

## INCIDENT INVESTIGATION COURSE

SLP, in collaboration with IChemE, organized a two-day course on Incident Investigation on 26-27 Nov 07.



The course was well-attended by industry HSE practitioners, and Operations & Maintenance personnel.

It was conducted as a workshop. Hence participants were able to engage the trainers as well as the other participants in various discussions and sharing of each others best practices in incident investigations.

Participants were grouped into tables. They worked together and then presented their solutions to the problems/tasks that they were assigned. The cases were taken from industry. It was a very fruitful two days for them.

As always, any good training cannot go without good food. Over the two days, delicious lunches and snacks kept the participants and trainers going in between the serious work.

At end of the course, participants bade farewell to each other and promised to keep in touch to share best practices. To top it off, all participants left the workshop knowing that they had acquired some new knowledge. They had a better grasp of the subject and understood the various tools available to help them uncover root causes.

By Dennis Tay

We had the privilege of having John Lockwood and Tan Kian Hock, two of the most experienced industry practitioners, as the trainers for this course.

The first day of the course started with the opening address by IChemE Singapore Branch Chairman, Steve Puckett, followed by a short speech by SLP Vice President, Tay Cheng Pheng.





# President's Message

In this message I would like to address the issue of our society's continued well-being. On Dec 7, your Executive Committee held a half-day strategic planning meeting to map out a strategy to help our society move forward and enhance our stakeholders' long-term value. Who are our stakeholders? Our stakeholders are none other than you (our members), local and international professional bodies and government agencies associated with loss prevention & EHS in the oil, chemical and process industries.

The Executive Committee's Strategic Planning meeting focused on the areas requiring improvement and enhancement to achieve our long-term goal of enhancing our stakeholders' value. Key focus areas included Technical Programs, Communications and Information Sharing, and Membership.

We need to keep pace with the changing business environment and the expectations of our stakeholders to stay relevant. Our strategy, which will be translated into a Work Plan, can only be successful with the full support of our members and those who volunteer their precious time in the various Standing Committees that we propose to form and the Executive Committee.

I would now like to emphasize the value of our Corporate Members. They, through their nominees, play an important role in the Society - their presence make a difference as most, if not all, of our corporate members have resources such as technical know-how and capability

in loss prevention and EHS to share with other players in our industry through various technical programs. We view this as part of their corporate social responsibility to help industry as a whole improve its EHS performance. The benefits gained by our corporate members are not always immediate. They are long term. For instance, these members are users of services provided by suppliers and contractors. Improvements by these suppliers and contractors will ultimately translate into the performance of the corporate members themselves. Employees and staff of Corporate Members benefit from SLP's technical program and information exchanges. Participation in SLP activities is an invaluable forum for like-minded people and professionals to meet and learn from one another.

I am pleased to say that our society is gaining more recognition from government agencies such as SCDF, MOM, NEA and SPRING Singapore. Similarly, we are making our presence felt with other professional bodies, both locally and internationally. We need to continue to collaborate with them through participation in the formulation of loss prevention and EHS standards, codes of practice, technical guidelines, etc. All these cannot be done without the active support of our members.

As incidents and accidents have no holidays, we must continue to be vigilant to maintain our loss prevention and EHS standards and safe work practice during the coming festive season where chemical and process plants may be busy and lean in various functional supports. This could potentially increase the risk of being complacent in EHS.

**I WISH YOU ALL A MERRY CHRISTMAS AND A HAPPY AND SAFE NEW YEAR AHEAD.**

## Editorial

It is that time of year again when we send all our friends and colleagues our good wishes for the Holiday Season. It has been a good year for us in Singapore because the economy has been doing well and nearly everyone who is ready and willing can find some gainful employment. It is also a time to make resolutions for the next year.

### What are these resolutions for SLP?

Like other professional societies, we are subject to "market" forces. When we were formed in the early 1990s, the intellectual space we occupied was less crowded. Now there are competitors. For example, when Prof Ching and his committee organized the first conference on loss prevention in 1989, the field was new and the conference was a huge success. Now the same conference would face stiff competition. Other than conferences, we also organized training courses, seminars, workshops and technical talks. These have been our staple diet.

