Chemical Management Safety & Security initiatives in Sri Lankan Industry

Background and approach

In Sri Lanka the Chemical Management Safety & Security aspects are handled by several arrangements and organizations who have got authority through various conventions, and protocols. Subsequently several acts too have been enacted for these purposes. The chemical weapons convention and chemical weapons convention act No.58 of 2008 act is a major component in this regard.

However, this paper will focus on Chemical Management in general, and specially revolving around activities of the Chemical Weapon Convention in Sri Lanka but also discuss broad ranging issues, awareness creation which goes beyond OPCW activities. It will also cover chemical related activities such as chemical leasing, responsible care, education and awareness at all stake holder levels.

This would give an overview of various related and non-related activities in Sri Lanka. Therefore, it may be a little difficult to put it into a formal presentation. This would include legal, academic, industry promotional and also educational activities. I will also include most of the awareness and outreach programmes conducted by various agencies in recent past.

Laws, Regulations, Policies in Sri Lanka, regarding Chemical Management

- Chemical Weapons Convention Act No. 58 of 2007 – A National Legislation for the enforcement of the convention has been approved by the Sri Lanka Parliament


- Gazette No. 1627/1 issued by the Ministry of Finance & Planning on 09th November 2009 – Regulations framed under section 20(3) & (4) and section 14 of the Import & Export Control Act No. 1 of 1969

- Chemical Weapons Convention act No. 58 of 2008 and regulations extraordinary No. 1561/23 of 07/08/2008

- Control of Pesticides Act No. 33 of 1980 – Regulation of imports, restriction and ban of pesticides through registration and gazette notification

- Imports and Exports (Control) Act No. 1 of 1969 – Regulation of import of industrial chemicals (except for Board of Investment requirements)
• National Environmental Act No. 47 of 1980 – Limited provisions for regulation thru licensing procedures

• Factory Ordinance of 1946 – Occupational health aspects relating to the industrial chemicals

• Explosive Act No. 21 of 1956 – Excise ordinance

• Customs Ordinance – Import and export of regulated industrial chemicals

• Inter-agency Coordinating Procedure of Basal, Stockholm and Rotterdam Conventions

• Important Articles: Annex III – Pesticide formulations and industrial chemicals under Prior Informed Consent (PIC) Procedure

Out of these procedures the Central National Legislations are Imports & Exports (Control) act and the customs ordinance. Through the recommendations of various national authorities the only organization who can issue an import licence on chemicals is the department of import & export and the Sri Lanka Customs is the organization who is empowered to implement and monitor that licence.

However, I would highlight certain programmes and events conducted by different authorities on this subject area. Significant among are the initiatives taken by the National Authority for Implementation of Chemical Weapon Convention, which is the Ministry of Industry & Commerce. Awareness, Education and outreach is a major component of it. A detail account of such programmes would be highlighted later.

The Chemical Weapons Convention commonly referred to as (CWC) deals with the Prohibition of Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction. The CWC is an international treaty, which seeks to eliminate this class of weapons in a verifiable manner. It primarily addresses national programmes and indirectly, the threat of Chemical Terrorism.

Sri Lanka and other countries throughout the world have businesses and industries that use toxic chemicals and its precursors for industrial, agricultural, research, medical, pharmaceutical and other peaceful purposes. However, some of these chemicals can also be used to make Chemical Weapons. Due to the existence of dual-purpose chemicals, it is pivotal to monitor the activities of industries related to such chemicals.

In order to fulfill obligations of CWC, Sri Lanka has established a National Authority to serve as the National Focal Point for the effective liaison with the Organization for the Prohibition of Chemical Weapons (OPCW) and other states parties. As per the cabinet decision
06/0982/214/014 dated 31st May 2006, the Ministry of Industry and Commerce was designated as the National Authority for the Implementation of the Chemical Weapons Convention at a national level.

According to this Act Sri Lankan national authority must,

- Serve as the National Focal Point for the Convention.
- Regulate the use of Toxic chemicals.
- Conduct periodic inspections of the use of scheduled chemicals.
- Submit annual declarations on the import and use of these scheduled chemicals to the Organization for the Prohibition of Chemical Weapons (OPCW).
- Fulfill obligations under the Convention.

