

PROJECT REFERENCES

DISTRICT COOLING PLANTS

United Arab Emirates:

SeaWorld District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system for the Process and the building services in addition to the SIL-3 ESD system to allow for the unmanned operation of the Plant.

Solution: Redundant Rockwell Automation ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, FactoryTalk Historian System with VantagePoint Reporting, SIL-3 S7400 Siemens Controllers with FS IOs for the ESD system and E+H Instrumentation system Location: Abu Dhabi, United Arab Emirates Client: Tabreed

Danat District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Siemens S7400H PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, FactoryTalk Historian System with VantagePoint Reporting, and E+H Instrumentation system

Location: Abu Dhabi, United Arab Emirates Client: PAL Cooling

First District Cooling Plant Expansion and Upgrade in Al Reem Island

Scope of Work: Upgrade the 2009-installed Rockwell Redundant ControlLogix PLC with ControlNet IO network to the latest Redundant PLC on Ethernet/IP IO network.in addition to the supply and installation of the instrumentation, IO capacity, for the newly installed chillers, pumps, and TES tanks and integration in the PLC logic, SCADA graphics, historian, and reporting.

Solution: replace the legacy 1756-L6x controller, ENBT, CNBR, SRM modules with 1756-L7x Controller, EN2TR, and RM modules and change all IO racks communication modules to be on Ethernet IP. Install new RIO panels based on 1794 Flex IOs to accommodate the newly installed equipment and TES tanks and the associated instruments from E+H. Integration of the new IOs with the redundant FactoryTalk SCADA system, FactoryTalk Historian and VantagePoint Reporting.

Location: Abu Dhabi, UAE

Client: PAL Cooling

Shams District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Siemens S7400H PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, FactoryTalk Historian System with VantagePoint Reporting, and E+H Instrumentation system

Location: Abu Dhabi, United Arab Emirates Client: PAL Cooling

Jumeirah Village Circle (JVC) District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Siemens S7400H PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, FactoryTalk Historian System with Reporting, and E+H Instrumentation system

Location: Dubai, United Arab Emirates **Client:** Empower

Mirdiff Main District Cooling Plant Controls Upgrade

Scope of Work: Design, Supply, Installation, and Commissioning of the control system upgrade. Solution: Allen-Bradley CompactLogix PLC System; Rockwell Automation FactoryTalk View Site Edition SCADA System, and E+H Instrumentation system Location: Dubai, United Arab Emirates **Client:** Empower

Abu Dhabi Airport District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system. Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation

FactoryTalk View Site Edition SCADA System, and Siemens/E+H Instrumentation system Location: Abu Dhabi, United Arab Emirates

Client: Abu Dhabi Airports Company

Warsan Village District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA System. Solution: Redundant Siemens S7400H PLC System; Redundant Siemens WinCC Server-Client, Historian with Reporting, and Siemens and Endress-Hauser Instrumentation system. Location: Dubai, United Arab Emirates **Client:** Nakheel

Dubai Creek Harbour Development District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA System.

Solution: Redundant Siemens S7400H PLC System; Redundant Siemens WinCC Server-Client, Historian with Reporting, and Siemens and Endress-Hauser Instrumentation system. Location: Dubai, United Arab Emirates

Client: EMAAR

Jumeirah Lake Towers District Cooling Plant 1

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system replacing the existing obsolete control system. Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, FactoryTalk Historian System with Reporting, and Siemens Instrumentation system

Location: Dubai, United Arab Emirates **Client:** Empower

Dubai Metro Green Line District Cooling Plants 10 & 11

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Endress-Hauser Instrumentation system Location: Dubai, United Arab Emirates **Client:** Tabreed

Palm Jumeirah Crescent District Cooling Plant 4 Controls Upgrade

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system replacing the existing obsolete control system. Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, FactoryTalk Historian System with Reporting, and Siemens Instrumentation system

Location: Dubai, United Arab Emirates **Client:** Empower

Saadiat Island District Cooling Plant DCP4

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Siemens/E+H Instrumentation system Location: Abu Dhabi, United Arab Emirates **Client:** PAL Technology

Saraya Abu Dhabi Cornish District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Siemens/E+H Instrumentation system *Location:* Abu Dhabi, United Arab Emirates *Client:* PAL Technology

ADNEC Capital Center District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Endress-Hauser Instrumentation system Location: Abu Dhabi, United Arab Emirates

Client: PAL Technology

Shams Abu Dhabi Modular District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system. Solution: Siemens S7-300 PLC System; Redundant WinCC SCADA System, and Endress-Hauser Instrumentation system Location: Abu Dhabi, United Arab Emirates **Client:** PAL Technology

Dragon Mart Modular District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system. Solution: Siemens S7-400 PLC System; Redundant WinCC SCADA System, and Endress-Hauser Instrumentation system Location: Dubai, United Arab Emirates Client: Nakheel

Baynoona District Cooling Plant Expansion

Scope of Work: Design, Supply, Installation Supervision, Commissioning, and Integration of the Additional Controls and Instrumentation Components Required for the New Equipment Installed in the Plant.

