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RISK ASSESSMENT AND LEGAL COMPLIANCE FOR NIOSH CONFINED SPACE AND WORKING AT HEIGHTS TRAINING ACTIVITIES

EDITOR'S Notes

NOVEMBER 2020

As we know a risk assessment is a systematic method of looking at work activities, considering what could go wrong, and deciding on suitable control measures. These control measures are designed to eliminate, reduce or minimise the risks of loss, damage or injury in the workplace.

The organizations that have carried out risk assessment at the workplace have noted numerous changes in their working practice. Those who have already carried out a risk assessment in their work, have reported positive changes in their working practice, they recognize the substandard act and working condition as they develop and take necessary corrective action.

Legislation requires that this process should be systematic and be recorded so that the results are reliable and the analysis complete. The risk assessment process should be continuous and should not be regarded as a one-off exercise!

For this edition, we will present to you a risk assessment and legal compliance for NIOSH confined space and working at height training activities.

See you next month.

Haji Ayop Salleh
Pengarah Eksekutif
NIOSH

Sila imbas kod QR ini untuk memberi maklum balas penerbitan NIOSH

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National Institute Of Occupational Safety And Health

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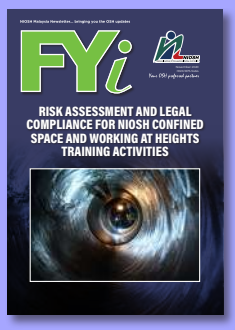

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Info

RISK ASSESSMENT AND LEGAL COMPLIANCE FOR NIOSH CONFINED SPACE AND WORKING AT HEIGHTS TRAINING ACTIVITIES

Mohd Razman bin Ismail
Resident Trainer
NIOSH Bandar Baru Bangi

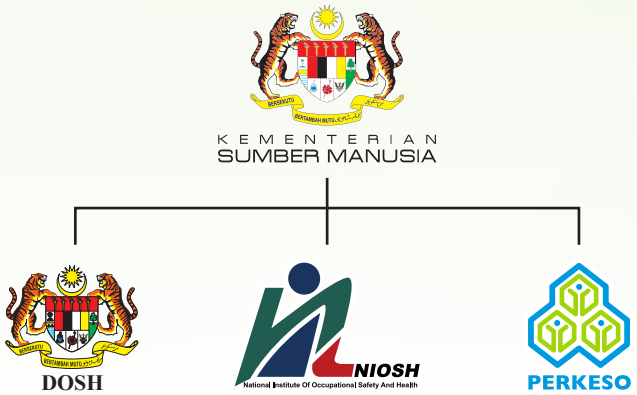
INTRODUCTION TO NIOSH

National Institute of Occupational Safety and Health, Malaysia (NIOSH) was established in 1992 by the government (Ministry of Human Resources) to spearhead safe and healthy culture at the workplace in Malaysia. The headquarters is located in Bandar Baru Bangi as the registered office for its operations and there are 5 other regional offices, namely Northern Regional Office, Southern Regional Office, East Coast Regional Office, Sabah F.T Labuan and Regional Office and Sarawak Regional Office.

NIOSH core activities are as follows:

i. Develop and conduct training programs;
ii. Assist industries, commercials, and others in solving problems related to OSH through consultancy services;
iii. Provide the latest information in the field of OSH;
iv. Conduct applied research and development activities, and
v. Examination and assessment of competency courses.

As an ISO 9001:2008 certified organization, NIOSH Malaysia committed to providing services in the field of Occupational Safety and Health (OSH) with the vision of 'The leading centre of excellence in Occupational Safety and Health' and the mission of 'The preferred partner in enhancing Occupational Safety and Health'. NIOSH is recognized as the leading OSH training centre as it offers total OSH solutions that range from highly technical OSH areas such as **occupational health, ergonomics** solutions for industries, **industrial hygiene** monitoring, and **occupational safety** services to general OSH training. NIOSH is working closely with the Department of Occupational Safety and Health (DOSH), Ministry of Human Resources and Social Security Organization (SOCSO), in enhancing Occupational Safety and Health work culture throughout the nation.



NIOSH as an agency under the Ministry Of Human Resources, Malaysia

OCCUPATIONAL SAFETY ISSUES BASED ON THE WORKPLACE OBSERVATION

Confined Space Activities

Figure 2: Confined Space Entry Procedures at Confined Space Simulator, NIOSH Bandar Baru Bangi, Selangor

A confined space is considered as one of the hazardous and deadliest places to work in the world. Almost every industry has confined space. Unfortunately, a lot of workers died and injured inside it due to numerous factors such as intoxication of toxic gas, explosion, drowning, etc. To enter the confined space requires a tremendous amount of preparation as shown in Figure 2. According to the Industry Code of Practice for Safe Working in Confined Space (DOSH, 2010), the confined space can be defined as:

i. An enclosed or partially enclosed space;
ii. Is at atmospheric pressure during occupancy;
iii. It is not intended or designed primarily as a place of work, and
iv. Is liable at any time to:
   a. Have an atmosphere which contains harmful levels of contaminants;
   b. Have an oxygen deficiency or excess; or
   c. Cause engulfment and
   d. Could have restricted means for entry and exit.

