The Catalyst

January 2013

About JOIFF

Membership of JOIFF, the International Organisation for Industrial Hazard Management is open to any Organisation which is a high hazard industry and/or has nominated personnel as emergency responders/hazard management team members who provide cover to industrial/ commercial organisations.

Organisations which do not fully comply with these requirements are welcome to apply for Corporate Membership of JOIFF.

JOIFF provides a forum for discussion amongst peers, accredited training specifically developed for the sectors in which JOIFF members operate and technical advice through the JOIFF Standard and the JOIFF Shared Learning network. JOIFF welcomes enquiries for Membership - contact the JOIFF Secretariat

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The Catalyst is the official newsletter of JOIFF, the International Organisation for Industrial Hazard Management and is published quarterly - in January, April, July and October each year. Our policy is to bring you high quality articles on relevant technical issues and current and new developments and other happenings in the area of Emergency Services Management. In addition to The Catalyst, information relevant to Emergency Services Management is posted on the JOIFF website.

Readers are encouraged to circulate The Catalyst amongst their colleagues and interested parties and the Editors welcome any comments.

Message from the JOIFF Chairman - Randy Fletcher

As High Hazard Industry continues to expand into all corners of the globe, the need to ensure that JOIFF continues to promote Best Practice, Shared Learning and high quality training becomes ever more critical. Lives, environmental impacts and organisational viability are at stake.

The number and variety of significant events in High Hazard industry, as discussed in JOIFF Shared Learning emails which are regularly circulated to the JOIFF membership, reveals fatalities of both non-responders and responders. There have been and continue to be major explosions and fires in refineries, chemical plants, airports, rail and other transportation accidents, vapor releases and spills and a plethora of other incidents. They have occurred in dozens of Countries on six Continents. Even a casual review of some of the events during the past year continue to reinforce the very reason for JOIFF's existence and its main focus.

JOIFF exists for the benefit of its membership and for response professionals to High Hazard Industry events Worldwide. To be effective, we must strive to expand participation in JOIFF globally and continue to provide to those who manage and respond to residual risk in High Hazard Industry the best information, training packages and technical guidance. In order to do that effectively, the members of JOIFF need to actively promote JOIFF and participate in its forums. We will be looking more and more to our membership to provide their expertise as their time and talents permit. Others need what they can offer, and there are undoubtedly things they and their organisations can benefit from as well.

(continued overleaf)

Disclaimer: *The views and opinions expressed in The Catalyst are not necessarily the views of JOIFF or of its Secretariat, Fulcrum Consultants, neither of which are in any way responsible or legally liable for any statements, reports or technical anomalies made by authors in The Catalyst.*

Message from the Chair, continued...

As JOIFF expands its presence in seminars, workshops, conferences, regulatory and other relevant forums and training venues around the globe, I hope that you will make support and participation in JOIFF a part of your professional performance and development portfolio. As JOIFF members read and benefit from the Shared Learning network, The Catalyst, Guidelines and other JOIFF resources, I hope that they will take the time to share all this with their colleagues and peers and together we can continue to raise the level of competence, commitment, and ultimately the effectiveness of our Profession globally.

With highest regards and on behalf of the JOIFF Management Committee.
Randal, S. Fletcher,

New Members

During October, November and December 2012, the JOIFF Management Committee were pleased to welcome the following new Members.

Full Members

AssetCo Fire and Rescue UAE Abu Dhabi, UAE, represented by Aliaa S. El Sheikh, Account Manager/Marketing & Communication, Dr Jeff Ord, CBE, QFSM, Head of AssetCo Fire and Rescue Service UAE and Gareth White, Managing Director, AssetCo Fire and Rescue UAE. With a large team of emergency responders, AssetCo UAE is principally involved in the provision of management and resources to the fire and emergency services in the Middle East where and they provide fully outsourced fire and rescue services including personnel, training and equipment. AssetCo UAE are the only company to have secured fully outsourced fire and rescue services in the Middle East. With a team including senior personnel with direct operational experience they advise governments and industry in the management and provision of fire and rescue services.

BP Exploration & Production Rumaila Operating Organisation, Iraq, represented by Graeme Beglin and John Darnell, Fire Safety Managers who oversee more than 200 full time emergency responders on site. BP and the China National Petroleum Corporation (CNPC) are working through a technical service contract (TSC) with Iraq's state-owned South Oil Company (SOC) to increase production from the Rumaila oilfield, near Basra in south Iraq. The Rumaila Operating Organisation has been formed and the consortium, led by BP with partners CNPC and the Iraq government's representative State Oil Marketing Organisation aims to nearly triple the Rumaila field's output, which would make it the world's second largest producing oilfield. By 2016, production of 2.85 million barrels a day is expected.

International Fire and Rescue, New York, USA, represented by Mike Thomas, Director. With more than 100 full time and part time emergency responders, International Fire and Rescue is engaged in Airfield emergency management and emergency response oil, gas and petroleum facility management and emergency response, hazops training and assessment, advice and consultancy

QFRS Tactical Training Unit (TTU), Queensland Fire & Rescue Service (QFRS), School of Fire and Rescue Service Training (SFRST), Specialist Training Command (STC), Lytton, Brisbane, Queensland, Australia, represented by Station Officer Tony Brown, Staff Development Officer TTU, Inspector Ricky May, Manager QFRS TTU and Station Officer Grahame Ray, Staff Development Officer TTU. QFRS, with more than 4,500 full and part time emergency responders, has state wide responsibility for emergency response and mitigation of all fires and other emergencies such as hazmat, road crash and technical rescue. SFRST is the state training branch of the QFRS. TTU is a unit of the Specialist Training Command that develops and delivers specialist and accredited training such as petrochemical firefighting, compartment fire behaviour training & maritime firefighting to QFRS personnel as well as to industrial clients such as oil refineries, coal seam gas companies and designated major hazard facilities Uniformed QFRS staff working at SFRST as instructors are available to respond and assist at any emergency incidents in the state.

