

IUPAC TRAINING ON CHEMICAL SAFETY MANAGEMENT

Part 1: Solvay Warrington Site Training Report

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3 BEST PRACTICES IN CHEMICAL SAFETY MANAGEMENT IN SOLVAY, WARRINGTON BUSINESS UNIT

This four day hands on training enabled me pick some of the best practices in a chemical manufacturing plant on Safety Health and Environment, Management Systems, Resource Use and Efficiency, Performance Monitoring and Reporting, Policies, Regulations and Legal Frameworks, Human Capacity Building and Innovations and Technology Use amongst others. It is important to point out that whereas the operations at the plant can be classified as high risk, the plant has operated without any major incident. And with the ever changing market dynamics and prices, the plant has ensured proactivity to ensure wastages are minimized while producing.

Some of the best practices in the plant are discussed below.

3.1 Top Management Commitment towards safety

The MD Mr. Craig's presentation on the first day of the training on the Plant Safety and Safety Programs being undertaken by Solvay, Warrington almost made me think he was the Safety Manager. As the training progressed, I basically realized that all the Managers link their work with safety. The plant visits and interactions with the different levels of management during the training cemented my observations that the top management was committed to continually promote safety in the plant. The top management visit the plant at least twice a week and wherever there are challenges, they are discussed and solved by the team and the affected workforce.

3.2 On line Pre plant visit safety tips

This enables a visitor to understand the plant and the safety requirements before visiting. By so doing, it reduces the amount of time spent to get access to the plant.

3.3 Voluntary Approaches on Safety and Environment

The plant is proactive on protecting its workers and environment. The good working relationship between the plant and the regulators enables the regulators to only visit the plant as a requirement as opposed to visiting to enforce. The different voluntary programs like the Solvay Care Management System, Responsible Care, etc have standards that once met ensure compliance internally.

3.4 Community Involvement

The development of a magazine that is distributed to the neighbourhood promotes a peaceful co-existence with the neighbours. This also creates a feedback mechanism from the neighbours on what the plant can do to improve on Safety and Environment.

3.5 Close Working Relationship with Regulatory Agencies

Unlike in our country where the regulators have a poor working relationship with the industries, the plant has a well-established working relationship with the regulatory agencies. The sharing of

information on the performance of the plant with the regulators is open and it enables the regulators to advice on improvements. This is not common in our country.

3.6 Safety as part of the More Future

Programs that are being developed by Solvay Company incorporate Safety as one of the key components. This clearly indicates that safety is prioritized in Solvay.

3.7 Safety and Resource Use

The clear linkage that exists between safety and resource use is very encouraging. A spillage, leakage or an overflow is not only investigated as a safety issue but also on how much of the resources go into wastage as a result of the spillage or leakage.

3.8 Contractors Adhering to Solvay Safety Rules and Procedures

Contracts are signed with a safety perspective. All workers who are contracted adhere to the safety requirements of the company.

3.9 Safety and Work Competence

It was encouraging to note that workers are also appraised on the basis of their understanding of the safety issues in their work stations. This is administered by workers who have been in the plant longer.

3.10 Technology and Safety (Plant Fire Detective System)

The use of technology to enhance safety is very encouraging. The installed fire detective system in the entire plant to protect it is very encouraging as this lowers the risk of loosing the entire plant incase of fire.

The raw material receiving pumps are also automated such that a truck can not load Hydrogen in a receiving pump if it was not recorded as so since the pump will not open. This I find to be an important safety and material management feature.

3.11 Safety Awareness Materials (The 8 Life Saving Rules on Playing Cards and Note Books)

The 8 Solvay Life Saving Rules (work at height, work on powered systems, line breaking, work in confined spaces, work in explosive atmosphere, lifting, excavation and traffic) being part of the writings on the playing cards spreads the message to all within and without Solvay as this leisure activity of playing cards can involve even people not working in Solvay.