There are a lot of hazards present in the confined space. When commencing the confined space entry procedures, the Authorized Entrance (AE) could face various kinds of risk such as:

i. Lack of Oxygen causing asphyxiation that can lead to death;
ii. Oxygen enrichment, which can cause a fire hazard;
iii. The presence of toxic gases such as NH3, H2S, CO, CO2 and SO2 that may kill or injured the workers;
iv. Combustible gas such as Methane, Propane can initiate an explosion;
v. Exposure to Radiation Material increasing the risk of cancer; and
vi. Physical hazards such as noise, heat, moving objects, slippery, etc.

Workers enter the confined space to carry out various tasks such as inspection, repair, maintenance, cleaning, etc. These tasks could be done easier outside, but it will be another story if the job is done inside the confined space due to its dangerous condition. Chemical or physical hazards are present within the space. (NIOSH, USA, 1987).

The employer has to establish and implement a written Confined Space Safety Program. Proper measures have to be taken to prevent unauthorized persons from entering the confined space. Danger signs such as “DANGER– CONFINED SPACE - DO NOT ENTER” – In both Bahasa Malaysia and English should be placed in any confined space entry area. (DOSH, 2010).

Confined Space Activities Legal Requirements:

Table 1: Legal Requirements in Relation to Confined Space Activities

Legal Documents	Detail Information / Reference
1. Occupational Safety & Health Act - 1994	**Act** • **Sec 15** - General duties of employers and self-employed persons to their employees. • **Sec 24 -** General duties of employees at work. • **Sec 28 -** Medical surveillance. • **Sec 32 -** Notification of accidents, dangerous occurrence occupational poisoning and occupational diseases, and inquiry. (NADOPOD) • **Sec 37 -** Approval of industry codes of practice. (ICOP CS 2010) • **Sec 38 -** Use of industry codes of practice in proceedings. **Regulation** • Use and Standard of Chemical Hazardous to Health Regulations 2000 (USECHH). • Notification of Accident, Dangerous Occurrence, Occupational Poisoning & Occupational Disease) Regulations 2004 (NADOPOD) **ICOP** • Industry Code of Practice for Safe Working in A Confined Space 2010.

Confined Space Activities Legal Requirements: (Cont'd)

Table 1: Legal Requirements in Relation to Confined Space Activities (Cont'd)

Legal Documents	Detail Information / Reference
2. Factory and Machinery Act 1967	**Act** • **Sec 10 -** Provisions relating to safety, etc. • **Sec 11 -** Persons exposed to explosive, inflammable, etc., substances. • **Sec 22 -** Provisions relating to health. • **Sec 51 -** Penalties. **Regulation** • Factories and Machinery (Safety, Health, and Welfare) Regulations 1970. a) Regulations 13 (Confined Space) b) Regulations 25 (Ventilation)
3. ICOP	**ICOP** Industry Code of Practice for Safe Working in A Confined Space 2010. • Part I - Introduction • Part II - Confined Space Entry Programme • Part III - Detail Requirements • Part IV - Duties of Responsible Persons

Suitable Control Measure to Control the Risk

Due to the hazardous condition present in the confined space, personnel going inside the space have to take precaution measures to protect themselves from being consumed by the risk. They have to control and mitigate the risk to the acceptable level by taking the necessary steps such as:

i. The use of valid Confined Space Work Permit (PTW);
ii. Atmospheric testing is done and endorses by the Authorized Gas Tester (AGT);
iii. Certified Authorized Entrants (AE) and Standby Person (SP) to work inside the confined space;
iv. The use of appropriate and suitable Personal Protective Devices and equipment. (Figure 3);
v. Continuous and adequate ventilation system; and
vi. Emergency responses and preparedness.

Full Body Harness | Life Line | Gas Detector | SCBA | Ventilator

Figure 3: Type of PPEs and Equipment Use in the Confined Space Operation.

Info

HIRARC Based on the Highest Risk Present in the Confined Space Activities.

Table 2: HIRARC Document for Confined Space Activities

Work Activity	Hazard	Description / Effect	Existing Risk Control	Risk Analysis			Risk Control	PIC
				Probability	Severity	Risk Rating		
Inspection, maintenance, hot work and installation inside the tank	Toxic Gases (H_2S, NH_3, CO, CO_2, VOC)	• Asphyxiation • Intoxicated • Acute or chronic effects • Skin problems (dermatitis) • Eye, nose and throat irritation • Systemic poisoning • Impairment to the central nervous system.	• SCBA / Respirator • Ventilation system • Gas testing	Most Likely (5)	Catastrophic (5)	High (25)	• CS entry permit system • CS entry training • CS Authorizing Officers (AGT, ES & PI) • Safety signage • Refer to Safety Data Sheet • Isolation of the confined space	• CS operator • Trainer & Assessor • Authorized gas tester • Permit Issuer • Entry Supervisor

(Scoring is based on the Guidelines for Hazard Identification, Risk Assessment and Risk Control (*HIRARC*), *2008*)

WORKING AT HEIGHTS ACTIVITIES

Figure 4: Working Safely at Heights Procedures at Multipurpose Hangar, NIOSH Bandar Baru Bangi, Selangor

Working at heights can be defined as work in any place at/ or below ground level or means of obtaining access to or egress from such place while at work, except by staircase in a permanent workplace where a person could fall a distance liable to cause personal injury.

