



ABBOTT INFORMATICS PARTNERS WITH SYNERGY

Synergy is Western Australia's largest provider of gas and electricity, operating as a generator and retailer, to more than one million residential, business and industrial customers. The organization operates in an area known as the South West Interconnected System (SWIS), which extends from Kalbarri in the north, east to Kalgoorlie-Boulder and south to Albany.

“Synergy’s major power stations are coal powered, relying on water both to generate the steam for the turbines and for its cooling towers. The water is continually tested for quality, and where necessary chemically treated to ensure that turbines and other components do not scale or corrode.”

STARLIMS ticked all of Synergy's boxes for an off-the-shelf laboratory information management system (LIMS) that would take unnecessary manual tasks out of laboratory technicians' hands, provide a mechanism to collate all chemical data for reporting and troubleshooting purposes in one central database and provide a platform for the laboratory team to operate unhindered by unsupported and unconnected systems.

The energy company was looking for a LIMS platform that could automate its routine laboratory test scheduling, enable direct results captured from analytical instrumentation into the software, and reduce the amount of manual data input, report writing, and reliance on spreadsheets. The ultimate goal was to deploy a single

LIMS system that would simplify data collation and visualisation, interrogation and analysis, and facilitate more informed decision making.

Synergy started using STARLIMS in May 2015, and within its first year rolled the platform out to the majority of its power station laboratories.

STARLIMS automates the scheduling of water testing, and integrates directly with many analytical instrument platforms so that test results and instrument data are captured directly into the database, without any need for manual recording or data entry.

Anomalous or out of specification instrument readings and results are highlighted. Technicians are alerted and prompted to take corrective action or to request repeated testing. Details of the nature, time, date and instigator of all remedial actions are recorded within STARLIMS.

STARLIMS integrates with Synergy's data historian, so that online data from field instruments can be viewed in conjunction with results and analysis from laboratory instrumentation. Decisions can be made on complete datasets, rather than on discrete packets of data.

“We can now continuously, in real time, monitor online instrumentation and laboratory chemistry data trends together on the same graphs, perform calculations on the data, interrogate the data during investigations, and review historical data, easily and efficiently at our desktops.” **Kathy Miller, Station Chemist.**

- STARLIMS solution was deployed at Synergy, with configuration options providing Synergy with workflows and personalisation required; for example fine tuning of dashboards, screens, visualization, reporting, scheduling tools and permissions.
- Integration of STARLIMS to the laboratory instruments allows for user initiated test run lists to be sent to the instruments and verified test results to be automatically loaded into the STARLIMS database.
- Using STARLIMS has resulted in direct savings of an estimated five man hours per technician per week.
- STARLIMS promotes personnel responsibility and accountability. The system logs who has made new data entries, changes or deletions from the database.
- Technicians spend less time keying in procedural information, results data and generating reports. More time

can be spent reviewing and analysing data and making sure that water quality is optimum for turbine and cooling tower operation.

- Information held in a single repository is more easily accessible to different departments within the organization.
- Integration of STARLIMS with Synergy’s data historian has allowed data and trend analysis through user-friendly graphical and other visualization options.
- Simply reducing the need for paper-based records has dramatically streamlined data storage and organization, accessibility and usability.

Synergy engineers monitor plant systems, including turbines, boilers, pumps and motors, by combining online performance data with STARLIMS data, to correlate performance with water chemistry. The overall platform allows engineers and chemists to derive a holistic view of plant performance that will not only aid troubleshooting, but will help to optimize operating parameters and conditions, ensure longevity of systems and components, and ultimately lead to additional cost savings and efficiencies.

SYNERGY CHALLENGES	STARLIMS SOLUTION	SYNERGY RESULTS
Replace old, very limited, manual-entry in house database and multiple excel spreadsheets with fully integrated LIMS system	<ul style="list-style-type: none"> • A single, centralized LIMS and database that integrates with instrumentation and site DCS data 	<ul style="list-style-type: none"> • Robust data management and access • More accurate trend analysis and informed decision making • Efficient, real-time data review and analysis • Ease of system configuration and upgrade • Better management of routine and ad hoc test scheduling
Time-consuming and error-prone process to write lab results on worksheets, followed by manual data entry into database via desktop PCs	<ul style="list-style-type: none"> • Immediate entry of lab results to LIMS at benchtops either via laptops or through instrument integration 	<ul style="list-style-type: none"> • Significant time savings for analysts and across other departments • Significant reduction in transcription errors • Secure data integrity • Ease of data visibility for supervisors/managers
Poor traceability of, and analyst accountability for, lab results	<ul style="list-style-type: none"> • Full audit trails • Integrated OOL investigations 	<ul style="list-style-type: none"> • Full traceability of data /audit trails • Ownership of data entry or alteration • Immediate review of data and trend analysis
No integration of online process instrument data with laboratory data Limited visibility of data to wider site teams	<ul style="list-style-type: none"> • Integrate STARLIMS with data historian PI 	<ul style="list-style-type: none"> • Visibility of all data in data historian • Powerful troubleshooting • Ability to compare and trend lab results with online process data • Access of system and data to accredited personnel at any site

“STARLIMS has exceeded our expectations. As well as automating analytical test scheduling and results capture from analytical instrumentation, the software timetables and records instrument calibration and maintenance activities. We can now be confident that these important functions are neither missed, nor repeated unnecessarily.”

“Cutting down significantly on manual data entry and record-keeping means that our technicians and chemists now have more time to do their job of analysing data and acting on results and trends.”

“STARLIMS has allowed us to do things that we simply couldn't with our legacy system. These lead to multiple 'organizational health' benefits rather than to direct financial benefits.”

“Using STARLIMS we can continuously monitor all of our online instrumentation across sites, view and interrogate chemistry data trends and historical data. All results and reports, including legislative compliance records, are stored within STARLIMS, so that in the event of an audit, we can easily provide any information or datasets requested.”

“Data held in STARLIMS can be searched, mined and viewed in context alongside historical and trend data.”

“Synergy's core values are Innovation, Accountability, Collaboration and Trust. Deploying STARLIMS across our laboratories has allowed us to meet and uphold those values.”
Kathy Miller, Station Chemist.



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