Safety Training Program Workshop
42nd IUPAC Congress
Glasgow, UK
4 August 2009

Mark Cesa, STP Coordinator and 2006-9 Chair, COCI

Summary Report

This symposium was the fourth in a series of Safety Training Program Workshops held in conjunction with the biennial IUPAC Congresses and General Assemblies. It was held at the Congress site in Glasgow on the afternoon of 4 August 2009.

The IUPAC Safety Training Program, STP, allows safety experts from developing countries to learn more about safety and environmental protective measures by visiting and working in plants of IUPAC Company Associates in the industrialized world. IUPAC has established the Safety Training Program to disseminate state-of-the-art knowledge on safety and environmental protection in chemical production. Fellows of the Safety Training Program, after completion of training, are expected to use their learnings in their home countries to improve health, safety and environmental practices in their workplaces, communities, and regions.

Six STP Fellows presented oral papers and posters at the Congress on aspects of their work in their home countries. In addition, the workshop included lectures by two regional speakers who are experts in chemical health, safety and environmental matters.

Following is a summary of the presentations at the workshop.

1. The IUPAC Safety Training Program, Mark Cesa, INEOS USA LLC.

Mark Cesa, coordinator of the IUPAC Safety Training Program and 2006-2009 Chair of the IUPAC Committee on Chemistry and Industry, gave an overview of the Safety Training Program to set context for the presentations at the workshop. Selection criteria for trainees were reviewed, brief biographies of Fellows were given, and acknowledgments were made to the Company Associates who have acted as Host Companies for the STP, including BP Chemicals (USA), Bristol-Myers Squibb (USA), Sasol (South Africa), Sankyo Co. (Japan), Mitsui Chemical Co. (Japan), AstraZeneca (UK), and Novozymes (Denmark). Previous support from UNESCO and UNIDO was also acknowledged. The abstract and presentation are attached here.

See 01_Cesa abstract.pdf
See 02_Cesa presentation.pdf

2. Professional Responsibility in Health and Safety, Steve Harper, Health and Safety Executive, UK.

Steve Harper presented the keynote address to the symposium. He used the example of production of biodiesel fuel as a context for describing processes for addressing and mitigating hazards in production, in government regulation, and for training of staff. Incidents were used to describe the main physical and chemical hazards.

See 03_Harper abstract.pdf

3. Managing Chemical Products Safely in Supply Chains, Christopher J. P. Eacott, Stewardship Solutions Ltd., UK.

Chris Eacott discussed the safe manufacture, handling, use and disposal of chemicals as prescribed by Responsible Care, the chemical industry product stewardship program. A process for assessing hazards and risks can lead to an effective program of management of chemicals through their life cycle. Recommendations were made to assembling a group of employees to develop and administer safe manufacture, handling, use and disposal procedures.

See 04_Eacott abstract.pdf

4. Improving HSE Culture in China, Zhang Guo-Hong, Industry/Safety Training Program, China.

Mr. Zhang made an oral presentation and a poster for the workshop, both of which are attached here. He discussed ways of moving forward on developing a culture of health, safety and environmental protection. Steps from Awareness / dependence, to Skills / independence, to Excellence / inter-dependence, to World Class were described. These procedures must be congruent with local culture in order to succeed.

See 05_Zhang abstract.pdf
See 06_Zhang presentation.pdf
See 07_Zhang poster.pdf

5. Promoting Health, Safety and Environmental (HSE) Culture – An Active Ingredient in Industrial HSE Management Success, Godfred A. Nyarko, Tema Lube Oil Company Ltd., Ghana.

Godfred Nyarko also spoke about instituting health, safety and environmental practice in an industrial setting, including the importance of developing a culture of HSE. This culture includes active monitoring and assessment by management. Activities including Toolbox Talks, Safety Walks, HSE Committee Meetings, Emergency Drills and Potential Incident Reporting were promoted at his workplace. Also, an HSE Potential Incident Reporting Award Scheme has been instituted to recognize and encourage staff to continue reporting. These activities have resulted in an improved HSE work culture, wider awareness of staff, visitors and contractors on issues regarding HSE by significant reduction in accident cases.

See 08_Nyarko abstract.pdf

6. Safety Training Programme – Learnings, Applications, Challenges and Path Forward, Gursharn Singh Grover, National Chemical Laboratory, India.

