

شركة مشارق بغداد
للمقاولات والتجارة العامة



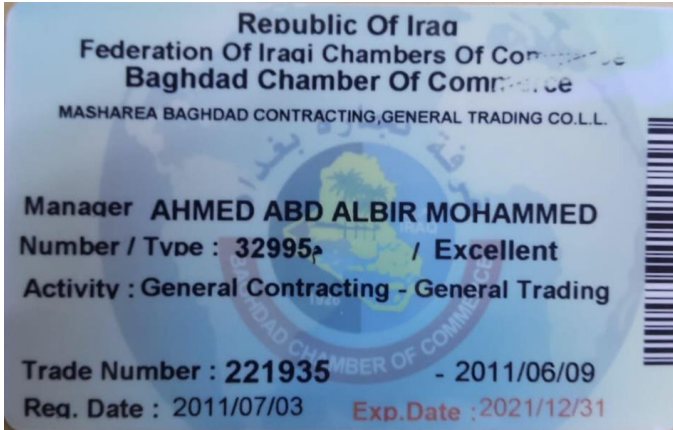
Mashariq Baghdad LLC
for Contracting and General Trade

Company Profile

Mashariq Baghdad Company established in Iraq by efficient engineers well known inside and outside Iraq for their long and good experience grows out of more than 20 years business in Power Electric and Automation industrial sector.

Mashariq Baghdad is the Engineering Company specialist in design and implements electric projects and industrial control systems. Handling turnkey projects and supply equipment and materials required for industrial projects and services.

Mashariq Baghdad Classified as excellent degree by Iraqi Trading Ministry, reserve capital of two milliard Iraqi dinar equal to 1,695,000 USD.



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Company of key Employees

Name	Education	Qualification	Position
AHMAD ABD AL-BAR	Bachelor	Electronics Engineer	Managing Director
	Master	e-Business	
AHMED YASEEN	Bachelor	Automation & DCS	Automation and field instrument Dept. Manager
AYAD FARIS NAJEEB	Bachelor	Power & Electronics	Power Electric Dept. Manager
MOSTAFA A. J	Bachelor	Electric & Automation	Commercial Manager
ABD AL-HAMEED M. A	Bachelor	English Language Arts	Baghdad Office Manager
MOHAMMED AYESH	Bachelor	Business Management	Basrah Office Manager

PRODUCTS AND SERVICES WE PRESENT

- **DCS (Distributed Control Systems)**\ design, Installation, Commissioning for industrial process monitoring and control.
- **PLC & SCADA** (Programmable Logic Controller) & (Super visor Control And Data Acquisition)\ programming engineering for industrial control according to customer requirements.
- **Distributed Temperature and Vibration monitoring** based on Fiber Optic Sensing technology.
- **PV Solar Electric Power Plant** with battery storage system\ design, Installation, Commissioning
- **Field Instruments** pressure, temperature, flow, level transmitters and gas analyzer\ supplying, installation and calibration.
- **Vibration Systems** for heavy machines protection like Compressors, turbines, pumps, motors.
- **Radar Tank Gauging** monitoring and control systems.
- **Motors, Drives & Soft starters.**
- **Weighing Systems** installation and calibration\ belt scale, weighbridge.
- **Battery chargers & UPS** (Uninterruptable Power Supply)\ Supply, installation and commissioning.
- **MCC** (Motors Control Center) & Low Voltage cabinets
- **Substations** 132KV, 11KV main equipment supply and installation

WORK HISTORY SIDE VIEW

- **Al QUDIS 3 – Gas turbine power plant (4X125 MW)** Perform all commissioning activities for GT & BOP (GE– GT9e / MarkVIe)
- **Power substation - 400/132 Kv - SCADA project** Test & commissioning activities (Off line test & on line test) of PLC system for power substation (400/132 Kv), Test 1(HMI to RTU), Test 2 (HMI to Field), Test 3(SCADA Master to RTU) & Test 4 (SCADA Master to Field) of RTU system for power substation (400/132 Kv)
- **Power substation – 132/33/11 Kv “Site management, coordination & Commissioning”**. Test & commissioning activities of (132 Kv) / GIS system – VATECH. Test & commissioning activities of (33/11 Kv) / ALSTOM – Switchgear. Test & commissioning of power transformer protection equipment & signals. Coordinate and inspect subcontractors in the field.
- **Power substation – 132/33/11 Kv / Site management & Supervision “Construction & Commissioning”**. ABB – 33 Kv switchgear. ABB – 11 Kv switchgear. Setting & testing protection relay (542 +) & differential relay (SPAD). Power transformer tests (31. 5, 16, 10) MVA. Auxiliary transformer tests. RTU marshalling cabinet (All signals). DC system (Chargers & Batteries). Earth resistance system. AVR (RTCC) & OLTC.
- **Baiji gas power station** (wiring, test switch gear equipment) 2003
- **Siemens Supervisor for 3AP1FG** circuit breaker.
Agarguf 132/33 kv substation Baghdad west.
Bakuba east 132/33 kv substation.
Rashdia 132/33/11 kv substation.
- **Site and commission Engineering** in Karkh substations 33/11 kv in Baghdad 2005.
Kahdumia 33/11 kv substations
Saba al- bour 33/11 kv substations
Auarije 33/11 kv substations
- **Commission engineering** for Samarra 132 kv P/P outdoor equipment wartsila 2009-2008
- Installation 400kv sealing end cable from AL-Mousil project in 2007
- **SCADA system HMI & PLC's software**, for fire alarm and fire fighting application with about 250 I/O signal for electric station in Nasiriya.
- **Upgrading belt weight scales and weigh feeders**. Lime Plant in Karbala.
- **Installation & commissioning Supervision DCS** (Distributed Control System) for Al-Rajhi new cement plant 6000 ton/day capacity in Jordan\ Al-Mafraq, system consist of 13 distributed control cabinets connected to one redundant server in the Central Control Room with 7 operator stations, data communication via fiber optic media.
- **Field instruments installation and calibration Supervision** for Al-Rajhi new cement plant 6000 ton/day capacity in Jordan\ Al-Mafraq Supervision power distribution for cement plant.
- **MV & LV AC motors and motor drives Installation & commissioning Supervision** for Al-Rajhi new cement plant 6000 ton/day capacity in Jordan\ Al-Mafraq.
- **Consultant for rehabilitation and upgrade control system and field instruments** for Kubaisa Cement Plant\ two production lines.
- **Consultant for rehabilitation and upgrade electric equipment** for Kubaisa Cement Plant\ two production lines.
- **Generators load sharing controller** using Deep-Sea controllers.

