

the arabian sun

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Munch at Ithra: building cultural bridges to Norway

Looking to encourage cross-cultural exchange and collaboration among nations, the King Abdulaziz Center for World Culture (Ithra) hosts a special preview of "Edvard Munch: Landscapes of the Soul."

see page 12

what is the 'Future of Work' in the oil and gas industry?

For some, the future of work — with its outsourcing, uncontrolled technology, and robots taking jobs — is a threat. For others who see the benefits of universal access, it represents opportunity.

see page 7



Kingdom's first hydrogen station

building a stronger
future in the oil
and gas industry

see page 3



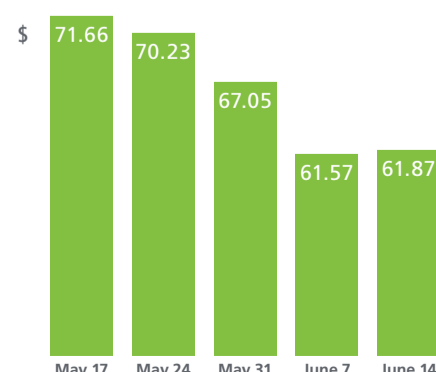
'Noor' steals the show

Training and Development welcomes a new teammate on its event team — "Noor." Standing about two-meters tall and consisting of a touch screen and a mobile base on motorized wheels, the new high-tech tool interacts with guests, proctors exams, bolsters marketing efforts, and more.

see page 4



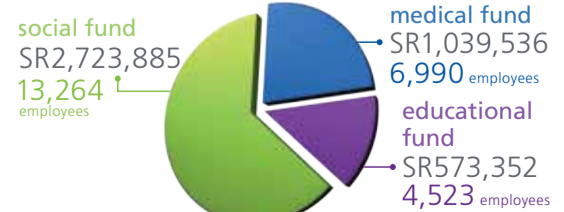
OPEC basket five-week price trend 2019



One day left!

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Aramco expertise displayed on global stage at international geoscience conference in U.S.



Serving on the prestigious Imperial Barrel Award (IBA) judging panel, Haidar M. Qatari reviews exploration concepts presented by teams from around the world. Featured as part of the American Association of Petroleum Geologists Annual Conference and Exhibition in San Antonio, Texas, the event featured technical papers, presentations, and support for the society's annual IBA, which engages top teams of geoscience graduates from around the world.

by Susan V. Gonzalez

San Antonio, Texas — Saudi Aramco's experience and leadership in geology, petroleum systems, and oil and gas exploration technologies were on display at this year's American Association of Petroleum Geologists (AAPG) Annual Conference and Exhibition in San Antonio, Texas.

The event featured technical papers, presentations, and support for the society's annual Imperial Barrel Award (IBA), which engages top teams of geoscience graduates from around the world.

building a technological bridge

Sa'id A. Al Hajri, manager of Saudi Aramco's Geological Operations Department, spoke during the IBA award ceremony, noting the rapid evolution of technologies that allow geoscientists to perform tasks in seconds and minutes rather than days and weeks.

"Our role as an industry is to build the bridge among industry, academia, and today's students, who become tomorrow's professionals," said Al Hajri.

Serving on the IBA judging committee was Haidar M. Qatari, a geologist with Saudi Aramco's Eastern Area Exploration Department.

Two Saudi Aramco professionals were honored for their contributions to the society and industry during the opening awards ceremony.

Ibrahim A. Al Ghamdi, chief geologist with Exploration Resource Assessment, received an AAPG Distinguished Service Award for his active involvement in the society since 1984 to educate and grow membership at the local and regional level.

top scientists, top presentations

Ayrat Gizatov, a lab scientist in reservoir engineering technology at the Aramco Re-

search Center-Boston, received the George C. Matson Memorial Award for the best paper presentation during last year's conference. Gizatov's paper highlighted the interaction of surfactant chemicals with carbonate rock at the nanoscale.

Throughout the three-day conference, poster presentations supported major conference themes such as geochemistry, basin modeling, and unconventional resources, among other topical sessions chaired by Saudi Aramco personnel.

The participation of a mentor in the Student Career Seminar further underscored the company's engagement with young professionals.

Crowds gathered on the exhibition floor to learn more about the company's latest exploration advances and specific talks on thin section image evaluation and research underway.

Christian Scheibe presented, "Evaluating Paleo Environment Redox Conditions in Organic-rich Carbonates through Geochemical Element Covariations and Proxies." Other presentations highlighted the company's work in related research.

Incorporating technology advances and integrating disciplines — geology, geophysics, geomechanics, and reservoir engineering — is helping to address increasingly complex hydrocarbon plays. These disciplines and the data science revolution are bringing about step changes in petroleum exploration and production.

Saudi Aramco's commitment to sustainable exploration and production, knowledge sharing, and professional development was evident and the company continued to support the mission of AAPG and this year's conference theme of step changes in petroleum geology.

Saudi Aramco was a diamond level sponsor for the conference and a sponsor of



Our role as an industry is to build the bridge among industry, academia, and today's students who become tomorrow's professionals.

— Sa'id A. Al Hajri

the IBA program. Houston-based Aramco Services Company and its Upstream team hosted a post-conference core workshop for company staff exploring the topic of fractures and their effect on fluid flow and production, titled "Interpretation of Natural and Induced Fractures and Artifacts in Cores."

your voice

from feedback to 'feedforward'



by Ahmed Abdelmoeti
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"Thank you for your feedback."

We usually use these polite words to end most of our business discussions about our presentations, projects, and even performance evaluations. The question is to what extent the feedback we receive moves us forward.

According to the *Oxford Dictionary*, "Feedback is information about reactions to a product, a person's performance of a task, etc., which is used as a basis for improvement."

However, in many cases the expected improvement does not occur. The person who receives the feedback becomes either defensive or loses confidence because feedback usually focuses on assessment and rating without offering a road map for real improvement.

Author Ken Blanchard said, "Feedback is the breakfast of champions," noting that constructive feedback should emphasize both strengths and areas for improvement. I totally agree, but when we give only feedback, we are still stuck in the past or at least we are stuck in the "basis for improvement," as stated by the *Oxford Dictionary*, without starting the real process of improvement.

"We can change the future. We can't change the past." With this simple quote,

leadership expert Marshall Goldsmith introduced the concept to "feedforward."

Goldsmith explained that it is more productive to help people be "right" through giving "feedforward," than prove they were "wrong" through giving just feedback. When you start giving "feedforward," you shift from an evaluator to a coach. When you adopt "feedforward," instead of just criticizing and judging a person's previous performance, you focus on their development in the future.

As an educator and a member of "Toastmasters," I have come up with, and exercised, a simple process of "feedforward" in several activities. You can also apply these five steps to start practicing the concept.

1. **Appreciate the positive points in the present situation:** This will create an encouraging kickoff and build the rapport needed to ease into the next steps. Avoid wasting time crying over spilled milk and tackling the concerns that can't be fixed. Negative comments about the past are not the best way to enhance the future.

2. **Choose the major area(s) for improvement:** Don't try to fix all concerns at once. Give your utmost attention to address the points that will make a clear difference and improve the future. Success triggers more success, so start with a target that can be

achieved and will make the person who receives your recommendations eager to proceed to the next step.

3. **Focus on the topic, not the person:** Avoid comments such as "You should/shouldn't have done that." Let the person think about the possibilities of improvement by asking questions such as "How can we take this performance to a higher level?" or "What can we do to make our project achieve its goals ahead of time?" Focus on the promise of the future rather than the mistakes of the past.

4. **Let the recipient visualize the future:** By setting a clear road map for improvement, indicate the expected future enhancements. Let the recipient see the benefits of taking your recommendation and what's in it for him or her.

5. **Reinforce the enhancement by giving more "feedforward":** When a certain goal is achieved, use it as an ideal starting point for a new cycle of "feedforward." Highlight the positive improvement and its concrete benefits. And then, go through the steps mentioned above to achieve another goal and so on.

The next time you are expected to give feedback, make a difference and use feedback just as a basis to build your promising "feedforward" process forward.

Saudi Aramco and Air Products inaugurate Kingdom's first hydrogen fueling station

Dhahran — A first step was taken yesterday toward making oil-based hydrogen a reality when Saudi Aramco president and CEO Amin Nasser inaugurated Saudi Arabia's first hydrogen fuel cell vehicle fueling station.

Situated at Air Products' new Technology Center in Dhahran Techno Valley Science Park, the pilot station will fuel an initial fleet of six Toyota Mirai fuel cell electric vehicles, and test the performance of these vehicles and fueling time in Saudi Arabia's environmental conditions.

'sustainable fuel for the future'

Describing the pilot fueling station as a milestone, Nasser said, "This pilot project represents an exciting opportunity for Saudi Aramco and Air Products to demonstrate the potential of oil-based hydrogen in the transport sector and its viability as a sustainable fuel for the future."

