



**Office of Safety,
Health &
Environment (OSHE)**

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OSHE, NUS**



**Massachusetts
Institute of
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**Environment, Health
and Safety Office
(EHS)**

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EHS, MIT**

**NUS-MIT Safety and Health Management System
Peer Review Program—Global Collaboration, Local
Safety Excellence**

ABSA Conference 2011, 1 November 2011



Objectives

- **Why did NUS & MIT decide to do a peer review?**
- **How did we do it?**
- **What happened?**
- **What's next?**

Why did NUS & MIT do a peer review?

Why NUS & MIT do a safety peer review?

1. Existing strategic research collaborations between the two institutions

- **Our Research Program are increasingly**
 - *Interdisciplinary & Multidisciplinary*
 - *Multi-institutional (local & international)*
- **Our Collaborators have varying**
 - *Approaches to safety and health management*
 - *Cultural & regulatory requirements*
 - *Expectations in terms of providing training, safety services, incident reporting, etc*

Why NUS & MIT do a safety peer review?

2. **Stakeholder assurance of collaborating institution's safety and health management systems**
3. **Sharing of safety and health best practices and programmes.**
4. **Fulfilling third party audit requirements – MIT**

International Federation of Biosafety Associations - Mission

“The offers a unique opportunity for biosafety professionals of different nations to coordinate and develop a global biosafety agenda aimed at *international harmonization, sharing of information, development of common standards and collaboration in all aspects of biological safety*. It's mission is to support and promote biosafety on a national and international level through collaboration among national and regional biosafety organizations worldwide.”

What did we do?

We used a systems approach to develop the peer review program



Goal & Objectives

Peer Review Programme that would achieve **systematic improvements** in the University's Safety & Health Management System

Peer Review Criteria

- Systems audit versus compliance audit?
- Against a recognized standard or internal standards?

Peer Review Scope

- Health, Safety, Environment, Security, etc?
- Systems or Programs?

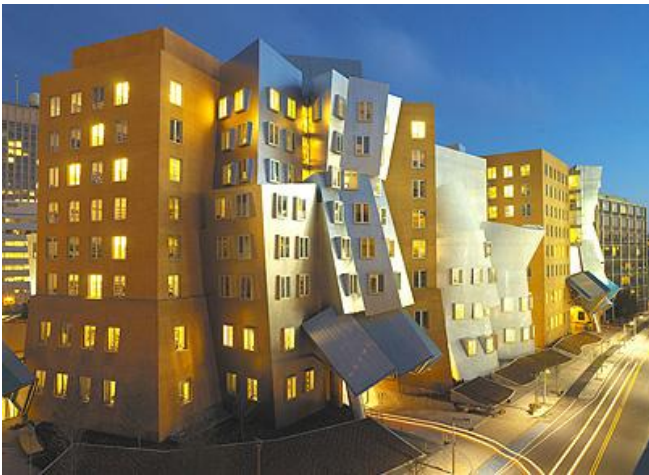
Peer Review Methodology

- Quantitative or Qualitative findings?
- Reviewer Qualifications

What we found ?

Definitions

1. Peer: *one that is of equal standing*
2. Peer review: an assessment performed by one that is of equal standing
3. As opposed to a regulatory inspection, certification, internal audit, or compliance inquiry



➤ ***No International Standard for Safety & Health Management System In Universities***

- CWA 15793:2008 – “Laboratory biorisk management standard”
- Generic safety and health management system standards
- Working document “Safety & Health Management Systems for Institutes of Higher Learning – Specifications & Guidelines for Implementation”

➤ ***No International Standard for Conducting Safety Peer Reviews In Universities.***

- Association for Assessment & Accreditation of Laboratory Animal Care International (AAALAC) International accreditation program
- CSHEMA – “Complete Environmental Health & Safety Program”
- ISO 19011:2002 “Guidelines for quality and/or environmental management systems auditing”

Generic Safety & Health Management System Standards

International Labor Organization

- “Guidelines on occupational safety and health management systems”

UK - BS OHSAS 18001:2007

- “Occupational Health and Safety Management Systems Requirements Standard”

UK - Health & Safety Executive

- “HSG65 Successful health and safety management”

Australia - AS/NZS 4801:2001

- “Occupational health and safety management systems - Specification with guidance for use”

USA - ANSI/AIHA Z10-2005

- “American National Standard for Occupational Health and Safety Management Systems”

