

Guide to Selecting the Right PHA Documenting Software

by

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Abstract: This article is a consumers' guide to selecting documentation software for process hazard analyses (PHAs), which are required by both the OSHA Process Safety Management (PSM) Regulation, 29 CFR 1910.119, and the EPA Risk Management Program (RMP) Regulation, 40 CFR 68. The article compares the most popular PHA documenting software on the market today based on nine user-interface criteria in addition to price.

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With so many different software programs available for documenting process hazard analyses (PHAs), choosing the one that is right for you and your facility can be a time consuming process that ultimately ends up being mostly guess work. Making the wrong decision can be an expensive commitment in software for your facility, creating inefficiencies in documenting PHAs, and causing frustration for users. This article compares the most popular PHA documenting software on the market today based on nine user-interface criteria in addition to price and is intended to help the consumer make a more informed decision. The opinions in this article are the opinions of the authors only and are based on our personal preferences from years of experience in performing PHAs. A different PHA facilitator may draw different conclusions and rankings in comparing these software programs.

Based on the authors' knowledge of dozens of facilities nationwide, the following are observed to be the three most commonly used PHA documentation software programs by the chemical process industry in the United States:

- PHA-Pro[®] 7 by Dyadem International Ltd., Ontario, Canada
Web site: www.dyadem.com
- PHAWorks[®] 5.1 by Primatech, Inc., Columbus, Ohio
Web site: www.primatech.com
- HazardReview Leader[™] 2006 by ABS Consulting, Knoxville, Tennessee
Web site: www.absconsulting.com

The following is a qualitative evaluation of these three products. In evaluating the software it was assumed that a typical user of the software will be proficient with personal computers and Microsoft[®] Office (or equivalent) applications. Furthermore, it was assumed that a typical user will use the software without extensive training.

PHA documenting software should enable a user to capture the proceedings of the PHA meetings in real time (i.e., while the meetings are occurring), although final editing and formatting may take place outside of the meeting. The PHA table produced by the software should be both easy to read and easily shared. Finally, the user of the software should be able to customize the table to fit the user's particular preferences.

The following sections describe pertinent features of the programs in nine different categories in which the programs were evaluated. Each program was graded on a subjective scale of 1 to 5 in each category with 5 being desirable and 1 being undesirable. The grading scale is shown in Figure 1 below. The results of the comparison are presented in Figure 2 below.

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1	2	3	4	5
Undesirable	Somewhat Undesirable	Neither Desirable nor Undesirable	Somewhat Desirable	Desirable

Figure 1. Scale for Grading User-Interface Criteria

Criteria Evaluated	PHA-Pro [®] 7	PHAWorks [®] 5.1	HazardReview Leader [™] 2006
1. Appearance and user interface	4	3	2
2. Initial setup of the HAZOP table	5	3	4
3. Use of the risk matrix feature	5	4	3
4. Library, auto-type, and shortcut features	2	3	5
5. Entering and editing data	4	4	3
6. Navigating between nodes and deviations	3	4	5
7. Changing modes of documentation	3	4	5
8. Recommendation tracking	3	1	5
9. Printing, generating, and sharing reports	5	2	4

Figure 2. Software Comparison Chart

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1. Appearance and user interface

PHA-Pro[®] presents the data in a series of tabbed spreadsheets. Users can easily modify the content of any sheet by adding, deleting, or moving columns. Any column can be added to multiple sheets.

HazardReview Leader[™] only displays one deviation at a time with related causes, consequences, safeguards, and recommendations as a series of lists below the deviation. The inability to view all the information for a particular node is a significant drawback.

PHAWorks[®] offers the user a choice between a datasheet view and a worksheet view. The datasheet view is similar to HazardReview Leader[™] in appearance and again limits the user to viewing only one deviation at a time. The datasheet view arranges the data in a spreadsheet format, but there are no gridlines to separate the cells, which can make reading the information difficult.

2. Initial setup of the HAZOP table

When a new study begins in PHA-Pro[®], the software gives the user a blank spreadsheet to enter preliminary data, such as nodes, drawings, and deviations. This arrangement allows the user to begin building the table efficiently.