Ahmad O. Al Khowaiter, chief technology officer, added, "At Saudi Aramco, we are working on developing breakthrough technologies and solutions as part of our long-term efforts to reduce carbon emissions and address climate concerns."

"It is well-known that our world needs a sustainable system to address environmental challenges while also meeting growing energy demand," said Seifi Ghasemi, Air Products' chairman, president, and CEO. "Hydrogen and fuel cell technologies are well positioned to be part of the solution. We are honored to collaborate with Saudi Aramco to establish and develop a sustainable, hydrocarbon-based hydrogen supply system for fuel cell vehicles in Saudi Arabia."

The new fueling station combines Saudi Aramco's industrial and



From left to right, professor Sahel N. Abduljawwad, acting rector of King Fahd University of Petroleum and Minerals, Air Products' chairman, president, and CEO Seifi Ghasemi, and Saudi Aramco president and CEO Amin Nasser fill a Toyota Mirai fuel cell electric vehicle with high-purity compressed hydrogen during the inauguration of Saudi Arabia's first hydrogen fueling station yesterday. (Photo: Hatim Oweida/MPD)

technological experience with Air Products' know-how and experience in the field of hydrogen fueling.

Air Products' proprietary SmartFuel® hydrogen fueling technology will be incorporated into the new station to supply Toyota Mirai fuel cell vehicles with compressed hydrogen.

expanding the use of oil in clean transport

The opening of the pilot fuel station comes amid growing international recognition that hydrogen could play a significant role in reducing carbon emissions from various energy sectors.

Released last week, the International Energy Agency's "The Future of Hydrogen" report concluded that hydrogen offers a way to decarbonize a range of sectors where it is proving difficult to meaningfully reduce emissions, improve air quality, and strengthen energy security.

"The time is right to tap into hydrogen's potential to play a key role in a clean, secure, and affordable energy future," the

report stated.

Most of the world's current hydrogen production comes from the chemical and petroleum refining industries, and as one of the world's leading producer of oil and gas, Saudi Aramco is well positioned to be a key producer of hydrogen gas.

Aqil Jamal, chief technologist with Carbon Management at the Research and Development Center, explained that the latest technology advancements have made many hydrogen solutions commercially viable.

"Hydrogen has the versatility to provide both short-term, mobile solutions for transport, and long-term, large-scale energy storage solutions for power and industry," said Jamal. "The current barriers to entry are primarily due to a lack of infrastructure."

Saudi Aramco has managed the world's largest reservoirs of hydrocarbons for decades and has significant infrastructure investment in place that could be leveraged for manufacturing hydrogen, as well as the scientific expertise and operational knowledge to further reduce cost and improve efficiency.

promising energy carrier

Hydrogen, which is the lightest and most abundant element in nature, is one of the primary components of crude oil and natural gas, and as an energy carrier, produces no carbon emissions. The only emission is a pure water vapor.

Hydrogen powered fuel cell electric vehicles offer both longer driving ranges and much shorter refueling time compared to battery electric vehicles.

The first hydrogen fueling station in Saudi Arabia

x6 Equipping the first fleet of Toyota Mirai cars with a 500 km driving range. Water as the only emissions and a five minute refueling time.

Striving to reduce emissions while addressing the world's energy needs.

Combining Saudi Aramco's technological experience with Air Products' hydrogen fueling expertise.

For a clean, secure, and affordable energy future

“

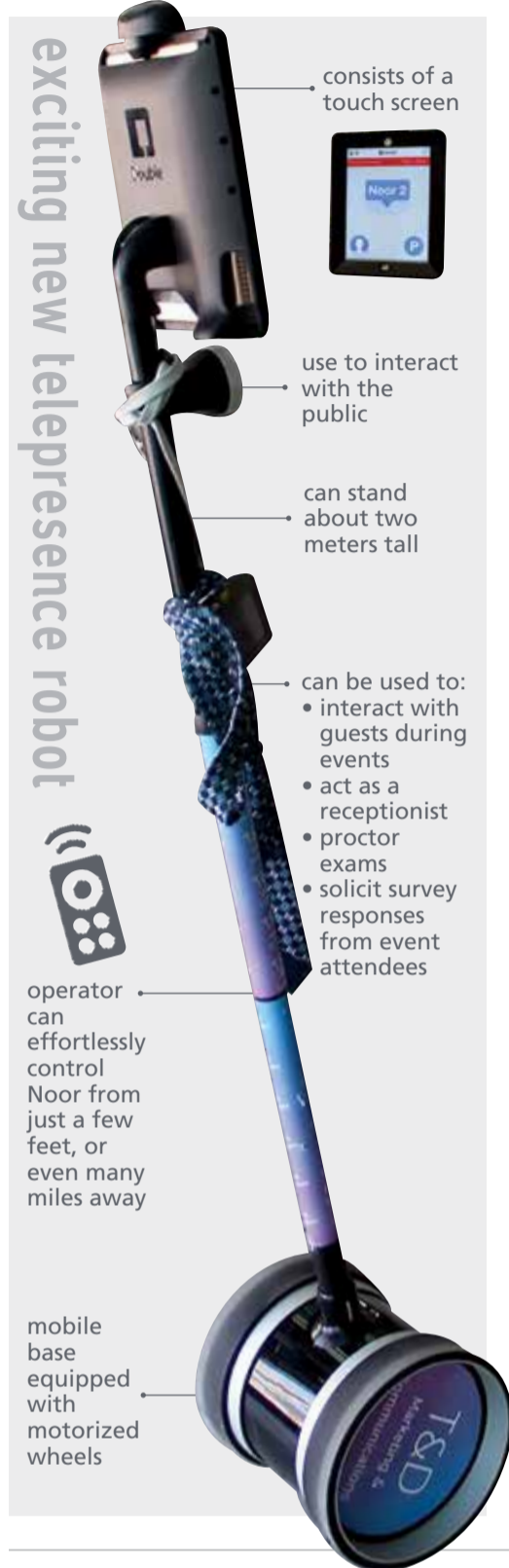
This pilot project represents an opportunity to demonstrate the potential of oil-based hydrogen in the transport sector.

— Amin Nasser



T&D's new 'Noor' robot steals the show

by Mohammed N. Alotaibi and James Tolland



Dhahran — Many visitors to Training and Development (T&D) events may have noticed one of Saudi Aramco's newest and most sophisticated marketing tools — "Noor," an exciting new telepresence robot that operators use to interact with the public.

The Noor robot can stand about two meters tall and consists of a touch screen and a mobile base equipped with motorized wheels. Utilizing advanced telecommunications technology, an operator can effortlessly control Noor from just a few feet, or even many miles away.

T&D marketing staff have been using Noor to interact with guests during events, act as a receptionist, and even proctor exams.

Noor's many interactive features can also be used to solicit survey responses from event attendees. The inherent versatility of the robot means that it can be utilized in a number of possible scenarios or locations.

a point of interest

Deena K. Nuaimi, a business system analyst, said T&D acquired Noor to better use technology in its ongoing marketing efforts. Nuaimi said the robot has been highly effective in drawing a great deal of interest from visitors at events where it has been used.

"Noor is a versatile tool that we've found useful in a variety of settings," said Nuaimi. "We've noticed that people really enjoy interacting with Noor. There's a definite wow factor there."

During a recent event at the Heritage Gallery, Noor was successfully used in multiple locations to interact with people and answer questions, said Yahya Shareet, a career counselor.

Noor was also recently employed as a proctor in Abqaiq for a recertification test at the Industrial Certification Unit. The device was used to help proctor the tests and answer questions from the students.

Because Noor can be operated remotely, this function could come in handy to better help the company use its workforce, which



The Noor robot is currently being successfully utilized at various company events.



A guest interacts with the Noor robot. Standing about 2 meters tall, Noor consists of a touch screen and a mobile base equipped with motorized wheels. Using advanced telecommunications technology, an operator can effortlessly control Noor from just a few feet, or many miles away.

is dispersed throughout the Kingdom. For example, marketing professionals could operate Noor from their offices instead of traveling to a location for an event, eliminating the need for them to travel, or for additional personnel to be employed.

Marketing professionals within T&D are just beginning to scratch the surface of all the functionalities Noor provides.

Shareet sees a bright future for Noor and other technological tools that T&D is leveraging to deliver its message regarding the

value of T&D services.

"Noor is an amazing tool that our audiences really respond to," Shareet said. "We look forward to using it to help tell all the amazing stories that come from T&D."

In short, the Noor robot represents yet another significant technological step forward for Saudi Aramco. Robots such as Noor are enabling the company to reach greater audiences than ever before, and the potential applications of this kind of technology are literally endless.



Noor is a versatile tool that we've found useful in a variety of settings. We've noticed that people really enjoy interacting with Noor. There's a definite wow factor there.

— Deena K. Nuaimi

Upstream puts focus on leveraging knowledge to forge the future

Dammam — The mobilization of leaders across the globe taking specific actions to leverage knowledge has been gaining momentum. The interest in the impact of knowledge management for organizations and of knowledge-based economies has brought the topics to the forefront of corporate and national strategies, conferences, books, academic research, and more.

