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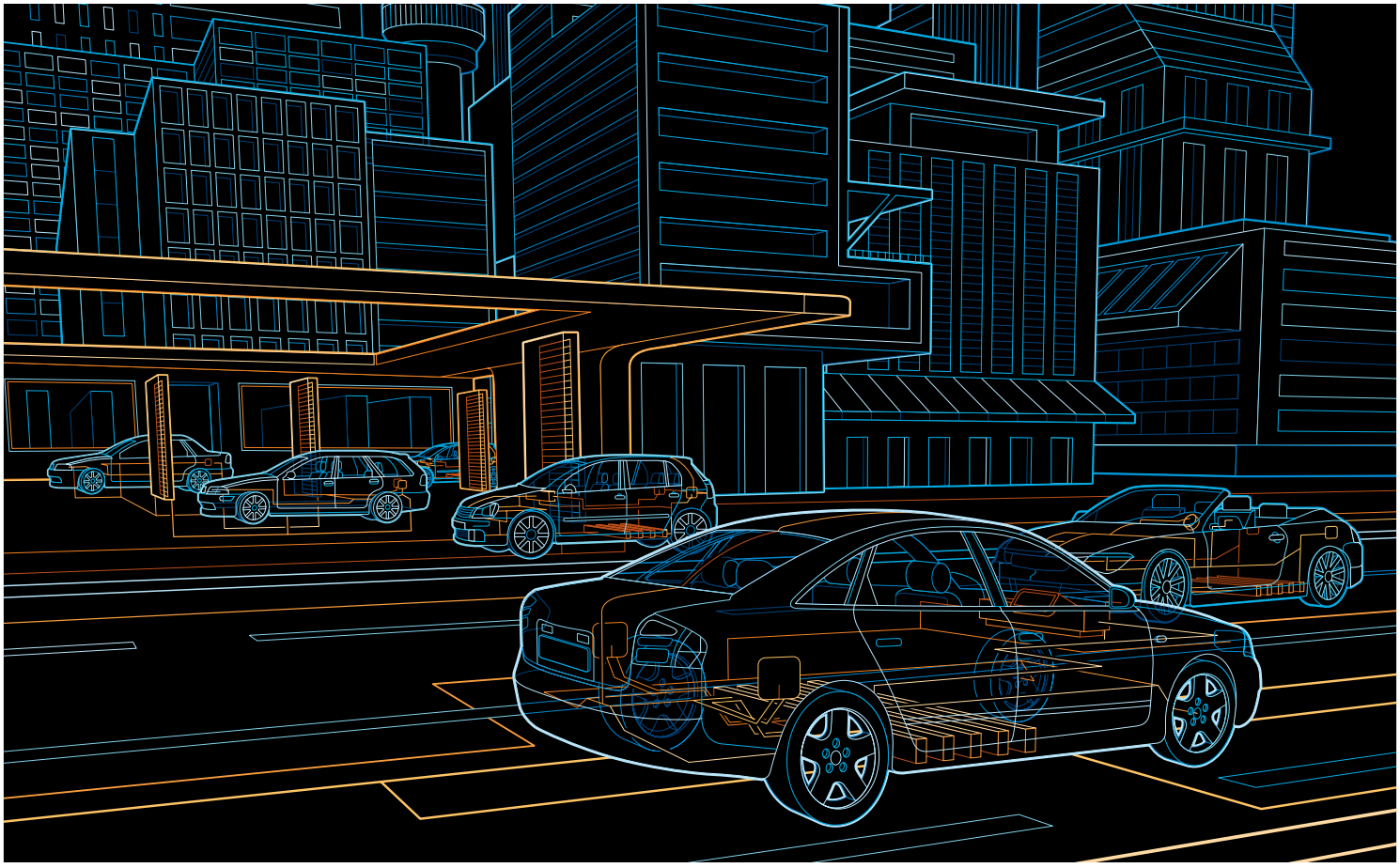
of the ABB Group
in New Zealand



Smart and sustainable solutions

Power and productivity
for a better world™

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Ewan Morris
Managing Director
ABB
New Zealand

Many new, intelligent solutions that contribute to a sustainable world, have software at their core. In October, ABB announced it has joined forces with Microsoft to combine ABB's fast-charging technologies, with Microsoft's state-of-the-art cloud services. This intelligent cloud platform will allow our customers, car manufacturers and partners in the electric vehicle (EV) space, to drive innovations. We are pleased to be able to offer this future-proofing capability on our chargers to Vector, as they roll out their charging network across Auckland, and to WEL Networks in Hamilton (see page 8).