Corporate Members

Advanced Group of Companies, Gauteng, South Africa, represented by Barries Barnard, Group CEO, Gert Jacobs, Group CFO and Westley Barnardt, Executive – Africa. Advance Group of Companies is engaged in sales, installation and service of the Ansul vehicle fire suppression systems, sales, installation and service of fixed fire suppression systems, manufacture of low/high voltage electrical switchgear/panels, MCC, motor control units etc., manufacture & repair of hydraulic cylinders and pumps, blasting, drilling, excavating and hauling services for the mining and related industry and fire investigations and safety training for the mining industry.

FREMTAC Fire and Rescue, Sandton, South Africa, represented by Jimmy Croucamp, Owner. FREMTAC Fire and Rescue are engaged in sales of emergency responder equipment and they also provide a response service to assist with emergency situation as and when required in the public and private fire and rescue sectors in South Africa.

We look forward to the involvement of our new and existing Members in the continuing development of JOIFF.

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MEMBERS SECTION.

JOIFF ANNUAL GENERAL MEETING

The Annual General Meeting of JOIFF Ltd. took place on 14th November 2012 at The Fire Service College, Moreton in Marsh, Gloucestershire, England. Representatives from JOIFF Member Organisations in Iraq, Netherlands, Spain, United Arab Emirates, United Kingdom and United States of America attended the meeting. Apologies received were recorded.

Attendees at the recent JOIFFF AGM in the Fire Service College

The business of the AGM was transacted following which JOIFF Chairman, Randy Fletcher, supported by the Director of Standards of Training and Competence, Gerry Johnson, presented a review of the overall mission and Direction of JOIFF. This included the name change earlier this year to "International Organisation for Industrial Hazard Management" and the three on-going strategic components that comprise the major efforts of JOIFF - Shared learning, Training, and the Technical Advisory Group. In this presentation, Randy reviewed some of the more significant high hazard industry loss-of-life events that have occurred during the past year which had been circulated through the JOIFF Shared Learning network. He discussed the significance of these incidents in reflecting the gaps and opportunities within high hazard industry and talked of how JOIFF could and should expand its footprint around the World to educate and set standards to try to reduce the tragic losses caused by Industrial accidents.

Following some personal experiences whilst on responder duty in the community Richard Coates FJOIFF, founder member and past Chairman of JOIFF made a very specific address to the JOIFF members present on the need for all member organisations of JOIFF to review the facilities that they have on site for the treatment of burn victims so that they would be fully prepared with the correct treatment and support in the event of such an incident.

Mark Samuels Dip.JOIFF, of JOIFF Member Essex County Fire and Rescue Service reported on the current position with regard to the establishment of a system of Mutual Aid in the UK between Industry, the Fire Services and Government in the UK. The principals of the ORCCID (Operational Response to COMAH/Seveso and Catastrophic Incidents and Disasters) initiative developed jointly by JOIFF and the UK Chief Fire Offices Association has been adopted to enable the identification of the key constituent elements of a mutual aid scheme.

Under the COMAH/Seveso Regulations applicable Industry must consider all reasonable foreseeable emergency scenarios arising from credible major hazard incidents. They may identify a requirement for resources beyond those available on site so they should consider becoming a member of a local Mutual Aid agreement. In an escalating emergency, the Fire and Rescue Service is very likely to call for assistance from National Mutual Aid, because it is unlikely that any of the involved sites by themselves will have enough resources and equipment to deal with any catastrophic incidents which have escalated beyond their credible major hazard Incident scenarios. The identification and location of the national mutual aid resources needs to be held in the central depository of information.

The AGM unanimously supported Mark's proposal for JOIFF to play a central role in the establishment of the National Mutual Aid system.

In concluding the meeting, the Chairman once again emphasised the necessity that JOIFF be seen as the leader in Industrial Emergency Response Best Industry Practice and that JOIFF accredited training certification should be seen as having credibility and value.

The JOIFF Roll of Honour

JOIFF is delighted to announce that the following persons working as Emergency Response Team Leaders in BP Exploration, Sullom Voe Terminal, Shetlands, Scotland, have been awarded the JOIFF Diploma.

They now join the exclusive ranks of those who can use the Post Nominals DipJOIFF after their name.

James Johnson

David McDonald

John Nisbet

Steve Owers.

The Tetrahedron of Safety

By Chief Charles Brush MS EFO (Florida, USA)

The triangle seems ensconced into the very fabric of the fire service. When we had the opportunity to move away from it, we opted for the three dimensional triangle… the tetrahedron. While pushing the envelope of tradition is something I relish, I am not touching this one.

Safety in the fire service is dependent upon three components and one situation:

- The actual event or incident
- The climate or culture of the organisation
- The individual
- The supervisor

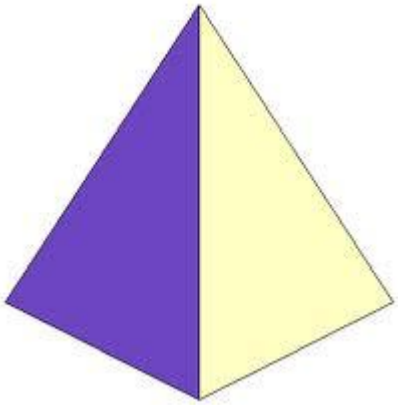

Fig 1. Tetrahedron

Just as a truss becomes unstable if just one component making up a truss triangle fails, the lack of focus upon safety by the organisation, supervisor or individual can result in injury, long term disease or worse. In this article, we will explore the impact, emotion, reality and potentially positive or negative results upon safety that the first 2 components can have. In the next edition, the other 2 components will be discussed.

The actual event or incident

Why focus on an event or incident? It is because the incident is the stage upon which the drama of safety is presented. Just as a Shakespearian play consists of five acts, each with multiple scenes, our drama of safety consists of:

- Act 1 - Prelude
- Act 2 - Response
- Act 3 - Operations
- Act 4 - The return
- Act 5 - Prologue

Act 1 - Prelude - The scenes making up this act consist of training, equipment maintenance and readiness, familiarity and environmental factors such as time of day, weather, traffic conditions.

Act 2 - Response - The scenes making up this act consist of the time it takes for dispatch to process the call for help, the reaction time of the fire department to the call, once dispatched, the travel time from the station to the scene and the time it takes to deploy and be ready to conduct operations once the unit arrives on scene.

