



DuPont Safety Award Winners 2015

- **Ethylene XXI Contractors SAPI de CV** for the Global Safety Award

Ethylene XXI Contractors SAPI de CV (Mexico), the contracting group in charge of building Etileno XXI, the largest petrochemical complex in Latin America, has been selected as the global winner of the DuPont Safety Award with the highest score ever given.

The plant, located in Mexico's Veracruz state near the oil port of Coatzacoalcos, was built to have an annual processing capacity of 1.05 million tons of ethane. Integrated to three polymerization units, it also can produce 750,000 tons of HDPE and 300,000 tons of LDPE plastics yearly. Etileno XXI will be operated as a joint venture between Brazilian petrochemical concern Braskem and the Mexican Idesa Group.

Health, safety and environment (HSE) were established as key objectives at the start of the project. But this was a challenge on several levels. First, there was no existing HSE culture in the region. Communication also was an issue due to the 220-hectare size of the site, as well as a workforce of more than 17,000 people, including employees who speak several different languages, with a range of skills and educational backgrounds. Finally, the multi-billion-dollar scale of the investment in the plant required the use of international standards of project finance.

The project HSE system was established by bringing together high-level management procedures with detailed contractor processes. These included behavior-based safety (BBS) methods, a recognition program that rewards positive safety behavior, and a dedicated software application for incident analysis and investigation, along with extensive training, documentation and communication efforts. The Integrated HSE Management system components were applied from the start of the project, through construction of the plant and initial testing of its production facilities.

After almost three years and 68 million man hours worked, Etileno XXI's Integrated HSE system has had zero fatalities, a lost time injury rate of 0.07 and a recordable injury rate of 0.23. Those numbers would be notable almost anywhere, but are especially significant achievements in the context of an environment that lacked an HSE mindset before, together with a project of such scale and complexity.

- **Versa Drives Pvt. Ltd.** for the Global Sustainability Award

Versa Drives, a manufacturer of electric motors, drives and appliances, has been selected as the global winner of the DuPont Sustainability Award for Superfan, its energy-saving ceiling fan for the consumer market.

Despite being a small business based in Coimbatore, India, Versa Drives has big ambitions. Its mission is to become a leading global manufacturer of low power variable frequency drives and energy-saving synchronous motors. Currently the firm serves both the business and consumer markets: it provides customized motor control solutions to original equipment manufacturers and also produces the Superfan for retail customers. About 25,000 Superfans were sold in the year after the product was launched, and Versa Drives aims to reach a production volume of 1 million fans by 2018.

The Superfan project originated in the challenge of making an energy-efficient brushless DC electric motor for ceiling fans that could also be economically produced. As ceiling fans are one of the most common electrical appliances in the world – with 350 million being used in India alone on a daily basis – the potential energy savings are enormous. The Superfan uses less than half the power required by a conventional fan to deliver the same or greater air flow. If all the ceiling fans in the world were replaced by Superfans, global residential energy consumption could be reduced by 70 terawatt hours annually. (Just one terawatt hour is enough energy to power a city of 200,000 for a year.)

Beyond ceiling fans, Versa Drives has developed a platform of energy-efficient permanent magnet BLDC motors and inexpensive drives that can be used in a broad range of home appliances. This is significant as appliances are responsible for about half of the current increase in global energy consumption. The project also inspired a higher commitment to sustainability and energy conservation in the manufacture and distribution of the Superfan itself as well as throughout the Versa Drives organization.

- **Gulf Drilling International** for the Global Operational Excellence Award

Gulf Drilling International (GDI), a Qatar-based drilling rig and associated oil and gas production services company, has been selected as the global winner of the DuPont Operational Excellence Award, for maximizing efficiency and safety in new rigs.

Established as a joint venture in May 2004, GDI is Qatar's first domestic drilling contractor. From just two rigs and 100 employees in 2004, GDI's current workforce of 1,700 employees now operates 18 rigs – including nine offshore jack-up drilling rigs, six land rigs, one accommodation jack-up and two liftboats. Additionally, GDI is actively constructing two land rigs, one offshore jack-up drilling and one liftboat, with an expected delivery date in the next 10 months. In May 2014, GDI became a 100 percent subsidiary of Gulf International Services, a Qatar Stock Exchange-listed company.

GDI – which is ISO 9001, ISO 14001 and OHSAS 1800 certified – seeks to deliver a world-class service that is safe, effective and efficient. Since its founding, GDI has rapidly become a market leader in Qatar, with 60 percent offshore and 100 percent onshore market shares. The company attributes its success to continuous improvement of key operational indicators and targets, such as utilization maximization, downtime reduction, operation-cost optimization, inventory control, rental cost control and maintenance.

Meeting client requirements, while also learning and advancing best practices from clients, is crucial for the relatively young company. For instance, GDI begins engaging potential clients as early as rig building projects to determine how to meet diverse clients' varied international standards. Another vital aspect of operations is asset integrity, achieved through preventive maintenance and quality control supported by a computerized maintenance management system. At the same time, GDI's advanced commercial management system operates in concert with warehouse and maintenance management systems: An ongoing evaluation of warehouse and supply chain spares and other critical inventory promotes high levels of availability as operational systems demand it.

