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Dear Fellow HSSE professionals

We express our sincere gratitude to all team members and their extended support in shaping & bringing this first "The Bulletin".

In this Bulletin, sharing below contents & topics and please notify us if there is any amendments in standards & Regulations, will publish in upcoming bulletins.

1. Lock out and Tag out procedures in mining industry, Standards of Illumination in opencast coal mines - sourced from Directorate General of Mines Safety, Govt of India - website.
2. Green Building movement in India, Source from Green Building Council of India
3. Guide lines on Online effluent and emission monitoring system, source from Central Pollution Control Board, Govt of India
4. A Focus on Behavior is Needed. Whitepaper published by QSE.
5. Important links on Kuwait regulations
6. Safety (General Provision), Nigeria Factories Act

Thank you

Sincerely

ASSP Region IX HSSE Standards & Regulatory Chair



Working together for a safer, stronger future

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COAL MINES, LOCKOUT & TAG OUT – EMERGENCY SHUTDOWN PROCEDURES

Contribution: Mr Partha Sarathy, Sandvik – Mining and Rock Technology division

DGMS(Tech)(MMID) Circular No.02 Of 2017
Dt:15/06/2017

In coal mines, about 3% of accidents were caused due to Electricity. Majority of these accidents were caused by unexpected energization or startup of machines / equipment or by uncontrolled release of energy. The electrical accidents can be prevented by proper Lock out / Tag out procedures. The philosophy of LOCK OUT / TAG OUT –Energy shut down Procedures is as such, not new in our country and being followed in oil field installations of CAIRN INDIA and in cement industry (including mines) of reputed organizations.

Electrical Safety is observed in mines (as well as in other Industries) as per laid down Practices of Indian Standards / NEC and Provisions of Legislation of Indian Electricity Act, 2003 and Regulations of Central Electricity Authority Regulations, 2010. As such, the provisions made there under are adequately covering the requirements of safe work practices and thereby to eliminate risks associated in unsafe working methods on use of Electricity. However, when it comes to underground mines, the prescribed work permit procedure as per BIS: 5216 is not sufficiently followed for varied reasons. This is more so in the case of coal underground mines where the workforce at lower levels, generally, prefers simple methods of working and goes awry. For lack of working discipline, adequate monitoring and control, people tend to go in short cut methods and invite risks.

The Lock out and Tag out energy shutdown procedures could well be an answer, in case of our underground mines, bringing some changes to suit our conditions of working and without compromising on the philosophy of work permit procedures laid down by BIS under standard: 5216.

Philosophy: To perform a service and maintenance work on industrial equipment safely, you must understand the importance of energy control.

A LOCKOUT is a method of preventing mishaps by keeping equipment from being accidentally started or switched ON. This method can be used for disconnecting switches, circuit breakers, valves or other isolation mechanisms and to put them in safe / off position. It is physically an attachment of lock so that the equipment cannot be energized. In a TAGOUT, the energy isolating device is placed in safe position and a written warning is attached to it.

TAGOUT means to physically neutralize all energies in a piece of equipment before beginning any maintenance or repair work. Lock out involves stopping all energy flows by turning off switches on supply lines. It also involves locking physically the switches and securing the machine, device or supply lines in a de-energised state.

TAGOUT means placing a warning tag or sign (TAGOUT device) on an energy isolating device, warning not to operate the machinery until the TAGOUT device is removed. The purpose is to alert other employees about the status of a machine or a system, why it has been taken out of service and identity of the Individual who has applied the LOCKOUT.

Principles of practices:

These LOCKOUT and TAGOUT materials are to be supplied by the





employer to their employees and the employer brings out a policy of answerability, accountability for all their acts / decisions taken during production, maintenance, servicing installation, dissembling of machines etc., which are generally, the areas where accidents take place In a work place.

- This Energy isolation and LOCKOUT / TAGOUT are to be carried out by trained employees who are also authorised to perform service or maintenance.
- Before applying LOCKOUT / TAGOUT, all employees who work in the affected area must be notified.
- The control of hazardous energy or sources is to be done according to a six step procedure.

