

Securing crucial production.

Video surveillance that ensures safety, security and productivity.



Being prepared for everything... is the best investment.

Some infrastructure is so vital that its output is needed for the functioning of everyday life. When you are responsible for a critical facility, you need to be prepared for all sorts of threats. Everything from incidents and theft to terrorism and natural disasters can cause production interruptions. With Axis surveillance solutions, you can protect against some of these challenging situations – and make sure your facility runs as smoothly as possible.

Being a world leader in IP surveillance, Axis offers a unique combination of crystal-clear real-time HDTV with unparalleled light sensitivity. When you couple this with audio detection and intelligent video applications, you can ensure the safety, security and productivity of your facility. Ultimately, being prepared for everything and being able to take action in time will save you money in the long run.



Full product range for your surveillance needs

Thanks to Axis' full range product portfolio we can meet the many and varying needs of this critical segment. Network video is our core competence, but we can tailor-make special video management applications and intelligent analysis tools together with our partners.

These additional features can cover everything from perimeter protection and remote supervision to detection and identification.

When choosing Axis you buy into an open and flexible platform that can be integrated with other systems used in the facility step by step – as they're needed. Axis' video system is open but extremely secure, thanks to password protection, access control, encryption and IP address filtering.

Looking ahead, we can assure that all our products will be compatible with future innovations, so that you can feel secure that you are making a sound short and long-term investment for your business.

Securing crucial energy production.

Without electricity, society immediately comes to a standstill. Regardless of whether you are responsible for a nuclear power plant, oil refinery or solar station, Axis will have a solution that ensures the security and safety of your facility and its employees. Sometimes monitoring production efficiency is just as important as the security of your facility. With Axis' video surveillance you can do both – and gain a smooth-running facility with increased profitability.

Detect and locate intruders over long perimeters in remote locations

Production sites are often remotely located, unmanned and have long perimeters. Cameras need to be able to cover wide areas in detail, so the person in charge can detect and locate intruders a long way away. Thanks to Axis advanced high speed PTZ domes (pan/tilt/zoom) you get a wide overview, while also being able to zoom in to detail – even after it's happened. Because control rooms are often far away from the actual facility, the cameras give you extended possibilities for not just verifying the intrusion and whether it is an animal or human being trespassing, but also seeing if the intruder is an authorized person or an attacker.

In dark, foggy, or other difficult weather conditions, Axis Lightfinder technology transforms murky pictures to sharp, identifiable ones. And at night time, our thermal cameras automatically detect and alert activity in complete darkness.

Boost productivity through monitoring

You can increase your efficiency and shorten your downtimes by regularly collecting production data from your remote sites and coupling this with visual information. For example, solar cells must be free of snow and dust to effectively convert sunlight to electricity. By monitoring the condition of the panels remotely and in real-time you know if intervention is needed. With Axis' video applications you can check for production problems with pressures, flows, temperatures and leakages – so you can take action before losing output.

Secure surveillance even in harsh conditions

You need to be sure that your video surveillance will work even in the most challenging environments, electrical surges and other normal or abnormal operating conditions. Axis can provide cold-proof cameras (-40°C) camera window heaters and adjustable sun shields – ensuring you get the footage you need no matter what weather conditions.

Thanks to the ruggedness of our products and the vandal alarms they are equipped with, they can operate without interruption. Some of our cameras are so sturdy they can resist even explosions or strong electromagnetic exposure – useful features around oil facilities and nuclear power plants – so they can deliver content that is clear and trustworthy even in critical situations.

**“ Very few companies
can offer the quality
of camera we
need in our critical
industry, but
Axis cameras can,
and do, deliver. ”**

Kari Nykänen, Ph.D. in charge of
information security at Oulun Energia.

IP cameras help plant operators keep solar power flowing.

Firelight Infrastructure and Great Circle Solar use Axis cameras to protect and manage large solar farms.



Organization:

Firelight Infrastructure
Partners & Great Circle
Solar Management
Corporation

Location:

Toronto, Ontario, Canada

Industry segment:

Critical infrastructure

Application:

Plant security and
monitoring

Axis partner:

UCIT Online Security

Mission

Firelight Infrastructure Partners, a Canadian infrastructure fund with \$300 million in capital to invest in renewable energy projects, works with Great Circle Solar Management Corporation to finance, own and operate solar plants in Ontario. Each plant inhabits 100 acres of open ground outside of smaller population centres. This seclusion necessitates a real-time security and monitoring system that operates around-the-clock, yet is still cost effective.

Solution

Firelight and Great Circle considered many options, including on-site security personnel, a ring of motion detectors and pan-tilt-zoom and/or infrared cameras. The best solution came from UCIT Online Security, an Axis partner twice named Axis Integrator of the Year in Canada. UCIT Online Security recommended a combination of thermal imaging and HDTV-quality PTZ and fixed network cameras.

Existing analog cameras were migrated to the IP video system using Axis video encoders. This delivers three critical prerequisites: large coverage area, durability and reliability.

Result

UCIT Online Security provides year-round monitoring. Staff have a clear view of the grounds if an alarm is triggered by in-camera analytics or motion sensors, and can contact law enforcement and warn intruders using loudspeakers and controllable lighting. So far, though, the systems' greatest return on investment has been as a day-to-day management tool. Solar cells must be free of snow and dust to effectively convert sunlight to electricity, and Great Circle and Firelight personnel can monitor the condition of the panels remotely and in real time. Without the cameras, costly trips to these distant locations would be required.

“The Axis/UCIT Online Security solution has exceeded our expectations. We started out looking for a basic security package, but we ended up with a tool that allows us to improve our operations. This has actually turned into a project management tool, with security being the secondary consideration.”

