



# NEWSLETTER

**THE INSTITUTION OF FIRE ENGINEERS (SINGAPORE BRANCH)**

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Website: [www.ife-singapore.org](http://www.ife-singapore.org)

## NOVEMBER-DECEMBER 2007

### IS MONEY MORE VALUABLE AS TIME

How Time flies !!! Year 2007 is coming to an end. As we reflect on what we had achieved, did we ever wonder what is the value of time?

Imagine there is a bank that deposits.....

Imagine there is a bank that deposits \$86400 into your account each morning. But there is a catch – it carries over no balance from day to day, so you lose every dollar you don't spend. What would you do? You'd spend every cent, of course!

Each of us has such a bank. It's name is Time. Every morning it credits you with 86400 seconds. Every night it writes off as lost, whatever you have failed to invest to good purpose. It carries over no balance; it allows no overdraft.

Each day it opens a new account for you. Each night it burns the remains of the day. If you fail to use the day's deposits, the loss is yours. There is no going back. There is no drawing against tomorrow.

You must live in the present on today's deposits. Invest it so as to get from it the utmost in health, happiness and success. The clock is running. Will you make the most of the time you've been given.

Is time – a little or a lot – all that important? Consider the following:

*To realise the value of one year, ask a student who failed a grade.*

*To realise the value of one month, ask a mother who gave birth to a premature baby.*

*To realise the value of one week, ask the editor of a weekly newspaper.*

*To realise the value of one day, ask a daily-wage laborer with several children's mouths to feed.*

*To realise the value of one hour, ask the lovers who are waiting to meet.*

*To realise the value of one minute, ask a person who missed a train.*

*To realise the value of one second, ask a person who has just avoided an accident*

*To realise the value of one millisecond, ask a person who won a silver medal in the Olympics*

#### IFE (Singapore Branch) Council Members

**President**

Tan Jin Thong FIFireE

**Vice President**

Siew Yee Cheong FIFireE

**Honorary Secretary**

Azmi b Adam FIFireE

**Honorary Treasurer**

Pandi Karuppiah FIFireE

**Members**

Koh Soon Chuang MIFireE

Christopher Ang MIFireE

Yeow Mei Leng FIFireE

Vincent Leong Kuan Yu MIFireE

S Ramasami FIFireE

K Ramanathan GIFireE

Fong Kum Wah AFFireE

## MEMBERS' NITE

IFE is organising a Members' Night 2008 on Friday, 25<sup>th</sup> January 2008 at 7.00 pm sharp at the Emerald Ballroom 2, Parkroyal on Kitchener Road, 181 Kitchener Road, Singapore 208533 (former New Park Hotel)

We have lined up two programmes at this event:

1. **A Technical talk** on fire pump controllers designed to meet SS.CP.52 requirements to be presented by a Canadian controller manufacturer whose controllers are UL listed and FM approved.

Come and listen and you will be surprised how the fire pump controllers currently being installed in Singapore do not comply with SS.CP.52.

2. **NTUC-IFE Associate Program.**

NTUC will give a presentation on their membership drive to recruit IFE members to the NTUC family by explaining the benefits. They will sign an MOU with IFE if we are

able to guarantee at least 75% of our members to sign up in order to justify the \$45.00 annual subscription instead of the normal \$117.00.

Those of you who are already NTUC members can convert to the NTUC-IFE Card and pay the reduced subscription in future.

A Chinese/Muslim dinner will be served after the presentation.

### Charges:

Members have to pay \$10.00 which is refundable if you turn up for the function. Please note reservation is required. Return the enclosed form together with payment on page 7 to IFE to reserve your place. Guests of members are charged at \$50.00 per person. Reservation and prepayment is required.

Closing date for submission of reservation forms is **11<sup>th</sup> January, 2008.**

## Establishing Effective Fire Response Capability in Hydrocarbon and Petrochemical Installations

by

Mr Ramasami Sundaresan FIFireE, MBA  
Management Council Member

*This paper was presented at the Aposho 23 Conference held at Suntec Singapore on 31 Oct 2007.*

### **Abstract**

This paper aims to identify and broadly discuss the various elements that are essential for the establishment of emergency response capability to manage potential fire incidents in Hydrocarbon and Petrochemical installations.