Act 3 - Operations - This is the heart of the drama, each incident will have scenes unique to the type of incident and the challenges it presents. Here, the climate / culture, the individual and the supervisor lay themselves open to the scrutiny of the audience. Their strengths / weaknesses exposed to all as the act unfolds.

Act 4 - The return - The battle is over, hopefully evil has been vanquished and the heroes prevailed. The scenes consist of replenishing and decontaminating both human and equipment resources, making the scene safe and preparing for the next challenge that awaits them.

Act 5 - Prologue - The narrator of our drama, along with key players review the actions of our play, identifies strengths, weaknesses and areas that require further attention to ensure future positive outcomes.

"All the world's a stage, and all the men and women merely players: they have their exits and their entrances; and one man in his time plays many parts, his acts being seven ages." William Shakespeare

With the stage set for our play, it is time for the characters of our play to enter stage right. How these actors and actresses will portray and interpret their personas will be determined in large part by the school or method they developed their trade under. In similar fashion, firefighters will develop their skills, attitudes, values, perceptions and risk taking in large part by the fire department they develop their trade under.

The climate or culture of the organisation

A fire department, just as the schools of acting, has a culture that has developed over the years. This culture encompasses the core values of the organisation that unconsciously or perhaps consciously exist regarding how and what the organisation stands for. The easiest ones to read are the ones that festoon mottos upon themselves and their equipment. One of the most telling perhaps is "We go where others fear to tread". Perhaps it is just bravado but it can just as well be evidence of a culture of risk taking without value. "Bravery, Courage, Self-Sacrifice" is another one that bears interpretation. A quick on-line search for fire department mottos will provide a number of these for further discussion.

In my organisational culture investigations, I did not find any indication of a fire department culture that was based upon, safety, self-preservation and service to those in need! What I found were cultures based upon action, risk taking and adrenalin. The reason for this, I believe, is we are still looking back at our past and not embracing the future. Images from Currier and Ives "The life of a firefighter" and unrealistic media representations of fire department operations provide a false sense of both expectation and reality to new members. A disturbing outcome of this gap between culture, expectation and reality is the rise of suicides amongst those new to the fire service. The expectation is to be running fire calls all day long, saving citizens, doing the great deeds; however, the reality is to perform maintenance duties, run mundane calls and realize little if any self-gratification. While there are still stations within departments that fight "the red devil" on a daily basis, the numbers of fires are waning. With the reduction of fires, the strive for risk taking and going into harm's way seems to be increasing at the same time that threats to firefighters are increasing due to toxic substances,

building construction techniques and a myriad of other issues.
There are efforts currently in-place to attempt to stimulate a shift from a risk taking culture to one of safety. “Everyone Goes Home”, “The Courage to Be Safe” and the 16 firefighter life safety initiatives of the National Fallen Firefighters Foundation are a few examples.

While these programs are useful and will hopefully assist in cultural change, they are externally based. To be successful, the change in organisational culture must come from within. The organisation must alter its risk taking values and institute more of a safety culture that embraces a culture that it is not our job to die for the organisation, but rather to save lives, including our own.

Having looked at organisational culture, let’s consider organisational climate. The climate of an organisation has been expressed in various ways even to being the same as organisational culture. The most consistent expression of organisational climate is how the members of an organisation see the organisation itself on a day to day basis. As an example, a newly assigned member of a combat unit assesses his new unit with respect to both functioning and surviving as part of it.

- Is this a good unit to be with?
- Will they stand by me?
- Will they protect or project me into harm’s way needlessly?
- What are my chances for survival?

Just as the soldier has little to say with regards to where he or she is assigned; with today’s hiring environment, the focus is on acquiring a job, regardless of conditions, reputation, climate or culture. In this environment, unless the firefighter is strong willed or finds other like-minded members within the department, the firefighter will be assimilated and become part of the ongoing climate of the organisation.

Organisational climate can be positive, truly focusing on safety, innovation, leadership, ownership, pride of service and representing the best interests of its members. It can also be singularly fixated upon contract, negotiations, us and them and the advancement of the membership regardless of conditions and potential outcomes.
With the stage set, some of our actors are from the school of risk taking, adrenalin and bravery while others are from the school of safety, self-preservation and service to others.

The next article in The Catalyst will explore the individual component of the Tetrahedron of Safety and will bring the influence of the supervisor to light and bring our play to an end.

Editor’s Note: Chief Charles (Charlie) Brush MS EFO is Safety Programs Manager, Bureau Fire Standards and Training, Florida State Fire Marshal. Charlie has held the rank of Chief in both career and volunteer fire departments, working his way through the ranks of firefighter to chief. Charlie holds a Master of Science degree, is a Florida Certified Instructor III and has a bunch of other certification “suitable for framing”. When not involved in emergency services, Charlie can be found on the water aboard his sailboat. Contact Charlie at Charlie.brush@myflorida.cfo.com

Falkland Islands Government Press Release

1. Future of Port Determined

Port William (north of the Camber) was designated as the location for a new deep-water port facility capable of meeting the demands of all incumbent industries by Executive Council (ExCo) at its meeting on 24th October 2012. The ExCo decision follows significant work by the Falkland Islands Government (FIG) over the last four months following requests by the Oil & Gas Industry for FIG to provide confirmation of what facilities will be available to meet their needs, and the timescales for the delivery of these facilities.

At the meeting, Members of the Legislative Assembly (MLAs) expressed significant concerns about the size and impact that a proposal for a permanent 250-metre extension to the existing FIPASS facilities would have on the environment and community of Stanley. This helped reaffirm for them the need to ensure port facilities are delivered in a planned and considered way.
In withdrawing support for an extension to FIPASS, MLAs instructed FIG officials to quickly bring forward proposals and costed models for a full port infrastructure located at Port William. This announcement has been communicated to Rockhopper PLC and Premier Oil and will mean that alternative arrangements to support development of the Sea Lion field will need to be agreed with them” said MLA Dick Sawle. “However, ExCo was acutely aware of its responsibility to ensure a long term vision for Stanley and the surrounding areas which is both appropriate and cohesive with our way of life. Our major concern was that while we welcome and want to support all of the Oil & Gas Industry, we need its development to happen in the right place and that is not Stanley Harbour.