The focus on knowledge as a critical commodity, and the need to leverage and share it more broadly to maximize return on investment, cannot be denied.

For companies, that translates into accelerated learning for the workforce, optimized business efficiencies, quicker-to-market products, higher quality, and cost savings. For economies, it means a more educated populace, accelerated innovation, and higher standard of living and gross domestic product.

The rapidly evolving technology realm plays a tremendous role in helping knowledge flow and connecting people, as most have benefited with social media — the most widely used knowledge sharing tool.

The American Productivity and Quality Center's (APQC) recent conference in Hous-

Upstream knowledge officer Heather Bence delivers a presentation to faculty members at Imam Abdulrahman Bin Faisal University in Dammam. The event focused on knowledge management and the role of IR 4.0 technologies in the industry, as well as discussion on the knowledge-based economy in Saudi Arabia.



ton also emphasized the role knowledge plays in getting the most from Fourth Industrial Revolution (IR 4.0) technologies to more quickly bring quality knowledge closer to those who can leverage it the most, while also connecting like-minded people together for synergy and more competitive deliverables to society.

These topics were discussed by Heather Bence, Upstream knowledge officer with Saudi Aramco's Upstream Business Support,

during a recent talk at Imam Abdulrahman Bin Faisal University (IAU) in Dammam. Bence shared insights encompassing a knowledge management overview, knowledge management industry trends, takeaways from the recent APQC knowledge management conference, the role of knowledge management in applying IR 4.0 technologies, and the knowledge-based economy in Saudi Arabia — including the role of knowledge in the 10th Development

Plan and Saudi Vision 2030.

Maqsood Mahmud, head of the Research Unit with the College of Business Administration at IAU, was the organizer of the informal event, with about 25 faculty and the vice dean in attendance. The presentation was followed by a discussion on how universities can play a stronger role.

"My colleagues found the content highly informative, with thought-provoking insights, and on target with contemporary trends in the Kingdom, the knowledge-based economy, and public-private partnerships," said Mahmud. "We believe that the success of Saudi Arabia is keenly based on the strong correlation between industry and academia."

The event was very engaging with a broad range of questions — many pertaining to the university and expanding the impact of knowledge more broadly into the Kingdom.

Potential ideas for subsequent activities followed, and those suggestions will be assessed for alignment with the Upstream business line or referred to University Relations, entrepreneurship entities, and other areas of Saudi Aramco.

"We believe that the success of Saudi Arabia is keenly based on the strong correlation between industry and academia.

— Maqsood Mahmud

elevating the bar on excellence

Southern Area Oil Operations recognizes outstanding efforts



Khaled A. Al-Buraik joins other members of Southern Area Oil Operations (SAOO) in congratulating more than 180 employees during the 2019 SAOO President's Excellence Awards. The awards fell under 14 categories that provide equal opportunities for employees to participate and demonstrate their excellence in business. (Photo: Ding/MPD)

Abqaiq — Some of Southern Area Oil Operations' (SAOO) best individuals and teams were recently recognized during the 2019 SAOO Vice President's Excellence Awards.

The awards are designed to promote consistent, positive, and objective rewards for quality improvement. More than 180 employees were recognized from across SAOO at the ceremony held in Al-Murjan Hall.

"Clearly, you are raising the bar for innovation and problem solving," said SAOO vice president Khaled A. Al-Buraik. "You are Saudi Aramco pioneers."

Al-Buraik noted that excellence both steers business for Saudi Aramco and defines its various operations.

"As our world changes, amid the Fourth Industrial Revolution, and as our nation transforms for the future, excellence has never been more important," said Al-Buraik. "Our people not only perform to the highest standard, but you also are the key to Saudi Aramco's innovation culture. Thanks to you, Saudi Aramco is at the vanguard of 21st century innovation."

The awards fell under 14 categories that provide equal opportunities for employees to participate and demonstrate their excellence in business, including:

North Ghawar Producing Department (NGPD)

- **Safety Excellence:** Reece Bavliz, Hussain Abdulmohsin, Ali Khalifa, Ali Basri, and Mohammed Rashidi for improved safety performance.

- **Environmental Excellence:** Khalid Buradha, Abdullah Ghamdi, Abdullah Askar, and Abdulaziz Obaid for their work on the One Million Trees Initiative.

- **Process Plants Automation Excellence:** Peer Shiffli, Abdulaziz Zahrany, Fawaz Patta, Faisal Hammad, and David Spriggs for a re-engineered corporate emergency responder tool.

- **Groundwater Conservation Excellence:** Miguel Lopez Andreu and Ramsey White for their efforts on wash water ration control.

- **Patent Excellence:** Mohammad Zahrani for Cathodic Protection Automated Current and Potential Measuring Device for an Anodes Protecting Vessel Internals patent.

Khurais Producing Department (KhPD)

- **Energy Excellence:** Badr Hussain, Saif Blui, Mohammed Malki, and Turki Deghailbei for installation of the Khurais high-pressure gas compressor swing lines network.

- **Environmental Excellence:** Ayedh Hajri, Sohaib B. Alhajhusein, Amro Abbasi, and Abdullah Malki for Khurais artificial wetlands and biodiversity.

- **Patent Excellence:** Kamarul Amminudin and Mohammed Abdulmohsin for a Gulf Cooperative Council patent for developing a performance monitoring tool.

- **Patent Excellence:** Kamarul Amminudin

for a U.S. patent with an energy performance metric in hydrocarbon-producing facilities.

Sea Water Injection Department (SWID)

- **Energy Excellence:** Imran Shah, Fadhel Ghuwainem, and Hassan Jama for energy performance monitoring dashboards.

- **Plant Network and Security Excellence:** Saleh Fuwaires, Sara Mousa, Abdullah Hareth, Qassem Alwi, and Khalid Rabea for SWID mesh control system network optimization and enhancement.

- **Groundwater Conservation Excellence:** Ahmed Orfali, Mohammad Minhas, Prafulchandra Sonara, Momcilo Malis, and Ammar Monshi for groundwater conservation at the Qurayyah Sea Water Plant.

Shaybah Producing Department

- **Outreach Excellence:** Abdulaziz Fathi and Tariq Twaqiq for the Shaybah employee and family safety and health day.

- **Patent Excellence:** Saad Jalalah for a Combined Chuck Jaws Tool patent.

- **Patent Excellence:** Faisal Enazi and Maher Uraijah for a Using Iso-Octane to Enhance TEG Systems Efficiency patent.

South Ghawar Producing Department (SGPD)

- **Safety Excellence:** Fahad Amri, Ahmed Farhat, Abdelghani Daraiseh, Mohammed Abahareth, and Sureshkumar Pathapate for a Smart Work Permit System.

- **Patent Excellence:** Syed Haizir, Syed Khuzzan, Randall Franklin, and Marnix Jan Tueling for a Simplified Logic Injection Control for Demulsifier Chemical Automation patent.

North and Central Ghawar Gas Producing Department

- **Process and Plants Automation Excellence:** Musab Talal and Abdullah Mukhaizeem for a corrosion management dashboard.

- **Training and Development Excellence:** Ahmad Khalifa and Antonio Sabulao Jr. for a gas well simulator.

- **Technical Paper Excellence:** Musab Talal and Abdullah Mukhaizeem for "Optimization Module for Aged Flow Lines."

- **Patent Excellence:** Khalid Ghamdi and Fathi Bugubaia for a Hydrocarbon Flow Line Corrosion Inhibitor Overpressure Protection patent.

Southern Area Well Completion Operations Department

- **Employee Engagement Excellence:** Sultan Mutairi, Ibrahim Najie, and Ahmed Arnous for efforts to make the department the highest scoring in employee engagement. (The award was presented to the highest scoring SAOO departments in the annual fourth quarter Employee Engagement Pulse Survey. The 2019 awardees are committed to conveying the vice president's message pertaining to "excellence" and will be the SAOO ambassadors for those initiatives.)

- **Emerging New Technology Excellence:** Thamer Abdulghaffar and Nasser Qahtani for utilizing AramcoLink to streamline rigless operational data.

Abqaiq Plants Maintenance Department

- **Outreach Excellence:** Ilyas Qahtani, Khalid Zahrani, Hashem Yousif, and Ahmad Zahrani for the Safari Abqaiq Festival.

- **Patent Excellence:** Mohammad Qahtani and Bandar Rashed for a Utilizing Clean Gas to Reliably Operate Main and Pilot Relief

Valve patent.

Abqaiq Plants Operations Department

- **Projects Excellence Award:** Montaser Mubayidh, Ibrahim Ghamdi, Mohammed Rasheedi, and Haider Bashir for the BI-25-0044: Saudi Bahrain Pipeline Project and Successful Completion of AB-4.