Anyone who is working at heights or in the industry has to comply with the Occupational Safety and Health Act (OSHA) 1994. (DOSH, 1994). It is the responsibility of both employers and employees to ensure that the workers are safe and well protected. Penalties will be imposed on those who are not complying with the legislation.

Based on the Safety, Health & Welfare Regulation 1970, (DOSH, 1967) stated that where any person is required to work at a place from which he will be liable to fall a distance of more than ten feet (3.33 meters), means shall be provided to ensure his safety and such means shall where practicable include the use of safety belts or ropes as shown in Figure 4.

Worldwide, it is reported that over 40,000 injuries and deaths have been caused by falling from high ground. 33 per cent of fatal accidents result in death. According to the study carried out by NIOSH USA Fatality Assessment and Control Evaluation Program, falling from heights remains as the main factor of fatalities cases in the construction site. (Katharina Busch, 2019). Accidents at the construction site can be divided into three major categories:

i. Workers fall from a high place or into the hole/pit;
ii. Objects falling – the collapse of the structure/scaffolding/ tools and etc.; and
iii. Workers fall from the stairs.

To ensure safety during working at height operation, the use of personal protective equipment is mandatory. The workers should use:

i. Full Body Harness (the use of safety belts is not allowed because there are many fatal cases and serious injury while wearing safety belts. The protection provided by safety belts is not comprehensive);
ii. Safety shoes;
iii. Lifeline;
iv. Lanyard;
v. Rope grab; and
vi. Safety helmets/bump cap.

Info

Working at Heights Activities Legal Requirements:

Table 3: Legal Requirements in Relation to Working at Height Activities

Legal Documents	Detail Information / Reference
1. Occupational Safety & Health Act - 1994	**Act** • **Sec 15** - General duties of employers and self-employed persons to their employees. • **Sec 24 -** General duties of employees at work. • **Sec 32 -** Notification of accidents, dangerous occurrence occupational poisoning and occupational diseases, and inquiry. (NADOPOD)
2. Factory and Machinery Act 1967	**Regulation** • Factories and Machinery (Safety, Health, and Welfare) Regulation 1970 (Revised – 1983) a) **Regulation 12: Working at a height** b) **Regulation 41: Penalty** • Factories and Machinery (Building Operations and Works of Engineering Construction)(Safety) Regulations 1986 a) **Regulation 51 (3) :** The point of anchorage of the lifeline shall not be lower than the level of the working position of the employee. b) **Regulation 54 (1):** Every safety belt and every lifeline shall be inspected by a designated person before use by an employee. c) **Regulation 54 (2) :** No employer shall suffer or permit an employee to use a safety belt or life which shows any indication of wear, damage or deterioration likely to affect its strength and no such belt or lifeline shall be kept on the worksite. d) **Regulation 154:** Penalty
3. Guidelines	• DOSH Guidelines for the Prevention of Falls at Workplaces 2007 • Petronas Technical Standard Working at Height (PTS) • Kuala Lumpur International Airport (KLIA), Working at Height Procedure • Universiti Tunku Abdul Rahman (UTAR), Guidelines Prevention of Falls

Suitable Control Measure to Control the Risk

Multiple approaches can be used to prevent risk when working at heights. The use of suitable pieces of equipment, as well as safety training, is important to prevent an accident at the workplace. (Chi et al., 2005)the fall site, company size, and cause of fall. Individual factors included age, gender, experience, and the use of personal protective equipment (PPE.

To work in the physical demanding condition such as working heights, the workers should:

i. Well trained and competent by attending competency training endorsed by the certified authority;
ii. The workers should be healthy and fit and certified by the Occupational Health Physician;
iii. Every worker should not be allowed to work alone, the implementation of the buddy system is vital when carry out working at height tasks;
iv. The use of suitable equipment and PPE's could prevent any unwanted incident. (Figure 5);
v. All the types of equipment, PPE's and climbing structures such as scaffolding, stairs, netting and etc should be checked and verified prior to doing any task;
vi. The practice of 3-points contact is a must when climbing stairs;
vii. Avoid carrying any equipment during climbing; and
viii. The principle of Climbing put into practice. (100% Tie off, 3-points contacts, fall factor, work restraint, work positioning and fall arrest).

Y-Lanyard | Rope Grab | Positioning Lanyard | Full Body Harness | Helmet

Figure 5: Type of PPEs and Equipment Use in the Working at Heights Operation.