Executive Council also approved the immediate investigation of the legal requirements and consequences of the creation of a Port Authority in the Falkland Islands, and further investigation of the Joint Venture led funding model with the private sector as a potential long-term strategy for funding port infrastructure.

2. Reaction to Falkland Oil and Gas Ltd/Noble Energy Farm-in Agreement

The Falkland Islands Government recently received news of a farm-in agreement between Falkland Oil and Gas Ltd and Noble Energy. Noble Energy are acquiring a 35% stake in FOGL’s interests in the Falkland Islands under a farm-in deal that will assist in financing the development of FOGL’s future exploration programme.

Falkland Island Press Release continued...

Stephen Luxton, Director of Mineral Resources for the Falkland Islands Government said: "FIG welcomes the entry of Noble Energy as a new partner in Falkland Islands licenses. Another significant international energy company has given its vote of confidence to the many interesting opportunities available in the Falklands. We look forward to meeting the Noble team in due course and working with the new partnership to progress their licence interests in the South Falkland Basin."

Hon. Jan Cheek, Member of the Falkland Islands Legislative Assembly said: "The investment of another respected international partner is good news for the oil industry and the Falkland Islands. This announcement is another clear indication as to how positively industry view prospects in the Falkland Islands. The Falkland Islands are an excellent investment destination, and as with all current and potential partners we look forward to working further with Noble Energy through the development of FOGL's prospects."

Editor's note: Gardner Fiddes, Chief Fire Officer of JOIFF Member Falkland Islands Fire and Rescue Service (FRS) sent us this detail. These developments will considerably expand the scope of the activities of Gardner and the Falkland FRS and we wish Gardner and his colleagues every success in their involvement with these developing issues.

Institute of Fire, Safety and Disaster Management Studies, India

The phenomenal progress and rapid industrialization during the past four decades has seen an exponential industrial growth in India. The handling and use of a wide range of hazardous material in large quantities has resulted in numerous unexpected problems for society. To serve the emergency response and training needs of the private sector industries, municipal and government agencies, JOIFF member organization , Institute of Fire, Safety and Disaster Management Studies (IFSDMS) was established in 1998 by the Checkmate Group to provide trained firefighters and fire officers to the rapidly expanding industrial sector in India.

The Institute is located on the outskirts of Vadodara, a city steeped in culture, humanities and education. IFSDMS is spread over a serene environmentally safe area of 100 acres, well connected by roads, railways and air transportation.

In the October edition of The Catalyst, the award of JOIFF accreditation of IFSDMS was announced. The fire training facility of IFSDMS was developed in collaboration with the Fire Science Academy Worldwide, University of Nevada, Reno, USA and inaugurated in March 2012. This state-of-the- art training campus has full scale replicas of industrial mock ups with live fire burning facilities and an oil/water separation plant of 1000 m3 capacity. IFSDMS takes very seriously its responsibility to protect the environment during firefighting on its Training Ground and has made a major investment in "state of the art" facilities to treat the water that is discharged in firefighting and other activities.

The IFSDMS training facility has different fire props which use both fuel oil and LPG and during firefighting exercises a large volume of water is used. The regular fire water system in IFSDMS can operate at a high pressure of about 7.0 kg/cm2. If not treated, contaminated water and suspended solids would violate the state/central norms related to the discharge of effluents and so a comprehensive treatment facility for removal of these pollutants has been installed. When treated, the pollutant free water is re-used for fire fighting purposes. With such a system, IFSDMS not only provides training to the highest standards of Best Industry Practice but in doing so, it fully recognizes its responsibility to protect the surrounding environment and to maximize the availability of the precious natural resource water, by re-using it in firefighting after an appropriate treatment. The facility not only meets the regulatory norms in relation to preventing pollution of land, water bodies, the surrounding environment, but it also achieves 'Zero Discharge Aim'.

The contaminated fire water effluent facility collects used fire water from the firefighting prop area and it is directed to join the common gravity pipe collection system leading to the treatment plant. Before admission of water to the drainage system, it passes through a coarse screen system to arrest the coarse particles entering the system. The entire effluent gets collected by gravity in to the effluent collection sump which brings the oil bearing effluent to it, without emulsifying the hydrocarbons in the waste water. The capacity of the system is fixed at 150 m3/hr flow and this system is so designed that it does not allow any flooding condition at the prop area. The entire treatment facility comprises of units like TPI separator and dissolved air flotation system and pumps, which are installed to remove free and emulsified hydrocarbons and suspended solids respectively.

The water leaving the air floatation unit is practically oil free and it is stored in the treated water tank which has a capacity of 450 m3. The capacity of the plant is designed on the basis of water to be used for firefighting. The oil collected from tilted plate separator is stored in the slop oil tank, which can be reused as fuel for conducting fire training. The sludge is collected separately and is disposed of scientifically.

IFSDMS is very proud of this facility as it adds a feather in their cap by being the first type of Institute in the country which not only takes care of their prime business activities but contributes to the noble cause of "Environmental Protection".

Amongst the other facilities in IFSDMS are multimedia class rooms and conference facilities, turnout building with showers and locker rooms, PPE gear and SCBA, an audio-video Conference Room with capacity of 50 and spacious lodging and boarding facilities for 350 persons

IFSDMS offers a wide range of training courses and services for the oil & gas, petrochemical, chemical, power, automotive, fertiliser, transportation and hospitality sectors operating at levels ranging from fire fighter to incident commander and from operator to manager. As well as fire and safety training props IFSDMS has training grounds and props for hazardous materials, technical and confined spaces, mine rescue and extrication exercises.

Find out more about IFSDMS by visiting their website at www.ifsdms.checkmateservices.com

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JOIFF Member Receives Major Award

JOIFF Member Organisation HHSL Safety Systems Limited & the Hummingbird Group, Couva, Trinidad have received the American Chamber of Commerce of Trinidad and Tobago (AmCham) award for Outstanding HSE Project during 2012. AmCham's member companies represent over 90% of foreign direct investment into Trinidad and Tobago. AmCham promotes the view that excellence in safety and health and environmental management is integral to sustainable business success and they encourage their member companies to implement HSE best practices and to uphold the highest standards of HSE management, striving for continuous improvement and excellence at all times. Each year AmCham recognises excellence in safety, health and environmental management and business success amongst their member companies at an award ceremony.