### **1. Introduction**

Concentration of large quantities of flammable and combustible liquids, and

elevated operating pressures and temperatures render hydrocarbon and petrochemical processing and storage facilities particularly vulnerable to fires. Fire outbreaks in these facilities can very rapidly grow into significant proportions for want of proper emergency planning and provision of adequate material resource. The most important aspect of emergency response frameworks in hazardous installations is however that which relates to People.

## 2. Fire Risk Assessment

Systematic fire risk assessment and risk management strategies help minimize the element of surprise and raise the level of organizational preparedness to deal with credible fire scenarios. They also form the basis for the provision of appropriate fixed fire protection systems, and portable and mobile equipment. The fire risk assessment process facilitates the gathering and sharing of vital information relating to facility layout, processes and activities and their inherent risks. Such information is vital for effective handling of fire emergencies in these installations. This is the primary consideration underlying the practice of establishing in-house emergency response capability with dedicated or auxiliary response teams in oil refineries and petrochemical complexes.

### Fire Risk versus Fire Hazards

It is imperative to distinguish between fire hazards and fire risks at the outset. The term Fire Hazard\* (including explosion) refers to a situation or a set of conditions that poses a level of threat to life, health, property or environment. Hazards are generally dormant or potential, with only a theoretical risk of harm. They do commonly exist in any industrial environment, particularly so in hydrocarbon installations. Such threats are however kept in check through appropriate preventive measures and safe operating practices. However, these safety measures can sometimes fail and result in fire outbreaks.

Note\*: Term 'fire' include 'explosion' for this discussion.

### Definition

Fire Risk Assessment is a process to characterize the risk associated with a particular fire scenario, and is a function of their probability of occurrence, and their potential consequences.

***Fire Risk = Probability of a given Fire Outbreak X Expected severity of Consequence***

It naturally follows that a given fire risk may be mitigated by introducing measures that will bring about one of the following:

- a) Reduction of the probability of an outbreak occurring, or
- b) Reduction of the severity of loss from such occurrences, or
- c) Reduction of both probability and loss severity.

### Fire Risk Assessment Approaches

Risk assessment initiatives undertaken in industries can fall into one or a combination of the following 5 categories:

1. Qualitative
2. Semi-Quantitative: likelihood
3. Semi-Quantitative: consequence
4. Cost-benefit risk methods
5. Quantitative

Quantitative risk assessment (QRA), at one extreme, is a rigid, systematic and objective approach that relies on accurate and comprehensive data relating to the risk being assessed. QRA is usually conducted to meet statutory stipulations. It is generally reliant on external specialists and is conducted over considerable time frames. The outcome from a QRA is a set of specific, quantified and prioritized improvement measures.

Qualitative risk assessment, at the other end of the spectrum, is generally conducted by in-house resources utilizing only available data that is often incomplete. Qualitative risk assessment is the approach that is widely used for emergency preparedness initiatives at company level. Corporate level risk assessment projects more often resort to the quantitative approach.

## 3. Logistics

Reliable water supply and distribution network, and adequate levels of foam concentrate stocks are the other essential aspects of pre-fire planning. The assurance of a reliable water supply, the installation of adequate fire water pumps and the stocking of appropriate type and quantities of foam

concentrates are largely determined by corporate standards. These are invariably in place at the time of initial commissioning of the installation.

#### Mutual Aid

Where circumstances permit, and they generally do, industry wide mutual-aid schemes are developed among co-located installations.

Mutual aid schemes offer participating companies significant cost saving opportunities both in the capital outlay and recurring operating expenditures for the provision and maintenance of fire protection systems, equipment; and material inventory. In mature industrial clusters, mutual aid schemes have successfully overcome insurance and liability issues to include emergency response personnel in such schemes.

#### **4. Pre-Fire Planning**

From an emergency preparedness standpoint, it is imperative that appropriate response strategies and tactical procedures; and adequate logistics are developed to manage potential events. Emergency response procedures (ERP) should cover, emergency shut down, process and storage equipment isolation, personnel evacuation and emergency responder actions, including rescue and fire fighting.