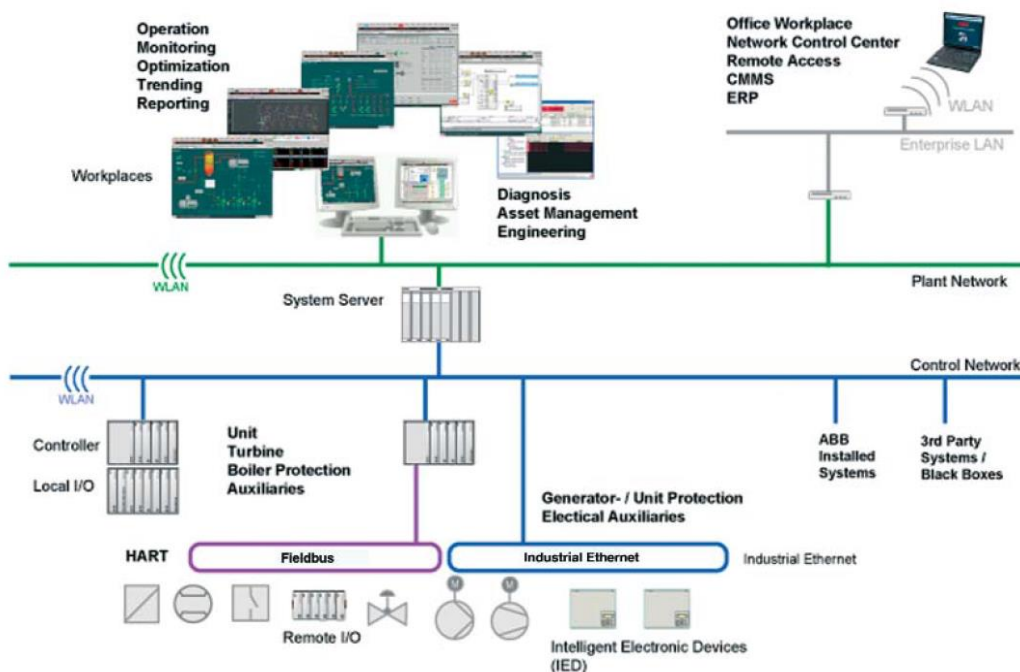
Power Generation Power Plant Automation

All functions necessary to monitor plant operation are integrated into the operator station:

- Intuitive display navigation
- Faceplate control of any device in the plant
- Integrated alarm and event management with sequence-of-events
- Trend curves displaying current as well as historic values



In addition to in-depth process monitoring capabilities, through DCS (Distributed Control System) system the operator stations allow detailed analysis of the current state of the control system itself, as a comprehensive system status display

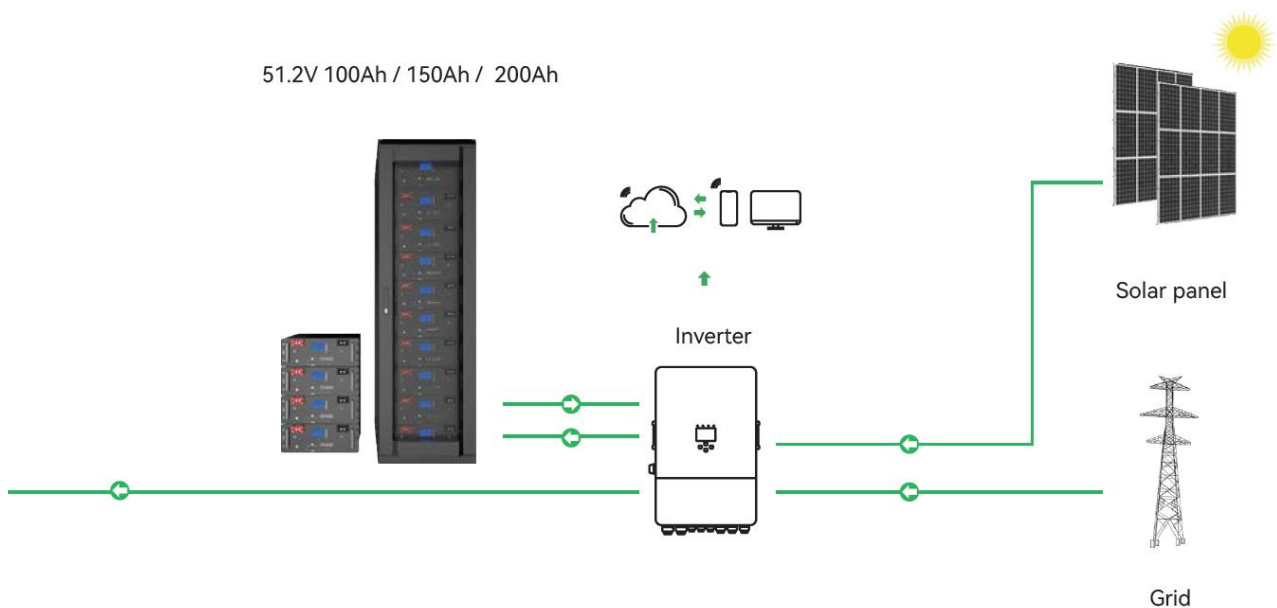


Photovoltaic System

Our services in the integration of PV system to cover design, supply, installation and commissioning of components from reliable sources according to the standards.



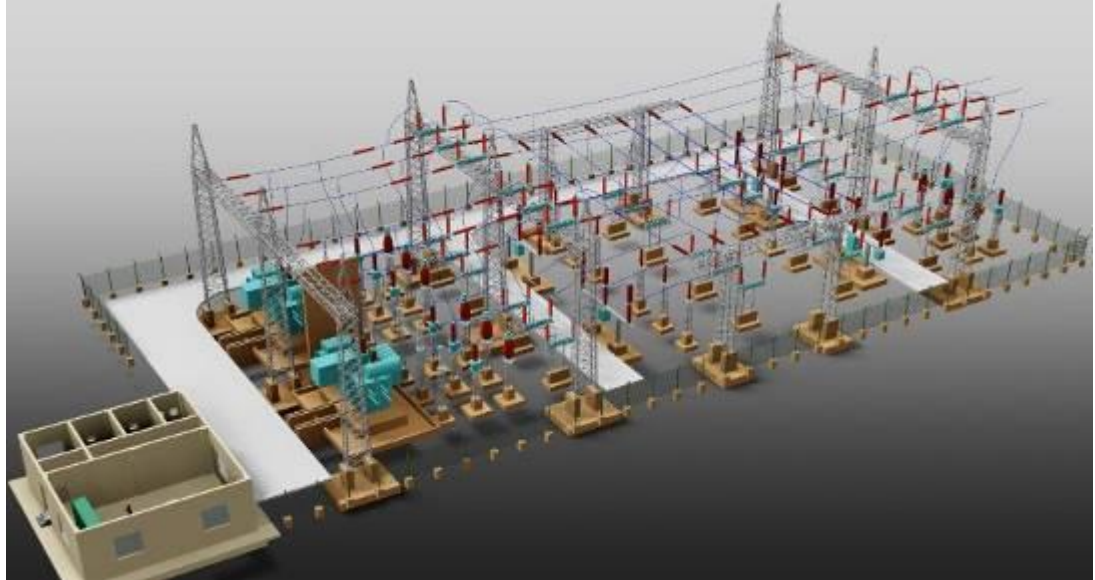
- Off-grid solar power system products, mainly including solar panel, Isolate power controller and stand along power inverter etc...
- On-grid solar power system products, mainly including PV solar module, grid tied power inverter etc...
- Solar back up lithium battery storage system, mainly including PV solar panel and backup power supply etc...
- Solar panels products, mainly including Monocrystalline PV module and Polycrystalline PV panels etc...
- Low-voltage power supply products, mainly including Low-voltage switch, various circuit breakers etc...



