30 September – 03 October 2019 | Gulf Convention Centre, Kingdom of Bahrain

POST SHOW REPORT 2019

SUPPORTED BY

ORGANISED BY
27 - 30 September 2021
Oman Convention & Exhibition Centre

ABOUT GLOBAL HSE

Global HSE 2021 will mark its 8th edition in the Sultanate of Oman, where HSE professionals from all across the globe will converge their knowledge to lead the future of HSE practices. The event will witness thought leaders of the industry who will impart knowledge sessions on the sustainable business practices underlining socio-economic excellence.

CONFERENCE CHAIRS

Dr. Hisham Al Siyabi
Exploration Director
PDO

Abdulrahman Al-Yahyaei
Chief Executive Officer
OPAL

H.E. Dr. Shaikh Mohamed Al Khalifa
Chief Executive Officer
BANAGAS

GET INVOLVED

www.globalhse.org

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Project Head
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info@globalhse.org

ORGANISED BY
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Hafedh Al Qassab
BMP Project Director – BAPCO
Technical Committee Chairman – Global HSE 2019
FOREWORD

The Global HSE 2019 technical committee would like to thank H.E. Shaikh Mohamed bin Khalifa Al Khalifa, Minister of Oil, Kingdom of Bahrain for patronizing the Global HSE Conference and Exhibition. We also like to thank the steering committee for a job well done in putting this conference together. Appreciation goes to the speakers, facilitators and panelists who shared their insights in addressing HSE challenges. Furthermore, we wish to offer our sincere thanks to all the people who have been working behind the scene to ensure that this will be a smooth, enjoyable and effective conference for all of us.

This event which spanned over three days and engaged more than 100 regional and international speakers, facilitators and panelists focused on HSE Excellence – Efficiency, Resilience and Sustainability. The conference was composed to deliver on a varied number of topics, subjects and challenges that involved critical and current issues relating to HSE management at national, regional and international levels. Great effort has been put into capturing the synopsis of all keynote speeches, discussion panels and technical sessions to develop this comprehensive report by the conference scribes.

The event was very engaging and whilst nothing can substitute attending the event, the conference steering committee, the technical committee, the organising committee and event management team insisted on creating this valuable document for practitioners and leaders alike to have an opportunity to access and use as a reference to share learnings in their own organisations and their circles of influence.

We hope you enjoy reading through this report and hope that it will have some use and will be shared throughout organisations to help impact HSE practices at national, regional and international levels.

Regards,

Hafedh Al Qassab
BMP Project Director – BAPCO
Technical Committee Chairman – Global HSE 2019
In today’s competitive environment where efficiency and profitability are key performance indicators, the importance of safety and health at work and protection of environment holds a crucial area of concern demanding a suitable addressing mechanism. This said, the seventh edition of Global HSE conference and exhibition was set out to focus on **HSE Excellence – Efficiency, Resilience and Sustainability**.

The Global conference combined first-rate technical content with high-level networking within this fascinating and critical area of major industries. Leaders and HSE professionals alike were invited for knowledge sharing, high level learning and networking. Experts from the global industry, government, and academia attended this high-profile event to share, exchange and deliberate new ideas and innovations, leading to significant strategy formulation for implementation at the workplace.

The first day of the conference focused mainly on enterprise risk & crisis management, organisational HSE learning, stakeholder engagement, HSE in major projects, traffic safety, occupational health & hygiene, process safety management and environmental sustainability. While the second day focus was on HSE best practices, HSE case studies, Safety culture & behavioral-based safety, HSE competency, Contractor health & safety management, HSE performance compliance and emerging innovations & technologies in HSE.

The Global HSE Conference and Exhibition was endorsed by so many national, regional and international governmental and non-governmental organisations that few conferences have seen endorsement from this number of supporting professional organisations.

This conference would not be complete without the exhibition with more than 80 exhibitors. Many organisations have put a lot of effort into showcasing their latest developments and technologies. Conference participants had the opportunities to establish contact with leading organisations providing various solutions to HSE challenges.

The conference was organised over a period of two days. The agenda of the conference included two keynote addresses; four leadership panel discussions and 15 technical parallel sessions followed by brief technical questions and answers to make it interactive event. The enthusiasm of the participants and speakers have added extra flavor to the technical presentations.
World ils

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EIR

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Gulf States News

Gulf Fire

industry Networker

INTERNATIONAL

FIRE FIGHTER

Oxford Business Group

RefinerLink

Your Gateway to International Business

Times International

www.timesinternational.be

WorldOils

#GlobalHSE2019
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BMP Project Director
BAPCO

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PDO

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SABIC

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Director HSE
BAPCO

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ALBA

Hussain Al Hussaini
Head Occupational Health
Ministry of Labour
Kingdom of Bahrain

Hussain Al Sayegh
Manager Environment & Safety
Bahrain Steel

Hussain Jaffer Makki
Head International Studies
NOGA

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Manager - SSHE
GPIC

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HSE Advisor – Regulatory & Contractor Management
Tatweer Petroleum

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Head Safety & Security
ASRY

Mariam Al-Ansari
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Supreme Council for Environment
Kingdom of Bahrain

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KPC

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Saudi Electricity Company

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EQUATE

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EWA

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Saudi Aramco

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ADNOC
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General Manager
Finance & Admin
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General Supervisor – Loss Prevention
Saudi Aramco

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SABIC

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Fire Development Division
Saudi Electricity Company

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BANAGAS

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Head
Media Committee
BHSS

Hesham Alawi
S. Saed
Head
HSE Compliance
ALBA

Jayesh K. Dalal
Manager
Mechanical Maintenance
Bahrain Steel

Mohammed Isa Khalfan
Superintendent
Logistics Services
GPIC

Rajeev Bansal
Managing Director
iCONEX

Reem Ebrahim
Superintendent
Events
BAPCO

Salem Al Eisa
Senior HSE Specialist
MA’ADEN

Sara Abdin
Head – HR
TAMKEEN
Global HSE 2019 Stats

3574 ATTENDEES
1247 DELEGATES
150 COMPANIES
30 COUNTRIES
10 INDUSTRIES

56 EXHIBITORS
109 SPEAKERS
5 LEADERSHIP PANELS
16 TECHNICAL SESSIONS
8 WORKSHOPS

NEW IN 2019

ROUND TABLE DISCUSSION
EXHIBITOR PRESENTATION SESSION
INNOVATION ZONE
TESTIMONIALS

“I was my first Global HSE conference. It was great to be with so many other people who are experts in their fields and shared their expertise. The conference was very well organised and the staff was extremely helpful. Thank you for all your hard work.”

Er. Ho Siong Hin
Senior Director International WSH
Ministry of Manpower, Singapore

“Global HSE conference is something for us that is absolute across all borders in every culture in every company and it’s an easy way to interact with all sorts of professionals & talents. I wish good luck to the organisers & looking forward to be a part of next edition in Oman.”

Xavier Bontemps
Senior Vice President - HSE
TOTAL, France

“First time attended Global HSE conference. It was totally first class from beginning to end. I would like to thank the organisers for this event, and I hope I can come back again.”

Ian Taylor
CEO
NEBOSH, UK

“I have found the Global HSE conference to be one of the most valuable conferences I attend. The presentations are wide-ranging and extend from beginner to advanced levels. It is a good place to make professional connections.”

Prof. Vincent Ho
President
IOSH, UK

“A professionally organised conference with interesting topics. An excellent platform to exchange information with industry professionals in the field of the Health, Safety, and Environment.”

Ahmed Khalil
Director – HSE
BAPCO, Kingdom of Bahrain

“A great conference to attend for knowledge sharing and networking. I am really impressed with the numbers of delegates, speakers and exhibitors.”

Talal A. Al Anazi
Director – Corporate Safety & Security
MA’ADEN, Kingdom of Saudi Arabia
TESTIMONIALS

“Global HSE conference has been growing over the years. I wish the conference to continue to grow and to be successful.”

Dr. Mei Li Lin
Senior Vice President – Innovation
DEKRA, USA

“The conference was very informative, and the speakers were very knowledgeable and enthusiastic. Global HSE conference is growing more and more and attracting more people to participate in this important event. I am looking forward to the 8th edition of GHSE in Oman and wish all the very best to the organisers.”

Dr. Maha Al Shehhab
General Secretary
BHSS, Kingdom of Bahrain

“Great conference! Speakers were top-notch, sessions were educational and entertaining with plenty of immediately applicable information, keynotes were fantastic.”

Hari Kumar
Director Group HSE Assurance
ENOC, UAE

“I am attending the Global HSE conference from its first edition. It is the most beneficial, informative conference and it has attracted a tremendous amount of industry professionals in Health, Safety & Environment. I urge young industry professionals in HSE to attend this event.”

Dr. Chit Lutchman
President
Safety Erudite Inc., Canada

“A great event; packed with so much knowledge and great speakers. Safety leaders shared fantastic insights for the audience on what’s happening currently in the industry. I wish the organisers all success.”

JC Sekar
Co-Founder & CEO
Acuizen Technologies, Singapore

“Global HSE conference was very diverse and informative. It was a great opportunity to share the information on advanced health safety & environment technology for the region & the industry as well. It was a very well organised & successful conference.”

Tony Diamantididis
Managing Director
Chemical Safety Software, USA & EU
CONFERENCE SCRIBES

The Technical Committee would like to appreciate the efforts made by the following individuals who put these proceedings together.

