



Office of Safety, Health & Environment

NUS Safety & Health (S&H) Management System Standard for Departments - Part A: Requirements

Issue Date : Sep 2013

Version No. : 1.0

Last Review :

Introduction

The purpose of this document is to standardize the structure and elements of safety and health management systems in NUS Departments. This document shall be used by heads of academic departments, directors of NUS research institutes and centres, directors of administrative departments, hall masters and masters of residential colleges (hereafter known as Heads) to establish, implement and maintain their departmental safety and health management system. By implementing this standard, Heads would be able to demonstrate to their stakeholders their system of ensuring safety and health for their departmental staff, students.

For lab based departments, this standard will facilitate the integration of the OSH management system for laboratories into the department S&H Management system, (NUS Occupation health and safety (OH&S) management system standard for laboratories – Part A:Requirements; and NUS Occupational health and safety (OH&S) management system standard for laboratories – Part B: Guidance Notes.

1 Objective

The aim of this Departmental Safety & Health (S&H) Management System standard is to provide NUS departments with a framework for managing safety and health risks arising from activities and workplaces managed by department and to improve its S&H performance.

2 Scope

This standard specifies requirements for a departmental-level S&H Management system, which addresses risks faced by the department, including those undertaken by staff or students outside the workplace managed by the department.

3 Terms and definitions

3.1 Department

Any academic department, research centre/institute, administrative department, hall of residence or residential college.

3.2 External parties

Persons who are not staff or students of the department. Examples of external parties are collaborators, contractors and visitors.

3.3 Hazard

Source, situation, or act with a potential for harm in terms of human injury or ill health, or a combination of these.

3.4 Hazard identification

Process of recognizing that a hazard (3.3) exists and defining its characteristics

3.5 Head of Department (HOD)

A person appointed by the senior management of the University to assume overall management responsibility of a Department (3.1).

3.6 Incident

An event(s) in which an injury or ill health (regardless of severity) or fatality occurred, or could have occurred.

Note 1: An accident is an incident which has given rise to injury, ill health or fatality

Note 2: An incident where no injury, ill health, or fatality occurs may be referred to as a “near-miss”, “near-hit” or “close call”.

Note 3: A dangerous occurrence is an incident which is specified in the First Schedule of the Workplace Safety and Health Act. This is a dangerous occurrence which needs to be reported to the Ministry of Manpower.

3.7 Interested party

A person or group of persons who are concerned with or affected by the S&H performance of a department (e.g. OSHE, regulators, contractors, visitors, collaborators, tenants, staff and students).

3.8 Laboratory

A workplace managed by a Principal Investigator or Lab Supervisor that provides a controlled environment for the purpose of scientific research and experiments. This includes, but is not limited to, all workplaces where chemicals, biological and radioactive materials, lab animals, equipment and machineries are used or installed.

3.9 Management of Change

Any change that can affect or impacts the department S&H hazards and risk. This includes changes to the department organisation structure, personnel, management system, processes, activities, use of materials, etc.

3.10 Non-compliance

Failure to comply, as with a law, regulation or requirement that is applicable to the department's operations and risks.

3.11 Principal Investigator

The primary individual in-charge of a research grant, cooperative agreement, training or public services project, contract, or other sponsored project or directs a research project or program or the lead scientist for a particular well-defined science project, such as a laboratory study or clinical trial.

Note: PI may share or own more than one laboratory unit.

3.12 Risk

A combination of the likelihood of an occurrence of a hazardous event or exposure(s) and the severity of injury or ill health that may be caused by the event or exposure.

3.13 Risk Assessment

A process of evaluating the risk(s) (3.12), taking into account the adequacy of any existing controls, and deciding whether or not the risk(s) is acceptable.

3.14 Supervisors

In academic areas, supervisors include Principal Investigators (PI), class instructors, lab supervisors and directors, or others having direct supervisory authority. For administrative areas, the supervisors are the managers.

