

Overview

Country or Region: India

Industry: Water

Customer Profile

Bhabha Atomic Research Centre (BARC), India's premier Nuclear research facility is based in Trombay, Mumbai. Established in 1957, BARC provides a wide scale of scientific and technological activities extending from basic laboratory bench scale research to scaled up plant level operations and its functional domain covers all walks of science and technology – stretching from classical school of thoughts to the emerging novel fields of interest.

BARC relies on Automated Water distribution system



Need

Water is a scarce commodity thus has unparalleled value. With rising urban population, demand for water is increasing and therefore efficient water distribution & usage is becoming increasingly important.

BARC has its residential complex consisting of 235 buildings having 9500 flats for the employees of Department of Atomic Energy at Anushakti Nagar, Mumbai.

With any amount of semiskilled /under skilled manpower deployed round the clock to monitor tank level in each building & operate pumps, one cannot ensure availability of water reliably. To operate water distribution efficiently & reliably, BARC decided to automate the operation.

Objectives:

- Provide water reliably to each flat
- Provide the ability to monitor and control remote facilities
- Minimize routine visits to remote sites
- Reduce power consumption
- Optimize pumping operations

Solution

L&T-C&A was awarded the contract by BARC for a turnkey control & instrumentation solution for Pump House Automation by DCSEM, Anushakti Nagar

Township covering 14 nos. Pump houses and 310 nos. Overhead tanks. Objective was to enhance the performance of pumping stations and reduce energy consumption.

L&T-C&A's scope of supply includes the Control System (PLC, Remote IOs, Pressure Transmitters, Pressure Switches, Level Transmitters, Level Switches, Control Vales) for Pump House and Overhead Tanks, SCADA system housed in a Control Room, Large displays and wireless communication system to measure, monitor, control and analyse the entire water distribution process. C&A was also responsible for Engineering, Supply, installation, Commissioning and AMC support services.

The water distribution inside the complex was challenging as it needed a robust solution to manage 14 pump houses to supply water to 235 buildings containing 1600 tanks using 90 Sluice valves.

L&T-C&A implemented SCADA system to operate and control the water distribution. To control & monitor water distribution for entire facility, control devices such as valves & sensors for level, flow & pressure are used. All the pump-house' are automated and connected to centralized server over a GPRS network. Every tank in individual

About Us

L&T Control & Automation (C&A) is a Strategic Business Unit of L&T Electrical & Automation. It is a part of Larsen & Toubro – the multi-billion India-based conglomerate. L&T's C&A business is market leader in delivering integrated electrical & automation solutions in India and overseas. With over three decades of experience in diverse industry segments, C&A delivers value through comprehensive solutions based on varied technology platforms and incorporates the benefits of its wide-ranging experience. L&T's state-of-the-art Electrical & Automation Campus at Navi Mumbai in India has the latest testing and manufacturing equipment. It incorporates a modular manufacturing unit, an application software laboratory and a fully networked office for engineering and project management.

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- Smart Grid

Infrastructure

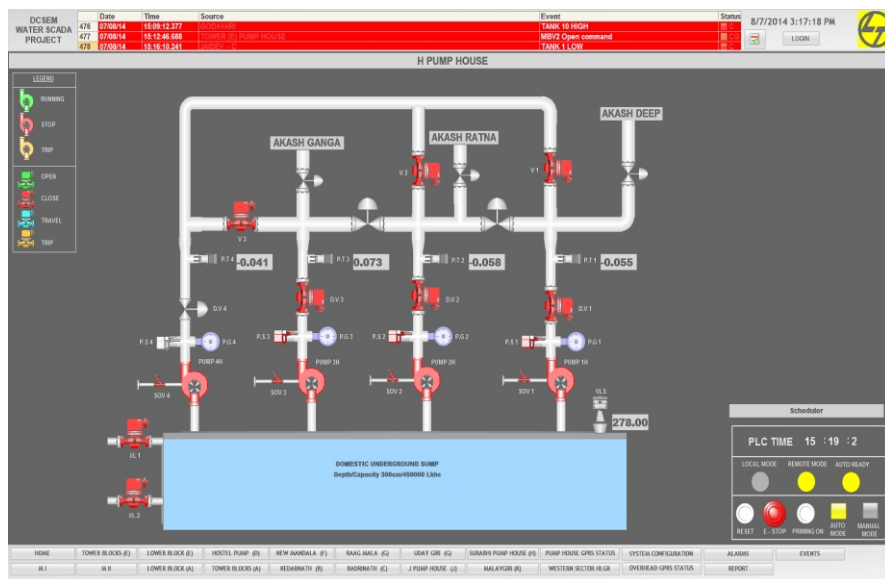
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- Security /Surveillance Solutions
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- E&I for Ports

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- Substation
- MV / LV Power Distribution System
- ELV / CCTV / Fire Detection & Alarm Systems (FDAS) with suppression solution
- Access Control and Lighting Controls



building is installed with a level switch, connected to the control panel in each building. All the buildings are further connected to the server over a GPRS network. Every sluice valve is operated electrically through an actuator. Entire system is mapped on a Central SCADA in the centralised control room. The solution enables the user to monitor & control the pumping operation remotely. It helps to check the events and alarms, diagnose any abnormal situation in the system. It also generates various reports required for Operation & Maintenance.

Benefits:

- Assurance of reliable water supply
- Reduced the administrative overhead required to operate water distribution services
- Reduced energy consumption & conserve water
- Reduced manpower for operation
- Remote Control & Monitoring of widespread assets enabling quick rectification of problems
- Automated report generation for O&M requirements eliminating human error

