



WHAT'S HAPPENING?

May 2009

MADDINGTON SERVICE STATION FIREBALL

Emergency services investigating the Maddington petrol tanker explosion have described it as a 'lucky escape' from a potentially fatal disaster. FESA continue to investigate the cause of the fire explosion, which sent a massive fireball into the sky when a petrol tanker exploded as it was filling an underground tank at a service station on the Albany Highway. Homes had to be evacuated and local roads and shops closed as a massive fireball shot into the air while a tanker was stationed at the Caltex-Woolworths fuel outlet.

FESA operational services officer Paul Ryan said the exact cause of the blaze was yet to be determined. "At this stage, we can ascertain that during the driver transferring unleaded petrol from the tanker to the ground tanks, there was some sort of ignition, and the fire commenced," he said. Officers from FESA's Fire Investigation Unit, Arson Squad, and the Dangerous Goods Division of the Department of Minerals and Petroleum were working to determine the cause of the fire. Mr. Ryan said crews from Maddington Fire Service and Welshpool were first on the scene to treat the initial fire, before a massive fireball shot out when the fuel tank ruptured. "On arrival, the guys found some tyres had started to ignite and some of the fuel areas around the garage had started to burn, so they started to cool the tank," he said. "The tank started to bulge a little bit and started pressurizing, (and) the guys then backed off from that area. "The side of the tanker which was facing the service station then ruptured." Mr. Ryan praised the efforts of the fire crews at the scene in placing water on the side of the tank to keep the strength of the aluminium in place, preventing further damage. "If they hadn't have done that, there was a possibility it may have failed, and taken some of our crews... so it was very good fire fighting by our personnel," he said. "If they hadn't done such a good job, we would be looking at something quite different, with the possibility that all the tanks could have ruptured. "It was very lucky we didn't have anybody lost." The fireball erupted after two of the tanker's six compartments failed due to the initial fire, affecting 15,000 litres of the 40,000 litres of unleaded petrol on board. Mr. Ryan said the tanker's driver was "very shocked and upset" but not injured in the blaze. The fire is estimated to have caused \$2 million damage.



Congratulations
on attaining
Full Membership

Graham Hogg
NSW

Welcome to our
new Associate
Members

Adam Ritchie
Queensland

Andrew Hahn
Victoria

Despite initial fears affected wastewater would seep into nearby rivers, Mr. Ryan said environmental teams had set up a small dam soaking system to ensure the Canning River would not be affected. The environmental cleanup will continue throughout Saturday.

By Chris. Robinson

<http://www.news.com.au/perthnow/story/0,27574,25492530-2761,00.html>

Perth authorities say the explosion of a petrol tanker has caused an estimated \$2 million damage and left a cleanup bill of \$500,000. The arson squad is investigating the fire which broke out in a tanker at a service station in Maddington yesterday afternoon. Fifteen thousand litres of fuel was lost and it took authorities 14 hours to clear the site. The Department of Environment and Conservation is pumping out drains which lead to the nearby Canning River. Paul Hughes from Fire and Emergency Services Authority says the drains have been blocked and pumped in an effort to stop the fuel reaching the waterway. He says the cleanup bill is estimated at half a million dollars. "The Department of Environment and Conservation are working with the Swan River Trust to make sure that is mitigated, because obviously they don't want any more pollutants than they need to enter any water," he said.

Photographs

<http://www.news.com.au/perthnow/gallery/0,21592,5053740-5013959,00.html>

Watch the Video

<http://www.youtube.com/watch?v=5m-VqWwfH0c>

Watch the Video

<http://newsbizarre.com/2009/05/video-gas-tanker-explosion-in.html>

Watch the Video

<http://www.news.com.au/perthnow/story/0,27574,25492530-2761,00.html>

Investigation Continues

http://www.abc.net.au/news/stories/2009/05/16/2572479.htm?WT.mc_id=newsmail

Are You Under 30 Years of Age?

You will have noticed that the Board of AIDGC approved the proposal for the reduction of membership fees for the next financial year.