Ismail Mohamed Ahmed
Lead Scribe Superintendent Safety & Occupational Hygiene
BAPCO

Asma Abdulrahim
Material Coordinator
Tatweer Petroleum

Abdulla Garadah
Engineer – Reservoir
Tatweer Petroleum

Eyard Ali
Engineer – Reservoir
Tatweer Petroleum

Abdulla Almesmari
Control Man-Operation-Project
BANAGAS

Haifa A Aziz Marjan
Engineer – Safety & Environment
BANAGAS

Saeed Faisal Al Saeed
Safety Engineer
BAPCO

Rosie Williamson
Occupational Hygienist
BAPCO

Haya Darwish
Environmental Engineer, BAPCO

Zahra Almansoor
Safety Engineer
RB Hilton

VISITOR SURVEY RESPONSE

93%
Visitors left satisfied with their participation

95%
Consider Global HSE an important event

88%
Met objectives

93%
Met or exceeded expectations
CONFERENCE AGENDA
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Theme – Industrial Revolution 4.0 in HSE |
| 0930 - 1030| Leadership Panel Discussion – 3  
Theme – Business Resilience | Where Does ‘HSE’ fit? |
| 1030 - 1100| Exhibition Visit & Coffee / Tea Break          |
| 1100 - 1215| Parallel Technical Sessions                   |
|             | Technical Session 9  
HSE Best Practices                  |
|             | Technical Session 10  
HSE Case Studies                   |
|             | Technical Session 11  
Safety Culture & BBS               |
|             | Technical Session 12  
HSE Competency                     |
| 1215 - 1315| Prayer & Lunch Break                         |
| 1315 - 1430| Parallel Technical Sessions                   |
|             | Technical Session 13  
Contractor Health & Safety Management |
|             | Technical Session 14  
HSE Compliance & Performance         |
|             | Technical Session 15  
Safety Technology                    |
| 1430 - 1445| Exhibition Visit & Coffee / Tea Break          |
| 1445 - 1545| Leadership Panel Discussion – 4  
Theme – Is Incident & Injury Free Concept Aspirational or Targeted? |
| 1545 onwards| Closing Remarks & Raffle Draw                 |

### DAY 4 – THURSDAY, 3 OCTOBER 2019

#### POST CONFERENCE WORKSHOPS

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INAUGURAL CEREMONY
30 SEPTEMBER 2019
Inaugural Speech by Conference Patron

H.E. Shaikh Mohammed bin Khalifa Al Khalifa  
Minister of Oil  
Kingdom of Bahrain

The Global HSE conference and exhibition 2019 patron, H.E. Shaikh Mohammed emphasized on the importance of HSE and particularly Middle East as it is the fastest growing economy in the world with many existing and new industrial settings.

H.E. the Minister of Oil expressed his appreciation for the Kingdom of Bahrain to host such a significant event which acts as a platform for professionals from Bahrain, GCC and worldwide in the industry to share, deliberate new ideas and innovations to make the workplace safe and free of any impacts that may harm the environment.

H.E. Shaikh Mohammed noted that HSE is the license to operate for any business, anywhere across the globe. H.E. further expressed his appreciation to see that this year’s Global HSE attracted many national and international speakers with a wide range of topics covering not only today’s HSE challenges but also anticipated future challenges.

H.E. concluded his remarks by wishing all a fruitful and productive conference and exhibition.

Welcome Address by Conference Chairman

Dr. Shaikh Mohamed Al Khalifa  
Chief Executive  
BANAGAS  
Kingdom of Bahrain

Dr. Shaikh Mohamed kicked off the conference by welcoming all to the 7th edition of the Global HSE Conference and Exhibition. He thanked H.E. Shaikh Mohammed bin Khalifa Al Khalifa for patronizing the event and NOGA support which positions the Kingdom of Bahrain in the forefront and the leader in promoting HSE in the region. The chairman of Global HSE conference and exhibition further thanked all the sponsors, speakers, supporting organisations and exhibitors who made this event happen.

The chairman stated that the number of participants exceeded the organising committee expectations which was more than 3000. The range of topics was carefully selected and put in a way to address industry HSE challenges that are common across all industry sectors not only in Bahrain, but also in GCC and beyond.

Dr. Mohamed invited all to make the best out of this year’s Global HSE conference and exhibition as it is an opportunity for HSE professionals at national, regional and international levels to work closer to address HSE issues of mutual interest.
Special Address by Co-Host

Dr. Muhammad M. Al-Saggaf
Senior Vice President – Operations & Business Services
Saudi Aramco
Kingdom of Saudi Arabia

Dr. Muhammad reiterated that HSE is an important management tool adopted for industries to survive and flourish. He noted that Aramco adopts best international HSE practices not because they have to, but they want to. HSE practices in Aramco goes above and beyond any national or international legislations.

The speaker emphasized on the fact that HSE is an integral part of Aramco’s day-to-day operation. He further noted that Aramco continues to learn and adopt best practices to address HSE challenges and share their learnings with their peers in the region.

The speaker concluded with the message that HSE makes a good business sense as HSE has proven to positively impact productivity in Aramco and help in effective management of emergencies and recovery.
Thematic Session | CEO Leadership Panel Discussion

Theme: HSE Challenges in Major Projects

Moderator

Er. Ho Siong Hin
Senior Director – International WSH
Ministry of Manpower
Singapore

Panelists

Raoul Restucci
Managing Director
Petroleum Development Oman

Khaled Ali Al Alyani
Vice President – Global EHSS
SABIC

James Kenneth Eastlack
Chief Executive Officer
Tatweer Petroleum

Hatem Nuseibeh
President Total E&P UAE & Total
Country Chair UAE
Total E&P

The moderator is this plenary session started this session by noting that there are many mega projects are being taken place in GCC and worldwide which have different challenges than day-to-day operation of similar facilities.

The panel talked about the challenges concerning human resources requirements in mega projects during construction phase from selection, medical checkup and surveillance, training, transportation and welfare facilities. They also highlighted the issues around health and safety legislations in the region which don’t specifically address oil and gas nor the construction of mega projects.

Pre-commissioning, commissioning and start-up was also an area of common interest and a major challenge highlighted by all panelists and how to integrate the new facilities into the existing plants. Another major challenge discussed by the panelists was around meeting lenders requirements and particularly those related to stakeholder engagement and information transparency.
Plenary Session | CEO Leadership Panel Discussion
CONFERENCE
1 October 2019
H. E. Dr. Mohamed Mubarak Bin Daina discussed adopting the sustainable development goals of the global labyrinth and the Paris agreement for climate change. Government of Bahrain is looking seriously at implementing this system with appropriate sustainable development goals and KPI's.

It will be harsh on the fossil fuel industries and industries that are using fossil fuels. Countries have to submit the inventory of the CO2 emissions and show progress every 5 years on the mitigations for the CO2 emissions. The governments of those industries have to work closely to achieve the global commitments by the Paris Agreement. I believe Saudi Aramco and the ministry of energy is working closely to achieving these goals.

H. E. Dr. Bin Daina has the honor to chair the National Committee for Climate Change which ensures that every initiative goes to the national contributions. Waste management is another issue which is important to all industries. Bahrain has managed to develop a national waste management strategy. The industrial waste is the full responsibility of the Supreme Council for the Environment. Alba announced yesterday that previously they produced 50,000 tons per year off the SPM which goes to the Bahrain hazardous waste landfill. Now Alba has invested in a joint venture for approximately 50 million dollars investment for recycling of SPM. It will be generating an income using their waste which was previously went to the hazardous waste landfill in Bahrain. We believe that working with industries to solve their own hazardous waste issues is very important. What Alba has achieved in recycling is the jewel of our own success story.
“Safety for me, safety for you and safety for all” was the opening remark by Xavier Bontemps.

Paul O’Neil, a CEO of an Aluminium Company from 1987 until 2000 wrote a book called “The Power of Habits”. Paul did not talk about money, he talked about workplace safety as rituals that drive habits, habits drive excellence and the concepts of keynote habits were paramount. By understanding why injuries happen you understand how things get done. If you understand how things get done you fix the business hence he wanted to understand injuries within 24 hours.

In TOTAL contractors and frontline employees participated in a survey like BP, Shell & Chevron. The results identified one important keystone habit.

By asking three of the following open questions before the start of the job:

1. What’s the job?
2. What has changed?
3. What can get me killed?

If the safety light is green, I start or if the safety light is red I stop. Companies and contractors should ask the questions, how good is my work method and is it specific or generic.

In TOTAL they conduct monthly joint safety tours with contractors – 2 pairs of eyes to see, two pairs of ears to hear and 2 pair of tongues to question.

Good safety leads to good business!
Keynote Address
Sustainable implementation of HSE is crucial in the dynamic and rapidly-changing nature of business and technology. As the job roles change and as new generations begin to enter the industry so does the perspective of the workforce, therefore a solid foundation is needed to build on and introduce new things. Especially in the case of the Refining and Petrochemical industries the panelists are familiar with, the employees may be working with flammable hydrocarbons, hazardous chemicals and high-pressure streams which places them at high risk therefore a robust HSE system is needed to safeguard humans and protect the environmental community.

The panel discussed how a unified HSE culture can help clarify responsibility and accountability at all levels of a company. T&I are one of the most challenging times for a company and having common standards makes it safer, easier and more economical. Applying sufficient management systems in day to day activities and being audited to ensure that there is continuous review and improvement is crucial. As easily accessible communication and reporting tool will make it easier to engage all levels of a business and at the end of the day it is that engagement that truly matters. Also capturing the experience of the workforce and incorporating their lessons in a framework tailored to the company would be more beneficial than having it built by third party.
Sustainability is all about endurance and creating value for stakeholders in terms of social, economic and environmental performance and only when the business is safe can value be delivered. Focus on safer performance will translate to better growth opportunities, less insurance fees, fewer wasted man hours and long-term relationships with customers.

All the panelists agreed that the “Zero Incident” concept is not impossible but can only be achieved by a mitigation plan to remove all unsafe conditions and practices that eliminate all hazards in the workplace. Focus must be placed on the journey towards achieving “Zero Incidents” and to initiate a safety mindset that is not forgotten after work.

Sustainable HSE implementation leads to business success and contributes to continuity and profitability but being a solely profitable business is no longer sufficient. A company must have the ability to demonstrate its commitment to ethical investment and support that with exceptional performance figures which in return will secure and retain talent and gain the trust of investors.

Technology has had a very important role in sustaining HSE implementation as can be seen by the widespread technology initiatives and the growth of artificial intelligence and machine learning in what has been called the 4th industrial revolution. It has reduced incidents and allowed us to measure footprint, ensure regulatory compliance and overall reduce human errors yet the panel agreed that there is more potential for utilization.

Proper integration of HSE into business and operational process requires good vision and constant upgrading and advancement that does not compromise value. There are no shortcuts to ensuring sustainable HSE practice, but it takes very hard work and fully committed leadership to implement a clear and sustainable HSE vision.
Common Root Causes of accidents are attributed to lack of training, knowledge, information or skills. Training isn’t just about formal “classroom” courses it is the process of absorbing that information to increase skills, abilities and make use of it.

An organisation can improve health and safety on a day-to-day basis by building on the lessons learned from the past, sharing best practice information, learning from other organisations and industries.

Health and Safety learning and training ensures that people know how to work safely without risks to health. This develops a positive culture which meets the legal duty to protect the health and safety of your employees. Effective training ensures employees are competent in helping your business which avoids the distress that accidents and ill health cause.

As a leader of learning it is important to invest time and energy to make it happen and find out what other companies are doing to improve their health and safety. By analyzing near misses, worker feedbacks including suggestions on how to improve site health and safety performance ensure continual improvement. Workers can share good health and safety practices with colleagues to become part of a learning organisation.

HSE learning and training in SEC has improved by utilizing common and core competencies. The learning approach focuses on outcomes, measurement and reflection. An effective HSE learning approach requires management support and commitment. Keep learning, keep improving, keep healthy, keep safe!