Peer Review Program by Australian Universities

Australasian University Safety Association (AUSA) PPI Benchmarking Survey 2008

The University of Sydney

Scores	Maximum	Sydney	NSW	Go8	Total
Marks	140.0	101.0	100.4	106.7	96.4
1 Policy	24.0	18.0	18.7	18.3	17.4
1.1 Does the organisational OH&S Policy include accountability, responsibility and authority statements aimed at?	4.0	4.0	3.9	3.9	3.7
1.2 What is the highest level of executive management involvement on the OHS Policy Committee?	4.0	3.0	3.0	2.5	2.6
1.3 What is the average attendance rate of members at OHS Policy Committee meetings?	4.0	4.0	3.6	3.3	3.1
1.4 How are OHS resources allocated across the University when initiating new works, business initiatives or undertaking organisational changes?	4.0	2.0	2.2	2.0	2.2
1.5 What is the lowest organisational level that the OHS resource budgets are allocated?	4.0	1.0	2.4	2.9	2.6
Is there a system in place for the development of workplace statements (policies, procedures, handbooks, guides, SOPs) for managing specific safety					
1.6 and health risks?	4.0	4.0	3.6	3.8	3.2
2 Planning	32.0	20.0	21.2	23.4	21.1
2.1 At what organisational level(s) are OHS risk management principles integrated into the University's planning framework?	4.0	3.0	2.4	2.9	2.5
2.2 At what organisational level is the OHS Strategic Plan being driven/coordinated?	4.0	3.0	3.3	3.4	3.2
2.3 At what organisational level are a documented OHS Business Plan /Action Plan in place?	4.0	2.0	2.4	3.0	2.4
2.4 Do OHS Management plans contain the following criteria?	4.0	2.0	3.2	3.4	3.2
2.5 How is OHS performance measured?	4.0	3.0	2.9	3.3	2.8
2.6 How often are OHS targets set?	4.0	3.0	2.2	2.4	2.3
2.7 How often are OHS targets reviewed?	4.0	3.0	2.6	3.1	2.7
2.8 How often do OHS professionals have input into design phase of all new or refurbished spaces?	4.0	1.0	2.3	2.0	2.0

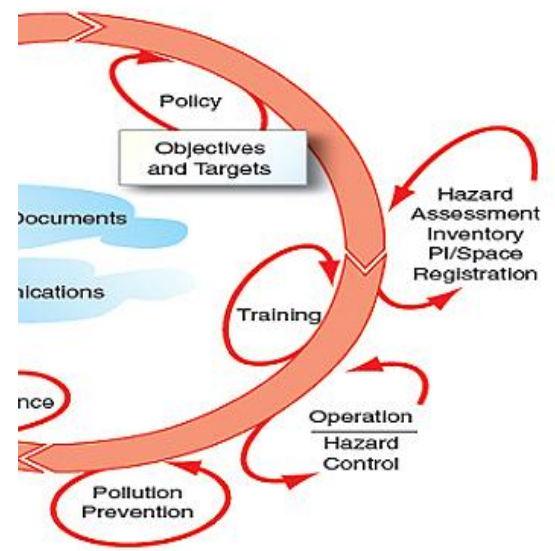
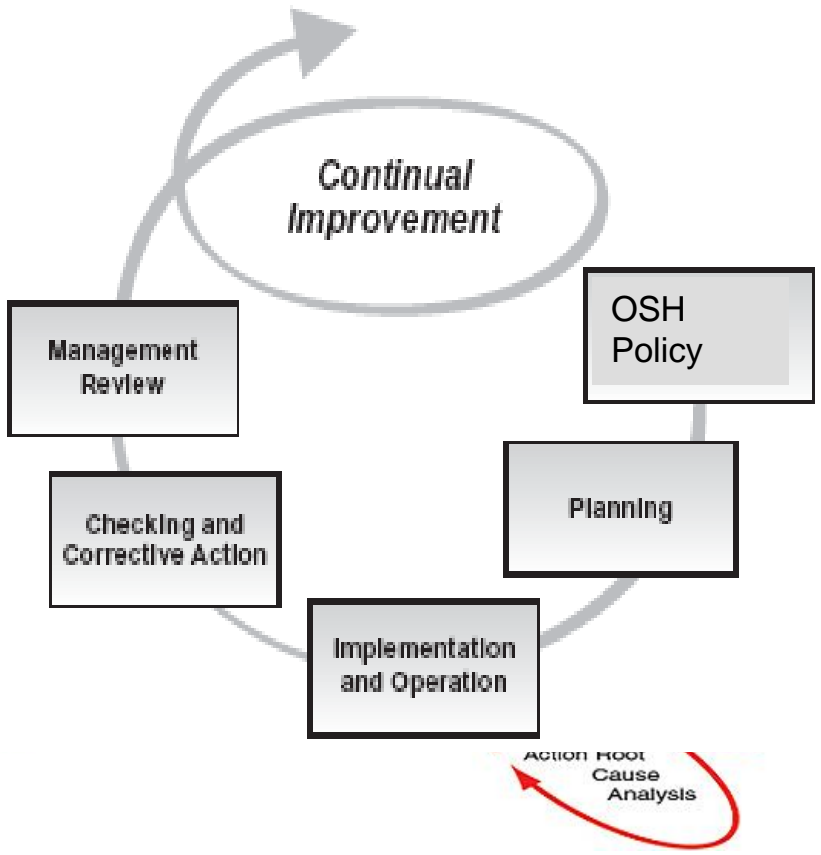
NUS & MIT Safety & Health Management System, “Plan-Do-Check-Act (PDCA) Cycle” for Management Systems



