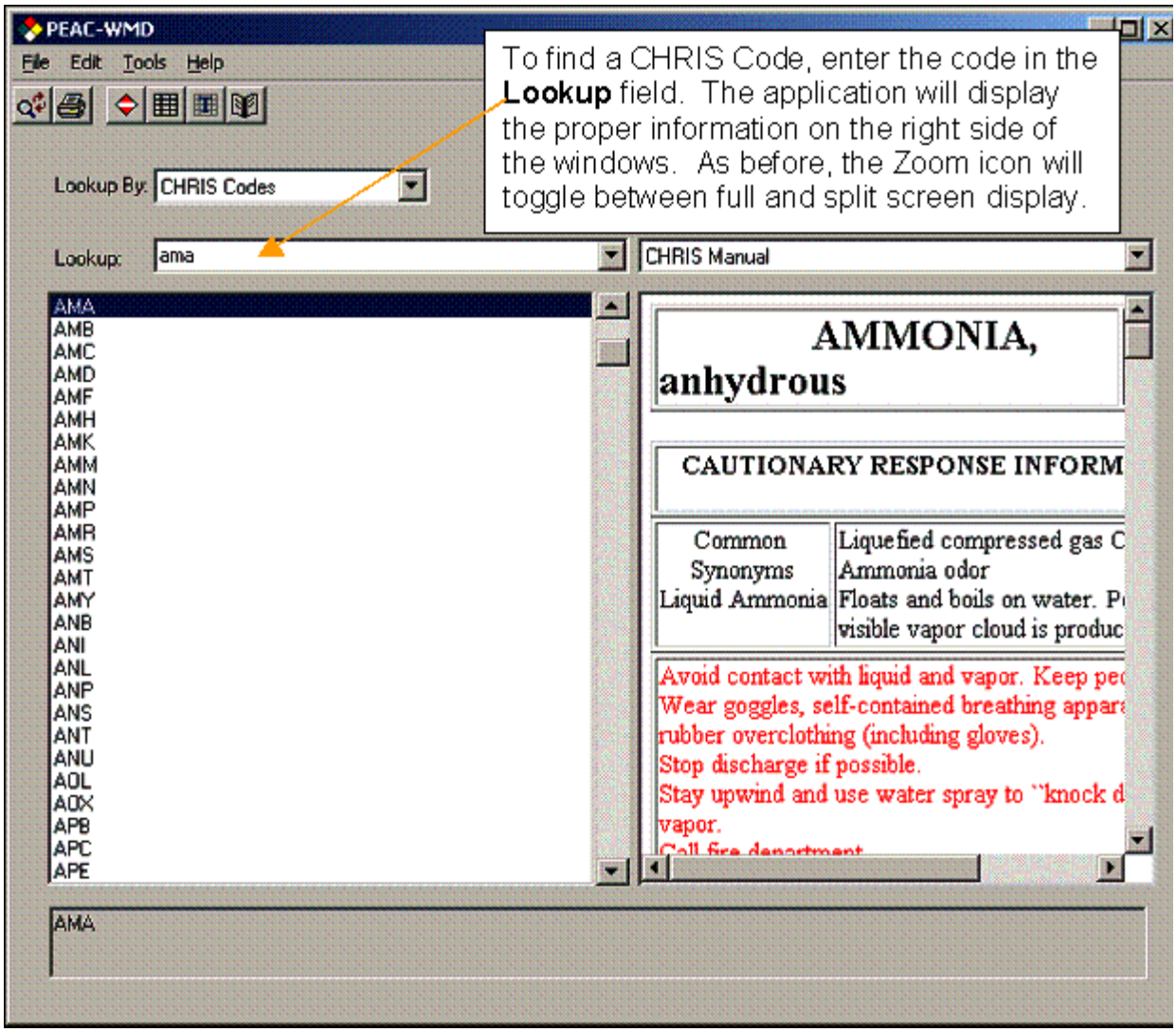

Figure 9 – Accessing the CHRIS Manual with the CHRIS Codes

CDC's NIOSH Pocket Guide to Chemical Hazards

To access these reference sources as separate stand-alone sources the user simply selects the desired reference as shown in Figure 10 for the NIOSH Pocket Guide. As was done with the ERG2004 and CHRIS Manual, click on the **Lookup By** field and from the drop-down list highlight the NIOSH Pocket Guide selection. Two submenus are displayed, the **NIOSH Chemicals** or the **NIOSH Extras**. The **NIOSH Chemicals** will list the full chemical names in alphabetical order. The **NIOSH Extras** will provide another sub-menu for accessing either the **Introduction**, **First Aid** or **Appendices** sections found in the NIOSH Pocket Guide.

