

# Chilworth

## Asia

Experts in Environment, Health  
and Process Safety



### Issue: 3

Welcome to Chilworth Asia June 2007 Newsletter. This issue outlines:

◆ REACH ◆ EVENTS ◆ HSE PROFILING ◆ RISK MANAGEMENT ◆ HAZARDOUS AREA CLASSIFICATION

### From Director's Desk:



Hello Friends,

Chilworth has completed four years of operation in Indo-Asia region. Thanks for your valued interest in CHILWORTH ASIA; We are working in INDO-ASIAN region to assist the companies to develop their HSE standards.

Chilworth ASIA would always welcome your suggestions and queries so that we can assist you with our best available international & technical expertise.

We again undertake this opportunity to present our third issue of the newsletter and it shall be our endeavor to keep you informed and abreast of the latest developments in the area of EHS.

We look forward to your continuing support. In case of any feedback, you can directly respond to me at [info@chilworth.co.in](mailto:info@chilworth.co.in).



Chilworth India HQ at New Delhi

**P.K. Sharma**  
Director

### REACH & ITS BENEFITS-CHILWORTH ASIA

#### Registration, Evaluation and Authorisation of Chemicals

The new European Chemicals regulation (REACH) was adopted in December 2006.

**REACH** stands for Registration, Evaluation, Authorization and Restriction of Chemicals. REACH Regulation (EC) No 1907/2006 and Directive 2006/121/EC amending Directive 67/548/EEC were published in the Official Journal on 30 December 2006.

**REACH** will enter into force on 1 June 2007. Enterprises, which manufacture, export or import more than one tonne of a chemical substance per year, will be required to register it in a central database administered by the new EU Chemicals Agency. The Agency will provide IT tools and guidance and Member States will offer helpdesk assistance to the impacted companies.

#### Achieving REACH by CONSORTIUM C3-B (CHEMSAFE, CHILWORTH, CERB, BRIXHAM)

Chemsafe is an independent consulting and project planning company Located in Northern Italy (near Turin) offering its services to the Chemical, Agrochemical and Pharmaceutical industries. Founded in 2001, Chemsafe offers its clients a combined Scientific, Regulatory and Project Management expertise based on more than 15 years' experience in the field of chemical safety. They have consolidated relationships with the main European Competent Authorities (Italy, France, Spain, UK, Ireland and Malta) allowing them to also offer consultancy for dossier submission and after submission assistance. Chemsafe is also part of a consortium of companies called C3-B, and it provides the administration and submission expertise, with Chilworth Technology handling Phys-chem studies, CERB SA the toxicology enquiries and Brixham Environmental Laboratory dealing with eco-toxicological

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studies. C3-B is therefore the ideal partner to support companies looking for REACH implementation.

### EVENTS-CHILWORTH ASIA (First Quarter)

#### 1. CHEMTECH 2007

CHILWORTH ASIA participated in CHEMTECH 2007 held in JAN 2007 and exhibited its services.



#### 2. INTERNATIONAL SEMINARS

Chilworth ASIA organized two international seminars in March 2007 at Mumbai & Delhi, the topics being:-

“**Flammability Hazards**” - From Basics to Advance”

“**REACH**” - Registration, Evaluation and Authorization”

### Faculty Details

#### REACH :

**Dr. Antonio Conto** is a Senior Toxicologist and founder of Chemsafe Sas.



#### FLAMMABILITY HAZARDS :

**Richard W Prugh** is a senior process safety specialist with Chilworth Technology Inc., USA



### UPCOMING EVENTS-

#### 1. Seminar On

*Electrostatic Ignition Hazards- Assessment & Control" & "Dust Explosion Hazards- Prevention & Protection"*



Upcoming Seminar by Chilworth India faculty at Hyderabad : 10<sup>th</sup> July'2007 & Chennai : 12<sup>th</sup> July'2007

#### 2. Technical paper presentation in IORS 2007

### TOPIC - Significance of Process Risk Management In Oil & Gas Industry

Mr. Vinod Wagh, Sr. Process Safety Consultant, Chilworth Asia will be presenting technical paper in IORS 2007.

### HSE PROFILING OF EMPLOYEES

In process industries most of accident occurs due to Human Behavior, so HSE profiling of employees is needed. To carry out employee profiling, the following elements are considered:

1. Planning
2. Organization & Responsibility
3. Communication & Involvement
4. Policy & Objectives
5. Training

There are three steps to the Chilworth profiling process:

1. Structured Questionnaire/ Assessment Sheets
2. Site Visits / Walk-through Surveys (behavioral Observations and personal interactions)
3. Personal Interviews

Chilworth will be looking mainly at individual and organizational characteristics, but job characteristics will not be ignored.

**“The individual, job and organizational characteristics that**

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influences behavior in way that can affect health, safety and environmental performance”.



## RISK MANAGEMENT

### OVERVIEW

Risk management addresses controlling of risk to protect people, the environment and company assets. It involves the systematic application of management policies and tools to analyze and assess potential impacts of uncertain future events, such as fires, explosions, toxic releases and natural events.