Office of Safety, Health & Environment (OSHE)



Massachusetts Institute of Technology
 Environment, Health and Safety (EHS)



Continual Improvement

Policy

Management Review

Construction Safety Programme

Radiation Safety Programme

Fire & Life Safety Programme

Planning

Physical Safety Programme

Typical Risk Sectors In the University

Biosafety Programme

Checking & Corrective Actions

Chemical Safety Programme

Hazardous Waste Management

Occupational Health Programme

Implementation & Operation

What we decided ?

Peer Review Schedule

Mar 15-19, 2010:

NUS Team (OSHE + EPH + FOE) to MIT



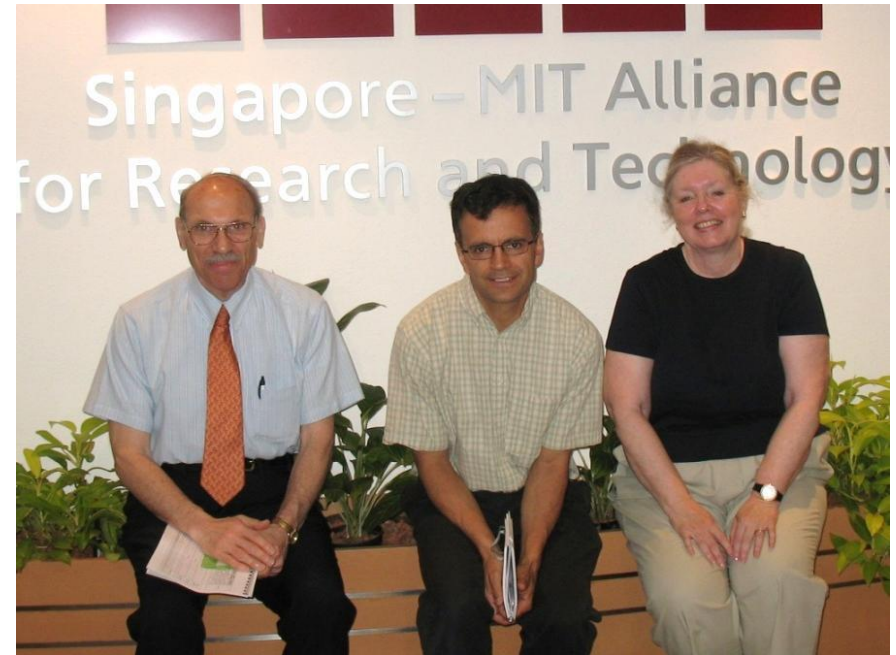
April 19-23, 2010

MIT (EHS Office) to NUS



MIT Peer Review Team

- **Lou DiBerardinis**
Director, EHS Office
- **Claudia Mickelson**
Deputy Director, Biosafety
- **Andrew Kalil**
Industrial Hygiene Officer



NUS Peer Review Team

- Mr. Saravanan Gunaratnam
Head, OSHE
- Ms. Gisela Ho
Senior Safety & Health Manager, OSHE
- Ms. Angela Tan
Manager (Management Systems), SHMD,
OSHE
- Mohammad Fazulee Bin Abdul Rahman
Fire & Life Safety Officer, OSHE
- Mr Wan Nian feng
Assistant Manager, Faculty of
Engineering

- Prof. Chia Sin Eng

Deputy Head of Dept of Epidemiology and
Public Health (EPH), Yong Loo Lin School
of Medicine (SOM)

- Ms. Vivian Ng

Senior Laboratory Technologist, EPH, SOM



Assessment Scorecard

Element	2	Hazard Identification and Risk Assessments	Evidence, References	Score
	The procedure (s) for hazard identification and risk assessment shall take into account:			
Method Statement	a	Routine and non-routine activities		
Method Statement	b	Activities of all persons having.....involved in the operations should be considered in the planning process.		

