Singapore Standards Council

SS 506 : Part 3 : 2013

(ICS 03.100.01; 13.100; 71.020)

SINGAPORE STANDARD

Occupational safety and health (OSH) management systems

– Part 3 : Requirements for the chemical industry

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The Working Group, appointed by the Technical Committee, to assist in the preparation of this standard comprises the following experts who contribute in their *individual capacity*:

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The organisations in which the experts of the Working Group are involved are:

Association of Process Industry
Association of Safety Auditing Firms
ExxonMobil Asia Pacific Pte Ltd
Lanxess Butyl Pte Ltd
Ministry of Manpower
Petrochemical Corporation of Singapore (Pte) Ltd
Risk and Insurance Management Association of Singapore
Singapore Chemical Industry Council
Singapore LNG Corporation Pte Ltd
Singapore Manufacturing Federation
Singapore Refining Co Pte Ltd

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Foreword

This Singapore Standard, SS 506 : Part 3, was prepared by the Working Group appointed by the Occupational Safety and Health Management Technical Committee under the purview of the Management Systems Standards Committee.

SS 506 comprises the following 3 parts under the general title, 'Occupational safety and health (OSH) management systems':

Part 1 – Requirements

Part 2 – Guidelines for the implementation of SS 506 : Part 1 : 2009

Part 3 – Requirements for the chemical industry

Part 3 was revised to align the standard to the framework of SS 506 : Part 1 : 2009 which is an identical adoption of the Occupational Health and Safety Assessment Series (OHSAS) 18001:2007, a document published by the British Standards Institution (BSI).

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SS 506 : Part 1 and Part 2 which are identical adoption of OHSAS 18001 and OHSAS 18002 respectively, are used as a basis for providing safety and health assurance to the general industry.

SS 506 : Part 3 was then developed specifically for the chemical industry in Singapore to meet the basic specifications in the SS 506 : Part 1 and also the elements of the Code of Practice on Safety Management System for the Chemical Industry (SMSCI). The SMSCI consisted of a set of process safety requirements developed jointly by the Ministry of Manpower and the chemical industry in 2001. With the release of the OHSAS 18000 series in 1999, many organisations referred to OHSAS 18001 for certification on top of the mandatory safety management system specified in the SMSCI. This resulted in a dual auditing system which required organisations to be audited twice for a similar system, one for legal compliance and the other for business management and customer requirements.

Therefore, the purpose of SS 506 : Part 3 is to enable a single OSH management system satisfying both the OHSAS 18001 and the SMSCI, as well as audit requirements for certification for the chemical industry. SS 506 : Part 3 adopts the framework of OHSAS 18001:2007.

Since SS 506 : Part 3 is intended for the chemical industry, process safety management has been incorporated into it. Process safety management is the proactive and systematic prevention and control of process-related incidents that have the potential to release hazardous materials or energy. Such process safety incidents can cause toxic effects, fires or explosions and could ultimately result in serious injuries, property damage, lost production and environmental impact.

With the withdrawal of the SMSCI, the chemical industry, which includes organisations and their service providers in the chemical, petrochemical, oil refining, pharmaceutical companies, should now review their OSH standards using SS 506 : Part 3.

Organisations and their service providers that are certified to SS 506 : Part 3, are deemed as meeting the relevant requirements of SS 506 : Part 1. The standard may also be referred to by OSH consultants, practitioners, auditors as well as certification bodies.

In preparing this standard, reference was made also to the following publications:

1. Guidelines for process safety documentation, 1995 – Center for Chemical Process Safety
2. OSHA process safety management of highly hazardous chemicals – CFR 1910.119
3. SS ISO 14001 : 2004 Environmental management systems – Requirements with guidance for use
4. SS 506 on Occupational safety and health management systems
   Part 1 : Requirements
   Part 2 : Guidelines for the implementation of SS 506 : Part 1 : 2009
5. API ANSI/Recommended Practice 754: Process safety performance indicators for the refining and petrochemical Industries
6. AICHE CCPS process safety leading and lagging metrics, January 2011
7. International Association of Oil & Gas Producers, Process Safety – Recommended practice on key performance indicators, November 2011
8. UK HSE, Developing process safety indicators, 2006

Acknowledgement is made for the use of information from the above publications.