Electrical Substations

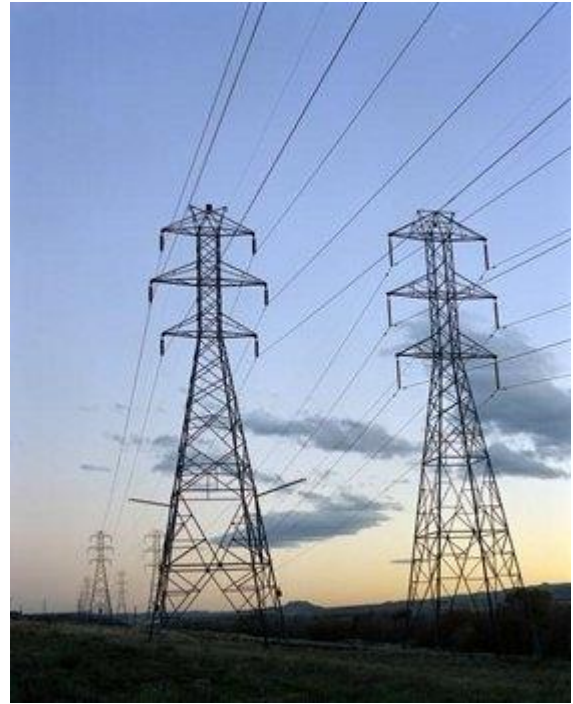
11, 33, 132 KV

Main equipment Erection & Installation, Civil & Mechanical work



Electrical Power Distribution

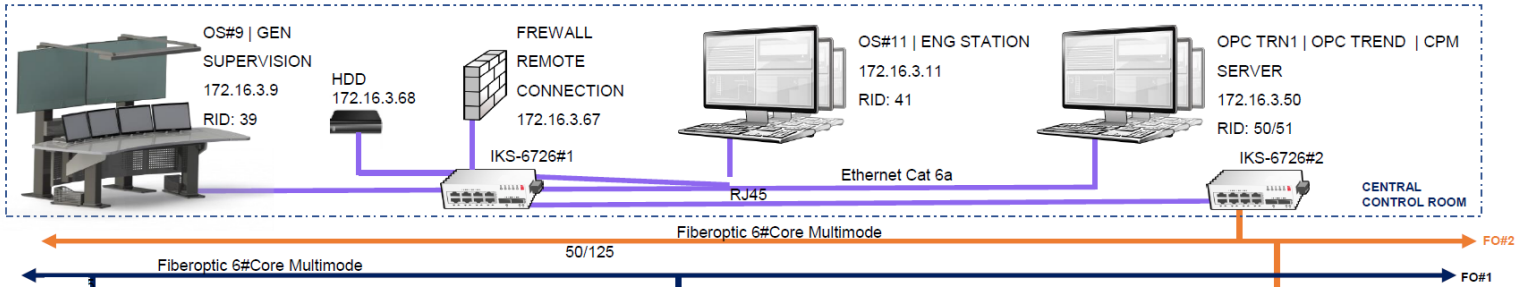
Establishment of new feeders 33 & 11 KV for power distribution covering towers civil work, mechanical and electric installation with accessories connection, underground feeders excavation and cables jointing.



DCS System

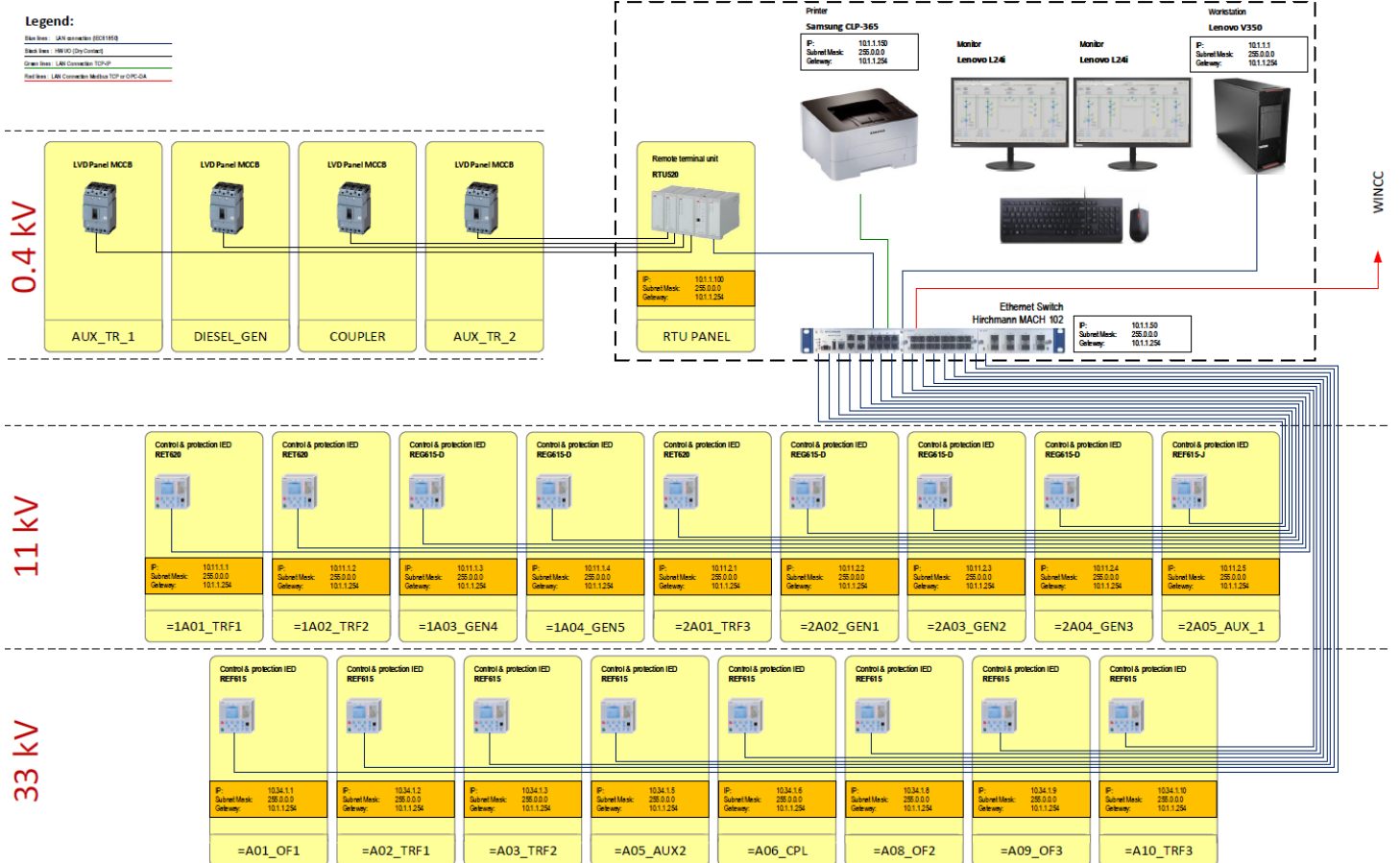
- **Sinjar Cement Plant**, Installation and commissioning DCS System. DCS license, Operator workstations (11 pcs), Engineering station (1 pcs), Fiber Optic switch, Fiber Optic cables, and CAT 6 cables.

Cement Plant DCS Topology



- **Sinjar Cement Power Plant**, installation and commissioning SCADA System in the CCR power plant, installation and commissioning of RTU's with field cabinets.

Power Plant SCADA Topology



- **Al-Furat for Chemicals ABB 800xA DCS** upgrading the DCS system from version5 to version 6 with new redundant CPU AC800 M/PM858.