The award recently presented to HHSL Safety Systems Limited & the Hummingbird Group was primarily for the development of their Industrial Fire Training Props which have contributed significantly to safer training and a cleaner atmosphere. This particular award was established to encourage small and medium entities to work towards the implementation of formal HSE management systems by recognizing an outstanding project completed or significantly completed during each year that has significantly improved or significantly impacted on their organization's occupational safety and health or environmental performance. Projects must relate to occupational health, occupational safety and environmental activities in the workplace, facility or immediate vicinity of the facility. HHSL were submitted to a comprehensive evaluation of their project and the excellence of their project resulted in the presentation of the award.

HHSL Safety Systems Limited is the holder of several international certifications, to include OPITO (Offshore Petroleum Industry Training Organisation) approval for the delivery of safety and survival training to offshore personnel. HHSL also provides a range of training programmes for the petrochemical, construction and general industries. HHSL Safety Systems Limited also provides contracted HSE Advisors and Emergency Response Teams to both upstream and downstream petrochemical industry. HHSL Safety Systems Limited are currently preparing to apply for JOIFF accreditation of their Training.

HHSL Safety Systems Limited & the Hummingbird Group joined JOIFF in 2010 and have been active participants in the exchange of information since then. The parent Company of the Hummingbird Group, Hummingbird Helicopter Services Limited was incorporated in September 1994 by Capt. H. Anthony Vieira, a 10,000+ hour helicopter pilot and survival training expert who introduced helicopter underwater escape training to Trinidad & Tobago and the region in 1997.

In 1996 Hummingbird began providing helicopter pilots and engineering personnel on contract and this was followed by their entry into the training sector for High Hazard Industry. More detail on HHSL Safety Systems Limited & the Hummingbird Group can be found at www.thehummingbirdgroup.com

Left to right: Jean-Andre Celestain, Chief Operating Officer, Atlantic LNG, The Honourable Errol McLeod, Minister in the Ministry of Labour Small and Micro Enterprise Developments, Fyzal De La Rosa Safety Superintendent, Methanex Ltd., Anthony Vieira, Managing Director HHSL Safety Systems Limited.

i-Flow Technology

by Alan Elder

Inert gas fire fighting systems technologies were amongst the first halon alternatives to be introduced and twenty years on have stood the test of time. The environmental advantages of inert gases is well documented as are a number of less favourable characteristics when compared to halocarbon agents. These include the larger space requirements for the storage cylinders as well as the need for higher pressure pipework and greater over pressurization venting areas. Until recently the technological development in conventional systems was limited to increases in storage pressure from 150 bar to 200 bar and then to 300 bar, which have had the benefit of a reduction in the storage footprint by 25% as the pressure increased from 150 bar to 200 bar and then by 50% when comparing 300 bar to 150 bar. The benefits of these developments however have not been globally realised as the refill infrastructure varies significant across the globe, with facilities in some countries still limited to 150 bar and in others 200 bar is the maximum available.

The issues of higher pressure pipework and enclosure pressurization is very much dictated by the very nature of the inert gases themselves. Unlike halocarbon agents which are stored as liquids, the inert agents are stored as high pressure gases that exhibit certain properties upon discharge that demand special attention in specifying and designing pipework systems as well as devices to avoid potentially damaging pressurization effects within the protected enclosure. These effects arise in conventional inert gas systems as the agents are discharged. Firstly the relatively high storage pressures cause the agent flow rate to reach a peak in the first few seconds (typically during the initial three to five seconds) of the discharge. This pattern is not efficient from a distribution system point of view as the pipework is sized to handle the peak flow rate before it rapidly reduces, meaning that the piping is actually much larger than needed to handle the average flow rate. The peak flow rate also has to be used to determine the free vent area in the boundary of the protected enclosure, which is needed to allow for the displacement of a relatively large volume of air to avoid over pressurization potentially causing structural damage.

Patented technologies from Tyco Fire Protection Products, including the i-Flow valve technology, horizontal check valve system and the matrix racking system assist in solving some of the drawbacks associated with conventional systems. Firstly the i-Flow valve regulates the pressure, resulting in an even discharge at a constant flow rate for the duration of the effective discharge period. The discharge pattern in this case is much more efficient as it evens out the flow rate without experiencing the peak flow as described earlier. This constant (reduced) flow may permit the system design engineer to reduce the size of the pipework since it is no longer necessary for it handle the initial peak flow associated with conventional systems.

Secondly the system does not need an orifice plate in the pipework to reduce the pressure from the relatively high storage pressure – to the pressure required in the system to ensure effective discharge and distribution of agent, since the pressure reduction has already taken place in the i-Flow valve. An added feature of the i-Flow valve, is that when used in systems featuring selector (or distribution) valves, in the event of a selector valve failing to open, the flow ceases and unlike some constant flow systems the pressure remains at the output pressure of the i-Flow valve and does not reach the cylinder storage pressure. This permits the cylinder and selector valve manifolds to be designed at the same pressure rating as the upstream pipework and not at pressures needed to handle the cylinder storage pressure, - which could be as high as 300 bar, even when closed sections are present in the system. This is an important safety feature consciously designed into the i-Flow valve technology.

The next benefit is that the reduced agent flow rate lowers the over pressurization effects, thereby significantly reducing the venting requirements in the boundary of the protected enclosure, saving both cost and disruption associated with the fitting of over pressurization devices. The i-Flow technology is available for use with both 80 litre and 140 litre cylinders, with the 140 litre cylinder particularly useful where space constraints are a factor.

The development of the i-Flow system horizontal check valve resulted in another patented component. The horizontal check valve may be installed in any orientation, unlike many conventional check valves that need to be installed vertically to be fully effective. This component allows the interconnection of upto 8 cylinders, feeding into a single pipe, thus avoiding manifolds, reducing space and installation costs.

The matrix racking system was designed to allow the system cylinders to be easily installed in challenging locations, for example where the bank needs to wrap around a column or other structure. It also allows for easier maintenance as the racking system requires minimal dismantling when gaining access to a single cylinder, no matter how deeply is it hidden in the bank.

The i-Flow system technology is available to be used with all Inert gas combinations including INERGEN, i3 (using IG-55), IG-01 (Argon) and IG-100 (Nitrogen).