To encourage younger people working in the dangerous goods industry to join AIDGC you will be offered fees of only \$150, plus GST, and free entry to the Annual Conference.

If you were born after 1979 you qualify, but we do need you to request this subsidy and to provide proof of age, either with a photocopy of your birth certificate or valid driver's license.

Send to the Treasurer, Chris. Flannery: lcf@alwaysonline.net.au

EMERGENCY RESPONDERS BEWARE: HYDROGEN SULFIDE IS DEADLY ! WHEN ITS SMELL DISAPPEARS - THE DANGER IS BIGGEST!



By Jetty Middelkoop - Jetty is a Hazmat Officer for the Regional Fire Department of Amsterdam Amstelland, The Netherlands.

On the 16th of March 2009, at a farm in Warns (a small village in north Netherlands), a twenty-three year old man entered a manure spreader tank to remove an obstruction. He immediately collapsed as a result of hydrogen sulfide poisoning. His father immediately dialled 112 (the emergency telephone number in the Netherlands) and then made a desperate attempt to save his son. As soon as he entered the tank, he too fell unconscious. A neighbour lifted the farmer up with a hook, bringing him closer to fresh air, but he was unable to get him through the narrow entrance of the tank without risking his own life. Firefighters arrived at the scene and got the father and the son out. The son died in the ambulance on the way to hospital. Doctors kept the father asleep for two days to give his stricken brain time to recover. He was able to attend the funeral of his son. He managed to do that on foot, which was a miracle on itself, as some victims with severe hydrogen sulfide poisoning spend the rest of their lives in a wheelchair or even live in a vegetative state.



Jetty after measuring the H₂S concentration in foaming manure and having determined it to be safe. It is important to wear breathing apparatus when you take measurements.

Hydrogen sulfide is a dangerous gas. In very low concentrations, starting at about 0.005 ppm, most humans can detect its characteristic odour, described as resembling "a rotten egg." At a concentration of 100 ppm, the olfactory nerve is paralyzed after a few inhalations, and the sense of smell disappears, together with awareness of danger. At several hundreds of ppm, the gas is deadly within minutes. At a concentration above 1,000 ppm, one breath of the gas is enough to make a healthy person fall down unconscious.

The media mistakenly often blame ammonia or methane as the cause of death in manure-related accidents. Ammonia, however, is released in much lower concentrations than hydrogen sulphide (depending on the acidity of the manure), and it is also much less deadly than hydrogen sulfide. Moreover, unlike hydrogen sulfide, it is lighter than air, making it dissipate within seconds. Methane can be released at high concentrations (not ppm but percentages in air). It can cause death by displacing oxygen--for which you need a lot--or through fire or explosion--which requires an ignition source.

Why Did I Write this Article for Emergency Responders?

Not because hydrogen sulfide can be released from manure pits or silos. Fire departments in rural areas already know about this risk and firefighters in urban areas will not likely encounter manure. However, hydrogen sulphide can also be produced in places where it is least expected. As a result, people, including emergency responders, can be taken by surprise.

Hydrogen sulfide can be produced at any location where biological or organic material breaks down in the absence of oxygen.

At biogas installations, in crude oil, gas wells, compost, septic tanks, sewers and waste water treatment plants.

On 31 March 2009, 10,000 cubic meters of biogas escaped from the new water treatment plant in Amsterdam West. The environmental service blamed the company for the fire and explosion risk caused by the escaped methane. Luckily, no one got hurt in this incident, but it might have ended very differently, as proved the incident on a Canadian mushroom farm on 5 September 2008.

Here, three men died and three were critically injured when a biogas pipeline ruptured inside the building where some of them were working. The men who worked inside died immediately. Others who ran to their rescue were reportedly in critical condition. Hydrogen sulfide was the cause.

Accidents in which hydrogen sulfide is involved happen much more often than most people think. Most of them take place in silence. People do not speak about them, mostly out of shame, especially when only animals are victims, or if a human victim quickly recovers in fresh air. Most people involved know the risks, but do not always take them seriously.