Adam Reeds, Director, Firelight Infrastructure Partners.

Business opportunity

The province of Ontario is eliminating coal-fired electricity plants by 2014. To encourage private enterprises to invest in renewable energy, the province offers fixed-priced 20-year electricity contracts for providers of renewable energy. “This branches away from the typical utility model and means independent power producers can now succeed,” said Adam Reeds, director, Firelight Infrastructure Partners. In partnership with Great Circle Solar Management, a portfolio of three 10-megawatt solar plants have been built or are under construction throughout central Ontario.

IP cameras power live monitoring

A remote monitoring system was needed to provide security and check the status of the far-flung plants. A number of options were considered, including guards, motion detectors and the use of infrared and/or pan/tilt/zoom cameras.

UCIT Online Security, the Axis partner chosen for the project, monitors live more than 4,000 outdoor cameras across Canada. The company specializes in short-term surveillance initiatives like construction sites but, by contrast, systems at the solar plants had to operate for 20-plus years. “We needed cameras that are durable and cover a lot of space,” said UCIT Online Security President Erik Mikkelsen. “Many would recommend infrared cameras, but typical infrared illuminators burn out every three to five years, so over 20 years you would replace them multiple times. Also, with infrared illumination you can only see 20 to 40 meters at night.”

Mikkelsen recommended using a mix of high-definition and thermal IP cameras. “The Axis thermal cameras [chosen] can see up to 1,100 meters in complete darkness. So we need fewer cameras, less cabling and a lot less maintenance.”

All three sites leverage AXIS Q1921-E Thermal Network Cameras with varying lens options for outdoor detection, and then use a mix of AXIS Q6032-E PTZ Dome and 1080p HDTV-quality AXIS P1346-E Network Cameras for detailed recognition.

AXIS M3204 Fixed Dome Network Cameras were selected to secure building interiors, and existing analog cameras were digitized using AXIS 7214 Video Encoders. The entire system is controlled by UCIT’s own Detexi VMS.

Day-to-day ROI

While security was the main driver, it is no longer the main use. “Theft and security have not been an issue to date,” said Noel McDonald, Associate, Great Circle Solar. “In fact, the cameras have been most useful from an operational standpoint. For example, if snow covers the modules, they generate much less electricity. With the cameras, we can check the sites remotely and send out staff when necessary.”

The system also has security covered. Mikkelsen said, “If motion sensors or in-camera analytics trigger an alarm and we see trespassers, we can use the PA system to announce that authorities have been notified and they should leave. If it’s a work crew, we ask them to call our office and explain why they’re there.”

Video is recorded locally and archived for a minimum of two weeks. During an incident, UCIT Online Security begins live monitoring and recording at its Mississauga office. “We can provide high-quality evidence to investigators or an insurance company in an instant.”

Reliable and durable

UCIT Online Security was Axis Integrator of the Year two years in a row, and the company is committed to Axis products. “The equipment is very reliable in terms of service and maintenance,” Mikkelsen said. “We’ve tried other cameras, both less and more expensive, and we’ve found Axis to provide an excellent solution to meet our clients’ needs.”

And the ROI has been clear, Firelight’s Reeds said. “The Axis solution exceeded our expectations. We started out looking for a basic security package, but we ended up with a tool that allows us to improve our operations.”



“Axis is an innovator in the IP space. We use Axis equipment to provide a service that takes work and worry off the plates of our end users. We create systems that deliver peace of mind,” says Erik Mikkelsen, President, UCIT Online Security.



Axis network cameras stand guard over remote power plants.

Cameras detect motion, monitor maintenance and daily operations, and deliver a dramatic drop in vandalism.



Organization:
GDF Suez Canada

Location:
Toronto, Ontario, Canada

Industry segment:
Critical infrastructure

Application:
Security surveillance,
remote monitoring,
vandalism prevention

Axis partners:
Freedom Lock and
Security, Inc., Luxriot

Mission

GDF Suez is the world's largest independent electricity producer, generating more non-nuclear electricity than any other provider. GDF Suez Canada operates two large 10-megawatt solar facilities and thirteen wind-turbine sites, each producing 10 to 99 megawatts of power. These sites are all in remote locations, so managing and securing them would be expensive and labour intensive were it not for modern networked security cameras.

Solution

GDF Suez Canada partnered with systems integrator Freedom Lock and Security to install and manage AXIS P3364-LVE Fixed Dome Network Cameras and AXIS P5534-E and Q6034-E PTZ (pan/tilt/zoom) Dome Network Cameras at its wind and solar sites. The cameras record still images of the equipment for maintenance and management, and the PTZ units are set to "patrol" specified areas.

In-camera analytics detect motion and trigger alerts, and the system is connected over fibre to central GDF Suez facilities, where the data is stored on two terabyte video servers running Luxriot VMS. GDF Suez staff can view the feeds on computers, tablets or smartphones.

Result

The cameras have produced significant reductions in both vandalism and theft. Power plants use a great deal of copper wiring, and this makes them high-value targets for thieves. The cost of shutting down to replace lost wiring climbs quickly. GDF Suez found that preventing even one theft more than pays the hardware and operation costs of networked surveillance cameras.

“On a 100 megawatt wind farm, the revenue we make on an hourly basis is fairly significant, so if I can avoid being down for three hours for repairs because of vandalism or theft, then I have paid for all the cameras. We have seen that type of deterrence, and that is a huge return.”

Augusto Di Maria, Director of Project Management, GDF Suez Canada.