All components in the i-Flow system meet the exacting requirements of the EN12094 harmonized series of standards and carry VdS and CNPP approvals.

Editor's note: About the author; Alan Elder is the Chairman of the British Standards Committee on Gaseous Suppression Extinguishing Systems and Media, UK Delegation Leader to ISO TC21/SC8, an active member of the FIA Extinguishing Council and a member of the LPCB Technical Expert Group.
He is currently the Tyco Fire Protection Products Director of Global Product Management, Engineered Systems
For further information visit tfppemea.com

Diary of Events 2013

January

15 – 17	Intersec 2013, Dubai, UAE

February

12 - 14	Storage Tank and Associated Facilities Fire Hazard Management Workshop, Abu Dhabi UAE

March

5 - 7	Fire Systems Testing and Integrity Assurance, Aylesbury, UK
18 – 22	Fire Incident Command Course (FICC), Rotterdam Netherlands
19 – 20	LNG & LPG Hazard Awareness and Fire Fighting Workshop, Asturias, Spain
19 – 21	Fire and Gas Detection Principles, Abu Dhabi, UAE
21 – 22	LNG Hazard Awareness and Fire Hazard Management, Asturias, Spain

April

10 - 11	Practical Hands on Storage Tank Fire Fighting, Kuala Lumpur, Malaysia
22 – 27	FDIC, Indianapolis, USA
24 – 25	Practical Hands on Storage Tank Fire Fighting, Asturias, Spain
20 – 21	The Buncefield Explosion Mechanism Phase 2, FABIG,UK
30 - 2nd May	Tank Storage Forum, Dubai, UAE

May

13 – 16	FIREX International 2013, NEC, Birmingham, UK
14 - 16	Storage Tank and Associated Facilities Fire Hazard Management Workshop, Aylesbury, UK
18 – 19	5th International Firefighting Foam conference, Bolton, UK
22 - 23	LNG Hazard Awareness and Fire Hazard Management, Asturias, Spain

July

10 – 11	Ambulex 2013, Coventry, UK

June

4 - 6	Fire and Gas Detection Principles, Bangkok, Thailand
12 – 13	Management of Ageing Facilities: Best Practice, FABIG,UK
18 – 20	Storage Tank and Associated Facilities Fire Hazard Management Workshop, Abu Dhabi, UAE

September

3 - 5	Emergency Planning for Major Accident Hazards, Abu Dhabi, UAE
11 – 12	Hazards in Extreme Process Conditions, FABIG, UK
17 – 19	Tank Storage Forum, Sao Paulo, Brazil
24 – 26	Storage Tank and Associated Facilities Fire Hazard Management Workshop, Kuala Lumpur,Malaysia

October

8 - 10	Fire and Gas Detection Principles, Aylesbury, UK
22 - 24	Fire Systems Testing and Integrity Assurance, Kuala Lumpur, Malaysia
30 - 31	Practical Hands on Storage Tank Fire Fighting, Asturias, Spain

November 2013

12 - 14	Fire Systems Testing and Integrity Assurance, Abu Dhabi, UAE

Please contact the JOIFF Secretariat with details of any event that you think that JOIFF Members might be interested in attending.

***Note**: The Catalyst is not responsible for the accuracy of dates and / or venues announced. This is based on information given to the Editors and is published in good faith.*

Can Fire Safety Benefit from Certification? The Dutch Approach

By Jeanne van Buren and Frans Meulenberg

Note: This is a brief version of a full article on this topic. The full article can be down loaded from our website https://uk.marsh.com/NewsInsights/Articles/currentpage/2.aspx

Brief History

Certification of fire systems has a long and interesting history in the Netherlands. Some decades ago the arrangement and process were more or less administered by insurers and later by the Loss Prevention Certification Board under UKAS accreditation. In 2002/2003 some stakeholders initiated the development of a model and independent management of various certification schemes within this model to establish and secure fire safety. The model and schemes are governed by the fully independent foundation the Dutch Centre for Crime Prevention and Safety (CCV). More information about this setup is provided later in this article.

Authority's Role in the Certification of Fire Safety

November 2003 the Dutch Parliament published a position paper on the role of certification and accreditation in formal processes like licence applications. Distinction was made between the many forms and levels of certification and accreditation in this paper.

In the Netherlands certification of fire safety is carried under market driven schemes. Parliament's position is that certification schemes that form the foundation for processes where certificates are used to demonstrate compliance with mandatory and/or legislative requirements can be applied in a market driven environment under the following conditions:

- Representatives of the authorities can influence the certification structure and process to satisfy information that is relevant for the competence of the authorities, for instance by participating in the panel of experts that administer and maintain the scheme
- The issued certificate can never overrule the competence of the authority

Model Integrated Fire Safety

Under management of CCV a model with various certification schemes is used to establish and secure fire safety under accreditation. This model is based on the following four principles:

- Life safety of the people in a building or construction
- Controlling the severity of damage and business disruption a fire can cause
- Safeguarding heritage buildings from the potential detrimental effects of a fire
- Mitigating potential adverse effects of the fire to the environment

The model, which is discussed later in this article, is shown in figure 1 overleaf.

The model identifies and qualifies five risk levels: 1 – 5, where level 1 represents a construction with the highest risks or most severe effects of a fire. The specific requirements for each level are discussed in the longer article which can be down loaded form our website provided below the title.

This article will provide only detail for the certification of fire protection at high risk risks as most JOIFF members are involved with the activities on these sites.

Risk Level 1

Is used in situations where there is a known risk that a fire can have detrimental effects and where establishing fire safety requires the involvement of many stakeholders. The required level of fire safety can only be established and maintained by going through a complex process. High risk industrial activities or warehouses storing flammable and combustible products are some examples that are covered by risk level 1. Circumstances where fire protection systems are installed in existing buildings as an equivalent solution for meeting legal requirements or when hybrid solutions of various fire protection systems are used by going through a performance based process as described in Chapter 5 of the NFPA 1 Fire Code Handbook 2012, should also be considered to be level 1 risks.

The assembly of necessary constrictive provisions, fire safety systems and organisational measures that should be in place to continuously control the fire risks at these sites are described in an "Integrated Fire Safety Principles Document". This document is an integral part of the licence application for the building or construction (like a process installation). This is of course prior to new construction and altered occupancy use of this building or construction.

