





**IUPAC-UNESCO-UNIDO Safety Training Program Workshop
IUPAC General Assembly and Congress
Turin, Italy
9 August 2007**

10:00 Poster Viewing

Environmental Safety and Management Training: Its Impact on Rubber Research Institute of Nigeria.

Isiaka O. Bakare, Rubber Research Institute of Nigeria, Benin City

Improving Safety Culture in a Developing Economy: A Build-Up from IUPAC-UNESCO-UNIDO Fellowship Experience.

Tersoo C. Gwaza, Shell Petroleum Development Company, Port Harcourt, Nigeria

The Regional Conference on Occupational Health and Safety Management in East Africa..
Kelvin Khisa, Kenya National Cleaner Production Centre, Nairobi

Building Capacity in Environment, Health and Safety in Kenyan Businesses.

Jane B. Nyakang'o, Kenya National Cleaner Production Centre, Nairobi

Improvements in Occupational Health and Safety Management in Turkey.

Esma Toprak, Department of Chemical Engineering, Bogazici University, Istanbul, Turkey

Improving Safety Management with Scientific Safety Management Philosophy,
Zhang Guo-Hong, Unilever China, Beijing

10:45 The IUPAC-UNESCO-UNIDO Safety Training Program
Mark C. Cesa, INEOS USA LLC, Naperville, IL USA

11:00 Nordberg, topic tba

11:30 Distance Learning In Toxicology: The IUPAC Contribution
John H. Duffus, The Edinburgh Centre For Toxicology, Edinburgh, Scotland

12:00 Panel Discussion
All speakers and presenters

Financial support is gratefully acknowledged:

**IUPAC
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BP Chemicals (USA)
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AstraZeneca (UK)



ENVIRONMENTAL SAFETY AND MANAGEMENT TRAINING: ITS' IMPACT ON RUBBER RESEARCH INSTITUTE OF NIGERIA

Isiaka O. Bakare Rubber Research Institute of Nigeria, P. M. B. 1049, Benin City - 300001, Nigeria. E-mail: iobakare@yahoo.com Keywords: Safety, Environment, Training, and Research

Lack of environmental and safety management consciousness among Technical Staff in Research Institutes is the main reason for poor safety procedures and practices in Laboratories in Nigeria. Therefore, there is need for Safety Training in the Rubber Research Institute of Nigeria. Scientists and Technical staff in RRIN were recently trained. Also, RRIN Safety Committee was established to advise management, monitor and ensure compliance to safety rules and regulations in the institute. Basic laboratory safety materials were also provided for staff. Since, RRIN provides laboratory and other technical services to farmers, agro-based industries, tertiary institutions & others, as one of her mandates. Consequently, fresh graduates and undergraduates students from tertiary institutions in different parts of the country and other relevant stakeholders were trained on environmental safety and management. Recently, chemical and equipment suppliers/ sales representatives and two commercial laboratories' staff in the southern part of the country were also trained. These achievements and difficulties experienced during this safety-training program are discussed.

IMPROVING SAFETY CULTURE IN A DEVELOPING ECONOMY: A BUILD UP FROM IUPAC-UNESCO-UNIDO FELLOWSHIP EXPERIENCE

T.C. Gwaza Shell Petroleum Development Company, Port Harcourt, Nigeria.

The challenges of Technology and Culture in the developing world make it essential to promote interactions to disseminate state of the art knowledge on safety and environment protection in chemical production and other areas of economic expansion. As an IUPAC-UNESCO-UNIDO Safety fellow, I visited Sasol Chemical Industries in South Africa. My area of interest revolved round the following: Aspects of responsible care and integrated approach for SHE, Occupational Hygiene, Process safety management with emphasis on HAZOP awareness, Material Safety Data Sheets (MSDS), Hazard Identification Risk Assessment (HIRA) and Top set accident investigation technique. Part of my Actions include: · Technical Safety Studies in my place of work. · Leading Safety awareness Campaigns. · Coordination of Hazards Management Workshops. · Equipment integrity management in Shell operations in Nigeria · Share Learning from Investigation of Incidents. These actions have resulted in improved safety work culture, wider awareness of staff and other citizens on issues of safety and environmental preservation.

THE REGIONAL CONFERENCE ON OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT IN EAST AFRICA



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In recent years there has been increased emphasis on the need to improve on the occupational health and safety status of the work environment as a response to a marked increase in the number of work related accidents. Developed world governments are keenly taking a hard look at safety in industry and there has been a marked increase in the amount of government regulation in this area. Whereas industrialists in the developed world take safety issues seriously, their counterparts in the developing world do not do so with the same gravity. It is against this background that this conference was organized for the East African region for purposes of improving on this deteriorating situation. The workshop attracted a total of 50 industrialists. It was resolved that Health and Safety Audits be undertaken for all the 50 participating institutions with the ultimate goal of highlighting weaknesses in their safety procedures for improvement. So far, five such Health and Safety Audits have been undertaken and the remaining 45 will be undertaken in the next two years. The improvement measures are to be monitored and evaluated over time.

