

Learning from incidents, accidents and events



LEARNING FROM INCIDENTS, ACCIDENTS AND EVENTS

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FOREWORD

A number of industry commentators have noted that the energy and allied industries still need to improve in learning lessons from incidents. This view is prompted by the reoccurrence of similar events, and by evidence of the difficulty of achieving long-term changes in behaviour and working processes following incidents. Ideally, learning from incidents (LFI) should be a critical part of ensuring continuous business and operational improvement.

In 2008 the Energy Institute (EI) published *Guidance on investigating and analysing human and organisational factors aspects of incidents and accidents* (first edition). This provided guidance on ensuring human and organisational factors (HOF) are considered in addition to technical causes when investigating incidents, and was produced because of the recognition that these factors were often given insufficient attention.

In addition to insufficiently probing HOF within the investigation, research has indicated additional challenges at several stages in the LFI process, including: reluctance to report incidents due to fear of disciplinary action; lack of time and resources dedicated to helping people understand and make sense of lessons; overload of investigation recommendations and failure to agree actions with all the involved parties, and failure to check that implemented changes have actually addressed the underlying causes and have reduced risk.

In recognition of these and other challenges, the EI's Human and Organisational Factors Committee (HOFCOM) was tasked by the EI's Technical Partner Companies (comprising many of the major energy companies), together with the Stichting Tripod Foundation (STF), to update and broaden the original 2008 guidance document.

Learning from incidents, accidents and events (first edition) supercedes the 2008 publication and now covers the whole LFI process, from reporting and finding out about incidents through to implementation of effective learning resulting in changing practices.

The main objectives of this publication are to:

- act as the initial 'go to' resource for LFI, but pointing to other more detailed resources as necessary;
- inform on current good practice for all key phases of the LFI life cycle; and
- focus not just on accident/incident investigation but also learning.

In addition, the central objective of the 2008 publication has been retained, i.e. to guide the reader in understanding the HOF causes of an incident through appropriate investigation approaches.

This publication has been produced with the help of three industry stakeholder workshops organised by the EI and held in September, October and November 2014. The workshops focused on reporting, investigation and broader learning respectively. Workshop attendees included representatives from major energy companies, regulators, infrastructure providers, consultancies and academic institutions (over 20 organisations in total).

Little progress with LFI is possible without strong management commitment. Section I Executive summary is intended to inform managers of the essential features of LFI and explain concisely why it is needed.

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Suggested revisions are invited and should be submitted through the Technical Department, Energy Institute, 61 New Cavendish Street, London, W1G 7AR. e: technical@energyinst.org

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1 INTRODUCTION

1.1 BACKGROUND

A number of industry commentators have noted that the energy and allied industries still need to improve in learning lessons from incidents. This view is prompted by the reoccurrence of similar events and by evidence of the difficulty of achieving long-term changes in behaviour and working processes following incidents. Ideally, LFI should be a critical part of ensuring continuous business and operational improvement.

In 2008 the EI published *Guidance on investigating and analysing human and organisational factors aspects of incidents and accidents* (first edition). This provides guidance on ensuring HOFs are considered in addition to technical causes when investigating incidents, and was produced because of the recognition that these factors were often given insufficient attention. A recent publication from the Society of Petroleum Engineers (SPE) states that this is still the case (*The human factor: process safety and culture*):

'Researchers, human factors professionals and others [. . .] believe that real learning from incidents has been hindered by a tendency to 'blame the human', or to treat 'human error' as an acceptable final explanation of why an incident occurred.

Despite the best efforts of many companies [. . .] going 'beyond human error' is still relatively uncommon in many industries, including the oil and gas industry.

The key is to pursue a deeper understanding of why 'human error' occurred, and especially the organizational/cultural factors that 'set up' the human for failure.'

In addition to insufficiently probing HOF within the investigation, research has indicated additional challenges at several phases in the LFI process, including:

- reluctance to report incidents due to fear of disciplinary action or the perception that reporting does not lead to any change;
- lack of time and resources dedicated to helping people understand and make sense of lessons;
- overload of investigation recommendations and failure to agree actions with all the involved parties, and
- failure to check that implemented changes have actually addressed the underlying causes and reduced risk.

In recognition of these and other challenges, the EI's HOFCOM was tasked by the EI's Technical Partner Companies (comprising many of the major energy companies), together with the STF, to update and broaden the original 2008 guidance document. *Learning from incidents, accidents and events* (first edition) updates and supersedes the previous 2008 publication, and now covers the whole LFI process, from reporting and finding out about incidents through to implementation of effective learning resulting in changing practices.

1.2 WHAT IS LFI

In this publication, LFI is understood to be a process whereby employees and organisations seek to understand any negative events that have taken place and take action to prevent similar future events (Lukic, 2013). Such events include near misses, which enable successful interventions to be analysed and learnt from, as well as learning from what has gone wrong.

While LFI is often discussed in the context of safety, it includes any failure of control with the potential to impact a business. These impacts could be, but are not limited to, environmental, health, production, system availability, damage, quality, etc. Thus, LFI should be understood to be relevant to all these aspects throughout this publication.

Following a significant incident, organisations produce a range of responses, suggesting that the phrase 'we have learnt from this incident' can mean different things to different people. For example, it could mean any of the following:

- a) That the team of investigators has investigated an incident, and understand how and why it occurred.
- b) That several people in an organisation now know how to prevent it happening again.
- c) That an organisation has implemented a set of changes (for example in equipment and personnel behaviours) which will prevent this event happening again.
- d) That an organisation has implemented a set of changes which will prevent this event, and similar events, happening again and even learnt about its processes and practices for LFI.

Bullets a - d could be seen as representing a range of learning potential. It would be expected that bullet 'd' would lead to a significantly larger and sustained risk reduction than if bullet 'a' alone were achieved. In this publication, the ideal LFI process is regarded as one which leads to changes in equipment, processes or behaviours such that risk is reduced in an effective and sustainable manner.

LFI is therefore not just about investigation or generating and disseminating information about incidents from which learning might take place, but it will also involve people having opportunity to reflect and make sense of that information, and actually taking action to reduce risk. It involves the organisation embedding changes so that even if people leave, measures to prevent incident reoccurrence stay in place. A key point about LFI is that it should occur within individuals, teams, an organisation, and between organisations. All of these are covered within this publication.

For convenience, the phrase LFI is used in this document to cover learning from accidents, incidents and events. An accident is considered to be an event that results in injury or damage or general loss, whereas an incident has the *potential* for injury, damage or loss and hence includes near misses. For further definitions see Annex B. The term 'incident' is predominantly used in this publication and refers to both accidents and incidents unless otherwise specified.

It should be noted that there are other methods as well as LFI for learning from operational experience, such as task observation, inspections and audits. Lessons from these techniques are also necessary for risk management, but they are not the subject of this publication.

1.3 THE BENEFITS OF LFI

There can be various 'blockers' to learning (discussed in this publication) that can lead organisations to neglect the potential lessons from lesser severity incidents (e.g. near misses, precursors, barrier failures) which could have escalated into major accidents (MAs), and only learn when a MA actually happens. This is an inherently unstable approach likely to lead to states of higher overall risk as illustrated in Figure 1. If the only changes an organisation makes are in response to learning from major accidents (LFMA) rather