Ground for Shutdown: Before any equipment is turned off in order to lock or tag it out, it is required to know the types and amounts of energy that power it, the hazards of that energy and how that energy can be controlled.

Equipment shutdown: The OEM's recommended procedures by using operating controls shall be followed to shut the system down for the equipment so that no one is endangered during shutdown.

Equipment Isolation:

- (i) All energy isolating devices shall be installed so that the equipment is isolated from its energy sources.
- (ii) All primary and secondary power supplies shall be isolated as well so as to avoid any back feeding of source of supply into the equipment under service / maintenance of job. No short cut methods are to be employed by just removing fuses and it shall be ensured a total disconnection of source of energy of power.

- ✓ The policy thus framed is required to be reviewed and updated as per the changing situations.



How to Identify lockout situation:

- It is required to assess all processes, work activities and machinery and, where and when lockouts are needed to be identified.
- Maintenance work will be a major area where lockout needs are more. The information may be through work place inspections, recommendations through ISO and inspections by statutory authorities.
- Every machine, device or process that will require a lockout is to be listed. More than one lockout may be required for a single machine or system.

LOTO Procedures

- Procedure should be in writing and communicated to all employees and departments concerned.
 - They should include the supervisors in the work areas.
 - All lockouts are to be authorised by work permit.
 - Lockout shall stay, if work is not completed at the end of the shift.
 - Completed work is to be reported to the person in-charge for signing off the work permit.
 - The procedures should identify person responsible for performing lockout, person responsible for ensuring the lockout properly, energy sources to be controlled in the lockout, location of control panels, power sources, special hazards,
- To be Continued..

WORK-RELATED ACCIDENTS REFERRED TO INDUSTRIAL MEDICAL CENTER, KUWAIT

By Al-Fajjam and Samir AM

Occupational accident is an unexpected and unplanned event, arising out of or in connection with work which results in one or more workers' injury, disease or death. An occupational injury resulted from occupational accident could be fatal; considering that death occurred within one year of the day of the accident, or it could be non-fatal and will cause loss of work time (ILO, 1998). In 2005, the International Labor Organization stated that the estimates of the number of deaths caused globally by work-related accidents as well as work related diseases were around 2.3 million (Driscoll et al., 2005). According to the report of European Statistics on Accident at Work; an accident at work is defined as an event that occurs during the course of work which leads at least to four days of absence from work. Non-fatal accidents at work cause harm to the workers and their families because accidents at work have the potential to cause a permanent disability to the workers or force them to change their job. Recently the International Labor Organization (ILO) Congress on Safety and Health at Work held in Singapore 2017 has shown that work-related fatal injuries and diseases have increased from 3 million in 2010 to 3.74 million in 2014, highlighting the failure to adequately address occupational safety and health concerns and this lead to estimated global cost of 2.99 trillion US dollars (ILO, 2017). Data also reveals that 40% of youth suffers from work-related injury and illness than older workers (ILO, 2017). However, occupational accidents are underestimated world-wide, the problem in the developing countries are bigger and serious. Moreover, 10% of the gross domestic product (GDP) is lost because of occupational accidents and diseases in the developing countries (Dorman, 2000).

Most of the work-related injuries are preventable; therefore, identifying the distribution patterns of occupational injuries, causes, risk factors and mechanism of occurrence can lead to more effective preventive strategies in the absence of systematic occupational injuries surveillance, data collection and analysis make the management of the problem difficult (Abas et al. 2011). In Kuwait, according to labor law, the employer is obliged to inform public authority of manpower about the work related accidents in his plant or factory. The goal is to identify why accidents happened and to take action to reduce the risk of future accidents. In addition, national statistics are produced annually to track the trend of the incidence of work-related accidents in Kuwait and to compare the resulted prevalence with other countries (Kuwait Labor Law, 2010). There are many industrial areas in Kuwait including Al Shuaiba and Abdulla Port industrial area. Al Shuaiba area consists of two areas; East and west areas. There are limited studies on the prevalence and the characteristics of nonfatal occupational injuries in Kuwait. Previous studies emphasized on the pattern of accidents in Kuwait on only construction sector (Kartam and Bouz, 1998; Zawilla et al., 2008) or they describe fatal accidents (AlKandary and Al-Waheeb, 2015). [Click For further descriptions on Work-related Accidents in Industrial Medical Center, Kuwait](#)





Green Building movement in India

Green buildings offer some of the most effective means to achieving a range of global goals, such as addressing climate change, creating sustainable and thriving communities, and driving economic growth.