Security challenges

The solar and wind power-generation facilities operated by global power company GDF Suez are vast installations set in remote areas of Ontario. The seven wind-power sites are located on working farm land and each has six turbines scattered across unfenced land. GDF's two 80-acre solar sites are fenced but, with approximately 42,000 solar panels at each site, they are still vulnerable to determined vandals.

Value of deterrence

Vandals are drawn to power facilities, according to Augusto Di Maria, Director of Project Management at GDF Suez Canada. “At one site, on an annual basis, we would get a pickup truck driven down one of the roads and lit on fire. We always had to go in and clean up the mess. You also get people with golf clubs and a bunch of balls who come out to see what damage they can do to solar panels. The panels are surprisingly strong, but if you hit them just right you can do damage.”

To secure its sites, GDF partnered with Freedom Lock and Security to install a total of 40 Axis network cameras at its wind and solar plants. The all-IP cameras are a mix of AXIS P3364-LVE Fixed Dome Network Cameras, and AXIS P5534-E and AXIS Q-6034-E PTZ Dome Network Cameras.

“Since we've had the cameras, the vandalism issue is gone. The cameras are a deterrent, because when you are out to cause mischief, you look around to see if there are security measures. If you see cameras, you leave.” While the presence of Axis cameras alone has kept vandals at bay, the intelligent network video has allowed GDF to take security to the next level.

Image usability matters

When an incident does occur, image quality is paramount, as Di Maria learned at a previous job. “We had people steal a lot of copper and copper connectors, and the video system captured them doing it. But the quality was horrible: we couldn't read a license plate or see a face, or even tell what color the car was. If we had better cameras, we could have figured out who did it.”

Di Maria wanted a better system at GDF Suez, and Gord van der Grinten of Freedom Lock and Security recommended Axis. “As an integrator, Axis is a win-win. If you put in second-rate equipment it will inevitably fail, and that is bad for the client and bad for my business.”

The cameras use existing fibre connections at the power plants to link to video servers at GDF Suez' offices. The cameras are all made by Axis, and the VMS is from Luxriot. The PTZ cameras pan through a preset surveillance area. If onboard analytics detect motion, the cameras lock in on that area. “The cameras record 24/7 at a lower resolution, transmitting the images to the GDF servers, but anytime they sense motion, they immediately begin recording in high-definition and trigger an alert to GDF Suez,” van der Grinten said. “The analytics have proven to be very effective in this environment.”

In many areas, ambient light is strong enough to provide adequate illumination even at night, but when that is not the case, the sites employ the cameras' Lightfinder technology. The cameras also take regular snapshots of the far-flung equipment to monitor issues such as snow loads on solar panels. These images are used daily by maintenance staff. “We have them rotating at intervals to take snapshots of solar panels and email those to maintenance personnel. We are looking for factors such as snow loads, and we chose the cameras based on their ability to take still photos and send them off,” van der Grinten said. Di Maria added that “part of our role is to ensure we know when the panels are covered in snow, and that is much easier to do if they can refer to these photos.”

Worthwhile investment

The return on investment has been immediate. “Copper theft is a huge problem, and not so much because of the actual value of the copper but because of the delays caused by theft,” Di Maria said. “We have to isolate a station—turn everything off, and lose that revenue—and then send someone in to replace the copper, fix the fence, etc. It's costly and it's a huge nuisance. If I can prevent one theft of copper, then I've paid for the cameras 10 times over — easily.”



“Security may be your main motivation for installing cameras, but once you have them installed, take a look at what else you can do with the system. Look at the maintenance opportunities, such as snapping photos on a regular basis, or email notifications. With the structure already in place, this will add to your return on investment,” says Gord van der Grinten, owner, Freedom Lock and Security Inc.

GDF SUEZ



Axis at the service of the Acerra incinerator.

Axis cameras enable surveillance of important waste disposal site in Naples province.



Organization:
Partenope Ambiente (A2A)

Location:
Naples, Italy

Industry segment:
Critical infrastructure

Application:
Safety and security,
perimeter monitoring,
license plate recognition

Axis partners:
I.R.T.E.T. srl, TechnoAware

Mission

The incinerator at Acerra is a waste-to-energy plant built in 2009 in the Province of Naples, Italy, with the aim of solving the so-called "garbage crisis" in the Campania area, which has received widespread attention from the media, partly due to the presence of the Italian army, who were brought in to monitor the site. In order to bring an end to military control of this area, Partenope Ambiente chose to install a video surveillance system.

Solution

The 34 Axis network cameras were installed at key points, such as pedestrian walkways and vehicle routes, allowing for strategic, timely monitoring of activity and ensuring high image quality without affecting bandwidth capacity. The management software allows delivery of objects and waste to the storage site to be monitored, along with the license plates of the vehicles moving within the vicinity of the incinerator.

Result

The solution adopted has allowed the site to establish an extremely reliable video surveillance system, with equipment which is advanced both in terms of quality and technology, and which is able to meet the security standards required by the company. Efficient monitoring of the external perimeter of the site and excellent hardware and software integration combine to ensure that tampering, unauthorized access and dangerous situations near the site are discouraged and avoided.

“The depth of knowledge and expertise which comes with Axis cameras left us in no doubt as to the most appropriate solution for the plant.”

Teresa Presutto, Program Manager at I.R.T.E.T. Srl.

Axis cameras guarantee security

The incinerator at Acerra uses waste-disposal processes to create electrical energy, and made the headlines in 2009 due to protests and demonstrations against its construction. The delicacy of the situation led to the direct intervention of the Italian military, with a view to safeguarding security in the area surrounding the plant.

