

Developing Process Safety at MOL

THE SECOND BUILDING BLOCK OF AN EFFECTIVE SAFETY CULTURE



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— **Béla Cseh,**
HSE director,
MOL Group

When Béla Cseh, HSE director at Hungarian energy group MOL, first suggested bringing in DuPont safety consultants to improve the company's safety performance in 2004, the reactions he got were mixed. Many people in the organisation already believed they were doing the right thing and didn't see the need to bring in an external company to train and advise them.

Yet in Cseh's experience, “Consultants are good, because they force us to do what we know we should do.”

Safety: a prerequisite for developing multi-nationals

Once a state-owned Hungarian oil and gas company, the MOL Group, since privatisation in 1995, has developed into Central Europe's most influential player in the energy market and now has holdings in Hungary, Slovakia, Croatia, Bosnia-Herzegovina, Serbia, Slovenia, Austria, Italy, Romania, the Czech Republic, Russia, Oman, Yemen, Syria and Pakistan. On an aggressive expansion drive to become a leading multi-national company, MOL Group's senior management wanted its safety performance to be in line with the top quartile of its peers to demonstrate the company's operating excellence.

In 2003, MOL had recorded 55 Lost Time Injuries (LTI) and a Lost Time Injury Frequency (LTIF) rate of 2.6, an indicator measuring LTI cases against one million hours worked. By comparison, the International Association of Oil and Gas Producers in its 2003 safety performance report¹, recorded an average rate less than half that of MOL — 1.16 LTIF — among its 36 member companies.



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¹ OGP safety performance indicators 2003, Report No: 353, June 2004



Operatives at the MOL Duna refinery in Százhalombatta, Hungary

“We set ourselves the goal of getting our LTIF rate below 1 by 2008,” Cseh says. “Our overall key safety performance indicators were not satisfactory in certain businesses and, what was in some ways more worrying, was that there was a big gap in safety culture and results between business units.”

Stepping up safety

To address this disparity, MOL’s first step was to work with DuPont on a shift in cultural attitude to safety. “We decided to invite a safety consultancy which is described as best-in-class, which also manages hazardous processes and assets that are similar to ours; one which brings with it genuine practice and experience, not just a booklet,” Cseh explains. “DuPont consultants are not just trainers, but have practical, up-to-date experience and can explain what we need to do in everyday words. They really practice what they teach others.”

DuPont carried out an initial evaluation in 2004 and made recommendations, at first only for the MOL operations in Hungary. However, the programme was soon extended to TVK in Hungary and Slovnaft in Slovakia, two companies MOL had recently acquired and was in the process of integrating into its operations. MOL decided to approach the safety issues in two phases: laying the foundations for an overall shift in mindset and attitude to safety, then building on the continuous cultural change with a programme focusing on a properly structured and adapted process safety management (PSM) system once this had taken hold. DuPont therefore began to work with MOL on developing an effective safety culture that would motivate and engage the more than 14,000 employees in the group.

Together with DuPont, MOL set up what eventually became known as the *Safe Workplaces Project*.

Safety at the grass roots level

The implementation of a safety management system decided on by senior management might not be seen as something that the wider workforce might buy into. However, as production expert István Jászapáti, from the upstream division of MOL in Hungary, says: “You can never claim that your organisation is perfectly safe, but DuPont has helped us bring standards up to a more acceptable level. They have introduced regular monthly safety meetings attended not only by the HSE experts, but also by our managing director and the local operating team. Information from the meeting is transmitted back to shop floor employees, so they are also informed of what is happening.”

Cseh expands, “Employees are now more disciplined. They understand that safety steps are there for them, that they are taking care of themselves and others. They know that warning each other about missing personal protective equipment for example is not a way of telling each other off, but of looking out for each other. They have also taken part in the development of safety management steps by making suggestions, some of which are very simple, but very effective, like changing safety glasses and helmets so that they fit together better.”

Kornélia Procházková, project manager at MOL Group, draws attention to another notable change, “Even executives conduct behavioural audits and when they come to visit a plant, operatives can see that they now wear safety helmets, safety glasses and safety shoes; in other words the same equipment the operatives themselves have to wear. That sends an important and positive message.”



The MOL Algyő gas plant in Hungary

Rewarding excellence

Just one example of how the shift in attitude to safety brought about a positive change is the performance of MOL Refining, the crude oil refining unit of MOL. In 2003, MOL introduced an annual HSE Award at which one division from the group receives an award for its safety efforts and performance. In March, 2008, this division was MOL Refining, honoured for its impressive improvements in 2007.

MOL Refining took a leading role in setting up the safety management system introduced by DuPont and today carries out an impressive number of behavioural audits — over 800 in 2007. Behaviour audits focus on a dialogue with employees about safety. These dialogues are conducted with employees working safely to acknowledge their positive behaviour, and with employees working unsafely to convince them of the unnecessary risks they are taking. The next step is to jointly develop a safer approach towards the work conducted. Extensive studies have shown unsafe behaviour to be the main source of injuries rather than engineering deficiencies.

Attila Csala, Refining HSE Manager of MOL Group Refining, explains, “Refining used this superb tool to improve our safety performance and build up an extensive behaviour auditor system. There are now nearly 70 trained auditors in MOL Refining and 30 in Slovnaft Refining.” As a result of the consequent execution of the HSE action plan, the number of Lost Time Injuries at MOL Group Refining dropped from 9 in 2005 to 3 in 2007 and the LTIF rate decreased from 1.53 in 2005 to 0.67 in 2007.

