

CASE STUDY



CADWorx & Analysis Solutions



"We finished the entire cost estimate, material take-offs project in five and a half weeks, spending just 299.5 hours, an accomplishment made possible only with the help of Intergraph CADWorx Plant and P&ID"

Kunal Patel, CAD Designer at JFMPE

PRODUCT INDEX

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Intergraph CAS

12777 Jones Road, Suite 480
Houston, TX 77070 USA

Phone: +1 281-890-4566 • Fax: +1 281-890-3301
E-mail: sales@coade.com • Web: www.coade.com

JFMPE eliminates traditional material take-off challenges with Intergraph CADWorx Plant

About JFMPE

JFMPE, Inc. (JFMPE) is an engineering services company serving geothermal energy and power generation industry projects around the globe. The company provides clients with skilled engineering teams specialized in geothermal, mechanical, structural, electrical and other engineering disciplines to match each project's requirements.

Estimating accurate costs and materials for large geothermal power plant

A major geothermal power generating company in Nevada contracted with JFMPE for a multi-million dollar project that required zero tolerance on the cost estimate. The company's task was to prepare a preliminary cost estimate for a geothermal power plant including bills of material. Hardcopy process and instrumentation diagrams (P&IDs) and process flow diagrams (PFDs) were the only references available from the client.

Addressing project size, time and budget challenges

Project challenges included its size combined with both time and budget constraints. Involved were pipes ranging from 1/2" to 66" in diameter and 20,000 feet in length plus 55 vessels, 349 process lines, 5080 fittings, and 25 other pieces of large equipment – 6,242 items in all.

"On a project like this, the large size and short time schedule might discourage some from accepting the challenge within the proposed budget, but not if you can use Intergraph CADWorx and Analysis Solutions (Intergraph CAS) products to their maximum potential," said Kunal Patel, CAD designer at JFMPE. "The benefits of the Intergraph CAS integrated approach, which we had not seen before, surprised everybody. No one had imagined how project tasks could be simplified so optimally," added Patel.

Producing accurate deliverables with CADWorx Plant

Using CADWorx solutions, JFMPE successfully developed database-backed P&ID reports; process line, instrument, vessel, mechanical equipment reports, and various bills of materials. The cost estimate and data accuracy were verified by the client in a Microsoft Access® database from CADWorx P&ID and CADWorx Plant's AutoCAD®-based drawings. Intergraph CAS products ensured 100% reliability of material take offs, and any of the 500-plus items on one PFD/P&ID could be tracked for inclusion in bills of material. "Intergraph CADWorx and Analysis Solutions helped eliminate errors on fittings and other traditional material take-off challenges," said Patel. "Within the allotted time, we were able to develop an accurate cost estimate using the PFD & P&ID drawings laid over scans of client hardcopy drawings plus a summary report."

Achieving high client satisfaction

JFMPE achieved high client satisfaction and confidence thanks to CADWorx and Analysis Solutions and the support and report documents delivered for the client. "We started work on Dec 18, 2009, and finished the entire cost estimate, material take-offs project in five and a half weeks, spending just 299.5 hours, an accomplishment made possible only with the help of Intergraph CADWorx Plant and P&ID," Patel concluded