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EXPLOSIVES SAFETY

Explosives Manufacturing Incident – Sierra Chemical Company, Mustang, Nevada January 7th 1998, 4 Deaths & 6 Injuries.

By
Abd Razak bin Abdul Majid
(Retired Major RMAF ato)
mil_razak@hotmail.com

INTRODUCTION

These information is only a basic understanding for those who are involved in the explosives manufacturing industry. Most of the information are gathered from a sincere research, since January 2000 and still ongoing to develop a better improvement on having a uniformity of Explosives and Ammunition Safety Standards related Physical Hazard Analysis (PHA). Hope that with these useful information will benefits all parties.

PROPERTIES OF INITIATING EXPLOSIVES

Initiating xplosives include lead azide, mercury fulminate, lead styphnate and tetracene. They are very sensitive to friction, heat, and impact. When involved in a fire, they can be expected to detonate without burning. Quantities in storage and in process must be limited to the smallest practicable amounts. Bulk initiating explosives will be stored in conductive containers and if more than 10 grams are stored for more than 4 hours, they shall be kept wet with water or with water-alcohol mixtures.

Every effort shall be made to prevent the liquid from freezing, and if frozen, explosives material itself shall not be handled. Whenever processing requires the scooping or pouring of dry initiating explosives, the operation will be done by remote control. Dust from initiating explosives operations shall be collected with a wet-type aspirator system. The aspirator bottle or container shall be located as close to the dust intake point as practicable. The aspirator bottle will contain an approved desensitizing agent or be housed in a protective shield. No valves, where explosives may lodge, shall be in the vacuum line.

The vacuum will be controlled to preclude excessive bubbling. Because explosives may be present, extreme caution will be used when disassembling the system to clean it. Contaminated sections of vacuum systems shall be cleaned daily by circulating an approved desensitizing solution through the tube or pipe. Dry-type collection systems will not be used. Emphasis must be placed upon cleanliness and general housekeeping since contamination of these explosives with foreign or gritty material markedly increases their
sensitivity.

Rooms in which initiating explosives are handled shall have floors of lead or other non-sparking flooring material. Flooring shall always be of conductive finish. Walls of the rooms should be covered with waterproof material having a smooth hard gloss finish. Frequent washing of the rooms with a neutralizing solution is necessary. Drying of the explosives is usually accomplished in muslin squares on a drying table or by a special air blowing device with temperatures limited to between 122 degrees Fahrenheit and 140 degrees Fahrenheit (50 degrees Celsius and 60 degrees Celsius).

LEAD AZIDE

Lead azide is a crystalline, cream-colored compound which is practically insoluble in water. Care must be taken, however, to assure that the water used is free of bacteriaforming impurities which may react with the dextrinated lead azide to form gas. Lead azide, and killed or treated solutions of lead azide, allowed to come into contact with copper, zinc, or alloys containing any concentration of such metals can cause the possible formation of other azides which are more sensitive than the original lead azide.

Rooms in which lead azide is handled shall be washed thoroughly and regularly with a desensitizing solution. Facilities and operating procedures shall avoid exposing lead azide, wet or dry, to ultraviolet (UV) light. Lead azide decomposes when exposed to UV light.

LEAD STYPHNATE

This explosive is particularly sensitive to discharge of static electricity, and the dry material can be readily ignited by static discharges from the human body. Lead styphnate is approximately as sensitive as mercury fulminate to impact and has about the same order of friction sensitivity as lead azide.

It should be stored under water in conductive rubber containers. Where practicable, lead styphnate should be in the water-wet state while being processed. Water should be removed by decanting. It is usually dried by suction filtering, washing with alcohol, and drying in an oven at 50 to 60 degrees Celsius. The alcohol wash is needed to prevent caking since breaking up caked explosives is hazardous. Conventional methods of de-watering explosives such as placing material in cloth then squeezing and draining on inclined smooth surfaces such as glass are not recommended.

To remove styphnate from receptacles, a stream of water should be used to wash the material from the inclined container. If this procedure is impractical, the styphnate may be carefully removed by hand, provided rubber gloves are worn. The use of spatulas, rakes, or scoops should be prohibited. Containers equipped with removal rubber liners facilitate handling of the wet explosives and are recommended. Lead styphnate tends to form a sensitive scaly deposit on the sides of the containers and collection sumps. The scale can be removed with 5 to 10 percent sodium hydroxide or sodium acetate solutions. The removal of the scale with tools or other instruments shall not be attempted. Operations should provide for eye protection. Conductive flooring and table tops, without cracks or crevices in which explosives can lodge, are required. Conductive footwear is required. All equipment shall be electrically grounded.

MERCURY FULMINATE

The precautions given for lead styphnate and lead azide shall be used as guides for the handling of this explosive. Mercury fulminate either wet or dry should not be permitted to come into contact with certain materials such as aluminum, magnesium, zinc, brass, or bronze. This material is no longer used to any extent in military explosives.

