

A photograph of an industrial facility at night, with several tall smokestacks emitting plumes of smoke or steam. The facility is illuminated by various lights, and the sky is a deep blue. The image is partially obscured by a blue triangular graphic on the right side.

Implementing next-gen wired and wireless LAN infrastructure for a global energy giant

Challenges

- The integrated energy provider had launched a multi-year, multi-million dollar “site of the future” internal network infrastructure upgrade to implement consistent advanced wired and wireless LAN connectivity across all its locations
- The customer and its network design partner were seeking an expert implementation services provider with staff across the US and Canada to install wireless and wired network across a wide range of facilities – from a two-person pumping station to one of the world’s largest oil refineries, from massive warehouse facilities to the executive boardroom
- The network installation was complex and involved massive outdoor facilities, high ceilings, RFI (Radio Frequency Interference) issues, concrete floors and walls, and heavy machinery
- Close coordination with facility management was critical to minimize operations interruptions; installation team needed to follow strict health, safety, security and environment standards at each location
- Unique network requirements included:
 - Use of advanced technologies like Google Glass Enterprise for real-time communication to visually confirm components needed prior to dispatch via expensive helicopter delivery to drilling platforms
 - Secure, low-latency, ultra-reliable data connectivity for IoT devices
 - High-bandwidth applications for video and geological analysis, mapping and modeling software
- Legacy site wiring was insufficient – many sites did not have WiFi and still relied on Cat 3 cabling – and required replacement of existing networking equipment, cabling and wireless access points

Customer Profile

Industry

Energy

About

- A vertically-integrated energy company
- Operations in 80 countries across 6 continents
- 50,000+ employees

Solutions

- Granite worked closely with the company's network and systems engineers to understand priorities, applications, bandwidth and latency requirements, and site connectivity needs
- To execute on the required network redesign, Granite proposed a future-proof cabling design based on the latest networking standards to deliver reliability, security, high bandwidth and low latency within all sites, including:
 - OM4 multi-mode fiber supporting speeds up to 100 Gbps for the network backbone, Cat 6a for horizontal wiring and latest-gen WiFi 6 (802.11ax) standards
 - Standardized networking equipment rack configurations to ensure consistency, simplify support and maintenance
- Skilled Granite Project Managers developed complex, comprehensive rollout schedules designed to comply with the company's priorities, address safety regulations, minimize site interruptions and ensure on-time completion
- Using customized mapping software, Granite reviewed each facility's footprint and layout, developed preliminary cabling and WAP locations plans and validated specifications with onsite visits to dozens of locations to ensure adequate coverage and identify site-specific issues
- After reviewing site proposals with the company, Granite teams managed end-to-end deployment – from equipment and supplies logistics to final handover – including scheduling, operations coordination, custom installation equipment rental (such as trench diggers and aerial booms), installation, testing, and environmentally-friendly disposition of old wiring and equipment
- End-to-end project management included status updates, equipment and personnel logistics, and budget management
- Granite delivered comprehensive documentation detailing WAP and jack locations and addresses, wiring diagrams and rack configuration; documentation was delivered electronically, simplifying site maintenance and future upgrades

Results

- Solution was first rolled out in high priority US locations, and based on the success of these deployments, was extended to all US locations
- Granite is now managing deployment across all company sites around the world
- To date, Granite has installed over 33,000 WAPs, 2,000 switches, 250 racks, 200,000 ft of OM-4 fiber, and nearly 1 million feet of Cat 6a cabling
- Granite's standards-based modern cabling design and expert installation, along with clear documentation, minimizes downtime and enables future expansion
- The network improvements, along with site infrastructure upgrades, are expected to deliver a positive return on investment within five years
- "Site of the future" strategy positions the customer for new data-driven environment with consistent, secure, high-bandwidth wired and WiFi connectivity everywhere, in every company location. Infrastructure upgrade met all customer bandwidth, latency and reliability requirements and was completed on time and on budget