Recently Another Type of Hydrogen Sulfide Incident

has become more and more common in Japan but has now also emerged in the USA. Hydrogen sulfide suicide. The suicide candidate locks him- or herself up in a small room (bathroom, toilet, car) and then mixes two chemicals, leading to the uncontrolled release of hydrogen sulfide. If the suicide candidate does it "neatly", the door or a window has a warning sign on it so that potential rescuers are warned. If not, the vicinity will often notice it by the protruding stench and relatives or emergency workers fall ill or even die in an attempt to save the victim. Many people have ended in hospital because the hydrogen sulfide spread through the ventilation system.



Mixer ready to start mixing manure.

DIARY DATES FOR 2009

BRISBANE

**Class 4
Seminar
June 4**

**Greek Club
Edmondstone
Street
Brisbane, Q'ld**

**Mixed Class
Dangerous
Goods
August
(Date and venue
to be advised)**

Incident Procedure

Because the chance for firefighters to encounter a hydrogen sulfide incident seems likely, it is wise to check the incident area for the presence of hydrogen sulfide. Although Draeger tubes can be used, a better choice is the use four cell meters to measure flammable gas, oxygen, carbon monoxide, and hydrogen sulfide because these instruments can provide continuous readings.

As hydrogen sulfide is a poisonous gas, an incident with this gas automatically is a hazmat incident. However, rescuers do not need to wear hazmat suits. Normal firefighter gear with a breathing apparatus is adequate. It is very important to use the right method of decontamination afterwards. Decontamination with water with or without detergent is useless, as the gas does not react with skin moisture and remains in the clothes when these are flushed from the outside. The right way to decontaminate is by ventilation!

The breathing apparatus needs to be kept on while blowing a high volume of air into and onto the clothes. During the decontamination, the clothes need to be kept open or pulled out, which is a challenge while keeping the breathing apparatus on, but it is really necessary. The clothes need to be checked for traces of the gas before the ventilation is stopped. If a firefighter takes off his breathing apparatus too soon, he may get intoxicated, too.

This happened to a group of experienced firefighters in Rhadereistedt, Germany on 8 November 2005. After they removed four hydrogen sulfide victims out of a biogas building, gas fumes escaping from their clothes made them fall ill. The four rescued victims died. Two of them were declared dead on the spot, the other two later died in hospital. A fifth victim survived the ordeal. He had entered the building after the hydrogen sulfide cloud had escaped from a waste silo. He barely managed to get out of the building himself and had collapsed after having warned the emergency services. For a while his life was in danger too.

I Want to End with a Request

Last year, I started an accident register on manure gas accidents which have led to either sick or dead people and livestock or to explosions and/or fire because of ignition of manure gasses. The registered accidents are only the tip of the manure gas iceberg. Often when I give lectures on this subject in rural areas and ask local volunteer fire fighters who are also farmers, if they

SYDNEY

Class 4 Seminar June 11

**Ryde Eastwood
Leagues Club
West Ryde , NSW**

Hazardous Areas Standards June 16

Chatswood, NSW

AGM

August 7

**Ryde Eastwood
Leagues Club
West Ryde, NSW**

Mixed Class Dangerous Goods October

**(Date and venue
to be advised)**

personally have any experience with manure gas incidents, they deny this, but their eyes tell a different story. I hope that readers of this article who know of such incidents, are willing to report them to me with as many details as possible (date, place, description of what happened, any measurement information available, amount and state of the victims, both human and animals).

Privacy related information like the victim's names is not relevant for my register. And of course anyone who is interested in my register can ask for a copy.

Email: j.middelkoop@brandweeraa.nl

**Jetty is also a member of the Dangerous Goods-Hazmat Group
<http://tech.groups.yahoo.com/group/DangerousGoods>**

Mixed Class Dangerous Goods Proposed Seminars in Brisbane and Sydney

Frank Mendham from AECOM, has agreed to speak at two Seminars one each in Sydney and Brisbane on Mixed Class Dangerous Goods.

The stated purpose of AS/NZS3833:2007 is to provide minimum acceptable safety requirements for installations where more than one class of dangerous goods is stored and handled, whether in packages or intermediate bulk containers (IBCs) of up to 1.6 m³ capacity.