Introduction

Organisations are increasingly concerned with achieving and demonstrating sound occupational safety and health (OSH) performance by controlling their OSH risks, consistent with their OSH policy, objectives and targets. They do so in the context of increasingly stringent legislation, the development of economic policies and other measures that foster good OSH practices, and increased concern expressed by interested parties about OSH issues.

SS 506 Part 1 specifies requirements for an OSH management system to enable an organisation to controls its OSH risks and improve its performance. The basis of the approach is shown in Figure 1. The success of the system depends on commitment from all levels and functions of the organisation, especially from top management. It does not lay down specific performance criteria or give detailed specifications for the actual structure or form of the management system. SS 506 Part 3 is created for the chemical process industry such as refineries, petrochemical plants, bulk storage terminals, pharmaceutical plants, wafer fabrication plants and certain chemical plants. It specifies the establishment and implementation of safety and health management system for the protection of individuals and the process safety management system for effective management of hazardous materials, equipment and facilities as an integrated management system known as OSH management system in this SS 506 Part 3 standard.

SS 506 Part 3 can be used for certification of an organisation's OSH management system. Also it can be used as a non-certifiable guideline intended to provide generic assistance to an organisation for establishing, implementing or improving an OSH management system. Demonstration of successful implementation of this SS 506 Part 3 Standard can be used by an organisation to assure interested parties that an appropriate OSH management system is in place.