TETRACENE

Tetracene is a colorless or pale yellow crystalline fluffy material. It is as sensitive to impact as mercury fulminate and diazondinitrophenol. It is the ease of ignition and its relatively high heat of explosion and gas volume that render it useful in priming compositions and along with lead azide in explosive rivets.

HANDLING LOW ENERGY INITIATORS

Whenever manufacturing, processing, using, or testing low energy initiators (can be initiated by 0.1 joules (1 million ergs) of energy or less) the following regulations in addition to those precautions (barricades, safety glasses, etc.) normally used when handling explosive items shall be followed wherever applicable:

a. All metal parts of equipment shall be bonded together electrically and grounded.

b. Personnel shall wear proper clothing. This means powder uniforms, cotton under garments and conductive shoes with cotton socks or stockings. Just prior to an operator entering the room or area where low energy initiators are being processed, his/her conductive shoes shall be tested with a resistance meter.

c. Personnel positioned at operating locations where low energy initiators are handled shall be directly grounded by an approved wrist strap. This grounding strap shall be checked daily while on these operators and the resistance reading shall be less than 250,000 ohms when measured form opposite hand to ground. Special contact creams may be used to decrease the resistance to the required value.

d. When glass, acrylic or polycarbonate materials are required for transparency in barricades, they shall be coated with an antistatic wax to prevent build-up of static electricity. This coating should be renewed every 2 months.

e. In areas which are monitored by static electricity alarm devices, work shall be discontinued when the device warns of a static electric charge until cause has been determined and corrective action taken to eliminate the condition. In each area at the time of installation, a survey will be made to determine the maximum setting of the alarm which will give ample warning but will not cause cessation of operations needlessly.

f. In air-conditioned areas, work shall not be started until the relative humidity and temperature are at their proper levels as called for in approved SOPs for the job.

g. All metal surfaces exposed to a rubbing or friction action shall not be painted. If lubrication of such unpainted surfaces is necessary, it will be of such a composition as not to increase surface resistance of the metal materials above 25 ohms.

h. All work on or with initiators shall be performed in areas equipped with conductive floors and conductive table tops. Exceptions may be made when approved in writing by the local safety office when the initiators are properly packed, or are part of a completed metallic end-item affording a complete shield for the initiators.

i. Work shall not be done in the vicinity of electromagnetic or electrostatic fields or where they may be produced. Examples of electrostatic or electromagnetic sources are:
   (a) radio transmission
   (b) electrical storms
   (c) transformer stations
   (d) high voltage transmission line
   (e) improperly grounded electric circuitry, and
   (f) rotating equipment, belts, etc.

Adequate lightning protection and ground for electric storms and adequate resistances for fixed sources of energy shall be established for areas where low energy initiator operations shall be shielded to afford protection against mobile radio transmission in the vicinity.

j. All electrical equipment shall be so located that it cannot be reached or touched by an operator working with a low energy initiator. Soldering shall never be performed with a connected electric soldering iron. An iron with a permanently grounded tip may be remotely heated, disconnected, and then used.

k. Initiators, not part of an end-item or end-item subassembly shall be transported from one area to another only when properly packed according to the latest packing specifications for low energy initiators.

BOOSTERING EXPLOSIVES

Explosives used for this purpose include tetryl, RDX, PETN, and RDX with additive ingredients. These explosives have intermediate sensitivity between initiating explosives and explosives used a bursting charges such as TNT. They may be ignited by heat, friction, or impact and may detonate when burned in large quantities.

PETN

PETN (Pentaerythritol tetranitrate) is more sensitive than either tetryl or RDX, and is considered an initiating agent. In its pure form, PETN is a white crystalline material, but it may be a light gray color due to impurities. It must be shipped wet with not

less than 40 percent by weight of water in the Appropriate specification shipping containers. It is extremely sensitive to initiation.

TETRYL

Tetryl is a fine crystalline yellow material, insoluble in water, but soluble in acetone, benzene and other similar solvents. It is toxic when taken internally or by skin contact and special precautions are necessary to protect personnel. Tetryl is stable at all temperatures encountered in storage:

(1) Existing data indicates that tetryl is a weak to moderate mutagen in bacterial systems. Personnel exposures to tetryl should be minimized.

(2) Recommended control procedures :
   (a) Handling precautions. Minimize skin contact and dusting.
   (b) Protective clothing. Wear powder uniforms (to include associated hygiene practices of hand washing, showering, clothes change lockers, etc.) with emphasis on the use of gloves where hand contact is probable. Approved toxic dust respirators should be worn if atmospheric value of tetryl exceed those stated in (e) below.
   (c) Medical surveillance. Periodic surveillance should emphasize the skin effects and pulmonary function. Semiannual SGOT and hematrocrit should be determined.
   (d) Engineering controls. Personnel exposures should be controlled by other than personal protective measures. Emphasis should be placed on methods to minimize dusting in the employees' breathing zone. This can be accomplished by local exhaust ventilation, enclosed process systems, automatic handling devices, etc.
   (e) Atmospheric exposure levels. The exposure limit for tetryl is 1.5 mg/m3. Refer to the current American Conference of Governmental Industrial Hygienists, TVL for tetryl is also 1.5 mg/m3 along with a skin notation and a Short Term Exposure limit of 3.0 mg/m3.