BUILDING CAPACITY IN ENVIRONMENT, HEALTH AND SAFETY IN KENYAN BUSINESSES

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The Kenya National Cleaner Production Centre helps businesses comply with Safety legislation that requires businesses to form Safety Committees and submit annual Occupational Health and Safety Audits. These committees are often inadequately trained and have limited information on hazards. The Centre has therefore incorporated safety in its activities to prevent occupational accidents and diseases and to improve the working environment. The Centre concentrates on principles of prevention and root-cause analysis. Since 2003 8 national workshops on Environment, health and safety have been held, and 167 experts have received safety training to implement industry safety programs. In September 2006 an East African workshop in Kenya drew participants from Kenya, Uganda and Tanzania with more than 80 businesses. The Centre has also undertaken 35 safety audits in 15 different business sectors. The Centre has launched an Occupational Health and Safety Award to recognize significant reductions in occupational health and safety hazards, and has developed an Industry Program to reduce or eliminate the generation and release of unintentionally produced persistent organic pollutants.



IMPROVEMENTS OF OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT IN TURKEY

Esma Toprak Bogazici University, Department of Chemical Engineering, Istanbul, Turkey e-mail: toprakes@boun.edu.tr Keywords: Occupational Health and Safety Management, Safety Training

The concept of Occupational Health and Safety Management (OH&SM) in Turkey has been well understood and the implementations about this matter have been developed during the past few years. Since Turkey is one of the most rapidly developing countries, its industry is also growing fast. Unfortunately, Health and Safety experts for industrial sectors were not sufficient. Work related accidents and day losses made companies to take serious action to improve their safety records. During negotiations for Turkey to become a member of the European Union (EU), many strict safety regulations were put into action by the Turkish Government. These regulations help us in providing and imposing implementations. Ministry of Labour and Social Security asked the European Union for technical assistance to reach European safety standards. ISAG Project was set up and was successful. The importance of education in safety training for disseminating the safety concept is vital to keep up these kinds of projects.

IMPROVING SAFETY MANAGEMENT WITH SCIENTIFIC SAFETY MANAGEMENT PHILOSOPHY

Zhang Guo-Hong Unilever China

Many foreign and regional enterprises have recently come to China with different safety philosophies during a time of reform and development. Some local enterprises introduce Western safety standards, some choose regional safety standards from Taiwan, Japan, etc., and some use their original safety standards. It is urgent to understand and master science safety philosophy to develop safety management in China. Scientific safety management is divided into two organic parts. One is safety engineering, focusing on technical control of production/maintenance/research. It is easy for people to understand and accept. The other is safety management philosophy focusing on safety goal/organization/training/compliance to legal standards and safety culture. It is difficult for people with different safety experience and background to accept a standardization safety philosophy while they face different enterprise safety situations. Many enterprises have set up a safety management system, such as EHS management system. But it will be easy to understand these phenomena and improve safety management level if we master and implement scientific safety management philosophy.

THE IUPAC-UNESCO-UNIDO SAFETY TRAINING PROGRAM



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The IUPAC-UNESCO-UNIDO Safety Training Program allows safety training experts from developing countries to learn about safety and environmental protection by visiting plants of IUPAC Company Associates in the industrialized world. The Program is part of an initiative by the IUPAC Committee on Chemistry and Industry that includes sponsorship of Workshops on Safety in Chemical Production. Safety Training Program Fellows are scientists and engineers at a supervisory or managerial level in chemical companies, government institutions or scientific institutions; engaged in aspects of safety and environmental protection in chemical, pharmaceutical, or biotechnological production or in the teaching of these fields; and have the ability to influence safety practices in their places of employment and elsewhere within their home country. Since 2000, nine Fellows from China, Egypt, Kenya, Nigeria, Turkey, and Uruguay have received training. Our recent trainees have an impressive record of success in effecting positive change in health, safety and environmental quality, and the Safety Training Program looks forward to continuing to contribute to capacity building in the developing world.

INDUSTRIAL USE OF METALS, RISK ASSESSMENT AND PREVENTION OF HEALTH EFFECTS

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Metals are widely used in many industries. The chemical industry is based on catalysts and these are often metals or metal compounds. New applications in the electronic industry and in nanotechnology are expanding. In combination with classical large uses the total worldwide use of metals is expanding. Human exposure as a result of industrial uses occur in the working environment, general environment in the vicinity of industries and sometimes due to the use of metal containing industrial products. It is important to carry out risk assessments, including assessment of human exposures from various exposure media, hazard identification, i. e. to determine what potential health effects that can be caused by exposure to a particular metal or its compounds, dose-response analysis, i e to relate exposure levels to the occurrence of health effects and finally risk characterization, i e to combine the exposure assessment with dose-response analysis in order to derive the number of persons that are at risk of developing adverse health effects. Based on risk assessments, preventive measures are recommended. They may include control of the working environment, emissions to the general environment and sometimes, limiting the use of specific metals or metal compounds. In the Handbook on the Toxicology of Metals (3rd Ed 2007) these considerations are dealt with for 31 metals and their compounds.



DISTANCE LEARNING IN TOXICOLOGY: THE IUPAC CONTRIBUTION

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The International Union for Pure and Applied Chemistry (IUPAC), through its Commission on Toxicology and Subcommittee on Toxicology and Risk Assessment, with support of the Committee on the Teaching of Chemistry, has used the IUPAC web site to promote distance learning in toxicology for chemists. After preparation of the thoroughly refereed consensus “Glossary of Terms for Chemists of Terms Used in Toxicology”, a textbook “Fundamental Toxicology for Chemists” and a set of educational modules entitled “Essential Toxicology” were compiled. The glossary has recently been extended to include toxicokinetics and revised. Terms in ecotoxicology are currently being defined and an explanatory dictionary and derived book on “Concepts in Toxicology” are being written.

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