Application of Axis HD camera in smart oil depot.

Introduction of video surveillance system for Sinopec Tianjin National Crude Oil Reserve Base.

Organization:
Sinopec Tianjin National Crude Oil Reserve Base

Location:
Tianjin, China

Industry segment:
Critical infrastructure

Application:
Safety and security

Axis partner:
Beijing Giris Electronics Technology, Ltd.

Mission

Sinopec Tianjin National Crude Oil Reserve Base, as one of the four new smart oil depots built by Sinopec in 2015, adopted high-level IoT technology, system integration technology and network communication technology to fully benefit from the functions and efficiency of the sub-systems and ensure the safety and efficiency during production, storage and transportation.

As a subsystem of smart depot, the depot video surveillance system forms a security barrier integrating personal protection, physical protection and technical protection by virtue of video information, and plays a key role in security and production management of the depot. Meanwhile, video information is provided to other smart subsystems through the network, making up a complete smart depot system to facilitate the user's production and operation management and emergency command decision-making.

Solution

The video surveillance system of Sinopec Tianjin National Crude Oil Reserve Base adopted full HD video surveillance system to give full play to the advantages of digital video such as high definition, storage, transmission, image quality and multiple applications, and form a customized CCTV system for the depot.
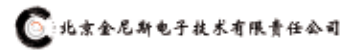
Result

> The video terminal allows the user to browse the image caught by any HD camera of any depot conveniently, supports the display of video in single window, four windows or 16 windows, and enables easy playback of image history and PTZ control

> The video surveillance system can interact with perimeter intrusion systems, and leverage the alarm video client to help security personnel find real-time video and image of the alarm zone and handle the alarm in a timely manner

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Production control center of Sinopec Tianjin National Crude Oil Reserve Base.

> The video surveillance system can interact seamlessly with the depot's fire alarm system, and leverages the fire alarm system client to display image of related camera in case of any fire alarm with the oil tank so that the user can handle the alarm in a timely manner
> The video and image can be uploaded to subsystems such as the geographical information system of the smart depot and the command scheduling system; the HD cameras of Axis provide details of the spot to help local or remote users implement command decision-making or production management

Specifics

In the TV surveillance system, the front-end devices adopt Axis network cameras. IP66-rated 720P integrated cameras (AXIS P1354-E) and 1080P day and night dome cameras (AXIS Q6045-S) are installed in outdoor area; built-in 1080i AXIS Q1755 Network Cameras are installed at empty spaces of the oil transfer pump and the top of oil tanks; 720P dome cameras are installed in indoor area; integrated network camera and dual thermal outdoor PTZ camera (AXIS Q8722-E) are respectively installed on the fire training tower and the camera tower in the southeast corner to monitor the entire base.

Digital signals from the front-end 133-way Axis cameras are all connected to the video surveillance chassis in the comprehensive office building through optical cable; they are then connected to the network switch of control center through Ethernet fiber optic converter (receiver); the alarm switch quantity signals from the perimeter alarm system and fire protection system are connected to the core switch through the network alarm module, thus achieving the interaction of videos from perimeter alarm system and fire protection system; an application for network video management of video surveillance and stream media server is installed in the comprehensive office building for systematic management of cameras and user authorities; all industry video servers and clients are connected to the 10 Gigabit core switch with optical module.

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