By monitoring and reducing operational downtime, GDI has increased its rate of rig utilization and experienced rapid growth for its drilling activities. Within just four years, GDI's rig count doubled: from nine rigs in 2010 to 18 by 2014. GDI's drilling rig downtime average was 0.76 percent in 2014, comparing favorably with the industry standard downtime rate of approximately 2 percent. As downtime rate has fallen, GDI's utilization rate has been at 100 percent since 2012. As such, client acquisition has increased, along with revenue--GDI saw a 111 percent increase of net profit from 2013 to 2014.

- **Diageo** for the Regional Safety Award, Europe, Middle East and Africa

Diageo is the world's largest producer of spirits and a major producer of beer and wine. It has been selected as a winner of the Safety Award for the Europe, Middle East and Africa region, based on Diageo's commitment to Redefining Zero-Harm and Engineering for Safety, demonstrated in the successful construction of the new Guinness Brewery at St. James's Gate in Dublin, Ireland.

An alcoholic beverage producer, Diageo's supply functions span distilling, brewing, packaging and distribution of leading brands, such as Baileys, Captain Morgan, Crown Royal, Guinness, Johnnie Walker, Ketel One, Smirnoff and Tanqueray, among many others. With offices in 80 countries and trade in approximately 180 countries, the company employs 28,000 people globally. Annually, Diageo produces more than 6.5 billion liters of beverages from more than 100 sites in 30 nations, including countries in Africa, Asia, Europe, North America and South America.

In 2012, Diageo's Engineering Excellence team began work on the fourth-generation Guinness brewhouse, on the site of the existing St. James's Brewery. Project management of the complex, state-of-the-art brewhouse, located alongside the existing brewhouse in a big-city setting, created significant engineering and safety challenges. To create a Zero-Harm work site, the Engineering Excellence team developed an approved contractor process, ensuring that suppliers, workers and all operatives shared the same safety standards and expectations. Inductions were interactive, with compelling videos to inspire active conversation about safety.

Zero-Harm setup for the new brewery site included biometric controlled access, site signage, walkways, traffic management, layout and accommodation designed to create a better on-site experience for workers – changing their behavior, fostering community care, promoting higher housekeeping standards and boosting best performance practices. At the same time, they adopted severe and fatal incident protocols based on mobile incident alert technology, including preemptive alerts; implemented on-site meeting spaces where teams could discuss ideas without safety risk; and deployed senior supervisors to monitor sites for safety risk, noting issues via iPad to prevent future incidents.

The results were impressive. Of the 1.7 million hours worked on this project, there was only 1 reportable accident. Throughout its global operations, Diageo's commitment to Redefining Zero-Harm and Engineering for Safety is demonstrable through safety compliance, management and oversight resulting in significant companywide reduction in lost time accidents and accident frequency rate.

- **Aurizon Holdings** for the Regional Safety Award, Asia Pacific

Aurizon Holdings, an Australian-based rail freight transport and infrastructure company, has been selected as a winner of the Safety Award for the Asia-Pacific region, based on its Zero Harm commitment to develop category-leading safety performance practices.

A top-50 Australian Securities Exchange (ASX) listed company, 150-year-old Aurizon is Australia's largest rail freight operator, moving 700,000 tons of minerals, agriculture and general freight across the continent daily. With 7,600+ employees and four major product lines, Aurizon operates a coal network with 2,670 kilometers of heavy haul rail infrastructure. Headquartered in Brisbane, Queensland, the company additionally provides specialist services in construction, engineering, large-scale supply chain solutions, management, maintenance and rail design.

With a goal to be the world's safest transport operator, Aurizon conducted an internal employee and operational safety review in 2009, one year before going public on the ASX. The results disappointed the company: .90 derailments per million train kilometers, 2.03 signals passed at danger (SPADs) per million train kilometers, an 11.43 lost time injury frequency rate (LTIFR) and a 55.64 total reportable injury frequency rate (TRIFR). Further, lack of standardized safety management and processes constrained accountability and reporting.

In response, and with the support of DuPont Sustainable Solutions, Aurizon embarked upon an immediate, enterprisewide safety improvement program. In collaboration with stakeholders across all institutional operating units, Aurizon developed the Safety, Health and Environment Management (SHEM) data system to support harmonized compliance and management of compliance and incidents. The results of its implementation are considerable: Aurizon has achieved a 99 percent reduction in LTIFR and 96 percent reduction in TRIFR since 2009; a 69 percent reduction in SPADs since 2010; a 31 percent increase in safety interactions since 2011; and a 53 percent reduction in derailments since 2012.

SHEM significantly reduces the number of workers injured annually and greatly minimizes incidents affecting the train network's safe operation. It increases physical and psychosocial health outcomes for workers, while mitigating previous business impacts, such as costly workers' compensation claims, enterprise insurance premiums, incident recovery costs and lost production. Via SHEM, Aurizon meets its commitment to Zero Harm.