SABIC is a Petrochemical Company founded in 1976 which is based in Riyadh – KSA with a vision to be the preferred world leader in chemicals. The Heinrich safety pyramid allows SABIC to have a mature culture for incident reporting which helps towards incident prevention. Failure to recognise and learn from previous incidents often results in larger incidents.

Learning from incidents by using a unified procedure as a platform can capture all incidents globally. SABIC’s Leadership Team launched the Global EHSS Town Hall in 2016 engaging all regions for open EHSS dialogue. Theses Town Hall drivers share high-value learning’s from incidents and near misses, recommendations to avoid recurrences and showcase best practices. Learning from incidents, SABIC developed site specific guidelines to actively cascade the learning to front liners with face to face engagements. A workflow was implemented to allow internalizing of external incidents which generated learning’s from internal incidents / near misses.

In conclusion organisations should not depend on distributing incidents alerts as the only learning mean. An internalization process will assure determining the key learning opportunities to prevent similar recurrences.

IOSH is a professional body which is a non-profit organisation holding a Royal Charter that exists for the public good. A membership organisation supporting a global network of 48,000 members in 130 countries. IOSH enables organisations around the world to excel in safety and health with 180, 000 delegates in over 70 counties trained each year. IOSH is underpinned by research, expertise and understanding around occupational safety and health. IOSH now has 48,000 members in over 120 countries with a vision for a safe and healthy world of work.

Priorities focusing on musculoskeletal disorders, Wellbeing, Occupational Cancer, Sustainability and human capital, Rehabilitation and Non-health related fatalities. Workplace changes have an impact on the health and safety at work agenda such as demographic and technological changes. The healthy profit focuses on how investments in safety, health and wellbeing are giving businesses the edge. 2.78 million work-related deaths occur every year worldwide, over 380,000 are fatal accidents, 2.4 million the result of occupational diseases, including cancer.

There is a return of 2.2 euros for every euro invested in occupational safety and health, according to the International Social Security Association. There is a changing world of work which organisations are now responding to and this is leading to changes in the Occupational Safety and Health role. There is now more collaborative working and OSH professionals need to build on competencies with IOSH program to enhance the profession.
Technical Session - 1
Every enterprise should have a strategy to prevent fire and explosions by identifying causes and establishing passive and active fire protection.

Passive fire protection systems are fire proofing to protect structural steels, insulation for fire protection and isolating compartments of a building. On the other hand, active fire protection has different types of systems such as:

- Water spray system: used for flammable liquid and gases, it comes in different forms such as wet and dry pipe sprinklers systems, deluge systems and water curtains.
- Fire water mains: looped network, below frost, not under buildings and catholic protections.
- Fire water value: post indicator values, gate values and resilient seats.
- Fire water hydrants: 60-90 m. intervals, along roads.
- Fire water monitor guns: protect exposures and disperse vapours.
- Special systems: foam used for fire suppression, carbon dioxide systems and clean agent systems.

Consideration of fire water flow rate, fire water volume, fire pump and fire source is a must to prevent any fire or explosions in future.

Ms. Samah Al Hamad started her presentation by identifying herself to the audience. She spoke about her carrier history and what obstacles she faced in her past. After that she spoke about the term enterprise risk significance of risk management at corporate level and its importance as a potential source of competitive advantage, commercial and compliance value, and signification essence savings. Governance and culture, strategy and objective setting, performance, review and revision and information, communication and reporting are important aspects of the enterprise risk management process. She identified the sources of risks, some of which include: strengths, weaknesses and opportunities. The key steps to risk management is identification, assessment, treatment and reporting. For example, the procedure of reporting risks includes updating risk register, updating CMP/BCP neediness, identifying emergency risks and specifying tolerances. Lastly, Samah touched on the topic of Business Resilience Management program and the benefit of implementation in BAPCO.

Ms. Shaikha Al-Helal started her presentation with explaining the meaning and importance of risk management. She mentioned that every organisation should have a proper risk management department to manage loss and to achieve their goals. Then she talked about the pre-loss and post-loss objectives, pre-loss is basically what to do to reduce possible losses, uncertain outcomes and to meet legal commitments, and post loss is to ensure that after the loss happens to maintain the survival of the firm, maintain the earnings and possible growth and to try to minimize the effect of loss on the people and the organisation, and then she spoke about how risk management adds value to the business. It identifies the processes and makes it move clear, ensures the service delivered by the organisation and its efficiency, helps in creating awareness of high risk areas, and helps in becoming proactive and helping to act sufficiently to reduce surprises. She then pointed the key risk indicators (KRI). Each business should define their own (KRI) based on their standards and organisation. Main indicators can be our HR, operation, legal, finance, departments. She then mentioned the benefits of (ERM) and how successful an (ERM) can provide visible risk data and minimizing the losses. After that, she explained the relationship between (ERP), (CMP) and (BCP). That we should have quick response, manage crisis and continue business. We could continue business by understanding our business, developing it, and the summary was that we should always have a backup plan and emergency response plan for our risks.
Technical Session - 2
HSE in Major Projects

| Topic 1: HSE Global Approach in Fast Track Development Projects |
| Speaker: Cinzia Sangalli, Manager – HSE, ENI, Abu Dhabi |

At the outset of the presentation, Cinzia opened by providing some figures relating to ENI’s operational activities around the world, namely its worldwide oil production rate of 1.85 Million boe/d, and workforce of about 30,000 people from 106 nationalities and 67 countries, as per 2018 figures. Ms. Cinzia then moved on to speak about the increasing importance of reducing the time taken to bring projects to market, particularly in times of fluctuating oil prices. Such reductions, in her view, had several advantages and those are; (1) Project start-up can be phased out allowing the assessment of process effectiveness and efficiency; (2) Early production; (3) Cash flow availability; and (4) attractiveness to shareholders and stakeholders.

Although a reduction in time to market for major projects is key, she stressed that such reductions must be achieved with no compromise in HSE. Cinzia followed by recommending some procedures to prevent compromise in HSE from occurring and those are; (1) conducting environmental surveys; (2) Identification, assessment and early treatment of risk; (3) Asset integrity and design case scenarios; and (4) Corrective actions and project cold eye review. The Zohr project, the largest gas discovery ever made in Egypt, was given as an example of no compromises in HSE made when attempting to accelerate time to market, where start-up was achieved a mere 2.3 years from discovery. Emphasis was placed on HSE training hours, which averaged at 16 hours per person and on mandating smart kits for operators equipped with wireless smart PPE for monitoring as preventative measures against incidents.

| Topic 2: HSE Best Practices in KIPIC Projects |
| Speaker: Ali Mahdi Khajah, Chief Industrial Hygienist, KIPIC, Kuwait |

Mr. Ali began by presenting some of the best HSE practices that have been implemented in the Kuwait Integrated Petroleum Industries Companies (KIPIC) construction site situated in the Al-Zour Area, south of Kuwait. Ali placed emphasis on the scale of the project, which covered 16 km2 of footprint comprised of three distinct complexes; (1) Refining; (2) Petrochemical production; and (3) LNG import. The speaker mentioned that incidents and accidents are inevitable when it comes to projects of such magnitude and that some of those incidents are straightforward and identifiable via root cause analysis, but others are more complex and provide opportunities for innovation and improvement. Mr. Ali then spoke about the importance of communication with contractors to improve practices and to mitigate the more complex hazards. Many complex hazards have been identified over the course of the project, but Ali chose to share in detail four practices to implement to mitigate those hazards. Those are; (1) Cable drum safety using fit for purpose lifting equipment; (2) roof edge fall protection by wearing full body harnesses attached to guard-rails with counterweights; (3) Utilisation of real-time 3D monitoring software for tower crane anti-collisions; and (4) Steel roof air-raising for LNG storage tanks. The presenter concluded by stressing on the need for a systematic and structured approach to identifying hazards and on building clear lines of communication with operators and contractors alike.

| Topic 3: Beyond Injury Free Integrating Safety Culture into Project Risk Management |
| Speaker: Faisal Sonbal, Manager – Personal Safety, SADARA, Kingdom of Saudi Arabia |

Mr. Faisal started his presentation by listing the key safety management systems integrated into SADARA’s policies, such as the ISO14001, OHSAS 18001 and the RC14001. The speaker went on to list some of the key elements of safety management systems, such as management leadership & employee participation, robust policies, evaluation of incidents, corrective actions, and continuous management reviews. He then gave an example of the implementation of such a system at SADARA, which he termed the “Operating Discipline Management System” (ODMS), which he described as a comprehensive corporate management system that integrates all the management systems for manufacturing, quality, environmental and health & safety into one unified system. The ODMS contains numbered elements describing SADARA’s policies, requirements and processes for safety management, which include facilities operations, contractor management and employee health & safety.

In his view, the fundamental purpose of implementing such procedures is to create a “Beyond Injury Free” (BIF) environment predicated on the belief that integrating, rather than compartmentalizing, employee health & safety and profitability & productivity helps to eliminate and/or mitigate impacts that could lead to undesired events. Faisal outlined six focus areas that are instrumental to building this type of environment and those are; (1) Life critical standards; (2) Leadership engagement; (3) Balance of consequences; (4) Root cause investigations; (5) Hazard recognition; and (6) Organisational excellence. The closing remarks of the presentation emphasized that building a safety culture begins by collecting, analysing and disseminating near misses and incidents reports. This is crucially dependent on the willful participation of the workforce to submit incident reports and that any safety system is dependent on creating a reporting culture, which is heavily tied to how an organisation handles blame and punishment.
Technical Session – 3
Technical Session 4

Stakeholder Engagement

**Session Chairman**
Clément Lavigne
Head of Environment & Social Division

**Session Coordinator**
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Petroleum Development Oman

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**Topic 1: SRM+ (Stakeholder Relationship Management)**

**Speaker:** Emmanuel Tarika, Partner – Altermondo Consulting, France

Tarika defined SRM+, which stands for Stakeholders Relationship Management, as an in-house framework and tools co-developed by all HSE teams with Altermondo Consulting. It was created in 2005 in line with international standards AA1000 and ISO4001-15 to professionalize societal practice and facilitate sound integration of operations in their local environment. It involves engagement of internal and external key stakeholders. He outlined the importance of SRM+ which offers tool-based solutions to address operational and reputation risks related to the challenges faced by subsidiaries in dealing with societal activities.

