

Safety and/or hazard near miss reporting in an international energy company

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Abstract

This paper presents the preliminary progress of an industry driven programme to improve the data monitoring of safety/hazard near miss reporting from front line staff of a branch of a multinational energy supply company in Ireland. The paper discusses the main factors that emerged as possible causes for underreporting and the course of action selected for addressing them. The initiative, which is only in operation for 4 months has already led to an increase in reporting of “near misses” by a factor of nine. Furthermore, the level and detail of the reports is far greater than had previously being received.

Introduction

It is recognised as Best Practice that collating and monitoring of data on safety incidents or reported near misses would lead to better learning and indeed the avoidance of accidents in the future. (Jones et al 1999). Various studies have showed the relationship between near miss incidents and actual accidents pointing out that reducing the number of near misses that occur will very likely reduce the likelihood of full accidents, which in turn would lead to less severe human, economic and environmental impact., (Bird & Germain, 1966; Heinrich, 1980; Tye, 1976).

Within this paper, the experience of the safety advisor within a division of a larger multinational energy supply company was able to identify from report statistics supplied by the Head Health and Safety Office that near miss data from field staff in his division as a whole was not being reported. This data has the potential to identify latent hazards in plant, equipment, procedures and in design of high voltage (HV) equipment that may otherwise go unnoticed.

The division in question is the Asset Management Service, AMS, within the company, which is responsible for providing a full range of commissioning services on new and maintained HV plant & equipment. AMS also ensures the correct operation of protection schemes on the Transmission systems.

During 2009 this section of the company only had only reported 2 near misses for events of trivial importance related to offices and nothing referring to site operations. The 80 staff in the division spend the majority of their time in the field on site works. The fact that there was no reporting from the field was of concern to the senior management team in AMS.

The Issue of Underreporting

Various studies on organizational-level under-reporting linked the issue to multiple factors. Typical issues would be the general safety climate, the specific industrial, sector, the company size and the perceived lack of management engagement (Leigh et al., 2004; Oleinick et al.,

1995, Daniels and Marlow, 2005, Clarke, 1998, Probst et al., 2008; Zohar, 2003) at individual-level under-reporting has been ascribed to factors such as fear of reprisals, loss of benefits or a fatalistic attitude that injuries are a fact of life in certain lines of work (Webb et al., 1989; Pransky et al., 1999; Sinclair and Tetrick, 2004, (Pransky et al., 1999).

From a previous study performed in Ireland in the construction sector (McDonald N and Hrymak V. 2002) it appears also that the presence of a safety representative on site shows a very strong relationship with hazards reporting and safety compliance. The report of the study states that “safety representatives influence safety compliance not only through their influence on the response to audits and hazards but also through other means. Thus they encourage the reporting of hazards and help ensure that these reports lead to better safety compliance on site. Their presence also makes it significantly less likely that workers will continue to work in hazardous situations”.

In the context of the present study the positive effects of the safety representative on site were reinforced thanks to the presence of the specific organizational role played by Safety Advisor within the specific division.

The Safety Advisor in this case was an interface between the central Health and Safety Department and Asset Management Services and He was tasked to take care of the division specific safety issues involved in the day to day operations.

The Safety Advisor was able to work on site with the staff and perform informal interviews in order to try and identify the main issues for this lack of reporting. Through this process three factors emerged as possible causes for underreporting:

1. The current definition of “near miss reporting ” and indeed the actual safety training received by the staff were confusing.
2. The actual reporting framework was received as extra paper work to be sent to the immediate supervisor in a very formal process.
3. Poor feedback on reported problems.

Overall the “near misses” reporting process was seen as something the staff was told to do rather than something they should be doing for their own benefit. As a result it was perceived as “an extra task not a value”.

A simple plan for action

In identifying the best course of action to take to try and improve reporting of the following elements were taken into account:

- A. A dedicated safety advisor for the Asset Management section to bridge the gap between the Safety Management System and day to day operations.
- B. a different definition of near misses that would highlight the relevance in respect to the everyday operations and a proper communication of it to the workers
- C. A reporting form more closely related to forms currently part of day to day usage
- D. A feedback mechanism to ensure the benefits of reporting in terms of follow up would reach the front line staff in charge of reporting.

The Role of the Safety Advisor

As already pointed out the operational safety advisor for the Asset Management Services (AMS) division of the company is a specific recognised organizational role established to take proper action for the safety issues of the division of a specific technical nature rather than the

management of occupational health on site, which was still dealt by the Central Health and Safety Office. The Safety Advisor in fact had to also develop personal technical competencies for AMS in parallel with the safety role.; which in turn enable him/her to work side by side with the rest of the technical staff of the division.

The availability of a safety advisor close at hand similar to a safety representative but with the managerial role to enforce and follow up on issues raised on the field was highlighted as a strong guarantee towards the achievement of a better promotion of a reporting culture and a closer feedback to the front line staff, in line with the findings of the HSA research report for the construction sector (McDonald and Hrymak 2002).

