



## Matrix Secures Gujarat Government's Leading Power Transmission Company

2500+ Network Cameras and 500+ NVRs  
Deployed at 500+ Substations

### Case Study

#### Industry:

Power, Government

#### Location:

Gujarat, India

Some locations include - Bharuch, Jambua, Navsari, Kim, Dahod, Godhra, Koyli, Navsari, Zagadia, Acchalia, Vapi, etc.

#### Company Profile:

Established in May 1999, this state-owned electric power transmission company operates under the Gujarat Electricity Industry Act, 2003. It ensures a reliable power supply across Gujarat through an extensive network of high-voltage transmission lines and substations. Emphasizing advanced technologies and innovative practices, enhances grid stability and performance. With a focus on sustainable development and renewable energy integration, it supports Gujarat's economic growth by providing a resilient power transmission framework, playing a crucial role in the state's energy landscape.

#### Business Scenario:

The absence of a video surveillance system presented significant security for the power transmission company. With over 60,000 km of transmission lines and 500 substations, the lack of continuous monitoring and recording left the infrastructure vulnerable to theft, equipment tampering, and unauthorized access. Manual inspections were time-consuming and insufficient for real-

time threat detection, leading to frequent operational disruptions and increased maintenance costs. Without a proper video surveillance system, the ability to respond swiftly to emergencies was compromised, jeopardizing the safety of the state's power transmission network.

#### Challenges:

The power plants and substations in the power transmission company had critical infrastructure components that were vulnerable to security threats like vandalism, tampering, and theft.

- **Susceptibility to EMI/EMC Issues**

Operations in the power plant are susceptible to Electromagnetic interference (EMI) and Electromagnetic Compatibility (EMC) issues, which can pose safety risks. They needed a video surveillance system that could comply with EMI/EMC standards to ensure reliable operation.

- **Harsh Environmental Conditions**

Being in remote areas, power plants and substations often face harsh weather conditions, necessitating weatherproof network cameras to ensure continuous and reliable surveillance.

#### **Workplace Safety and Occupational Health**

The impact of workplace accidents, injuries, and occupational illnesses on employee health, productivity, and morale was significant due to inadequate surveillance coverage. They needed a video surveillance system with incident reporting capabilities to enhance

workplace safety, prevent accidents, and ensure compliance with occupational health and safety regulations.

- **Data Protection Compliance**

They required a video surveillance system that could comply with data protection regulations governing the collection, storage, and sharing of surveillance footage to safeguard sensitive information and ensure regulatory compliance.

- **Inefficient Manual Inspections**

Relying solely on manual inspections for monitoring proved inefficient and prone to oversight. This delay in identifying issues led to extended downtime and potentially escalating problems, compromising overall operational efficiency.

- **Slower Emergency Response**

In the event of an emergency, such as equipment failure or natural disaster, the lack of real-time surveillance delayed response times, increasing the risk of prolonged outages and damage, which could have been mitigated with a more responsive surveillance system.

## Solution:

To enhance security across 500 substations, Matrix Network Cameras and Network Video Recorders (NVRs) were strategically deployed to ensure comprehensive surveillance.

Each substation was equipped with a Matrix 2MP PTZ Camera, strategically positioned to detect threats from a distance. These cameras provided enhanced perimeter security by offering high-resolution zoom capabilities and 360-degree coverage, allowing for the identification and tracking of potential intruders.

Three to four Bullet Network Cameras were installed both inside the substations and around the periphery. These cameras ensured thorough surveillance coverage by capturing high-definition video of key areas, including entrances, exits, and critical infrastructure components.

Each substation was equipped with an NVR to record and store the feeds from the network cameras. These NVRs were configured to provide continuous recording, ensuring that all activities were documented. The NVRs were connected to TV screens in the control rooms, enabling security personnel to monitor live feeds and review recorded footage.

Security personnel could access and review recordings locally on individual stations using the device client installed on the NVR. This allowed for quick retrieval of footage in case of incidents or investigations.

The surveillance system was enhanced with basic Intelligent Video Analytics features, such as tripwire detection, motion detection, and intrusion detection. These features automatically analyzed video feeds to identify and alert suspicious activities.

Video pop-up notifications were configured to alert security personnel in real-time. When an IVA event was triggered, such as an unauthorized entry or unusual movement, a notification would appear on the monitoring screens, prompting immediate attention and response.

## Products Offered:

- **SATATYA PZCR20ML33CWP P2 (36 Nos.)**  
2MP IP PTZ Camera with 33x Zoom
- **SATATYA CIBR20FL36CWS P2 (2682 Nos.)**  
2MP IR Bullet Fixed 3.6mm Lens
- **SATATYA NVR1602X P2 (33 Nos.)**  
16 Channel NVR with 2 SATA Ports
- **SATATYA NVR0801X P2 (487 Nos.)**  
8 Channel NVR with 1 SATA Port

## Benefits:

Continuous 24/7 surveillance with Matrix Network Cameras and NVRs reduced risks of theft, tampering, and vandalism. Real-time alerts and video pop-up notifications ensured prompt response to potential threats.

