

Forum's Hydraulic Catwalk Solution Creates the Optimal Solution for a Customer Drilling in an Extreme Environment

The Challenge

A large, privately held, U.S.-based, exploration and production company wanted a solution to safely and efficiently transfer pipe to the rig floor within the constraints of an Arctic Circle land rig. Extreme weather conditions necessitated that all areas of the rig (rig floor, derrick, pipe rack, catwalk, and auxiliary and storage facilities) be enclosed to help protect drilling personnel and equipment.

The limitations associated with mounting a catwalk inside a mobile, confined-space structure presented additional challenges. Because the catwalk was designed to operate within the limits of the protective envelope and it needed to be mobile, the distance from the catwalk to the well center was greater than standard rig layouts. Additionally, the rig floor height, relative to the distance to the well center, would be substantially less than conventional rigs. To address these demands, the customer abandoned traditional plans and required a lower profile catwalk with substantially more horizontal travel.

Finally, operating the catwalk in the restricted space created safety concerns due to accessibility and visibility issues. The catwalk operator needed to move the tubulars from the pipe barn, up through the cattle shoot and onto the rig floor in a safe manner, sometimes without visual confirmation.

The Solution

Since this was the client's first project of this type, they needed a Company who was experienced in modeling and building tailored hydraulic catwalk systems. Based on the customer's understanding of Forum's engineering and design capabilities and having seen the Pipe Wranglers® catwalk in conventional applications, Forum was highlighted as the go-to company to offer the most practical solution and resolve the customer's specific technical challenges.

Numerous planning meetings were conducted between the client, their rig designer, and Forum's engineering and business development groups. In these meetings, Forum shared ideas, concepts and options before developing a hydraulic catwalk system that best fit the customer's prerequisites.

The resulting solution included a compact, low-profile, mechanized catwalk system with specialized pipe racks and sensors. This equipment connected the interface to the ancillary equipment in the client's pipe barn, which virtually eliminated the need for a person to load and unload the catwalk.

The Benefit

By meeting with the client and truly understanding their requirements, Forum was able to design and manufacture a practical semi-automated solution that safely and effectively transferred pipe to the rig floor on an extreme drilling location. Because the constrained environment prevented full visibility between areas, minimizing human intervention in the process substantially mitigated serious safety concerns.

The Forum catwalk provided a more simplified solution than what had previously been used in similar applications. Because up-time, specifically tripping speed, is so valuable, the client recognized the Forum system as being the new standard due to its robust features. The design helped ensure that maintenance and downtime were minimized, while providing superior operational cycle times and efficiency.

As a result of the close collaboration throughout the project and the delivery of a solution that successfully met their needs, the customer is working with Forum on other projects, specifically the supply of handling tools, gate valves, manifold components and instrumentation for their various drilling projects.