The speaker then explained the scope of SRM+ which is to deliver operational recommendations and action plans in five key areas: namely relationships with stakeholders, local content, HSE & livelihoods, societal investments and societal governance. After that, he highlighted the SRM+ methodology which consists of five main steps. The first step is to do stakeholder mapping. Based on influence and interest, stakeholders are mapped in 4 clusters: Authorities, Business, Civil Society and Communities. Second of all, societal diagnoses are done by tackling the key areas of SRM+. After that, a societal portfolio is performed to optimize the management of societal projects to gear shared value at the best feasibility. Then, based on mapping, around 30 key stakeholders among the 4 clusters shall be engaged. The fifth step is to do materiality assessment or analysis based on the scoring of concerns and expectations stemming from the SRM+ consultation. The final step consists of gap analysis and action plan to manage societal risks and opportunities.

Tarika ended the presentation by mentioning the benefits of SRM+ to HSE teams. Benefits include a better integration of societal teams and relevant issues, and the opportunity for top management to step away from day-to-day issues and engage stakeholders on issues that are more long-term oriented.

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**Topic 2: Stakeholder Engagement for Operation Management System**

**Speaker:** Amin Abdulmajid Khan, Principal Engineer – SABIC, Kingdom of Saudi Arabia

Stakeholder engagement is essential “to gain the required support toward project completion”, those were the words of Mr. Khan who emphasizes on the importance of engaging stakeholders to prevent incidents and to sustain the management system. HR, legal parties, Finance and accounting, customers, employees, management, etc. are examples of possible stakeholders that need to be part of the aforementioned process. Stakeholder engagement process include three main aspects: the input, the process and the action plan output. The project charter or what is known as the objective of the change shall be identified first, then the management plans i.e. the available resource management and communication plans shall be considered to know the available capacity, and lastly, the organisational culture shall be understood because cultures differs from one context to another. All potential and non-potential stakeholders shall be listed, mapped based on their possible expectation and an action plan shall be established and implemented accordingly. Interactive methods were recommended as per SABIC successful experience which results a positive outcome in identifying the key stakeholders. Mr. Amin ends the subject by stressing on the engagement process with an interactive approach along with using proper communication channels. Clarity with the stakeholders shall also be used to clarify the ambiguities which will reduce stakeholder resistant.

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**Topic 3: Case Study – Stakeholder Management Plan**

**Speaker:** Mohamed A. Rasool Mohamed, External Stakeholder Coordinator – Bahrain Petroleum Company, Kingdom of Bahrain

Mohamed stated by giving a brief introduction about BAPCO Modernization Program (BMP) and the importance of having an external stakeholder management plan for such big project which represents the largest capital investment since the launch of BAPCO. Then he defined stakeholder management plan as the planning and activities associated with influencing any individual or group of individuals that can have either a direct or indirect effect on the results of a project in a negative or positive manner. He stated that stakeholder could be a user, a company executive, an external organisation or a project team member.

The speaker mentioned that stakeholder management steps consists of stakeholder identification, stakeholder analysis, stakeholder engagement planning and stakeholder monitoring & control. Two methods are used for the identification of stakeholders, namely brainstorming and lessons learned from previous projects. In stakeholder analysis, stakeholders shall be classified based on location and field. The management level needed for the identification of stakeholders, namely brainstorming and lessons learned from previous projects. In stakeholder analysis, stakeholders shall be classified based on location and field. The management level needed for these stakeholder is determined upon their power and interest levels. For stakeholder engagement planning, Mohamed suggested that information need to be centralized for the project to succeed. One out of five projects is unsuccessful due to ineffective communication. Stakeholder requirements register shall be initiated to track the status of the same. In this project, BAPCO held BMP stakeholder engagement meeting where government authorities, industry partners, public were all invited to be given an explanation of the scope and environmental & social impact assessment aspects of BMP. Then, Mohamed ended the presentation by stating that the stakeholder management plan is a dynamic document which needs to continually be evaluated and modified throughout the project life cycle.
Technical Session - 4
Al Dossari started his presentation highlighting that Saudi Aramco was committed to protecting the environment long time ago as Environmental Protection Policy signed since 1963, implementing that, Aramco established 12 different Environmental Protection Programs including air quality, land environmental protection, marine environmental protection, groundwater protection, environmental technology, water conservation and others, highlighting that his presentation will be concentrating on Waste Management. Aramco developed their Waste Management strategy by separating their waste to municipal and industrial waste at first then applying Reduce- Reuse- Recycle- Recover and Dispose method as required. One of Aramco’s program for municipal waste was Segregation of Recyclables accomplished through having a well-developed recycling program which separates paper, plastic, aluminum, glass and printer toner cartridges.

Another program was Integrated Waste Management Facility, where components of an Integrated Waste Management facility goes through the following process starting from Material Recovery Facility followed by control and weighing trucks then new landfill cell, Compaction and waste landfilling, Chemical Neutralization Facility, Collection and treatment of leachate, Capture and valorization of biogas and at last Landscape integration and after-care monitoring. Furthermore, speaker talks about Implementation of Waste Minimization Opportunities such as Oily sludge from crude oil storage tanks, installed mechanical mixers, Switch to lighter crude before cleaning, automated tank cleaning and Contaminated soil Technology Development. In conclusion, Al Dossari illustrated chance of Technology Development within the Waste Minimization program highlighting that researches are continued on integrated Bio Treatment Technology, Automatic Tank Cleaning Technologies, Micro Auto Gasification System Technology and Waste to Energy (WTE).

Al Johani started his presentation by spotting attention into world's population, related statistics and global trends of population growth trends, raise in global temperature, demand growth and freshwater withdrawals, consumption and availability. From there, speaker went through the history of sustainability starting from Rachel Carson’s book “silent spring” in early 1960’s through US Environmental Protection Agency (EPA), KYOTO Protocol reaching to United Nation’s Sustainable Development Goals (SDGs) in 2015. Speaker highlighted Importance of sustainability and compared sustainability in North America – where Two-thirds of companies that apply sustainability reporting system achieved better financial results – and sustainability in MENA region where 36% of organisations targeted does not have sustainability strategy, 31% has a holistic strategy and the remaining has either environmental strategy or CSR strategy only. Speaker said it takes five steps to develop a sustainability strategy: Ownership, Analysis, Stakeholders, Strategy and Framework; Ownership is that commitment from top management, steering committee dedicated team and making sustainability lives in everyone DNA. Second comes analysis including analysis of critical risks, current & future challenges, business nature and relationship with SDG’s. Stakeholders are to be identified internally & externally, prepare list of interest & concerns then setting list of priority considering the three pillars of sustainability and at last conducting materiality assessment. Strategy then need to be set by organisation’s pillars and short term & long-term goals are to be set. The last step, Framework, where organisation need to put on Sustainability Policy, manual, protocols, spread awareness & publicity, put on Performance measurement (KPI’s) and reporting.

Speaker concluded by illustrating Sustainability reporting and its method, first Sustainability Reporting – UNGC – which is through United Nations Global impact and second Sustainability Reporting – GRI which goes in coalition of: Regulators, Investors, Companies, Standard setters, The accounting profession, Academies and NGOs. About 153 GRI Sustainability Reports released in GCC of which 107 were GRI.
Started by giving an introduction about the company, Rob Cox, presented IPIECA as “the global oil and gas industry association for advancing environmental and social performance, IPIECA helps industry to improve its environmental and social performance and provides communication channel to the United Nations”. From there, Rob started by defining the sustainable development goals (SDGs) as part of 2030 Agenda for sustainable development adopted by United Nations Member States in 2015, SDGs represents the world’s plan of action for social inclusion, environmental sustainability and economic development. Speaker highlights that oil and gas industries could be mapped to SDGs through many channels, first of them is partnership and collaboration across sectors and industries, second is collaboration among governments, non-governmental organisations, development partners and communities.

The speaker highlights the Oil & Gas can contribute to sustainable development through number of ways includes research and development, jobs and skills, energy, investing in communities, transportations and infrastructure. Speaker said that integrating SDGs can make greater efficiencies, cost savings and competitiveness and can enhance industry’s social licence to operate, from there some of the SDGs applied for industry were illustrated: Goal7 – affordable and clean energy, as major part of the current energy system is consumed by industries. Goal13 – Climate change, industries can participate in plans like net-zero emissions, self-asses carbon resiliency, mitigation of emissions and developing Carbon Capture and Storage (CCS) technologies. Goal17 – partnership for the goals, by cooperation and coordination of efforts with governments, companies, investors international organisations and civil societies.
Technical Session – 5
Dr. Aaesha Hashem illustrated ADNOC’s vision and goals in achieving 100% HSE by empowering everyone to comply with HSE policies and procedures.

ADNOC’S core activities include: exploration, production, refining and petrochemicals. The five types of support services that ADNOC provides are, fire and rescue services, medical support, education, transportation and waste disposal. Some strategic components such as adoption of holistic and integrated approaches are implemented to prevent illness and injury. Dr. Aaesha then introduced the elements of the national program of happiness and wellbeing which aims to empower the employees to think differently and become better and stronger. The primary objectives of the program are, to create a healthy work place climate, to provide support and the right environment by encouraging healthy behaviours and building a culture that supports employees. Lastly, Dr. Aaesha Hashem presented the 7 dimensions of well-being and illustrated their key role in building a strong identity that will become a key tool to communicate with ADNOC employees.

Dr. Marwan Behisi started his presentation with an overview of the history of PMSD. He then pointed out on the map, the risk of malaria within different regions of Saudi Arabia. He illustrated the HSE scope of service which is divided into two sections, environmental compliance and occupational health. The HSE mission is to provide evidence-based practices for chemical and corporate occupational medicine services and also to provide environmental and safety compliance services for chemical, biological and radiological hazards. The domains of occupational health include: pre-employment, fitness assessment, health surveillances and disability determination. Dr. Marwan then mentioned the clinical services that the HSE provides. These services include: pre-employment physical examination, workplace fitness for duty/return to work evaluation, out of kingdom assignment physical and medical disability assessment. On the other hand the HSE provides more specialized services such as security personnel periodic physicals and firefighters physicals. Dr. Marwan Behisi explained the importance of advisory roles and health productivity in preventing hazard-specific health surveillance. He then illustrated the process of enhancing on job injury reporting.

Dr. Marwan Behisi spoke about Radiation protection team and their responsibilities at JHAH. They handle emergency situations and accidental exposures at JHAH, train the radiation workers, review and update the policies and procedure. Then he spoke about the importance of the Industrial Hygiene team where they test and certify engineering controls. Hazard and the waste are controlled by the OHHA. Lastly Dr. Marwan talked about how specialized functions evaluate contracted hospitals, regulations and guidelines of ministry of Health.
Technical Session - 6
Mr. Jamal Alghamdi presented briefly about SADARA chemical company and the implementation of Chemical Reactivity program that eliminate the hazardous scenarios and prevent the uncontrolled chemical reactions that have potential to result injuries, property damage and environmental harm.