Our Executive Committee has been grappling with these issues these past few months and we recently held a half-day strategic planning meeting on Dec. 7. Taking the results of an earlier SWOT analysis, we worked on an action plan for the way forward. Our President, Ong See Hee, has made reference to this strategic planning work in his message. You will hear much more on this in the new year. Doing the strategic plan is rightfully the work of the Exco. To translate these plans into action is another matter. One of the things the Exco will do will be to form standing committees to execute the plans e.g. Training, Technology, Conferences and others. When you are approached to serve on one or more of these working teams, please seriously consider the request and come on board. Better still, put your hands up and volunteer.

This is the Number One resolution for SLP — to regenerate itself so as to remain the society of choice for professionals in safety, health and the environment.

Members will notice that we have been busy these past few months. We were invited to join SCDF in its CERT (Company Emergency Response Team) assessment launch. Our President made a presentation on Emergency Response Planning at the ceremony. There will be more on this in the near future.

We paid a visit to the SCDF Academy on Nov. 15. This was a very interesting and informative tour of the facilities. Attendees will agree that SCDF is well prepared to deal with any emergency. SLP members have many dealings with SCDF and the visit was an excellent way to build rapport.

On Nov. 20, we co-hosted a technical talk with SCDC on Process Safety Performance Indicators Metrics by Mr Mitch Krutilek of Chevron Phillips Chemicals. As members will know, process safety management (PSM) has gained much prominence since the BP Texas City incident in 2005.

PSM is distinct from personnel safety. For example, a plant can have an excellent personnel safety record but go on to suffer a catastrophic accident because of a process failure.

On November 26 and 27, we held a successful training course on Incident Investigation. This was a collaborative effort with the Singapore branch of the Institution of Chemical Engineers.

As a side comment, we will increasingly lean towards collaborative efforts with other like-minded organizations in the future. This is driven by the reality of "scarce resources".

November was hectic to say the least.

To end this note, we need to go back to our strategic plan and resolution.

SLP is as good as its members want it to be.

When you are asked to make a contribution to SLP and to the science of loss prevention, please step forward.

**HAVE A HAPPY HOLIDAY SEASON AND A SAFE NEW YEAR 2008.**

# Process Safety Performance Indicators (Metrics)

On March 23rd, 2005, an accident at BP's Texas City refinery resulted in 15 fatalities and 170 injuries. This accident became a watershed process safety event that triggered many process safety management (PSM) initiatives. One such initiative was the recommendation of process safety performance indicators for the chemical process industry. This was recommended by the BP Refineries Independent Safety Review Panel (Baker Panel) and also the U.S. Chemical Safety Board (CSB).

To help better understand the latest recommendations and for best practice sharing, SLP and SCIC (Singapore Chemical Industry Council) jointly organized a talk on "Process Safety Performance Indicators (Metrics)" by Mr. Mitch Krutilek, Manager of Process Safety Management in Chevron Phillips Chemicals Company in Texas. This talk was held on November 20th, 2007, at the EDB Academy in Jalan Bukit Merah. 40 SLP and SCIC members and guests attended.

In his presentation, Mr. Krutilek stressed that the primary objective of Process Safety Management (PSM) is "to use metrics to measure and track the effectiveness of the process safety management system to prevent the release of hazardous, toxic and flammable materials, and hence preventing catastrophic accidents". These performance indicators should be used to drive changes in human behaviour and in the safety system, to reduce risk and have fewer accidents. Indeed, he stressed that continuous improvement in the process safety system has been the emphasis of Chevron Phillips Chemical. He spoke about the company's proactive approach to the adoption of the "right" metrics and their use to manage process safety. These metrics serve to indicate the state of health of important aspects of the process safety management system. If measured and monitored, he said that these metrics would indicate early deterioration in the effectiveness of these key safety systems. Hence timely remediations can then be taken to avoid a serious process safety incident.



Terrance Koh, SCIC's Director showing his appreciation on behalf of the audience

He went on to elaborate why and how the following indicators were adopted for his company.