(3) These and other standard industrial hygiene practices deemed locally appropriate should be followed.

(to be continued in the next issue...)

MAJLIS MENANDATANGANI MEMORANDUM PERJANJIAN (MOA) DI ANTARA NIOSH DENGAN ENAM (6) SYARIKAT IAITU MKRS BUMI (M) SDN BHD, SR SCAFFOLD SDN BHD, NEWWIN ENGINEERING SDN BHD, INDAH WATER KONSORTIUM SDN BHD, FALCON TRAINING AND SERVICES SDN BHD DAN NOSH GLOBAL SDN BHD

Majlis Menandatangani MoA di antara NIOSH dan keenam-enam syarikat telah diadakan pada 30 September 2016 bertempat di Dewan Teater, Bangunan Utama NIOSH. Majlis tersebut dihadiri oleh Pengarah Eksekutif NIOSH, Tn Haji Zahrim Osman dan En. Khairunnizam Mustapa, Pengurus Kanan ETDRO serta Pengurus-pengurus Bahagian NIOSH.

MoA ini telah ditandatangani oleh Pengarah Eksekutif NIOSH, Tn Haji Zahrim Osman dan diwakili oleh Pengurus Besar dari keenam-enam syarikat dengan disaksikan oleh En. Ayop Salleh, selaku Setiausaha Eksekutif NIOSH.

Skop kerjasama selama tiga (3) tahun ini adalah melibatkan dua (2) bidang yang berbeza iaitu kerjasama di dalam program kompetensi 'Basic Scaffolding' dan Penilaian di dalam Ruang Terkurung.

Syarikat MKRS Bumi (M) Sdn Bhd dan SR Scaffold Sdn Bhd menjalinkan kerjasama dalam program kompetensi 'Basic Scaffolding' manakala Pusat Pengajar Newwin Engineering Sdn Bhd, Indah Water Konsortium Sdn Bhd, Falcon Training And Services Sdn Bhd dan Nosh Global Sdn Bhd menjalinkan kerjasama dalam Penilaian di dalam Ruang Terkurung.

PROGRAM KESEDARAN AMALAN BUDAYA SELAMAT DI SEKOLAH 2016

Pada 24 September 2016, telah diadakan Program Kesedaran Amalan Budaya Selamat di Sekolah Menengah Kebangsaan Taman Ehsan, Kepong Selangor.

Objektif utama program ini diadakan adalah bagi mewujudkan persekitaran sekolah yang selamat dan sihat kepada guru, kakitangan dan juga murid semasa berada di sekolah. Selain memupuk kesedaran terhadap Keselamatan dan Kesihatan Pekerjaan (KKP) di sekolah, program ini juga memastikan sekolah sebagai zon selamat bagi murid dan warga sekolah yang lain.

Program ini merupakan program anjuran bersama SMK Taman Ehsan, PIBG SMK Taman Ehsan dan SASTERA Education Development Sdn Bhd. Agensi luar yang terlibat dengan program ini adalah Jabatan Keselamatan dan Kesihatan Pekerjaan (JKKP/DOSH), Institut Keselamatan dan Kesihatan Pekerjaan Negara (NIOSH), Pertubuhan Keselamatan Sosial (PERKESO) dan Universiti Teknologi MARA (UiTM). Program pada hari tersebut telah dirasmikan oleh wakil NIOSH Encik Fadzil Osman, Pengurus Besar Jabatan Konsultansi, Penyelidikan dan Pembangunan.

LATIHAN KAWAD KECEMASAN DAN *FIRE DRILL*

Pada 26 September 2016, telah berlangsung latihan kawad kecemasan dan Fire Drill di NIOSH Bandar Baru Bangi. Latihan tersebut melibatkan semua kakitangan dan peserta kursus yang berada di bangunan NIOSH. Dalam latihan tersebut pihak NIOSH telah menjemput pasukan Bomba Bandar Baru Bangi yang telah memberi bantuan dari segi kelengkapan dan tunjuk ajar.

Tahniah diucapkan kepada semua ahli NEFT serta First Aider yang bertungkus-lumus menjayakan Latihan Kawad Kecemasan 2016. Sumbangan dan komitmen semua yang terlibat sangat dihargai.