SAOO Technical Support Department

- **Optimization Excellence:** Turki Oufi, Murtada Sowajj, and Khalid Dawood for Project Schedule Optimization, BI-10-10215 to Replace Affected HIC Vessels (NGPD).

- **Patent Excellence:** Nasir Ullattumpoyil and Abdulaziz Subaie for a Determining Chemical Oxygen Demand patent.

Southern Area Production Engineering Department

- **Emerging New Technology Excellence:** Sajid Mohmood, Mesfer Ghahtani, and Alaa Shawly for the first worldwide application of Active iFC Power in Khurais.

- **Projects Excellence:** Muhammad Hajri, Shoaib Murtaza, Hussain Quwaisim, and Mohammed Dahlan for preparing the ANDR/FZRN Lower Fadhili Increment through the development of novel acid stimulation recipes and supporting the Acid Stimulation Execution Campaign.

- **Technical Paper Excellence:** Ramiro Cedeno Rojas and Abdullah Ghannam for "A Novel Approach to Identifying and Evaluating External Corrosion Using Advanced Technology."

- **Patent Excellence:** Muhammad Idris and Mohammed Atwi for a Systems and Methods for Finding and Solving Wet Gas Venturi Meter Problems in Real-Time patent.

- **Patent Excellence:** Muhammad Idris, Ahmed Mahsoon, and Mohammed Atwi for a Performing Continuous Daily Production Allocation patent.

- **Patent Excellence:** Nasser Hajri for a Determining Wellbore Leak Crossflow Rate between Formations in an Injection patent.

- **Patent Excellence:** Mohammed Huraifi, Mohammed Madan, Muhammad Hajri, and Obimalotaoso Isichei for their Analyzing Productivity Indices Decline in Wells patent.

- **Patent Excellence:** Aslan Bulekbay, Mustafa Khowaildi, and Prasad Karadkar for a Hydrocarbon Well Deliquification Using Dry Ice patent.

Southern Area Manpower Development Division

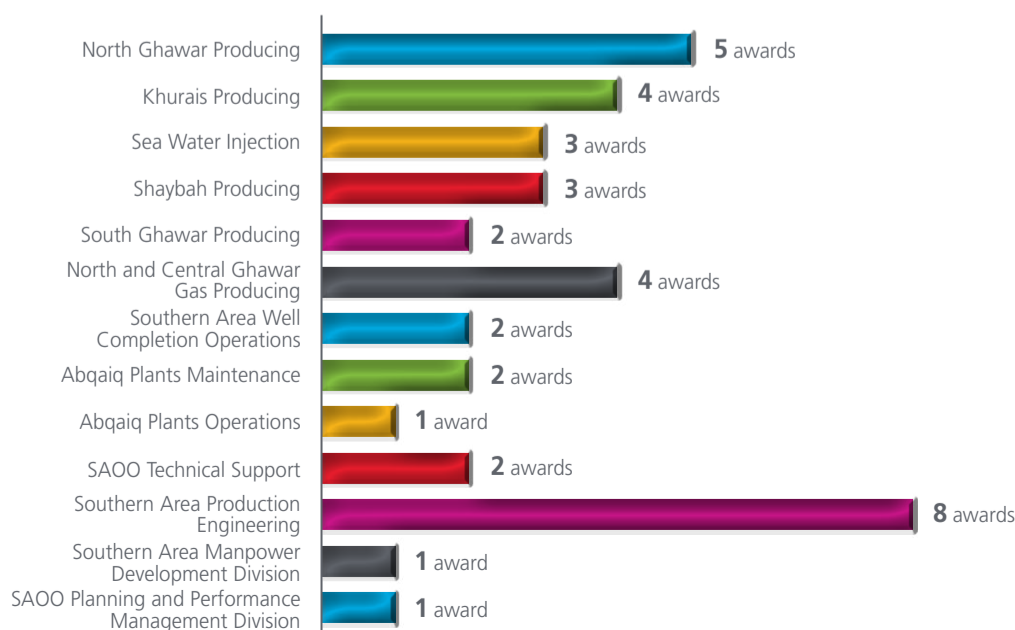
- **Training and Development Excellence:** Mathew Hope, Waheed Saeed, and Abdulrahman Rowaished for SAOO's maintenance evaluation scheduling enhancement process.

SAOO Planning and Performance Management Division

- **Optimization Excellence:** Muhammad Imran Nasir, Abdulaziz Ghamdi, Ali Binalshaikh, and Abdullah Amri for SAOO's monthly key performance indicator dashboard.

by the numbers ...

SAOO VP Excellence Awards



high-pressure Khursaniyah gas wells rigless completion a unique achievement in NAOO

by Olakunle Ayoola, Ali Al-Muslim,
and Ahmed Al-Ghamdi

Northern Area Oil Operations (NAOO), as part of its commitment to growth and development, recently achieved another historic milestone by safely and successfully completing, riglessly, 22 high-pressure sour gas wells in NAOO's Khursaniyah onshore gas field.

Nestled among the prolific oil field with the same name, the Khursaniyah field's gas producing reservoirs were discovered in 1987.

Khursaniyah gas development consists of 22 wells drilled in the Khuff reservoir, with a target production of 500 million standard cubic feet per day (scfd) of nonassociated gas. During the discovery of this gas field, it was determined that to ensure meeting the gas production targets, the wells must be treated with chemicals at high-pressure (fracturing) to improve production prior to putting the wells on stream.

The safe, successful execution and completion of this campaign marks a major milestone in that this is the first high-pressure, high temperature fracturing campaign completed in the Northern Area without employing a rig.

To ensure delivering the wells on time, two simultaneous rigless setups (known as "sites") were operated. Saudi Aramco experts oversaw the operations around the clock at both sites, which were oper-

ated by different service companies.

This marks a unique operation in NAOO, and it was executed with the utmost professionalism and extreme focus on safety. A testament of this is evident from the number of safety related lessons learned from the operation, which were implemented by participating service companies in their worldwide operations.

rigless = cost savings in Northern Area

The completion campaign involved several critical activities, including fracturing to improve the well's production performance. Previously, a rig would be required to handle these complex activities. Therefore, without deploying a rig, the successful campaign resulted in significant cost savings while freeing the rigs to attend to other wells.

To achieve this, the Northern Area Production Engineering and Well Services Department (NAPE&WSD) established a highly skilled well completion team composed of experienced professionals (expatriates and Saudis) that included motivated young Saudi engineers.

The team also achieved another historic milestone — NAOO's first rigless acid fracturing of a Khuff gas well. By using this technology, the wells are able to produce double the expected production rate. NAPE&WSD collaborated with the Northern Area Gas Producing Department, the



Management visits a Khuff gas well site on the Khursaniyah onshore field for a safety talk. Frequent management site visits for such talks were a key part of the first ever coiled tubing operations by Saudi Aramco's Northern Area Oil Operations.

Southern Area Well Completion Department, and other support organizations to complete the wells. Khursaniyah gas wells are expected to be put onstream later this year.

"I am pleased to see NAPE&WSD develop the capability to safely and successfully conduct such complex well completion activities riglessly for the first time. Moreover, the opportunity was taken to develop staff competencies with unique skill sets. I am proud of the team for rising to the challenges posed by this project and are therefore confident that going forward, the team can accomplish more," said AbdulRahman A. Al-Ghamdi, NAPE&WSD manager.

safety is the first priority

Stringent safety measures were applied to achieve safe, successful, and timely delivery of this unique project. Because the target reservoir is a high-pressure reservoir, and contains dangerous hydrogen sulfide gas, the highest safety precautions were implemented during the activities. Equipment assigned to the project were of the best quality, and a number of unique operating procedures were applied.

To ensure safe operations, no critical procedures were performed at night, and multilayered safety measures were put in place during high-pressure pumping activities, which included multiple inspections and clearance of high-pressure equipment to assess fitness for operation, use

of highly experienced service company personnel, and the presence of the service company's product and service delivery manager on location during critical operations.

Peer reviews were performed at every step, from the initial job procedure publication to the execution of all aspects of the jobs.

"It was a privilege to participate in the first NAOO rigless gas completion campaign, which has been safely and successfully completed on time while achieving more than double the target production rate. Stringent safety measures were applied to mitigate several risks during the campaign," said Rotimi F. Adesegha, general supervisor of the Northern Area Gas Production Engineering Division.

young Saudis at the helm

Through training and on-site participation of the NAOO's young engineers and operators in the gas wells' rigless completion activities, NAOO now has a competent gas well completion team in place that is ready for future projects.

"Performing well intervention in high-pressure sour gas wells is a demanding task. By capitalizing on the diligence and experience of our employees, including young Saudi engineers, we were able to successfully perform these critical operations," said Faisal Al-Dossary, superintendent of the Northern Area Onshore Well Services Division.



This coiled tubing operation at a Khuff gas well site on the Khursaniyah onshore field is a first for Saudi Aramco's Northern Area Oil Operations (NAOO). Through training and on-site participation of the organization's young engineers and operators in the gas well's rigless completion activities, NAOO now has a competent gas well completion team in place that is ready for future projects.