## A. Lagging indicators

- Number of process safety incidents
- Process Safety Severity Index (ACCI metric)
- Precursors (Leading or Lagging)
- Challenges to safety systems

## B. Leading indicators

- Number of preventive maintenance or inspections past due
- Number of mechanical integrity corrective recommendations past due
- Number of maintenance procedure reviews past due
- Number of PSM related action items past due by year
- Number of permanent Management of Change past due by year
- Number of temporary Management of Change past term in date by year
- Number of open, cancelled, and closed Management of Change's by year
- Number of contractor monitoring past due
- Number of PSM training courses past due

This interesting and informative presentation was followed by a lively discussion during the tea session that followed.

The Director of SCIC, Mr. Terence Koh ended the proceedings by thanking Mr. Krutilek for his valuable insights and presenting a memento to him.

By Tay Cheng Pheng

Mitch taking a question from the audience



# Visit to Civil Defense Academy

On 15 October 2007, a group of our eager members visited the Civil Defense Academy (CDA). A light drizzle did not mar their enthusiasm.



Led by our President Ong See Hee and Honorary Secretary Ngiam Tong Yuen, the group was welcomed by Major Ivan Sin and his staff. Members first gathered at a conference room for an overview of SCDF – what it does and how it contributes to the safety and security of Singapore. The briefing included a video that showcased civil defense officers in action, doing what they do best – saving lives and property.

Many of us were awed by the training regime at the CDA. Trainees are put through a systematic series of stringent and rigorous training before they can become full-fledged fire-fighters and rescuers. Fitness is heavily emphasized by the academy and SCDF because of the simple fact that "if you are not physically fit, how then can the lives of others and properties be dependent upon you?"



The academy has an exchange program where SCDF officers train in other countries or participate in relief missions while officers from its counterpart in other countries come over to CDA for training.

Members were still digesting the information from the briefing and video when Major Ivan Sin and his team invited us to proceed to the "live demo" area.

A special tent had been set up with seats at the parade square and located at a safe distance for the visitors to view a treat of "fireworks". This was no ordinary fireworks. It was a display of the fire-fighting techniques for various types of fire situations that could occur in industrial settings. One moment there was flame shooting out from above storage tanks, the next moment we saw an "oil" fire occurring within a mock-up chemical plant



facility. We could not help but be amazed at the depth of detail that the CDA employed / deployed to make its training as realistic as possible. Kudos to CDA!

The highlight of the visit was the experiential demo in the "furnace" – a **15-storey building** in which simulations of different fire scenarios (discotheque, karaoke bungalows, industrial warehouse, etc) can be created for training. All of us were literally heated up (more like being grilled, actually) while watching each simulation.



We witnessed the fitness test stations that CDA uses to ensure the fitness of its field officers. After seeing the various fitness tests that SCDF officers have to pass on an ongoing basis, it is no wonder that these CD officers do not pant or crumble under the weight of equipment during a real life emergency.



The visit ended with some light refreshments at the Officers' Mess. Our President presented a memento to Major Sin in appreciation of the CDA's hospitality.

By Dennis Tay

# LAUNCH OF CERT ASSESSMENT BY SCDF



On September 28, SCDF launched the CERT Assessment Audit program for all facilities and installations that are covered by the Fire Safety (Petroleum and Flammable Materials) Regulations 2005. Such facilities and installations are required to have an in-house Company Emergency Response Team (CERT) to be the first responders to any emergency or in the words of SCDF, "The CERT should be capable of handling all the initiating events identified in the Emergency Response Plan (ERP) ... ." In Singapore, SCDF will take over command of the emergency upon its arrival at the site.

The assessment is being introduced as part of a process of continuous improvement for Singapore industry to ensure an adequate standard of emergency preparedness.

See Hee speaking about our ERP Guidelines

## Preparation work

The HazMat Department of SCDF invited SLP and Singapore Chemical Industry Council (SCIC) to review and provide feedback for its draft assessment guidelines. Our President and Hon Secretary attended several working meetings with SCDF officers not only to discuss the draft but also to work on the launch event. This took the form of a seminar on Sept. 28 at the Home Team Academy in Choa Chu Kang. The seminar design ensured that there was participation from all stakeholders – SCDF, industry (represented by SCIC) and loss prevention professionals (represented by SLP).