The above is usually achieved through the development of a Pre-Fire Plan for each identified risk.. Pre-fire plans are equally valuable at on-site forward command as well as at the Crisis Command Centre for management decision and support.

Additionally, the pre-fire planning process provides an important avenue for reviewing the adequacy of existing hardware and material inventory in the light of emerging fire protection philosophies and new statutory requirements.

#### **5. Trained and Committed People**

It is worth reiterating here that the success or otherwise of all protection investments in hazardous installations is determined largely by the human element. The myriad protective hardware, be it automatic or manual, depend on human interface for their reliable upkeep; and skilful operation for effective performance when they are needed most. The involvement of as many employees and contractor personnel as practicable in appropriate emergency roles give rise to several benefits in respect to personnel commitment. It not only assures the much needed manpower availability during times of need, but also assists in raising the knowledge of emergency measures and awareness of their importance. Emergency Responders Given the low manning levels prevalent in most organizations today, dedicated emergency responders are few in numbers. However, they are usually highly trained to lead teams of auxiliary responders who are generally drawn from operations and engineering functions.

#### **6. Conclusion**

Managing hazardous installations like hydrocarbon and petrochemical processing and storage facilities in an efficient and incident-free manner is no mean task. The global safety record of the industry, despite the occasional major incidents, is a testimony to the dedication, commitment and sheer grit of its People – management, employees and contractors alike.

Successful management of major emergencies in the industry is attributable to the following factors:

- Efficacy of the design, installation and maintenance of protective hardware and logistics,
- Practical and comprehensive response plans and tactical procedures
- Regular exercises and periodic testing of the response capability and coordination, including with state civil defence authorities.

- Proper selection, training and staffing of emergency response teams and crisis management leadership structure.

It is, however, the motivation and commitment of the people involved that

constitutes the success factor. It is this that provides the necessary mortar to bind together the various discrete elements of a fire emergency management framework to achieve the unified goal.

## COURSE ON SERVICING & MAINTENANCE OF FIRE EXTINGUISHERS

The 4<sup>th</sup> run of the Course on Servicing & Maintenance of Fire Extinguishers will be held from 14-22 January 2008 jointly with NTUC Learning Hub.

### VENUE:

Theory lectures:  
14<sup>th</sup> Jan, 15<sup>th</sup> Jan & 21<sup>st</sup> Jan 08  
Centre for Employability Scheme  
NTUC Learning Hub, 2<sup>nd</sup> Floor  
141 Redhill Road  
Singapore 158828

Practical workshop:  
17<sup>th</sup> Jan, 18<sup>th</sup> Jan & 22<sup>nd</sup> Jan 08

32, Ang Mo Kio Industrial Park 2,  
#07-16, Sing Industrial Complex,  
Singapore 569510.

Course Fee: \$\$470.00 for IFE Member  
\$500.00 for Non-Member

Maximum Class Size: 25

Please fill up the application form on pg 9 and return it together with payment to the IFE Secretariat. As there will be limited places, allocation will be on a first-come-first-served basis.

## NEW MEMBERS

We would like to welcome and congratulate the following members whose applications have been approved by IFE UK: -

### Member

Mr Lee Soon On  
Jesplan Pte Ltd

### Graduate

Mr Robert Wayne Orchard  
Omvac Pte Ltd  
Mr Orchard has passed his Graduate Examination this year.

Also a very warm welcome to Mr Jack C Kilavuz who has transferred his membership from the Australian Branch.

## CALL FOR TRAINERS

NTUC Learning Hub will be conducting the following courses which are accredited to our Institution:

Fire Safety Committee (12 hrs)  
Fire Warden in Buildings (8 hrs)  
Fire Emergency Plan for Commercial/  
Industrial Buildings (7 hrs)

Fire Emergency Plan for Hotels (7 hrs)  
Fire Safety Audit (16 Hrs)  
Fire Protection System in Buildings (8 hrs)  
Incident Management (16 hrs)  
Hazardous & Explosive Substances  
Awareness (16 hrs)

The courses are conducted during the day.

