

Proving Ground

Hess applies lean manufacturing to empower an army of problem-solvers to improve supply chain operations. *By Eric Slack*

Getting the needed material out of a strategically placed Material Supermarket is as easy as scan-and-go for Hess.

Founded in 1933, Hess Corporation is a leading global independent energy company engaged in the exploration and production of crude oil and natural gas. Hess' portfolio is about evenly split between unconventional and conventional, U.S. and international, and onshore and offshore.

EXTENSIVE REACH

Hess' portfolio is focused in five strategic areas: the Bakken Shale Region of North Dakota, the Deepwater Gulf of Mexico, Valhall Field in offshore Norway and South Arne Field in offshore Denmark, offshore West Africa – Equatorial Guinea and offshore Malaysia in the Gulf of Thailand. These specific areas represent roughly 83 percent of reserves and 95 percent of production.

A world-class acreage position, technology advances and a lean manufacturing mindset have established Hess as a leading onshore shale oil and gas producer. Hess has premier acreage in the Bakken and the infrastructure to capture maximum value. It also has operated in the Permian Basin in Texas for more than 70 years.

"We've worked hard to implement key tools, processes and the right supplier partnerships in our onshore operations in the Bakken that drive out waste and add value," Senior Manager of GSC Materials and Logistics Chris Starcke



says. "We drilled about 200 wells there in 2015. It is a long-term unconventional shale play that we approach similarly to a high-volume manufacturing environment."

Offshore, the company is a leading performer in drilling and project delivery, development and production. It pioneered sub-sea drilling techniques in Denmark and West Africa, and is the sixth-largest producer in the Gulf of Mexico. Additionally, it has been a selected operator by the Malaysian national oil company and Gulf of Mexico partners.

Hess is also engaged in exploration, employing a strategy aimed at delivering material, long-term

value. Its focus is on proven and emerging oil-prone plays that leverage its offshore capabilities. Hess has deepwater exploration operations underway with Chevron in the Gulf of Mexico, with Esso in Guyana and in Nova Scotia with BP. Hess has also made multiple discoveries offshore Ghana, is a top leaseholder in the Gulf of Mexico and West Africa, and is completing exploration drilling off the coast of Malaysia.

ONGOING JOURNEY

Supply chain leadership envisions a world where materials are available just-in-time wherever work happens. The team wants its

Hess's global operations are based at the LEED-certified Hess Tower in downtown Houston.



customers to focus on the work, not the parts, to enable more jobs per day, more barrels per day, safer operations and less down time.

“Devising just-in-time material solutions help us operate more like a manufacturing assembly line, improving our ability to bring wells online and perform maintenance faster, safer and with much less cost,” Hess’ Global Warehouse and Yard Lead Jeff Archer says. “We are trying to create more standardization in our work.”

That’s what drove the need to develop standard workover trailers, which deliver material to producing rigs that are typically many miles apart in rural areas, just in time. These mobile units operate on consignment to provide material in the right quantity and

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condition, right where the work occurs, not in a warehouse and not on a shelf.

Workover trailers are designed to present parts in an optimal way, and help ensure that production operations never stop to wait for needed materials. Additionally, they make sure standard material is used on every job. As a byproduct, Hess has avoided the costly

expense of expediting items, or hotshots, to the well. The trailers enable the rig to keep working while staying focused on the job at hand, rather than chasing or waiting on material.

“Materials delivered just-in-time is a huge leap forward for increased efficiency on workover rigs in the Bakken,” Hess’ Maintenance, Reliability and Integrity Sub-Surface Lead Logan Stoner says. “In the past, like most of the oil and gas industry, we have taken a reactive approach and waited to see what equipment was damaged in the well before ordering replacements. Now, with the use of the workover trailer, 80 percent of what you are ever going to need is already on location and ready for use at the drop of a hat. By having

this equipment on location and ready for the crew it has reduced hot shots to the rig by more than 50 percent and increased rig up-time dramatically.”

Another Hess innovation on the supply chain side has been material supermarkets designed to provide quick access to materials that are frequently used. Material supermarkets are consignment inventories placed in strategic locations near common work sites or frequented routes that eliminate the need for trips to a warehouse. They are aimed at eliminating non-productive time related to unplanned work, which may be seasonal, unknown or unpredictable demand but frequent use. They are easy to use and shorten lead time to help get wells back online faster.

Hess also is working on truck kitting for field operations. The trucks of individual operators are outfitted with material needed to do the most frequent jobs along with the appropriate tools. Hess used the 5S method on the truck kitting so that it is easy to identify the needed part, find it and replenish what’s taken. This enables operators to perform well maintenance immediately instead of delaying the job to order and pick up material that may be far away – presenting the material where and when it is needed.

“Supply chain and operations have been working together to pilot these programs and realize significant gains,” Archer says. “Our goal is to create a competitive advantage by finding ways to innovate and eliminate waste and inefficiency.”

Supplier partnerships have been

Mobile workover trailers at work sites carry needed parts to remote Hess well sites to keep operations on schedule.



critical to this effort, especially with DistributionNOW, the company Hess selected to help pilot these programs. Strategic partnerships play an important role in Hess’ supply chain transformation and are a key lean principle.

“We looked at our asset needs and material requirements and then worked to understand suppliers and their capabilities,” Supply Chain Advisor Ankur Jain says. “We want to forge true partnerships over the long term that benefit both Hess and the supplier.”

An historic drop in the price of oil over the last several months has put considerable pressure on companies across the industry. Hess’ focus on lean can help it weather the storm.

“Lean is all about the relentless pursuit of perfection,” says Archer. “If we have that mindset and collaborate with trusted partners to continually attack waste and inefficiency, supply chain can play a major role in helping Hess be a company that performs well in any environment.” 🌐