Statistics indicate a shift in attitude

DuPont completed its safety management consultancy engagement in mid 2007. By the end of 2007, the overall LTIF rate for MOL Group had already dropped from the 2003 figure of 2.6 and 55 Lost Time Injuries to 1.52, which equates to 37 Lost Time Injuries. As Cseh says, “We are heading in the right direction and based on the January to October 2008 figures, I’m convinced that we can meet our year end 2008 LTIF target which is to be at or below 1.00.”



Why do more?

With safety statistics at MOL Group improving at this pace, indicating a positive change in attitude throughout the organisation, many organisations would have rested on their laurels. However, MOL Group had always intended to support behaviour safety management with a process safety programme. Positive safety statistics can easily lead to complacency and a misinterpretation of safety performance, because serious process incidents happen relatively infrequently. But when they do, the outcome can be fatal and can affect not only the site, but also the company’s business, its customers, the environment and the local community — in other words, the company’s reputation. For this reason process safety errors are more critical than conventional hazards which are addressed by behavioural safety systems.

Inadequate preventive maintenance, poor technical design, insufficient emergency planning, and incomplete hazard analyses are just a few of the reasons for major incidents. Process safety management addresses these and other likely causes.

Tailored support

DuPont ran its first series of workshops on process safety with MOL Group in early 2006, but as Procházková explains, “We weren’t getting the desired results in the timeframe we wanted, mainly because we expected everyone who had taken part to immediately act as they had been taught. That was when we realised we needed a dedicated DuPont consultant on site, someone with a lot of practical experience.” DuPont sent in Christophe Prajer, a consultant with more than 20 years’ experience working with critical chemical processes and implementing the PSM system at DuPont Teijin Films in Luxembourg. According to Procházková, he practically became a well respected MOL Group employee and was permanently on-hand to advise and help.

DuPont and Prajer not only presented and popularised the PSM system at MOL Group, but provided practical support. Prajer suggested PSM network structures, helped with developing an implementation plan at MOL Group level and, with the benefit of his experience at DuPont and other organisations, as well as his in-depth knowledge of MOL Group structures, set realistic deadlines. He participated in task forces, conducted site visits, held discussions with leaders and field workers, carried out analyses and then proposed specific solutions.

DuPont and Prajer also introduced Key Performance Indicators (KPI) to evaluate PSM at group level. Vojtech Harča, PSM manager MOL Group, elaborates, “The KPIs became part of our PSM manual which was prepared with substantial support from Chris. He also helped us design the site level *Management of Change* regulation structure, to fulfil the requirements of our insurance company.”

DEVELOPING PROCESS SAFETY AT MOL

Prajer got to know the organisation so well that he collected examples of everyday work experiences for use in a second series of workshops. Starting in 2007, DuPont trained 120 employees — from first line supervisors to process safety engineers and specialists — from 10 individual legal entities in Hungary, Romania and Slovakia.

Peter Augsten, DuPont project manager, explains, “With the number of different languages and businesses involved, we tailored these workshops together with MOL Group to address the specific issues the participants face and developed customised training material. We also used examples from everyday work experiences at MOL Group that Christophe had gathered and presented them at the workshops, so that DuPont consultants could advise on how to tackle concrete local issues rather than working with general examples.”

In addition to Prajer, other DuPont specialists from a range of European DuPont operations came in at various stages to work with MOL Group on the introduction of specific elements of the process safety system, giving the group “specialist to specialist” support.

Helping MOL Group become self-sufficient

The objective for DuPont had always been to make MOL Group self-sufficient and give MOL Group employees the skills to carry the PSM programme forward themselves. Harča says, “We wanted DuPont to help us identify the right people in MOL Group and then train them so that they could become trainers themselves. This part of the programme was called *Train the Trainers*.”

During a transitional period DuPont consultants accompanied new MOL Group process safety trainers as they rolled out the programme to different sites. By mid-2008 MOL Group had become self-sufficient and established a large, dedicated process safety network with more than 120 expert members.

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— **Vojtech Harča,**
PSM manager,
MOL Group

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One of the MOL Group petrol stations

To ensure that everyone in the group knows what is expected of them, all process safety management requirements have now been set out in the new MOL Group PSM Global Operative Regulation. Process safety management has been made mandatory for all hazardous operations and contractors are also given a set of standard requirements they have to abide by if they want to work for MOL Group.

“Overall, the change is big, though difficult to express in numbers,” Harča says. “The most important difference, in my opinion, is that people are taking action to make operations safer in divisions such as retail, what does not belong to our ‘closely watched’ risky operations.”

The process safety management project has been judged to be so successful within the MOL Group, and the company has such confidence in its efficacy, that it is being extended to other companies in the group in Pakistan and Russia.

About MOL

MOL Plc is a leading independent, international and integrated oil and gas company in Central-Eastern Europe, headquartered in Budapest. MOL Group has operations in Europe, Middle East, Africa and the CIS member states and it employs over 15,000 people worldwide. MOL also owns 3 highly complex refineries in Hungary, Slovakia and Italy and according to the Wood Mackenzie global survey, its refineries in Hungary and in Slovakia are the most efficient refineries in Europe. MOL operates over 1000 filling stations in Central and South Eastern Europe. MOL Group also operates over 5,000 km high pressure natural gas pipeline network in Hungary and is involved in the petrochemical business as well.

About DuPont Safety Resources

DuPont has been focused on safety for more than 200 years. Through DuPont Safety Resources, its safety consulting arm, the company brings this knowledge to its clients every day across many global markets. The comprehensive range of safety training products helps organisations develop a safe workplace and workforce, and also reap the benefits of increased worker morale and an improved bottom line.