Members who are interested in giving lectures can contact the Secretariat at 65360021.

## FSSD CIRULAR

Our Ref: CD/FSSD/12/01/03/04

DID: 68481407

FAX: 68481493

13 Dec 2007

### **REVISED FIRE RESISTANCE REQUIREMENT FOR ELEMENTS OF STRUCTURE OF CARPARK LOCATED IN THE BASEMENT OF A SINGLE BASEMENT BUILDING**

Under the current Fire Code 2007, fire resistance rating for elements of structure of basement carpark is 4-hours if it is in a building of more than 15m high (as given in Table 3.3A), irrespective of whether the carpark is protected by automatic sprinkler system or not.

2. SCDF has reviewed the risk level of a single-basement carpark that is protected by automatic sprinkler system and reckoned that should there be a fire outbreak in a vehicle, the sprinkler system would be able to help reduce the chance of fire spreading to other vehicles.

3. SCDF has decided that, with immediate effect, the minimum period of fire resistance rating of elements of structure of sprinkler-protected single-basement carpark can be reduced from 4-hours to 2-hours.

4. Please convey the contents of this circular to members of your Institution/Association/Board. The circular is also available in CORENET-einfo: <http://www.corenet.gov.sg/einfo>.

5. For any enquiry or clarification, please contact Mr. Randy Tan at tel. no. 68481461 or e-mail address: [Randy\\_Tan@scdf.gov.sg](mailto:Randy_Tan@scdf.gov.sg).

Yours faithfully

(transmitted via e-mail)

Poon Keng Soon  
Secretary, FSSD Standing Committee  
for Commissioner  
Singapore Civil Defence Force

**REPLY SLIP**  
**(By 11<sup>th</sup> January 2008)**

**MEMBERS' NITE**

The Secretariat  
The Institution of Fire Engineers  
1 Park Road, #04-42 People's Park Complex  
Singapore 059108  
Fax: 65355188

Date: \_\_\_\_\_

**MEMBERS' NITE**

I will be attending the Members' Nite on Friday, 25<sup>th</sup> January 2008 at the Emerald Ballroom 2, Parkroyal on Kitchener Road, 181 Kitchener Road, Singapore 208533 (former New Park Hotel)

I will bring along \_\_\_\_\_ guests. Enclosed is my cheque \_\_\_\_\_  
for the sum of \$ \_\_\_\_\_ made payable to "THE INSTITUTION OF FIRE ENGINEERS".

I am interested to sign up as a NTUC Member.

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name of Company: \_\_\_\_\_

Address of Company: \_\_\_\_\_

Tel No: \_\_\_\_\_ (O) \_\_\_\_\_ (HP) \_\_\_\_\_ (Fax)

