EMPOWER

St Mary's Hospital - Paddington

Case Study

Background: St Mary's Hospital is part of Imperial College Healthcare. St Mary's is a general acute hospital that diagnoses and treats a range of adult and paediatric conditions. The Jefferiss Wing is an internationally renowned centre of excellence for the diagnosis, treatment and care of people with sexual health problems, including sexually transmitted diseases such as HIV and AIDS. The paediatric service includes a dedicated children's A&E department and north-west London's paediatric haematology service. The hospital has pioneered the use of robotic surgery, including the UK's first da Vinci robot for keyhole surgery.

The Project: Medical gas alarms are controlled through standard plant control panels, which perform really well. However, they have limited 'intelligence' in the control of plant operating levels. Medical air plant and medical vacuum plant have standard analogue sensors, and more control is required to reduce the number of component failures. There was also a need for maintaining accurate records of component failure in order to meet higher levels of compliance. The current situation was to rely on planned preventative maintenance schedules to reveal under-performing plant.

The Solution: SHJ provided an intelligent control system – **EMPOWER** – which maintains plant at optimum performance levels; automatically changes duty cycles; senses and records hours run, temperature, amperage load, dew point, pressure and service intervals. SHJ has been supplying and installing medical gas pipeline systems for over 40 years to the NHS. Its Research & Development laboratory tested **EMPOWER** along with **EVOLUTION** – the remote monitoring system – at St Mary's for over four months, prior to rolling out the complete packaged solution.

EMPOWER is the latest technology to assist APs and Estates Managers in controlling their medical gas plant. The system is designed to record all plant deviation from the standards set. This means that reporting is a whole lot easier, takes up less manual time in collating information, and provides positive feed-back to Estates Managers for future capital expenditure requirements. At St Mary's, **EMPOWER** was retro-fitted to their medical air compressors, dryers and vacuum plant, following an Estates & Facilities Alert for Medical Gases directive from the Department of Health. **EMPOWER** complies with HTM 02-01 and ensures directive 10395 is adhered to. The system includes a touch screen for easy local control, and a secure on-line monitor through any web browser. Statistics generated by the system can be viewed at any time, so that Managers can trend faults for internal review. The on-screen schematics of each plant means that identification of components is simple, and for clarity where necessary, plant was photographed and tagged and incorporated into the system. Should any part of the **EMPOWER** system fail; all plant automatically reverts back to a manual system of operation.

Conclusions: Because **EMPOWER** uses Secure Private Telemetry© (SPT), monitoring is through any authorised PC browser, although control is always local to the plant. The total time-saving in diagnostics and remedial action means faster turn-around of repairs and maintenance. Engineers are thus freed up for more pressing tasks and on-call engineers make only one trip with the correct replacement parts when required. Alerts from critical faults are transmitted to the relevant person by text to mobile, e-mail to Blackberry or PC, or to Windows Mobile™ PDAs. When the remedial action is complete, an acknowledgement is sent in the same way. The payback on investment is calculated at 8 months.

SHJ HOSPITAL PIPELINES

Innovations in Medical Gas Technology