MAJLIS PENUTUP 'OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT FOR CAMBODIA, LAO PDR, MYANMAR AND VIETNAM DI BAWAH 'THIRD COUNTRY TRAINING PROGRAMME (TCTP)' 2016

Pada 2 September 2016 NIOSH Bandar Baru Bangi, Selangor diadakan majlis penutup bagi kursus peringkat antarabangsa bertajuk "Occupational Safety and Health Management for Cambodia, Lao Pdr, Myanmar and Vietnam (CLMV)' dari 14 Ogos hingga 3 September 2016. Kursus ini adalah khusus kepada peserta daripada Cambodia, Lao PDR, Myanmar dan Vietnam. Kursus ini dikenali sebagai 'Third Country Training Programme' (TCTP) iaitu program yang dikendalikan oleh Jabatan Keselamatan dan Kesihatan Pekerjaan Malaysia dengan kerjasama Kementerian Luar Negeri Malaysia (KLN) dan Japan International Cooperation Agency (JICA).

Majlis penutup program TCTP telah diadakan di Dewan Teater NIOSH yang dihadiri oleh beberapa orang pengurusan tertinggi dari pihak penganjur dan kakitangan NIOSH. Diharap program yang diadakan setiap tahun ini dapat memberi manfaat kepada semua pihak.

ANGGOTA Hazmat membersihkan tumpahan merkuri di dalam makmal.

MERKURI yang tumpah.

Eksperimen 'rebus' raksa

Termometer mengandungi cecair merkuri pecah dalam bilik makmal sekolah

Asmah Rusman
asmah_rusman
@hmetro.com.my

Kuala Lumpur

Tindakan tiga pelajar membakar alat termometer mengunakan penunu gas ketika melakukan eksperimen di bilik makmal Sekolah Menengah Kebangsaan (SMK) Sri Hartamas di sini, mengundang padah apabila alat itu pecah hingga menyebabkan tumpahan cecair merkuri.

Dalam kejadian kira-kira jam 8.20 pagi semalam, kumpulan pelajar lelaki itu dilaporkan tersalamat dan tidak mengalami kecederaan serius.

Pemangku Penolong Pengarah Operasi Bomba dan Penyelamat Kuala Lumpur, Samsol Maarif Saibani berkata, pelajar itu dikatakan sedang membuat eksperimen di dalam makmal terletak di tingkat satu sekolah berkenaan.

> "Sebaik tiba di lokasi, pemeriksaan menemui termometer pecah dan berlaku tumpahan merkuri di dalam makmal berkenaan"
> *Samsol*

"Pihak kami menerima panggilan kecemasan berhubung kejadian itu pada jam 8.22 pagi dan dua jentera dari Balai Bomba dan Penyelamat (BBP) Sri Hartamas dan KLCC diarahkan ke lokasi kejadian.

"Sebaik tiba di lokasi, pemeriksaan menemui termometer pecah dan berlaku tumpahan merkuri di dalam makmal berkenaan," katanya.

Katanya, siasatan awal mendapati pelajar terbabit mencelup alat berkenaan dalam bekas air panas dan membakarnya menggunakan penunu gas menyebabkan alat itu pecah.

"Pasukan Pengurusan Bahan Berbahaya (Hazmat) tiba di lokasi kejadian pada jam 8.56 pagi dan mengarahkan semua pelajar mengosongkan bangunan itu sebelum kerja pembersihan dilakukan hingga selesai sejam kemudian," katanya.

EKSPERIMEN 'REBUS' RAKSA
Publication: Harian Metro
Date of Publication: 8 September 2016
Page number: 45

Dua warga emas nyaris maut kereta dihempap bancuhan simen konkrit

KUALA TERENGGANU – Dua warga emas nyaris maut selepas kereta yang mereka naiki tiba-tiba dihempap oleh bancuhan konkrit yang tertumpah dari tingkat empat sebuah bangunan hotel yang masih dalam pembinaan di Jalan Kampung Cina di sini semalam.

Kereta Nissan Sunny dinaiki Wan Nawang Wan Mamat, 62, dan rakannya A. Rahman A. Hamid, 63, rosak teruk dengan kesemua cermin kenderaan tersebut pecah berikutan impak dihempap bancuhan simen dari ketinggian 16 meter itu pada pukul 11.30 pagi.

Kejadian bermula selepas bekas mengandungi bancuhan simen yang sedang diangkat dengan kren untuk kerja-kerja pembinaan projek menaik taraf sebuah hotel tibatiba terbuka lalu mengenai kereta dipandu Wan Nawang.

Selain itu, tiga buah kenderaan iaitu Honda Accord, Perodua Kancil dan Mazda CX5 yang diletakkan di kawasan meletak kenderaan berhampiran turut mengalami kerosakan.

Wan Nawang berkata, sewaktu kejadian, dia dan A. Rahman dalam perjalanan ke sebuah kedai yang terletak di Kampung Cina dari Pasar Payang di sini.

"Sebaik tiba di lokasi kejadian, tiba-tiba saya terdengar bunyi kuat sebelum sesuatu menghempap bahagian atas kereta saya yang menyebabkan semua cermin pecah.