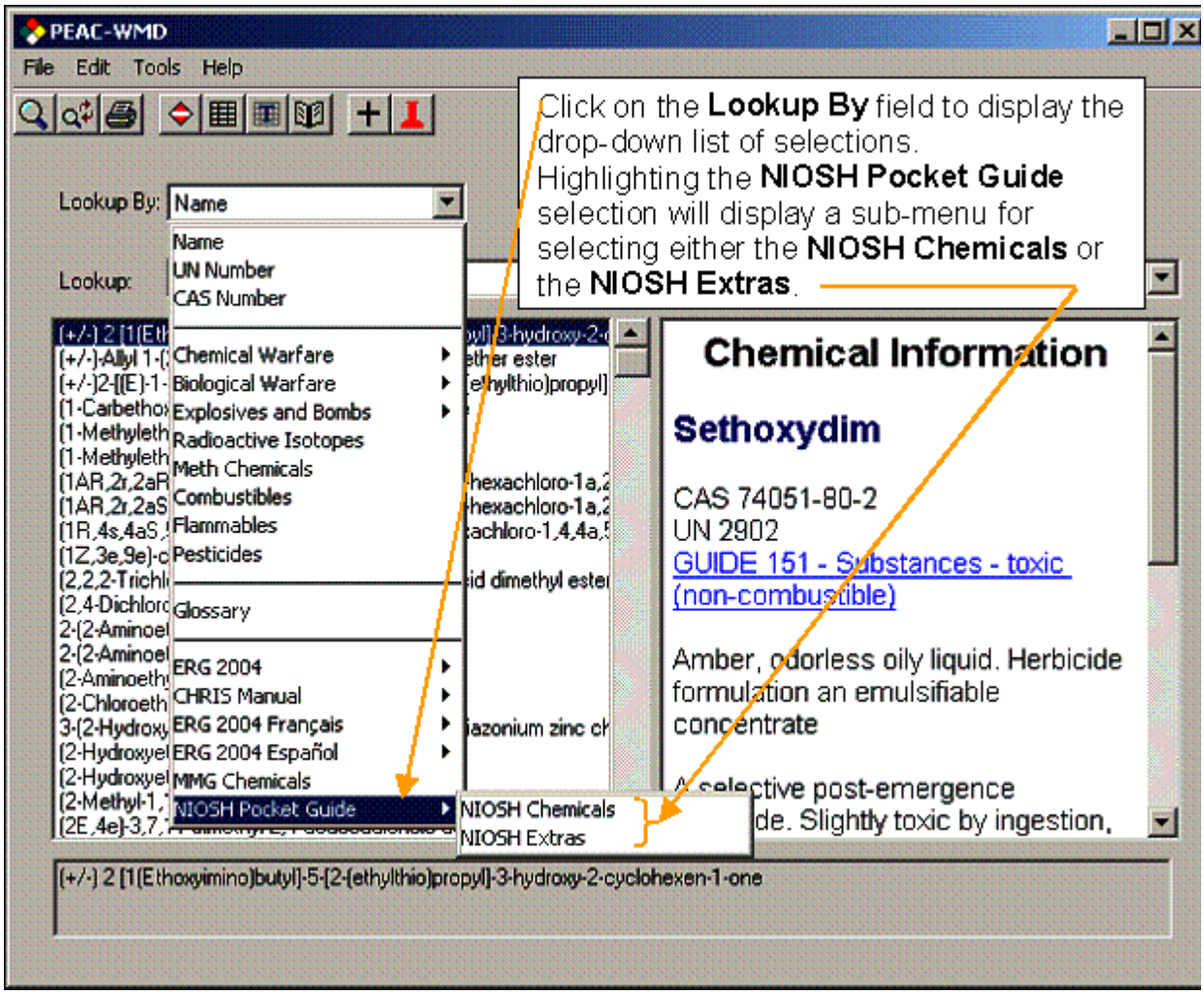

Figure 10 – Accessing the NIOSH Pocket Guide

If the NIOSH Chemicals are selected, a window similar to Figure 11 will be displayed with the alphabetical listings of the NIOSH Chemicals on the left side of the display and the individual information related to the highlighted chemical displayed on the right side of the split window.

As was demonstrated earlier for the CHRIS Manual, a specific name can be entered in the **Lookup** field, and the system will find that name in the list of chemicals and highlight the entry. The user can also toggle between the full screen and split screen display by clicking on the **Zoom icon** at the top left of the window.