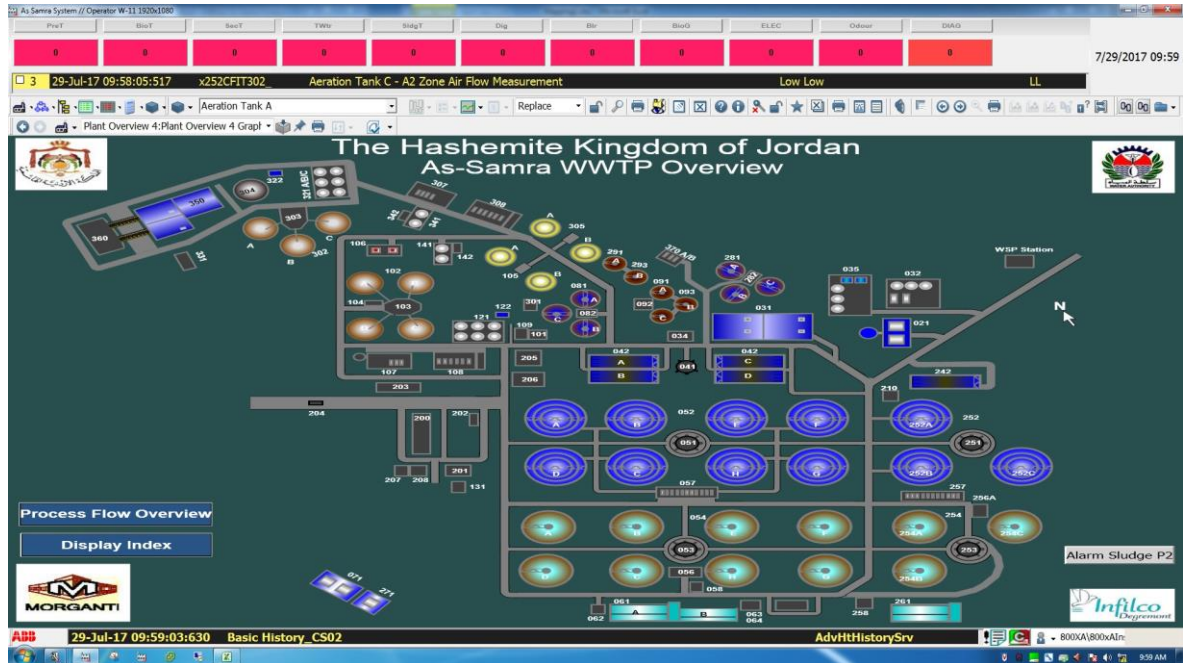


Mashariq Baghdad Job:

- Supply, install configuration new redundant CPU AC800 M/PM858.
- Take backup for the old system version 5 (CPU logic & SCADA).
- Upgrade the old system to version 6.
- Supply new server and operators with 60" dual screens monitors for the new DCS.
- Download the new upgraded system (CPU logic & SCADA) to the server and redundant CPU's.
- Troubleshooting some problems existing from the old system.
- Training course the customer staff for ABB 800xA DCS V.6



- **AS SAMRA WWTP ABB 800xA DCS** Configuration for Modbus interface with Allen Bradley PLC and new plant optimization software created by CreaTech software engineering company. DCS HMI modification for new transmitters readings and display.

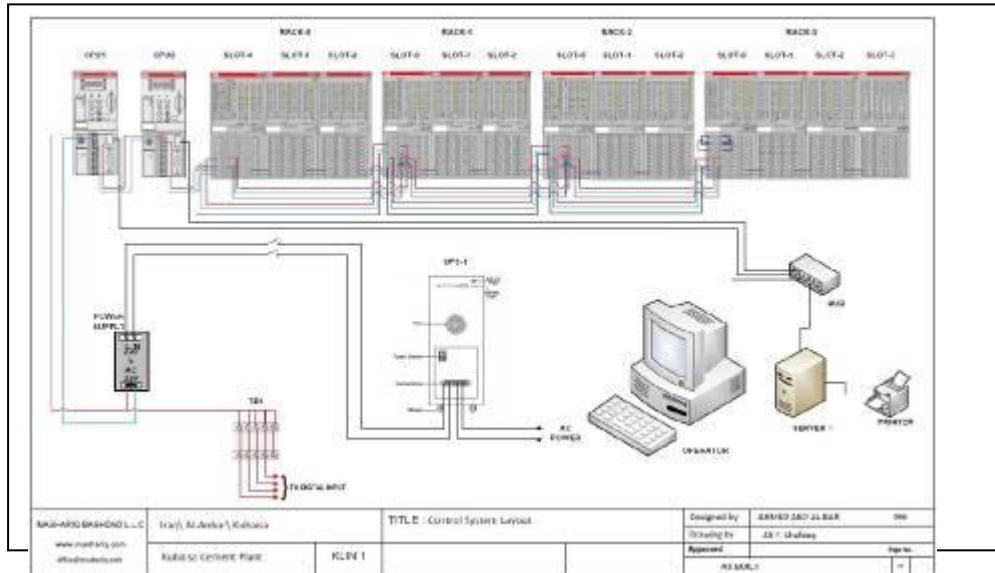


Mashariq Baghdad Job:

- Add new module (CI867) to ABB PLC and configure the PLC program.
- Read signals for 14 **blowers**, from AB PLC using Modbus.
- Add the new sensors of Ammonia, Nitrate and Turbidity to ABB PLC and SCADA.
- Collect signals for **11 Reactors** and **2 General** in ABB PLC.
- Writing subroutine for signals conversion (bits to unsigned integer, real to unsigned), subroutine for watchdog and set point selection.
- Transfer all the signals Blowers, Reactors and the general signals to CreaTech server using Modbus/TCP.
- Test the signals from AB to ABB and from ABB to CreaTech server.

SCADA System

- Kiln Monitoring and Control** for Kubaisa Cement Plant\ Upgrading the monitoring and control system PLC based with SCADA in the CCR (Central Control Room) for pre-heater and Kiln with related field instruments in Cement Plant. Monitoring and control process parameters of pressure, temperature and flow. 230 AI, 30 AO, 15 DI, 15 DO signals and 17 Nos. of PID controllers to control actuators and dumpers for manual & automatic operation.



Control system consist of PLC and one server with two clients.

ABB AC500 (PM573-ETH **redundant** CPU, CI590-CS31-HA, AI523, AO523, DC532... and others) + DigiVis (DV500-GBUILDER).



Engineering station



Operator Station

Local Control Panels (HMI & PLC Based)

- **Main cooling tower (stabilizer)** in Kubaisa Cement Plant. Upgrade local control panel (contactors & timers) changing to **PLC based control panel (ABB AC500)**.

The old contactors & Timers based control panel



The new PLC based control panel





- **Homogenizing of raw material in Homo Silo, Cement Silo** in Kubaisa Cement Plant. Change local control panel (contactors & timers) changing to **PLC based control panel (ABB AC500)**. Controlling valves, gates and pumps for silo in the Kubaisa cement plant in Iraq.



- **Burner control system for Kiln, RSP burner & Kiln Burner** in Kubaisa Cement Plant. Change local control panel (contactors & timers) changing to **PLC based control panel (Siemens PLC S71500 & S71200)**. Programming the PLC logic control and HMI monitoring and control, communication with the Plant CCR (Central Control Room).