3.15 Safety & Health Management system

A management system is a set of interrelated elements used to establish policy and safety and health objectives and to achieve these objectives.

3.16 Safety & Health objective

Safety & Health goals in terms of performance that a Department (3.1) sets out to achieve.

3.17 Safety & Health performance

Measureable results of management of S&H risks.

3.18 Workplace

Any physical location in which work activities are performed (such as laboratories, seminar rooms, chemical/gas storage areas).

NOTE: When giving consideration to what constitutes a workplace, the department (3.1) should take into account the S&H effects on personnel who are, for example, travelling or in transit (e.g. driving, on boats or trains), working at the premises of a collaborator, working at home or conducting field work.

4. S&H Management system elements

4.1 General requirements

The Head of Department shall establish and implement a S&H Management system in accordance with the requirements in this standard.

The department shall define and document the activities and premises managed by the department that are under the scope of this S&H management system.

Head of Department shall form a Departmental Safety & Health Committee (DSHC) and appoint committee members to champion safety and health issues in the department. The committee shall consist of:

- Departmental Safety & Health Committee Chair (DSHC Chair);
- Departmental Safety & Health Coordinator (being a member of DSHC); and
- Representatives from different organizational levels and functions in the department.

DSHC shall drive safety programmes in the department, including the sharing of best practices within the department. The committee shall encourage staff and students to participate in University, faculty or department S&H events.

DSHC Chair has the responsibility and authority for:

- a) ensuring that the S&H management system is established, implemented and maintained in accordance with this standard; and

- b) ensuring that reports on the performance of S&H management system are presented to Head of Department for review and used as a basis for improvement of the S&H management system.

Department Safety & Health Coordinator shall provide guidance, advice and technical assistance to Head of Department and DSHC on all S&H matters. Department Safety & Health Coordinator shall be the key liaison person with OSHE on all safety and health matters pertaining to the department. Detailed roles can be found in the University Safety & Health Policy https://share.nus.edu.sg/corporate/policies/safety_and_health/General-Safety-and-Health-Policies/Policy-general-safety-and-health.pdf

The identity of the DSHC members shall be made known to staff and students of the Department.

4.2 S&H policy

The Head of Department shall define and authorise the department S&H policy.

The Head of Department shall ensure that within the defined scope of its S&H management system (4.1), it:

- a) is aligned with the University's S&H Policies;
- b) includes a commitment to prevention of injury and ill health and continual improvement in S&H management and S&H performance;
- c) includes a commitment to comply with applicable safety and health legislation, guidelines and standards that the Department subscribes to which are related to its S&H hazards.
- d) provides the framework for setting and reviewing S&H objectives;
- e) is documented, implemented and maintained;
- f) is communicated to all persons working under the control of the department with the intent that they are made aware of their individual S&H obligations;
- g) is available to interested parties; and
- h) is reviewed periodically to ensure that it remains relevant and appropriate to the department's operations and S&H risks.

4.3 Planning

4.3.1 Hazard identification, risk assessment and determining controls

The department shall ensure risk assessments are conducted for all its activities in accordance with legal requirements and University requirements.

Risk assessments shall take into consideration:

- a. Non-routine activities in the workplace (such as maintenance of equipment etc);
- b. Activities / experiments conducted after office hours;
- c. Activities organised by the department outside the departmental premises (e.g. field work);
- d. Activities in the department's core/common facilities and teaching laboratories;
- e. Activities of all persons involved in the department's operations including external parties,

- f. Infrastructure, equipment and materials at the workplace, whether provided by the department or others;
- g. Renovation, installations, commissioning/decommissioning of equipment & workplaces, that comes under the control of the department; and
- h. Any applicable legal obligations relating to the S&H risk and implementation of necessary risk controls; and
- i. Human factors and capabilities
- j. Possible emergency situations;

All risk assessments shall be documented and kept up-to-date through periodical review as required by regulation or University standard. When selecting risk controls, the principle of hierarchy of controls shall be used.

