Australasian Institute of Dangerous Goods Consultants

WHAT'S HAPPENING?

April 2006

DIARY DATES

NB DATE CHANGE!

- Because of a clash with Hazmat, the May 24 Seminar will now be held

* May 31

Emergency Plans

Ryde Eastwood

Leagues Club

* 25 & 26 May

HAZMAT

Conference

Melbourne

* August 3

Annual General

Meeting PLUS

EPA – Draft Code of Practice Underground Tanks

Philip Turner has been asked to represent AIDGC on this Committee and will report back to the Board. Thank you Philip!

Risk Assessment Forum

Our March workshop meeting was attended by 29 members who were presented with some audience participation exercises by Ross Underwood and Dick Benbow. The session, on Risk Management, began with a presentation by David Moore demonstrating that generic standards could produce very conservative results and that there were benefits in applying first principles. Rick Hall reviewed the specific risk assessment and management requirements of the Regulation and the Code of Practice. Doug Gibbons from WorkCover, who came as our guest, contributed to the discussion, as did many members.

Next Technical Seminar

Our next meeting, on Wednesday 31st May, is on emergency plans with a presenter from NSWFB – watch for the flyer coming soon. This meeting is on a different weekday at the request of several members – your feedback is welcome.

10 Day Investigation Report

Our thanks to BP for the following report:

---

bp

Explosion of vacuum truck and tank fire

Type of Incident: **explosion of vacuum truck & fire**
Business Unit: **Kassel Terminal, Logistics CCR**
Country: **Germany**
Location of Incident: **Tank 6**
Date of Incident: **11 Nov 2005 16:05**

Brief Account of Incident:

On Friday 11th November 2005, around 16:05 explosions and a subsequent fire occurred during tank cleaning of a 2,500 m3 gasoline tank. The fire ignited after opening the tank manway for cleaning. The two workers involved in the

Seminar Topic TBA

Ryde Eastwood Leagues Club

* September 15

Annual Conference

Crowne Plaza

Darling Harbour

Corporate Members

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

Basset Consulting Engineers – Tim Dean 07) 3371 8444

Hoslab Pty Ltd – Shelley Watson 02) 9816 3555

Leighton O'Brien MassTech – Rodney Durant 03) 9813 5122

Store-Safe Pty Ltd – Grant Breeze 02) 9569 2122

vacuum truck operation were able to escape. The Terminal emergency plan was activated and all personnel accounted for. No people were injured.

The tank fire was extinguished within a few minutes by the Terminal Personnel actuation of the fixed systems and the local Fire Brigade dealt with the vacuum truck fire (mainly tyres/flexible hoses fire). All fires were extinguished successfully at about 4.50 p.m.

The vacuum truck was destroyed; the tank and its' concrete bund wall were heavily damaged.

It must be noted that the rigorous inspection and testing program applied to fire equipment and good emergency response training of personnel played a key role in the quick extinguishment of the fires.

Tank 6 was a gasoline tank, 15m diameter, 14.5m high, with fixed roof with Vapour Recovery Unit connected. It is inside a concrete bund wall. Its' nominal capacity was 2.500 m3. At the time of the incident, product has been pumped out and the tank was isolated for entry. The top and bottom manholes were open and a last pumping operation to empty the sump hole was to be carried out using a vacuum truck (which had already pumped 2,500 litres from the sump drain line when manholes were still closed).

The investigation revealed that:

• vapours from the tank entered the truck engine air intake;

• the truck engine raced (over-speeding) and immediate attempts to decelerate it from the control panel at the back of the truck were not successful.

Critical factors:

1. Gasoline vapours from tank manway reached air intake of vacuum truck engine.
2. Engine of vacuum truck couldn't be stopped.

Immediate Causes:

• The change in operating conditions from "using the vacuum truck near close manway" to "using the vacuum truck near open manway" did not trigger reconsideration of location/adequation of the truck despite shifting wind conditions and known high vapours levels (above LEL detector alarm) at manway.

The area is congested and creates confusing and changing wind directions.

• The truck was not fitted with an over-speed protection device.

.

Destroyed truck and fire damage on concrete bund wall

Root Cause:

The root causes are linked to inadequate risk analysis and prevention (lack of in-depth analysis of previous similar incidents in the Industry, including BP; cleaning procedure), inadequate risk assessment and management (procedure for vacuum truck and permit to work implementation), and inadequate safety devices (diesel-engine over speed protection).

Proposed Corrective Actions:

- Review existing procedures of contractor management, as well practices for use of vacuum trucks. (e.g. gas detection frequency)
- Refresh training accordingly.
- Improve lessons learned capture.
- Verify adequacy of diesel engines used near/in hydrocarbon areas.
- Review communication process of Safety bulletins / guidelines.

What went well & Lessons learned on emergency response:

- Existence of a good emergency pre-fire plan with the presence of well trained operators proved invaluable to suppress the fires quickly.
- Testing of all systems (fixed and mobile) must be done regularly and adequacy of systems verified.
- Regular training must involve mutual aid and local authorities for good communications the day it is for real.
- Briefing of the contractors. They knew the emergency plan and routes.
- The first investigation team came on the next day and the terminal could be taken in operation again on Monday
- Accounting of personnel during big emergencies is a major concern that must be clearly addressed in sites procedures and training.
- **Contact:** Ludwig Szekeres, +49 (0) 561 95349-40

Keeping in Touch

If you have any suggestions or queries please do not hesitate to contact the AIDGC Executive Officer robyn@f1.net.au or leave a message with the AIDGC paging service 02 9430 6739 and I will return your call.