"Saya yang mengalami luka akibat terkena serpihan cermin terbabit panik terus membrek kecemasan. Mujur nyawa saya dan rakan (A. Rahman) tidak melayang," katanya.

Wan Nawang berkata, keretanya yang rosak teruk itu kemudian ditunda ke rumahnya di Kampung Seberang Takir, Kuala Nerus.

Dia yang bekerja sendiri berkata, selain menanggung kos penundaan kenderaan itu, pihak kontraktor pembinaan yang bertanggungjawab terhadap kejadian tersebut juga berjanji akan menggantikan kereta baharu kepadanya sebagai ganti rugi dalam masa terdekat.

WAN NAWANG melihat keadaan keretanya yang rosak akibat dihempap bancuhan konkrit yang tumpah di Jalan Kampung Cina, Kuala Terengganu semalam.

DUA WARGA EMAS NYARIS MAUT KERETA DIHEMPAP BANCUHAN SIMEN KONKRIT
Publication: Kosmo
Date of Publication: 22 September 2016
Page number: 14

Reports by ROYCE TAN, YEE XIANG YUN and N. TRISHA

Crackdown on crane drivers

DOSH to order 'stop work' at sites with unqualified operators

KUALA LUMPUR: The fatal accident in Bukit Bintang on Aug 25 was the last straw. The Department of Occupational Safety and Health (DOSH) is cracking down on tower crane operators who do not operate by the book.

Those who use fake certificates and competency licences may find themselves out on their ear.

DOSH directors in Kuala Lumpur, Selangor, Johor and Penang were instructed to inspect tower crane operators at all construction sites beginning yesterday and the results have been astonishing already.

In Johor alone, DOSH found 47 tower crane workers using fake competency licences.

DOSH director-general Datuk Mohtar Musri said he told state directors to check every crane and whether the operators are competent, trained and licensed after the latest tragedy.

On Aug 25, administration executive Joice Chin Khoon Sing, 24, who was driving along Jalan Raja Chulan here was killed when a crane hook from a construction site fell more than 20 storeys onto her car.

"Construction sites found to have tower cranes operating illegally will be slapped with a stop work order," said Mohtar when contacted.

"Action will be taken against the main contractor or those found to be responsible."

He said it was the duty of the main contractor on site to ensure each standard and regulation was adhered to.

For heavy machinery like a tower crane, he said it was the main contractor's job to ensure it was safe and operated by a legal operator.

"The tower crane operator must have a valid certificate of fitness and tower cranes should only be operated by those with a valid certificate of competency from DOSH."

Mohtar said some main contractors allowed illegal or untrained crane operators.

"Some illegal operators use an original certificate but replace the original photo of the licensed person with theirs.

"We are changing the certification system to include QR codes that we can scan using our phones to minimise tampering of the certificate."

On the fatal accident, Mohtar said DOSH had "narrowed down what caused the wire rope to snap and how the crane was operating outside its boundary".

"We are not at liberty to reveal it pending the court action that we are going to take," he said.

In Johor Baru, the 47 tower crane workers using fake competency licences were mostly from China, Bangladesh and Indonesia, said state DOSH director Kormain Mohd Noor.

He said the operators working at various sites in Johor Baru, Pengerang and Muar had never undergone any of the required crane operating courses, which was an offence.

Kormain says DOSH has lodged police reports about the falsification of documents and illegal handling of heavy vehicles.

"The illegal operators usually worked at night to avoid detection by the authorities," he told reporters after attending the Inculcating Preventive Culture conference here.

DOSH, he said, had 159 competent operators on record in comparison to the 273 active tower cranes currently in Johor.

Kormain said some employers chose to hire unlicensed workers as it was cheaper.

To date, 30 tower crane owners had been fined a total of RM75,000 and six crane owners have received summonses for various offences amounting to RM80,000.

In George Town, state DOSH director Mohd Rosdee Yaakob said the "Tower Crane Ops" here would continue until Thursday.

"We will issue a stop work order immediately if we find anything amiss," he said yesterday.

Mohd Rosdee said DOSH would also review the firms' maintenance contracts and their records.

"We have so far inspected four tower cranes at two construction sites.

"We seized one crane and issued two notices," he added.

Going up: A tower crane at a construction site in Kuala Lumpur in this file picture. Operators must have valid certificates of competency from DOSH.

CRACKDOWN ON CRANE DRIVERS
Publication: The Star
Date of Publication: 6 September 2016
Page number: 4N

Tingkatkan keselamatan dan kesihatan pekerja

LEE LAM THYE MENULIS

KEMALANGAN ketika dalam perjalanan pergi atau pulang dari tempat kerja semakin meningkat setiap tahun dan perlu diberi perhatian sewajarnya. - GAMBAR HIASAN

MELIHAT kepada statistik kemalangan industri, kemalangan semasa berulang-alik ke tempat kerja dan penyakit tidak berjangkit (NCD) di tempat kerja, ia menunjukkan bahawa kesihatan pekerja dan keselamatan di jalan raya tidak diberi perhatian secukupnya.