In order to fulfill these obligations the National Authority adopts following strategies

- Registration of Scheduled Chemicals users
- Issue import / export recommendations
- Assist in Chemical emergencies
- Provide awareness for industrialists related to scheduled chemicals
- Provide awareness for persons handling hazardous chemical materials
- Provide general awareness to all stakeholders
- Conducts client based educational addressing sector based issues
- Adopt necessary measures to ensure that toxic Scheduled Chemicals and their precursors are only used for peaceful purposes
- Collect data on hazardous chemicals
- Develop National Protection Programmes
- Dealing with media

Programme Initiated by the National Authority for the Implementation of Chemical Weapons Convention at a policy and operational

The industrial sector of Sri Lanka is one of the driving forces of the country’s economy. Its growing trend poses increasing risks of exposure to hazardous chemicals due to increasing utilization in the in the country. If improperly managed, hazardous chemicals can lead to
accidents with dire environmental, economic and social consequences, severely impacting communities and livelihoods. Entire communities may suddenly find themselves deprived of work and their traditional livelihoods significantly affected because of a single chemical accident. Thus, there is a great need to increase Sri Lanka’s capacity to adequately prevent the occurrence of chemical accidents and to, in the case that these still occur, be prepared to properly deal with such accidents.

Industrial policy in Sri Lanka has been designed with a view to address key challenges and issues facing all these sectors and placing them in a new high growing path. With the view of achieving sustainable industrial development and addressing the development constraints, and industrial policy frame work in consistence with the Government policy framework has been designed and will be implemented.

Chemical Weapons Convention (CWC) is an international treaty for the prohibition of development, production transfer, stockpiling, usage and destruction of chemical weapons. The Convention adopted in 1993 completely bans the whole category (chemical) of weapons for mass destruction. Unlike other conventions this includes comprehensive mechanisms to verify its prohibitions.

CWC on 19th August 1994 and the Chemical Weapons Convention Act No. 58 of 2007 have been enforced by the Hon. Minister of Industrial Development on 15th August 2008.

National Authority for the implementation of the Chemical Weapons Convention is an organization which is established under the Ministry of Industry and Commerce to fulfill the national implementation measures under the convention and to serve as a national focal point for the effective liaison within the Organization for the Prohibition of Chemical Weapons (OPCW), The Netherlands and other States Parties.

Also as per the Article X and Article Xi of the Chemical Weapons Convention which is implement under Chemical Weapons Act 57 of 2008 it is required to prepare for emergencies on assistance and protection and facilitate international exchange of scientific and technical information, chemicals and equipments for the production, processing or use of chemicals for purposes not prohibited under the Convention.

**Education and Awareness Programmes of National Authority for the Implementation of Chemical Weapons Convention**

As far as the National Authority of the Implementation of Chemical Weapons (NACWC) in Sri Lanka is concerned educational and awareness programme has been significant. Most of them are educational and awareness programmes targeting a particular set of stakeholders. A brief outline of such programme recently are as follows.
• **Hazmat Training Programme for Fire Brigade in Sri Lanka: 26-28 Sep 2011**

As per the request made by the Fire and Rescue Academy, the National Authority conducted a three day training programme at the Fire and Rescue Academy, at Wellawatte for over 30 fire officers. The main objective of this training programme was to provide proper handling of hazardous chemical incidents/accidents and mitigate expansion of the disaster due to the incident.

• **Awareness Program for Chemical Importers in Sri Lanka: 6th October 2011**

An awareness programme was conducted on 6th October 2011 to introduce the CWC obligations and to familiarize the legislative matters of the Act No 58 of 2007. It aimed at discussing issues faced during the import and export of chemicals. The meeting was chaired by the Honorable Minister of Industry and Commerce, while more than 50 persons participated in this programme.

• **Final Training Programme for First Responders: 02-06 April 2012**

Development of the National Protection Programme on chemical emergencies on chemical weapons attack or the release of Toxic Industrial Chemicals was conducted for the First Responders in Sri Lanka.

Selected personnel from SL Armed Services, SL Police, Fire Service Department and medical professionals were trained under this programme. The final training programme for the first responders was held from 2-6 April 2012 at the Fire & Rescue Academy, Wellawatta.

