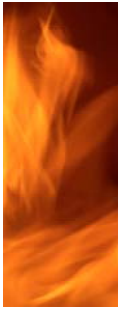


Explosion Science Seminar

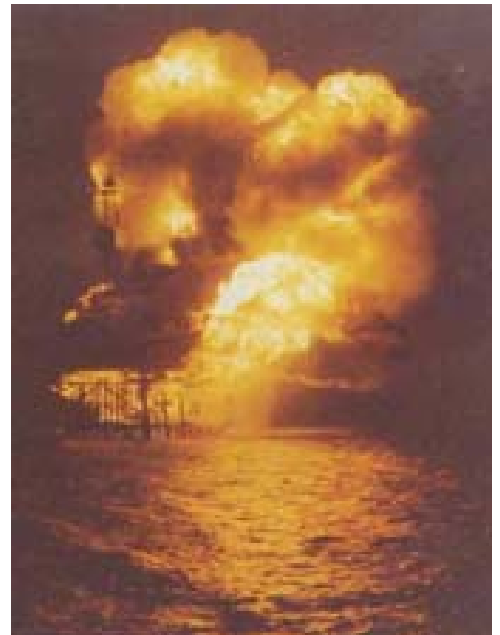
To include gas and dust explosion theory
DSEAR & ATEX regulations
Ignition theory and protection concepts



(CPD accredited by the
Institute of Fire Safety Managers, 7 hrs / day)



Theory
Prevention
Protection
Regulations



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Course program

Day 1 Gas explosions

Gas explosions, basics

Concepts, combustion, concentration, flame speed, explosion pressure

Ignition sources – how to prevent gas explosions

Electric, electrostatic, mechanical, hot surfaces

Explosion effects and consequences

Pressure, temperatures, radiation, damage to constructions, injuring personnel, gas dispersion and blast prediction using Computational Fluid Dynamics (CFD)

Hazardous area classification

Regulations, methodology, examples, the role of CFD

Risk analysis

Methodology, examples

Examples of accidents

Questions and discussions

Day 2, DSEAR / ATEX-directives and standards in force

ATEX product directive (ATEX 94/9/EC)

Regulation for equipment and protective equipment

Requirements for electric equipment

Standards In force

Requirements for mechanical equipment and protective equipment

Requirements described in equipment standards

DSEAR / ATEX user directive (ATEX 1999/92/EC)

Regulation for safety and health in potentially explosive areas

Risk assessment and explosion protection document

Questions and discussions

Day 3, Dust explosions

Dust explosions, basics

Concepts, combustion, concentration, flame speed, explosion pressure

Ignition sources, how to prevent dust explosions from happening

Avoidance of presence of ignition sources, housekeeping, inerting, maintenance, grounding

Smouldering combustion

Conditions, risk, prevention, protection, examples of incidents

Protection against the consequences of dust explosions

Pressure, temperatures, radiation, damage to constructions, injuring personnel, explosion venting, explosion isolation, explosion suppression

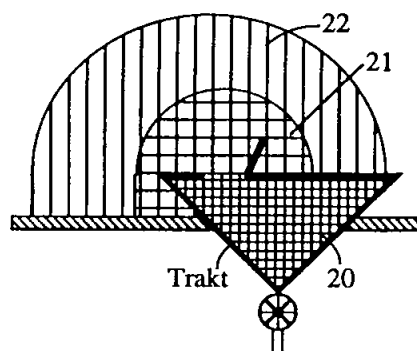
Examples of accidents

Questions and discussion



“A unique seminar for obtaining a full understanding of the explosion phenomenon, which effects and consequences one can expect, how to protect personnel and equipment in an optimal way and which regulations are in force”

The seminar would be newsworthy for companies handling flammable gases, liquids and dust and for suppliers of equipment to be used in potentially explosive atmospheres



 **FLACS**

Proposed Presenters (These are liable to change without notice)



Dave Price (Post Graduate Diploma Fire & Explosion Engineering, Leeds University, UK.), Managing Director GexCon UK, has 16 years of experience in the field of gas and dust explosions, until Dec 2007 was working within the Kidde group of companies as an Industrial explosion protection specialist and international sales manager. The main activities in these years have been the design, sale, installation and maintenance of explosion protection and mitigation systems. He has recently established GexCon UK and is responsible for providing UK customers with the wide range of specialist products and services that GexCon are highly respected for. President of the Institute of Fire Safety Managers 2008-2010



Geir H. Pedersen (MSc. Norwegian Institute of Technology (Chemical Engineering)), chief engineer and department manager has 27 years of experience in the field of gas and dust explosions. The main activities in these years have been experimental research, accident investigations, risk analyses and consultancy services. He has given many presentations on gas- and dust explosions.



Jan Roar Bakke (MSc (applied mathematics) University of Bergen, PhD (gas explosion modelling), Technical Director. He started his career at Chr. Michelsens Institute (CMI) in 1981, working on numerical modelling of gas explosions until 1988, when he became manager of the department gas explosions at CMI. In 1993 he went to Statoil where he worked as a specialist in the area of gas and fire safety technology until 1998. In 1998 he returned to GexCon where he now directs the gas consulting and accident investigations team.



Kees van Wingerden (MSc, University of Technology Delft, Netherlands, PhD. University of Bergen), marketing director and senior adviser, started his career at TNO (dept. of gas and dust explosions) in the Netherlands. In 1991 he joined CMR/GexCon, in 2002 he became responsible for the sale of explosion protection equipment at INCOM Explosionsschutz, Switzerland and Kidde Brand – und Explosionsschutz, Germany. In 2007 he returned to GexCon. He has more than 31 years of experience in the field (research, testing, consulting, risk analyses). He is convenor of the European Committee CEN/TC 305 WG3 "Devices and systems for explosion prevention and protection".



Barry Pomford (HNC Chemical Engineering, Manchester Polytechnic), Senior risk engineer, started his career at Pilkington Glass as a process engineer, later to become Chief Engineer at Morton International Speciality Chemicals, also many years experience working in the food processing industry for the likes of Arla Foods, and Heinz, UK & Europe. Recently has served with several notified bodies as DSEAR / ATEX Scheme manager. Today he concentrates on risk assessment in relation to ATEX and DSEAR including equipment directive consultancy and testing.
