CASE STUDY

JV Driver and PCL automate fabrication deliverables for Alberta Oils Sands projects with Octave OnSite Spool Design

Key facts:

Company: JV Driver, PCL

Website:
www.jvdriver.com
www.pcl.com

Industry: Energy

Country: Canada

Octave products used:
OnSite Spool Design
(Intergraph Spoolgen)

Identifying goals

Engineering and construction firms tasked with designing and building large, complex projects face challenges when it comes to developing the numerous drawings, bills of material, material requisitions and other deliverables required to fabricate and build such facilities. This is especially true when the facilities are in remote, extreme environments, and these firms must perform the fabrication elsewhere to minimize site-based activities. Such is the case in Alberta, Canada, home of the second-largest proven concentration of oil in the world, most of which is in the McMurray Formation oil sands deposits, a mixture of crude bitumen (a semi-solid form of crude oil), silica sand, clay minerals and water. The technology for extraction of oil involves large-scale, energy-intensive processing of the deposits, typically by the injection of steam, separation of the oil and processing of waste. Since 2002, companies have invested US$150 billion to recover oil from Alberta's oil sands.

Calgary is the center for design engineering and project management, while Edmonton, further north and closer to the oil sands deposits, is the site of most fabrication and off-site construction. This is where the pre-fabricated modules are

shipped by road (or trucked) for assembly at the production plants. JV Driver and PCL have been at the forefront in supporting these efforts.

Overcoming challenges

- Link project management with design, fabrication and construction performed at different sites
- Produce accurate fabrication drawings from original design with no redrafting
- Speed the production and delivery of fabrication deliverables
- Optimize workflow from engineering and design through fabrication and construction

Realizing results

JV Driver and PCL have achieved success using OnSite Spool Design for the creation of isometric drawings, bills of material, material specifications and other deliverables required for the fabrication of modules that compose these production plants. Based on Forte Isogen (formerly Isogen), the industry standard software for automating piping isometric generation, OnSite Spool Design enables JV Driver and PCL to simply add information to the original design data to create new fabrication deliverables.

The companies selected OnSite Spool Design based on its ability to integrate with their existing in-house systems, allowing them to develop customized workflows and provide cost savings and efficiencies to their customers. Another key factor was the software's compatibility with all the leading plant design systems, including Forte 3D, PDS® and Forte 3DWorx plus other competitors' offerings.

JV Driver and PCL have found Intergraph Spoolgen well-suited for large, demanding projects at Alberta Oil Sands, including projects such as the $963 million Syncrude UE-1 Project and the $590 million CNRL Horizon Project in Fort McMurray, and the $500 million Scotford Upgrader Expansion 1 Project in Fort Saskatchewan, a joint venture among Shell Canada, Chevron Canada and Marathon Oil Sands. The software not only automates and speeds up time-consuming tasks, but also reduces errors and ensures consistency of deliverables at each phase of the process, from design and engineering through fabrication, construction and assembly.

Compared to manual drafting, they report:

- A 95% reduction of data-entry time
- Tenfold improvement in productivity
- Elimination of most drafting errors and rework
- Production of consistent quality drawings

This improves productivity in the fabrication workshop, eliminates waste and surplus material and ensures the right modules get to the construction site at the right time and with the correct erection materials, which in turn benefits the owners; engineering, procurement, and construction firms; and fabricators.

Moving forward

According to the U.S. Department of Energy, world energy consumption will increase by 28% between 2015 and 2040. These vast reserves in the Alberta Oil Sands will be an important resource in meeting this demand. JV Driver and PCL will continue to leverage OnSite Spool Design to provide their clients with the required fabrication drawings and other deliverables with speed and accuracy.

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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