Near Misses, definitions and communications

The definition of near misses previously provided by the Central Health And Safety Office of the company stated that:

‘A near miss is an incident where personal injury was narrowly avoided or where damage to property-only occurred. A good catch is an unsafe condition/act, which if left unaddressed could result in an injury. Such incidents may be early warning signs of hazards that could eventually result in serious consequences. By reporting such incidents you will help make the workplace safer for yourself, your colleagues and visitors. Remember, what is a near miss today could result in an accident tomorrow.’

The staff understanding of the above definition also reinforced by the type of information provided by newsletters and the periodic training promoted by the Central office was that a near miss belonged only to realm of occupational health on site and did not apply to specific technical issues related to operations. The link between the day to day anomalies in the field and the ability to make work practices more efficient, of a higher quality and safer was not being recognised.

The Safety Advisor was able to introduce among his fellow workers an alternative definition and to promulgate it through a specific meeting.

‘An opportunity to improve safety, health, environmental and quality practice based on a condition, an incident or an observation with minor outcomes but with the potential for more serious consequence. ‘

The workers were made aware that the consequences proposed in the definition can include but were not limited to the following:

- Property damage
- Damage to the environment
- Business interruption
- Deviations for example from the work instruction or procedure
- Potential or actual injury to staff

The definition above was presented and discussed with the personnel by the safety Advisor in the following ways:

- i. Organizing a meeting with the engineering manager where it was agreed to produce a document outlining the benefits of an integrated approach to the management of quality, safety, health and environmental issues.
- ii. Providing a presentation during a periodic team briefing meeting in the AMS section where the alternative definition was discussed and amended
- iii. Sending a communication through email to all AMS staff

- iv. Reiterating on the presentation regarding the near miss management approach at Specialist Team meeting and subsequent team meetings attended
- v. Promoting the idea also informally on site

The initial feedback was that the new definition was accepted as a better fit to the working environment in AMS since it gave the opportunity to report or capture technical deviations or observations that commissioning and maintenance staff can encounter in their daily tasks.

A new reporting framework: making better use of what is already there

The new reporting framework for the initiative was introduced as an informal process. The future direction of it to be embedded in the commissioning checklists that are already used as part of the sign off for the operators working on site.

Currently commissioning based reporting has two elements. The first is the on-site Snag List Form(see figure 1) and the other is the Project Follow-Up Reporting form. The snag list is to be given to the person on site responsible for correcting it and then entered into a so called “SharePoint folder” where the design team can monitor it and make the any design changes.

The Project Follow-Up Report form is given to the people identified as responsible for solving the issues and also sent electronically to the designer and manager of substation design. This form should also be copied to the SharePoint folder where the actions can be monitored. The deviations recorded on the snag list However or the follow up report forms are not currently considered as possible elements of the miss reports statistics at central level.

Company XX

Snag List

Station:

Project:

Issued By:

HV Designer:

To:

CC:

CC:

CC:

CC:

Item	Priority	Description	Date Identified	Responsible for Resolving	Date Resolved	Source
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						

Figure 1: company existing Snag list for commissioning operations

Further a Database has been introduced to collect and monitor the commissioning checklist as records of the operations completed.

The database has a function that provides report templates for commissioning and “condition based assessment” of assets and records the results. These templates are designed by AMS staff. The templates also provide the option of recording deviations in an ‘additional comments’ field and to import or export documents/files/jpeg/PDF. Reports can also be generated for any specific asset.

The safety advisor prompted the workers to start using that part of the current reporting forms for forwarding information on near misses via mail to him and whenever possible attach pictures of the possible event being reported. Figure 2 reports the example of a picture attached to one of the reports (“Failure of 110 kV cable sealing end”).



Figure 2: Example of a picture taken by one of the worker and sent as part of a near miss report on the failure of 110 kV cable sealing end

The advantage of using existing tools for reporting is that the use of ad hoc extra forms may fail to provide a real-time picture of routine operations supporting performance management and predictive risk management. Furthermore the use of many discrete tools implies that much valuable data gathered about the operation are stored and analyzed in different formats and by different and often disjointed departments. This makes it difficult to obtain an integrated risk registry (Leva et al 2010), while the effort of integrating existing data collection tools can be a much more practical way to operate the data monitoring reducing the paperwork.

Another issue existing with the previous reporting system is the fact that the health and safety office at central level presents a classifications system for near misses with categories that are fairly generic and therefore are not able to really direct possible improvements and follow up initiative on specific technical areas in a meaningful way. An example of this is observable from figure 3 reporting the headings under which near misses are currently categorized. It is clear that a category named “electrical” is far too generic to be able to provide any clear indication for a division in charge of commissioning HV equipment and installations. The proposed enhancement of the classification introduced by the imitative would only require to distinguish electrical faults according to the type of equipment they refer to (e.g. Neutral Earth Switch, Cable Sealing Ends Links , Busbars, G.I.S Switchgear , HV Lightning Arrestor, HV Transformer Bushing, Oil Filled Circuit Breaker , Capacitor Bank etc..). This further distinction would enable also to classify possible troubleshooting adopted for recurring faults.