• **Training Programme for Medical Specialists: 05 April 2012**

The National Authority also conducted the training programme for the Medical Specialist on Chemical Emergency Management at the National Hospital in Sri Lanka. A total of 32 medical officers from hospitals across the country participated in this programme. It was conducted by Dr. Megan Thomas, Chemical, Biological, Radiological and Nuclear (CBRN) Specialist from the Organization for the Prohibition of Chemical Weapons (OPCW).

• **Identification of Hazardous Chemical Substances and the Development of a Chemical Emergency Programme in Kalutara Industrial Zone: 29th May 2012**

An awareness programme on Chemical Emergency Management was conducted for industrialists in Kalutara Industrial Zone on 29th May 2012 with basic introduction on emergency management preparation. The main objective of this awareness programme was to conduct a survey to assist the safety and security in their respective work places and
to achieve sustainable industrial development in Sri Lanka. The industry survey was initiated on 24th July 2012.

- **Awareness Programmes on Hazardous Chemical Management for Sustainable Industrial Development: 26th Sep 2012 – 29th September 2012**

  The National Authority in collaboration with the IHRA conducted awareness program on Hazardous Chemical Management for Sustainable Industrial Development on 26th Sep 2012 at the IHRA auditorium. It provided basic knowledge for handling of the hazardous chemicals, health, safety and security of workers and management for sustainable industrial development. More than 80 participants participated in this programme.

- **Identification of Premises of Hazardous Chemical Substances: 22 January 2013**

  The National Authority carried out a survey at Kalutara Industrial Zone to assist the safety and security in their respective work places and to achieve a sustainable industrial development in Sri Lanka. The industry survey was initiated on 24th July 2012 while 23 industries were investigated at the industrial zone.

  During the survey, the National Authority made certain observations on security measures on handling hazmat chemicals, health and safety of the workers in industries. Reports on the recommendations for the above observations were distributed to the industrialists on 22nd January 2013 at the Auditorium of the Ministry.

- **Fire, Safety and Security Training Programe: 22nd – 24th March 2013**

  As a second step for developing a Chemical Emergency Programme in Kaluthara Industrial Zone, the National Authority conducted a basic training program on Fire Safety and Security for safety officers at the Kaluthara Industrial Zone on 22nd March 2013 to enhance a general knowledge of principals of fire chemistry & sources of fire, fire prevention and fighting techniques, basic evacuation and casualty handling procedures and practical experience on fire fighting.

- **Work Place Hazard Management Programme: 06th September 2013**

  To enhance the knowledge of safety officers /workers on Health and Safety within the work place, the National Authority conducted workplace hazard management training on 06th September 2013 at Kaluthara Industrial Zone premises. The workshop included theoretical
knowledge through lecturing and provided practical training on emergency medical treatments.

- **Training Seminar on ISO Standards: 16th January 2013**

The National Authority in collaboration with Institute of Human Resource Advancement (IHRA), University of Colombo (UOC) conducted a training seminar on ISO Standards for the industrial sector on 16th January 2013; to provide basic knowledge on ISO Standards, Benefits of standards for business, Requirements and guidance for use of popular standards for sustainable industrial development. For this programme 25 participants from 12 companies/institutions participated.

- **Awareness Programme on CWC and Chemical Emergency Management: 25th – 28th March 2013**

As per the request made by Police Training College, Kalutara, the National Authority conducted a three day awareness program on CWC and Chemical Emergency Management for police officers at the Police Training College, Katukurunda from 25th -28th March 2013. About 250 police officers participated in this programme.

- **Awareness Programme on Hazardous Chemical Management for Sustainable Industrial Development: 17th & 18th May 2013**

The National Authority in collaboration with IHRA.UOC conducted awareness programmes on Hazardous Chemical Management for Sustainable Industrial Development on 17th May 2013 at IHRA.UOC to provide basic knowledge for handling of the hazardous chemicals, health, safety and security for workers and management for sustainable industrial development. This programme was attended by 51 participants from 23 companies.

- **Awareness Programme on Workplace Hazard Management: 11th June 2013**

Institute of Human Resource Advancement (IHRA) of the University of Colombo in collaboration with the National Authority for the Implementation of Chemical Weapons Convention under the Ministry of Industry and Commerce conducted a Workshop on Workplace Hazard Management at the Fire and Rescue Training Academy, Wellawatta on 11th June 2013.