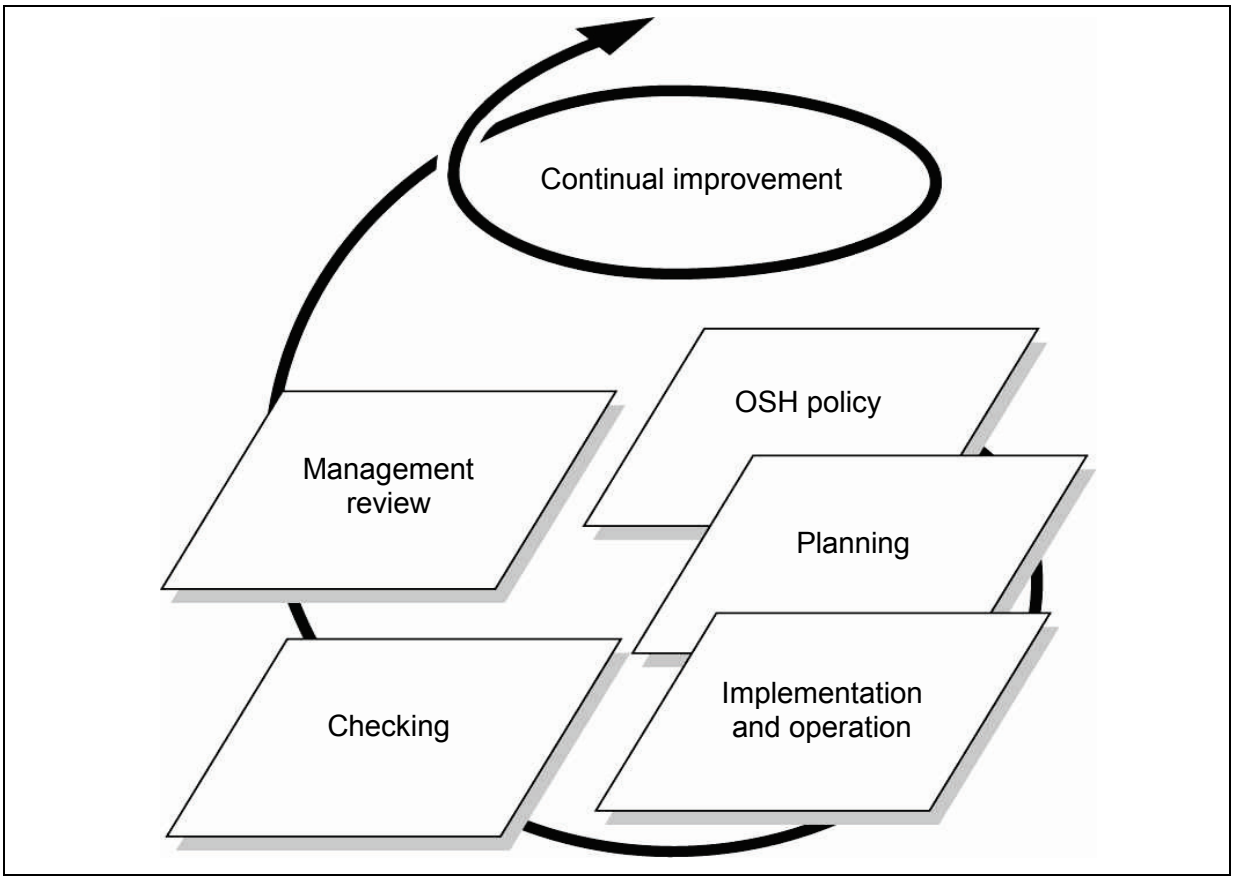

Figure 1 – OSH Management systems model

This SS 506 Part 3 Standard is based on the methodology known as Plan-Do-Check-Act (PDCA) which can be briefly described as follows:

- **Plan**: establish the objectives and processes necessary to deliver results in accordance with the organisation's OSH policy.
- **Do**: implement the processes.
- **Check**: monitor and measure processes against OSH policy, objectives, legal and other requirements, and report the results.
- **Act**: take actions to continually improve OSH performance.

This SS 506 Part 3 Standard contains requirements that can be objectively audited; however it does not establish absolute requirements for OSH performance beyond the commitments, in the OSH policy, to comply with applicable legal requirements and with other requirements to which the organisation subscribes, to the prevention of injury and ill health and process safety incident and to continual improvement. Thus, two organisations carrying out similar operations but having different OSH performance can both conform to its requirements.

The level of detail and complexity of the OSH management system, the extent of documentation and the resources devoted to it depend on a number of factors, such as the scope of the system, the size of an organisation and the nature of its activities, products and services, and the organisational culture. This may be the case in particular for small and medium-sized enterprises.

Occupational safety and health (OSH) management systems – Part 3 : Requirements for the chemical industry

1 Scope

This SS 506 Part 3 Standard specifies requirements for an occupational safety and health (OSH) management system, to enable an organisation in the chemical industry to set-up, implement, maintain and improve its management system so as to control its OSH risks and improve its performance. It is intended to address OSH processes rather than product and services.

This SS 506 Standard is applicable to an organisation undertaking activities involving hazardous substances such as processing, bulk storage, manufacturing, handling, or combination of these activities. In addition, this SS 506 Part 3 Standard is applicable to the appropriate organisation that wishes to:

a) establish an OSH management system to minimise risks to personnel and other interested parties and process safety incident, and

b) demonstrate conformity with this SS 506 Standard by:

   i) making a self-determination and self-declaration, or

   ii) seeking confirmation of its conformance by parties having an interest in the organisation, such as customers, or

   iii) seeking certification/registration of its OSH management system by an external organisation.

2 Reference publications

Other publications that provide information or guidance are listed in the bibliography. It is advisable that the latest editions of such publications be consulted. Specifically, reference should be made to:

ISO/IEC Guide 2 : 1996	Standardisation and related activities – General vocabulary
SS ISO 9001 : 2000	Quality management systems – Requirements
SS ISO 14001 : 2004	Environmental management systems – Requirements with guidance for use
SS 506 : Part 1 : 2009	Occupational safety and health (OSH) management systems – Requirements
SS 506 : Part 2 : 2009	Occupational safety and health (OSH) management systems – Part2 : Guidelines for the implementation of SS 506 : Part 1 : 2009

International Labour Organisation: 2001, *Guidelines on occupational safety and health management systems (ILO-OSH 2001)*