There are several risk analysis tools used to assist in decision making; from relative risk ranking of risk reduction strategies to comparison of quantitative risk estimates to established risk tolerability criteria. Chilworth professionals are experienced in the application of simplified, qualitative and quantitative methods of risk analysis and can provide guidance on the appropriate level of analysis for a given problem. Methods we have utilized for our clients include:

- Perform HAZID, HAZOP studies & hazard assessment
- The frequency of occurrence of hazardous events is estimated by employing a statistical approach utilizing available failure databases, Fault Tree Analysis (FTA) or layer of protection analysis (LOPA)
- Perform dispersion models
- Conduct fire and explosion analysis (FEA)
- The impacts of hazardous material releases are quantified by employing hazard consequence models
- Perform qualitative and quantitative risk assessments using event and fault trees.
- The results of quantitative risk assessments are compared with risk tolerability criteria.
- Risk Management Programs (RMP)
- Develop management system

- Develop and audit prevention programs
- Develop emergency response plans

Companies that implement effective process safety programs receive a windfall benefit every year. This income shows up on the bottom line in the form of the major incident that did not occur. Process safety provides unparalleled capacity for enhanced risk reduction. Your company's risk exposure is reduced in the following areas when well-founded process safety systems are in place.

- Lives are saved and injuries are reduced
- Property damage costs are reduced
- Business interruptions are reduced
- Loss of market share is reduced
- Litigation costs are reduced
- Incident investigation costs are reduced
- Regulatory penalties are reduced
- Regulatory attention is reduced

Any of these items can easily put a smaller company out of business.

How does increased risk reduction capability enhance your company?

Most companies participating in this study observed significant reductions in injury rates due to implementing high quality process safety programs.

Incidents cause operational interruptions. If your plant is not idle due to an incident, you are making product and the business can flourish.

Incidents divert corporate management's attention from long-term business planning. When these managers have to stop and deal with incidents and other crises, it can distract their ability to concentrate on sustainable growth.

Your corporate reputation and legacy are protected for future generations.

Risk Analysis is an invaluable method for making informed risk based process safety planning decisions, as well as being fundamental to any facility-siting decision-making. CHILWORTH has a proven track record in performing RAs & has available modeling tools and data needed to perform QRAs. We are experienced in using them in a variety of National & International projects. Our professionals have performed assessments on a wide range of facilities, such as refineries, chemical plants, pharmaceutical plants, and fertilizer industries, cross country pipelines, crude oil refineries, LNG facilities, and transportation terminals.

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### HAZARDOUS AREA CLASSIFICATION FOR DUST

Many times it has been found that the fire & explosion risks associated with the flammable liquid/gas operations are given the required attention but go unrecognized for flammable solid handling operations. One of the main causes is the limited awareness among the industries about the hazards of dust fire & explosion and the prevention & protection techniques to control/mitigate the dust explosion risks.

One of the widespread observations of the flammable solid handling/processing industries is the use of non-protected [non-certified] electrical apparatus for flammable dust handling operations, presenting a serious risk of dust fires & explosions. Generally speaking, the awareness regarding selection, installation, maintenance and use of electrical apparatus for combustible dust handling operations is found to be very limited.

It is essential that the risk of spark from an electrical apparatus, capable of igniting flammable dust cloud is adequately addressed by selecting the suitable electrical apparatus inside the powder handling locations. For that, the identification of hazardous locations [based on the probability of occurrence of flammable dust cloud atmosphere is just as important where combustible dusts are handled as it is where flammable gases/vapors are used.

Hazardous area classification for dust identifies the locations in a plant where flammable dusts may be released, estimates the extent and likely duration of the resultant flammable atmosphere, and allocates zone designations to them. From this information, appropriate (electrical) apparatus can be selected.

Zone definitions used for combustible dusts:

**Zone 20** A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is present continuously, or for long periods or frequently.

**Zone 21** A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur in normal operation occasionally.

**Zone 22** A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

### Following personnel joined Chilworth in year 2007

- Sanjeev Paruthi, Dy. Manager –Business Development
- Aalok S. Negi, Sr. Engineer – Business Development
- Alok Singh, Sr. Consulting Engineer
- Babitha, Engineer – Fire & Safety
- Ligy, Engineer – Fire & Safety
- T.M Anand, Sr. Consulting Engineer

**Further: To learn more about CHILWORTH, visit [www.chilworth.co.in](http://www.chilworth.co.in)**

**Faxback: Please fax back your queries to Marketing at + 91- 11-26135979 / 22- 66942352**

**Or Email to: [info@chilworth.co.in](mailto:info@chilworth.co.in)**

Name: .....Job Title: .....

Company: ..... Address: .....

..... Pin code: .....Country: .....

Telephone: ..... Fax: ..... E-mail: .....

- ✓ I would like a FREE & confidential telecon with a consultant on EHS matters
- ✓ I would like a FREE visit from a consultant next time in my area

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