NAOO
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million scfd of
nonassociated
gas

what is the 'Future of Work' in the oil and gas industry?

The future certainly poses a number of challenges and opportunities for the oil and gas industry. Increased acquisitions in downstream and petrochemicals, new consumer and retail engagement, and the evolving role of technology mean that the skills of tomorrow will undoubtedly be different than the skills of today.

Saudi Aramco's preparation for these trends is well underway, through deep and comprehensive training and development competencies, leading-edge technological capacity, and strategic data and workforce analytics capabilities.

by Deema Hadrami

Dhahran — The "Future of Work" is a topic on the minds of many leaders globally. What does this future hold?

For many, it represents a threat — outsourcing, uncontrolled artificial intelligence (AI), and robots taking human jobs. For others, the future of work is an opportunity — access to everything everywhere — via an all-encompassing internet while self-driving cars shuttle workers to the office.

dual narrative

The media also presents this dual narrative. One article says that AI will, "displace 40% to 50% of our jobs,"¹ while another in the same publication says that "AI will create 58 million new jobs."²

To address the uncertainty and complexity of this subject, the World Economic Forum (WEF) recently convened a task force on the "Future of Work in Oil & Gas," which was co-chaired by Nabil K. Al-Dabal, executive director of Human Resources (HR) with Saudi Aramco, and Michelle Green, Chevron vice president of HR for Downstream and Chemicals.

The meeting featured more than 25 HR executives, academics, and experts from BP, Chevron, Equinor, Repsol, Petronas, National Oilwell Varco, OPTIO, Mercer, the Society of Petroleum Engineers, and ATKearney.

'investment paying off'

"Saudi Aramco has a long history of investing in our people and our training, and we are very proud to show our peers how this investment is paying off," said Al-Dabal. "The success of companies in the 'Future of Work' will depend largely on the innovation, creativity, and complex problem solving abilities of their people — and this is where we truly demonstrate our excellence."

The two-day visit was organized by Saudi Aramco's Organization Consulting Department and focused on key issues integral to preparation for the future of work, including HR strategy, workforce planning and skill transition matrices, and the crucial need for upskilling and reskilling as technology transforms the industry.

an inside look at Saudi Aramco

The delegation was introduced to Saudi Aramco's facilities with an overview of our global operations and the "Future of Jobs @ Saudi Aramco" — an internal team whose goal is to identify the impact of the Digital Transformation Program on the workforce and how to best utilize talent during this process.

The task force also toured the Oil Supply Planning and Scheduling Center and the Upstream Development Center, where they saw Saudi Aramco's cutting-edge training and development facilities for petroleum engineers, including leading technologies such as "the Cave" and a "rig simulator" that ensure engineers are ready for the Fourth Industrial Revolution.

The task force also flew to Shaybah to view operations and Saudi Aramco's flagship wildlife reserve to better under-



Hanny Agawani, a 3-D visualization technology developer with Upstream Continuing Excellence (UCE), speaks with Michelle Green, vice president of Human Resources for Downstream and Chemicals with Chevron, during a visit to the Upstream Petroleum Development Center in Dhahran. Along with Nabil K. Al-Dabal, executive director of Human Resources with Saudi Aramco, Green is the co-chair of a task force convened by the World Economic Forum on the "Future of Work in Oil & Gas." Agawani discussed with Green the use of custom in-house developed apps at UCE that utilize technologies such as touch screens, virtual reality, and augmented reality to assist with the training and development of employees.

stand our commitment to the environment and sustainability.

'Toward a Reskilling Revolution'

The second day of the visit, which was held in the Knowledge Tower at the King Abdulaziz Center for World Culture, focused on the road map and action times that will guide leadership in strategy and planning.

WEF representatives began with a discussion on their report "Toward a Reskilling Revolution: Industry-led Action for the Future of Work," which provided key strategies, innovative frameworks, and data-driven tools to support the business case for investment in training workers for the jobs of the future.

Results of a survey of more than 7,300 business executives, HR leaders, and employees from around the world in nine different industries were presented to the group. Key trends included addressing the growing gap in digital fluency between skilled and unskilled workers, promoting lifelong learning to keep up with the rapid pace of technology, and understanding the varying impact of digitalization among different businesses.

While the oil industry is relatively "skills stable" (70%) compared to other industries such as information and communications technology and financial services, the data still presents a compelling case for a greater introduction of digital capability, data analysis, and emotional intelligence among all employees.

specialized academies: a Saudi Aramco solution

Mohammed T. Alsubaiei, manager of the Local Workforce Development Department (LWDD) with Saudi Aramco,

presented on "National Specialized Partnership Academies," which were highlighted by WEF as a "global best practice" in closing the skills gap.

"Saudi Aramco's effort to prepare the Kingdom for the 'Future of Work' is immense," said Alsubaiei. "The company, through LWDD, is working to establish additional institutes to build the training capacity for 360,000 participants over 30 academies by 2030. This will form the cornerstone of a strategy to help young Saudis acquire the skills and qualifications to meet energy sector demands."

Others' solutions included a "Digital Academy," which consists of blended learning methods, in-class learning, and e-Learning, to help prepare their global workforce for digital transformation. The academy leans on "social learning," where people use technology to learn from one another via different methods.

The task force visit closed with multiple commitments from the industry to investment in upskilling/reskilling programs, as well as a pledge to continue to collaborate, find and share best practices, and to broaden the scope to include non-oil and gas industries to maintain a leading role in the future of work.

1. Lee, K-F: "How Artificial Intelligence Job Displacement Will Affect the Worldwide Economy," *Forbes*, Oct. 18, 2018. Accessed at: <https://www.forbes.com/sites/quora/2018/10/09/how-artificial-intelligence-job-displacement-will-affect-the-worldwide-economy/#41bb51ca1f52>

2. Chowdhry, A.: "Artificial Intelligence to Create 58 Million New Jobs by 2022, Says Report," *Forbes*, Sept. 18, 2018. Accessed at: <https://www.forbes.com/sites/amitchowdhry/2018/09/18/artificial-intelligence-to-create-58-million-new-jobs-by-2022-says-report/#773f27824d4b>



Saudi Aramco has a long history of investing in our people and our training, and we are very proud to show our peers how this investment is paying off.

— Nabil K. Al-Dabal

Five jobs that won't exist in 2030:

1. Postal couriers
2. Bank tellers
3. The print industry
4. Drivers (taxi, uber, private)
5. Librarians

Five jobs growing in demand:

1. Doctors
2. Business professionals
3. Artists
4. Strategists
5. Emergency services

KT at 10 providing knowledge to the future workforce



Our new generation is handling critical tasks, and we are using the subject matter experts developed throughout the program to troubleshoot maintenance and operations failures to prevent future occurrences.

— Mohammed Herz



Mark Roads shares some of his 20 years of experience as a machinist with a young colleague in Saudi Aramco's Sea Water Injection Department. Roads says he has two strategies to motivate young employees. First, he lets the young employees know he is there to help their development and not judge them. Second, he provides a weekly progress update to the employees' unit heads so they can be recognized when appropriate.

At the core of Saudi Aramco's Knowledge Transfer Program are the employees who pass on their critical, experience-based knowledge to their younger colleagues. In the program they are classified as "knowledge providers."

Some of these people have collaborated for years with the Learning Solutions and Services Department's Knowledge Management Group to mitigate the impact of Saudi Aramco's demographic challenges. This article will profile three long-term knowledge providers, and share some of the challenges and successes they've had along the way.

Mark Roads

Roads is a maintenance machinist with the Sea Water Injection Department. He's been a machinist for 20 years — five with Saudi Aramco. According to Roads, the most important thing a knowledge provider should do initially is increase general buy-in for the Knowledge Transfer Program.

"The biggest challenge I faced initially was motivating my recipients and convincing them that I was not trying to 'pass' or 'fail' them," said Roads.

"Most of them graduated recently from their apprenticeship, so they were not too far removed from the Industrial Training Center. My strategy to motivate them had two components. I would initially inform my recipients that I was there to help their development — not to judge them. Once they understood the purpose of the program, I made sure I provided a weekly progress update to their unit heads. This allowed the unit heads to allocate time during their weekly safety meetings to recognize recipients who had improved."

Roads also stressed the importance of creating a knowledge-gap closure plan.

"I look at our planned work sometimes even six months in advance," said Roads. "I work with the division head to get people assigned to specific activities during plant shutdowns. When special activities are not available, I pick the most common activities to ensure the greatest impact on

our daily operations."

Proper implementation of the program has yielded benefits. Roads said 100% of his unit passed the recertification test on their first attempt. When asked what advice he had for newer knowledge providers, Roads stressed the importance of making your efforts visible.

"The provider needs to be seen in the field," said Roads. "If management sees you out there working with the recipients, buy-in will follow."

