Guidance on meeting expectations of EI *Process safety management framework*

Element 16: Management of safety critical devices

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GUIDANCE ON MEETING EXPECTATIONS OF EI PROCESS SAFETY MANAGEMENT FRAMEWORK

ELEMENT 16: MANAGEMENT OF SAFETY CRITICAL DEVICES

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FOREWORD

Process safety management (PSM) is vital to ensuring safe and continued operations in major accident hazard (MAH) organisations. However, PSM is a multifaceted process, and a number of high profile incidents since 2005 have suggested that without a holistic understanding of the various factors required for effective PSM it can be difficult and inefficient to ensure, and measure, performance.

In 2010 the Energy Institute (EI) published *High level framework for process safety management* (*PSM framework*), which aimed to define what PSM should involve. Divided into four focus areas (process safety leadership, risk identification and assessment, risk management, and review and improvement) and sub-divided into 20 'elements', it sets out a framework of activities MAH organisations should undertake to ensure PSM. Each element lists a number of high level activities organisations should meet (expectations).

EI *Guidance on meeting expectations of EI Process safety management guidelines* is a series of 20 publications ('guidelines') that build on the PSM framework. Commissioned by the EI Process Safety Committee (PSC) each guideline captures and presents current industry good practices and guidance on how organisations can meet the expectations set out in each element of the *PSM framework*. Each guideline includes:

- a logical flow diagram of activities (steps) the organisation should undertake to manage that element;
- descriptions of those steps;
- example performance measures (PMs) to measure the extent to which key steps have been undertaken;
- a list of further resources to help undertake key steps;
- a table mapping the steps against the expectations in the *PSM framework*, and
- annexes of useful information.

Readers implementing the guidance in this publication should be aware of the *PSM framework* and the other publications in this series, particularly if they are a manager with oversight of the wider implementation of PSM.

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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INTRODUCTION

1.1 MANAGEMENT OF SAFETY CRITICAL DEVICES

This guideline sets out good practice for the management of safety critical equipment and devices (SCDs). Management should ensure that safety critical equipment and devices are identified and appropriately managed, so that they are in service and functioning correctly.

This guideline sets out good practices for the management of safety critical devices (SCDs) which will ensure that SCDs are identified, operated, inspected, tested and maintained in an appropriate way to assure that the integrity of their operation and of the assets they protect is maintained.

In many cases the inspection and maintenance criteria for SCDs may be governed by the requirements of legislation, licensing requirements or industry and company standards. However, the application of this guideline will bring together all aspects of testing, inspection and maintenance of SCDs in order to ensure that there is a systematic risk managed approach.

This guideline follows the principles and is closely aligned to those for element 15 (inspection and maintenance). However, the management of SCDs is essential to the operational integrity of the business and should be managed by means of segregated processes with assigned accountabilities /responsibilities and a dedicated set of PMs to ensure that compliance status is routinely monitored and reviewed at all levels of management.

1.2 EXPECTATIONS FOR ELEMENT 16: MANAGEMENT OF SAFETY CRITICAL DEVICES

Element 16 of EI *High level framework for process safety management* ('*PSM framework*') describes 11 expectations – arrangements and processes that organisations should (to an appropriate degree) have in place in order to ensure they are managing this aspect of PSM appropriately:

'Overview An essential requirement for HS&E and process safety is that safety critical equipment and devices (SCDs) are in service and operating correctly.
Management must ensure that safety critical equipment and devices are identified and appropriately managed, so that they are in service and functioning correctly.

16.1 SCDs are uniquely identified on an asset register which provides up-to-date asset lists and equipment records, including location and equipment specification data. The asset register provides a basis for the planning of SCD testing, inspection and maintenance.

16.2 SCD testing, inspection and maintenance programmes are in place. There are defined standards and the programmes are proportionate to the risk associated with failure of the SCDs.

16.3 There are procedures to ensure that SCD testing, inspection and maintenance programmes are reviewed regularly commensurate with risk, using findings from the programme, industry experience and incidents to identify and address issues and opportunities for improvement, so that they are kept up to date as living systems.

16.4 Feasible plans and schedules are developed for execution of testing, inspection and maintenance programmes.

16.5 Adequate numbers of competent personnel are available to carry out the testing, inspection and maintenance programmes.

16.6 There are procedures to ensure that findings and recommendations from the SCD testing, inspection and maintenance programmes are appropriately prioritised and followed up.

16.7 There are procedures to ensure that temporary disarming or deactivation of critical alarm, control, shutdown, security and emergency response equipment is managed and recorded.

16.8 SCD testing, inspection and maintenance programmes are approved by specified named competent individuals.

16.9 Disarming, deactivation or bypassing of SCDs is reviewed and approved by specified named competent individuals commensurate with the risk.

16.10 Arrangements for management of SCDs are understood and followed; understanding of arrangements and compliance with them is regularly tested.

16.11 Compliance and performance trends are reviewed by specified levels of management.'

This guideline provides a process, along with guidance, to help organisations meet these expectations. It also suggests a number of compliance checks and performance measures (PMs) to measure the extent to which key activities involved in meeting these expectations have been or are being undertaken.