3.11 Positive Safety Discussions

The fact that workers can note and share a discussion on safety motivates these workers. This is not common as most of the companies tend to recognize those who come up with innovation that are not focusing on Safety but on production.

4. IMPROVEMENT OPPORTUNITIES

4.1 Good House Keeping

When repairs are undertaken, the replaced parts or materials need to be taken and kept in the correct waste collection areas for safe disposal. Given that the plant does not have many people manning different sections of the plant, it may take some time for a material that was left by the repairer to be noticed.

The labeling and signage should also be adhered to. The labs and workshops where different materials, equipment or reagent are kept should stick to the labels. This is critical since if a different personality other than the regular worker in that place is called upon to assist while the regular is absent (due to an emergency on the regular that will make him/her not to report to work that day) the operations of that area will go on smoothly. It also avoids a mix up.

4.2 Adherence to the Safety and Hygiene Rules in all Areas

It is important for all workers to observe and adhere to the set rules and regulations in all working areas. The lab especially is critical and eating in the lab should be discouraged.

4.3 Waste Management

All workers and contractors should be encouraged to ensure that the waste they generate in the course of their work is placed in the designated waste bins within the plant. This will not only ensure proper waste management but it also ensures a safe working environment.

5. SOME CHALLENGES OF THE TRAINING

The organization of the training in Warrington was very smooth. The fact that the program on the training was availed the first day of the training was proof enough that the team was well prepared to carry out the training. It is also worth noting that for the four days, the management arranged a dinner with different management teams. It is during this dinner that I was able to freely get additional information and clarifications on some of the aspects I could not understand well during the training hours at the plant. It also gave the management teams an opportunity to know who am, what I do in KNCPC and what KNCPC does in general and how it was related with the training. This gesture gave us an opportunity of knowing some few places within Warrington and some history and culture of the British People.

The assignment of one person to take us to and from the plant to the hotel proved an important gesture and on this I wish to thank the Solvay Warrington plant management and especially Mrs. Julie Hitchin.

I wish to note that the Warrington phase had little logistical challenges that can be improved. They include:

- a) ***Logistical information on Credit Card Guarantee requirement by the Hotel*** – This is important information that all trainees need to have prior to their travel for the training. It enables the trainees to make adequate arrangements to avoid any inconvenience once you arrive at the hotel.
- b) ***Full information on the costs covered by both the institution and trainee*** – It is important that the trainees get the full details on the costs covered by both parties. The Solvay Warrington management was able to take the trainees for dinner. It was important that the trainees are made aware that the dinner cost for example was to be met by them. For the other days when the trainees were not in the plant, lunch cost was to be catered by them equally. This information can assist the trainee make adequate arrangement with the employer on how this cost is to be catered.
- c) ***All trainees to provide their latest bio data before the training commences*** – The period between the application for the training and the training was long. For instance I applied for the training in 2008 and got a go ahead to be trained in 2017. The information about myself and my expectations on the training then and now have drastically changed. I will advise that IUPAC and the host industry develop a simple template that is sent to the trainees on their latest information. The filled template should then be shared with all the facilitators of the training.
- d) ***Trainees to adhere to the selected training topics*** – It is important to note that the trainers were adequately prepared to share their experiences in the topics they were handling. Since we had different experiences amongst the trainees, at times some topics were not adequately covered because of the assumptions that all of us knew much about them.
- e) ***Lack of a training report format*** – It will be very important if IUPAC and the host industry develop a reporting format for reporting by the trainees on the report. This will ensure uniformity in reporting, adequate reporting and also timely reporting

6. UPSCALING THE EXPERIENCES FROM THE TRAINING

This training is meant to increase the skills on Chemical Safety Management to me and also KNCPC. It is also meant to increase the linkage between KNCPC, the regulatory agencies and other stakeholders on Chemical Management.