Green Buildings can not only reduce or eliminate negative impacts on the environment, by using less water, energy or natural resources, but they can - in many cases - have a positive impact on the environment (at the building or city scales) by generating their own energy or increasing biodiversity.

Broadly, the following are the benefits of green buildings

- ❖ 40 to 50 % savings in electricity consumption as compared to a conventional building
- ❖ 20 to 30% savings in water consumption
- ❖ Addresses National Priorities: conservation of natural resources, water efficiency, and energy efficiency, handling of municipal waste and health & well-being of the citizens.
- ❖ Intangible benefits: enhanced ventilation and better views & daylighting
- ❖ Enhanced health & productivity of occupants

Green buildings offer several economic or financial benefits, which are relevant to a range of different people or groups of people. These include cost savings on utility bills for tenants or households (through energy and water efficiency); lower construction costs and higher property value for building developers; increased occupancy rates or operating costs for building owners; and job creation.

Green building benefits go beyond economics and the environment and have

Courtesy: CII-IGBC, Hyderabad, India

been shown to bring positive social impacts too. Many of these benefits are around the health and wellbeing of people who work in green offices or live in green homes.

Illustrative Green Building Features*

Building Design	Orient building to allow optimum sunlight and ventilation
Envelope	High performance walls, roofs <ul style="list-style-type: none">○ fly ash bricks for walls, over deck insulation, etc.,
Glass	High performance glass – double glazed units, Low e Glass
Appliances	ENERGY / BEE star rated equipment and appliances <ul style="list-style-type: none">○ air conditioners, refrigerators, Geysers, etc.,
Lighting Systems	Energy efficient lamps and luminaries <ul style="list-style-type: none">○ T5, CFL, LED, High frequency electronic ballast etc.,
Renewable energy sources	Solar photovoltaic, solar water heaters, biogas etc.,
Energy Monitoring	Energy meters & sub meters to measure, monitor & sustain building performance
Water Fixtures	Use ultra low & low flow & flush water fixtures <ul style="list-style-type: none">○ dual flush systems, (high flush 4 – 6 LPF / low flush 1.5 - 2 LPF), water less urinals etc.,

To be Continued.....



A Focus on Behavior is Needed

Internationally, business and industry have implemented quality improvement initiatives that have not met expectations and have been cast aside. Lean, Six Sigma, World Class Manufacturing, Operational Excellence, and Total Quality Management are still in fashion in spite of their mixed record. Some companies are implementing three or four initiatives at once—thinking more is better. Näslund (2013) highlights some of the problems with such efforts:

A Wall Street Journal article, based on a five-year study, stated that Six Sigma fails to produce the desired results 60 percent of the time (Chakravorty, 2010). Similarly, Soti et al. (2010) claims that many companies have failed to reap the fruits of the Six Sigma methodology, often taking up valuable organizational resources. A parallel scenario happened for Just-In-Time (JIT) in the 1990s and reports are also starting to occur for Lean (Rosemary and Wempe, 2009; Chakravorty, 2010). A survey by Industry Week found that only 2 percent of companies with Lean programs reached their anticipated targets while 74 percent were not making good progress with Lean (Pay, 2008). Farris et al. (2008) claim that most Kaizen descriptions of success are based on anecdotal evidence.

If you review each initiative, you see dozens of techniques, tools, and processes for solving problems and improving quality. Each initiative mentions frontline employees, but doesn't produce a systematic approach for addressing the role people play in hindering or improving quality. The irony is, frontline employees' behavior is the fundamental element in producing a product or service.