This Integrated Fire Safety Principle Document plays a vital role in establishing fire safety and can also be used to review fire safety while the building is occupied. Therefore type A ISO/IEC 17020 inspection bodies have to review this document before it is applied in practice. During this review the inspection body will determine whether all legal requirements are theoretically met when the described provisions are in place, if codes and standards are properly translated to the practical situation present in the building and whether the required level of fire safety can theoretically be established with the provisions described in this document.

Critical steps in the process for establishing integrated fire safety for such risks require fully independent judgement by type A ISO/IEC 17020 inspection bodies. The same inspection bodies will also carry out an inspection during commissioning of the building/construction and perform at minimum an annual inspection during the occupied period of the building/ construction. More information on what these activities entail will be provided later when the Model is discussed.

The Model Explained

The stakeholders and process involved in each box (the number is below each box) shown in the model in figure 1 are briefly explained in this paragraph.

Box 1) Use (of building/construction) and Associated Risks

A licence application for all buildings and constructions of risk levels 1 should be accompanied by a risk analysis. This also is the case when an owner intends to change the occupancy use of an existing building or construction.
The outcome of the risk analysis forms the foundation for writing the Integrated Fire Safety Document.

Box 2) Integrated Fire Safety Principles (IFSP) Document

This document holds a vital position in the process for establishing and maintaining integrated fire safety for any building and construction. This document provides a clear inside into the necessary coherence between construction provisions, the installations (fire protection and other systems like ventilations) that are present and the organisational measures to establish and secure integrated fire safety of a building or construction.

Writing an IFSP-document requires specific knowledge and expertise as well as a high level view of all relevant LoDs and other provisions. Therefore it was decided to secure the "quality" of this vital document by setting up a scheme with qualification criteria to be met by organisations and/or a single person in order the become a recognised IFSP-document writer.

Box 3) Construction – Installation (certificate) – Organisation

After the authorities have accepted the IFSP-document, design and construction can start, fire protection systems can be installed and organisational measures can be put in place.
The CCV has various product certification schemes certifiable under ISO 45011 for the design and installation of fire protection systems. Certification bodies that monitor the quality and performance of installers can be recognised by the CCV.

Box 4) Inspection

Independent inspection bodies carry out what can be considered a commissioning inspection before the building or construction is operational.
All inspection bodies that presently are recognised by the CCV to perform inspections hold this type A ISO/IEC 17020 accreditation.
They perform their work against inspection schemes that are managed by the CCV.

Box 5) Operational Phase

At this stage the operator is allowed to use the building or construction if the inspection body has issued a report with a positive judgement which was accepted by the AHJ. This is because the certificate can not overrule the authority of the AHJ. Other stakeholders like the owner of the building/construction

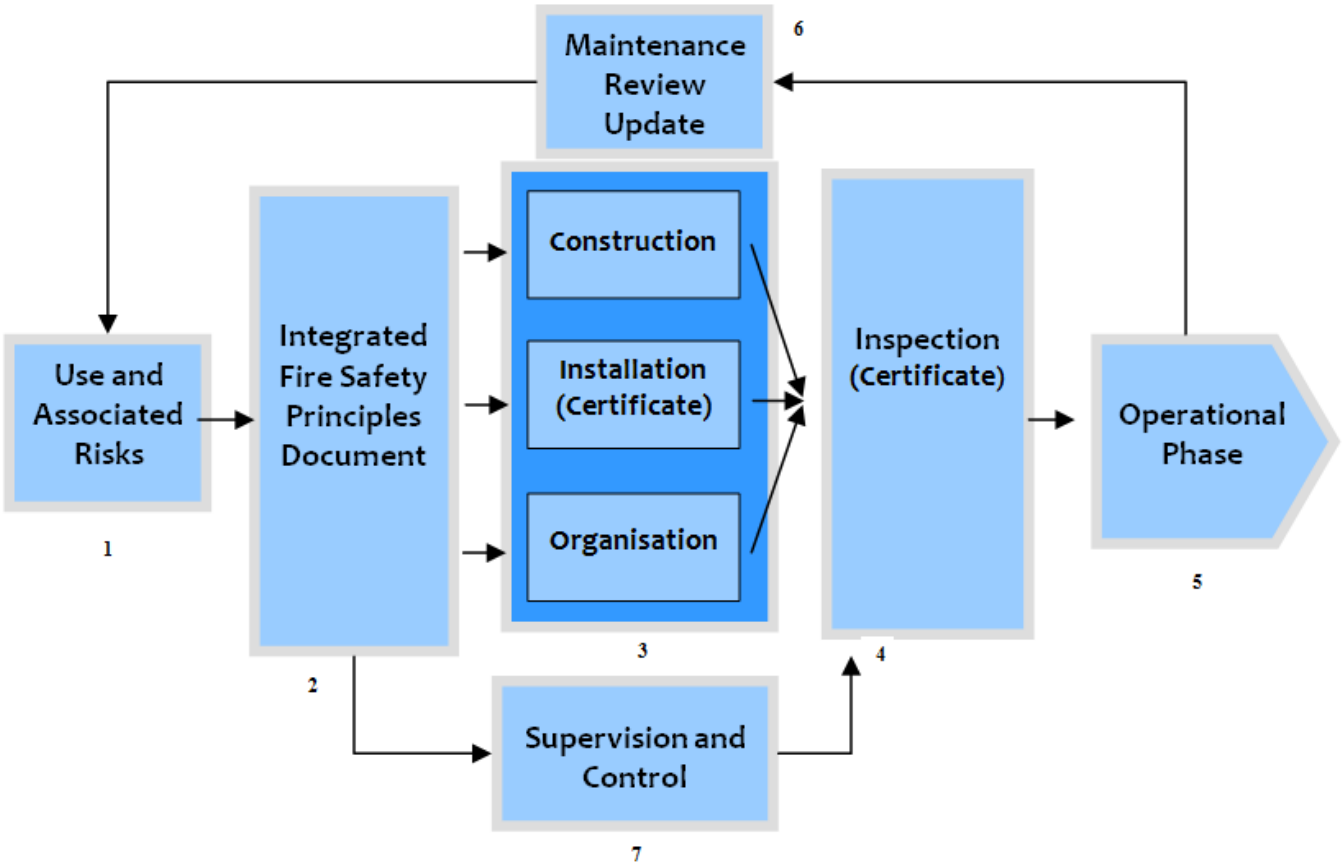

Figure 1: Integrated Fire Safety Model

and the insurer can accept or reject the judgement of the inspection body if they have profound reason to do so.