If the user desires to view other information not related to a specific chemical, the **NIOSH Extras** selection from the sub-menu can be selected as shown in Figure 12. The user is given three selections to choose from, **Introduction**, **First Aid** or the **Appendices** as found in the NIOSH Pocket Guide publication.

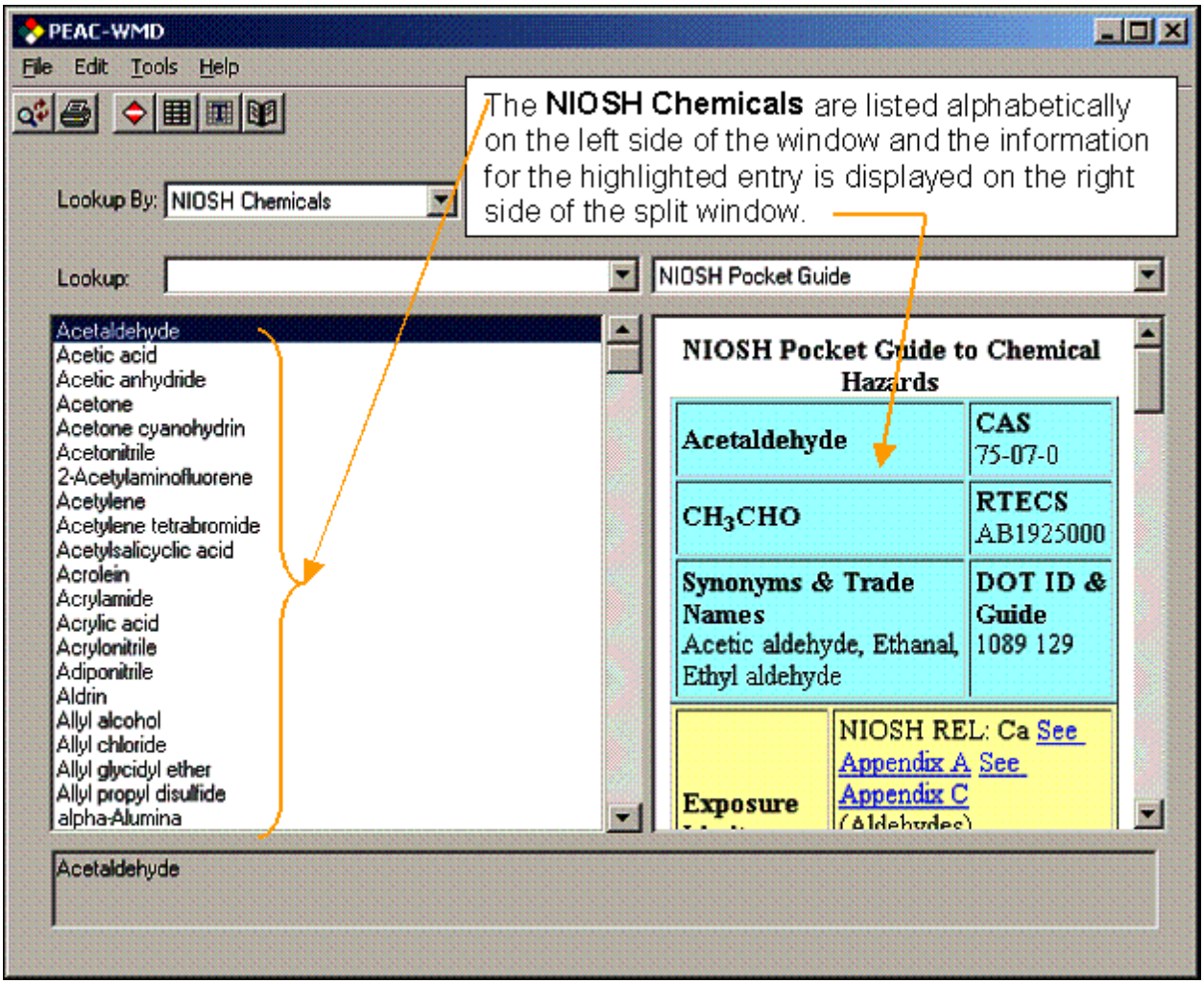

Figure 11 – Displaying the NIOSH Chemical information for a chemical

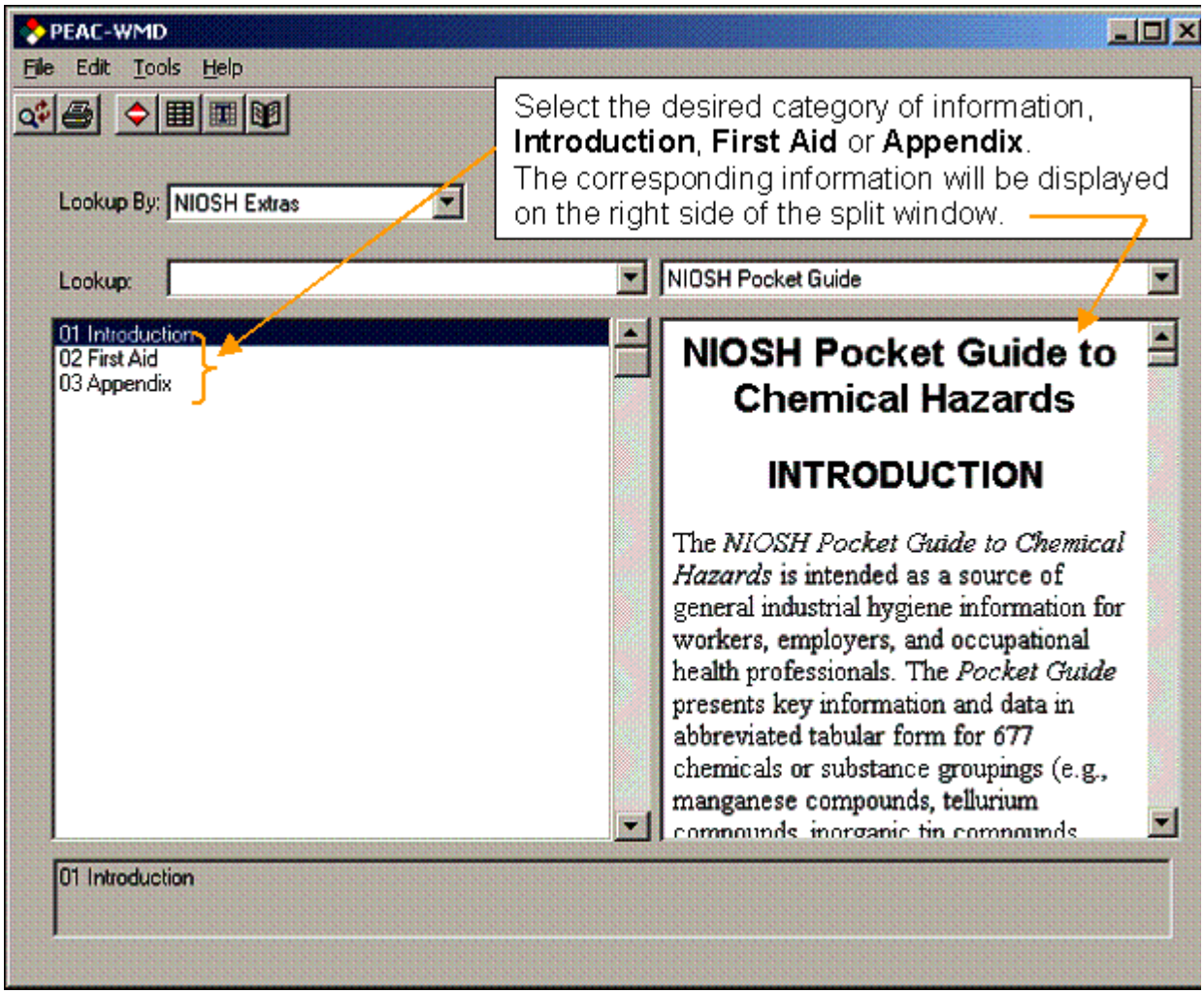

Figure 12 – Accessing other information found in the NIOSH Pocket Guide

As one would expect or actually as one would hope, the duplication or redundancy of information provided by multiple reference sources should work to the First Responders benefit. If multiple reference sources provide the same information, the First Responder has a greater level of confidence in the response plan and that the information on which the response plan is based is correct.

The PEAC-WMD application not only presents a comprehensive database on chemicals and other pertinent information and computations related to HAZMAT and WMD releases, but it also provides the user with an easy method to view recognized stand-alone reference sources in formats as received from the publisher.

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[i] As many if not all our readers have probably observed using different public domain reference sources, a boiling point, vapor pressure, flash point, toxicity or other property may be reported as different values in different reference sources. Unfortunately, this is a more frequent problem than many are willing to admit, and no federal, state or academic entity has ever successfully tried to tackle this critical problem.

[ii] NFPA 472 - *Standard for Professional Competence of Responders to Hazardous Materials Incidents*