How frontline employees behave—doing things right, doing things wrong, not doing what they should—determines quality results.

Courtesy: Quality Safety Edge

But most quality initiatives have no systematic method for identifying or changing frontline employee behavior.

There is a demonstrable need for each quality improvement initiative to include a systematic process for analyzing frontline employee behavior and identifying the specific behaviors each frontline employee needs to perform to accelerate quality improvement.

The behavioral approach is the solution for any company that has implemented a quality improvement initiative but has not achieved or sustained the desired results. We know why the results are lacking or unsustainable. All quality doctrines call for supportive senior executives to ingrain quality practices into the organizational culture, but the initiative does not specify how to do this.

Try this test. Open any book about Total Quality Management, continuous improvement, Lean, Six Sigma, World Class Manufacturing, or the Toyota Production System. Look for a chapter about “how to manage human behavior”—a chapter that describes exactly what supervisors and managers should say and do to influence frontline employees behaviors required to deliver high quality results. You won't find one! Human behavior is not on the quality agenda. Quality gurus are often statisticians and engineers and designers who are not trained in how to encourage people to perform at their best.

When audiences asked Dr. W. Edwards Deming, the pioneering father of quality, what exactly managers should do to achieve his 14 Points, he would famously reply, “You're the manager; you figure it out.”



That mindset has continued in the world of quality. Quality initiatives primarily focus on analyzing data and designing processes and then count on managers to make quality plans come alive in the everyday work habits of frontline employees in the real-world workplace. Quality initiatives leave it up to managers to “figure it out.”

Many quality initiatives have a gap—a missing ingredient, a blind spot. The gap is the assumption that human beings will automatically behave in accord with a newly designed, quality procedure. Human behavior doesn’t work that way!

**In next issue:
The Factors That Change Behavior**

Final Rule to Protect Workers from Beryllium Exposure

OSHA Issues Direct Final Rule (DFR) Revising Beryllium Standard For General Industry and Companion NPRM on Proposed Changes for Beryllium Standard for General Industry). Learn more from the news release.

The Occupational Safety and Health Administration (OSHA) has issued a final rule to prevent chronic beryllium disease and lung cancer in American workers by limiting their exposure to beryllium and beryllium compounds. The rule contains standards for general industry, construction, and shipyards.

OSHA estimates that the rule will save 90 lives from beryllium-related diseases and prevent 46 new cases of chronic beryllium disease each year, once the effects of the rule are fully realized. The rule is projected to provide net benefits of about \$560.9 million, annually.

About 62,000 workers are exposed to beryllium in their workplaces, including approximately 11,500 construction and shipyard workers who may conduct abrasive blasting operations using slags that contain trace amounts of beryllium. The majority of workers affected by this rule are exposed in general industry operations such as beryllium metal and ceramic production, non-ferrous foundries, and fabrication of beryllium alloy products. Responsible employers have been protecting workers from harmful exposure to beryllium for years, using engineering and work practice controls along with personal protective clothing and equipment.

[Click to Read more](#)



BURN

- Step1- Cool the burn under cold running water for at least 15 minutes.**
step2- Loosely cover the burn with cling film or a clean plastic bag.



Guidelines for Continuous Emission Monitoring Systems

CENTRAL POLLUTION CONTROL BOARD, INDIA

GENESIS OF PROBLEM

The highly polluting industries such as Power, Cement, Iron & Steel, Chlor-alkali, Pharmaceuticals, Fertilizers, Refineries, Pesticides, Distilleries, Sugar, Pulp & Paper, Textile, Tanneries, and other categories of industries emit particulate matter and other gaseous pollutant into atmosphere. These industries also release pollutants through effluent discharge. The SPCBs and PCCs have prescribed standards for various pollutants emitted/ discharged by the industries as notified under the Environment (Protection) Act, 1986. The compliance monitoring needs to be strengthened to ensure that emissions/ effluent complying with the stipulated norms are only discharged by the industries.

