



Improving Efficiency & Safety in Power Plants

DONG
energy

Enhanced Lone Worker Protection and Automatic Alarm Dispatching

DONG Energy, Denmark's largest power generator, produces more than 50% of Denmark's power and about 40% of the district heating.

As power plants become more automated, the number of employees decreases, and can often be characterized as lone workers. DONG Energy wants to maximize the security for these lone workers.

DONG Energy decided on a solution for multiple power plants based on digital TETRA radio and ZONITH software. Not only does this solution make the plants safer, but also more efficient through automated alarm dispatch.

All the plants are interconnected by IP, which enables radio communication (incl. alarms) between power plants.

"Not only do we have a safer working environment. It has become more efficient because employees receive technical alarms directly on their hand held radios"

Rene Fritzen, Project Manager

René Fritzen, DONG Energy project manager, emphasizes that the ZONITH solution provides the lone workers a feeling of being protected at work - no matter how isolated they are in their physical environment.

Thanks to ZONITH Indoor Positioning via Bluetooth, lone workers can even enter *safe areas* where lone worker protection-features are automatically turned off. If a lone worker stops moving in the safe area, the lone worker features will re-activate automatically.



The lone worker can now rest assured that he is protected through his TETRA hand set. It also helps him in his daily work with handling technical alarms.

Core Lone Worker Features

- ▶ Lone Worker - the employee must activate the radio every ten minutes. If he does not, help is called automatically.
- ▶ Panic button on radios calls for help.
- ▶ In case of alarm outer gates are opened for easy access. An open two way radio call is established to the rescue central.
- ▶ Safe Area - lone worker functionality is automatically switched off in defined areas

Core Alarm Handling Features

- ▶ Network Alive Check Module - warns lone workers if network is down.
- ▶ Employees receive technical alarms from process control systems on their radios.

The Solution

- ▶ **SAFETY:** Lone Worker Alarms are dispatched to the designated emergency control center and colleagues at the plant. At the same time all outer gates are opened for easy access for the control center rescue personnel.
- ▶ **EFFICIENCY:** Technical alarms from a wide variety of SCADA-systems are automatically dispatched directly to the employee radios. No matter where the employees are located they can receive the alarms.

Hardware and Software

The ZONITH Alarm Control System software was installed in each power plant with integration to technical alarms and ZONITH Lone Worker Protection System. It can dispatch text messages by TETRA and GSM and is connected to the outer gates by ZONITH Relay Modules.

ZONITH Indoor Positioning Module and ZONITH Safe Area software for defining safe areas.

ZONITH Alarm Control System is connected to a Zonith Network Alive Check Module, which warns employees if they are not covered by the network. Also it is connected to an RTCU, which collects the output from safe area motion sensors.

The power plants have DAMM TetraFlex base stations connected by IP creating one of the biggest private TETRA networks in northern Europe. The radios are from Sepura.

