CASE STUDY: PETROBRAS, BRAZIL

SUPPORTING INSPECTIONS WITH SMARTPLANT® ENTERPRISE FOR OWNER OPERATORS (SPO) MOBILE

Brazilian oil & gas company optimizes quality and maintenance with Intergraph® mobile technology

IDENTIFYING GOALS

The Termoceará plant, one of Petrobras’ thermal generators located in the northeast of Brazil, is capable of generating 220 MW of power for the National Interconnected System. Petrobras has been using SmartPlant® Foundation (SPF) as its Electronic Document Management System (EDMS) for a number of years with more than 2,000,000 (two million) documents in its database related to more than 1,000,000 (one million) tags for Exploration and Production, Gas and Energy, and Transportation.

Petrobras was looking for a solution to support as-built plant inspections and identify outdated documentation. Termoceará was chosen to run the pilot project due to its mature document management process, technical expertise and enthusiastic team. The overall goal of the pilot was to increase information quality and reduce the time that it takes to find the right information. Termoceará’s personnel would correct plant information in the field and upload documents marked-up with comments back into the system.

To this end, plant inspectors would have to take large sets of documents to the field and be able to search and navigate them comfortably. Petrobras decided to evaluate a mobile solution allowing for comprehensive document access in the field. As the company has been a long time user of Intergraph® solutions, the decision in favor of SmartPlant Enterprise for Owner Operators (SPO) Mobile and its integration with SPF and engineering data warehouse was an obvious step.

SPO Mobile Applications provide a simple way to replace paper printouts with offline electronic access to information and documentation on Windows®-based devices such as laptops or tablets. Information and documentation is downloaded into a “briefcase” on a mobile device, which is then available offline. Petrobras saw that SPO Mobile’s search and document visualization functionalities, the possibilities to input comments as well as the capture of photographs coupled with an-easy-to-use interface, would provide extensive opportunities.

FACTS AT A GLANCE

Company: Petrobras
Website: http://www.petrobras.com
Description: Petrobras is a Brazilian state-owned oil & gas company that operates as an integrated energy company in the sectors of exploration and production, refining, marketing, transportation, petrochemicals, oil distribution, natural gas, electricity, chemical gas and biofuels.

- 135 production platforms
- 15 refineries
- 31,000 kilometers of pipelines
- More than 8,000 service stations
- Proved reserves are around 16 billion barrels of oil

Employees: 86,111
Industry: Oil & Energy
Country: Brazil
Length Of Project: 5,000 man hours

PRODUCTS USED

- SmartPlant® Enterprise for Owner Operators (SPO) Mobile
- SmartPlant Foundation
- SmartPlant P&ID
- SmartPlant Electrical
- SmartPlant Instrumentation
- Intergraph Smart™ 3D
- PDS®
- SmartPlant Review
- SmartPlant Reference Data
- SmartPlant Interop Publisher

KEY BENEFITS

- No need to take hardcopy documents into the field
- Simple user interface for field engineers to access information
- Image resources available
- Overall support of process optimization
OVERCOMING CHALLENGES

For the implementation, Petrobras partnered with Sisgraph, the company that markets Intergraph solutions in South America and provided services and consulting for the Termoceará project. In only three months, Sisgraph implemented SPO Mobile solution and provides interoperability with the Petrobras SPF system as well as tested and deployed the installation. Now around 120,000 documents are managed with an interface to the SPO mobile solution at Termoceará.

During this time, typical brownfield issues arose, such as the identification of out-of-date documents with several copies of the same document all marked-up with different comments.

The process around the solution had to be designed to reduce the risk of accidents and absence of internet access in the industrial area for safety reasons. At the same time, specific safety requirements for mobile devices had to be met. The industrial area can only be entered with certified mobile equipment (4’ drop, shock, vibration, rain, dust, sand, altitude, freeze/thaw, high/low temperature, temperature shock, humidity, explosive atmosphere). Currently, five mobile devices are in use and shared by the field engineers.

REALIZING RESULT

The Termoceará pilot was set up to evaluate a mobile solution and its integration with the existing SPF system, verifying that the mobile technology is applicable and robust for the engineering process in the field. Now around 120,000 documents are managed with an interface to the SPO mobile solution, including vendor documentation, P&IDs, electrical diagrams, datasheets, etc. in SPF. SPO Mobile exceeded expectations as it provided offline access to documentation in a user-friendly process, optimized with useful features, of which the image resources were considered a big plus. SPO Mobile helps increase productivity and reduce risks due to improved:

- Engineering document access and management
- Information reliability
- Information security

For Petrobras, SPO Mobile has proven to be the right technology to support its as-built inspection requirements, helping to optimize quality and maintenance time.

MOVING FORWARD

After the successful pilot at the Termoceará plant, Petrobras is now planning to apply the system in its other thermal power plants across the country. At the same time, it will be working on automating the document approval workflow and increase the availability of information further to support its inspection and maintenance activities.

ABOUT INTERGRAPH PROCESS, POWER & MARINE

Soon to be known as Hexagon Process, Power & Marine, Intergraph Process, Power & Marine is the leading global provider of engineering software for the design, construction and operation of plants, ships and offshore facilities.

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