(New Panel)



(Old Panel)

- **Sub control system** for water treatment plant in Iraq\ Baghdad\ Al-Karkh water treatment.
Supply and install **pneumatic Solenoid valves** with control cabinet based on **ABB AC500 PLC** with HMI **CP675** to control chlorine feeding from cylinders. Manual and automatic operation through HMI touch panel.

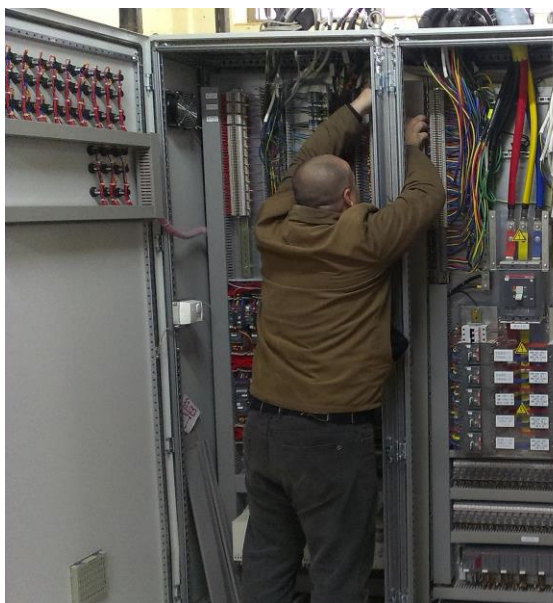
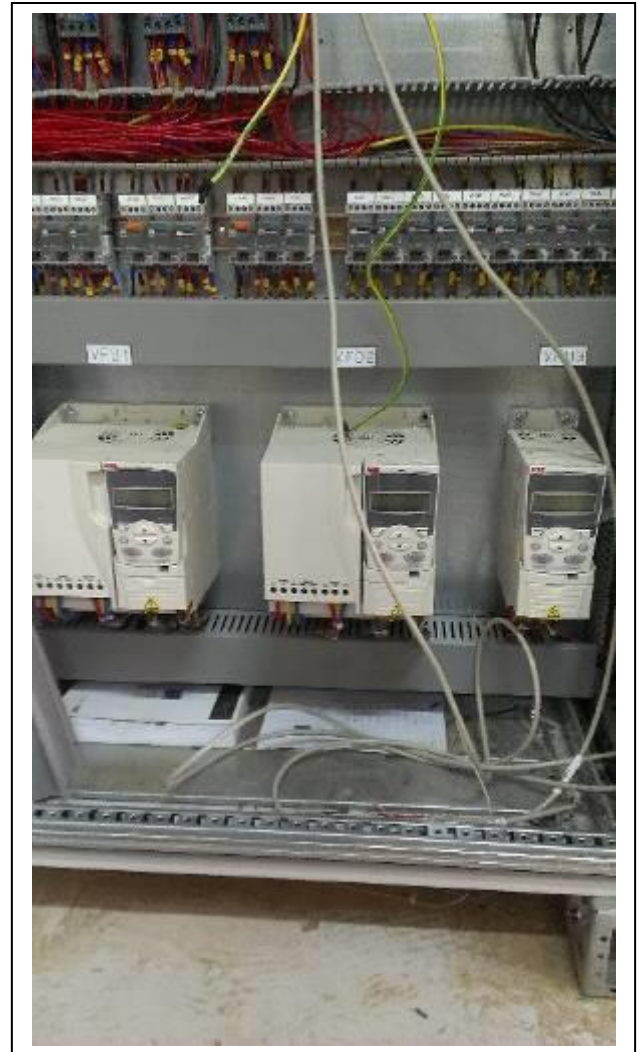


Low Voltage and Control Cabinets

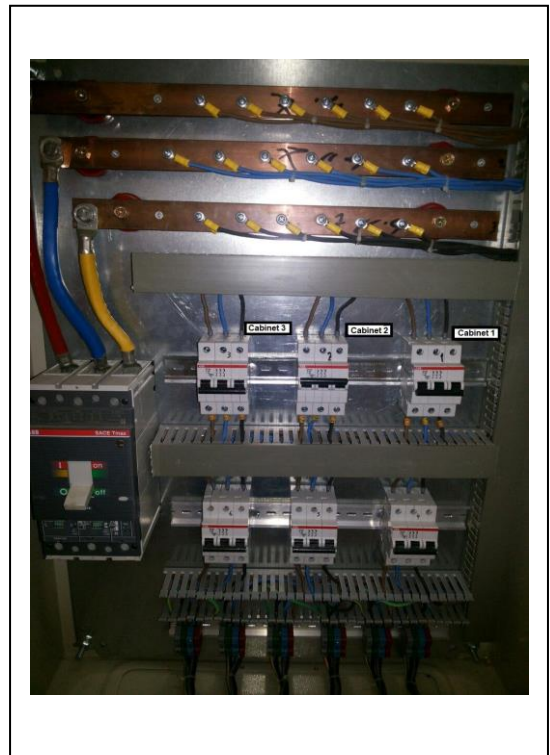
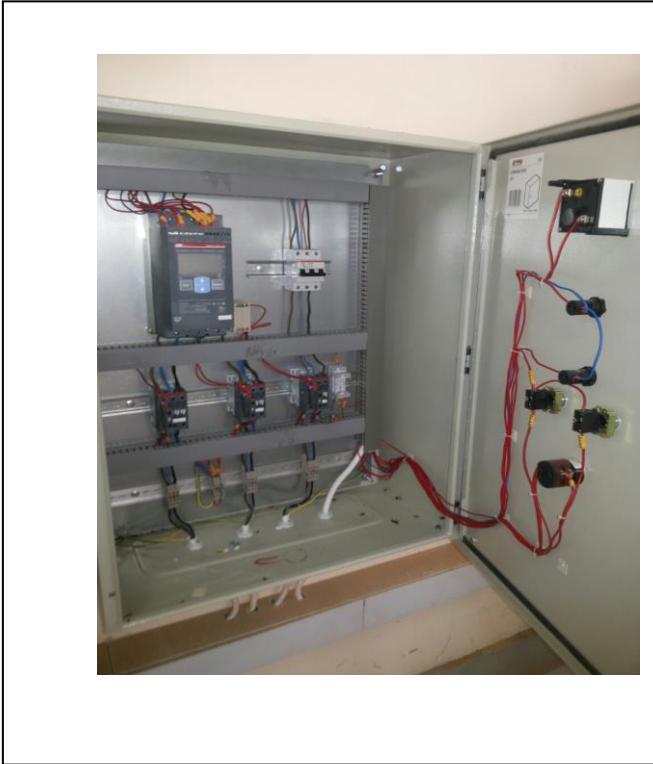
- **LV & Control PLC base cabinet**, Design, panel building, Installation, commissioning and startup for water treatment station 2x100 m³/hr & 200³/hr. In Al-Anbar\ Heet for Yamamah Jordanian company.



- **Design, installation and commissioning the power and control cabinet** to control operation of ventilation system in the water treatment plant based on **ABB AC 500 PLC, ABB AC drives and soft starters**. Manual and automatic operation for fans 5x30Kw, 20x3.8Kw and others.



- **Design, installation and commissioning the power and control cabinet** to control operation of booster pumps in the water treatment plant based on **soft starters**. Manual and automatic operation for 18 Nos. of pumps 18Kw.