AS/NZS3833:2007 addresses the storage and handling of mixed classes of dangerous goods of Classes and Divisions 1.4S (as consumer commodities), 2 (as consumer commodities or aerosols of UN 1950), 3, 4.1, 4.3, 5.1, 5.2, 6.1, 8 and 9, and combustible liquids when stored with the dangerous goods, in packages and IBCs as described above.

The application of AS/NZS3833:2007 is particularly suited to Regional Distribution Centres. This paper addresses opportunities and challenges that result from the application of AS/NZS3833:2007.

**ANNUAL
CONFERENCE
SYDNEY**

**Friday 18th
September**

**Peter Wilkin
from Caltex:
Case Study
on Newport
Petrol Spill**

**Fire Videos
Film and
Discussion
Evening
November 26**

**Ryedale Room
Ryde Eastwood
Leagues Club
West Ryde**

**Details to be
advised**

Honorary Membership

Graham Goodfellow has written to the President thanking the Board for their kind nomination for an Honorary Membership – which he gratefully accepts.

This is only the second only Honorary Membership of AIDGC to be awarded and is in recognition of Graham's very significant contribution to the formulation and initial operation of the Australasian Institute of Dangerous Goods Consultants.

We hope as many as possible will be attend the AIDGC Annual General Meeting on August 7 at the Ryde Eastwood Leagues Club to personally acknowledge his contributions.

MHF Fees Announced

On 25 May 2009, the NSW Finance Minister, Joe Tripodi, issued a media release stating his acceptance of a MHF fees schedule recommended by the Independent Pricing and Regulatory Tribunal (IPART)

WorkCover NSW advises that the fee schedule is a combination of a fixed annual fee that recovers all non-registration costs and a variable fee that recovers all registration stage costs based on an hourly rate for specific activities. All MHFs are to pay a truncated base fee of \$28,500 for 2008/09 to reflect the fact that initial notification was not required until part-way through the year. No variable fees will be charged for the 2008/09 financial year.

IPART's final report and media release are available at:

<http://www.ipart.nsw.gov.au/latest-news.asp?id=193> .

The fee schedule is on page 40 of the IPART report. This and other information will soon be available on the WorkCover website: www.workcover.nsw.gov.au.

Gazettal of the fee schedule is expected to occur by the end of May 2009.

Keep in Touch

If you have any suggestions or queries, please do not hesitate to contact the AIDGC Executive Officer, Robyn Hogan at:

robhogan@tpg.com.au or via the AIDGC Paging Service on

02) 9430 6739 and I will return your call.

Corporate Members

Our Corporate Members provide a range of products and services to the Dangerous Goods Industry. Their contact details are:

AECOM
(Bassett is part of AECOM)
Tim Dean
(07) 3858 6700
M +61 421 407 633

AJM Environmental
Adrian Minshull
02) 9542 2366

Store-Safe Pty Ltd
Grant Breeze
02) 9569 2122

Vanguard Solutions
Tony Davies
08) 9420 5322

IN THE NEWS

Chemical Spill Leads To \$80,000 Penalty

One of the world's largest marine terminal operators was convicted today in the Melbourne Magistrates Court on a charge of polluting the atmosphere and was ordered to pay \$80,000 towards the construction of a community garden at Docklands. The company was also ordered to pay the EPA costs of \$10,000.

Over one tonne of ethyl acrylate was discharged onto the ground during the unloading of a container ship.

The spill resulted in a major pollution incident that lasted three days and affected air quality over a wide area of Melbourne.||

<http://epanote2.epa.vic.gov.au/EPA/media.nsf/7957c9b407150e5f4a256695000c4970/5f19c69921dc2c58ca25759a00256382?OpenDocument>

Toxic Emission to City River

An industrial site at Camellia will be forced to undertake major decontamination after the NSW DECC issued a formal notice over the property.

It is the fourth industrial site on the peninsula to be declared as being contaminated with hexavalent chromium, a human carcinogen and acute marine toxin. The original source of the contamination was reported to arise from an old chrome factory site which provided landfill for the industrial park.