Installing a video surveillance system made it possible to put an end to military supervision, replacing human eyes with surveillance cameras for monitoring that is not only more efficient, but which also serves to alleviate media attention. Axis cameras fully respond to the needs of Partenope Ambiente, monitoring the outer perimeter of the incinerator and allowing the control of pedestrian and vehicular access through video analysis.

The system's strengths lie in its seamless hardware and software integration, with simplified Power over Ethernet installation, eliminating the need for power cables. The Vtrack video analysis software by TechnoAware uses different plug-ins to facilitate the accurate and reliable detection of suspicious movements or attempted trespass into the area, while also pinpointing vehicle license plates and recording all suspicious movements in perimeter and waste storage areas.

The video surveillance system features a total of 34 network cameras, with 28 fixed and 6 pan-tilt-zoom (or PTZ) cameras. The first of these are AXIS Q1755-E Network Cameras in HDTV 1080i or 720p, suitable for day and night surveillance and ideal for the protection of areas that require high-quality identification.

The choice of this model was dictated by quality require-

ments with regard to identification, color reproduction and high transmission speed. It also represents an ideal solution for bandwidth optimization, thanks to the H.264 compression standard which does not affect video quality. These models also offer advanced motion detection and audio, tampering alarms and the new Gatekeeper functionality, a particularly useful feature which automatically enlarges the display in case of motion detection, returning to normal after a default period of time.

The other six cameras installed are AXIS Q6032-E Network Dome Cameras, specially designed for surveillance applications where high speed and precision PTZ capabilities are essential for the acquisition of detailed images. These waterproof, anti-vandalism cameras have been installed at strategic points throughout the site. They boast a wide-angle 35x zoom, and a functionality which enables the cameras to be rotated and tilted to 20° above the horizon, which is especially useful for monitoring of uneven ground. The model also provides full day and night functionality, which ensures high-quality video in all lighting conditions.



“Axis is an innovator in the IP space. We use Axis equipment to provide a service that takes work and worry off the plates of our end users. We create systems that deliver peace of mind,” says Erik Mikkelsen, President, UCIT Online Security.



Thieves beware, Axis thermal cameras never sleep.

City Utilities of Springfield, MO uses Axis thermal cameras to catch copper thieves after dark.



Organization:

City Utilities of
Springfield, Missouri

Location:

Springfield, MO, USA

Industry segment:

Critical infrastructure

Application:

Loss prevention, safety
and security

Axis partners:

NetWatch, Inc.,
Milestone Systems

Mission

Hard economic times and the skyrocketing value of recycled copper, which reached \$3 per pound, have led to an alarming rise in copper theft at Springfield, Missouri's unmanned electricity substations. In just the first two months of 2012, City Utilities (CU) recorded 17 incidents of copper theft from its power substations. The utility needed a surveillance solution to watch over its barbed wire-topped, 7 ft. chain link fence and help alert police in time to catch the thieves in the act.

Solution

NetWatch, Inc., a Springfield, Missouri-based IP surveillance system provider with multiple Axis Certified Professionals on staff, recommended an array of Axis thermal and pan/tilt/zoom (PTZ) network cameras to detect break-ins and track intruders in real time. Cameras at each of the 47 unmanned substations stream video 24/7 to the company's central security office.

Heat signatures and motion detection alerts help the staff verify the nature of incidents and whether the people on video are authorized employees before calling local law enforcement or their own security service to investigate.

Result

In addition to eliminating a rash of false alarms, the thermal and PTZ network cameras are helping CU mitigate the risk of trespassers tampering with live ground wires and creating the potential for electrocution. The real-time alerts have also helped law enforcement respond to incidents more quickly, causing suspects to flee or be caught before they can cut wires and interrupt the flow of electricity to the city.

“Given that copper thieves generally hit our substations under cover of darkness, the Axis thermal cameras help us detect suspicious movement and the Axis PTZ cameras give us enough detail about attire to help law enforcement apprehend intruders.”

Nick Rasey, Manager of Physical Security for City Utilities of Springfield, MO..

Staying well-grounded

City Utilities of Springfield, Missouri operates 47 unmanned electric substations that deliver power to more than 100,000 customers in the city of Springfield and outlying areas. With copper value soaring, these unstaffed substations present an attractive target for copper wire thieves.

The situation reached a tipping point in 2012. “In a 22-day period, we had nine break-ins that cost CU about \$45,000 in replacement supplies and labor,” said Nick Rasey, Manager of Physical Security for City Utilities of Springfield, MO.

The thefts were also putting lives in danger. “If you don’t know what you’re doing, cutting copper ground wire can get you electrocuted,” Rasey said. “Also, if a CU employee enters the substation not knowing the wire’s been cut, they could get electrocuted, too.”

CU wanted to install network security cameras to remotely monitor its substations, but they worried that the amount of lighting needed for a traditional network camera would disturb the surrounding neighborhoods. Furthermore, the additional lighting might draw too much attention to the facilities. “[The substations are] not easy to locate in the dark, which is another good deterrent,” Rasey said..

Maintaining a nightly vigil

To address these concerns, NetWatch, Inc. recommended CU install AXIS Q1921-E Thermal Network Cameras throughout their facilities. The thermal cameras detect the heat signatures of objects in their field of the view and stream the video back to a Milestone XProtect® Enterprise video management system in CU’s central security office, which is manned 24/7. Intelligent thermal imaging analytics coupled with motion detection alarms alert security to potential intruders and provide enough detail for them to determine if the alarm had been triggered by a human, an animal or an inanimate object.

