

# Internal Audits for Safety of Chemical Laboratory

## 1. Principle

To keep up with the fast developing technology and highly aggressive industrial competition, laboratories are essential for various industries, educational institutes and government sectors. A good laboratory enhances research and development as well as analytical and quality control work to maintain the superiority of raw materials and products in order to have ability to compete in the world market. However, a laboratory is known to be filled with several types of hazards; physical, chemical or biological. Particularly chemicals, while they are beneficial, they are also harmful to the health of people and environment, if not being handled properly. If laboratory personnel don't understand about hazards within their workplace, they will work on a high risk basis. Accidents and health problems are expensive, they result in poor respect for companies, and therefore they should be avoided as much as possible. The more competitive the country, the fewer accidents they have. Accident prevention procedures are a key to minimizing laboratory accidents and injuries. Internal safety audit not only helps prevention of accidents and injuries, but personnel who participate in laboratory inspection will gain knowledge and understand the hazards involved as well as appreciate in finding any protection for themselves and others. Developing of inspection program or audit checklists requires that you ask yourself a number of questions related to hazards in your laboratory and their definite answer can be used to improve the safety in your laboratory. Moreover, it makes everyone realizes that "Safety is a team work".

## 2. Objectives

Increase personnel's knowledge for the following:-

- 2.1 Developing checklists for internal laboratory safety audit and capable to use those checklists as self-inspection effectively.
- 2.2 Realization of hazards and able to pinpoint hazardous situations/conditions within laboratories.
- 2.3 Learning a process of laboratory safety self-audit.
- 2.4 Improving safety and quality of laboratories and also increase efficiency and quality of life of laboratory personnel as well as minimizing problems on health and environment.

## 3. Target Customer Group

Scientists, laboratory managers, laboratory personnel or others involved working in laboratories from public and private sectors.

#### 4. The lecturers

Professional of Department of Science Service and professionals from other agencies.

#### 5. Topics

5.1 Rationale for a laboratory internal audit program	1.5
hrs	
5.2 Identification, evaluation and control of hazards and energy usage	1.5 hrs
5.3 Laboratory safety program	1.5 hrs
5.4 Development of the laboratory internal audit program	1.5 hrs
5.5 Structure of the internal audit process	1.5 hrs
5.6 Elements and development of checklists	1.5 hrs
5.7 Case Study, questions & answers	3 hrs

#### 6. The training method

Lecturing and Coaching 12 hrs

#### 7. Duration of the training course

2 day

#### 8. Training facility

Institute of Analytical Chemistry Training Building  
Bureau of Laboratory Personnel Development  
Department of Science Service  
Ministry of Science and Technology  
Rama 6 Road, Ratchathewi, Bangkok 10400 THAILAND  
Tel. 02 201 7435, 02 201 7449 Fax. 02 201 7461

#### 9. Budgets

Fee ??? Baht/person

#### 10. Certification

Participants need to attend more than 75 % of class session to be eligible for the certificate of completion.

**Agenda for Training on  
Internal Laboratory Safety Audit  
At Institute of Analytical Chemistry Training Building  
Bureau of Laboratory Personnel Development  
Department of Science Service**

Day one:-

Time	Topic	Lecturer
08.30 – 09.00 hr.	Register	
09.00 – 10.30 hr.	Advantages of internal laboratory safety audit	Dr. Prapaipit Ternai
10.30 – 12.00 hr.	Laboratory Safety Program <i>(What is it? How is it importance? Who is responsible? Important elements, etc.)</i>	Dr. Prapaipit Ternai
12.00 – 13.00 hr.	Lunch	
13.00 – 14.30 hr.	Identification, evaluation and control of hazards and energy usage	Dr. Prapaipit Ternai
14.30 – 16.00 hr.	Process in preparing “internal lab safety audit” program <i>(frequency of inspection, preparation for initial inspection, what required to be inspected, recording and record keeping, etc.)</i>	Dr. Prapaipit Ternai

**Note:** Breaks at 10.30-10.45 hrs and 14.30-14.45 hrs

**Day Two:-**

<b>Time</b>	<b>Topic</b>	<b>Lecturer</b>
08.30 – 09.00 hr.	Register	
09.00 – 10.30 hr.	Structure of the internal laboratory safety audit program	Dr. Prapaipit Ternai
10.30 – 12.00 hr.	Elements and development of checklists	Dr. Prapaipit Ternai
12.00 – 13.00 hr.	Lunch	
13.00 – 16.00 hr.	Case Study, questions & answers	Dr. Prapaipit Ternai Dr. Natthakarn Ketkoom

**Note:** Breaks at 10.30-10.45 hrs and 14.30-14.45 hrs