Melalui statistik kemalangan tersebut boleh dirumuskan bahawa golongan pekerja sememangnya mematuhi peraturan Keselamatan dan Kesihatan Pekerjaan (OSH) semasa di premis syarikat atau tapak kerja, tetapi kurang memberi perhatian kepada kesihatan dan keselamatan semasa pergi atau pulang dari kerja.

Dalam tempoh 10 tahun lalu, terdapat peningkatan ketara dalam kemalangan semasa berulang-alik ke tempat kerja. Menurut statistik Pertubuhan Keselamatan Sosial (Perkeso), tahun lepas mencatatkan 28,579 kemalangan dalam perjalanan pergi dan balik dari tempat kerja, iaitu peningkatan sebanyak 65.3 peratus daripada 17,297 kes pada 2005.

Sebaliknya, kemalangan industri pula mencatatkan penurunan dalam tempoh yang sama. Bilangan kemalangan industri berkurangan hampir 22 peratus daripada 43,885 kes pada 2005 kepada 34,272 kes pada 2015.

Trend bertentangan antara kemalangan industri dan kemalangan semasa berulang-alik ke tempat kerja menunjukkan perlunya tindakan dalam langkah-langkah keselamatan dan pencegahan kemalangan yang dilaksanakan oleh majikan.

Jumlah pekerja yang mengalami NCD seperti penyakit jantung, kencing manis, darah tinggi, strok dan lain-lain juga semakin meningkat. Dalam tempoh antara 2005 dan 2015, kes NCD di tempat kerja meningkat lebih daripada dua kali ganda kepada 15,173 kes, daripada 6,775 kes pada 2005.

Akibatnya, kehilangan bilangan hari bekerja kerana kemalangan di tempat kerja, kemalangan semasa perjalanan dan NCD juga meningkat naik.

Bilangan kes kemalangan serta kematian yang tinggi bermakna jumlah pampasan yang lebih banyak harus dibayar Perkeso kepada pekerja terbabit dalam kemalangan atau tanggungan mereka disebabkan oleh hilang upaya sementara atau kekal, ataupun kematian.

> **Memandangkan majoriti kemalangan jalan raya melibatkan penunggang motosikal, tumpuan harus diberikan kepada pekerja yang menunggang ke tempat kerja.**

Pampasan ini dibayar melalui pelbagai skim termasuk Faedah Hilang Upaya Sementara, Faedah Hilang Upaya Kekal, Pencen Ilat atau Pencen Penakat.

Ini adalah satu perkara di mana semua pihak berkepentingan dalam OSH perlu memandang serius dan mencari jalan untuk menanganinya kerana Malaysia tidak boleh kehilangan sumber manusia yang berharga disebabkan oleh kemalangan di tempat kerja dan jalan raya, atau penyakit.

Peraturan itu hendaklah dipatuhi secara menyeluruh, termasuk kesihatan pekerja dan keselamatan mereka semasa perjalanan pergi dan balik dari kerja.

Kempen untuk mendidik pekerja mengenai keselamatan jalan raya dan menggalakkan gaya hidup sihat perlu diperhebatkan di peringkat organisasi dan kebangsaan. Keluarga yang sihat bermula dari tempat kerja kerana orang dewasa menghabiskan kira-kira satu pertiga atau lebih daripada masa mereka di tempat kerja.

Pemilik syarikat perlu bekerjasama dengan agensi-agensi berkaitan dan pertubuhan bukan kerajaan (NGO) untuk merangka program keselamatan jalan raya yang sesuai bagi pekerja. Para pekerja perlu diingatkan supaya mematuhi peraturan keselamatan jalan raya sama seperti mereka mematuhi peraturan keselamatan di tempat kerja. Memandangkan majoriti kemalangan jalan raya melibatkan penunggang motosikal, tumpuan harus diberikan kepada pekerja yang menunggang ke tempat kerja.

Untuk menggalakkan kesihatan pekerja dan mencegah NCD, program promosi kesihatan di tempat kerja perlu menggabungkan persekitaran kerja yang sihat dan amalan pengurusan yang menyokong kesihatan pekerja.

Ini termasuk pengurusan kerja yang mengelakkan tekanan dan keletihan, membolehkan pekerja mendapat keseimbangan kerja dan kehidupan, menyediakan kemudahan atau program sokongan untuk pekerja menjalani gaya hidup aktif dan pemakanan sihat, waktu kerja fleksibel bagi membolehkan pekerja berjadah, program pengurusan stress, dan pelaksanaan amalan sumber manusia yang memberi pengiktiraan kepada pekerja serta kepuasan bekerja.