Solution: GE RX3i PLC System Expansion; Integration with Cimplicity SCADA System, and Endress-Hauser Instrumentation system

Location: Abu Dhabi, United Arab Emirates Client: Tabreed

UAE University District Cooling Plant Expansion

Scope of Work: Design, Supply, Installation Supervision, Commissioning, and Integration of the Additional Controls and Instrumentation Components Required for the newly-installed equipment. Solution: Redundant Allen-Bradley ControlLogix PLC System expansion; integration with Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Endress-Hauser Instrumentation system

Location: Al-Ain, United Arab Emirates Client: Tabreed

Strategic Tunnel Enhancement Program Phase 1

Scope of Work: Design, Supply, Installation Supervision, and commissioning of the PLC and HMI system for the tunnel HVAC

Solution: Allen-Bradley CompactLogix PLC System and HMI Location: Abu Dhabi, United Arab Emirates Client: Samsung

YAS Island District Cooling Plant Expansion

Scope of Work: Design, Supply, Installation Supervision, Commissioning, and Integration of the Additional Controls and Instrumentation Components Required for the New Equipment Installed in the Plant.

Solution: Redundant Allen-Bradley ControlLogix PLC System expansion; integration with Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Endress-Hauser Instrumentation system

Location: Yas Island, United Arab Emirates **Client:** Tabreed

Golf Gardens District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Allen-Bradley CompactLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Endress-Hauser Instrumentation system Location: Abu Dhabi, United Arab Emirates Client: Sorrouh

Raihan Heights District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Endress-Hauser Instrumentation system Location: Abu Dhabi, United Arab Emirates

Client: Capitala

Zayed University District Cooling Plants 1 & 2

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.
Solution: Allen-Bradley CompactLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Endress-Hauser Instrumentation system
Location: Abu Dhabi, United Arab Emirates
Client: Zayed University

Pearl of the Emirates District Cooling Plant 1 (DCP1)

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Endress-Hauser Instrumentation system **Location:** Abu Dhabi, United Arab Emirates

Client: PAL Technology

Dubai Investment Park District Cooling Plant 3 (DIP3)

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Endress-Hauser Instrumentation system **Location:** Dubai, United Arab Emirates **Client:** Emicool

Reef District Cooling Plant

Scope of Work: Provide 3rd Party commissioning Management Services.

Solution: Prepare Commissioning Plan, Procedures, and Documentation; Coordination with Equipment Vendors, Manage the Commissioning Activities, Witness and Verify the Commissioning of all Plant Equipment; Carry out the Plant Performance Tests; Administer the Operation Training, and Manage the Plant Handover to the Client

Location: Abu Dhabi, United Arab Emirates *Client:* Manazel

YAS Island District Cooling Plant

Scope of Work: Provide 3rd Party commissioning Management Services.

Solution: Prepare Commissioning Plan, Procedures, and Documentation; Coordination with Equipment Vendors, Manage the Commissioning Activities, Witness and Verify the Commissioning of all Plant Equipment; Administer the Operation Training, and Manage the Plant Handover to the Client **Location:** Abu Dhabi, United Arab Emirates

Client: Tabreed

Jumeirah Crescent District Cooling Plants

Scope of Work: Provide 3rd Party commissioning Management Services.

Solution: Prepare Commissioning Plan, Procedures, and Documentation; Coordination with Equipment Vendors, Manage the Commissioning Activities, Witness and Verify the commissioning of all Plant Equipment; Administer the Operation Training, and Manage the Plant Handover to the Client **Location:** Dubai, United Arab Emirates **Client:** Palm District Cooling

Jumeirah Lake Towers District Cooling Plants

Scope of Work: Provide 3rd Party commissioning Management Services.