Box 6) Maintenance, Review, Update

In this stage two activities are carried out. The first one is periodic control, testing and maintenance performed by an installer or service company that usually operates under a CCV scheme. The second one is annual inspection during operations by inspection bodies.

Box 7) Supervision and Control

Authorities have to be notified of any changes the occupancy of the building or construction. This can result in the authorities suspending all activities while the operator is ordered to provide a new IFSP-document. The operator will have to go through the process once more.

In addition the IFSP-document has to be reviewed by an inspection body at least every 5 years against the Best Practices at the time of the review. This is done to assess weather the fire safety provisions are still relevant.

Certification Can Work

Fire safety is not something that is owned by any one single organisation or person. Fire safety is the result of profound and continuous cooperation between many stakeholders. Cooperation between some stakeholders is not always mutual but the CCV model is a proper incentive to accomplish this. It is also a real benefit that the authorities involved in fire safety can use the information generated in this process. The process helps to reduce the administrative burdens of the operator. The IFSP-document is accepted by many stakeholders in various processes.

The process described above is used in practice in the Netherlands. Although the experience from stakeholders varies, many welcome the transparency of the process which helps to manage the process from the start. Some operators at high risk industries and other complex locations have expressed that particularly the IFSP-document has given them more insight into the role of their fire protection systems in the control of credible incidents scenarios.

Certification often receives mixed reviews. This is mainly brought about by the fact that very few have in-depth knowledge of what a certificate represents. The transparent CCV Model together with the schemes used to certify products and activities makes it possible to assign a value to a certificate.

Editor's note: Jeanne van Buren is a senior consultant with Marsh Risk Consulting, based in Rotterdam and consults on specific risks related to the power, energy and (petro)chemical industry sectors. This includes identifying potential hazards, evaluating these hazards and quantifying the associated risks and counselling on risk mitigation and control measures.
Frans Meulenberg is a senior consultant with Marsh Risk Consulting, based in Rotterdam and consults on risk management, electrical safety and manages projects which have safety specialist's aspects. Frans guides organisations in preparing and implementing management systems such as ISO 9001:2008, OHSAS 18001 ISO 3100, among other standards. He compiles analysis and advises on risk solutions related to safety exposures And conducts safety audits based on international standards and good practices. Projects can take place within the Netherlands as well as in foreign countries. For more information contact Jeanne van Buren at Jeanne.vanburen@marsh.com tel. +31 10 406 0600 and Frans Meulenberg at Frans.Meulenbeg@marsh.com tel. +31 10 406 0600.

JOIFF Training Notes

"TRAIN AS IF YOUR LIFE DEPENDS ON IT, BECAUSE SOMEDAY, IT MIGHT!"

JOIFF accredited training is within a Competency Based Training framework and involves not only course content, as also critical to the effective provision of training are the facilities of the training provider/training establishment and the capabilities of the instructing staff. JOIFF has developed systems of accreditation for training providers and minimum instructional requirements for Instructors.

All students who successfully complete a JOIFF accredited course/programme are issued with a JOIFF Certificate of Competence which has its own unique number. Records of all successful students and the courses in which they qualify are retained. There is growing recognition worldwide of the JOIFF Certificate of Competence which is coming to be regarded as a passport to the level of employment and rank which an emergency responder's qualifications enables and entitles them to deserve.

"If you think that you can do it, that is confidence. If you can do it well on an on-going basis, that is competence!"

JOIFF Accredited Training for 2013:

For further information about JOIFF accredited on-Site Competency Based Training Programmes, the range of Fire Service NVQs and any other aspect of JOIFF Training, please contact the JOIFF Secretariat.

The dates on the following page have been provided by JOIFF accredited training providers.

If the dates are not suitable for you or your own specific training requirements are not listed below, contact the JOIFF Secretariat.

JOIFF Training Notes

Programme for 2013 JOIFF accredited Training Establishments:

JOIFF accredited Course	Dates	Venue / Organiser
Confined Space Entry Training	As required	On your own site. contact arcfiretraining@ntlworld.com
Fire Incident Command Course (5 Days)	18th – 23rd March	Falck Risc, Rotterdam, Netherlands r.deklerk@falck.nl
	08th – 12th July	
	16th – 20th September	
	11th – 15th November	
Fire Team Leader Course (4½ days)	28th January – 1st February	Fire Service College Moreton-in-Marsh, UK enquiries@fireservicecollege.ac.uk
	18th March – 22nd March	
	10th June – 14th June	
Fire Team Member Course (4½ Days)	14th – 18th January	Fire Service College Moreton-in-Marsh, UK enquiries@fireservicecollege.ac.uk
	3rd – 7th June	
Fire Fighter Refresher Course (3 Days)	18th - 20th February	Fire Service College Moreton-in-Marsh, UK enquiries@fireservicecollege.ac.uk
	3rd – 5th April	
Site Incident Controller Training (1 Day)	21st January	Sembcorp UK Protection Group Headquarters, Wilton, UK judith.wong@sembcorp.co.uk
	20th March	
	23rd May	
	3rd September	
	18th November	
Site Main Controller Training (1 Day)	15th February	Sembcorp UK Protection Group Headquarters, Wilton, UK judith.wong@sembcorp.co.uk
	19th April	
	28th June	
	11th October	
PERO (1 Day)	6th June	Sembcorp UK Protection Group Headquarters, Wilton, UK judith.wong@sembcorp.co.uk
Combined Site Incident Controller, Site Main Controller & Support Personnel (1 Day)	6th March	Sembcorp UK Protection Group Headquarters, Wilton, UK judith.wong@sembcorp.co.uk
	24th July	
	17th October	
Full course description of Sembcorp courses above can be viewed in their Training Brochure on http://www.sembcorp.co.uk/sembcorpprotection.aspx		

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