- **Heerema Marine Contractors** for the Regional Sustainability Award, EMEA

Heerema Marine Contractors, a world-leading marine contractor in the transport, installation and removal of offshore oil and gas facilities, has been selected as a winner of the DuPont Sustainability Award for the EMEA region in recognition of its acceleration program for sustainable ocean ventures.

Heerema Marine Contractors (HMC) has been an innovator of oil and gas field infrastructure in challenging offshore environments since 1948. Its fleet of heavy lift and deep-water construction vessels includes the world's three largest crane vessels. The facilities it builds and operates include fixed and floating structures, subsea pipelines and infrastructures in shallow, deep and ultra-deep waters. Headquartered in Leiden, the Netherlands, it employs over 1,750 people in offices around the world.

Sustainability is an integrated part of operations at HMC, with regular environmental awareness trainings and improvement objectives. But there was a broader question of how the company could contribute to the viability and health of the world's oceans by making use of in-house knowledge and expertise. Out of that desire to create social impact and connect with the outside world, the Our Oceans Challenge (OOC) initiative was born.

OOC is an acceleration platform for sustainable ocean ventures that connects entrepreneurs with corporations who can provide the means to help turn ideas into workable solutions. It was launched as an online community where students, scientists, engineers and inventors could share their business ideas and have them vetted by industry experts. Nearly 500 participants contributed a total of 88 working concepts. Through an intensive selection and mentoring process with HMC's corporate partner network, five of these concepts went forward as start-ups with validated business plans which they presented to potential investors and partners.

One of the five start-ups that has received support from HMC itself is PolyMore, a social entrepreneurship venture focused on plastic upcycling in Angola. It provides tools for local people to start their own business making and selling construction materials out of plastic waste. This is one area where HMC has made its quest to contribute to sustainable oceans more tangible already. Other benefits resulting from OOC have included positive media attention and a reputational benefit for the offshore industry, along with increased internal awareness of the company's sustainability vision.

- **Grifols Therapeutics Inc.** for the Regional Sustainability Award, North America

Grifols Therapeutics, the U.S. division of international healthcare company Grifols, has been selected as a winner of the DuPont Sustainability Award for the Americas region, based on its initiative to improve environmental sustainability through medical waste reduction.

Serving medical professionals and patients in 90 countries around the world, Grifols is a leader in transfusion, blood banking, protein therapeutics and laboratory analysis. The company has about 14,000 employees globally working among its Bioscience, Diagnostic and Hospital divisions. The Bioscience division operates a pharmaceutical manufacturing site in Clayton, N.C., which develops medical products made from human plasma.

A commitment to protecting natural resources is enshrined in the principles of Grifols' Environmental Policy, which includes environmental objectives and targets, as well as pollution prevention techniques. All of these objectives came together in the medical waste reduction project at the Clayton site.

The initiative began in 2013 with an evaluation of the classification and disposal practices that resulted in 3 million pounds of medical waste being sent for incineration in North Carolina each year. Grifols worked with state regulators to create a more accurate waste determination process that identified actual biohazards as only a fraction of the site's waste stream, with the remainder being eligible for additional treatment or recycling. For example, 70 percent of the byproducts from the manufacturing process were able to be diverted from landfills to the anaerobic digester unit of a local hog farm.

To reach the ultimate goal of Zero Waste to Landfill, additional targets in reducing energy, water and waste have been set. Meanwhile, Grifols is pursuing its environmental policy objectives on other fronts as well, such as having the county's first LEED-certified buildings on its campus. These initiatives have not only made Grifols a sustainability leader among other companies in the area, but also have positively impacted its business results and relations with the community.

Firmenich North America for the Regional Operational Excellence Award, North America

Firmenich, the world's largest private company in the fragrance and flavors business, has been selected as a winner of the DuPont Operational Excellence Award for the Americas region in recognition of the development of its Root Cause Analysis methodology and training program.

Firmenich is a global supplier of fragrance, flavors and chemical ingredients to the cosmetics, food and beverage, and household products industries. Firmenich is pursuing growth both in emerging markets as well as through innovative solutions to public health and hygiene issues. Headquartered in Switzerland, the company employs over 6,000 people at 63 facilities worldwide, and has yearly revenues of 2.95 billion Swiss francs.

In 2014, Firmenich took the challenges presented by one supplier relationship as an opportunity to create a new investigative and problem-solving template based on Root Cause Analysis (RCA). By identifying intermediate as well as root causes of adverse incidents, RCA addresses weak points in the management system itself and prevents problems from recurring. In addition to correcting problems, this procedure leads to a deeper understanding of interrelationships within the company structure, along with relationships between causes, effects and solutions. Firmenich drew on existing tools and techniques to develop its own RCA methodology and launch a global training program for employees.

Use of the method had immediate results: Firmenich eliminated late orders and became a top-ranked supplier of products and services to the original customer whose issues kicked off the RCA initiative. Firmenich also has been able to reduce or eliminate recurring adverse events and incidents in other areas as well. Now it is applying the technique to all other types of incident investigations – from quality and product safety to injuries and mechanical failures – and to the global continuous improvement process in general. Apart from the benefit of correcting the immediate incident, the company sees the greater value of RCA as the capacity to improve the management system as the ultimate driver of operational excellence.

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