- Review Method Statement *requirement* (RMS) – Score of “0”
- Meet Method Statement *requirement* (MMS) – Score of “1”
- Exceed Method Statement *requirement* (EMS) – Score of “2”

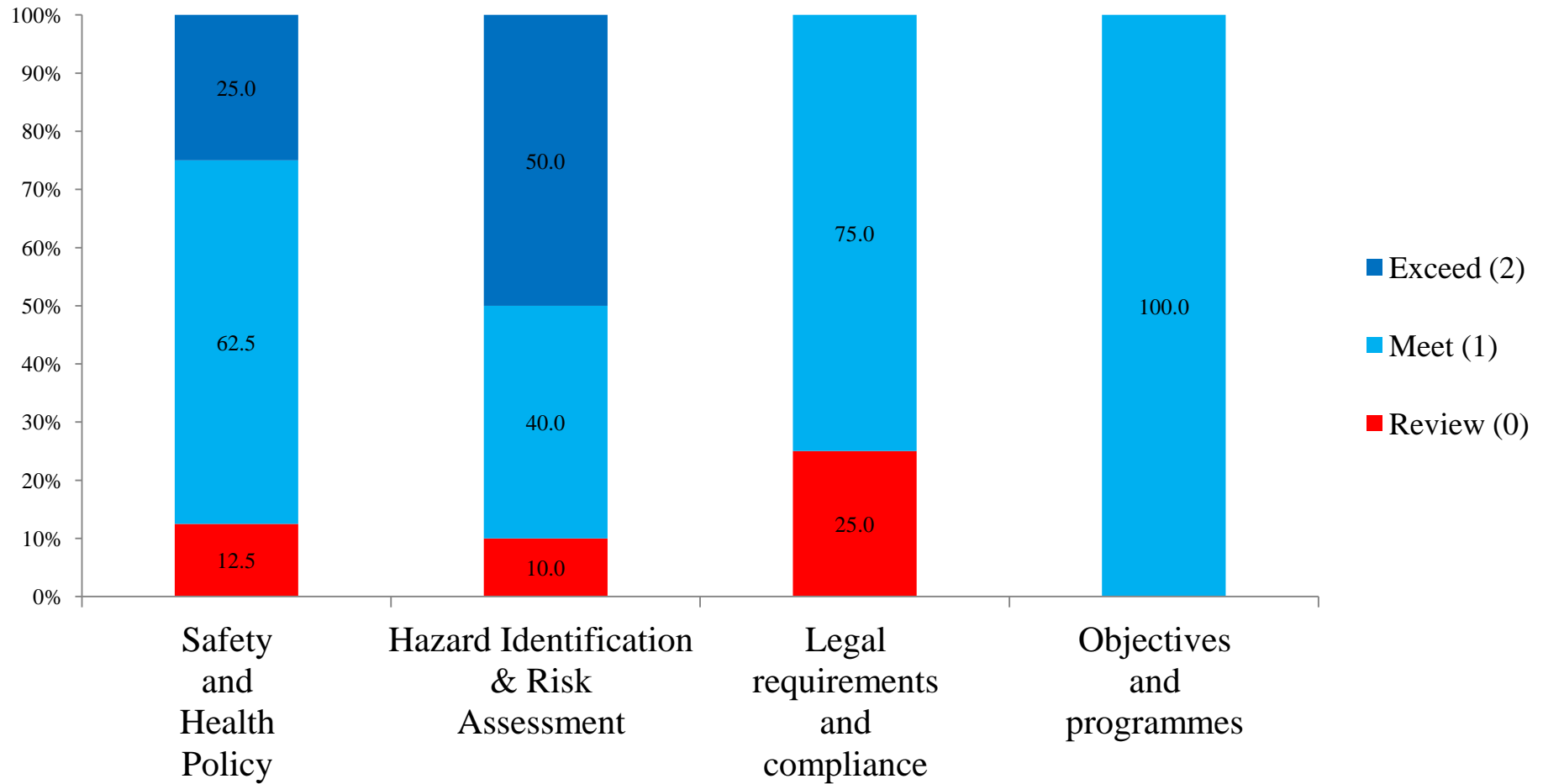
Qualitative Findings

Element	Assessor Findings	Recommendations (for continual improvement)
Hazard Identification and Risk Assessments	<ol style="list-style-type: none">1. MIT's Universe of laboratories is projected to increase rapidly with new research buildings (e.g. Koch Institute) & collaborations.<ul style="list-style-type: none">• Collaborating institutions or departments have varying safety & health standards or expectations of MIT researchers.	<ol style="list-style-type: none">1. MIT should consider reviewing its policy and approach with regards to cross institutional based collaborative research, in particular if PIs are operating laboratories not owned by MIT.2. The following recommendations are for MIT consideration<ul style="list-style-type: none">• The scope of the PI Space Registration could be extended to capture laboratory space supervised by MIT PIs in laboratories that are not owned by MIT.

Executive Summary

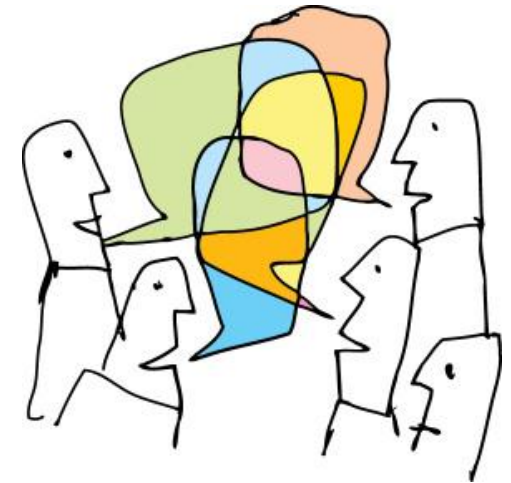
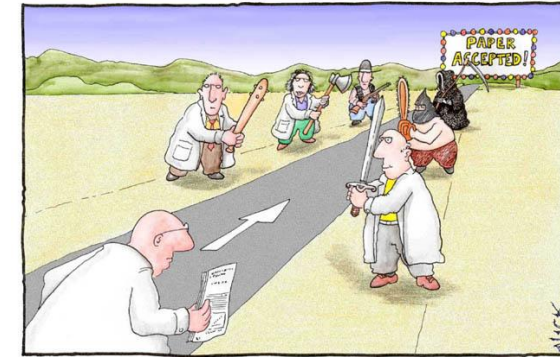
SHSM Element	Percentage of method statements that require review (%)	Percentage of method statements that meet or exceed expectations (%)	Key observations and areas for improvement
Hazard Identification and Risk Assessments (HIRA)	10%	90%	<p>HIRA should be conducted at the protocol level for all experiments, not just limited to those involving biological and radioisotopes.</p> <p>Risk assessment should also incorporate a quantitative component for more effective classification of risks.</p> <p>HIRA should also be carried out for researchers working in non MIT owned laboratories.</p>