He stated that SADARA relies on RC program based on the following Key principles:

- **Inherent energy**: understanding of inherent energy of our systems and conditions by which it can be released.
- **Avoid circumstances that put business in potential danger**: Employees should strive to follow existing procedure, not taking shortcuts, and constantly strive to ensure the safe operation of process they are responsible for.
- **Owner responsibility**: ownership to ensure key partnerships are developed with the process owner and other process safety experts.

He also explained that there are types of reviews implemented in SADARA:

- MOC review.
- New project review.
- Facility RC/PHA review after every 3 years.
- New leader review (must occur within 90 days).

The speaker presented examples for each review type starting from the first one, even small change can cause a major RC hazard. The change must be evaluated for RC hazard by the owner. The project and facility review RC/PHA shall be completed prior to start-up of new facilities and applicable projects. RC/PHA review frequencies are established as 3, 4 or 5 years, depending on facility degree of risk, the level of risk control and department’s performance. And finally, the RC/PHA shall be scheduled on or before the 90-day timeframe of the Leader formally taking over responsibility of the department.

The presentation of Mr. Alexey Kravtsun covered the CRITICAL FOCUS AREAS and how they present the highest risks in health, safety, environment and service quality. He stated that CFA demand extra attention and the highest observance to Halliburton processes to avoid injury, damage, and costly consequences. The speaker highlighted the types of CFA and how important to put them under control with different methodology. CFA such as Well barriers, Hydrocarbon to surface, Pressure Control, Well proximity and Radiation & Explosives. He concludes for each CFA with “What must do” to keep them under control, and he mentioned that well barriers must be tested, and the work must stop in case the barrier failed. Never repair or tighten pressure equipment while it’s pressurized. Well planned survey program must be confirmed and understand. Finally, always store explosive in the appropriate magazine at proper capacity.

Mr. Tijs Koerts Talked about Effective learning from Incidents, which is about (1) Recent incidents, (2) Learning culture & limiting factors (3) And shared learning with industry. He pointed out the main active topics such as SQRA, Dust & Statics, Loading & Unloading, Human factor, Digitalization and PS fundamentals. The speaker noted that Effective Learning Culture is against our nature, limiting factors (legal, leaders) and shared industrial learning. He outlined the learning concept in EPSC learning sheets, and how do they implement it, which depends on Relevant cases, Create awareness - in discussion, use an example anonymous and discuss the key aspects with no judgment, but sharing good industrial practices. The conclude with 3 cases that EPSC learning sheet has been used as examples (1) Release from system, (2) Hydrogen Sulphide Explosion and (3) Imploded storage tank.
Technical Session - 7
Topic 1: Best Practices of Road Safety in ADNOC Gas Processing

**Speaker:** Saleh Mohamed Almaskari, HSE Manager – ADNOC Gas Processing, UAE

The speaker started by emphasizing the importance of road safety. According to world health organisation, every 24 seconds a person is killed in road traffic accidents, and by the time he finishes the presentation, around 50 people may lose their lives due to road traffic accidents.

Mr. Saleh stated that there are three components on road safety: road, vehicle and driver. It was found that 90% of road crashes are because of human error or condition. That’s why a special attention must be paid to human behavior. He then showed a short clip which stresses that zero road accidents is achievable.

The speaker said that leadership commitment, road safety risk and mitigation journey, and best practices & continual improvements are the three pillars of ADNOC road safety management. ADNOC CEO and directors are committed to 100% HSE and all employees and contractors have a crucial role to play in bringing 100% HSE to life.

Road safety journey consists of procedures, risk assessment, controls, followed by training & awareness. ADNOC Procedures include Road Transport Management Manual, Life Saving Rules, Fatigue Management, Consequence Management and Recognition & Reward Scheme whereas controls include Transport Management System (TMS) and In Vehicle Monitoring System (IVMS).

After that, he highlighted the main road safety practices adopted by ADNOC Gas Processing which effectively helped in reducing road accidents. These practices include enforcing the compliance of HSE regulation, monitoring drivers’ behaviors, introducing sleeping cabins and utilizing company buses.

Mr. Saleh finished the presentation by sharing a video of an ADNOC employee telling a story of his friend who passed away in a road accident. He advised all attendees to always put on the seatbelt and drive safely.

Topic 2: Methods and measures adopted by Indian industry

**Speaker:** Arvind Bodhankar, Jr. Executive President & Chief Sustainability Officer – Ultratech Cement Ltd., Mumbai

India has the second largest road network with high toll of road accidents. About 400 people in daily basis (150,000 per year) got road accidents with 10% fatality cases. In India, the road characterizes by its mixed and heterogeneous traffic including the high-speed vehicles, rickshaws, motorcyclists, scooters, cyclists and pedestrians which are sharing the same space.

Road accidents could be caused from either the driver behavior, poor road infrastructure and/ or poor vehicle maintenance. Effects include losing lives, losing of the family earnings, costly injuries, property damage, backups and secondary accidents, loss of travel time and increased congestion on road, increase in the noise and air pollution, lose about 3% to 4% of gross national production and loss of total annual economic. In India, buses were targeted to improve employee’s road transportation, initiatives include installation of reverse camera in the buses, installation of real time GPS monitoring, sending SMS alerts for emergencies, enforcing seat belts usage, regulating speeds, ensuring the availability and adequacy of emergency exits, first aid boxes and fire extinguishers. Tips for avoiding traffic accidents were also presented which includes regular upkeep of infrastructure by government, following traffic roads safety rules, regular check-up and maintenance of vehicles, regulations enforcement, education and awareness improvement.

Topic 3: Saudi Aramco Role in Improving Traffic Safety Towards Saving Lives

**Speaker:** Saleh Al Ghamdi, Technical Advisor – Saudi Aramco, Kingdom of Saudi Arabia

Mr. AlGhamdi talked about the roles of Saudi Aramco in improving traffic safety that aims to save lives. He covers ten main points: the available training centers locations, the accident triangle and the adverse condition, human errors, safety initiatives and activities, driver monitoring device (DMD) and automatic vehicle locator (AVL), emotional effect programs, safety statistics, Saudi Aramco initiatives with Imam Abdul Rahman bin Faisal University in Dammam and the main challenges and successes. Among the three main pillars of road accidents (the road, human and vehicle), human errors counts for 85% of the accidents causes, thus Aramco concentrate its effort towards this factor in order to reduce the hazards, initiatives which were taken include safety boot camps, driving awareness campaigns, safety competitions, safety awareness programs, cooperate safety programs, weekly safety talks, GCC traffic week, quarterly safety inspections, safety interventions, provide online safety courses and having safety ambassador clubs. Convincing the workers to have DMD and AVL in their own cars was a huge challenge for Aramco with significant improvement in road incidents number.

Aramco supports Imam Abdulrahman bin Faisal university through chairing and supporting traffic safety events, sponsoring bachelor degree in transportation engineering, participation in traffic safety conferences, supporting traffic safety clubs, etc. Fatality cases has successfully decreased from 10 cases in 2015 to 0 cases in 2019 and ISO violations cases decreased from 429 cases in 2015 to 0 in 2019.
Plenary Session – Leadership Panel 2

Theme: Operational Efficiency – How to Achieve it Through HSE?

Moderator

Tijs Koerts
Operations Director
European Process Safety Centre

Speakers

Dr. Abdulla Habib Ahmed Ali
Chief Operations Officer
ALBA

Ali Al Failakawi
Manager – Fire
Kuwait Oil Company

Ian Taylor
Chief Executive Officer
NEBOSH

Hamoud Al Shamli
Director – EHS Compliance
SADARA

Xavier Bontemps
Senior Vice President – HSE
TOTAL

Salah Al Juaidan
Sea Water Injections
Department Manager
Saudi Aramco

The panel discussion was opened by Mr. Tijs Koerts, Operations Director – European Process Safety Centre. He gave a brief introduction of each panelist and then started the discussion. He also encouraged the audience to take advantage of the presence of highly experienced panelists.

The panelists agreed on the critical importance of experience to an EHS leader, but also iterated the role of learning from literature and development programs in speeding the process of development of leadership skills and creating the compassion towards EHS.

The panelists did not see a conflict between EHS goals and production goals as they complement each other and ensure sustainable business success. A key factor here is setting the mindset of leaders from the beginning to this concept and gain their buy-in to prevent possible conflicts and create achievable targets that all will strive to achieve.

On the subject of learning from past incidents and stopping their reoccurrence, all the panelists agreed that a paradigm shift is needed by all industries towards acting more proactively and investing more in this regard, such as: safety in design, better integration of EHS systems with operational systems, utilizing big data, technology and modern-day solutions.
Panelists agreed that transformation of leaders that are not from EHS discipline is possible through training and setting EHS KPIs for these roles.

On the matter of maintaining a leader’s credibility after an event, the panelists shared similar views on the importance of “Crisis Management” and ensuring all leaders throughout the organisation are ready to take important decisions when needed. The panelists also mentioned the importance of other factors such as having a robust system and good infrastructure.

A better relation between EHS and other operation disciplines could be achieved through:

• EHS awareness and training.
• EHS ownership and commitment of operational leaders.
• Setting EHS objectives and KPIs to all non-EHS disciplines.
• Effective communication between EHS and other disciplines regarding the interpretation of an EHS rule.

The panelists had split opinion on the question of what the most important element in an EHS management system would be. While, a number of panelists agreed that it would be leadership accountability, others chose training, contractor’s management and continuous improvement.
Keynote Address

Theme: Industrial Revolution 4.0 in HSE

Keynote 1

Er. Ho Siong Hin
Senior Director – International WSH
Ministry of Manpower
Singapore

Dangers associated with Industrial Revolution 4.0 include blurring of employer–employee relationship, skills and knowledge of workers becoming irrelevant, security and privacy (cyber security) and mental health. Opportunities for industrial revolution 4.0 include productivity, new jobs, opportunities and increasing skillset leading to higher salaries. Industry 4.0 is also known as the intelligent industry which is considered to be the fourth industrial revolution. The 1st revolution in the 18th century was associated with mechanization, steam and water power. The 2nd revolution at the end of the 19th century brought mass production and manufacturing. The 3rd revolution was at the second half of the 20th century introducing electronics, IT systems and high-level automation. The 4th is the current internet and digitalization with cyber and physical systems.

Technologies that can improve WSH include technologies to detect driver fatigue, remote noise and dust sensors and wearable’s that can improve productivity as well as monitor health conditions of cleaners who are deployed offsite.

Singapore’s current challenges include an aging population, evolving economy (industry 4.0) and the burden of rising diseases.

The level of ownership by all stakeholders must move beyond “basic” to be global-leading. This is the only sure foundation for sustained improvements in WSH.

Workplace Health is just as important as Workplace Safety.

Singapore’s WSH 2028 Vision “A Healthy Workforce in Safe Workplaces; A Country Renowned for Best Practices in Workplace Safety and Health”.