The upscaling of the knowledge from the training will be achieved in two levels namely:

- a) Regular KNCPC programs
- b) Phased Donor and Government KNCPC Projects and programs

6.1 Regular KNCPC Programs

KNCPC is a nodal quasi government institution in Kenya that provides capacity building activities on Resource Efficient and Cleaner Production (RECP) that basically entails the promotion of Sustainability Programs/Circular Economy activities on Raw Materials Management, Water and Waste water Management, Energy Management etc. Other than capacity building, the Centre also provides policy advice, undertakes assessments and other consultancies along the same line.

The Centre trains industries, policy makers, government institutions, private sectors amongst others on Resource Efficient and Cleaner Production, Waste Management, Environmental Impact Assessment and Audit (EIA/EA), Strategic Environmental Assessment (SEA), Climate Change, Occupational Health and Safety, Energy Management, Life Cycle Assessment (LCA), Clean Development Mechanism (CDM), Green Economy amongst many programs. These training programs are normally done in the Centre and also in the premises depending on the clients' need.

The Occupational Health and Safety training program is normally done twice a year in the Centre. Our last training will be in September this year. Chemical Safety management is one of the main topics that is covered in this training. Of importance to note is that am one of the trainers on this program and other training program.

It is also worth noting that during our EIA/EA training that runs for 3 weeks and we are currently running the training (5th-23rd June 2016), safety is one of our main topics. The safety training covers both the practices at the industry level and the regulatory requirements.

Other than the trainings, the Centre undertakes assessments for various clients with an aim of developing a management plan that is implemented on the best practices. Thus the training enabled me pick some of the best practices that I will share with the Kenyan industries that we are currently working with in our regular programs

6.2 Phased Donor and Government KNCPC Projects and programs

KNCPC has been running different programs and projects that are funded by different agencies and partners. The programs that we have recently run and some that are still active on chemical safety include the following:

- a) ***Promotion of innovative chemicals management approaches in the in the region (African Region)*** – This is a UNIDO funded project that is jointly being implemented by KNCPC and Egypt National Cleaner Production Centre (ENCPC). The project will address three main target groups/categories:
 - 1) Producers of chemicals (synthesis of chemicals; sub-sectors such as production of acids, dyestuffs, etc.)
 - 2) Formulators of chemical products (sub-sectors such as production of printing inks, paints, fertilizers, etc.)

3) Industrial users of chemical products (sub-sectors such as metal finishing, surface coating, furniture, plastic and foam products. Etc)

This project targets to work over 5 chemical industries in Kenya to promote innovative chemical management approaches where responsible care will be one of the key approaches together with RECP.

- b) ***Switch Africa Green (SAG): Promoting Sustainable Consumption and Production Practices and Eco-entrepreneurship: Greening SMEs Leather Clusters and Leather Tanning Industry in Kenya*** - The overall objective of the this project is to “Contribute to production processes, sustainable consumption, and eco-entrepreneurship”. The proposed intervention has a strong logical link with the overall goal of SWITCH Africa in that it will generate growth, create jobs and also reduce poverty as it is targeted at SMEs. It will contribute to improved productivity, reduction in the production and proper management of physical and liquid waste. Finally, a critical barrier for leather products from Eastern Africa would be overcome. As such, compliance towards greener production could avail markets and entry of the final leather products that are otherwise not available through eco-labeling
- I) Improve SMEs competitiveness through energy, space and machinery optimization by promoting joint use under Clusters; Cluster formation would promote joint action in procurement, production and marketing, which will lead to a decrease in the cost of production, consequently enhancing competitiveness, sales growth, employment creation and reduction in carbon emission.
 - II) Promote recycling and reduction in the use of chemicals with a negative impact to the environment; the centralization of SMEs would enable the generation of optimal amounts of waste to support the production of small leather articles out of the off cuts. Tanneries would be assessed to gauge if they are using chemicals that are in line with EU REACH Directive.
 - III) Develop a roadmap for improving effluent management and quantification of carbon footprint of the leather sector: The developed guidelines will be used to improve effluent management and also quantification of carbon emission in line with the new Pilot Project of Carbon footprint quantification.