Michael Cowie

An environmental consultant with the Environmental Protection Department's (EPD) Radiation Protection Unit, Cowie shared how seriously his organization takes knowledge transfer.

"EPD has placed significant importance on knowledge transfer," said Cowie. "I saw it as part of my role when I came to Saudi Aramco. Now that the process has been formalized and structured, it has become an intrinsic part of the department's activities."

Cowie's area of expertise is ionizing radiation protection. One area he targeted for knowledge transfer was how to perform surveys and tests in adverse weather conditions.

"When planning a survey in Saudi Arabia, you have to take into account challenges with the weather," said Cowie. "When the temperature gets up there, it can directly affect the response of your radiation detector, so you need to plan to be there early. I make sure to transfer things like this since you generally won't find them written down anywhere."

Mohammed Herz

Currently working as a maintenance electrician in the Hawiyah Natural Gas Liquids Recovery Department, Herz joined Saudi Aramco in 2003.

One of his most effective actions was using his knowledge transfer assessments to identify an area of concern and working with his local Job Skills Training Center and the National Industrial Training Institute (NITI) to address this concern.

"Last year, Gas Operations knowledge providers and NITI subject matter experts concluded a three-day workshop to develop a GUTOR UPS curriculum," said Herz. "The team ended up creating a three-tier strategy that will now be implemented across our training centers. This activity would have been more difficult without the assessments from the Knowledge Transfer Program."

Herz has also noticed a positive change since he began his work as a knowledge provider.

"Our new generation is handling critical tasks, and we are using the subject matter experts developed throughout the program to troubleshoot maintenance and operations failures to prevent future occurrences," said Herz.

The three knowledge providers highlighted here represent only a small sample of the men and women dedicated to mitigating risks to our institutional knowledge.

There are more than 1,450 knowledge providers currently providing knowledge to over 13,500 recipients. It is through their efforts that the company will maintain its position in an increasingly competitive industry.



Michael Cowie, an environmental consultant with the Environmental Protection Department's Radiation Protection Unit, is an expert in ionizing radiation protection and takes knowledge transfer seriously. "I saw it as part of my role when I came to Saudi Aramco. Now that the process has been formalized and structured, it has become an intrinsic part of the department's activities."

KPIs: driving process safety, spurring conversations

by Richard Bartlett

'Udhailiyah — The use of key performance indicators (KPIs) to measure process safety was put to the test at a recent Process Safety Community of Practice roundtable meeting hosted by the 'Udhailiyah Area Loss Prevention Division.

Hesham Al Adel, 'Uthmaniyah Gas Plant (UGP) manager, emphasized the importance of KPIs as tools in monitoring the layers of protection to ensure facility safety.

The Loss Prevention Department's (LPD) Jason Wan highlighted the importance of process safety during his presentation on "Corporate Level Process Safety Key Risk Indicators (KRIs)."

"The watershed event that led to process safety becoming a key focus across the energy sector was the 2005 explosion at a Texas City refinery," said Wan. "The driving logic of safety at the time was to keep the occupational safety KPIs (e.g., lost time injury rate) as low as possible, but this focus failed to consider a crucial factor — the hazards present within the processes being used."

Wan went on to explain how Saudi Aramco makes use of KRIs to systematically report, investigate, and communicate any lessons learned from process safety incidents.

what is a KRI?

Unlike KPIs, which evaluate the success of an organization, KRIs are predictors of unfavorable events that can adversely affect an organization. KRIs are predictable and can be used as early-stage warning signals and for tracking trends over a period of time, said Wan.

"Saudi Aramco has designed five corporate-level KRIs that act as a catalyst for decision making. These keep track of



Jason Wan responds to questions from the audience following his presentation on "Corporate Level Process Safety Key Risk Indicators (KRIs)" at a recent Process Safety Community of Practice roundtable meeting hosted by the 'Udhailiyah Area Loss Prevention Division. Wan was one of several subject matter experts to present at the meeting.

equipment inspections, the integrity of equipment and assets, compliance with our work permit system, safety recommendations, as well as the number of serious process safety events," he said.

Mohammad Al-Mulhim, from LPD in 'Udhailiyah, explained how KPIs form part of the Process Safety Excellence Initiative Implementation Plan No. 4 — "Proactive Approach to Process Safety Implementation." He noted that there are numerous reasons to track process safety KPIs, including improving reliability, avoiding complacency, and communicating performance.

KPI success stories

Faisal Alshamrani, a UGP field compliance coordinator, shared success stories



Faisal Alshamrani, a field compliance coordinator at the 'Uthmaniyah Gas Plant, delivers his presentation on the success of key performance indicators. A recent roundtable session in 'Udhailiyah focused on KPIs and key risk indicators.

since the implementation of KPIs at the site, confirming that the auditing of management of change procedures had improved by 25%, while KPIs for emergency shutdown systems had shown a 30% improvement.

The South Ghawar Producing Department (SGPD) is another role model site, and field compliance coordinator Bandar Absi shared some of its successes. He noted that over a two-year period, the number of alarms used to record deviation from a safe operating limit had been reduced by 66%. Through efforts to improve employee engagement, all noncompliance related to the company's work permit system has been reduced significantly, Absi said.



Through taking ownership of KPIs and interacting with them, proponents turn them from targets into stories.

— Jason Wan

using KPIs to tell stories

Wan noted that UGP and SGPD are prime examples of how proponents had customized KPIs to improve safety, stressing that KPIs should not be used simply as target setting tools.

"Through taking ownership of KPIs and interacting with them, proponents turn them from targets into stories. If there is bad news, how can it be fixed? And if there is good news, how can it be maintained?" he said.

Using KPIs to tell stories will allow Saudi Aramco to continue to enhance its safety processes. After all, KPIs are not about numbers or targets; they are about ensuring the safety of our employees, contractors, and facilities.

building your brand through a better self-image, understanding

by Raneem Ismail

Jiddah — As part of the efforts to provide new ways to develop human capital and elevate knowledge and abilities, the Western Region Industrial Security Operations Department (WRISOD) recently conducted the kickoff of the "My Development" campaign in Jiddah. More than 200 WRISOD employees attended the event.

The objective of the campaign, which featured the theme "Shape Your Development Road Map," was to enrich and redefine employees' self-image, reaffirm policy knowledge and understanding, and streamline and illustrate rights and responsibilities. The campaign sought to cultivate two-way communication skills, introduce emotional intelligence, and structure a successful workplace environment.

Subject matter experts from the WRISOD Training Group and Security personnel, the Safety and Industrial Security (S&IS) HR Group, and the Personnel Department's Performance Management organization conducted five informative and interactive sessions.

who am I?

After a welcome message from Bader N. Al Subaey, acting WRISOD manager, Sultan S. Safari delivered a session on improving self-image and building self-trust among security personnel, urging employees to maintain positive thoughts, and personal beliefs and values.

what about my PMP?

Waleed R. Hariri, an HR professional and a member of the Outreach initiative, helped provide a common understanding of PMP in a session through educating employees about their rights, and reviewers about their duties. The session involved various subjects such as factors of PMP success and timelines, meeting preparations, and ways to conduct effective PMP meetings, as well as the proper way of holding difficult conversations.

The session also covered the topics of assigned ratings and subsequent changes, SMART goals setting, calibration and compliances, as well as grievances related to PMP ratings.

a journey of the mind

Ahmad J. Hejazi of the WRISOD Training Group presented on the "Whole Brain Thinking" concept, its place in our day-to-day work, and how it helps employees better communicate with colleagues and customers.

The key, Hejazi noted, is in understanding diverse thinking styles, identifying one's own and others' thinking preferences, and developing strategies to tailor communication for optimum outcomes. During the session, attendees participated in individual exercises to diagnose their brain dominance by applying the Herrmann Brain Dominance Instrument System, which shows that through understanding and thinking preferences, an individual can analyze behav-



Ahmad J. Hejazi demonstrates the "Whole Brain Thinking" concept to employees attending a session of the recent "My Development" campaign kickoff in Jiddah. More than 200 employees participated in the initial event, which will be followed by several visits across the Western Region.

iors that will result in improving the ability to interact with others.

self-development

Ismail A. Ismail and Badr Al-Yaquout of the S&IS HR Group presented on self-awareness and engagement, and how that impacts self-development. In the "Self-Awareness" session, the two focused on how people understand themselves and the importance of positive thinking, beliefs, and values, and how they impact actions related to personal growth, health, business improvement, management, and team building.

The two noted that individuals tend to underestimate themselves and inadvertently yield their power to others. To highlight this message, they shared a metaphor of an old and crumpled \$100 bill, which despite

its history of difficulties, and being worn down by past experiences, still maintains its value. They noted people are just the same — as long as they hold on to their values.

A subsequent session focused on employees' roles in self-development and the importance of teamwork.

development resources

Ali Al-Shahrani of the WRISOD Training Group demonstrated the accessible development resources and existing paths to gain the necessary level of knowledge and skills. The session encouraged self-growth to boost productivity.