Department would need to reassess risks and review established risk controls whenever there is

- a. An incident/accident that occurs in the department;
- b. Changes or proposed changes in the department, its activities or materials; or
- c. Modifications to the S&H management system, including temporary changes, and their impacts on operations, processes and activities, prior to the implementation of the change(s).

For lab-based departments, the department shall ensure that PIs and lab supervisors have established their laboratory SMS to manage risks in their laboratories, workshops or respective areas of control.

The Head of Department shall ensure that workplaces in the department with high hazards and risks are considered when establishing, implementing and maintaining its S&H management system.

DSHC shall advise the Head of Department on high risks areas or activities. For laboratory based departments, the DSHC can review the PIs Laboratory SMS when determining high risk areas or activities. Head of Department shall ensure that these high hazards and risks are considered when establishing, implementing and maintaining its S&H management system.

4.3.2 Legal and other requirements

DSHC shall identify legal and University/Faculty requirements and other S&H requirements that are applicable to its operations. DSHC shall take into account applicable legal requirements as well as NUS S&H policies, and other University/Faculty requirements when establishing its S&H management system.

DSHC shall keep a register of regulations applicable to its operations and S&H risks. DSHC shall keep this information up-to-date and communicate applicable updates to relevant persons in the department (e.g. staff, students, collaborators, and contractors) and other relevant interested parties.

4.3.3 Objectives and programme(s)

The department shall establish, implement and maintain documented S&H objectives and the Head of Department shall endorse these objectives. The S&H objectives shall be aligned to the University / Faculty-level S&H objectives where applicable.

The objectives shall be measurable, where practicable, and consistent with the department's S&H policy.

The department shall establish, implement and maintain a programme(s) for achieving its objectives. Programme(s) shall include:

- designation of responsibility and authority for achieving objectives
- the means and time frame by which the objectives are to be achieved

The programme(s) shall be reviewed at regular and planned intervals, and adjusted as necessary, to ensure that the objectives are achieved.

4.4 Implementation and operation

4.4.1 Resources, roles, responsibility, accountability and authority

Head of Department shall take the ultimate responsibility for S&H and the S&H management system in the Department.

Head of Department shall demonstrate commitment by:

- a) ensuring the availability of resources essential to establish, implement, maintain and improve the S&H management system; and
- b) defining roles, allocating responsibilities and accountabilities, and delegating authorities, to facilitate effective S&H management. Roles, responsibilities, accountabilities, and authorities shall be documented and communicated.

Supervisors shall implement and maintain the S&H management system of the department.

4.4.2 Competence, training and awareness

The department shall ensure that staff, students and any person(s) working under its control, is (are) competent on the basis of appropriate education, training or experience, and associated records are retained.

DSHC shall identify training needs associated with its S&H risk. When defining the training needs of person(s), consideration should be made to the following:

- a) Mandatory training courses under the applicable legal legislations and the NUS Structured Safety Training System (SSTS);
- b) Induction training courses organized at the departments (including University, Faculty, RIRC and Department level);
- c) Training courses to address specific department needs (including laboratory-specific needs or activity-specific needs).

DSHC shall ensure that a system of monitoring the training status of these person(s) is established.

DSHC shall establish, develop and maintain the safety & health trainings that are conducted at the departmental level.

4.4.3 Communication, participation and consultation

DSHC shall establish, implement and maintain a procedure for:

- a) internal communication of S&H information, including hazards and risks and components of the S&H Management system, among the various levels and functions of the department, including addressing communication needed to effectively manage the S&H concerns in core and common facilities and areas;
- b) communication with stakeholder and persons working under its control (e.g. contractors, collaborators, and visitors);
- c) receiving, documenting and responding to relevant communications from external interested parties and regulators. (Communications with regulators shall be coordinated through OSHE.)
- d) updating faculty safety committee, faculty safety officer and OSHE on departmental specific S&H matters.

