

TAKING THE RISK OUT OF RISK ASSESSMENT

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Abstract

The Occupational Health and Safety (OH&S) Unit at The University of Queensland (UQ) became interested in installing a University wide risk assessment scheme in 2002. The aim was to have a web based risk assessment database accessible to all staff and postgraduate students that would be user friendly and simple enough to encourage everyone to use it. Risk assessment and management is central to Queensland Workplace Health and Safety Legislation and Regulations. It was apparent to advisors at the OHS Unit that generally UQ was not complying with the legislation. In an effort to comply with legislative requirements, a variety of systems were examined. The system selected was the NSCA electronic risk database because it appeared simple to use. NSCA Officers and programmers have worked closely with OHS personnel in developing the prototype to its present format, in line with the specific features which the OHS unit required of such a database. Many problems have occurred along the way. The most difficult problems have been related to the design of the database and building the system so that it is accessible to all staff at UQ. The system was not initially web ready or assessable across all platforms. The database went live in March 2003.

This paper illustrates the operation of the database, and covers aspects of its development (including the traumas). It also looks at the database from both a user's and a trainer's viewpoint.

Introduction

Risk assessments were not performed consistently at the University of Queensland (UQ) prior to the introduction of the database. They were being done rarely or not at all. When incidents / accidents occurred at UQ, it was found that, generally, there no risk assessments could be identified. UQ was not compliant with the Workplace Health and Safety Act 1995 (QLD) which mandated risk assessment and management (S.22.1) for the management of workplace health and safety risks. Some workplaces, mostly laboratories, understood the need for risk assessment and had paper-based or data base systems. There was no University wide system although risk assessment was advised for all processes where there was an occupational health and safety (OH&S) risk. Risk management was a process, while advised in all OHS policies, that was seen as too hard. Many UQ staff members had no understanding of the need for risk assessment or the skills to do a risk assessment. When a dangerous incident had taken place, there was likely to be no recorded risk assessment. This meant that UQ had no defence against sanctions following accidents / incidents.

Method

The major criteria was that the person doing the task should do the risk assessment as they had the best understanding of the task.. It was decided that there was a need for a risk management system that was accessible to and usable by all staff who had a UQ IP address; it should be suitable for non-specialist (in OHS) staff ; and based on the Qld Risk Management Advisory Standard 2000 and Australian

Standard 4360: 1999. Other criteria were that the system be simple and already in use.

Most existing systems were designed and built for OHS specialists. Systems were built for organisations who build just one widget; not thousands of different widgets in thousands of different ways (many of them innovative) as universities do. There was an offer from company who was already providing us with software to build a database. This company had a proven track record with us of providing high quality data bases. The quote from this company was very expensive. At the Futuresafe conference in 2001 a simple database was presented by the NSCA. It was based on Microsoft Access and we were told that it could be easily converted to world wide web use. The NSCA system was selected because it was web ready; it was simple to use; not aimed at specialists in OHS and based on the familiar OHS risk management system.

Introducing the new system -Problems

There were many initial information technology (IT) problems which were mainly related to the system being not web ready. Other IT problems were related to the system being PC based. It was not usable across all platforms and programs (Macs). There were many UQ staff who were not able to access the system. The developers of the system were based in Cairns and Brisbane so there were some communication problems. The fact that the system was designed by OHS professionals rather than IT professionals appealed to us initially. But this was the cause of many of the problems. Unfortunately this meant that they did not understand the scale of problem UQ experienced when we introduced the system. They did not understand how to operate IT in a large complex organisation. There were many implementation IT problems. Major crashes occurred when training users on the system began.

Solutions

The light at the end of the tunnel started to appear when the NSCA employed a professional IT developer for the system. The developer initially tried to patch up the existing system. There were so many problems that the developer did a complete rebuild. The system now functions across most platforms and programs. New modules are being developed to add on to the basic module. A Chemical safety module has been added to comply with Hazardous Goods Regulations (Qld).

Implementation

The impetus to complete risk assessments has been the regular threats of prosecution that UQ has received. These threats have ensured support for risk management from the top levels of management. An intensive training program has been implemented across all campuses. The program includes basic risk assessment and management information. The risk management process is worked through on the system. A recent major change on the system has been the change from a risk calculation using a tie line based on Fine's (1971) work. This has recently been changed to a risk matrix. The matrix is mathematically identical to Fine's (1971) model but offered several advantages to UQ. These advantages include a more stable system as it is less complex. There is less opportunity to play with the calculator and see what happens..

After signing in to the database, the first page of the system is a risk management console. There are search facilities on this page which allows the user to search on place, person or task. Printed reports are available. Risk assessments can be copied apart from the risk calculation. A new addition to the program is the facility to notify a supervisor of the risk assessment and for the supervisor to approve or suggest changes to the risk assessment. The latest major change has been the

chemical module which assists the user to do a risk assessment of chemical hazardous substances which complies with the Queensland Workplace Health and Safety Regulations (1997) Part 13. Other add on modules are planned as funding becomes available.