HIRARC Based on the Highest Risk Present in the Working at Heights Activities.

Table 4: HIRARC Document for Working at Height Activities

Work Activity	Hazard	Description / Effect	Existing Risk Control	Risk Analysis			Risk Control	PIC
				Probability	Severity	Risk Rating		
Working at the high level at the multipurpose hangar and stairs	• Falling objects • Unstable work platform • The uncovered hole on the working platform • Improper barricading • PPE malfunction • Damage working structures	• Trips and fall • Personal injuries • Lost time injuries • Suspension trauma • Fatigue • Heat stress/stroke • Death	• Working at Height Procedure • Personal Protective Equipment (Harness/fall arrest/work positioning) • Permit to Climb • Climbing principal	Possible (4)	Fatal (4)	High (16)	Engineering Controls • Handrails • Scaffolding • Fall arrest and anchor point systems • Barricading Admin Controls • Site inspection • Working Safely at Height training • PPE familiarisation • Competent person training (IRATA)	• WAH operator/ technicians • Trainer & Assessor • Maintenance department

(Scoring is based on the Guidelines for Hazard Identification, Risk Assessment and Risk Control (*HIRARC*), *2008.*

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NORMA BARU PROSIDUR KEMASUKAN RUANG TERKURUNG

DINIE IQBAL MINHAT
(RT NIOSH MALAYSIA)

LANGKAH 1	PERSEDIAAN KEMASUKAN

- Pastikan taklimat PTW dengan penjarakan fizikal dan mengikut SOP yg ditetapkan.
- Semua pihak yang terlibat perlu memakai pelitup muka sepanjang taklimat.
- Semua dokumen yang berkaitan disediakan (Cth : JSA, HIRARC, PTW, rekod kesihatan dan sebagainya)
- Pastikan semua orang yang terlibat telah menghadiri latihan kompetensi yang telah ditetapkan. (Latihan AESP dan AGTES)

LANGKAH 2	PENGASINGAN

- Penghadang dan papan tanda amaran – "BAHAYA, RUANG TERKURUNG, DILARANG MASUK" dalam dwi bahasa. Bahasa Malaysia dan Inggeris
- Penghadang juga diperlukan untuk melencongkan lalulintas bagi kenderaan dan pejalan kaki dari memasuki kawasan ruang terkurung
- Kuasa dimatikan dan di kunci menggunakan Lock Out Tag Out (LOTO) bagi mengelakkan peralatan bergerak

LANGKAH 3	PEMBERSIHAN AWAL

- Semua cecair dan pepejal, yang dijangka boleh mendatangkan bahaya kepada mereka yang berada di dalam ruang terkurung, mestilah dikeluarkan dari ruang terkurung sebelum kemasukan.
- Contoh: Proses melengai / purging, Hidro-jet, Pembersihan stim, Pembagasan Pelelas, Pembersihan kimia, Penyingkiran, Soaking dan Flushing

LANGKAH 4	PENGUDARAAN AWALAN

- Memilih cara pengudaraan yang paling sesuai seperti pengudaraan mekanikal
- Membuang segala gas yang tidak dikehendaki (toksik atau mudah terbakar), debu dan bau yang tidak enak dari dalam ruang terkurung
- Membekalkan udara segar (Fresh air)

LANGKAH 5	UJIAN GAS (PRA KEMASUKAN)

- Dilakukan oleh Penguji Gas Bertauliah yang telah ditauliahkan oleh pihak JKKP/DOSH
- Bahan bacaan akan direkodkan dan ditafsir di dalam permit (PTW)
- Jika keputusan bacaan gas gagal (terdapat kandungan gas merbahaya), periksa semula langkah 2, 3 dan 4

LANGKAH 6	PENGUDARAAN BERTERUSAN

- Pastikan sentiasa gunakan udara bersih untuk pengudaraan – JANGAN GUNA OKSIGEN
- Semua peralatan pengudaraan perlulah di bumikan
- Pastikan sumber udara jauh dari punca yang telah tercemar
- Jauhkan dari punca api

LANGKAH 7	PERSEDIAAN PERALATAN

- Penggunaan sanitiser digalakkan sebelum menggunakan semua peralatan
- Peralatan yang mesti disediakan sebelum kemasukan:
- Contoh: Kelengkapan Pelindung Diri, Peralatan Ruang Terkurung, Peralatan Kecemasan dan Peralatan Kerja

LANGKAH 8	PENGESAHAN DAN KEBENARAN PERMIT BEKERJA

- Pengeluar Permit hendaklah memberikan kelulusan PTW dan tempoh sah PTW adalah mengikut jangkamasa yang ditetapkan mengikut undang undang.
- Orang Yang Dibenarkan Masuk dan Orang Menjaga mestilah memastikan PTW telah disahkan.