Solution: Prepare Commissioning Plan, Procedures, and Documentation; Coordination with Equipment Vendors, Manage the Commissioning Activities, Witness and Verify the Commissioning of all Plant Equipment; Administer the Operation Training, and Manage the Plant Handover to the Client **Location:** Dubai, United Arab Emirates **Client:** Palm District Cooling

Kingdom of Saudi Arabia:

Mohammad Bin Salman Foundation (MiSK) District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA System.
Solution: Redundant Siemens S7400H PLC System; Redundant Siemens WinCC Server-Client, Historian with Reporting, and Siemens and Endress-Hauser Instrumentation system.
Location: Riyadh, Kingdom Saudi Arabia
Client: Mohammad Bin Salman Foundation

Neom Development Central Utility Complex 2

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the DCS-based Control System.

Solution: Schneider Electric EcoStruxure Hybrid DCS (PlantStruxure PES) **Location:** Tabouk Province, Kingdom Saudi Arabia **Client:** Neom

TIR-1110 DCP in Community Area, Al Jubail

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA System. **Solution:** Redundant Honeywell MasterLogic redundant PLC System; Redundant PlantCruise Server-Client, Historian with Reporting, and Endress-Hauser Instrumentation system. **Location:** Al Jubail, Kingdom Saudi Arabia

Client: Royal Commission for Jubail & Yanbu

Neom Development Central Utility Complex 1

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the DCS-based Control System.

Solution: Schneider Electric EcoStruxure Hybrid DCS (PlantStruxure PES) **Location:** Tabouk Province, Kingdom Saudi Arabia **Client:** Neom

Government Agencies Compound District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA System.

Solution: Redundant Siemens S7400H PLC System; Redundant Siemens WinCC Server-Client, Historian with Reporting, and Siemens and Endress-Hauser Instrumentation system. **Location:** Riyadh, Kingdom Saudi Arabia

Client: Ministry of Finance

Madina Hajj City District Cooling Plants

Scope of Work: Design, Supply, Installation supervision, and Commissioning of the Integrated PLC, SCADA, and Instrumentation System for the Development Infrastructure Including District Cooling Plants & ETS, Grey Water & irrigation Pumping Stations, Tunnel Ventilation System, and Central Command & Control Center.

Solution: Redundant Rockwell ControlLogix PLC systems; Redundant SCADA Client-server system; Redundant Historian System with Reporting; and E+H Instrumentation **Location:** Al Madinah Al-Munawara, Kingdom Saudi Arabia **Client:** Ministry of Finance

King Saud University Endowment Central Utility Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system. **Solution:** Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and ABB Instrumentation system **Location:** Riyadh, Kingdom Saudi Arabia **Client:** King Saud University

King Fahd Hospital Modular Chiller Plant Control System

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated PLC, and SCADA system. **Solution:** Allen-Bradley CompactLogix PLC System; Rockwell Automation FactoryTalk View Site Edition SCADA System **Location:** Jizan, Kingdom Saudi Arabia **Client:** Stellar Energy

King Saud University Campus District Cooling Plant

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA system.

Solution: Redundant Allen-Bradley ControlLogix PLC System; Redundant Rockwell Automation FactoryTalk View Site Edition SCADA System, and Endress-Hauser Instrumentation system **Location:** Riyadh, Kingdom Saudi Arabia **Client:** King Saud University

King Abdul Aziz International Airport – Cooling Tower Local Control Panel

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the local PLC & VFD control panels for the cooling tower. Solution: Siemens S7-1200 PLC System and I/Os. Location: Jeddah, Kingdom Saudi Arabia Client: King Abdul Aziz International Airport

State of Qatar:

Lusail Marina District Cooling Plant - Lusail City Development

Scope of Work: Design, Supply, Installation Supervision, and Commissioning of the Integrated Instrumentation, PLC, and SCADA System.

Solution: Redundant Siemens S7400H PLC System; Redundant Siemens WinCC Server-Client, Historian with Reporting, and Siemens and Endress-Hauser Instrumentation system **Location:** Doha, Qatar **Client:** Marafeq Qatar

Lusail Wadi District Cooling Plant - Lusail City Development

Scope of Work: Design, Supply, Installation, and Commissioning of the Integrated Instrumentation, PLC, and SCADA System.

Solution: Redundant Siemens S7400H PLC System; Redundant Siemens WinCC Server-Client, Historian with Reporting, and Siemens and Endress-Hauser Instrumentation system

Location: Doha, Qatar

Client: Marafeq Qatar