The thermal cameras are paired with AXIS P5532-E PTZ (pan/tilt/zoom) Network Cameras set on guard tour to stream full color images in daylight and use infrared technology to stream detailed black-and-white images at night. The PTZ cameras can also be controlled remotely through Milestone XProtect® by security staff to verify and investigate any alerts before calling security or police.

Because the security office keeps an up-to-date roster of staff schedules, they can also check if the “intruder” is in fact an authorized CU employee.

“This process has helped us avoid a lot of false alarms,” Rasey said. “And it’s helped shorten law enforcement response time to about five minutes.”

Stopping thieves in their tracks

The first Axis cameras were installed at the highly targeted Brookline substation. Within the first month, the police responded to four separate alarms. In the first three incidents, the intruders ran away as the police cruisers arrived on the scene. Often, the cruiser’s flashing lights are enough to scare off intruders before much damage is done. But, in the fourth incident, police and security service cordoned off the area and apprehended the suspect as he was fleeing into the woods, as well as his get-away driver.

The intelligent network camera system with thermal technology provides a return on investment that has both financial and personal security benefits.

“An average incident costs us about \$6,000,” Rasey said. “A majority of that is labor. For safety reasons, we can only use certified utility technicians to repair the breach in fences and replace the ground wires.”

“I don’t think there’s ever a way to totally stop copper theft,” he said. “But once you capture somebody and publicize it, it’s a better deterrent than any signage you can put up.”



CITY UTILITIES
Bringing Power Home.™

NetWatch
HD Surveillance Systems

milestone

Axis enhances security of oil drilling equipment manufacturer.

Baoji Oilfield Machinery deploys high definition IP camera surveillance system.



Organization:
Baoji Oilfield Machinery Co., Ltd. (BOMCO)

Location:
Baoji City, Shaanxi Province, China

Industry segment:
Critical infrastructure

Application:
Production plant safety and security

Axis partner:
NetPosa Technologies, Ltd.

Mission

Baoji Oilfield Machinery Co., Ltd., a subsidiary of China National Petroleum Corporation (CNPC), is an oil drilling equipment R&D and manufacturing enterprise. It is the world's largest land-based oil rig and serial mud pump R&D and manufacturing base, and a leading enterprise in the oil drilling equipment R&D and manufacturing industry in China. In order to upgrade the company's management efficiency and strengthen the security of its production management, it was necessary for Baoji Oilfield Machinery to deploy a new IP camera surveillance system. Taking into consideration the various conditions of the production plant such as the large quantity of expensive machinery and equipment, internal and external personnel, and the many potential risks, the front-end cameras had to be effective and stable, and provide high definition images, so that round-the-clock surveillance of the production plant was possible; the cameras had to be capable of handling difficult lighting conditions, high temperatures and other environmental issues.

Solution

Based on actual needs of the client, Axis and its partner designed an IP video surveillance system for Baoji Oil Machinery. A total of 143 Axis HDTV 720P HD dome IP cameras including AXIS P5534/-E and AXIS P3344 were installed in the production plant, ensuring round-the-clock, real-time recording. Within the existing comprehensive Local Area Network in the plant, a back-end surveillance management system was installed.

The PVG Server 3800 IP camera surveillance system of Axis partner, NetPosa, centrally manages the digital video data from the 143 IP cameras, the back-end storage, video forwarding and wall equipment, realizing real-time wall projection of video images as well as recording and storage. The entire system employs a modular management system, enabling compatibility of the new infrastructure with the existing surveillance system. At the same time, through the use of various modules, including digital map, real-time surveillance, media services, equipment inspection and alarm linkage, the surveillance management needs of the client are made possible.

“BOMCO’s technology upgrade project employs Axis IP camera products. Operations have been stable since the installation and commissioning of the project, the video images are clear, greatly easing the pressures the security guards face in the patrolling of the production plant. We hope to continue our partnership with Axis in future projects.”

Baoji Oilfield Machinery staff.

Result

The new system employs HDTV 720P HD digital IP cameras on a large scale. The high quality images improve the efficiency of the visual management of the production plant. AXIS P5534 and AXIS P3344 Network Cameras possess Power over Ethernet capability whereby there is no need to install the control cable and power supply cable separately, resulting in 70% of cost savings in wiring costs. The centralized platform makes it possible for a client’s computer with a single management account and platform to oversee the entire system.

The implementation of an open architecture, in accordance with open standards, has the advantage of enabling the integration of video surveillance and other security resources. This minimizes development duplication and reduces unnecessary wastage of manpower, materials and time, improving product reliability, interoperability and compatibility, and making the comprehensive upgrade of the system easy as well as laying a good foundation for future system expansion.



NetPosa 东方网力

Axis cameras resolve surveillance and assist with health and safety management at Donarbon.

Network cameras identify unsuitable refuse taken to Cambridgeshire waste management plant.



Organization:

Donarbon

Location:

Cambridgeshire, UK

Industry segment:

Critical infrastructure

Application:

Waste management, health and safety, remote monitoring and security

Axis partner:

3IT

Mission

At Cambridgeshire's largest waste management park, Donarbon was keen to upgrade its existing surveillance system to help improve health and safety across the site. It also wanted to be able to record all vehicles entering and leaving the park and monitor deposits so that any persistent offenders dumping unsuitable refuse could be identified. At the heart of Cambridgeshire County Council's waste PFI (Public Finance Initiative) contract with Donarbon is the Mechanical and Biological Treatment (MBT) plant. A surveillance system to help the MBT control room view what's happening on the plant was essential to assist with health and safety management and also to monitor waste arrivals for anything unusual.

Solution

Donarbon's IT contractor, 3IT, recommended an IP-based surveillance solution from Axis Communications. A range of Axis network cameras were deployed throughout the site that deliver excellent image quality under all lighting conditions over the IP network.