Conclusion

The implementation of the risk database has been a long but interesting task. We are now reaping the rewards of controlling the risks at UQ while complying with the legislation. UQ staff have been cooperative and some even enthusiastic. One of the major difficulties of the introduction of the database has been that it is easy to become overwhelmed at the sheer numbers of risk assessments which need to be done. Overall the process has been painful but rewarding.

A users' viewpoint:---towards more effective Risk Assessment training

This section of the paper presents an overview of the Co-author's experiences as a WHSO in an Engineering Department, in developing a training program for staff and postgraduate students in techniques of risk assessment.

Introduction of risk assessment training in the department

Initially I started to introduce training sessions in the Department of Mining, Minerals and Materials Engineering to a somewhat sceptical and reluctant workforce in 1998. The method I advocated for use was based on the NSCA risk Score Calculator. I ran several of these sessions which were quite well attended, and with the support of management a timeframe was set up for risk assessments to be carried out in a number of laboratories. Senior Supervisory staff were delegated the responsibility for expediting this work. With one or two exceptions however the process was never completed. It became obvious that this was not the best way to achieve an active staff involvement and get risk assessments happening in the workplace. This initial process did nevertheless offer some advantages in that it focussed peoples' attention on defining workplace hazards and safety issues. For example, comprehensive lists of hazardous substances were produced ; a chemicals inventory was established, and several risks were identified and acted on so that they were controlled.

One of the problems that emerged was the variety of operations that are carried out in a University context. These include undergraduate laboratory experiments and projects, postgraduate research, and consulting work over a range of disciplines. The work situation is usually a constantly changing one. So risk assessment was often seen as being in the too hard basket.

In particular there was no one suitable format for establishing a risk assessment for a process. Where this process normally involved a variety of work operations.

To illustrate this, one particular operation involves preparing chemical etching reagents and subsequently etching prepared metal surfaces to distinguish features of the microstructure. There are risks in using the chemicals, in mixing them, and in the specimen polishing and etching operation. All these must be considered in achieving the end result. Early standard formats for completing a risk assessment were often inadequate, and so we developed our own forms.

Using the NSCA developed electronic risk database

In 2002 the OH&S unit at UQ trialled a prototype NSCA electronic Risk Assessment Database. This turned out to be fortuitous since the personnel in our Department were already familiar with the NSCA method. At that stage I decided that the database would solve a lot of our problems since it provided a flexible format for risk assessment, and being web based would be seen as an attractive proposition for

staff to carry out those dreaded risk assessments. During the development stage there were difficulties in accessing the database at times, and most of these early problems were associated with the inbuilt internal security system of the database. Ultimately I found it easier to work on a one to one basis with staff and postgraduates to ensure that they could log into the database and at the same time to explain its operational features, and to carry out a trial risk assessment with them. This was particularly so whilst the database was in a state of flux during its period of modification and development. Constant upgrades tended to appear to the database, and this required that users were kept notified of changes, and became familiar with them. Nevertheless this interaction did have some advantages, as users were able to provide feedback to the OH&S group on any problems experienced with using the database. Training also became simplified as the OH&S unit at the University runs regular training courses in the use of the database.

In my opinion, the database has provided the impetus to get risk assessments happening at the workplace. It has a number of advantages over present print based methods used. I see its principal benefits as the following.

Web based; so more likely to be accepted

A University wide method accessible to all staff, and across all computer platforms

Easy to use and to locate/move between individual steps of the risk assessment

Easy for author to modify an assessment; e.g. add new risks or controls

Easy to access risk assessments; by author, workplace or task

Provides permanent record of all risk assessments to meet legislative requirements

Versatile in use; e.g. incorporates a chemical database in the general database, full access for own assessments, read only access to others, but copy facility available

Allows supervisor input/approval to risk assessments submitted.

Provides a readily accessible record of hazards and risks across UQ campuses

Allows for hard copies of risks and controls to be printed

Secure; Requires user name and password for access

Conclusion

The introduction of a web based University wide risk assessment system is providing a needed impetus to the task of getting risk assessments done in the workplace. The advantage of a uniform, across campus, system that is easily accessible to all, is that it facilitates the sharing of risk assessment information. As the number of staff using the system grows, it will become a valuable resource for all users in complying with their risk assessment obligations.

References:

Fine, W.T. 1971, "Mathematical evaluation for controlling hazards", *Journal of Safety Research*, vol.3, no.4, pp. 157-166.

Tranter, M., 1999, *Occupational hygiene and risk management: a multimedia package*, OH&S Press, Alstonville.