In HazardReview Leader[™], the software takes the user to the “sections” page to enter preliminary information. The software gives the user the option of selecting the type of section (line, vessel, etc.) being entered. If a user selects a section “type”, the program automatically inserts a set of deviations for that section. In its default mode, HazardReview Leader[™] also inserts causes, consequences, and safeguards as well. This option can be turned off, but if left active, the software will populate the table with a great deal of information that may not apply and can be cumbersome to remove. If the user selects no section type, then the software does not automatically insert any information.

PHAWorks[®] gives a “project configuration” window for new studies. Among other things, the software asks users how they wish to be prompted when a new section is started. If either “guideword” or “deviation” is selected then the program will ask for that input and prevent the user from viewing the table until it is entered. If the user does not choose to be prompted, then the software allows the main table to be viewed immediately.

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3. Use of the risk matrix feature

Each program allows the user to customize the risk ranking matrices, which can then be used to insert risk rankings into the tables. Customizing the matrices is simple in PHA-Pro[®] and PHAWorks[®]; however, this task is more cumbersome in HazardReview Leader[™].

4. Library, auto-type, and shortcut features

The most critical need for PHA software is its ability to assist a scribe in capturing the proceedings of the PHA meeting both accurately and efficiently. Much of the data entered during a meeting is repetitious in nature and this is where PHA software can be invaluable. Each program offers some type of automatic assistance for completing words and phrases (auto-type feature), all of which function reasonably well. PHA-Pro[®] is superior because it offers both an auto-type feature and a shortcut feature, which allows users to type a short abbreviation for common entries.

5 & 6. Entering and editing data and navigating between nodes and deviations

As mentioned earlier, PHA-Pro[®] and PHAWorks[®] are viewed as spreadsheets, which makes navigating and entering data within a particular node or section simple. This format is not as helpful when it is necessary to refer to a different node.

HazardReview Leader[™] makes moving through different parts of the table easier, but it requires more effort to enter data within a node. Additionally, it is easy to inadvertently lose the last item entered in each list.

7. Changing modes of documentation

Users may want to document PHAs in either deviation-by-deviation mode or cause-by-cause mode. HazardReview Leader[™] allows the user to switch modes at any time with one click. PHA-Pro[®] and PHAWorks[®] can function in either mode but changing the mode takes more effort and data can be lost when changing modes.

8. Recommendation tracking

HazardReview Leader[™] contains a separate integrated module for tracking recommendations that allows the user to easily manage a great deal of information. The Recommendations spreadsheet in PHA-Pro[®] can be used to track recommendations, but it does not offer the power

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and versatility of HazardReview Leader™. PHAWorks® is not set up to track recommendations; however, Primatch sells a companion program, Tracker, for managing recommendations.

9. Printing, generating, and sharing reports

The PHA tables produced by HazardReview Leader™ and PHA-Pro® can be exported to Microsoft® Word. This allows the user to easily share the table electronically and to customize the appearance of printed tables. PHA-Pro® provides options for exporting that make the process quicker. HazardReview Leader™ inserts its logo into the footer of the exported table and, although it can be removed in Microsoft® Word, it requires another step.

Printing options in PHAWorks® are somewhat limited. Gridlines cannot be added, making the table harder to read and the PHAWorks® logo is automatically printed at the bottom of each page. PHAWorks® does not allow the user to export the table to Microsoft® Word. Primatch offers a free viewer program, so that others can view the electronic version of the table.

Conclusion

Is there a best PHA documenting software program? Each program has its strengths and weaknesses and users must decide which qualities are most important to them. Each of these programs was developed by a company that also offers PHA consulting services and, in many ways, the programs reflect each company's philosophy of conducting PHAs. The programs are most helpful when the user's approach to PHAs is consistent with the approach of the company that created the software. Hopefully the information in this guide will help consumers select the software that is right for them and their facility. For more information, each of these vendors offers fully functioning trial versions of its software. Our advice is to try each of them to determine which works best in a particular application before making your purchase decision.