To view and record the footage taken from the cameras, 3IT advised Donarbon to use AXIS Camera Station, a software solution for simultaneous viewing and recording of high-quality, H.264, MPEG-4 and Motion JPEG video, with no recording limitations.

Result

Donarbon now has an extremely effective surveillance solution which not only monitors vehicles entering and leaving the site, but also contributes significantly to health and safety improvements. An unexpected benefit the surveillance system delivers is helping the MBT plant's engineers to remotely monitor the equipment and quickly identify any major faults. 3IT also set up the MBT technology providers in Austria with remote access to the surveillance system to assist the on-site technicians with fault diagnosis.

“The Axis network cameras save us a great deal of money when it comes to insurance claims. We will have evidence of what has happened in the case of an incident and can prove liability.”

Huw Gaskill, MBT Manager, Donarbon..

Axis cameras assist with health and safety management at Donarbon

Donarbon, part of the Dickerson Group, is based on a 200 hectare site at Waterbeach, Cambridgeshire. It has a major waste PFI contract with Cambridgeshire County Council to treat the county's waste and ensure the council meets recycling targets. As part of the PFI contract, Donarbon has a MBT plant, the first of its kind in this country. It uses the latest technology to sort waste and helps reduce the amount sent to landfill as up to 80% can be recycled.

Unwanted items

Donarbon waste management park accepts a range of waste brought in by various vehicles and means. Staff often find objects in the waste that could damage the expensive machinery so it is vital to survey the tipping area to identify these items so that they can be removed. Damage to the site by garbage trucks and dumpsters was also a problem, and Donarbon was keen to monitor this to identify repeat offenders.

Donarbon already had analog cameras in place, but was looking to step up its surveillance. It approached 3IT, its IT provider, to suggest a solution. “We recommended Donarbon upgrade to an IP-based solution as it would provide the image quality needed for improved surveillance and allow for images to be shared remotely over the network – which is very useful in the event of an incident. As a partner of Axis Communications, we didn't hesitate to base the new system on its technology,” said Kevin Auden, director, 3IT Ltd.

3IT placed Axis cameras in strategic locations in the plant: AXIS 225FD Fixed Dome Network Cameras were positioned in the reception, AXIS 221 Network Cameras were installed in the entrance bays and AXIS 232D+ Network Dome Cameras were installed in the preparation hall. To view and record footage, Donarbon uses AXIS Camera Station, a software solution for the simultaneous viewing and recording of high-quality video. 3IT recommended that footage be stored on NAS (Network Attached Storage) boxes located throughout the site.

Unexpected benefits

The MBT plant is designed to run with only a few people and this is now possible thanks to the cameras. The production coordinator is responsible for identifying the location of staff across the site and he can now view this from a PC in the control room. 3IT also installed a 42" wall mounted monitor so control room operatives can look at all the cameras at once and another monitor is in the reception to allow visitors to view the working plant.

The MBT machinery sorts around 50 tons of waste per hour and any blockages could cause it to come to a halt. 3IT have now set up the IP-based system so that the engineers responsible for support and maintenance of the machinery can log on remotely and identify any faults over the Internet. The engineers then advise staff on site, which speeds up the repair process and reduces costs as call outs are fewer.

Commenting on the benefits of the new surveillance system, Huw Gaskill, MBT manager, said: “The cameras' PTZ functionality means we can rotate the cameras 360 degrees and zoom into a bolt head. This greatly assists with quickly locating blockages. Whenever a vehicle enters or leaves the site, we now have video evidence and if any damage is caused we are able to identify the vehicle responsible. This saves us a great deal of money when it comes to insurance claims as we can prove liability.”

“The cameras also help us identify any hazardous goods discarded onsite. For example, recently a garbage truck deposited some smoldering waste and we could zoom in and detect the problem immediately.”

James Challis, Group IT Manager said “We are even using recorded footage to educate visiting school parties on recycling and waste management. This enables us to show them how the MBT plant works without them having to go near the machinery. Now, thanks to the IP-based system, we have an extremely effective surveillance solution which contributes significantly to health and safety management and keeping our machinery operational at all times.”



Remote monitoring of power plants and security with Axis PTZ network cameras.



Organization:
Norvento

Location:
Galicia, Spain

Industry segment:
Critical infrastructure

Application:
Remote monitoring and facility security

Axis partner:
Proxima Systems

Mission

Founded in 1981, Norvento Enerxia is a business group focusing on promoting, building and exploiting renewable power facilities. The company has been a pioneer in developing this type of energy in Spain, and it is the main Gallegan group in Galicia by installed power. Currently, it has more than a dozen hydroelectric, wind power, biomass and solar energy facilities, distributed throughout the Autonomous Galician Communities. Norvento has based its growth on its belief in renewable power, and has assigned significant resources to research, development and innovation projects. In 2008, it produced 500,000 MWh which is equivalent to the consumption of 100,000 inhabitants.

The company, through its subsidiary Norvento Operacion y Mantenimiento, performs operation and maintenance of its own facilities as well as of those belonging to their clients, employing maintenance personnel in charge of making regular visits to hydroelectric power plants facilities located in difficult access areas. These processes involve high costs in personnel and resources.

In these circumstances, Norvento began to search for a system that could allow them to see power plant operation in real time, and to remotely monitor some operational processes. Moreover, some of the power plants' owners wanted to enhance perimeter security in their facilities to reduce the risk of intrusion, theft, or accidents.