LANGKAH 9	MASUK DAN BEKERJA

- Orang yang dibenarkan masuk (AE) dan Orang yang menjaga (SP) hendaklah sentiasa memakai pelitup muka sepanjang kemasukan
- SP mesti berada di luar kawasan ruang terkurung
- Pastikan komunikasi berteruskan dengan AE melalui: suara, visual, isyarat tangan, tali, wisel, walkie-talkie

LANGKAH 10	KELUAR DAN TAMAT KERJA

- Kekemasan tempat bekerja
- Taklimat Penutup dan penutupan PTW oleh Pengeluar Permit dan Penyelia Kemasukan.
- Serahan tapak kerja kepada pemilik

Info

CALCULATION REQUIRED FOR VENTILATION SYSTEM IN CONFINED SPACES ACCORDING TO ICOP 2010 AND FMA 1967

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NIOSH MALAYSIA

Ventilation system is one method of dealing with hazardous atmosphere in a confined space such as toxic gas levels are above the PEL, flammable gas concentrations are greater than 10 percent of the LEL, or oxygen concentrations are less than 19.5 percent or greater than 23.5 percent.

Industry Code Of Practice For Safe Working In A Confined Space 2010 (ICOP 2010)

- 8.7 Ventilation
- 8.7.1 Ventilation shall be provided continuously throughout the period of occupancy in the confined space

Factory Machinery Act (FMA 1967)

- Regulation 25: Ventilation
- Where the means of natural ventilation is not adequate further means of natural or mechanical ventilation or both shall be provided.
- The number of ACH in the workplace are:
- Normal conditions [generate little or no heat, smoke or fume] Not less than 10 times per hour
- Hot Work [generate heat, smoke or fume] Not less than 20 times per hour
- Hot Work [generated fume is IDLH] Not less than 30 times per hour

Ventilator:

Use of mechanical system or equipment (such as air blowers, inductors, fans or air movers) to replace stale/ contaminated atmosphere with fresh air in order to produce a safe atmosphere.

Calculation:

CALCULATION FOR DURATION FOR INITIAL VENTILATION

$t = V / Q$

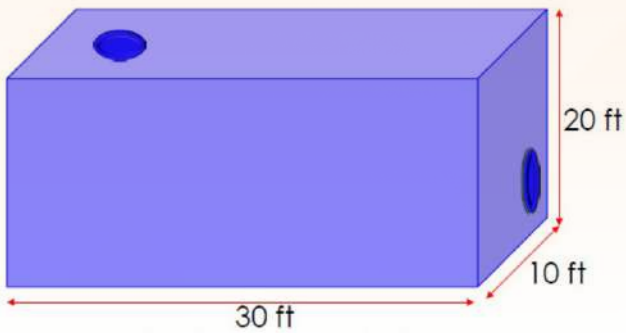
t = time; V = Volume of Confine Space; Q = Flow Rate

CALCULATION FOR CONTINUOUS VENTILATION

$Q = V \times ACH$

Q = Flow Rate ; V = Volume of Confine Space ; ACH = Air Change Per Hour

Example:



- Type of confined space = water tank
- Type of work = Sludge cleaning
- Ventilator's flow rate = 1000 cfm

- Volume, V = length x width x height
  = 30 ft x 10 ft x 20 ft
  = 6000 ft^3
- Continuous Ventilation Flow Rate
  $Q = V \times AC$
  = 6000 ft^3 x 10/ hr
  = 60,000 ft^3/ hr ÷ 60 mins
  = 1000 ft^3/ min @ 1000 cfm
- Initial Ventilation Duration
  $t = V / Q$
  = 6000 ft^3 ÷ 1000 ft^3/ min
  = 6 mins

SEMINAR NIOSH SECARA ATAS TALIAN SEPANJANG TEMPOH PERINTAH KAWALAN PERGERAKAN PEMULIHAN (PKPP) 2020

NIOSH kembali lagi secara 'live streaming' seminar atas talian (online seminar) khas buat anda yang terus komited membantu dan bekerjasama dalam usaha memutuskan rantaian pandemik COVID-19 di Malaysia.

Pada 7 November 2020 (Sabtu) telah berlangsung seminar atas talian (online seminar) dengan topik *Proactive Approaches in Managing HIRARC* yang disampaikan oleh Hairuddin Nasri (HSE Speaker/Lecturer/Trainer).

Seminar secara atas talian (online seminar) ini berlangsung pada pukul 10.00 pagi sehingga 12.30 tengah hari di *facebook* NIOSH Malaysia.

PERHATIAN KEPADA SEMUA PENGAMAL OSH

Pengenalpastian Hazard, Penilaian Risiko dan Kawalan Risiko atau dalam istilah English - nya; *Hazard Identification, Risk Analysis and Risk Control* yang disebut sebagai HIRARC adalah satu pendekatan yang tidak asing lagi di kalangan pengamal KKP/OSH terutamanya dalam memastikan sesuatu tempat kerja berada dalam keadaan yang selamat dan sihat.

Namun begitu, sejauh manakah kaedah atau pendekatan yang proaktif oleh seseorang individu dalam menguruskan sesuatu HIRARC yang lengkap dan berkesan?

Adakah bahaya dan risiko benar-benar berjaya diuruskan?

