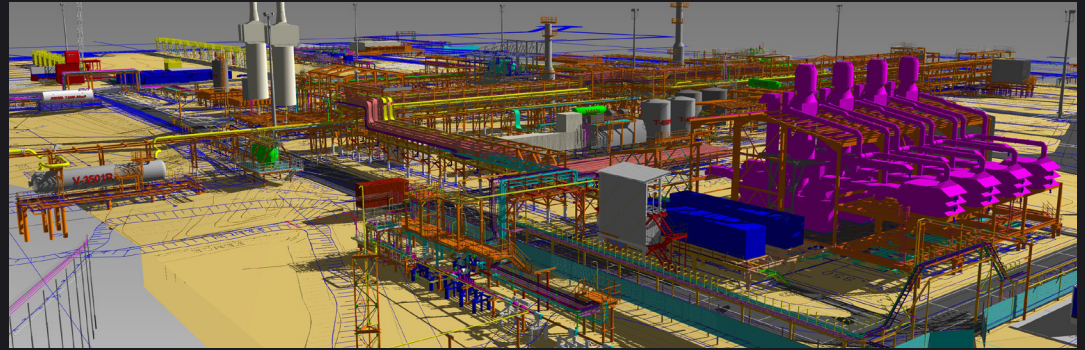




CASE STUDY

Total succeeds in Russian arctic with Octave's Forte 3DWorx



Key facts:

Company: Total Exploration & Production Russia

Website:
www.totalenergies.com

Industry: Chemicals & Petrochemicals

Country: Russia

Octave products used:
Forte 3DWorx (CADWorx Plant Professional)

Key benefits:

- Addressed design challenges in permafrost environment
- Efficiently reconstructed an entire facility in 3D
- Improved design processes with Forte 3DWorx
- Ensured on-time project completion

Total Exploration & Production Russia (TEPR) is part of Total Group, the largest French investor active in the Russian Federation since 1991. The company is Russia's largest trader of crude oil and product exports.

Total Exploration & Production Russia (TEPR) operates the Kharyaga oil field in the Nenets Autonomous Okrug, Timan Pechora Basin that is north of the Arctic Circle on permafrost soil.

The project involved the TEPR's construction department linking the extension of existing production facilities to accommodate new production and production increases from the oil field. The project included preparations to tie in pipelines from new remote pads and modifications to bring existent design solutions in line with modern safety requirements.

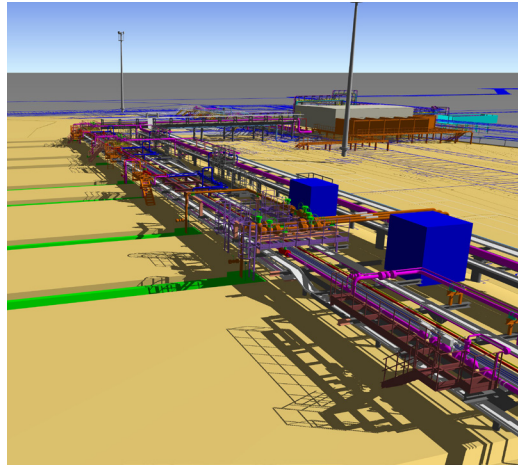
Identifying goals

Engineering projects of oil and gas fields benefit from 3D presentation. However, the facility's design documentation provided by the engineering contractor from the past was entirely in flat drawings, which meant TEPR had to reconstruct the entire facility, including piping and structural design in 3D.

Facing this challenge, the TEPR lead engineer chose Forte 3DWorx for the task because of its proven and easy-to-use 3D modeling capabilities. For the ongoing conversion involving two additional engineers, the 3D model in Forte 3DWorx that TEPR engineers produced provides a complete representation of the size of the production plant, and all the new facilities they add appear in this 3D model.

“By using Forte 3DWorx tools, we were able to get the project completed with just three specialists, and with the reconstruction and expansion completed, the 3D model they created of the facility can be used for any future extensions development.”

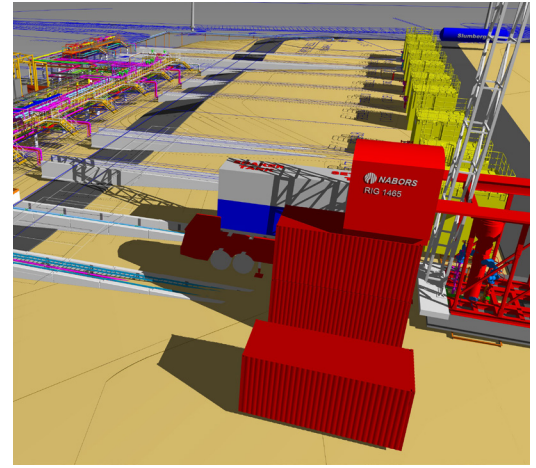
Andrey Zotov
Engineer, TEPR



Overcoming challenges

The construction department developed hook-ups of nine producing wells and two water injection wells and designed the pig receiving platforms and tie-ins for pipelines from the remote production pads.

“By using Forte 3DWorx we were able to get material takeoffs (MTO) for piping and structural items at the preliminary design stage,” explained Andrey Zotov, piping and structural engineer at TEPR. “This allowed us to plan a budget accurately and place orders early for materials and components with long lead items such as valves.” The 3D modeling with Forte 3DWorx also helped the company analyze piping network and steel structures during repair work and quickly generate piping spool isometrics and MTO.



Realizing results

The 3D reconstruction of these oil production facilities was a major task even for an experienced engineering company such as TEPR. During project meetings, they were able to use the 3D Forte 3DWorx models to demonstrate and review the new and proposed site modifications to ensure maximum clarity among all participants involved in the process.

Forte 3DWorx helped ensure quick installation of the pig receiving platforms and helped them start up remote pads production on time and report the project's completion to the Russian partners.

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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