Where relevant, staff, students and other stakeholders e.g. contractors shall be consulted and invited to participate in

- a) the development and review of department's safety and health policies and objectives,
- b) incident investigation,
- c) risk assessment, and
- d) changes to relevant S&H management system elements that affect their S&H.

4.4.4 Documentation and document control

The S&H management system documentation shall include documents, including records, determined by the department to be necessary to ensure the effective planning, operation and control of processes that relate to the management of its S&H risks.

Documents (including records) required by the S&H management system and by this standard shall be controlled.

The following should be considered in developing the document management system:

- a) documents are approved for adequacy prior to issue;
- b) documents are reviewed and updated to keep them relevant
- c) current revision status of documents are identified;
- d) relevant versions of applicable documents are available at points of use;
- e) documents remain legible, accessible and readily identifiable;
- f) documents of external origin determined by the department to be necessary for planning and operation of the S&H management system are identified and distributed to relevant person(s), their distribution controlled; and
- g) unintended use of obsolete documents are prevented and suitable identification are applied to them if these documents are retained for any purpose.
- h) records are legible, identifiable and traceable.

4.4.5 Operational control

The department shall determine those operations and activities that are associated with the identified risks where the implementation of controls is necessary to manage the S&H risks. This shall include risks arising out of management of change.

The department shall implement and maintain:

- a) operational controls as required by University policies, directives and manuals; the department shall integrate these operational controls into its overall S&H Management system;
- b) controls related to purchased goods, equipment and services;
- c) controls related to transport, import, transfer, handling, storage and/or disposal of materials (including hazardous materials), equipment and services;
- d) controls related to core, shared, common areas or activities;
- e) controls related to contractors, collaborators and other visitors to the workplace;
- f) documented procedures, to cover situations where their absence could lead to non-conformance to the S&H policy, objectives, regulations and standards; and
- g) stipulated operating criteria and conditions to ensure conformance to the S&H policy, objectives, regulations and standards.

All control measures should be communicated to all persons in the department, including staff, students, suppliers, collaborators, contractors and visitors as required.

4.4.6 Emergency preparedness and response

DSHC shall identify potential emergency situations and develop corresponding emergency response plans/procedures to respond to these emergency situations.

In planning its emergency response, DSHC shall take into account of the needs of relevant interested parties, e.g. emergency services and other occupiers in the same building, neighbours. The department shall ensure that its emergency procedures are aligned to the University's Crisis and Emergency Management (CEM) Manual (https://share.nus.edu.sg/corporate/procedures/emergency_mgt/Crisis-Management/manual-crisis-emergency.pdf).

The department shall ensure equipment and facilities are adequate and available to respond to emergency situations in the workplace.

The department shall

- a) periodically test the procedure(s) to respond to emergency situations, where practicable, involving relevant interested parties as appropriate; and
- b) periodically review, where necessary, revised its emergency preparedness and response procedure(s), in particular, after periodical testing and after the occurrence of emergency situations (4.5.2)

4.5 Checking

4.5.1 Performance measurement and monitoring, Evaluation of compliance

A. Performance measurement and monitoring

DSHC shall establish, implement and maintain a procedure(s) to monitor and measure its S&H performance(s) on a regular basis.

Where applicable, this procedure(s) shall provide for:

- a) both qualitative and quantitative measures, appropriate to the needs of the department
- b) monitor the extent to which the department's S&H objectives are met;

- c) monitor the effectiveness of controls (for health and safety), such as through DSHC inspection of the workplaces;
- d) proactive measures of performance that monitor conformance with the S&H programme, controls and operational criteria established by department;
- e) reactive measures of performance that monitor ill-health, incidents (including accident, near-misses, etc) and other historical evidence of deficient S&H performance; and
- f) recording of data and results of monitoring and measurement sufficient to facilitate corrective and preventive actions analysis.

DSHC shall review the performance monitoring and measurement results related to the departmental S&H performance.

If equipment are required to monitor or measure performance, the department shall ensure that these equipment are calibrated and maintained. Records of calibration and maintenance activities and results shall be retained.