Bagaimana pula jika datang bahaya dan risiko yang lain?

Apakah terbukti keberkesanan HIRARC yang telah dibangunkan?

PERHATIAN... BAHAYA PENYAKIT PEKERJAAN

Occupational Noise Induced Hearing Loss atau dikenali sebagai penyakit hilang pendengaran akibat pendedahan terhadap bunyi bising di tempat kerja adalah salah satu penyakit pekerjaan utama yang tidak asing lagi.

Malah berdasarkan statistik penyakit pekerjaan yang dilaporkan kepada pihak JKKP, kehilangan pendengaran akibat bunyi bising di tempat kerja adalah antara yang paling tinggi dilaporkan. Kehilangan pendengaran akibat bunyi bising di tempat kerja bermaksud tahap pendengaran terjejas atau kepekakan disebabkan pendedahan terhadap bunyi bising berlebihan pada paras kebisingan tinggi.

Namun begitu, sejauh manakah yang anda tahu tentang bahaya bunyi bising ini?

Di paras atau tahap manakah bunyi bising yang berbahaya bagi pendengaran anda terutamanya semasa bekerja??

Pada 21 November 2020 (Sabtu) telah berlangsung seminar secara atas talian (online seminar) melalui platform *video conferencing:* Aplikasi zoom yang berlangsung dengan topik *The Dangers of Noise: How Much Do You Know?* yang disampaikan oleh Muhamad Zulazhar Abdul Halim, Tenaga Pengajar Kursus 'NIOSH Risk Assessor' - NIOSH. Seminar berlangsung pada pukul 10.00 pagi sehingga 12.30 tengah hari di *facebook* NIOSH Malaysia.

Semoga seminar secara atas talian ini dapat memberi manfaat berguna disamping memberi peluang kepada peserta seminar menimba pengetahuan dalam bidang Keselamatan dan Kesihatan Pekerjaan (KKP) melalui sesi perkongsian ilmu oleh tenaga pengajar NIOSH yang berpengalaman sepanjang tempoh kawalan pergerakan pemulihan (PKPP) ini.

SEMINAR NIOSH SECARA ATAS TALIAN SEPANJANG TEMPOH PERINTAH KAWALAN PERGERAKAN PEMULIHAN (PKPP) 2020

Pada 30 November 2020 berlangsung secara atas talian Seminar dan Dialog Pengurusan Keselamatan dan Kesihatan Pekerjaan di Sekolah 2020. Buat pertama kalinya seminar *OSH in School* bersiaran secara atas talian khas buat anda yang terus komited membantu dan bekerjasama dalam usaha memutuskan rantaian pandemik COVID-19 di Malaysia. Program ini adalah kerjasama NIOSH dengan Jabatan Pendidikan Wilayah Persekutuan Kuala Lumpur.

Program *OSH in School* ini berlangsung pada jam 8.30 pagi-12.00 tengah hari yang disampaikan oleh dua panel dari NIOSH iaitu Dr. Muhamad Ariff Muhamad Noordin, Pakar Teknikal dari Jabatan Perundingan, Penyelidikan dan Pembangunan (CRDD), NIOSH dan Ts. Haji Shahronizam Noordin, Pengurus di Bahagian Penyebaran Maklumat (IDD), NIOSH. Topik yang dibincangkan berkaitan "Keperluan perundangan dan penghapusan risiko kemalangan di sekolah – sekolah selamat". Topik kedua pula berkisar mengenai "COVID-19: Langkah kesedaran di sekolah".

Objektif seminar ini diadakan adalah untuk memberi kefahaman dan kesedaran dalam bidang KKP seperti perundangan, sistem pengurusan KKP, Jawatankuasa KKP, polisi KKP dan perkara berkaitan KKP kepada guru, para pentadbir serta kakitangan sekolah. Semoga program seminar yang dijalankan ini dapat memberi manfaat berguna kepada masyarakat terutamanya yang terlibat secara langsung dengan pihak sekolah.

Pada 11 November 2020 (Rabu), NIOSH kembali lagi secara 'live streaming' seminar atas talian (online seminar) khas buat anda yang terus komited membantu dan bekerjasama dalam usaha memutuskan rantaian pandemik COVID-19 di Malaysia.

Seminar secara atas talian itu bertajuk *Introduction to NIOSH Competency Courses:*

- *5 Industrial Hygiene Courses Occupational Health Doctor (OHD)*
- *Occupational Health Nurse (OHN)*
- *Site Safety Supervisor (SSS)*

Seminar tersebut disampaikan Zulfadhli Suhaili (Eksekutif Program IH, OH & SSS @ NIOSH HQ Bangi, Jabatan Pendidikan dan Latihan NIOSH). Seminar berlangsung pada pukul 11.00 Pagi - 12.00 tengah hari secara atas talian di *Facebook*. Sertai kami secara live di https://www.facebook.com/nioshmalaysia/ untuk mendapatkan penerangan maklumat yang asas mengenai perlaksanaan kursus-kursus kompetensi *'Industrial Hygiene', 'Occupational Health'* dan 'SSS' di NIOSH.