The objective of this programme was to enhance Health and Safety within the working Environment. The workshop included theoretical knowledge through lecturing and
providing practical training on emergency medical treatments and fire fighting techniques. Twenty six participant from various private and public sector organizations participated.

- **Programme on Chemical Safety of Food: 29th & 30th August 2013**

The National Authority in collaboration with IHRA. UOC conducted a Programme on Chemical Safety of Food on 29th August 2013 at the IHRA auditorium. Discussions on; Chemical Contaminants in Food and food additives, Chemical Food Sanitation and Hygiene, Negative Impacts of Microbes in the Food Industry, Food and Consumer safety regulations in Sri Lanka and Safe use of Chemicals in Food Industry was carried out. A total of 51 participants from 35 food manufacturing and related organizations were present.

- **Awareness Programme for Scheduled Chemical Users: 8th November 2013**

According to the Chemical Weapons Convention Act it is mandatory for every person who is engaged in the produce, process, import, export or use of any scheduled chemicals to register with the National Authority for the Implementation of Chemical Weapons Convention in Sri Lanka (chemical list is attached). Any kind of usage of Scheduled Chemicals without a Certificate of Registration is a punishable offence under this Act. To make aware of the Chemical Weapons Convention’s obligations and to familiarize the legislation - Act No 58 of 2007, the National Authority conducted an awareness meeting on 8th November 2013 at the Auditorium of the Ministry of Industry and Commerce.

- **Preparedness of Chemical Emergencies Programme for Commonwealth Heads of Government Meeting (CHOGM) 2013**

In accordance with the taskforce Secretariat for CHOGM, the National Authority carried out a series of inspections on awareness and chemical emergency preparedness to manage any potential disasters during CHOGM at main and side event venue areas. In these series of inspections experts from the National Authority covered Hambanthota, Galle, Negambo, Ja-ela, Battaramulla and other venues in Colombo.

- **Training Programme for Police Officers: 03 March 2014**

As per the request made by the Kalutara Police Training College, the National Authority conducted a one day training programme on Chemical Sampling at a Crime site for a team of Police officers. This training provided the basic knowledge about the chemical sampling
and safety procedures to access a chemical incident site. The training was held on 03rd March 2014 at the Kalutara Police Training College. More than 20 participants participated.

- **Templeburg Industrial Zone Survey Inauguration Programme: 07 March 2014**

On request of the Western Province Regional Service Centre an awareness programme on Chemical Emergency Management was conducted for industrialists at the Templeburg Industrial Zone on 07th March 2014 with basic introduction on emergency management plan preparation. The main objective of this awareness programme was to conduct a survey to assist the safety and security in their respective work places and to achieve sustainable industrial development in Sri Lanka.

- **Certificate Programme in Emergency Management (6 months programmes)**

In view of reducing industrial issues through education, the National Authority conducted a training course on Industrial Safety, Environment & Emergency Management. Hence the National Authority in collaboration with the Institute of Human Resource Advancement (IHRA) of the University of Colombo organized a Five Months Certificate Program on Industrial Safety, Environment & Emergency Management. The Inauguration ceremony was held on 26th April 2014 at the Auditorium of the Ministry of Industry and Commerce with the patronage of the honorable minister.

- **4RS Programme for SL NAVY: 16 – 17 July 2014**

The National Authority conducted a training programme for the SL Navy on Mitigating Chemical Accidents/ Hazards, for the Rapid Response Rescue and Relief Squadron from 16th - 17th July 2014. The training programme consisted one theoretical session and one day practical session. Certificates were issued to the 35 participants at the end of the course.

- **Training Course for hazardous chemical transporters of Holcim Lanka**

The National Authority in collaboration with the Institute of Human Resource Advancement (IHRA) of the University of Colombo organized a Training Course on Hazardous Chemical Transportation for officials of Holcim Lanka Cement Company. The training was organized on request of Holcim Lanka. Theoretical and practical session were covered in the 2 day sessions.
• **Board Of Investment of Sri Lanka Training**

The National Authority in collaboration with the Institute of Human Resource Advancement (IHRA) of the University of Colombo organized a Training Course on Hazardous Chemical Management and Emergency Response for the staff attached to the Environmental Department of the BOI on request of the BOI. The training course consisted of both theoretical and practical sessions. The programme was held at the auditorium of the BOI, Level 08 West Tower, World Trade Center on 10-11 January 2014.