Dr. Grover gave a review of his training at Novozymes A/S in Denmark. Topics covered at Novozymes included risk assessment studies, use of MSDS, the systems of crisis management and early recovery etc. At his workplace in the National Chemical Laboratory, Pune, India, safety audits, improved accident investigation strategy, and risk assessment have been instituted. A better and more efficient solvent storage and disposal system is

being launched. Many other safety practices are being strengthened. Dr. Grover also provided a review of workshops and lecture programmes organized in colleges, universities and national laboratories in India. Such workshops and lecture programmes have led to a quality improvement in the general awareness for safety and procedures for handling and use of chemicals. Dr. Grover also supplied a series of suggestions to improve the STP as well as the application of learnings when Fellows return home.

See 09_Grover abstract.pdf
See 10_Grover IUPAC presentation final.pdf

Following the presentations, posters were presented at a general poster session in the evening. In addition to Mr. Zhang, the following STP Fellows presented posters.

7. Integrating Safety at an Oil & Gas Production Facility: Loop from IUPAC-UNESCO-UNIDO Fellowship Experience, Tersoo Gwaza, Shell Petroleum Development Company, Nigeria.

Mr. Gwaza's poster described steps that could be taken to encourage safety practices in industry to improve business and prevent unwanted reputation damage and litigation. He has committed to undertake production facility inspections, safety awareness campaigns, coordination of hazards management workshops, actions to manage the integrity of safety critical equipment (SCE) and learning-sharing from investigation of incidents.

See 11_Gwaza abstract.pdf

8. Collaboration of Industry, Universities and Government for Upgrading Occupational Health and Safety in Turkey, Esma Toprak, Bogazici University, Turkey.

Ms. Toprak's poster described her work to improve safety practices in the chemical industry in Turkey. Statistics on occupational injuries were presented, and the need for improved knowledge and implementation of SHE practices was highlighted. She recommended a survey of small chemical businesses to assess the level of education among workers and management and business experience with respect to safety. Ms. Toprak also described a new project, ISAG2, that encompasses a collaboration between industry, academia and government. The new project uses buses as Mobile Laboratories, establishing PPE Test Labs, and enforcement of regional labs. During the recent global economic crisis the need for voluntary work by students at universities and technical schools with the government and industry in order to upgrade SHE was emphasized.

See 12_Toprak abstract.pdf

9. The Impact of Environmental Safety and Management Training on Research Institutes in Nigeria, Isiaka Bakare, Rubber Research Institute of Nigeria, Nigeria.

Mr. Bakare's poster indicated the lack of environmental and safety management consciousness among technical staff and scientists in research institutes in Nigeria as the main reason for poor safety procedures and practices. His poster highlighted the establishment of laboratory safety committees in these institutions, the provision of basic laboratory safety materials, and training of graduates and undergraduates on laboratory safety and management. In addition, laboratory chemicals and equipment suppliers/ sales

representatives were also trained. An assessment of the achievements and difficulties experienced during safety training and the extent to which learnings have been incorporated in daily laboratory management was provided.

See 13_Bakare abstract.pdf

Conclusions and Next Steps

Speakers were invited to offer remarks and comments on improving the Safety Training Program. The Fellows agreed that there were significant benefits both to trainees and Host Companies in having several trainees at once during training to lower costs to the Host Companies and to provide for a shared learning experience for trainees. Continuing the Workshops was encouraged, and it was suggested to allow the possibility for fellows to act as future trainers.

Dr. Grover had several interesting and concrete suggestions for improvement of the STP and the efforts of STP Fellows after their return home. He proposed outreach efforts to schools and local and national governments to build awareness of safety at early stages. He suggested that STP Fellows work on projects for in-country programs after their training and that they continue to network. Also, he encouraged the STP to build databases and links to experts to provide real-time solutions to emergent situations.

It is clear that, while still small in scope, the Safety Training Program is having a beneficial effect both on the STP Fellows and their organizations, communities and governments. STP organizers will be challenged to find ways for the program to grow in scope. Some suggestions included collaboration with organizations such as the UN's SAICM program (Strategic Approach to International Chemicals Management) through the Quick Start program and to continue to actively and creatively seek Host Companies and similar organizations to provide the necessary training. The Safety Training Program is unique in that it provides for on-site active hands-on training of Fellows at the places where best practices are implemented, and in that the Fellows are strongly encouraged, if not required, to implement these best practices in their home countries. This uniqueness may be the factor that leads to the high rate of successful implementation of new procedures and programs in the Fellows' workplaces and communities. Collaboration between the Fellows must continue to be encouraged; in addition to the Workshops, establishment of a discussion group on the IUPAC Web site will be evaluated to provide STP Fellows and COCI members to share ideas and comments. Finally, STP Fellows will be encouraged to publish their comments and experiences in a future issue of CI.

Acknowledgments

The help of Bernard West, Aldo Bologna Alles, and David Evans along with all the members of COCI, along with the organizers of the 2009 IUPAC Congress, is gratefully acknowledged.