



## FACTS AT A GLANCE

**Company:** NOV Fiber Glass Systems

**Website:** [www.nov.com](http://www.nov.com)

**Description:** National Oilwell Varco Fiber Glass Systems (NOV FGS) is the combination of Star® Fiberglass, Smith Fibercast®, and Ameron ([www.ameron-fpg.com](http://www.ameron-fpg.com)) product lines, bringing over 60 years of time-tested composite pipe experience to the oilfield, chemical and industrial, petroleum marketing, and marine and offshore markets. Its broad range of temperatures, pressures, and corrosion barriers allow the company to best match a product with the required application. NOV FGS is headquartered in San Antonio, Texas, and has 15 manufacturing facilities around the world.

**Industry:** Process

**Country:** U.S.

## PRODUCTS USED

- SmartPlant® Isometrics

## KEY BENEFITS

- Reduced time in spooling and material take off (MTO) preparation
- Reduced errors for increased MTO accuracy
- Improved productivity through automation and reduced manual editing
- Rapid and easy creation of company-standard fiberglass piping component database

## NOV FGS IMPLEMENTS SMARTPLANT® ISOMETRICS FOR PRODUCTION OF FIBERGLASS-COMPOSITE PIPES

Intergraph® technology enables automation for increased productivity and accuracy

### IDENTIFYING GOALS

National Oilwell Varco (NOV) acquired Ameron International Corporation in 2011, creating NOV Fiber Glass Systems (FGS). NOV FGS manufactures and markets the world's most comprehensive line of fiberglass pipe products for the chemical and industrial markets. They are used for oilfield, service station fuel handling, offshore platform, and marine applications.

NOV FGS had been using plain 2D Autodesk AutoCAD® to create fabrication spool drawings. This process is both time-consuming and error-prone, leading to shortages of materials during procurement, as well as dimensional errors during manufacturing.

With the growth in business, NOV FGS wanted to boost efficiency of its production, as well as ensure it could effectively handle future growth. The company also sought to increase accuracy of material take off (MTO), which will help to facilitate the production process.

### OVERCOMING CHALLENGES

- Establish database-driven spool drawings
- Reduce manual editing during drafting
- Improve productivity
- Minimize errors and produce accurate MTO

### REALIZING RESULTS

NOV FGS wanted a standalone solution that is easy to use and would produce accurate results. The company chose Intergraph® SmartPlant® Isometrics because it was the only software solution available in the market that met these key requirements. In addition, the solution is user-friendly so only minimal training was required. NOV FGS could also customize SmartPlant Isometrics as required because the solution is very flexible.

SmartPlant Isometrics, powered by ISOGEN®, is the Intergraph solution designed to document piping systems with industry-standard piping isometric drawings, and is ideal for site-based piping engineers and designers. SmartPlant Isometrics can

read design isometrics from almost any 3D plant design system, or create new isometrics quickly and accurately from sketches, providing a high-quality record for planning, cost estimation, inspection, or design of modifications.

NOV FGS implemented SmartPlant Isometrics to generate database spools with accurate and automated MTO. The draftsmen use the Intergraph solution to develop spool drawings for production from NOV FGS clients' isometrics or layouts. The generated MTO is then sent to the sales and production team for planning and preparation.

It was a smooth and easy process for NOV FGS to implement SmartPlant Isometrics and users became proficient in the software very quickly. The solution could be readily adapted to suit the company's work processes, and its ability to provide accurate piping reports delivered great benefits to the handover of information between business departments by ensuring that accurate and timely procurement of materials is always performed. Due to the extensive customization options available in SmartPlant Isometrics, symbols and drawing templates could be established to enable standardized, consistently presented, and industry-standard isometric deliverables to be produced for all projects that NOV FGS undertakes.

SmartPlant Isometrics has also delivered significant time savings to NOV FGS. With its previous methods, it might have taken approximately one hour to create each and every individual spool drawing, including the addition of attribution, cutting and MTO information, and jointing details between male and female parts. Due to the productive pipe-sketching functionality and powerful editing tools of SmartPlant Isometrics, as well as the inclusion of ISOGEN drawing automation, making revisions to piping designs is fast and easy. Using the Intergraph solution, NOV FGS has dramatically reduced design time and errors, with

drawing production time per spool drawing now reduced to just minutes. NOV FGS considers all drawings and MTOs produced by SmartPlant Isometrics to be 99 percent accurate.

NOV FGS is very satisfied with the implementation of SmartPlant Isometrics, which has enhanced the company's accuracy and productivity. With SmartPlant Isometrics, NOV FGS is able to generate 25 to 30 spools per day, complete with MTO and ready for production.

## MOVING FORWARD

NOV FGS currently has a few thousand items in its database but expects this number to keep growing as it takes on more projects. The company will continue enhancing its system and processes to keep up with business growth, and ensure it fully maximizes the benefit of SmartPlant Isometrics for significant time and costs savings while maintaining high-quality production of fiberglass-composite pipes.



## ABOUT INTERGRAPH

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Intergraph operates through two divisions: Process, Power & Marine (PP&M) and Security, Government & Infrastructure (SG&I). Intergraph PP&M provides enterprise engineering software for the design, construction, operation, and data management of plants, ships, and

offshore facilities. Intergraph SG&I provides geospatially powered solutions, including ERDAS technologies, to the public safety and security, defense and intelligence, government, transportation, photogrammetry, and utilities and communications industries. Intergraph Government Solutions (IGS) is a wholly owned subsidiary of Intergraph Corporation for the SG&I U.S. federal business.

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