

Newsletter—January 2009

Happy New Year

HCRQ extends its best wishes to you and your family for a wonderful 2009. May you be blessed with peace, happiness, and good health.

This Newsletter

Many of you, no doubt, were wondering what happened to the monthly newsletters that you had been receiving from us.

Unfortunately, the last newsletter we issued was in October. The reason for this is quite simple. We were short of the necessary resources in the last two months. It was quite a hectic period for us with many new and existing clients having high priority work that had to be completed prior to the holiday season. Of course, in many cases, this pertained to attempts to use budget money prior to fiscal year end.

Health Hazard Assessment

Many of you are familiar with MIL-STD-882. This standard calls up HHA. HHA is also one element of Human Systems Integration (HSI).

HHA is used to systematically identify and evaluate health hazards, evaluate proposed hazardous materials, and propose measures to eliminate or control these hazards through engineering design changes or protective measures to reduce the risk to an acceptable level.

HHA evaluation determines the quantities of potentially hazardous materials or physical agents (e.g., noise, radiation, heat stress, cold stress) involved with the system,

analyzes how these materials or physical agents are used in the system, estimates where and how personnel exposures may occur and if possible the degree or frequency of exposure involved. Materials are evaluated if, because of their physical, chemical, or biological characteristics; quantity; or concentrations, they cause or contribute to adverse effects in organisms or off-spring, pose a substantial present or future danger to the environment, or result in damage to or loss of equipment or property during the system's life cycle.

One useful reference is the U.S. Army Health Hazard Assessor's Guide.

Quizzes

For quite some time we have had quizzes posted on our home page. There are 7 of them which are soon to be removed from the web site. Many people, including experienced system safety engineers, have tried their hand at these, often with difficulty. We believe this underscores the necessity for good definitions (with examples), training and someday certification.

For some time, we have been offering a service to industry in formalizing these questions and others into questionnaires that are used to assist in the evaluation of the knowledge of their people, and identify where training needs to be bolstered. You might imagine how uncomfortable the management of some safety-critical system suppliers have become when they were presented with the test results.

Please remember that these quizzes are targeting a wide range of audiences so, for

those of you who are seasoned system safety engineers and see these as trivial questions, please do not feel insulted.

Many visitors to our web site, though, have been intimidated by these questions, perhaps wanting to avoid the embarrassment of answering them incorrectly. To address this, we decided to post the answers. We will spread these quizzes out over the next few newsletters. The answers are located on the second page.

Quiz #1 - Identify Hazards

1. Nitroglycerin
2. Collision
3. Derailment
4. Burns
5. Electric Shock
6. Software Range Check Fails
7. CRC Fails To Detect Corruption

Approximately 80% of responders did not answer these all correctly.

Quiz #2 - Identify Failure Modes

1. Relay Fails To Cut Propulsion
2. Relay Catches Fire
3. Relay Fails To Be Energized
4. Relay Contacts Welded (Closed)
5. Relay Submersed In Water
6. Software Fails To Work Properly
7. Software Fails To Apply Penalty Brake When Discrete Input Asserted

Approximately 90% of responders did not answer these all correctly.

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Answers to Quiz #1 - Identify Hazards

If your answer is "none of them", you are correct.

Some of these are hazard effects. Others are often referred to as hazardous substances but are not considered hazards in themselves.

Answers to Quiz #2 - Identify Failure Modes

1. No. This is considered a failure and is not a failure mode of the relay (i.e., failures pertaining to the spring, contacts, coil).
2. Silly, right! The answer is no. This is not a failure mode of the relay. Other events would cause this condition.
3. No. Again, this is not a failure mode of the relay. Such an event could be caused by an open coil or a failure of the relay excitation circuit.
4. No. The event is not specified explicitly enough to be called a failure mode.
5. Yes.
6. Another silly one. The answer is, of course, no.
7. Yes.

Quiz #3 - More Challenging Questions

Let's present the following question to you in advance of covering Quiz #3 in the February newsletter.

1. Just How Important is the Selection of a Programming Language in a Safety-Related System?

Face Lift

In September we announced that we would be redesigning our web site - something that was long overdue. Although it has been lauded for its information content, the way it was organized made it overwhelming. The new web site will make navigating much easier for you. This work is progressing well. The new web site will make navigating much easier for you. We will begin the transition very shortly.

We are also performing overdue maintenance on the web site to correct broken links to external web pages.

Feedback

Please endeavor to send us your questions, feedback, and announcements for us to incorporate. We also encourage you to submit articles, lessons learned, etc.

New Offering—Technical Writing

Our people have been preparing technical documentation for years. This documentation consists of analyses, reports, plans, SOWs, DIDs, and, being safety-related, it has had to undergo a great deal of scrutiny, perhaps more so than in any other field.

Our clients are now taking advantage of our expertise in this area and are saving a great deal of money. When you weigh our technical writing hourly rates against the loaded labor rate of your skilled people, it makes little sense to have them spending their hours performing functions such as scrubbing down documents, formatting, correcting grammar, etc.

DIDs

We have excellent Data Item Descriptions for SSPP (7 pages), PHL, PHA, FHA, PSA, SSA, O&SHA, HHA, and system safety elements of DIDs for ECP, RFD, RFW, MEL, etc. These are available from us at low cost.

Webinar SSPPs

The next webinar on this topic is scheduled for March 23.

For further information, e-mail us at training@hcrq.com.

Software Safety Course

HCRQ is pleased to announce this course to be held in Williamsburg, Virginia April 20-22. This mature, comprehensive and very practical course has been attended by many organizations from around the world.

For further information, e-mail us at training@hcrq.com.

System Safety Course

HCRQ is pleased to announce this course to be held in Williamsburg, Virginia May 18-20. This comprehensive, practical course covers a large number of areas. Insight into this area is based on years of experience planning, and executing System Safety Programs for all types of safety-related systems.

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