Sementara itu, syarikat-syarikat insurans tidak harus memberi tumpuan semata-mata kepada keuntungan dan jumlah premium. Walaupun peringatan mereka adalah berorientasikan keuntungan, syarikat insurans harus melancarkan kempen pendidikan mengenai pencegahan kemalangan dan penggalakan kesihatan sebagai sebahagian daripada program tanggungjawab sosial korporat (CSR) mereka.

Kurangnya bilangan kemalangan atau penyakit bermakna jumlah pampasan yang lebih kecil dan ini membolehkan Perkeso dan firma insurans dapat menggunakan bayaran premium untuk tujuan lain seperti faedah-faedah yang lebih baik.

Adalah penting untuk menggabungkan Garis Panduan Pengurusan Keselamatan Semasa Perjalanan dan Promosi Kesihatan di Tempat Kerja dalam dasar keselamatan dan kesihatan pekerjaan dan sistem pengurusan keselamatan dan kesihatan pekerjaan dalam semua organisasi.

Langkah ini akan menyumbang kepada pembentukan budaya pencegahan, meningkatkan kesejahteraan pekerja, produktiviti dan prestasi mereka, serta mengurangkan tekanan ke atas sistem penjagaan kesihatan, kebajikan dan keselamatan sosial.

TAN SRI LEE LAM THYE ialah Pengerusi Institut Keselamatan dan Kesihatan Pekerjaan (Niosh)

TINGKATKAN KESELAMATAN DAN KESIHATAN PEKERJA
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BH AHAD 11 September 2016

FOTO: AP

Pasukan bomba berusaha memadamkan kebakaran dengan bantuan beberapa pekerja kilang.

Tragedi dandang meletup

25 maut, 70 cedera kilang terbakar

Dhaka

Perayaan Aidiladha bagi warga Muslim Bangladesh, di sini bertukar menjadi suram selepas sekurang-kurangnya 25 orang terbunuh dan 70 lagi cedera.

Ini berikutan satu kebakaran besar selepas dandang di sebuah kilang pembungkusan di Bangladesh meletup kuat, semalam.

Pihak berkuasa berkata, kira-kira 100 orang sedang bekerja ketika api memusnahkan bangunan empat tingkat itu di bandar industri, Tongi di utara ibu negara Dhaka.

Seorang doktor di hospital kerajaan Tongi, Parvez Mia berkata, jumlah kematian adalah 25 orang ia meningkat daripada 22 yang dilaporkan sebelum ini dan sekurang-kurangnya 70 mangsa cedera, kebanyakannya kritikal.

Kebakaran itu berpunca daripada bilik dandang di kilang syarikat Tampaco Foils Limited yang membekalkan produk di bawah beberapa jenama tempatan dan luar negara.

Bantuan lampu telefon bimbit

"Kami masih belum berjaya mengawal kebakaran dan bimbang masih ramai pekerja terperangkap dalam kilang," kata inspektor polis, Aminul Islam.

Mia berkata, beberapa mangsa cedera serius sudah dihantar ke hospital di Dhaka. "Ramai daripada mereka dalam keadaan amat kritikal," tambah beliau.

Juruelektrik kilang, Mohammad Rokon, 35, berjaya menyelamatkan diri dengan luka ringan.

"Ketika sedang bekerja dalam bilik pejabat, saya terdengar bunyi satu letupan dan gegaran. Kemudian siling mula jatuh menimpa saya," katanya ketika di wad pemerhatian.

"Saya hampir jatuh pengsan. Namun, saya memaksa diri untuk keluar dengan bantuan lampu telefon bimbit."

Tragedi itu berlaku ketika Bangladesh yang mempunyai majoriti penduduk Muslim bakal menyambut perayaan Aidiladha. AFP

Info

Kebakaran kilang

→ **Kebakaran dan kemalangan** berlaku secara kerap dalam industri kilang di Bangladesh yang membabitkan nilai AS$27 bilion (RM108 bilion).

→ **Pada November 2012**, sekurang-kurangnya 111 pekerja terkorban apabila kilang sembilan tingkat disambar api di kawasan perindustrian Ashulia, di luar ibu negara Dhaka.

TRAGEDI DANDANG MELETUP
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Budaya negatif menyebabkan pekerja tertekan

Oleh SITI NORHAWA MOHD. ALI
pengarang@utusan.com.my

KUALA LUMPUR 18 Sept. - Budaya tempat kerja yang negatif boleh menyebabkan pekerja mengalami tekanan berlebihan dan keadaan diri tidak terurus malah memberi kesan kepada kesejahteraan mental dan fizikal mereka.

LEE LAM THYE

Pengerusi Institut Keselamatan dan Kesihatan Pekerjaan Negara (NIOSH), Tan Sri Lee Lam Thye berkata, setiap organisasi perlu mewujudkan budaya tempat kerja yang positif kerana kesihatan mental yang baik adalah penting bagi menyumbang kepada produktiviti dan keuntungan yang lebih tinggi kepada sesebuah organisasi.

