Helping the Energy Industry Bring Its Products to Market

World Energy *interviews Philip Asherman, executive vice president of CB&I*

One of the world's leading engineering, procurement and construction (EPC) companies, CB&I specializes in lump-sum turnkey projects for customers that produce, process, store and distribute the world's natural resources. CB&I is a fully integrated EPC service provider, offering a complete package of conceptual design, engineering, procurement, fabrication, field construction, mechanical installation and commissioning.

CB&I serves customers in a number of key industries including oil and gas, petrochemical and chemical, power, water and wastewater, and metals and mining. Its projects include hydrocarbon processing plants, liquefied natural gas (LNG) terminals and peak shaving plants, bulk liquid terminals, pipelines, water storage and treatment facilities, and other steel structures and their associated systems. CB&I has more than 11,000 employees and operates from more than 60 locations worldwide.

World Energy: What capabilities and experience does CB&I have in the distribution segment of the oil and gas industry?

Asherman: At CB&I, we've been in the business of designing and constructing facilities used to distribute oil and gas products for decades. Our export terminals handle a wide variety of liquid products, including crude oil, refined products, liquefied gases, petrochemicals and bulk fuels. We have also designed and managed some of the world's largest onshore and offshore pipeline projects for transporting crude oil, natural gas, refined petroleum products, liquefied gases and condensates, in both single and multiphase.

CB&I has executed terminal projects in some of the most geographically and logistically challenging places in the world. Providing single-point responsibility and self-performing all aspects of both greenfield and expansion projects, we have the capability of starting with feasibility studies and going all the way through to construction, startup and commissioning.

Similarly, CB&I's comprehensive services for pipeline projects include conceptual and field development studies, project site and cost evaluations, complete engineering from front-end engineering and design through detailed design, procurement, construction management and commissioning.

World Energy: Can you cite examples of some of the more challenging projects you've taken on?

Asherman: Certainly. CB&I designed and built one of the largest petroleum terminals in Southeast Asia at Pulau Busing in Singapore. Situated on a reclaimed island in Singapore Harbor, this terminal includes 59 product storage tanks with a combined capacity of more than 5 million barrels, has four operational berths capable of handling large vessels, can load and unload four ships simultaneously and has a self-contained power generation system.

Another world-class terminal project involved the expansion of an existing crude oil trans-shipment terminal on the island of St. Eustatius in the Netherlands Antilles. For this project, CB&I constructed a single-point mooring system, an onshore pumping station and eight 625,000-barrel [100,000-cubic-meter] floating roof tanks along with associated subsea and above-ground piping systems. The remote location, difficult topography and plant operability requirements made this one of our more challenging projects.

Currently, we are performing an integral role in one of the world's largest pipeline projects, the Azerbaijan-Georgia-Turkey pipelines that will bring oil and gas to market from the Caspian Region. CB&I is providing engineering and construction management for two components of this massive project: the Baku-Tbilisi-Ceyhan [BTC] oil pipeline, which is 1,768 kilometers long and will transport oil from Azerbaijan to Turkey; and the South Caucasus [SCP] pipeline, which at 692 kilometers will transport natural gas from the Shah Deniz field in the Caspian to Turkey.

World Energy: Where do you see an increase in the demand for crude oil export terminals, and what types of products are driving this demand?

Asherman: Today's sustained high oil prices are prompting some of the major oil companies and exporting countries' governments to move forward with terminal projects that were not economical a few years ago. We are currently pursuing turnkey projects for both tanks and crude oil terminals in a number of locations worldwide.

In addition, there is a developing trend among some major oil producers, particularly in the Middle East, to move their operations further downstream to include the manufacture of higher-value petrochemicals. CB&I has considerable expertise in low-temperature terminals for products such as ethylene, styrene and propylene, making this an attractive market for us.

World Energy: Are you also seeing greater demand for pipelines? If so, where?

Asherman: We see growing demand for pipelines to bring oil and gas supplies to Europe and Asia, as well as to provide additional export capacity from the Middle East, Russia and other countries of the former Soviet Union. China is actively building pipelines to fuel its growing economy. There is a critical need to bring natural gas to Europe out of gas-producing areas in the former Soviet Union and the Middle East. Within the next several years, Europe will be in a gas-deficit position as regional demand outpaces production, and new gas supplies will be needed. In addition to the large reservoirs in Qatar and other Middle Eastern countries, big fields will be developed in Kazakhstan and Azerbaijan. Infrastructure will be needed to deliver gas from these new fields to markets in Europe. Russia is also seeking to pipe gas to the west and has additional plans to develop pipelines to move oil out of the country.

World Energy: What technological innovations are driving pipeline construction projects?

Asherman: New information management technology has significantly assisted the pipeline routing process. As an example, for the Caspian pipeline projects in which CB&I is currently involved, we use a customized, state-of-the-art geographical information system (GIS) in conjunction with a traditional CAD package to improve the design process. GIS is used to manage, interrogate and interpret an extensive range of available data, allowing the project team to develop detailed routing and constraint maps to avoid known sensitive or densely populated areas, cultural monuments and archaeological sites, and known geo-hazards. It is also used to maximize the safe, uninterrupted construction and operation of the pipelines, and to minimize the risk of spills and the amount of land required for pipeline construction. As a result of the meticulous route selection process, not a single person has been required to move from his or her home because of the BTC and SCP projects, and no permanent disruption to the livelihood of the local communities has been experienced.

World Energy: In addition to pipeline delivery, gas producers are bringing natural gas to market in the form of liquefied natural gas. Has CB&I been involved in the distribution of that product?

Asherman: Yes, we have designed and built numerous LNG terminals. Right now we're working on two major LNG import terminals in the United Kingdom: the South Hook project in Milford Haven, Wales, and the Isle of Grain project near London. Both projects are being managed out of our London office, and CB&I has complete turnkey design-build responsibility for these terminals, which will provide approximately 30 percent of the United Kingdom's annual demand for natural gas upon completion. The South Hook terminal will have five storage tanks, along with the associated regasification and sendout facilities. Three storage tanks and associated facilities will be constructed at the Isle of Grain project.

World Energy: Any final thoughts?

Asherman: Getting product to market in a timely manner is critical for any business, from a customer standpoint and for competitive reasons. In our case, not only are we helping mature international energy providers maintain and expand their distribution channels, but we're also helping developing countries bring their natural resources to market and earn much-needed hard currency to improve the quality of life for their citizens. It's a responsibility we take seriously, and we are pleased that our customers have recognized our abilities across the hydrocarbon value chain from production to distribution.

CB&I

For more information, please contact CB&I at +1 832 513 1000 or www.CBI.com