B. Evaluation of compliance

Consistent with its commitment to compliance, DSHC shall establish, implement and maintain a procedure(s) for periodically evaluating compliance with legal and University requirements and other requirements that are applicable to their operations and risk (4.3.2).

DSHC shall keep records of the results of the periodic evaluations.

4.5.2 Incident investigation, Non-compliance, Corrective action and Preventive action

A. Incident Investigation

DSHC shall ensure that:

- a) staff and students are encouraged to report incidents arising out of departmental activities
- b) incidents are investigated in a timely manner and results are documented in accordance to University requirements;
- c) appropriate corrective and preventive measures are identified, effectively adopted and implemented in a timely manner;
- d) results or lessons learnt from incidents are communicated to relevant stakeholders; and
- e) all associated records (including results of incident investigation) are maintained.

DSHC shall

- a) After an occurrence of an accident or dangerous occurrence
 - i. To conduct an inspection of the workplace and
 - ii. Discuss observations and corrective/preventive actions; and
- b) For all incidents,
 - i. review the results of the incident investigation to identify and address any underlying S&H deficiencies at the department level; and
 - ii. review adequacy of department's response and mitigation of the incident.

B. Non-compliance, corrective action and preventive action

DSHC shall ensure that:

- a) Non-compliances are identified, investigated and results are documented;
- b) Appropriate actions are identified and adopted to mitigate the S&H consequences;

- c) The cause(s) is determined and actions are taken to avoid their recurrence
- d) Lessons learnt from the non-compliances are communicated to affected parties in the department; and
- e) All associated records are maintained.

Risk assessments shall be conducted prior to implementation of the corrective action and preventive action if these action(s) identifies:

- a) new or changed hazards; or
- b) the need for new or changed controls.

DSHC shall review the results of the investigation to identify and address any underlying safety & health deficiencies at the department level.

4.5.3 Internal audit

The department shall ensure that internal audits of the S&H management system and that of PIs (for laboratory based departments) are conducted at planned intervals to

- a) determine whether the S&H management system:
 - 1) conforms to the requirements of this S&H standard; and
 - 2) has been properly implemented and maintained; and
 - 3) is effective in meeting the department's S&H policy and objectives;
- b) provide information on the results of internal audits to the Head of Department.

Audit procedure(s) shall be established, implemented and maintained by the DSHC and it shall address:

- a) the responsibilities, competencies, and requirements for planning and conducting audits, reporting results and retaining associated records; and
- b) the determination of audit criteria, scope, frequency and methods.

Selection of auditors and conduct of audits shall ensure objectivity and the impartiality of the audit process. Auditors shall be competent in conducting S&H audits.

4.6 Management Review

Head of Department and the DSHC shall review the department's S&H management system, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness. Reviews shall include assessing opportunities for improvement and the need for changes to the S&H management system, including the S&H policy and S&H objectives. Records of the management reviews shall be retained.

Input to management review shall include:

- a) results of internal audits and evaluation of compliance with applicable legal and University requirements and with other requirements to that is applicable to the department's operations and risks;
- b) the results of participation and consultation (4.4.3), such as matter arising from the DSHC;
- c) relevant communication(s) from University's management, OSHE and other departments;
- d) Results of previous audits (including PI and DS&H SHMS certification audits conducted by OSHE)
- e) the S&H performance of the department (such as incident and accident statistics);
- f) the extent to which S&H objectives have been met;

- g) status of incident investigations, corrective actions and preventive actions;
- h) follow-up actions from previous management reviews;
- i) changing circumstances, including developments in legal and other requirements related to S&H; and
- j) recommendations for improvement.

The output from management reviews shall be consistent with the department's commitment to continual improvement and shall include any decisions and actions related to possible changes to:

- a) S&H performance;
- b) S&H policy and objectives;
- c) Resources; and
- d) Other elements of the S&H management system.

Relevant outputs from management review shall be made available for communications and consultations.