Vision guides efforts on injury prevention, occupational disease prevention, workforce health promotion and WSH enabled through technology.

To achieve Vision Zero – the aspirations that all cases of injury and ill-health at work can be prevented.
As technology progresses, the focus is for safety professionals to make the most of these challenges and opportunities.

Being proactive in the workplace will ensure a safer work environment, involving such industries as airlines and ground services. Using suitable technology could reduce the risk of injuries to employees who are involved in the traffic flow at airports. Currently employees are involved in luggage handling, fuel and food supplies. By incorporating new traffic systems which are automated would reduce the risk of injuries and collisions at the ground level.

Safety professionals must prepare themselves by ensuring their core competencies are evolving to incorporate the advances in modern technology.

Using relevant data will identify hazards in the work process ensuring a safer work environment.

Managing the culture of technology will drive a safer workplace with appropriate decision making. Front line supervisors need to understand these concepts. All management systems may be in place, but employees need to be aware of them and to use them to ensure best practice.

Humans must still be involved with technology by using relevant data for decision making ensuring an informed decision can be made. Behaviors in the workplace are the tip of the iceberg and a culture needs to be created to be aligned with technology.

A multi-year journey towards HSE Excellence using Incident Analysis, Culture Assessment and Perception-based Evaluation with the outcome being the Safety Culture Transformation Program using the “Safe Steps” (Stop. Think. Evaluate. Proceed Safely.) A program that puts safety at the heart of the business by shifting from a reactive performance-based approach to safety “Find and Fix”, to a proactive, risk-based approach “Predict and Prevent”. Building a culture where safety is a pre-condition for work. Pro-actively identify, assess and manage risks. Fundamental gaps in the program were addressed which included the Safe STEPS Foundations. These included Safety Governance, Safety Culture Assessment, Safety Leadership Program, Audit & Assurance and Safety Transformation Digitalization.

Adopting digital technologies enhances HSE outcomes in Upstream by using remote operation and automated trucks and skip collection which are connected to workers. Midstream utilizes real-time work orders and advanced robotics. Downstream activities involve people analysis and data collection. Digital initiatives already in place include Digitalized Permit to Work system, Digital lockout / tag out program, Remote controlled lifting units, Fleet Tracking System, Vessel entry digitalized controls, Drones for inspection, Health monitoring and tracking system and Biometric access control system.
Keynote Address
All businesses aim to prevent incidents, but business interruption is bound to occur at some point and any company must adapt to the disruptions and recover quickly while safeguarding its people, assets and interest of the company. To formulate any resilience strategy, all manmade, natural, seen, and hidden operational risks must be considered. Embedding a risk management system into any organisation is essential to reduce redundancy and drive profitability as all panelists agreed that a risk-based approach and risk-based investment decisions should be adopted.

Business resilience models must focus on three main aspects which are hardware design, effective management system and mitigation emergency response capability. All three of these aspects are subject to deterioration so it is important to constantly reinforce operational discipline. Leadership is fundamental in the implementation of risk resilience and the communication of HSE requirements across an organisation in the right way engaging all operative levels in the process. HSE has big role to play in increasing resilience and the integration of risk and HSE will achieve a holistic approach where information/knowledge is shared widely by openly talking about unfortunate losses and discussing promising business resilience strategies implemented already.
Effectiveness of implementation of resilience programs is the main element in keeping the initiatives successful, e.g. HAZOP reviews, MOC’s, root cause analysis program, and asset integrity systems. The panelists stressed that there are no shortcuts to the right procedure, all present risks should be screened in consistent manner.

An area of potential risk is high turnover, the panelists agreed that it is important to push for training to ensure that the workers are competent and ready to adapt to the frequent changes in technology. With the increasing nature of integration and interdependency in world businesses today, resilience may also be greatly reduced in the case of any interruption to the value chain making businesses vulnerable.

The panelists emphasized that we should not be over-confident in our KPI’s as they could not be an accurate representation of the effective HSE system performance, audits and other tools should be utilized to identify issues as well. Any metrics used to measure HSE strategy must be benchmarked for added scrutiny and to motivate better performance.

With technology growing to be a big part of risk detection and assessment, we need to take advantages of it as a method to use all the data gathered over the years to build models of future situations and to predict upcoming risks. The advancements brought by technologies such as automation, digitalization and remote inspection have reduced human error and enhanced performance, however removing human interface will introduce new type of errors and risks that we need to consider.

Business resilience is all about agility and progress in situation response by building a robust plan and preparing good response capabilities that can quickly be set into action. If every member of the company starts to consider themselves as a risk manager and key contributor to the wellbeing of all, people will always act safely and responsibly.
The session’s speaker gave a brief about EQUATE development & branches, followed by statistics of the huge Turnaround & Inspection (T&I) the company had back in 2017. Al-Mutawa said that the success of 2017 T&I was due to the plan prepared by EQUATE splitting the project into three phases: pre-T&I, during T&I and after. The first stage was talked about preparing for the T&I, where all relevant HSE information prepared and studied thoroughly, many review of critical jobs were done and all communicated to all employees and contractors via different channels like Turnaround manuals, emails and safety banners. Second stage was managing healthy and safety performance during the T&I which was accomplished through many practices starting by placement of tent for access control aligning with authorities and provision of separated routes for access of different contractor. This would not happen without leadership engagement, carrying out safety meetings at each shift including incident simulation, behavior-based program and emergency plans were in place. Rewards and initiatives present on-spot, during safety meetings & upon tasks completion at site, encouraging safe practices of participants. At last, the third stage is all about sharing lessons learned of unplanned events during the project, focusing on that team-work was the main reason behind success of the T&I as all operation, maintenance, medical, and all other teams played a major role doing their responsibilities, communicating and liaising with each other.

Mr. Aldossari’s presentation started by highlighting the importance of self-assessment, defining it in technical terms as “an examination of performance to determine whether the organisation was successful in meeting requirements or in compliance”. In practice, self-assessment is “an exercise where a team evaluates whether their organisation is meeting requirements applicable within the organisation”. The speaker continued by illustrating management model of Plan, Do, Check & Act, and locating “self-assessment” within “Check” part of the cycle represented by internal and external audits. About the importance of self-assessment, speaker raised a question “why we need to do self-assessment?” answering by that self-assessment gives space for identification of more gaps compared to audits due to transparency, wider scopes is covered in self-assessment compared to audits. Speaker concludes by sharing two approaches of implementation of a successful self-assessment program, first is the “built-in self-assessment” which is compressive and complicated needs thorough understanding of the system. The second practice is the “template-based self-assessment” which is easier to be applied as a starting point for organisations to start their self-assessment.
Technical Session – 9
Mr. Hari highlighted the importance of continuous engagement, collaboration and innovation in top process safety risks. He conveyed ENOC’s HSE vision and strategy as an example of the transformational journey to operational excellence, governance and world class HSE standards.

He discusses safety culture and stresses on the importance of knowledge and trust to the growth of compliance culture to a proactive culture. The importance of purpose, design and resources as part of any safety observation program is portrayed alongside project review and analysis. The speaker concluded with (5P)’s as “Perfect Planning Prevents Poor Performance” and to focus on continuous engagement through safety leadership programs and HSE campaigns.

Ayssar started the presentation by defining Kintsugi “Golden Repair”, the Japanese art of repairing broken pottery. The speaker figuratively compared the repair of an object as part of its history to an ideology that should be embraced in HSE processes. She then continued to elaborate on the key elements involved in integrity management and the importance of a continuous assessment process.

The main elements attributed by the speaker were (1) accountability, a clear authoritative establishment of accountabilities; (2) Hazard Evaluation, evaluating all environmental risks such as natural and logistical hazards; (3) Facilities and Process Integrity through suitable design and accordance to codes and standards with regular maintenance; (4) Protective devices and practices, such as passive and active systems both operational and external.

Finally, the speaker concludes with the importance of key performance indicators as part of a management system to monitor effectiveness and efficiency. She demonstrates the vital role of incident investigation and learning through consistent reporting and learning/prevention opportunities.

The speaker emphasizes on Gesip’s responsiveness to technical and regulatory changes within the industry and how important knowledge, skill and experience are in developing internationally recognised expertise and a reference for industrial safety issues.

The integration with regulators and alternatives and Gesip’s willingness to launch international research and training programs.

He uses an example of GESIP’s foam concentrate and their involvement in its evolution and keeping it up to industry standard with the dynamically changing environmental constraints. The speaker concludes with the importance of building a recognised international position to face upcoming challenges in the field of safety, through sharing and mutualizing research efforts and findings.
Technical Session - 10
Safety Culture and Behavioural Based Safety (BBS)

### Topic 1: Secrets of a Successful Behaviour Based Safety Program
**Speaker:** Hasnain Ahmed, Leader – EH&S Compliance, DuPont

Mr. Hasnain spoke about the best practices for the successful implementation of behaviour-based safety (BBS) management systems in an organisation. He explained that to observe, analyse, review, and improve human behaviours at work, a behaviour-based safety program is one that should be comprised of several key safety management systems cohesively integrated into one system. The presenter then outlined several benefits that BBS programs had to offer organisations over the past 25 years, such as: (1) reduction in & mitigation of unsafe behaviours at work; and (2) the better engagement of frontline employees in safety. Hasnain then went through the best practices involved in the implementation of a BBS program. He stated that BBS observations and feedback must target behaviours that have a significant impact on safety and that time and effort should not be wasted on targeting behaviours that do not contribute to preventing incidents. In short, if the goal is to change behaviours and if the process is not based on the science of behaviour then it is not going to work. Hasnain proposes that concise, yet tailored checklists that involve employee interactions, rather than simple check boxes, should be standard practice to focus on a few critical behaviours. Observers need to be properly trained and experienced to ensure the effectiveness of this type of program. Once those behaviours have been identified, Hasnain stresses the implementation of effective root cause analysis to ensure that the solutions generated prevent recurrence. For this system to work, the speaker highlighted the power of positive recognition where workforce need to be appreciated for and reminded of their safe behaviours. The presenter concluded by explaining the significance of mutual bond and trust between leadership and the workforce, in which trust is the cornerstone for an effective BBS programs. The perception of trust, as Hasnain points out, is comprised of three factors; (1) Ability (perceived competence); (2) benevolence (perceived degree of care shown); and (3) integrity (perceived honesty and openness).

### Topic 2: A Safe Shortcut to Safety Culture
**Speaker:** Mohamed Ali Shukri, Founder & CEO, Y-Access Training Solutions Co.