Figure 1 Percentage of scores for Planning Elements



Many other benefits.....

1. Training opportunities for employees
2. Review Efficiencies
 - Review approach for development, deployment and monitoring of programmes
3. Networking, collaboration and partnerships



Conclusion

- 1. Critical Need to Formalize an international standard for University safety and health management.**
 - Systematic & uniform approach for managing safety & health in Universities.
 - Stakeholder confidence for multi- & cross institutional research is addressed
- 2. Peer Reviews are a highly effective tool to evaluate and enhance University's SMS.**
 - Review of the processes and not just the endpoint
 - Sharing of safety and health best practices

Recruitment Notice:

Safety & Health Professionals
for Office of
Safety, Health, Environment, NUS



**A Leading Global University
Centered in Asia**



***A Comprehensive Research-
Intensive University with an
entrepreneurial dimension
<http://www.nus.edu.sg/>***

Positions Available

(Associate Director, Senior Manager, Manager):

A. Biosafety Professional

B. Radiation Safety Professional

C. General Safety & Health Professional

D. Institutional Hazardous Materials & Waste Management Programme

- **Preferably holding relevant qualifications in safety e.g. OHSAS 18001 Lead auditor, CBSP, RBP, CIH, CHP**
- **Attractive Relocation Packages would be provided to successful applicants**

Application Process

- **Submit CV and resume to oshsg@nus.edu.sg**
- **More information about OSHE, the job duties and requirements can be found at:**
 - <http://www.nus.edu.sg/osh>
 - <http://www.nus.edu.sg/careers/>
- **More information about Singapore and NUS**
 - <http://www.sg>
 - <http://www.nus.edu.sg>