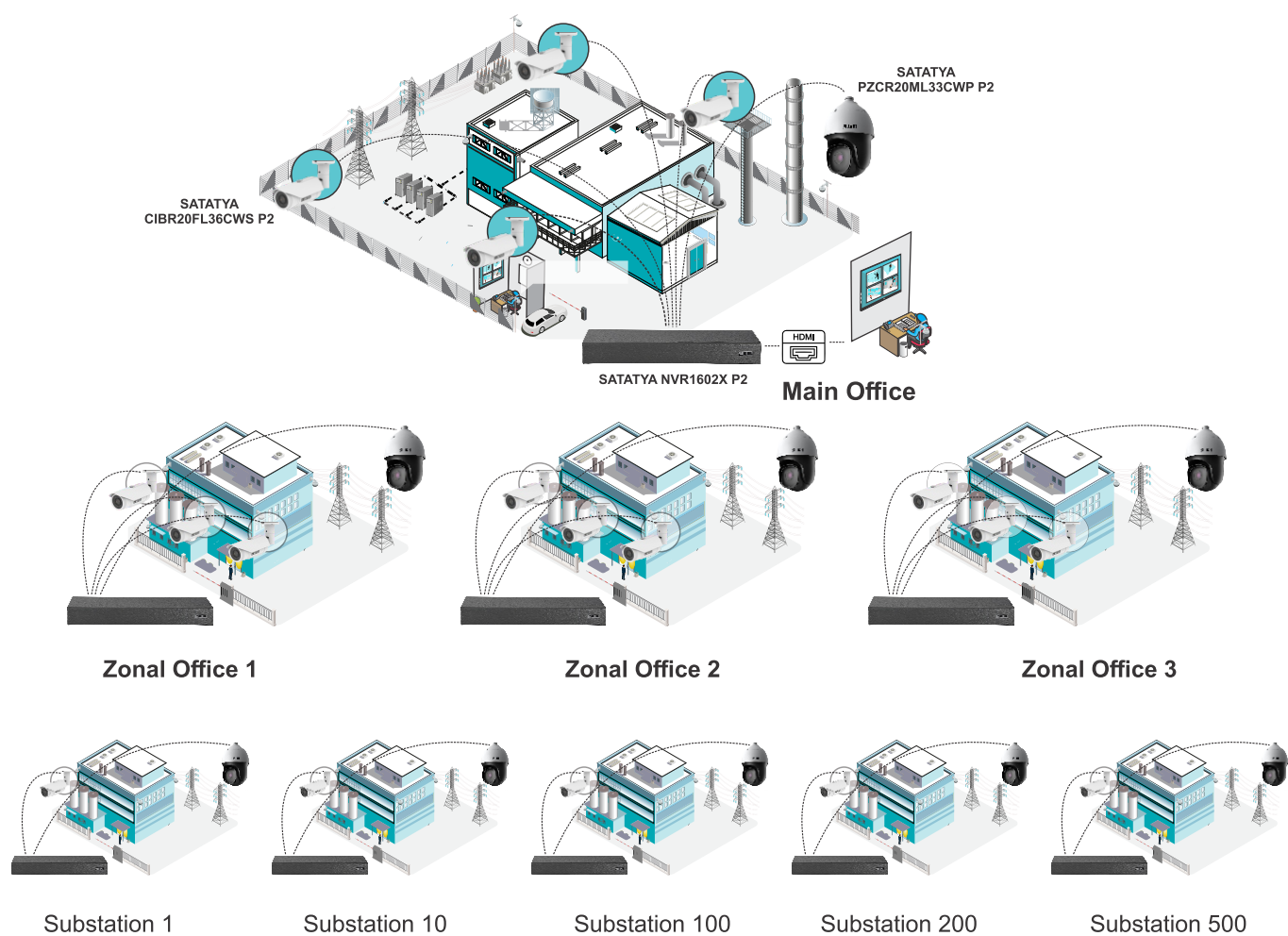
Matrix video surveillance system complies with EMI/EMC standards, ensuring safe and reliable operations in power plants. Matrix Network Cameras adhere to OWASP ASVS 4.0 L2 data protection norms, safeguarding sensitive information and ensuring legal compliance.

Matrix Network Cameras have Adaptive Streaming feature. This allows recording at a higher bitrate during activity periods and a lower bitrate during no-activity periods. This aided in saving on storage space.

Matrix NVRs have the mobile app - SATATYA SIGHT, which allows users to monitor network cameras from any location, at anytime.



## Solution Diagram



**Local Monitoring at all the 500+ Substations with Matrix Network Cameras and NVRs**



## About Matrix

Established in 1991, Matrix is a leader in Security and Telecom solutions for modern businesses and enterprises. As a technology-driven, and customer-focused organization, the company is committed to keeping pace with the revolutions in the Security and Telecom industries.

With around 40% of its human resources dedicated to the development of new products, Matrix has launched cutting-edge products like Video Surveillance Systems – Video Management Systems, Network Video Recorders and IP Camera, Access Control and Time-Attendance Systems as well as Telecom Solutions such as Unified Communications, IP-PBX, Universal Gateways, VoIP and GSM Gateways and Communication Endpoints. These solutions are feature-rich, reliable, and conform to international standards.

Having global footprints in Asia, Europe, North America, South America, and Africa through an extensive network of more than 4000+ channel partners, Matrix ensures that the products serve the needs of its customers faster and longer.

Matrix has ISO 27001: 2013, 20000-1 2018, 14001- 2015, and 9001: 2015 certifications for quality management standards. Matrix has also been awarded ZED Quality Certification, and DSIR Certification for indigenous R&D and Manufacturing. Matrix has gained the trust and admiration of customers representing the entire spectrum of industries.

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