Mr. Mohamed spoke on some simple shortcuts that could be followed to create a self-sufficient long-lasting safety culture in the workplace. He began his presentation by sharing some figures concerning work-related incidents and deaths each year and daily deaths due to work-related accidents & illnesses. He chose to begin his presentation this way to reinforce his belief on the importance of a safety culture in the workplace and the consequences in its lack of. He defined safety culture as the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the style of proficiency of an organisation’s health and safety. To that end, Mr. Mohamed defined three shortcuts; (1) Walk; (2) Watch; and (3) Win. The philosophy behind these shortcuts is predicated on the belief that if the employees can identify the source of safety hazards themselves with some guidance and are allowed to watch their own progress towards reducing those hazards with time, as a collective group, they would be intrinsically motivated towards reducing risks at the workplace, rather than being extrinsically motivated. He then emphasized that if safety targets are met, the workers should be allowed to celebrate, or win, in a manner of their choosing, without the need for intervention from supervisors or leadership. The speaker concluded the presentation by inferring that this type of a safety culture is not linear; in that when one habit is improved it is found that one or several other habits improve consequently. In his view, the speaker believed that this is the essence of a successful safety culture.

**Speaker:** Nasir Abdullah Al-Zahrani, Staff Engineer – Occupational H&S & EHSS, SABIC

At the outset of Mr. Nasir’s presentation, he stressed that culture is fundamental within any organisation and that without the right culture, it is virtually impossible for any organisation to achieve its goals and ambitions effectively. The speaker explored one such culture embedded into SABIC’s organisation, which is the EHSS culture where the organisation demands excellence in the protection of human rights, safety, security and the environment. The presenter also noted that some of the main reasons organisations fail to instill culture change in their environment is the inability of their leaders to identify and specifically target the positive behaviours that they would like to see. He then began to list suggestions to instill desired cultural changes and those are risk identification, risk response, visible leadership, safety systems of work, and training & capability. He further highlighted that leadership behaviour is critical, as it ultimately influence culture, which in turn influences performance. To that end, the presenter proposed certain initiatives that need to be in place to achieve that goal. Examples of such an initiative at SABIC, is the Basic Safety Behaviours (BSB) program, which is aimed at initiating a dialogue between site leaders and the workforce, promotes more focus and attention to key safety behaviours, and emphasises the importance of basic safety behaviours to improve safety culture.
Technical Session – 11
The speaker defined a competent person by being able to do something successfully and efficiently. He said that the recent ISO 14001:2015 requires the competency of workers for effective management of OH&S performance. He stated that competency has three main components: knowledge, skills and experience. Ashok stated that knowledge covers familiarity, awareness or understanding gained through experience or study. Skills are abilities that have been gained or developed through training or experience. Experience is a result of observing, encountering or doing something.

Ashok illustrated that certification is a key element for someone to become an HSE professional. He then made a comparison between certificates gained from an educational process and certifications gained from an assessment process. The main difference is that certifications have expiry dates while certificates don’t. The speaker said that there are plenty of certification programs and titles available in the world of safety, health, environment and sustainability fields. The growth in titles creates a confusion for potential users and raises questions about the quality of these programs. He stressed that one needs to ensure the accreditation of these certificates through independent third-party evaluation such as National Commission for Certifying Agencies or the American National Standards Institute (ANSI).

After that, the speaker showed the certifications provided by the Board of Certified Safety Professionals (BCSP). He stated that there are four types of BCSP certifications, namely professional, management, technician & supervisory and training. Each certification is designed for a specific job level or role within safety practice. Mr. Ashok then described the certification process and eligibility requirements of the main BCSP certifications including Certified Safety Professional (CSP), Associate Safety Professional (ASP), Transitional Safety Practitioner (TSP) and Graduate Safety Practitioner (GSP). He said that these certifications are valid for 5 years and described the recertification process and requirements.

Eng. Khalid talked about GE experience in improving their employee’s competency in Environment, health and safety (EHS) culture. Their improvement is based on conducting regular EHS audits (5 per Service Manager/Quarter, 2 per Engineer/Quarter, 2 per EHS Manager/Month), EHS training, daily meetings or calls, having measurable actions on EHS and considering EHS feedbacks. Eng. Khalid also talked about EHS culture which could be improved by considering four main pillars: the leadership, the risks, the intervention and the learning process. Leadership could be only improved by focusing on the leadership engagement, having annual or as required an EHS campaign and by rewarding and recognition. Every single employee shall be a safety leader in his/ her work with the sense of safety first, management shall also be committed to EHS which could be through the regular meetings with the parties and by setting and enforcing the KPIs. Risks need to be also looked at to reduce all hazards, supervisors shall take up their full responsibility towards their fellows and appropriate tools need to be effectively used. TRAs, Pre-Task assessment are some of the tools which need to be practiced and followed. Stop work empowering should be practiced because it could really add to the EHS culture, personnel who stops the work for EHS concerns shall not be punished, instead they shall be encouraged and rewarded. Lesson learned from previous incident shall be always communicated and reminded to prevent incidents reoccurrence in the future. Mr. AlSahly ends his presentation by emphasize on the importance of EHS culture for everyone’s safety. This culture shall be a measurable culture by setting the appropriate KPIs, Eng. Al Sahly quote “ If you cannot measure the thing you will never be able to manage it.”
Mr. Al-Qahtani started his presentation by outlining SABIC process safety management function. He stated that the three focus areas are to develop and deploy process safety knowledge and competency programs, to improve process safety risk discovery & management methods, and to improve emergency management capabilities.

Then he defined competency as a cluster of related abilities, commitments, knowledge and skills that enable a person or an organisation to act effectively in a job or situation. He stated that to achieve an outstanding process safety, there are major elements including good management systems, good company culture and adherence to standards. However, no matter how good the culture or management system is, or how well the company adheres to standards, it takes competent employees to implement those systems and standards. This requires intentional competency development which includes understanding competency expectations, providing educational resources and providing time for people to build competency.

After that, the speaker mentioned that SABIC has developed a framework for process safety competency. He illustrated by giving one example of SABIC programs named process safety competency development program for Engineers. The objective of this program is to develop, improve and strengthen process safety competency of SABIC engineers by targeting three major elements: theoretical & practical knowledge, process safety behavior & attitude, and process safety skills. He explained the scope and design of this intense program which consists of 150 to 200 learning hours. He then showed some key milestones in SABIC process competency development journey. Mr. Al-Qahtani concluded by saying that competent employee is a multiplier in the process safety performance.
Technical Session - 12

HSE CONFERENCE & EXHIBITION
CONVENTION CENTRE | 30 SEPTEMBER - 3 OCTOBER 2019
**Technical Session 13**

**Topic 1: Contractor HSE & Welfare Performance Management Mechanism in ADNOC**

**Speaker: Andrej Krnetic, Senior Engineer – HSE, ADNOC Refining**

Andrej started his presentation highlighting that in 2018 ADNOC Group has renewed its commitment and established a unified approach to Contractor HSE & Welfare Performance Management. As more than 75% of ADNOC's workforce accounts for contractors, HSE shall be engaged in the whole life cycle of contractors starting from pre-execution and pre-mobilization where contractors’ HSE management system is introduced. Prequalification is the beginning to make sure that contractors have only contractors with good EHS performance. Second, constant management of contractors’ performance requires a consistent amount of focus and effort to get it right, said Dr. Chit to start illustrating the answer to the subject question, “What can we do to protect our contractors?”. Prequalification is the beginning to make sure to have only contractors with good EHS performance. Second, constant management of contractors’ performance during mobilization of activities. Third, share of knowledge with them and engage them with finding solutions. Fourth, let them know whether they are doing good or bad job, provide them with evaluation of their job. And at last, jointly celebrate achievements with them.

In order to measure whether the group delivers the expectations of this new mechanism, a new KPI was introduced in 2019 states the ADNOC’s HSE contractors’ performance management evaluates two aspects of contractors’ performance with different weight, as contractor's compliance weighs 25% of its performance while 75% weighs number of cases closed within 90 days, where cases refer to cases of non-compliances of contractors.

In addition to the above, ADNOC also classifies their contractors to indicate “High level risk contractors” and get them into “contractors assurance program”. ADNOC group issues Contractors HSE performance reports quarterly where letters of recognition or non-compliance notifications are issued along with meetings and developing action plans for improvement of contractors’ performance.

**Topic 2: Protecting our contractors - why we need to Do More?**

**Speaker: Dr. Chit Lutchman, President, Safety Erudite Inc.**

Dr. Chit started his presentation by illustrating some statistics about the injuries and fatalities in the industry questioning why contractor employee accounts for a major percentage, highlighting that these days contractors perform on average 80% of the work done on industrial and commercial worksites, and more importantly, contractors are often hurt or killed in the workplace at a frequency 3-4 times that of employees. Speaker highlighted that managing contractor safety can be an intensely difficult task, particularly as owners send mixed messages to contractors. Dr. Chit states that Sustainable contractors HSE is within a strong HSE management system.

“Contractor management doesn’t stand on its own, it stands within an integrated management system, but it does require a consistent amount of focus and effort to get it right,” said Dr. Chit to start illustrating the answer to the subject question, “What can we do to protect our contractors?”. Prequalification is the beginning to make sure to have only contractors with good EHS performance. Second, constant management of contractors’ performance during mobilization of activities. Third, share of knowledge with them and engage them with finding solutions. Fourth, let them know whether they are doing good or bad job, provide them with evaluation of their job. And at last, jointly celebrate achievements with them.

**Topic 3: Managing Diverse HSE Cultures**

**Speaker: Colin Alexis, HSES Manager – EMEA Region, TechnipFMC, Italy**

The speaker presented his views on the way, diverse cultures should be handled with consideration to HSE topics when communicated to various contracted companies. Current HSE management systems are doing a great job of focusing on the main areas of concern which are people, assets, management systems and performance monitoring and reporting, but we need to look further to understand how such safety excellence and productivity can be maintained with respect to the project schedules and budgets dictating these contractor companies.

Colin gave the example of “Pulse” which was a global Health, Safety, Environment and Security (HSES) culture and engagement program. Through training, self-assessment and communication, it provides employees with the right skills, tools and behaviors to enable them to maintain and strengthen their commitment to HSES. “Pulse” is set to work at the highest level of management to create culture of care that empowers people to foster an incident-free working environment and to be the very best they can. By transformation of leadership and strengthening of safety awareness through things like training/induction /task-risk analysis/HAZOP, we can create a change HSE culture that will proceed to have decrease in injuries. When injuries do occur, rather than saying the employee “should have known better” we should instead identify gaps within the company’s management system and question whether the company should’ve done better or whether adequate training was provided.

Ensuring contractor safety should never be an additional cost or burden carried mainly by the HSE, it should instead be a responsibility shared by the entire organisation.
Technical Session – 13
Several factors were highlighted by the speaker regarding HSE Regulatory compliance as part of Tatweer Petroleum in Awali, Bahrain. The speaker emphasized on importance of meeting compliance requirements and the availability of adequate information to ensure best practices.