Following the successful kickoff meetings in Jiddah, the department will continue conducting the event in different locations in the Western Region, targeting more than 600 employees.

well-being

caring for your health and wellness



caring profile

Dr. Majid Al Othman

head of the Radiation Oncology Unit

education

- American Board in Radiation Oncology since 2005
- Residency training in Radiation Oncology at the University of Florida, 1999-2003
- Surgical internship at the University of Florida, 1998-1999
- Bachelor's degree in medicine and medical sciences at King Faisal University, Dammam, 1994

employment

- Head of the Radiation Oncology Unit at SAMSO/JHAH since 2003
- Out-of-Kingdom residency training in radiation oncology, 1998-2003
- Professional Development Physician (PDP) at SAMSO, 1994-1998

Quote

"In the JHAH Radiation Oncology Unit, we use the most advanced technology. It brings me joy every day to work with the talented Oncology Institute staff who treat our patients with compassion and provide the highest level of care."



Become a patient at Johns Hopkins Aramco Healthcare (JHAH)

Eligible Saudi Aramco employees and their dependents are invited to register for healthcare at JHAH.

For more information on how to change your registration, contact your local HR Service Center or visit HR Online, or scan the QR code below for detailed instructions.



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800-305-4444 | www.jhah.com

four shots to protect your child from measles



Talk about the measles has been in the news recently, due to outbreaks in multiple countries. Unfortunately, it is often children who are most affected by outbreaks of this highly contagious disease.

Spread by coughing, sneezing, or close contact with infected nasal or throat secretions, measles can produce serious complications such as blindness, encephalitis (brain swelling), and pneumonia. It can also be fatal.

However, outbreaks of the disease are preventable through proper vaccination. Four shots in a child's regular vaccination schedule will help protect them from contracting measles.

A child's first measles vaccination should take place at nine months. This is followed by the MMR (measles-mumps-rubella) vaccination at 12 months, 18 months, and between 4 and 6 years of age. The measles vaccine is safe and effective, saving almost one million lives every year. There is no evidence that any association exists between the MMR vaccine and autism.

who is at risk?

Unvaccinated young children and unvaccinated pregnant women are at risk. Any nonimmune person (who has not been vaccinated or was vaccinated but did not develop immunity) is at higher risk, too.

why vaccinate?

Getting your child vaccinated for the

measles not only keeps them from becoming ill with the measles, but it also helps prevent the disease from spreading to neighbors, co-workers, and others in close contact to them.

how?

Vaccinations are available in all John Hopkins Aramco Healthcare (JHAH) facilities for JHAH registered patients through Primary Care. Check www.JHAH.com for details.

does my child need a vaccination?

You always need to keep your child's immunizations status up-to-date. You can check and print their immunization record on *MyChart*. View the full vaccination schedule on our website.

how to access immunization reports on MyChart (www.JHAH.com/about-mychart)

- To access your immunization report on *MyChart*, log in to your *MyChart* account from the Health tab and select Immunization Report.

To access your child's immunization report on *MyChart*, log in to your *MyChart* account, select your dependent child's icon, and from the Health tab, select Immunization Report.

To print these immunization records, click on the "Print Preview" icon and then click on "Print This Page."

Vaccination Schedule — A Lifetime of Protection

Vaccinations should begin early in an infant's life and continue on a regular basis to adolescence. If your infant is allergic to eggs, please consult your pediatrician.

Recommended Age	VACCINE
Birth	• BCG • HepB (1)
2 months	• IPV – DtaP-HepB-Hib, Hexavalent (1) • Pneumococcal conjugate – 13 (1) • Rotavirus (1)
4 months	• IPV – DtaP-HepB-Hib, Hexavalent (2) • Pneumococcal conjugate – 13 (2) • Rotavirus (2)
6 months	• IPV – DtaP-HepB-Hib, Hexavalent (3) • OPV (1) • Pneumococcal conjugate – 13 (3) • Rotavirus (3) if required, consult your pediatrician
9 months	• Measles (monovalent) • Meningococcal conjugate (1)
12 months	• OPV (2) • MMR#1 • Varicella • Pneumococcal conjugate – 13 (4) • Meningococcal conjugate – 13 (2)
18 months	• OPV (3) • DtaP/Hib or DTP/Hib (4) • Hep A (1) • MMR#2
24 months	• Hep A (2)
4 – 6 years	• OPV (4) • DtaPd (5) • Varicella (2) • MMR#3
11 – 12 years	• Tdap • Meningococcal conjugate (3)
16 – 18 years	• Meningococcal conjugate (4)
Adults	• Tdap booster every 10 years

* Annual influenza vaccination recommended for all adults and children aged 6 months and older.

tips for bone health nutrition



Bone health is a serious issue. Bones are important not only to hold you upright, but to also protect your inner organs. There are many things that can weaken your bones, including smoking (both active and passive), an inactive lifestyle, not consuming enough protein, a lack of calcium and Vitamin D, drinking alcohol, and drinking too much caffeine.

Follow these tips from JHAH's Clinical Nutrition and Food Services to help you maintain strong, healthy bones.

- **Drink dairy products** such as low-fat or nonfat milk, soy milk, and almond milk
- **Eat cheese** (60 grams, about two slices), yogurt or labneh (low-fat or non-fat)

- **Consume dairy products** at all ages throughout life, from childhood to old age. They are high in calcium and are usually fortified with Vitamin D

- **Eat seafood** such as salmon, sardines with bones, and tuna, as they are rich in both calcium and Vitamin D

- **Eat unsweetened cereals**, as they are rich in both calcium and Vitamin D, and they also provide fiber

- **Eat protein** (lean meat), and take supplements with potassium, magnesium, and vitamins C and B

- **Get at least 20 minutes of direct exposure** (not through a window) to the sun without using sunblock

- **Do strength training**, as it helps build strong bones. Strength training includes walking, jogging, or carrying loads such as weights, groceries, or anything with a bit of weight. Talk to your physician if you have been inactive for some time, are taking medication, or have an illness.

LEGAL DISCLAIMER: All health and health related information contained in this Johns Hopkins Aramco Healthcare Company material is intended to be general in nature and should not be used as a substitute for a visit with a health care professional. The advice is intended to offer only a general basis for individuals to discuss their health and medical conditions with their health care provider. Your health care provider should be consulted regarding matters concerning the medical condition, treatment, and needs of you and your family.

King Abdulaziz Center for World Culture
by saudi aramco



Ithra Summer Camp helps kids flourish, learn



Children of all ages are taking advantage of the educational opportunities offered by the King Abdulaziz Center for World Culture at this year's Ithra Summer Camp. From learning the basics of filmmaking to inventing, to making games and more. One of the most popular programs for children from 7 to 15 is the Junior CEO program, which gives kids a chance to be their own boss.

Dhahran — Children looking for opportunities to learn through play, become inventors, create their own video games, and even to explore the secrets of the undersea world, will have a chance this summer to satisfy their curiosity at the new Ithra Summer Camp, sponsored by the King Abdulaziz Center for World Culture.

Summer camp programs will run until Aug. 1, and there is still a chance to register for many of the programs on offer.

Ithra encourages creativity and innovation in the Kingdom, looking to nurture a spirit of curiosity through a variety of pro-

grams, including the visual and musical arts, as well as science, technology, engineering and mathematics (STEM) skills. By nurturing creativity and innovation, Ithra can support the Kingdom's Vision 2030 for developing the Kingdom's most precious resource — the talent of the Saudi people.

Ithra's Summer Camp looks to prepare youngsters for a bright future by providing training programs for various age groups. Classes are 9 a.m.-1 p.m. and 3-7 p.m. daily at Ithra. Ithra membership holders receive a 20% discount. Enroll at www.ithra.com/summer.

Here are a few of the offerings:

Under the Sea

(ages 4-6) English (July 15-18); Arabic (July 1-4, July 29-Aug. 1). Children take a journey under the sea to learn about its secrets, inspiring professions such as scientist, and diver.

Little Inventors

(ages 4-6) English (June 24-27, July 22-25); Arabic (July 8-11). Children learn about the story behind inventions and explore the experience of making them, inspiring professions such as scientist, designer, and inventor.

Junior CEO

(ages 7-9) English and Arabic (June 17-27); (ages 10-12) English and Arabic (July 1-11), and (ages 13-15) English and Arabic (July 15-25). Kids are their own CEOs right from the start of camp! Inspired

professions include businessperson and entrepreneur.

Game Maker

(ages 7-9) English and Arabic (June 24-27, July 15-18); English ages 10-12 (July 29-Aug. 1); English ages 13-15 (June 24-27, July 8-11) and Arabic (June 29-Aug. 1). Children learn about different types of games and develop their own. Inspired professions include game developer and game designer.

Super Canvas

(ages 7-9) English and Arabic (July 1-4 and July 22-25); (ages 10-12) English only (July 8-11), (ages 13-15) English (June 24-27, July 8-11), Arabic (June 29-Aug. 1). In this track, participants will be inspired by great artists' techniques, enabling them to experiment with various mediums. Inspired professions include artist and designer.