Solution

Norvento Operacion y Mantenimiento contacted Proxima Systems, whose product, Puma Industrial, fit perfectly with their requirements. Puma Industrial is a modular and adaptable product which provides monitoring, telemetry, video surveillance, and access control. The solution was configured based on Norvento's requirements, and it was installed in the facilities that were harder and more expensive to maintain and control because of their distance or access difficulty.

“The numerous configuration options that Axis’ cameras offer are certainly important to me; I think it is amazing that, when needing some specific tool to verify something, the IP camera already has it.”

Emmanuel Lázaro Pérez, Norvento Operation and Maintenance.

Puma Industrial includes a great precision sensor system, designated for the critical parameter readout of the power plants’ processes. It allows monitoring the conditions, launching and stopping generator units, and testing the power that is being generated. Moreover, being an IP-based solution, it adds the option of integrating these data with video and sending them through the same communication channel.

Since it works through centralized protocols, this system ensures Norvento’s clients perform precise control over their facilities, receiving information via GPRS of the events taking place in each one of them in real time. It also allows remote monitoring of electric equipment and even receiving technical alerts automatically through e-mail or SMS, with the option to add images and video to them.

Selecting the AXIS 213 PTZ Network Camera as an integral part of the system, was based on the camera’s excellent integration capabilities and its multiple configuration options, the ease for programming events, and on being able to use its I/O ports to interoperate with different installation devices such as sensors. These cameras are able to perform visual control through Wi-Fi links, of events taking place in the facilities, including perimeter control, thanks to their horizontal and vertical movement and the zoom features. The system records what happens and sends a video signal directly to Norvento’s Control Center.

Result

In their Lugo offices, Norvento set up a 24-hour control center, where operators are able to monitor what happens in each of their client’s facilities. The cameras play a crucial role, for example on a wind farm, when performing outdoor maneuvers and having to visually identify that the maneuver has been successfully completed.

The main benefits that the system provides to Norvento’s facilities are:

- > Greater facility management and maintenance efficiency. With all these configuration options, some of the equipment management has been automated. Schedules are set, certain positions are established, control rounds and the system are connected in pre-determined moments, and after making the relevant testing, they receive the information and disconnect on their own.
- > Reduction in the number of displacements, and related time and costs.
- > Cabling costs and public works minimized.
- > Reduction of losses caused by undetected faults.
- > Faster response time in the event of incidents.
- > Forecasting of events that may happen within a short period of time.
- > Increased productivity and facility security.
- > Useful tool to prevent labor risks. In electric plants, personnel safety takes precedence over economic issues and halting a facility is chosen over exposing workers to an eventual risk.

In the future, Norvento intends to install this system in two more plants, and adding it to the design phase for future engineering.

About Proxima Systems

Proxima Systems is an engineering company specialized in industrial applications for Information Technologies. It has a large multi-disciplinary team of professionals with extensive experience obtained in domestic and multi-national companies. It provides turn-key products and solutions to solve their clients’ needs in the areas of: Monitoring and remote control of processes and industrial facilities, building automation, industrial computing, intelligent video surveillance in heterogeneous networks (GSM, UMTS, Internet, WiMax, WiFi, etc.), and access control.





Anything. Anywhere. Anytime.

We've got you covered.



With threats possible from any angle, the unexpected is pretty much a guarantee for critical infrastructure. That's why Axis focuses on securing you from perimeter to core. Our network video surveillance products help you secure your site in even the harshest conditions. Yet beyond that, we constantly work together with our partner network to bring you solutions that ensure safe, uninterrupted production that's also more efficient.

www.axis.com/criticalinfrastructure

AXIS[®]
COMMUNICATIONS

Protecting water treatment facilities cost-

The challenge when protecting water treatment facilities from intruders is the remote locations they are often situated at, with long perimeters to monitor. Apart from protecting the boundaries, there is a need for surveillance at operating points, reservoirs, and water and sewage systems and stations. Thanks to Axis' technology using high quality video, thermal imaging, audio and data systems you can improve the security of your facility and drastically cut personnel costs.



Water efficiently.

Outstanding image quality in difficult light

Water systems are vulnerable resources, with a need to be protected along perimeters down to the pipe systems. With Axis you can detect and avoid entry at critical points by high speed PTZ cameras that pan, tilt and zoom into the area of alarm. These cameras can also operate in dark, foggy, or other difficult weather conditions, thanks to Axis Lightfinder that transforms murky pictures to sharp, identifiable ones. And at night time, our thermal cameras' motion detection can trigger the PTZ cameras to zoom in the alerted area – so you can rest assured you will be able to detect an intruder even in complete darkness.

Monitor the entire water treatment process

Using our range of video surveillance solutions at your water treatment plant, you can monitor the entire process from dams and reservoirs, via tanks and pumps, to purification stations and waste water management. You can monitor for deviations in the process stream or finished water – and intervene before damage has been done.

Drastically reduce personnel costs

Due to the remote and often widespread locations of water treatment facilities the monitoring of these creates high personnel costs. By integrating human surveillance with IP video surveillance technology, staff can be optimized and the expert staff can prevent and respond quickly to incidents rather than spend all their time monitoring or travelling.

“ Axis PTZ cameras complement our strong security policies and help us stay proactive in safeguarding our employees and property. ”

Jeffrey Woodward, Senior Manager of Global Environment, Health, Safety and Security for Panduit Corporation.

CAESB combines human security and electronics with Axis cameras.

From 2008 onwards, the Federal District Sanitation Company went from 35 to 57 electronic surveillance stations, substantially reducing costs.