Ms. Layla talked about key points influencing compliance (1) Legislation and subjection to local authorities and environmental permit objectives; (2) Environmental assessment (EA) through environmental related forms and processes, such as Tatweer’s Internal Environmental Permit Process and its flowchart; (3) Environmental impact assessment and the requirements a project must meet prior to its approval.

Ms. Layla presents the different permitting processes while stressing on their importance in identifying and assessing environmental impacts while presenting an example of a successful closed-loop process. She concluded with emphasizing on environmental compliance requirements awareness and the adherence to environmental compliance requirements in all stages of a project.

Mohammad introduces TASNEE as a petrochemical products company and stresses on the importance of regulatory, legal and ethical compliance. Mohammad highlighted the TASNEE IMRS Rating system process designed to manage organisation operations, execution and control through a feedback loop which begins and ends at Leadership. The program was designed to assess both safety program strengths and opportunities to improve. It ensures compliance through its developed monthly KPI’s and EHSS Audit which cover: Safety, environment, security, fire and health. The safety culture brought forward through these KPI’s lead to Identifying major gaps and responding with the according awareness campaigns.

TASNEE was repeatedly awarded “Best environmental Performance” in Jubail under the jurisdiction of the RC-EPCD. Their claim for this achievement comes from personalizing monthly KPI & EHSS Audit for each individual plant whilst promoting educational campaigns for proper certification and environmental awareness.

The speaker emphasizes on ISRS (International Sustainability Rating System) as a leading system to assess and improve operations safety and sustainability. The speaker highlights the predominant cause of any accident is the lack of management control and inadequate compliance and standards. ISRS audit focuses on the human factor for error and the importance of reporting not only incidents but also near misses. ISRS is aligned with the International Standard Organisation(ISO) for high level structures and continual improvement. The integrated management system that includes various models ranging from occupational health & safety management to risk management and quality management allows users to customize their process approach.

Moreover, ISRS adopts a sustainable and safe operation. In addition, the speaker explains the zero-incident target in all loss categories and the processes and cycles associated with achieving it. He emphasizes on strategy, implementation, monitoring and reviewing.

Dr. Laks conveyed the importance of integrating compliance, risk evaluation and monitoring into a single process and sub-processes. In conclusion, the speaker conveyed the healthy way to manage your business through integrated assessment to cover regulatory conformance and best practices.
Technical Session – 14

GLOBAL HSE CONFERENCE & EXHIBITION
THE GULF CONVENTION CENTRE: 30 SEPTEMBER – 3 OCTOBER 2019

Lucky Draw Raffle
GD004
Jamal Al Bulahed
The presentation of Dr. Samantha was about HSE IIoT which is the industrial internet of things, and specifically the HMI (Human machine interface). She highlighted that we are moving to a world where the Machines are not just intelligent, they are brilliant, self-aware, predictive, reactive and social. She pointed that their team focused on creating HSE innovations based on human signal detection, real time monitoring with predictive trends, biofeedback systems and advanced prescriptive. She outlined two types of HSE HMI: BrMI = Electroencephalography (EEG) installed in a worker's hard-hat that measures Excitement, Engagement, Relaxation and stress. BoMI= Biometrics collected from next generation gloves and other wearable technology (e.g. belts, shoes, etc.) that measures Body composition analysis (BIA), Blood pressure & stress response (BP, RR, GSR), Time series performance (rate) and Performance rating. She concluded her presentation with the benefits and advantages list (1) Data trends risks and hazard in the workplace (2) Protect employee health and prevent injuries (3) Reduce expenditure: Lost work time / injuries and (4) Environmental Protection: smart plant / machines.

The presentation of Mr. Arsen was about the importance of technology, and how it played an important part to reduce driving incidents and accidents in Schlumberger. The presenter highlighted that driving incidents in Schlumberger 5.5 times safer than other large companies members of NETS (Network of Employers for Traffic Safety) and they believe that is a function of their tremendous historical efforts in driving safety. He stated that driving is the activity with the highest risk in our industry, Schlumberger has 36% of major injuries and fatalities year (2014–2018). Mr. Arsen gave brief about driving safety approach, along with driver training and policies & behavior safety, he only talked about Vehicle Specifications, Driver Improvement Monitoring, and Journey Management. Their minimum requirement of the Vehicle specifications is In-video camera, Rollover damage minimization device (Roof must hold 4 times weight of vehicle), Air bag and Reversing alarms camera and parking sensor. Using Driver Improvement monitor that measures Harsh Acceleration, Hard Braking, Vertical Acceleration, Unsafe Cornering, and to record Crash Events. GPS Receiver is used to measure Speed to preset Threshold, Speed to Speed Limit from an over the air updatable Speed Limit Database, and vehicle position. Third, the Monitor communicates with the vehicle's Engine Control Unit to monitor Seatbelt Use, Engine Diagnostics, Speed, RPM, Fuel Consumption, and Engine Idle. And finally Journey Management, the approach to score the driver and journey based on elements of the inherent risks. And it monitors all their field journey through their global journey management call center. The speaker concludes with the eJourney application launch for smart phones or tablets, application that provides an algorithm for calculating the risk of the journey instantaneously without the need to involve the call center.

Mr. Wael presentation was about the Artificial Intelligence in HSE purposes. And how does it affect and improve the HSE in ADNOC. He started with an overview of ADNOC Offshore Artificial Intelligent initiatives, and with briefing about the Artificial Intelligence, he stated that Artificial Intelligence is punch of algorithms that can make decision about data, it has ability of a machine to perform cognitive functions that associated with human minds. The speaker highlighted the Video Analytics Artificial Intelligent Program deployments targeting ADNOC Offshore sites objectives: (1) Enhancement of HSE culture and compliance (2) Streaming Evacuation Procedure (3) Real time POB (4) Timekeeping Management (5) Personnel Tracking and (6) Physical security. He outlined 6 scenarios that Artificial Intelligence has been implemented to, (1) Protective gear detection (2) Safety passage violation (3) Live POB count in all-weather decks (4) No watchman in muster (5) man over board (6) Fell on stairs. And he played some videos that explain how the detection is happening. Finally, he concludes about the advantages of the Artificial Intelligent systems, as the following (1) Unbiased monitoring of operations, (2) Ability to measure HSE compliance and benchmark performance, (3) Auto timekeeping procedures Reduce complacency and up lift HSE culture.
The panel discussion was opened by Mr. Hafedh Al Qassab, BMP Project Director – BAPCO. He gave a brief introduction of each panelist and then started the debate. He also encouraged the audience to take part in the discussion.

All the panelists agreed that the target of zero injuries is a realistic target and very much achievable. A real-life time example was given for company that works in the construction sector, which is considered a high-risk sector, and managed to achieve zero injury for a long time. Moreover “Zero Injuries” is a KPI that must happen now, but rather a vision that needs to be instilled within all workers and contractors alike. This vision will undoubtedly be a great driver and motivator for any worker. Despite all the efforts put to prevent an injury, the unfortunate may happen, but it is also this undesired event that creates a great opportunity to learn, evolve and get back to zero. On the same subject, the panelists noted that “Zero” does not only covers the harm incurred but goes beyond that to include the wellbeing and happiness of every worker and his/her family.

The panelists highlighted several differentiating factors that make it possible to reach the zero target. Of these are:

- Leadership sees safety as value rather than a priority.
- Progressive plans and experience retention programs.
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- Leadership sees safety as value rather than a priority.
- Progressive plans and experience retention programs.
- Maturity of safety culture among all workers and consistency within all pockets in an organisation.
- Holistic EHS management system.

On the question of underreporting and what successful counter measures that could be taken. The panelists were different on the approach to resolve this problem. Whereas as a number of panelist chose the hard line of penalizing whoever found not reporting, others took more lenient path as to address the fears that are hindering workers to report such as:

- Awareness sessions to explain to workers that reporting of near misses or minor incidents would prevent a serious one.
- Break the connection between workers benefit schemes (such as bonus) and achievement of zero injuries.
- Make it a company’s objective to turn into a “Reporting Culture”.
- Simplifying reporting procedure (e.g. utilizing technology such as simple e-forms).

On the matter of the significance of simple incidents that are not purely work related (such slip and falls). The panelists stressed on the importance of taking these ‘freak’ incidents seriously. Panelists gave several examples of simple incidents that were investigated and found exposed many gaps in the system. Hence, when these simple incidents are investigated, the objective is not only to stop a repeat but to prevent other incidents through addressing deficiencies in the system.

The panelists revealed numerous tools that they found from experience very beneficial for driving the effectiveness of incident investigation. Of these are:

- Becoming a learning organisation by always looking for root causes and addressing them.
- Sharing information from investigations to the ‘front line’ which are the ‘persons’ that need them the most.
- Allocating resources to train investigators and equip them with proper tools.
- Monitoring investigation progress and not to allow their postponement.
- Sharing of incident findings and recommendations should be from the head of the organisation (i.e. CEO).
- Ensure efficient reporting exists that would only report actual facts and hence would not mislead an investigation later. A good idea here is to involve EHS at the initial reporting stage.
Plenary Session – Leadership Panel 4
Closing Remarks

Hafedh Al Qassab  
BMP Project Director – BAPCO  
Technical Committee Chairman – Global HSE 2019

Global HSE goes from strength to strength and compared to the Kuwait conference last year this is the most successful Global HSE Conference to date. Delegates have grown from 882 last year to 1152 this year. Participating speakers have grown from 90 to 110. Participants have been from 25 countries compared with 22 last year. Additionally, participating industries have grown to 10 from 9 compared to the previous year. The conference has connected people by sharing knowledge from around the world.

There has been one goal for all that company representatives that everyone should go home safe and sound every day. Sharing best practices is the best way to achieve HSE Efficiency, Resilience and Sustainability. There are industries achieving zero harm and it is our objective to get everyone to this level.

Hafedh thanked all involved in making the Global HSE Conference a success which included the Steering Committee, Technical Committee and the Organising Committee. With special thanks to the many sponsors and partners for supporting this event. To the many people working behind the scenes who worked tirelessly for this event to be a success. Furthermore, he thanked the Gulf Hotel and Administration Staff for the excellent venue.
ABOUT iCONEX

iCONEX is a leading trade, consumer shows and Live Concert organizing company that exemplifies the spirit of innovation and vibrancy. We believe in creating experiences that are focused on bringing together crème de la crème of the industry experts from different sectors under one roof. We are specialists in forming platforms for the opinion leaders and industry stakeholders to meet, network and inspire each other with new and innovative ideas springing to business excellence.

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