Field Instruments

- **Vibration monitoring and protection system** procurement, installation and commissioning for South Refineries Company and Basrah Oil Company in Iraq. Bently Nevada 3500 system and A1900 vibration monitoring and control.



- **Supply and install ABB PID local controller, Pressure transmitter, Temperature transmitter, Pyrometer, actuators and control valves.**

Local Controller: Change old controller with new electronic PID controller **ABB Control master CM50**, manual and auto control, local and remote set point from CCR.

Pyrometer: High temperature measurement up to 1600°C, local monitoring and sending signal to Central control room.

Old controller



New PID controller



Pyrometer



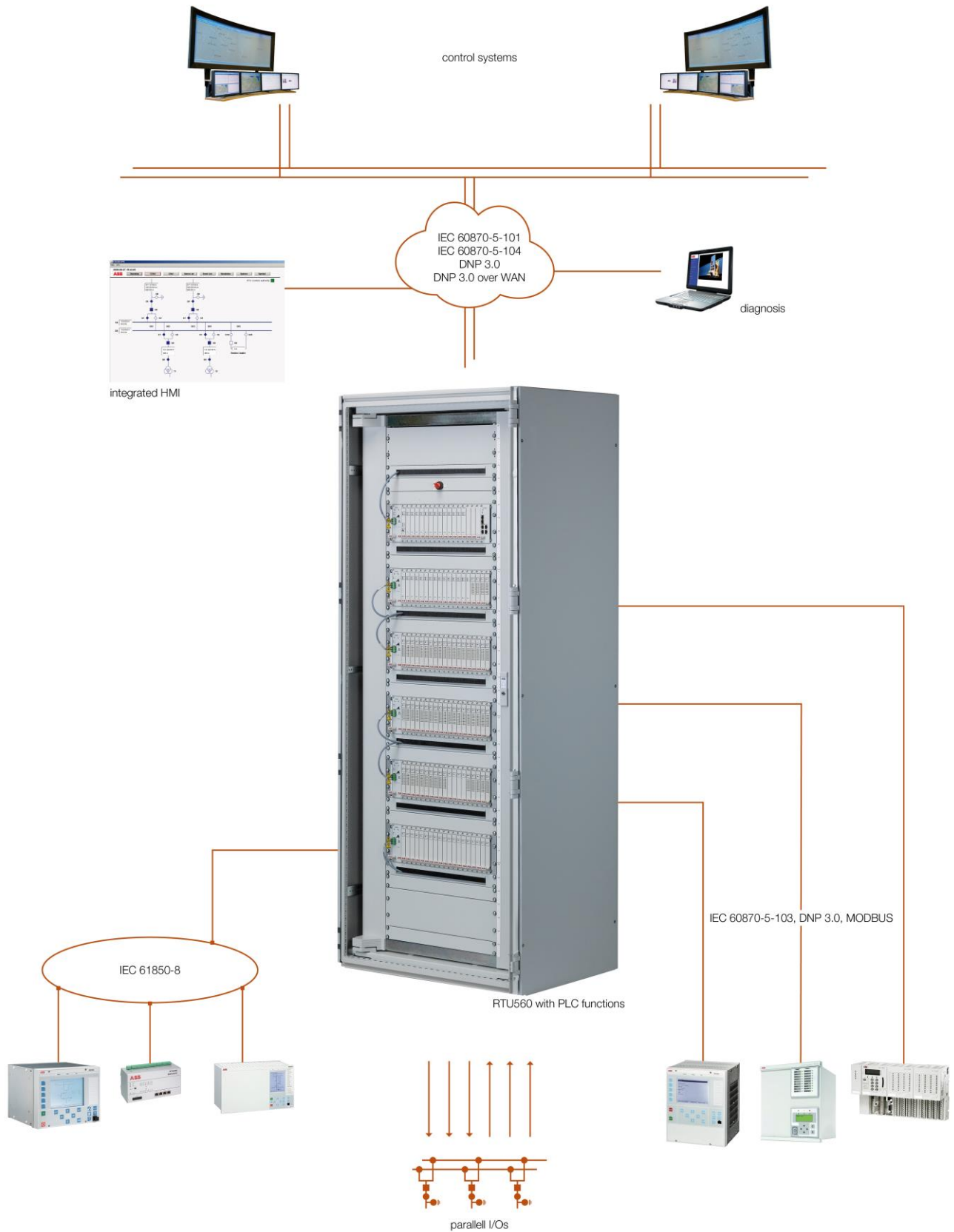
Supply, installing with configuration for 2600T Pressure Transmitters and TTF300 Field mounted Temperature Transmitter



Supply, installing with fittings olenoid ball valves to control chlorine feeding

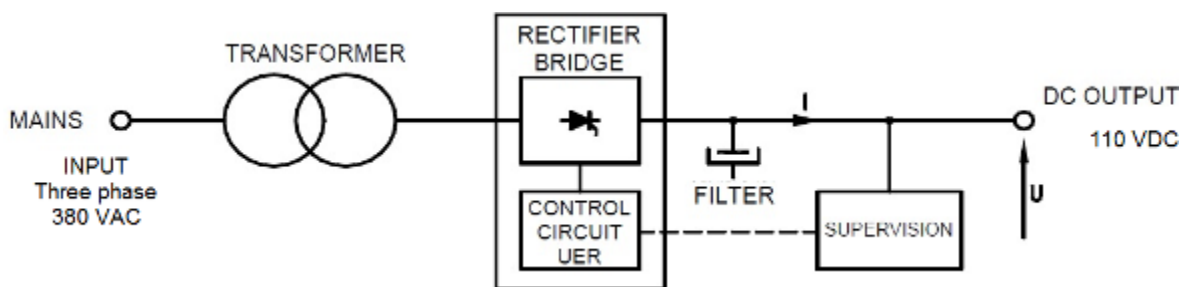


RTU (Remote Terminal Unit)



UPS & Battery Charger

- **EMERSON Automatic three phase Battery redundant Chargers 100 Amp 110 VDC** with training course in France. Contractor is GSC, the end user is North refinery Company.