With rapid industrialization, it is becoming a need and necessity to regulate compliance by industries with minimal inspection of industries. Therefore, efforts need to be made to bring discipline in the industries to exercise self-monitoring & compliance and transmit effluent and emission quality data to SPCBs/PCCs and CPCB on continuous basis. For strengthening the monitoring and compliance through self-regulatory mechanism, online emission and effluent monitoring systems need to be installed and operated by the developers and the industries on, 'Polluter Pays Principle'. Verification, validation and accuracy check of the values indicated by the online devices needs to be done. For proper interpretation of data measures need to be taken at the level of SPCBs/PCCs. For regulatory and for purpose of actions to be taken against non-complying industries/facilities, the existing method of sampling, analysis and related procedures under the existing statutes need

to be continued, till further direction. Various technologies are available for monitoring the particulate matter and gaseous emission from the stack of industries and common treatment facilities in terms of the parameters specified in the directions issued by CPCB. However, no guidelines on selection of the Continuous Emission Monitoring Systems (CEMS) are available. This guideline document has aimed to help industries and regulator for proper implementation of online emission monitoring system through proper selection, operation and data transfer in a transparent self-regulatory mechanism.

CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)

In recent years Online Emission Monitoring Technology has received attention and interest in context of providing accurate and continuous information on particulate matter/ gaseous emission from stacks. There are already commercially available systems for monitoring parameters such as PM, HCl, HF, NH₃, SO₂, CO, O₂, CO₂, NO_x, VOC, etc;.

OBJECTIVES OF CONTINUOUS EMISSION MONITORING SYSTEMS.

The Continuous Emission Monitoring (CEM) System comprises of the total equipment necessary to determine the concentration of gaseous emission and/or particulate matter concentration

[Click to get more details](#)

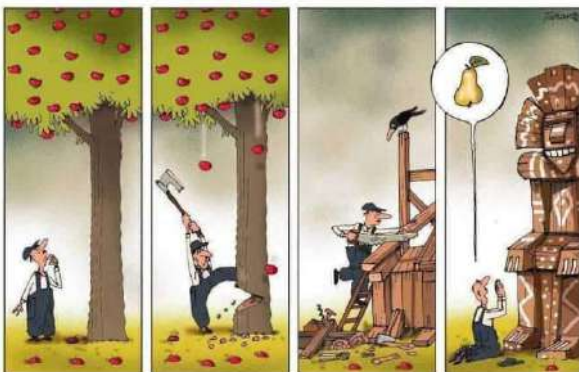


Important links on Kuwait HSSE Regulations

Contribution : Ashok Garlapati, CSP,CFIOSH,QEP, ASSP Region IX Vice President




Sl.NO	HSSE Regulation	Links
1	Kuwait Fire Safety Regulations	http://www.kwtfire.gov.kw
2	Kuwait Traffic Regulations	http://www.moi.gov.kw
3	Kuwait Health Regulations	http://www.moh.gov.kw/
4	Kuwait Environmental Regulations	http://www.epa.org.kw/en-us/
5	Kuwait labor Law	http://www.kuwaitlaborlaw.com/wpcontent/uploads/2012/01/Kuwait-Labor-Law-2010-Detailed.pdf
6	Kuwait Environment Law No.42/2014	http://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=en&p_isn=99818
7	An outline of HSE Regulations of State of Kuwait - Pre-recorded Webinar presentation	http://www.assekuwait.org/download/books/1904151047181585.pdf

Think twice...





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<h2 style="color: blue; text-decoration: underline;">METHOD STATEMENT</h2> <h2 style="color: blue; text-decoration: underline;">SEWERAGE MANHOLE CONSTRUCTION</h2> <p style="color: blue; text-decoration: underline;">(PRE-CAST & CAST IN-SITU)</p> <h3 style="text-decoration: underline;">CONTRACT NO: 1</h3> <p style="color: blue; text-align: center;">PROJECT: Internal Roads at Various Locations in Al Ain, Stage 18, Contract 1</p>																														
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Safety (General provisions), Nigeria Factories Act

14. Prime movers

(1) Every flywheel directly connected to any prime mover and every moving part of any prime mover, except any prime mover mentioned in subsection (3) of this section, shall be securely fenced, whether the flywheel or prime mover is situated in an engine-house or not.