LUANGKAN MASA ANDA, KOMITED KKP BERSAMA NIOSH

Pada 25 November 2020 (Rabu), NIOSH kembali lagi secara *'live streaming'* Seminar atas talian (online seminar) khas buat anda yang terus komited membantu dan bekerjasama dalam usaha memutuskan rantaian pandemik COVID-19 di Malaysia.

Seminar secara atas talian itu bertajuk *Introduction to NIOSH Competency Courses: Authorised Entrant and Standby Person For Confined Space (AESP), Authorised Gas Tester And Entry Supervisor For Confined Space (AGTES)* disampaikan oleh Saidatul Hafizah Alzalip, Eksekutif Program Ruang Terkurung @ NIOSH HQ Bangi, Jabatan Pendidikan dan Latihan NIOSH. Seminar berlangsung pada pukul 11.00 pagi - 12.00 tengah hari secara atas talian di *Facebook* NIOSH. Ayuh bersama kami secara live di https://www.facebook.com/nioshmalaysia/ untuk mendapatkan penerangan maklumat yang asas mengenai perlaksanaan kursus kompetensi AESP dan AGTES di NIOSH.

LUANGKAN MASA ANDA, KOMITED KKP BERSAMA NIOSH

SUMBANGAN NIOSH KEPADA GOLONGAN TERKESAN AKIBAT PANDEMIK COVID-19 DI W.P.LABUAN

W. P Labuan: 11 dan 12 November 2020 - Di bawah inisiatif tanggungjawab sosial korporat (CSR), NIOSH melalui Pejabat NIOSH Labuan telah menyampaikan sumbangan berbentuk kit makanan kepada pihak Jabatan Kebajikan Masyarakat Cawangan Labuan dan Hospital Labuan.

Sumbangan ini adalah antara usaha NIOSH untuk membantu pihak-pihak yang terkesan di atas bencana pandemik Covid-19 khususnya masyarakat di Wilayah Persekutuan Labuan. Kit makanan seperti beras, gula, garam dan lain-lain keperluan penting ini diharapkan sedikit sebanyak dapat meringankan beban warga Labuan yang memerlukan.

NIOSH menyeru kepada masyarakat Malaysia yang berkemampuan untuk sama-sama membantu kerajaan di dalam memastikan warga Malaysia mendapat bantuan dan perhatian. Sesungguhnya usaha bantu membantu ini akan dapat mengeratkan lagi perpaduan dan kerjasama di segenap lapisan masyarakat.

Pada 12 November 2020: Penyerahan sumbangan berupa kit makanan berjumlah 89 kit kepada warganegara golongan B40 yang terkesan akibat Covid-19 daripada NIOSH melalui Jabatan Kebajikan W.P. Labuan.

Pada 11 November 2020: Penyerahan sumbangan berupa 20 kampit beras kepada Hospital Labuan. NIOSH SBRO, khususnya NIOSH W.P Labuan ingin mengucapkan ribuan terima kasih kepada pihak pengurusan atas keperihatinan kepada warga W.P. Labuan yang terkesan akibat COVID-19.

LAWATAN KERJA YB ADUN HULU BERNAM KE IBU PEJABAT NIOSH

Bandar Baru Bangi: Pada 11 November 2020 - YB Datuk Rosni Sohar iaitu Adun Ulu Bernam (Ahli Lembaga Pengarah PTPTN) membuat lawatan ke Ibu Pejabat NIOSH, Bangi Selangor.

Ketibaan YB Datuk telah disambut oleh YB Senator Datuk T. Mohan, Naib Pengerusi; YBrs Tuan Haji Ayop Salleh, Pengarah Eksekutif NIOSH dan pengurusan tertinggi NIOSH.

Selain sesi suai kenal dan pembentangan fungsi dan peranan NIOSH, YB Datuk juga di bawa untuk melawat beberapa makmal dan fasiliti yang terdapat di NIOSH. Ini termasuk *Dust Mask Lab (DML), Fall Protection Equipment and Testing Lab (FPETL), Confined Space Simulator* dan beberapa bahagian lain.

BUAL BICARA "ABAS ORANG KAMEK KAFE KAMEK" BERSAMA YB DATUK WILSON UGAK ANAK KUMBONG, PENGERUSI NIOSH

Pada 17 November 2020, berlangsung program bual bicara secara langsung "Abas Orang Kamek Kafe Kamek" bersama YB Datuk Wilson Ugak Anak Kumbong, Pengerusi NIOSH.

Program julung kali diadakan secara atas talian bersama Pengerusi NIOSH berbicara berkaitan "Pengurusan Keselamatan dan Kesihatan Pekerja Tanggungjawab Bersama" diadakan pada hari selasa pukul 8.30 malam.

Bual bicara berkaitan program pembangunan Upper Rajang Development Agency (URDA) dan aktiviti-aktiviti keselamatan dan kesihatan pekerjaan oleh NIOSH.