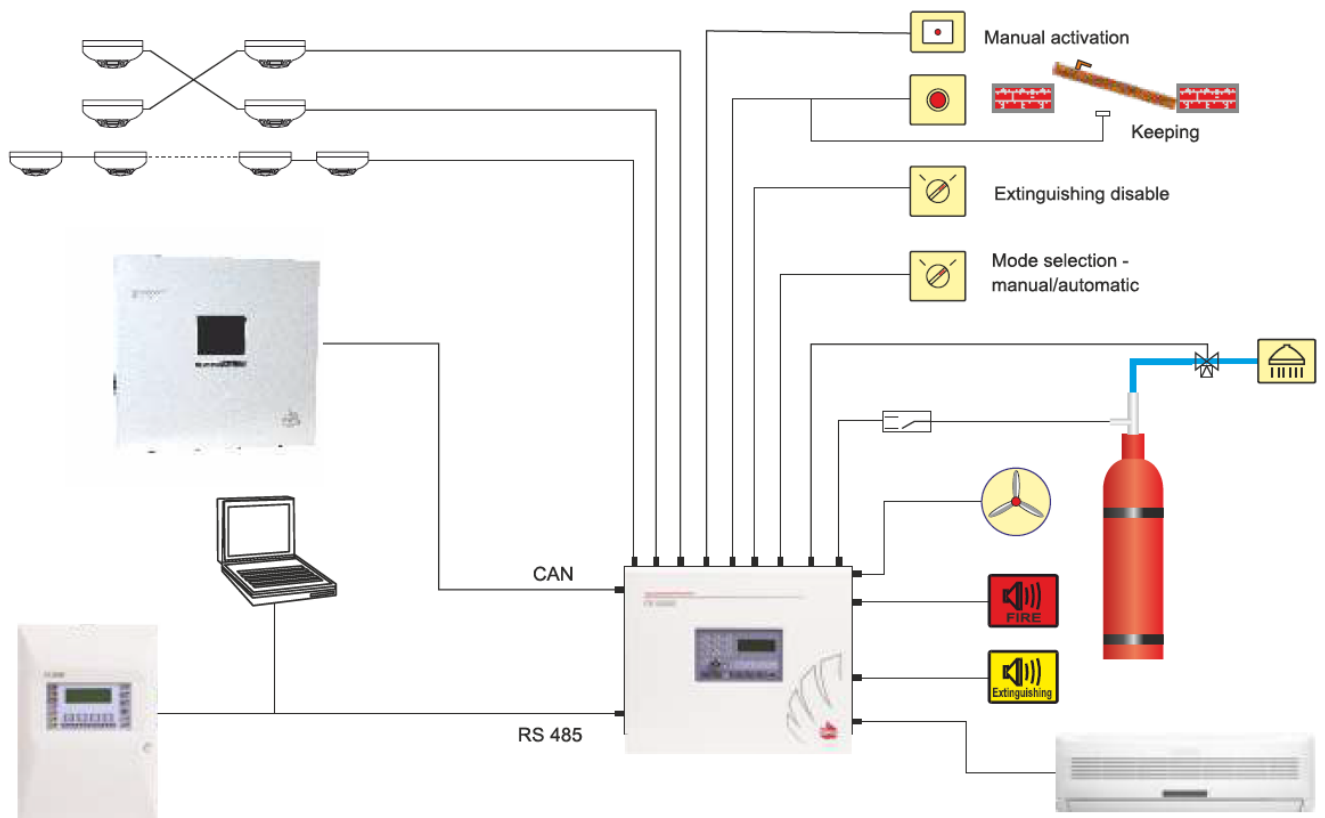


Fire Alarm and Extinguish System

Fire Extinguishing Control Panel is designed in accordance with European standards EN54-2 and EN54-4 Fire Detection and Fire Alarm Systems - Controlling and indicating Equipment and EN12094-1 Fixed firefighting systems – Component for gas extinguishing systems.

System Features:

- Fire detection lines and fire alarm lines are monitored for short-circuit or open-circuit fault;
- Detection for removed fire detector;
- Automatic reset of the fault warning condition;
- Programmable countdown release timer - 0 to 5 minutes;
- Programmable Extinguishing duration timer - 10 sec. to 5 minutes;
- Real time clock and Event log of 100 events;
- CAN interface for networking with the UniPOS Addressable Fire Alarm System;
- RS485 interface for communication with a Repeater panel;
- Optional module for Release pressure condition;
- Optional module for Extinguishing outputs multiplication.



Fiber Optic Cable Sensing Technology

Pipe Line Security

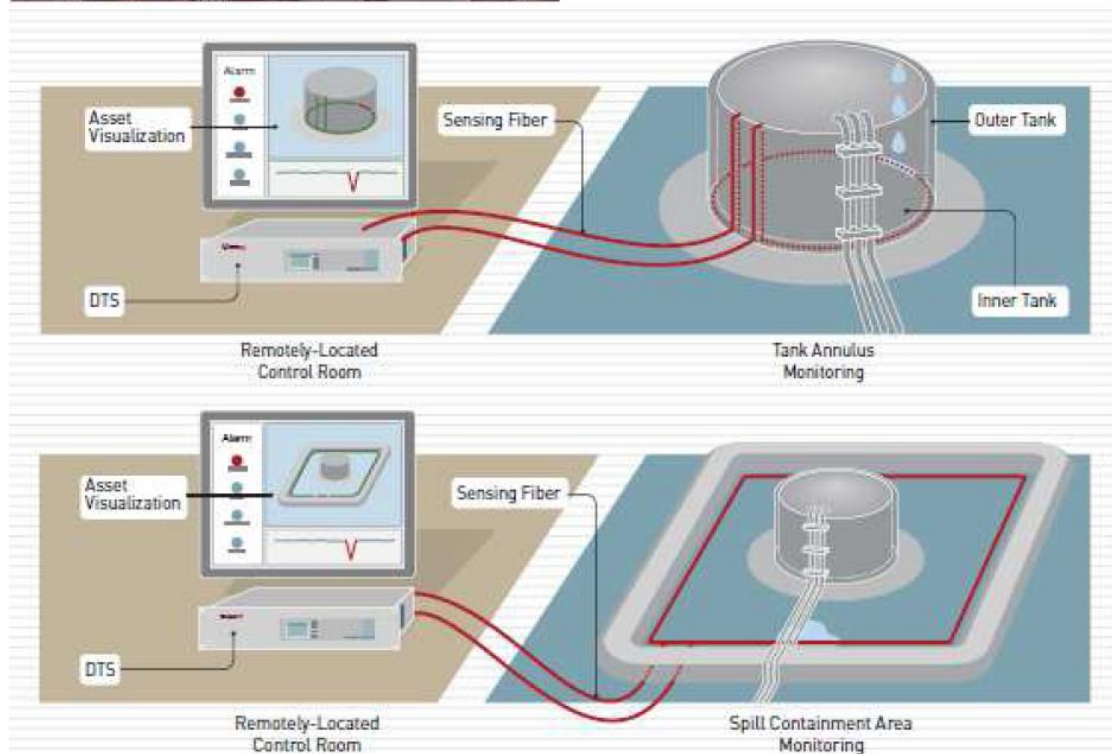
- Distributed fiber-optic sensing is rapidly becoming **the detection method of choice** for pipeline protection and leak detection.
- The use of complementary technologies provides a broader range of benefits and a **reduction in the likelihood of false alarms and optimizes the probability of detection**. Both are critical features of any monitoring solution.
- **Leaks or security events are located rapidly** and with precise accuracy even along pipelines of hundreds of kilometers length.
- **Third party threats** to a pipeline – either accidental or intentional – are detected using AP Sensing's Distributed Vibration System (DVS), and **leak detection** is achieved using a combination of our unique DVS and our class leading Distributed Temperature System (DTS).