(2) The head and tail race of every water wheel and of every water turbine shall be securely fenced.

(3) Every part of any electric generator, motor or rotary converter, and every fly-wheel directly connected thereto, shall be securely fenced unless it is in such a position or of such construction as to be safe to every person employed or working on the premises as it would be if securely fenced.

15. Transmission machinery

(1) Every part of any transmission machinery shall be securely fenced unless it is in such position or of such construction as to be as safe to every person employed or working on the premises as it would be if securely fenced.

(2) Efficient devices or appliances shall be provided and maintained in every room or place where work is carried on by which the power can promptly be cut off from the transmission machinery in that room or place.

(3) No driving-belt when not in use shall be allowed to rest or ride upon a revolving shaft which forms part of any transmission machinery.

(4) Suitable striking gear or other efficient mechanical appliances shall be provided and

maintained and used to move driving-belts to and from fast and loose pulleys which form part of the transmission machinery, and such gear or appliances shall be constructed, placed and maintained as to prevent the driving-belt from creeping back on to fast pulley.

(5) The Director of Factories may by certificate in writing grant, subject to any conditions specified in the certificate, exemption from compliance with any of the requirements of subsection (2), (3) and (4) of this section in any case where he is satisfied that compliance with the requirement is unnecessary or impracticable.

16. Powered machinery

(1) Every power-driven machine having its individual sources of power shall be provided with an efficient starting and stopping appliance or control.

(2) Every electrical equipment or appliance intended for use in a factory shall be of such construction as to be safe for use by all persons required to use same or who come into contact with same and shall be maintained at all times in a safe condition.

17. Other machinery

(1) Every dangerous part of any machinery, other than prime movers and transmission machinery, shall be securely fenced unless it is in such a position or of such construction as to be as safe to every person employed or working on the premises as it would be if securely fenced,.



provided that, in so far as the safety of a dangerous part of any machinery cannot by reason of the nature of the operation be secured by means of a fixed guard, the requirements of this subsection shall be deemed to have been complied with if a device is provided which in the opinion of the Director of Factories satisfactorily protects the operator or other persons from coming into contact with this part

2) Any part of a stock-bar which projects beyond the headstock of a lathe shall be securely fenced unless it is in such a position as to be as safe to every person employed or working on the premises as it would be if securely fenced.

18. Provisions as to unfenced machinery

(1) In determining, for the purposes of the forgoing provisions of this Part of this Act, whether any part of any machinery is in such a position or of such construction as to be as safe to every person employed or working on the premises as it would be if securely fenced-

(a) no account shall be taken of any person carrying out, while the part of machinery is in motion, an examination thereof or any lubrication or adjustment shown by such

examination, lubrication or adjustment which it is necessary to carry out while the part of machinery is in motion; and

(b) in the case of any part of transmission machinery used in any

process in any factory with respect to which the Director of Factories has declared, by certificate in writing, that he is satisfied that, owing to the continuous nature of such process, the stopping of that part would seriously interfere with the carrying on of the process in such factory, no account shall be taken of any person carrying out in the factory by such methods and in such circumstances and subject to such conditions as may be specified in the certificate, any lubrication or any mount-in or shipping of belts.

(2) The provisions of this section shall only apply where-

(a) the examination, lubrication or other operation as aforesaid is carried out by a male person who-

(i) has attained the apparent age of eighteen years;

(ii) has been appointed by the occupier of the factory, by certificate attached to the general register, to carry out such examination, lubrication or other operation, and has been furnished by the occupier with a copy of such certificate signed by him;

(iii) has been sufficiently trained for the purposes of the work entailed by, and is acquainted with the dangers of moving machinery arising in connection with, such examination, lubrication or other operation;

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