"Kesejahteraan emosi pekerja akan memberi keuntungan yang baik (kepada sesebuah organisasi) kerana ini dapat mengurangkan bilangan pekerja mengambil cuti sakit dan kurang insiden ketidakhadiran serta *presenteeism*.

"Ketidakhadiran adalah apabila seorang pekerja berniat atau sengaja tidak pergi kerja dengan kerap, manakala *presenteeism* adalah apabila pekerja datang bekerja walaupun sakit atau mengalami stress yang melampau. Kedua-duanya boleh memberi kesan negatif kepada organisasi dari segi produktiviti dan prestasi," katanya dalam satu kenyataan di sini hari ini.

Tinjauan Kesihatan Kebangsaan Morbiditi Malaysia (NHMS) 2015 mendapati 29.2 peratus orang dewasa di Malaysia mengalami penyakit mental.

Tambah Lam Thye, pekerja yang tekanan juga boleh menyumbang kepada kadar kemalangan dan kecederaan lebih tinggi semasa bekerja apabila mereka tidak dapat memberi tumpuan sepenuhnya kepada tugas-tugas mereka.

Ada majikan dan pengurus yang menyebabkan tekanan di tempat kerja kerana mereka menafikan mewujudkan pekerja keseimbangan antara kerja dan kehidupan yang amat diperlukan untuk mengekalkan kesihatan mental positif bagi pekerja, katanya.

"Semua organisasi perlu mengambil kira tekanan yang berkaitan dengan pekerjaan dan risiko psikososial sebagai sebahagian daripada strategi OSH untuk mengurangkan kemalangan dan kecederaan di tempat kerja.

"Beban kerja berlebihan, konflik interpersonal, penderaan fizikal dan psikologi, gangguan seksual, kurang sokongan daripada pihak pengurusan tinggi dan komunikasi yang tidak efektif menyumbang kepada risiko psikososial di tempat kerja, yang boleh membawa kepada tekanan, *burnout* dan kemurungan," katanya.

Tambah beliau, gabungan usaha majikan dan kerajaan akan menjadi lebih berkesan dalam mewujudkan tenaga kerja yang sihat dan produktif, dari segi mental dan fizikal.

"Kempen dan pendidikan mengenai kesihatan mental, sama ada di peringkat kebangsaan, negeri atau organisasi, perlu dilaksanakan seperti kempen kesedaran awam yang memberi tumpuan kepada kepentingan mengekalkan kesihatan fizikal," katanya.

BUDAYA NEGATIF MENYEBABKAN PEKERJA TERTEKAN
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*A hazardous material team from the Pasir Puteh Fire and Rescue Department inspecting the leak site at a factory in **Menglembu** yesterday.* Pic by Muhaizan Yahya

8 sick after inhaling toxic gas in Menglembu

IPOH: Six firemen and two factory workers were rushed for treatment after they inhaled toxic fumes from a leaked ferric acid tank in Kampung Bukit Merah, Menglembu, here yesterday.

The hazardous material (Hazmat) team members are being treated at Raja Permaisuri Bainun Hospital (HRPB) after suffering breathing difficulty, red eyes and stomach ache due to toxic gas inhalation.

State Health Committee chairman Datuk Dr Mah Hang Soon said the affected factory workers sought treatment in a clinic after they showed similar symptoms.

He said the firemen were also exhausted as they had to carry five tonnes of soda ash on their backs to help neutralise the spilled acid.

"They couldn't wait for the forklift as they had to stop the acid and its vapours from spreading," he said after visiting the firemen at HRPB yesterday.

State Fire and Rescue Department operations commander Mohd Khairul Jamil said 24 firemen, including 12 from the Hazmat team, were involved in the operation, which ended at 3pm.

He said an initial investigation found that one of the tanks, which contained corrosive acid, had leaked before it fell on the ground at 10am.

The incident caused panic among villagers in Kampung Bukit Merah.

Village head Woong Tong Wan said he thought the loud sound coming from the factory at 10am was from a car crash.

However, he was shocked when a villager told him there had been a gas leak at the factory.

"The villager said that the ammonia gas had spread to the village and asked me to inform the authorities.

"I lodged a report and called the Department of Environment," he said, adding that leaves on several trees in the area had also turned yellow due to the toxic gas.

8 SICK AFTER INHALING TOXIC GAS IN MENGLEMBU
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INSTITUT KESELAMATAN DAN KESIHATAN PEKERJAAN NEGARA
KEMENTERIAN SUMBER MANUSIA
NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH MALAYSIA (NIOSH)
Lot 1, Jalan 15/1, Section 15, 43650 Bandar Baru Bangi, Selangor Darul Ehsan
Tel: 03-8769 2100 Fax: 03-8926 5655
www.niosh.com.my