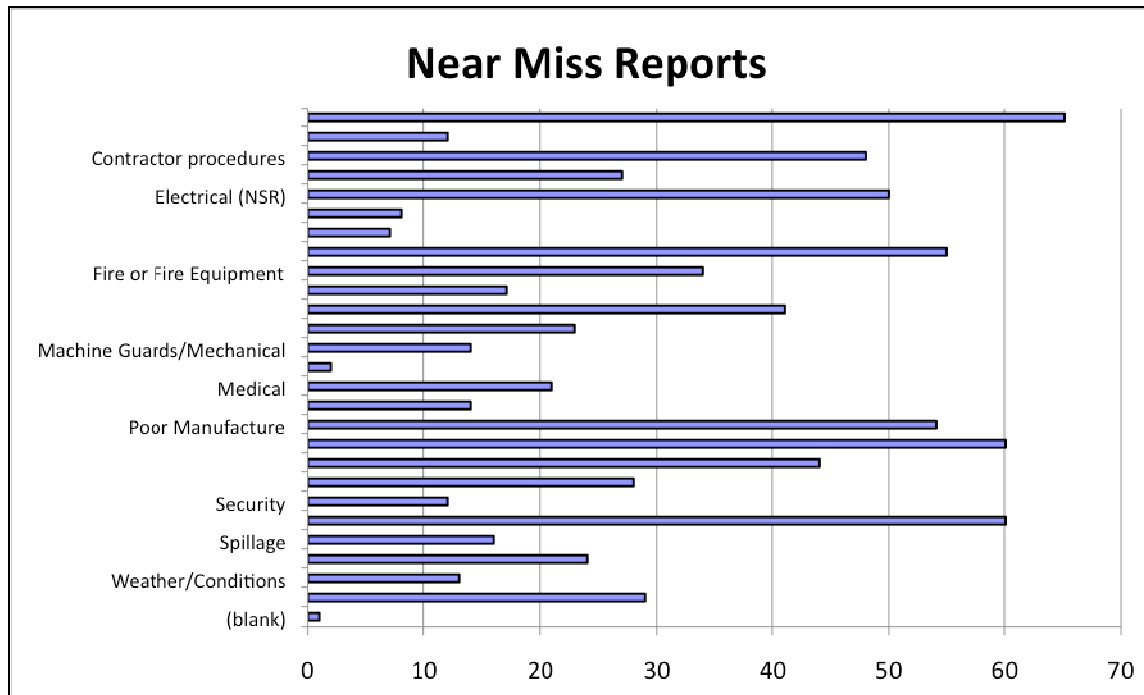


Figure 3: Existing near miss categories for event reported across the entire company in 2009

The feedback mechanism

As already pointed out the main purpose of reporting near misses is the possibility of using the resulting data to initiate improvements and possible interventions able to prevent more serious events and accidents. Further the feedback to the reporters on the follow up initiated thanks to their reporting is an important motivational factor. Therefore the safety advisor had to take care that after each report a communication about the status of the analysis and the possible initiated action would reach the front line staff in charge of reporting.

Since the beginning of the initiative 29 near misses have been reported in the past 12 months and the follow up of 62% of them was already completed and communicated to the report initiators.

Preliminary Results

The initiative in the first 12 months was already able to increase by 14 times the amount of reports that were previously obtained within a year, further the level of technical details acquired and their relevance is much more meaningful and in depth in comparison to what collected previously.

Table 1: Initial outline of results of the Initiative

Near Miss Reports	Amount	Location
Centrally collected Events in 2009	768	Site / Office
Events collected at the division level of Engineering Solutions 2009	60	100% of them are related to the Office
Near Misses collected for AMS in 2009	2	100% of them are related to the Office
Near Misses collected for AMS in 12 months after new definition was introduced (12 months approx.)	29	90% of them are related to Site

Conclusions

Data collection programs such as these provide a real-time review of current safety issues in the operations departments. Real-time data review facilitates the identification of areas where modifications to working practices, equipment, training programs or standard operating procedures might be appropriate. Such modification might reduce costs as it improves the availability of equipment and prevent the occurrence of future safety events (incidents or accidents) as well. This seems to be a very proactive way of managing safety with very positive implications for day to day operations efficiency as well. The key to success is arriving at the desired cultural climate as a result of the system changes introduced. This is why a careful understanding of people dynamics is not to be underestimated. In the present experience the role of a safety advisor close at hand on site with the capacity to follow up on issues raised on the field was highlighted as a very important factor towards the achievement of a better promotion of a reporting culture and a closer feedback to the front line staff.

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