• **More Training Programmes are Pending...**

Such as training and awareness of Chemical management for the staff of the Bandaranaike International Airport, Katunayake and Sri Lanka Ports Authority in next month.

The other important programmes in this field are the ones conducted by the Ministry of Industry and Commerce through the National Cleaner Production Centre (NCPC). **Chemical Leasing** and **Responsible care** are major programmes where educational and outreach concerns have been embodied in to it. Educating the public as well as reducing costs is part of the main programme.

**Chemical Leasing**

UNIDO, in close cooperation with National Cleaner Production Centre (NCPC) of Sri Lanka introduced the Chemical Leasing concept to Sri Lankan chemical industries in 2008. During the last five years, the chemical leasing business models have been developed and successfully applied in different industrial sectors in the country. Chemical leasing brings together the user and supplier and make supplier too responsible for the environmental impact resulting from use of chemicals. The process optimization achieved through Chemical Leasing results in improving efficiency and quality while reducing costs.

NCPC has introduced the concept for different industrial sectors in the country including Printing, Painting, Water Treatment, Powder coating and Textile Dyeing. The results obtained have shown that the implementation of chemical leasing has high potential to enhance the efficient management of chemicals and significantly reduce harmful emissions and wastages.

Applying the chemical leasing concept for newspaper printing sector, it was reduced 15% ink consumption and also increase the workers health and safety condition. Supplier was the General Ink Ltd and the user was Wijeya NewspaperS Ltd.

Applying the chemical leasing concept for water treatment sector, it was reduced 20% chemical consumption. Also in the building paint sector it was reduced 12% paint consumption by
applying chemical leasing. Strong awareness programmes were instrumental for these developments.

NCPC has introduced the new model to the Sri Lankan agriculture sector and the results showed that chemical leasing approach accounted for more than 40% of cost savings on chemicals. The result of the case studies clearly demonstrates that both agrochemical manufacture and user can benefit by the application of Chemical Leasing. Besides it demonstrates the environmental and the occupational health and safety benefits achieved by the application of Chemical Leasing.

**Responsible CARE**

Lanka Responsible care Council (LRCC) was initiated as a voluntary association under the National Cleaner Production Centre (NCPC) with the support of International Chemical Council Association (ICCA) in 2012. Currently 25 member companies are engage with the council and NCPC provide technical assistance to improve Environmental, Health and Safety conditions.

The LRCC is an association of chemical companies that have made a commitment to implement Responsible Care. The LRCC provides support to member companies to improve their Responsible Care activities through such measures as meetings where members can exchange information and experiences related to Responsible Care. Also the council promotes effective communications and knowledge sharing with the public and local communities and strives to strengthen its bonds of trust with society. The strategic objective of the council are;

- To anticipate and respond to government policy
- Maintain effective communications and knowledge sharing for members of government and industry stakeholders and to provide better service to members in effective dissemination of information, safety, health and environment issues and monitoring the national and international chemical industry scenario
- Promote industry best practice
- Provide safe chemical management information and resources
- Maintain robust relationship with local chemical suppliers, distributors and users
- Be widely recognized as the Centre of excellence in Sri Lanka for safe chemical management

As a LRCC member, a company manages all aspects of its activities so that it provides a high level of protection for the health, safety and security of its employees, associates, customers, facilities and the public and the environment. The LRCC members’ company’s Responsible Care programme starts with the member company’s senior management making a commitment to the guiding principles. LRCC member companies demonstrate their commitment to sustainable development and continuing improvement by adhering to the following guiding principles:
- To recognize, respect and respond to community concern about our products and operation
- To lead our operations in ethical ways that increases the benefits to society by protecting our people, environment and community
- To develop a procedure in the organization to continually identify, reduce and manage occupational and process safety risks.
- To promote pollution prevention, minimization of waste and conservation of energy and other critical resources
- To counsel customers and other relevant stakeholder groups on the safe use, transportation and disposal of chemical products
- To participate with government and others in creating responsible laws, regulations and subs
- Demonstrating continuous improvement throughout our business and reporting performance
- Inspiring and assisting others to commit to responsible Care