<http://www.smh.com.au/environment/exposed-toxic-time-bomb-in-city-river-20090515-b62b.html>

STANDARDS WATCH

The Storage and Handling of Class 4 Dangerous Goods - DR AS/NZS 5026

The draft is open for public comment until 15th July 2009 and is available as a free download from:

<http://infostore.saiglobal.com/store/Details.aspx?ProductID=1119254>

CASE STUDIES

Catastrophic Tank Collapse

A liquid fertilizer tank catastrophically failed, seriously injuring two workers and partially flooding an adjacent residential neighbourhood. At least 35,000 L of the liquid urea ammonium nitrate was not recovered, with some entering the adjacent river.



The final investigation report is available from:

[http://www.csb.gov/assets/document/Allied Terminals Report Final.pdf](http://www.csb.gov/assets/document/Allied_Terminals_Report_Final.pdf)

SAFETY IS NO ACCIDENT

State Fines UCLA for Fatal Laboratory Fire

State regulators fined University of California LA more than \$31,000 for three "serious" breaches of workplace safety laws following the fatal burning of a staff research assistant in a chemistry laboratory fire.

The assistant was transferring about 50 grams of t-butyl lithium from one sealed container to another when a plastic syringe came apart in her hands, yielding exposure to a chemical which ignites instantly when exposed to air. The resulting fire set alight rubber gloves and synthetic sweater.

The findings by the California Division of Occupational Safety and Health concluded that the research student had not been properly

trained and was not wearing protective clothing permitting burns over 43% of her body. She died 18 days later.

The UCLA fine was the largest among seven recent cases involving accidents at academic research laboratories or those in the chemical and biotechnology industries.

<http://www.latimes.com/la-me-uclalab5-2009may05,0,7130412.story>

RESOURCES

Powder Handling - Bulk Density Chart & Newsletter

These searchable databases contain nearly one thousand products with dry powder or granular characteristics. Data includes bulk density and angle of repose for selected materials.

<http://www.powderhandling.com.au/bulk-density-chart>

<http://www.asiinstr.com/technical/Material Bulk Density Chart P.htm>

Powder Handling Newsletter

<http://www.powderhandling.com.au:80/newsletter/newsletter-may-2009>

Prevention of Falls

Road Tankers and Tank Containers

The HSE has recognized that gaining access to the tops of road tankers and tank containers can be an inherently hazardous activity. It is most frequently carried out to facilitate top loading/unloading e.g. for dangerous goods loads, during making/breaking connections, dipping or sampling the contents or during cleaning operations.

<http://www.hse.gov.uk/foi/internalops/hid/spc/spctg04.htm>

Safety of Workers when Accessing the Top of Freight Tank Containers

http://www.hse.gov.uk/research/hsl_pdf/2005/hsl0504.pdf

IN THE FACTORY

Cool Store Admits Guilt over Fatal Explosion



A cool store has pleaded guilty to three charges laid under the Health and Safety in Employment Act following an explosion that killed a fire fighter and injured seven Colleagues.

The legislation sets out the duties of employers regarding the safety of employees and others in And around the workplace.

This month my thanks
go to
John Baker
Rick Hall
Peter Hunt
Don Johnston
for their contributions.

The Director of the refrigeration company also faces charges under the A Fire Service report released nearly six months after the incident asse that fire fighters did not know that the cool store used a highly flammable refrigerant, which contained about 95 per cent propane. It was reported that there were no signs warning that flammable gas was present nor v there a smell of gas before the explosion.

http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=105721

Fine for Acid Cloud

Fines of US\$121,500 and US\$34,187 were levied against a chemical company following an acid leak that caused a toxic gas cloud which forced the evacuation of about 2,500 people from their homes for a day. It was reported that a transfer tank overflow resulted in loss of containment of about 1.5 tonne of oleum which reacted with moisture In the air to cause a sulphuric acid mist which drifted over the residential area.

<http://www.thepittsburghchannel.com/health/19518845/detail.html>