Engineer in-training

(ages 7-9) English and Arabic (July 8-18); (ages 10-12) English and Arabic (July 22-Aug. 1). Engineering is problem solving and a skill set of its own. Inspired professions include engineer and scientist.

Sound in Action

(ages 13-15) English (June 17-22, July 1-6), Arabic (June 24-29, July 8-13). Like a director, participants will learn the basic concepts of developing their own film. Inspired professions include film maker and sound engineer.

spotlight



Saudi Aramco geoscientists gather at this year's American Association of Petroleum Geologists (AAPG) Annual Conference and Exhibition in San Antonio, Texas, contributing through sponsorship, technical papers, and the mentoring of young professionals. Also, Ayrat Gizzatov, a lab scientist in Reservoir Engineering Technology at the Aramco Research Center-Boston, received the George C. Matson Memorial Award for the best paper presentation during last year's conference. Gizzatov's paper highlighted the interaction of surfactant chemicals with carbonate rock at the nanoscale.



The World Economic Forum (WEF) recently convened a task force meeting in Dhahran on the "Future of Work in Oil and Gas," which was co-chaired by Nabil K. Al-Dabal, Saudi Aramco executive director of Human Resources (HR) with Saudi Aramco, and Michelle Green, Chevron vice president of HR for Downstream and Chemicals. The meeting featured more than 25 HR executives, academics, and experts from BP, Chevron, Equinor, Repsol, Petronas, National Oilwell Varco, OPTIO, Mercer, the Society of Petroleum Engineers, and ATKearney.

King Abdulaziz Center for World Culture
by saudi aramco

Edvard Munch's 'Landscapes of the Soul' at Ithra: building cultural bridges to Norway



Amin Nasser, Saudi Aramco president and CEO, smiles as Øyvind Eriksen, Aker ASA CEO, discusses details of one of the works of art on display at the King Abdulaziz Center for World Culture's (Ithra) "Edvard Munch: Landscapes of the Soul" exhibit in Dhahran. They are joined by Stein Olav Henrichsen, Munch Museum director (second from left), as well as guests including former Saudi Aramco CEO Abdullah S. Ju'mah and Saudi Aramco senior vice president of Technical Services Ahmad A. Al Sa'adi.

“ This successful collaboration is a testament to how Ithra continues with its commitment to building cultural bridges between the Kingdom and the rest of the world.

— Amin Nasser

Dhahran — The King Abdulaziz Center for World Culture (Ithra) celebrated a special preview of its "Edvard Munch: Landscapes of the Soul" exhibition with a special viewing attended by prominent art and culture figures from across the Kingdom and the wider region. Guests and attendees were welcomed by Saudi Aramco president and CEO Amin Nasser, who praised the exhibition partners for their collaboration.

Aker ASA CEO Øyvind Eriksen, Munch Museum director Stein Olav Henrichsen, and Ithra's head of programs Abdullah Al Rashid also gave speeches during the ceremony.

a first for the Middle East

"Edvard Munch: Landscapes of the Soul" presents 40 works by the internationally renowned Norwegian artist, including a lithograph version of his most famous painting, "The Scream," from 1895. It is the first time that the work of Munch (1863-1944) has been exhibited in the Middle East, and the exhibition has been organized in partnership with the Munch Museum in Norway, Aker ASA, and design firm Snøhetta.

The exhibition, which is open to all and will run at Ithra until early September, introduces the work and ideas of Munch to audiences and explores the landscape as a

key motif throughout his career. Munch's landscapes became a mirror of his inner self through which he examined universal issues of the human soul.

The exhibition is presented across five specially designed pavilions within Ithra's Great Hall, each focusing on a specific theme, including "Melancholy," "Love," "Despair," "Loneliness," and "Portraits of the Soul." In addition to the lithograph version of "The Scream," the exhibition also features other renowned Munch works such as "The Sick Child" from 1896, "Self-Portrait with Skeleton Arm," and "Cutting the Corn."

Ithra: a center for cross-cultural exchange

In his opening speech, Nasser welcomed the exhibition's partners, attendees, and visitors, celebrating the collaborative efforts behind the exhibition. "Cultural centers such as Ithra are built to be beacons of knowledge. They look to encourage cross-cultural exchange and collaboration among nations to build a global network. They help establish cooperation between organizations and countries for a better world and future," he said.

"History has shown us that there is a strong connection between the arts and culture, as well as economy and trade to create purpose," Nasser added. "The Silk Road and the 'Ukath market stand as two prominent examples, known as economic hubs, but celebrated for their cultural dimension."

Nasser noted that in Norway, Munch's artworks are regarded as national treasures.

"As such, this exhibition represents an embodiment of the spirit of cooperation between the Kingdom of Saudi Arabia and Norway, who both play a major role in the world of energy and economic prosperity," he said.

The exhibition, he added, is also a reflection of the cooperation between two prominent industrial institutions — Saudi Aramco and Norwegian company Aker ASA — as well as between two global cultural institutions: Ithra in Saudi Arabia, and Munch Museum in Norway.

"This successful collaboration is a testament to how Ithra continues with its commitment to building cultural bridges between the Kingdom and the rest of the world," Nasser said. "I hope that the work of this world-renowned artist, highlighting aesthetic and humanitarian values, will in-

spire the Kingdom's youth to produce creative work infused with their Arabic and Saudi identities, attracting the world's attention and conveying our cultural wealth and depth, as aligned with Vision 2030."

at the heart of Ithra's mission

Ali A. Al-Mutairi, Ithra director, said, "We are proud and honored to bring and host this very special exhibition. To have 40 works by such an influential artist as Edvard Munch is a privilege and at the very heart of what Ithra was established to do.

"In addition to championing the local Saudi creativity scene, Ithra was founded to promote cross-cultural exchange and provide the people of Saudi — and indeed the region — with compelling new cultural experiences. This latest exhibition certainly does this," he added.

Henrichsen said the Munch Museum is deeply committed to exhibiting internationally. "We believe that cultural cooperation across national borders promotes knowledge and understanding between people from different countries and backgrounds. For us, the collaboration with Ithra is an event of major significance. We are grateful for this excellent and inspiring collaboration."

about Munch

Munch was a pioneering artist within the history of modern art. Not only did he challenge the conventions of art in his time, but he also addressed issues of universal significance that still have relevance today. Throughout his artistic career, he persistently scrutinized existential challenges of the self and the significance of personal experiences and he came to be one of the most influential artists of his generation.

"Landscapes of the Soul" will be hosted until Sept. 3 at Ithra's Great Hall, a multipurpose indoor display space created to host international and temporary exhibitions from global institutions as part of its dedication to cross-cultural exchange. The Great Hall has previously hosted the successful "Leonardo Da Vinci: Codex Atlanticus" exhibition from Italy.

In addition to the exhibition, Ithra will host workshops twice a month, from June until September 2019, which will teach visitors new art techniques inspired by Munch's work. The workshops are open to all, and registration can be completed on Ithra's website.



King Abdulaziz Center for World Culture
by saudi aramco



Ithra movies

in cinema

Ithra Heroes Adventure

A collection of engaging children's animations that integrate science, technology, engineering, art, and math.

June 20, 22, 24, 25, 26 10:30 a.m.

Singing with Angry Bird

Five years ago, a Korean opera singer started a children's choir in a slum in India. Frustrated by the lack of support from the parents of his choir children, he decides to train the parents to sing for a joint concert.

June 22 1:30 p.m.
June 24, 25, 26 3:30 p.m.

The Green Planet

Take a spectacular journey to one of Earth's most beautiful and diverse natural habitats: The Forest.

June 19, 20, 21, 22 3:30 p.m.

Robinson Crusoe

A daring parrot recounts how Robinson Crusoe came to be stranded on a tropical island.

June 21 2 p.m.
June 19, 20, 21, 22, 24, 25, 26 5:45 p.m.

The Short Game

A group of seven-year-old golfing protégés battle to be the next champion of tomorrow.

June 24, 25, 26 7 p.m.

The Sphinx Unmasked

A leading Egyptologist cracks the 4,500-year-old mystery of who built the greatest monument in the ancient world and reveals the inspiration behind the enigmatic face of the Sphinx.

June 19, 22 7:30 p.m.
June 20, 21 8:30 p.m.

Wasati

Based on true events that happened during a play in Riyadh 10 years ago. The play was called "Wasati bela Wastiah," which roughly translates to "A Moderate Without a Middle Ground," where a group of extremists attacked the theater and the play was shut down.

June 20, 21 7 p.m.



Energy Exhibit Theater

Conquest of the Skies

Evolutionary story of flight from the very first insects to the incredible array of creatures, which rule the skies today.

June 19, 24, 25, 26 5 p.m., 8 p.m.
June 20, 21, 22 6 p.m., 7 p.m., 8 p.m.



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