Organization:
CAESB

Location:
Brasilia (DF), Brazil

Industry segment:
Critical infrastructure

Application:
Safety and security,
remote monitoring

Axis partners:
Brasilia Segurança,
Explora Tecnologia,
Anixter, CNT Brazil, Nuoo
Software

Mission

Responsible for supplying water to 97% of the population in the Federal District, in addition to providing sanitation services to 94% of the inhabitants of the region, CAESB serves 2.17 million people. Due to the need to monitor hundreds of operating points, reservoirs, and water and sewage systems and stations – many of them in remote locations, the company has undergone a process of integrating human surveillance with IP video surveillance technology.

Solution

Starting with a service contract for five years, the solution designed by the client, together with Brasilia Segurança, through technical advice from their partner Explora, was to implement the new system in the new points of access and corridors of the units selected, as well as in high-traffic areas.

PTZ dome cameras were positioned at points of high altitude and visibility. So far, approximately 200 network cameras have been installed, including models AXIS M1011, AXIS M1113, AXIS P1343, AXIS P3343-VE, AXIS P5532-E and AXIS Q6032-E.

Result

The project has fulfilled the mission of ensuring the security of CAESB's assets with lower costs and greater efficiency. In January 2008, the company had 35 electronic surveillance points; it currently has 57. "Security costs were too high because we have hundreds of properties. If you consider that each human-manned guard station costs, per month, about 13,000 Brazilian reais (while an automated station costs 4,000 reais), imagine the total volume of that," points out Cristiano Carvalho, the client's security manager, who has achieved monthly savings of approximately 300,000 reais.

“We have seen that human security presents difficulties, as a guard generally works alone, in a remote location, and that does not guarantee security - neither his own, nor that of the property. We're talking about units with difficult access in remote locations, where risks really do exist.”

Cristiano Carvalho, CAESB manager of security.

Inside the business

For a technology provider, understanding the client's business can be a rather arduous job, especially in areas of high operational complexity, as is the case with utility companies. Cristiano Carvalho, as CAESB security manager, knows what that means. "Our company has many properties, treatment plants and operating units. Therefore, the challenge was to provide security for these posts, and especially, at a lower cost," says the executive, summarizing the major theme of the integration of human surveillance with IP technology.

As a service provider of CAESB, Brasília Segurança, directed by Explora Consulting, of Brasília (DF), has worked on the installation of equipment as well as maintenance and system management. All notices and videos arrive in real time at a central monitoring company via air links operated by Explora itself, with the authorization of Anatel (National Telecommunications Agency) to utilize the Multimedia Communication Service (MCS). The images are also monitored locally, in units equipped with electronic surveillance, using the NUUO Surveillance System software.

"The role of Brasília Segurança and Explora's consulting has been fundamental, because both companies possess expertise in project development and solutions for specific demands, with extensive experience in the field of security and PMP certification. They have been very helpful in this process," says Carvalho.

Ongoing process

According to the security manager, CAESB has grown every year, with new operational units, and the posts opened have received electronic surveillance directly. That is, there is no increase in stations with human security. And for the next two or three years, the company must maintain the pace of the operation of capacity expansion.

"The integration of human and electronic security is still in progress. We are studying some posts, because there are some infrastructure issues to be addressed. To install a camera, you need, for example, to install fences at the site," explains Carvalho. In addition, the company works to strengthen partnerships with public safety agencies in the region, to bring police action closer to the locations where occurrences are registered.

About CAESB

CAESB is present in the 31 Administrative Regions of the Federal District, operating five water and 17 sewer systems. To do so, it maintains 28 fountainheads; 109 wells in operation; 127 reservoirs; 66 water treatment plants; 39 water pumping stations; 17 sewage treatment plants; 38 sewage pumping stations; 14 regional offices, 7 service offices and the Service Park within the Department of Industry and Supply (SIA). CAESB serves 2.17 million people, using 5 water and 17 sewer systems.



Axis helps Huaneng Cascade Hydropower Stations upgrade to IP surveillance.



Organization:
China Huaneng Sichuan
Baixinghe Power
Corporation

Location:
Sichuan, China

Industry segment:
Critical infrastructure

Application:
Remote monitoring

Axis partner:
Beijing Videocomm
Electronics Technology
Co., Ltd.

Mission

Located at western edge of the Sichuan Basin, the 144km-long Baoxing River has a water energy reserve of 1.555 million KW, and features 19 cascade power stations reaching an annual production of 5 billion KWH. Sichuan Baoxinghe Power Corporation was looking for a solution to manage the cascade hydropower stations centrally from its head office, that would integrate easily with the existing IT infrastructure and fire alarm system.

Solution

Analog cameras were already installed at the power stations, which showed limitation in terms of integration and remote access possibilities. In order to protect existing analog investments while meeting the requirements

for new capabilities, Sichuan Baoxinghe Power Corporation decided to upgrade its analog CCTV system to IP using Axis video encoders.

Result

By integrating easily with the IP network and the fire alarm system, Axis video encoders have provided the company with powerful centralized management of all surveillance points, thus enabling smooth remote management and quick response to any incident that may happen in the hydropower stations. Sichuan Baoxinghe Power Corporation can now remotely monitor the power stations from any connected computer anytime, anywhere, and scale the system easily in the future.



“We are impressed with the high quality and reliability of the Axis equipment, which can run stably in severe environments such as the sites of our hydropower stations.”

Yang Youjun, Vice General Manager, China Huaneng Sichuan Baoxinghe Power Corporation.

About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the global market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform - delivering high value to customers through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 1,600 dedicated employees in more than 40 countries around the world, supported by a network of over 65,000 partners across 179 countries. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ OMX Stockholm under the ticker AXIS. For more information about Axis, please visit our website www.axis.com.