Siaran FB Live ini dapat dicapai melalui FB Live Sarawak Volunteers dan FB Live NIOSH Malaysia.

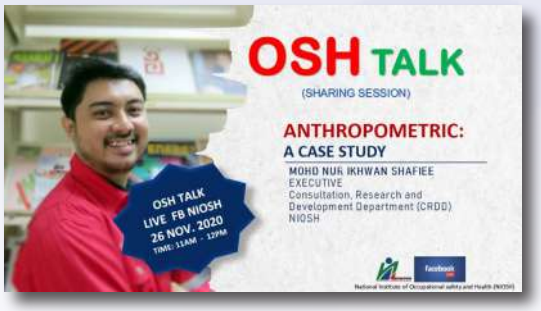
Program ini boleh di tonton di *Facebook* berikut : -

- https://www.facebook.com/unitkomunikasiawamsarawak/
- https://www.facebook.com/catsfm/
- https://www.facebook.com/sarawakvolunteers/

OSH TALK SECARA ATAS TALIAN SEPANJANG TEMPOH PERINTAH KAWALAN PERGERAKAN PEMULIHAN (PKPP) 2020

Pada 19 November 2020 (Khamis), NIOSH membawa perkongsian secara atas talian OSH Talk di *Facebook* NIOSH (FB Live). OSH Talk ini berlangsung pada jam 11.00 pagi hingga 12.00 tengah hari yang disampaikan oleh Dr. Mohd Ridzuan Sepian, *First Aid and Emergency Care* dari *Academy of Safety and Emergency Care* (ASEC). Topik yang dibicarakan pada pagi tersebut bertajuk *First Aid Amidst COVID-19: The Danger Is Real.*

Semoga program yang dijalankan ini dapat memberi manfaat berguna kepada masyarakat disamping dapat mengetahui lebih mendalam dalam bidang Keselamatan dan Kesihatan Pekerjaan (KKP) melalui sesi perkongsian ilmu pengetahuan oleh tenaga pengajar yang berpengalaman sepanjang tempoh Perintah Kawalan Pergerakan Pemulihan (PKPP). Sertai kami di https://www.facebook.com/nioshmalaysia.

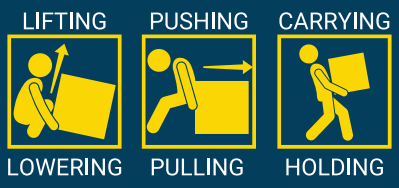


Pada 24 November 2020 (Selasa) - NIOSH membawa perkongsian secara atas talian OSH Talk di *Facebook* NIOSH (FB Live). OSH Talk berlangsung pada jam 11.00 pagi hingga 12.00 tengah hari yang disampaikan oleh Mohd Azhar Kamarudin, Technical Specialist for Fall Protection, dari 3M Malaysia Sdn Bhd. Topik yang dibicarakan pada pagi tersebut bertajuk *Confined Space Rescue and Entry Solution*.

Pada 26 November 2020 (Khamis) - NIOSH membawa perkongsian secara atas talian OSH Talk di *Facebook* NIOSH (FB Live). *OSH Talk* berlangsung pada jam 11.00 pagi dengan topik bertajuk *Anthropometric: A Case Study* yang disampaikan oleh Mohd Nur Ikhwan Shafiee Eksekutif di Jabatan Perundingan, Penyelidikan dan Pembangunan (CRDD), NIOSH.

Manual Material Handling

ERGONOMICS EXCELLENCE CENTRE
National Institute of Occupational Safety and Health (NIOSH) Malaysia



Did you know that Manual Materials Handling (MMH) contributes to the largest percentage of the Work-related Musculoskeletal Disorder (WMSD)?

MMH is the process of moving or supporting an object by physical force which includes lifting, lowering, pushing, pulling, carrying or holding activities.

MMH Injuries

What to do?MMH

MMH injuries may have massive implications for the employer and the person who has been affected. To help prevent MMH injuries in the workplace, employers should carry out the duties to evaluate the health and safety risks resulting from any working activities. These are several examples of evaluation that can be performed to reduce the risk of MMH injuries and improve the safety of your workplace:

Ergonomic Risk Management
- Initial Ergonomics Risk Assessment
- Advanced Ergonomics Risk
- Assessment
- Body Discomfort Survey

Functional Capacity Evaluation
- Pain Evaluation
- Hand Strength Testing
- Range of Motion Testing
- Extremity Strength Testing

Postural and Lumbar Risk Test
- Average twisting velocity
- Maximum moment, sagittal flexion and lateral velocity
- Lifting Rate

Evaluation of Manual Handling Devices
- Ergonomics Verification and Evaluation

Since the establishment in 2013, the Ergonomics Excellence Centre (EEC) NIOSH has successfully assisted many employers and employees in reducing the risk of MMH injuries and improve the safety of the workplace. With the high expertise in ergonomics's field, the EEC welcomes all parties to contact and further run the collaboration together.

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Sila imbas kod QR untuk muat turun FYi NIOSH

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