Special Educational and Training Programmes Conducted

2012 Training Programme

Training Programme on Chemical Leasing at Plastic & Rubber Institute (PRI) on 27th January 2012

National Working Group Meeting on Chemical Leasing 24th February 2012 at Institute of Engineering in Sri Lanka (IESL)

Training Programme on Chemical Leasing for Officers from Industrial Development Board 30th & 31st March 2012

Training Programme for Chemical Leasing for Environmental officers in BOI office – Katunayaka EPZ on 24th May 2012

Training on Chemical Leasing for Industrial Development Officers in IDB- Kegalla Branch 28th June 2012

26th October 2012 Training Programme on Responsible Care for Industries at PRI

29th – 30th November 2012 Training on Responsible Care and Chemicals Management at Institute of Engineering in Sri Lanka (IESL)

2013 training programme

12th February 2013 Workshop on Chemical Leasing and Chemicals Management for Industrialist
27th March 2013 Training on Chemical Leasing for Industrialist

29th May 2013 Working Group meeting on Chemical Leasing

25th July 2013 Workshop on responsible care initiatives in Sri Lanka for Industrialist

20th – 23rd November 2013 Workshop on Safe chemicals management through responsible care for Industrialist

**2014 Training Programmes**

2014 April 1st five day Training Program on Safe Chemicals Management at PRI(For Industries)

29th July 2014 one day training on Responsible Care and Safe Chemicals Management-at PRI(For Industries)

1st August 2014 Responsible Care Certificate Award Ceremony at Mt.Lavinia Hotel (For Member companies)

**Inclusion of Chemical Management concerns in Universities Curricular**

One of the most significant features in the educational and outreach programme in the area of chemical management in inclusion of such concerns in the degree programmes, in Universities. In fact it is the Cleaner production concerns have been included in the curricular and chemical management is a significant component of it.

Following Universities has Included cleaner production concept in their curricular. Under this subject they have included chemical leasing, sound chemicals management etc

University of Moratuwa(Faculty of Engineering)
University of Peradeniya(Faculty of Engineering)
University of Colombo( Science Faculty)
University of Sri Jayawardanapura ( Science Faculty)
Open University of Sri Lanka
Sabaragamuwa University (Science Faculty )
Wayamba University (Science Faculty)

**Programmes of the Central Environmental Authority**

**The Programme initiated by the Central Environmental Authority (CEA)**

Similarly the other major project now in progress in Sri Lanka is the project to formulate a Chemical Management Programme for Sri Lanka. This is being initiated by the Central Environmental Authority (CEA). It may be pertinent to note that while the other project of the
National Authority concentrated on the Industries situated within the Industrial Estate while this project focused on Industries outside Industrial Estates.

According to the industrial census in Sri Lanka, there are nearly one thousand large, medium and small-scale chemical industries and activities and a myriad of small-and medium-scale activities associated with chemicals such as warehousing, transportation etc in operation at present.

The Central Environmental Authority operates the environmental protection licensing process, as a legally enforced methodology of controlling environmental pollution caused by such industries and activities. CEA has a strong educational and publicity unit headed by a Deputy Director General who are engaged in educational and outreach programmes on as their main activities, in Translating into Sinhalese and Tamil languages the publications containing the recommendations and guidelines presented by the United Nations Environment Programme with regard to the prevention of chemical accidents, chemical management and distributing them among factories, and training officers is one of the main tasks of the Central Environmental Authority (CEA). CEA has a strong unit that covers Environmental Management aspects and Environmental Resource Centres have been established locally. Furthermore it is the CEA who conduct majority of programmes focusing on school children on environmental issues which covers Chemical Management as well.

Conclusion

I basically discuss most of the programmes conducted in the relevant fields, focusing on education awareness feasibilities. It goes beyond OPCW activities but highly relevant. The Ministry of Industry & Commerce as the National Authority and as the Ministry is very much connected to these programmes and myself as the Additional Secretary, Second in Command in the Ministry, (next to the Chief Executive Officer), and as the Acting Head of the National Authority is personally involved in these activities.

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18/09/2014