Membership No: \_\_\_\_\_ E-mail address: \_\_\_\_\_

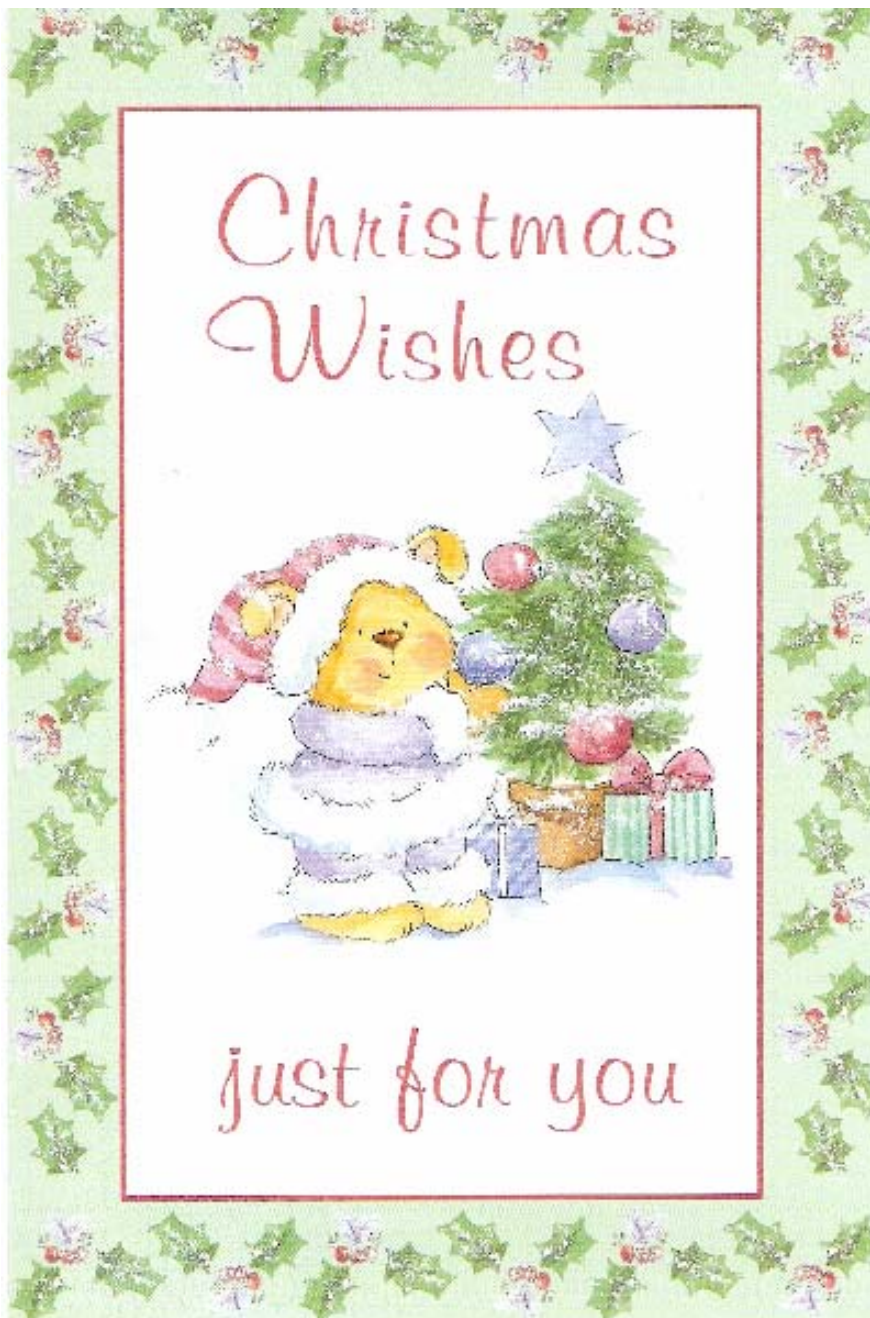
Member is charged \$10.00 which is refundable when they turn up.  
Guest is charged \$50.00

*The President and Council Members*

*Wish All Members*

*Merry Christmas and*

*A Happy & Prosperous New Year*



## **REGISTRATION FORM**

### **Fire Extinguisher Servicing & Maintenance Course 14<sup>th</sup> – 22<sup>nd</sup> January 2007 (6.30 pm – 9.30 pm) (Closing Date: 10<sup>th</sup> January 2008)**

The Secretariat  
The Institution of Fire Engineers  
1 Park Road,  
#04-42 People's Park Complex  
Singapore 059108  
Fax: 65355188

I am interested in enrolling for the Fire Extinguisher Servicing & Maintenance Course. Enclosed is my cheque \_\_\_\_\_ for the sum of **\$470.00 (IFE Member)**, made payable to "THE INSTITUTION OF FIRE ENGINEERS".

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name of Company: \_\_\_\_\_

Address of Company: \_\_\_\_\_

\_\_\_\_\_

NRIC/Passport No: \_\_\_\_\_ \*Citizenship \_\_\_\_\_

Date of Birth: \_\_\_\_\_ Sex: \_\_\_\_\_ Marital Status: \_\_\_\_\_

Tel No: \_\_\_\_\_ (O) \_\_\_\_\_ (HP) \_\_\_\_\_ (Fax)

Membership No: \_\_\_\_\_ E-mail address: \_\_\_\_\_

\* For non-Singaporeans, a copy of the employment pass/work permit must be submitted with the application.