

DEHN protects.

Open Grid Europe's Compressor Station
in Werne

Customer

Open Grid Europe GmbH

Project overview

Branch

Gas transport
Pipeline technology

Application

Risk analysis and 3D planning
of the earthing and lightning
protection concept for the
Werne compressor station
(incl. the integration of existing
facilities)

Software

AVEVA Everything 3D™

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Open Grid Europe GmbH

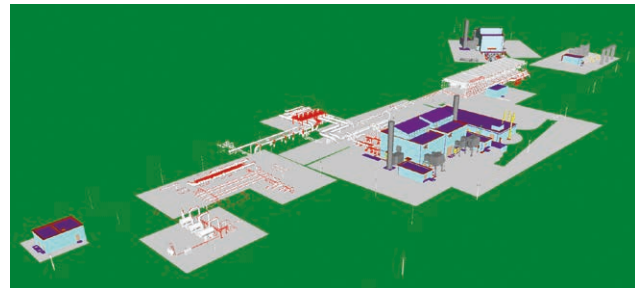
Die Open Grid Europe GmbH (OGE) with its headquarters in Essen is Germany's leading natural gas transmitter with a gas pipeline network of roughly 12,000 km. One of the most important hubs in the natural gas grid is the OGE compressor station in Werne: here 13 pipelines come together from different directions. They transmit natural gas from the Netherlands (so-called L gas) and from the North Sea (H gas) to the Ruhr area and then on southwards. As about a quarter of Germany's natural gas consumption flows through the Werne compressor station, the expansion of the location as a central point in the gas supply grid is also part of the grid development plan. In future, it will be possible to reverse the gas flow so that it can flow both north and south. In addition, OGE is upgrading the compressor station for the impending conversion from L to H gas. With this "fitness programme" OGE is shaping up to guarantee the supply reliability and flexibility required in the grid development plan: the transmission capacity in Werne will be increased to 6.5 mill. m³/h by the end of 2018.

Challenge

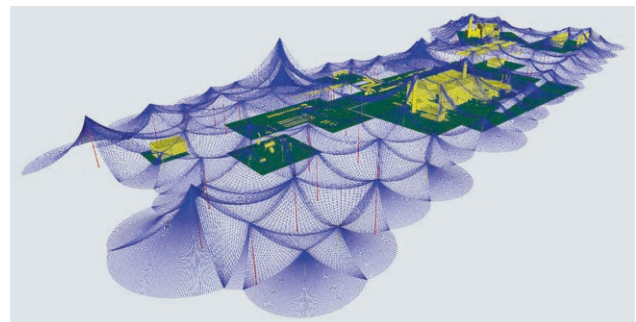
The safe operation and maximum availability of a compressor station on the scale of Werne demands the precise planning and implementation of a detailed lightning protection concept. The focus here is on the holistic consideration of the individual parts of the facilities and structures (incl. connection with existing installations) and establishing LPZ 0_B (Lightning Protection Zone) for the entire site.

Solution

Open Grid Europe relies on DEHN's 3D planning service to integrate the lightning protection concept in the complex architecture of the site (incl. ex areas!). This guarantees the efficient configuration of air-termination devices under consideration of all parts of the facility whilst also offering the advantage of a very clear depiction of the protected volume of the air-termination devices. 3D planning makes it possible to place air-termination devices at the best positions in the facility, helping to optimise installation and material requirements.



3D lightning protection concept: new building/extension of Werne compressor station



3D lightning protection concept: protected volume new building/extension of Werne compressor station

Advantages of the DEHN solution

- All drawings always correspond with the current 3D model
- Errors are minimised because the protected volumes are clearly visible right round the building (360 degrees)
- Coordination of the installation process is more convenient for the installation company
- Any number of 2D models and 3D views can be created from the 3D model
- Many mounting details can be generated alongside the view
- 3D visualisation helps reduce air-termination devices to a minimum
 - ➔ lower material costs, reduced installation time
- Future expansion of facilities / buildings can be integrated in the existing 3D model, quickly and easily
- Optimum overview for technical experts when inspecting adherence to minimum health and safety requirements.