Sensor cables ideally suited to pipeline applications

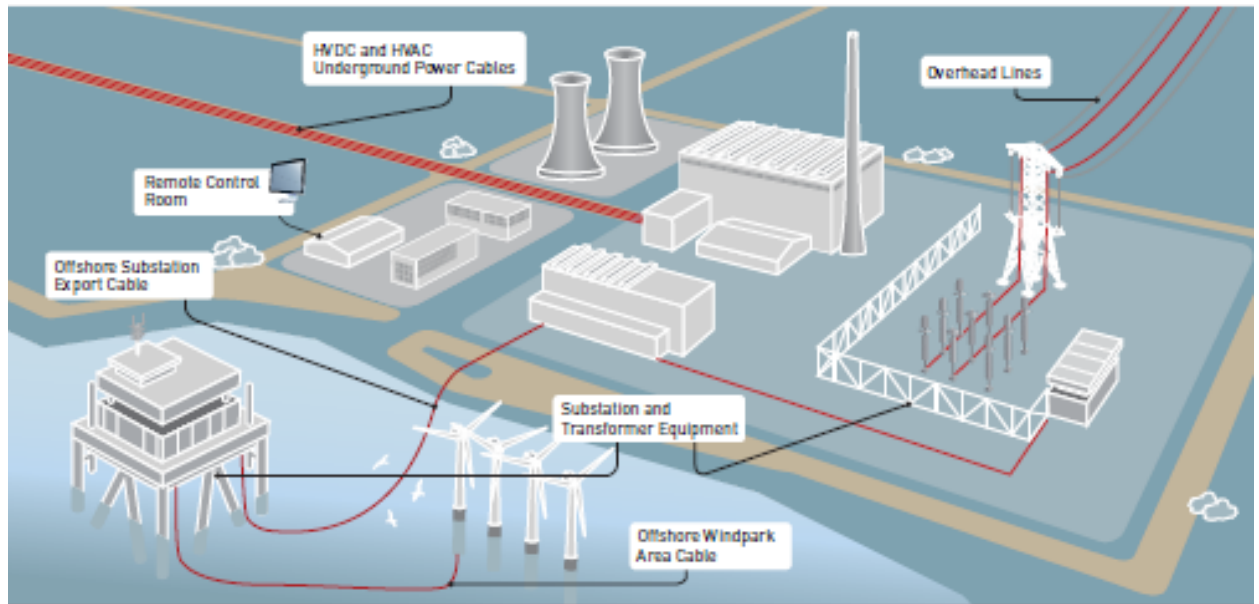
Tank leak detection and spill containment areas

- The DTS system locates leaks in the internal tank. The sensor fiber is deployed in the annulus **between the two tank walls** during tank construction. If a leak occurs, cryogenic fluid comes in contact with the sensing fiber lying in the annulus space. Due to the low temperature of the fluid, **the DTS system rapidly identifies even very small leaks.**
- Cryogenic fluid is also quickly detected by routing DTS sensor cable **around the perimeter of the spill containment areas.** When leaking material reaches the containment areas, the temperature decreases, triggering an alarm. The system reports the precise alarm location.



Power Cable Monitoring

Distributed Temperature Monitoring provides continuous monitoring of high power cable temperatures, detecting **hotspots**, delivering **operational status, condition assessment** and power circuit rating data (**Real Time Thermal Rating - RTTR, Dynamic Cable Rating - DCR**). This helps operators to optimize the transmission and distribution networks and reduce cost of operation and capital.



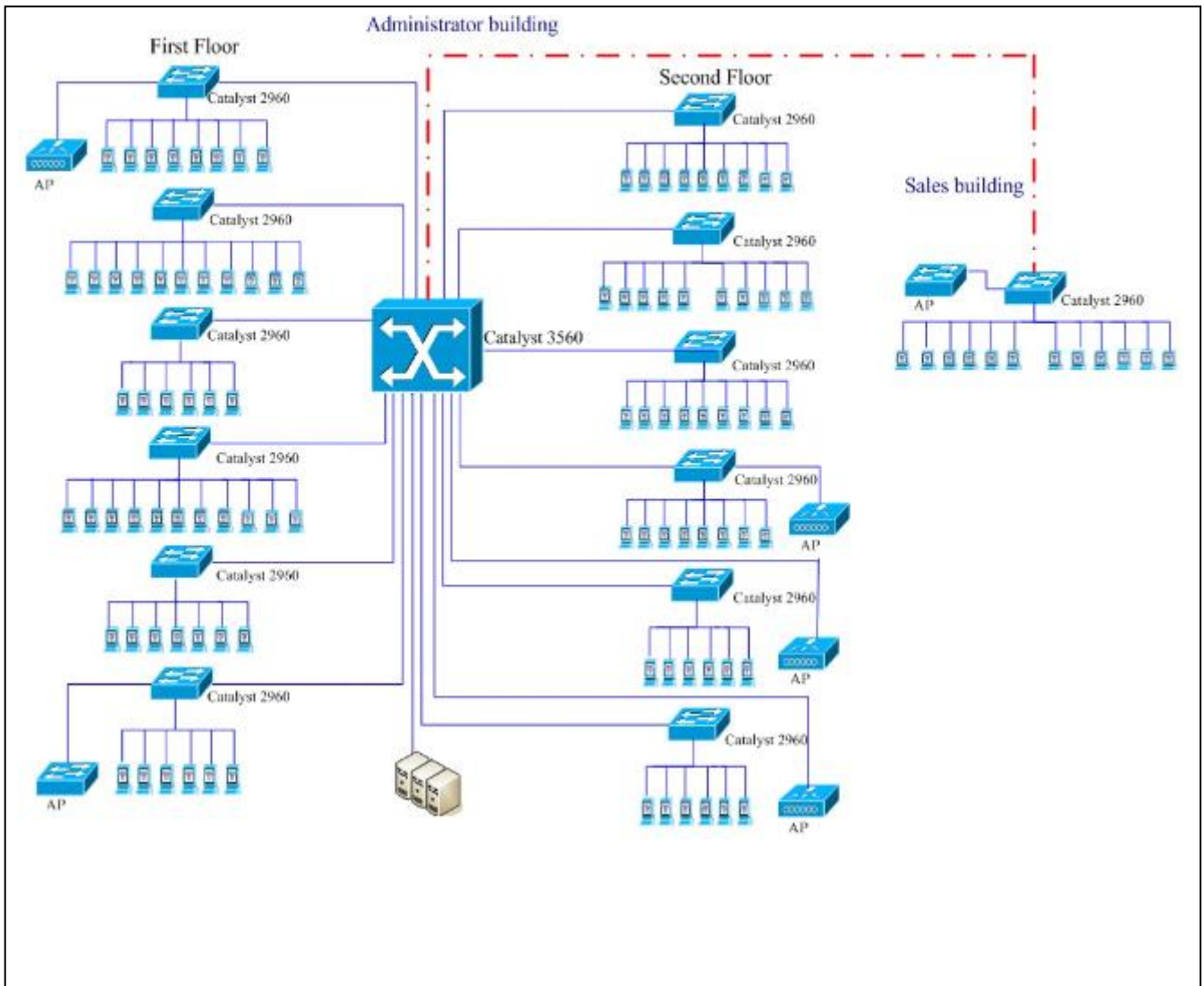
Applications HVDC / HVAC underground power cables Power cable joints and terminations Power cable tunnels and trenches Subsea power cables Overhead lines Transformers Substation equipment



IT infrastructure

Administration Building Network

Networks using the star topology, The core of 3650 were used to connect 13 2960 as a corporate network access switches, Each access switch among different departments, A small number of departments of the wireless AP, VLAN played an important role In the current network environment



Broadcast call intercom topology

The broadcast system for communication in factory make up of main station and several branches station. Main station make up of wireless radio speaker and handwork phone. Operating station includes built-in MIC, speaker and “page & party” transducer. This system has the following communication facilities :

- Master station operator can call the branch station, and also can make a conference call if necessary
- Master station operator can make an announcement to branch station in the same time
- Branch station can make a public or private call to master station
- The branch station in the same group can talk directly to each other without disturb the master station
- Strategically speaking, 25-30 branch stations distributed in all parts of the factory, to ensure the effective operation of the whole factory