See Hee and Kit Wing concentrating hard on the presentations

Our President presented our Guidelines for Emergency Response Planning. Members will recall that SLP has conducted training on our ERP Guidelines a number of times.

In addition to See Hee's presentation, we also took a booth in the display area and used the opportunity to provide brochures on SLP, sold some copies of our ERP Guide and distributed our membership application forms.

SLP is proud that it helped to launch an important initiative to raise the overall emergency preparedness level in Singapore.

## Seminar

The Director of HazMat Department, LTC Teong How Hwa, explained the objective of the audit/assessment and introduced the guidelines. He invited feedback from the audience who were mostly from industry. He announced the intention of SCDF to start the audit/assessment in 2008. The audit would be done as part of licensing/re-licensing. Workshops would be held to help industry get ready.

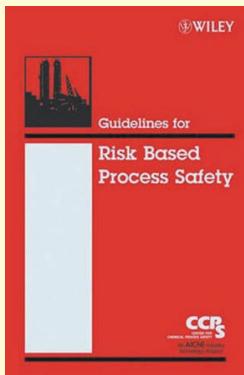
Industry papers were done by Naranjan Singh of Merck Sharp and Dohme, Ridwan Jaafar of Sun Ace Kakoh and Brian Rains from SCIC.



Penny at our booth speaking to potential members

# Book Review ---- Guidelines for Risk Based Process Safety

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.  
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The Guidelines for Risk Based Process Safety provides guidelines for industries that manufacture, consume or handle chemicals, by focusing on new ways to design, correct or improve process safety management practices. This new framework for thinking about process safety builds upon the original process safety management ideas published in the early 1990's. It integrates industry lessons learned over the intervening years, utilizes applicable "total quality" principles (i.e., plan, do, check, act), and organizes it in a way that will be useful to all organizations - even those with relatively lower hazardous activities - throughout the life-cycle of a company.

Comparison of Risk Based Process Safety (RBPS) Elements and the original CCPS PSM Elements and OSHA PSM/EPA RMP Elements revealed the following:

- Process Safety Culture (similar element exists in CCPS PSM Guidelines)
- Process Safety Competency (similar element exists in CCPS PSM Guidelines)
- Workforce involvement (similar element exists in OSHA/EPA Guidelines)
- Stakeholder Outreach
- Safe Work Practices (similar element exists in OSHA/EPA Guidelines)
- Contract Management (similar element exists in OSHA/EPA Guidelines)
- Operational Readiness (similar element exists in OSHA/EPA Guidelines)
- Conduct of Operations
- Emergency Management (similar element exists in OSHA/EPA Guidelines)
- Measurement and Metrics
- Management Review and Continuous Improvement

This book deserves serious study by everyone in the chemical industry.

By Ong See Hee

# CHANGE FORM

Keeping members' particulars current is a challenge for our Secretariat. This is important for administrative reasons, the most important of which is communications. The cooperation of members is therefore sought in keeping their particulars current. Whenever there is a change, please email our Secretariat — Penny Pan, Email Address: [secretariat@sp.org.sg](mailto:secretariat@sp.org.sg)

And supply the following information:

Name:

Grade of Membership or Corporate Nominee:

Name of Employer (if applicable):

Position title (if applicable):

Email address:

Postal address:

Tel (Home):

Tel (Office):

Mobile:

Please highlight the changes.

For Corporate nominees, please inform the Secretariat whenever you have ceased to be the nominee or if a new person has been named as a nominee. Please supply the particulars of the new nominee.

Thanks for your cooperation.

Ngiam Tong Yuen  
Hon. Secretary

## WE WANT TO HEAR FROM YOU

The SLP Newsletter is circulated among members and other like-minded organizations. We are always seeking to improve the quality of this publication.

We welcome contributions of interesting news that cover loss prevention in the oil, chemical and process industries.

Please send your contribution or any queries to:

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