IUPAC-UNESCO-UNIDO Safety Training Program
Workshop and Poster Session
IUPAC General Assembly and Congress
Ottawa, Ontario, Canada
13 August 2003

13:00 – 16:00  Workshop
Brunswick Room, Westin Hotel

13:00  Introductory Remarks
Dr. A. Nelson Wright, Chairman, IUPAC Committee on Chemistry and Industry
Dr. Alexandre Pokrovsky, UNESCO

13:15  Overview of the IUPAC-UNESCO-UNIDO Safety Training Program
Dr. Mark C. Cesa, Coordinator, Safety Training Program

Reports from Safety Training Program Fellows

13:45  Ms. Esma Toprak
Bogazici University, Istanbul, Turkey

14:15  Mr. Kelvin Khisa
UNIDO National Cleaner Production Centre, Nairobi, Kenya

14:45  Mr. Tersoo Charles Gwaza
Shell Petrochemical Development Company, Port Harcourt, Nigeria

15:15  Discussion
Status and Possible Improvements of the Program

16:00  Adjourn

16:30 – 18:00  Poster session
Ottawa Congress Centre, Congress Halls C-D-G-H

Financial Support from UNESCO and the IUPAC Committee on Chemistry and Industry is gratefully acknowledged.
Purpose of the Safety Training Program

Reinforce concept of corporate responsibility and accountability in the industrially developing world.

Narrow gaps between developed and developing countries in safety education, research and implementation of technical measures.

Promote interactions to disseminate state-of-the-art knowledge on safety and environmental protection in chemical production.

Allow experts from developing countries to learn about safety and environmental protective measures by visiting and working in plants of IUPAC Company Associates in the industrialized world.
Topics Covered in Training Program

- Process Safety Management (PSM)
- Environmental Protection
- HAZOP/HAZAN Analysis
- Legislative Measures and Interactions Between Industry, Universities, Government, and the Public
- Emergency Planning and Model Studies
- Responsible Care and its Relevance to Developing Countries
- Integrated Approach for Safety, Health, and Environment (SHE) At Unit and Company Levels
- Training of University Teaching Staff in SHE
- ISO 9000 and 14000 Series
- Material Safety Data Sheets (MSDS)
Criteria for Selection of Trainees

Professional scientists and engineers who are currently:

Involved at a supervisory or managerial level in chemical companies, governmental or scientific institutions, or universities;

Engaged in aspects of safety and environmental protection in chemical, pharmaceutical, or biotechnological production or in the teaching of these fields;

Influential in the safety practices in their places of employment and elsewhere within their home country.
Responsibilities of Trainees

Utilize learnings within their place of employment

Disseminate knowledge gained in the program throughout home country

Establish new programs to improve safety practices within home country.

File report with IUPAC, UNESCO, and UNIDO

Evaluation of training - host company, content of program, usefulness

Activities to be undertaken to apply training after return home
Benefits to Host Companies

**Information exchange** between trainee and employees

Interactions beyond safety training - select trainee with similar research interests or potential for future collaboration

**Publicity** - demonstrate leadership in health, safety and environment
- Shareholders
- Public relations
- Internal - increasing employee awareness and commitment to safety
- Publications in news media, Internet, company publications

**Host Companies:** BP Chemicals (USA), Bristol-Myers Squibb (USA), Sasol (South Africa), Sankyo (Japan)
Trainees to Date

**Ms. Esma Toprak** - Director of Chemical Engineering Laboratories, Bogazici University, Istanbul, Turkey
Trained at BP Amoco Chemicals Research Laboratory and Petrochemical Plant, Chicago, IL and Green Lake, TX

**Mr. Tersoo Charles Gwaza** - Shell Petrochemical Development Company, Port Harcourt, Nigeria
Trained at Sasol, South Africa

**Mr. Kelvin Khisa** - UNIDO National Cleaner Production Centre, Nairobi, Kenya
Trained at Sankyo, Japan
Trainees in 2000

Prof. Ali A. El-Emam - Dean of Faculty of Pharmacy, University of Mansoura, Egypt
Trained at Bristol-Myers Squibb Corp. Laboratories and Production Facilities in New Jersey, USA
Focus of Training - Safe handling of laboratory chemicals, medical surveillance of employees, crisis management
Applications of Training - Establishment of nationwide safety programs via Egyptian Ministry of Environmental Affairs (with UNESCO funding)
Trainees in 2002

Mr. Zhang GuoHong,
Sinopec, China

Trained at BP Chemicals, USA
Focus: Occupational Health and Safety
Applications: Numerous magazine articles on industrial safety; HAZOP audits and analysis; incident investigations and root cause analysis
Safety: Closing the world gap

BP AMOCO is part of a programme aimed at closing the final safety gap between developed and developing nations. Led by IUPAC (International Union of Pure and Applied Chemistry), it promotes interaction, disseminates state-of-the-art techniques and encourages accountability.

In its role as a BP AMOCO company associate, BP Amoco recently sponsored the visit to the US of an IUPAC officer, Esma Toprak, chief chemical engineer at Bogazici University in Istanbul, Turkey. She visited BP Amoco sites in Naperville, Illinois, and Green Lake, Texas, shadowing referees, HSE and engineering groups during her two-week stay. The Naperville and Green Lake sites were chosen to show her aspects of HSE both at the corporate, commercial and plant levels.

Esma Toprak on her recent US visit

Toprak was amazed by what she saw. "We are really behind in safety and health in Turkey. We don't have strict safety laws as you have here." She was especially impressed with the safety manuals outside each laboratory door. Site safety councils and emergency response teams were also new to her.

The fact that Turkey suffered a devastating earthquake in August 1999 was never far from her mind. "It was a horrible experience. It makes safety training much more important."

Upon her return home, Toprak will reorganize the student laboratories to comply with international regulations on safety, and will help her department review and supplement necessary safety measures and required equipment. Toprak is also planning to teach courses on safety to students in her department, as well as other departments and institutions in Turkey.


Keeping an eye on the road

Safety at work is not a luxury everyone has, but a BP backed scheme is trying to change that.

You never can be sure who’s watching you, or how routine behaviour could affect a co-worker a few feet away or a stranger on the other side of the road.

Consider the motorists arriving for work recently at BP's Naperville, Illinois, complex or the BP Chemical complex in Lima, Ohio, who couldn't have guessed their driving habits were being observed and might save a life in China.

But Zhang Guofeng was watching. "Every driver would stop at every stop sign and look around in all directions even if no other car was approaching," Zhang says in obvious awe. "Every driver! Each one! All of them!"


They are all part of a safety training programme that encourages businesses in industrialised countries to share knowledge about health, safety and the environment (HSE) with developing nations.

Zhang, a senior engineer in the Safety Technical Department of China Petrochemical Company (SINOPET), lost his father in a construction accident and bears his own scars from work incidents. His visit to BP's facilities was his first trip outside of China and during that time he learned how BP deals with HSE issues on a daily basis.

One aspect that impressed Zhang is "the way that your goal of getting HSE right is part of everything." He also notes the speed with which issues are resolved. "You have extraordinarily productive meetings and everyone becomes involved, not just your leaders."

The engineer says he will take his new safety education back to China and encourage similar practices within his company. He also hopes to impart some of the new found knowledge to Chinese industry as a whole through newspaper and magazine articles.

"I also want to tell that BP is a very good company and treats its workers well," he says. "And I want to say that BP people are very kind and helpful. I want to say that from my heart."

Words: Tom Sellar

For Further Information:


- General Information
- Program Brochures
- Application Forms
- Links to Trainee Reports
- Links to Published Articles on the Program
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