CASE STUDY

Leading energy provider increases productivity and lowers management costs of a power plant

Key facts:

Company: Gelsia

Website: www.gelsia.it

Industry: Power & Utilities

Country: Italy

Octave products used: Forte 3DWorx *(CADWorx Plant Professional),* Facets P&IDWorx *(CADWorx P&ID Professional),* Forte ReviewWorx *(CADWorx Design Review Professional)*

Key benefits:

- Improved operations and maintenance efficiency
- Increased awareness of and access to information
- Safer plant management
- Reduced management costs

Gelsia is a leading energy supplier of gas, electricity, and thermal power located in Seregno, Italy. Originally started as a municipal company of Seregno in 1910, and launched as Gelsia Group in 2008, the company has grown to become one of the major players in the Italian energy market, and currently provides services to 28 municipalities in Italy.

Identifying goals

Gelsia wanted to improve the safety, productivity, and maintenance potential for its existing combined heat and power station and substations in Seregno, Lombardy. The company needed a way to map the facilities of cogeneration plant and substations, obtaining designs as actually constructed ("as built").

The goals of the project were to:

- Create an intelligent and up-to-date 3D model of the plant for improved safety management and maintenance.
- Generate an accurate overview of plant documentation, including piping layouts, isometric sketches, and bills of material.
- Acquire component data for an accurate materials management and layout study.
- Extract critical information to improve energy efficiency of the plant.

The company wanted to improve its understanding of its own network and reduce management costs. Gelsia decided

to utilize the Forte 3DWorx Design Suite for the project, including Forte 3DWorx for the creation of intelligent 3D models, Facets P&IDWorx for creation of piping and instrumentation diagrams, and Forte ReviewWorx to enable efficient management and tracking of the project steps.

Overcoming challenges

Based on its own software, Gelsia already had a facility maintenance process in place. This system needed more information to enable full and efficient management of its facility. As such, the first step was to perform a 3D laser survey of the entities located inside the substations to create a 3D realistic point cloud of the environment surveyed.

The survey was registered with Leica Geosystems HDS Cyclone™ software and displayed in the Leica TruView free viewer.

From the 3D point cloud, a characterized 3D model was implemented. All information relative to each power station and substation, such as equipment data sheets, piping and instrument components, etc., were included in the 3D model to:

- Allow safe management of substation operations.
- Enable easy and faster maintenance of the substations (especially during unpredictable failures and subsequent emergency management).
- Create a complete database of components inside substations for materials management.

Simultaneously, Facets P&IDWorx was used to create an intelligent database of the existing P&IDs of the plants. Throughout the project, Forte ReviewWorx was used by the Gelsia management team to review project progress, and facilitate decision making regarding next steps.

Realizing results

With the newly available intelligent information, Gelsia was able to:

- Improve safety of the facilities thanks to having a real-life 3D design documentation of the plant.
- Streamline plant operations and maintenance due to more available and better quality information.
- Create a database for materials management for the substations.

Furthermore, once the 3D model was completed, all documents and information such as the piping layout, sections, isometric sketches, and a complete bill of material were available to allow PED qualification of the substations.

The choice to adopt Octave's Forte 3DWorx Design Suite solutions was motivated by their ease of learning and use; complete interoperability between the various modules of the software suite; and the possibility of an easy-to-implement, custom interface with other software.

Moving forward

During the project, Gelsia standardized its work processes by leveraging Forte 3DWorx Design Suite solution. The final step of the project was to integrate the existing information systems (CMMS and GIS) with the new data. The company expects to be using Forte 3DWorx Design Suite solutions in all of its future projects.

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.