With water being such a precious commodity for farmers and local communities, our Aquamaster3 flowmeter will help generate significant water savings for Ashburton Lyndhurst Irrigation Limited in the South Island. ABB's smart software allows real time data collection to be communicated to all Ashburton Irrigation's telemetry systems from remote locations. Aquamaster3 even integrates renewable technology like solar panels.

Our smart Power Electronics technology, developed and produced in Napier, continues to shine on the international stage. Toyota will achieve significant cost savings and reduce production losses in their plant in Thailand, while the Royal Danish Navy is keeping their frigates in action, courtesy of ABB's reactive power conditioner.

With hundreds of employees over many sites, ABB is very much a part of the community. As part of our wider company sustainability focus, we have recently joined the Sustainable Business Network. We look forward to supporting their goals, as well as sharing with and learning from the other 500 member organisations. In this edition you can also read about ABB's support for Project X, an initiative that the Institute of Engineering and Technology (IET) is running to promote engineering, as well as a donation to Surf Life Saving NZ as part of our company safety week in November.

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Email: tracey.paver@nz.abb.com • **Design:** Sauvage Design • Any use of text or photos requires the written consent of the publisher.

Smart solutions

Local technology

Stories in short

Water savings for Ashburton Lyndhurst Irrigation through reliable, accurate flowmeters

Around 270 Aquamaster3 flowmeters will be installed as part of Ashburton Lyndhurst Irrigation Limited's (ALIL) Stage 2 pipeline upgrade project, which will generate significant water savings for the company.

"ABB has provided us the ability to save water through a delivery system with accurate flowmeters, where we are able to know exactly where the water is going and what we are delivering", ALIL Scheme Manager Jess Dargue said.

Background

As part of ALIL's Stage 2 Piping Upgrade Project, which began in 2014, the existing pipeline was extended to cover 200 kilometre (km) of the scheme's open races. Enabling more efficient water use and minimising water losses, by delivery of water under pressure and increased reliability, were the driving forces behind the multi-million dollar upgrade. The energy saved by piping the scheme will be equivalent to the energy used by 2,000 homes. The three-year project is to be completed by July 2017.

Earlier in 2008, ALIL commenced the ground-breaking Stage 1 pressurised piping scheme project where a 30 km pressurised pipeline was installed to supply 37 properties to irrigate 4,000 ha of land. The concept was to use the natural fall of the land within an open channel irrigation scheme to generate pressurised water at the farm gate, by piping the water from the source to each individual farm. Sufficient pressure would be generated to spray irrigate without pumping. The advantages of Stage 1 included energy savings in terms of both pumping and transmission losses; improved water efficiency, including 15 percent saving in water by eliminating the losses of an open channel system; a larger irrigated area; and a minimum 50-year design life with very low maintenance.

To support the pipe delivery system, ALIL needed an accurate and reliable flowmeter to carefully measure water drawn for irrigation, track delivery and detect leaks, ensuring that water is being used as responsibly as possible.

ABB's solution

ABB is installing around 270 AquaMaster3s over the two-year project, including some large flowmeters up to 1200 mm.

The AquaMaster3 is an enhanced electromagnetic flowmeter which delivers measurement data from remote locations directly to customers via the internet. The flowmeter offers an ideal solution for irrigation applications with the following primary benefits:

- Enhanced accuracy: compared to other flowmeter types, electromagnetic flowmeters offer greatly enhanced accuracy and repeatability throughout their operational life, with uncertainty of ±1% reading or better.

- Maintenance free: with no moving parts, they do not suffer from problems with wear and tear, minimising maintenance, and require no upstream strainers to filter sediment.

- Reduced installation costs: ABB's Aquamaster3 is completely sealed with MIL spec connections. This benefits operators since they do not need to spend time terminating wires at the device, and avoid the potential for wiring mistakes. Furthermore, transmitters and flow tubes can be interchanged easily. Transmitters upload all flow tube data and parameter settings automatically, so there is no need to input calibration values or settings, should either tube or transmitter be changed.

- Highly flexible installation: it can be installed anywhere, even in the remotest locations, particularly with the introduction of renewable energy options. Adding to the existing battery and mains-powered versions, it can be hooked up to sources as small as a five-watt solar panel or a 60-watt wind turbine generator. Requiring zero pipe diameters upstream and downstream, the AquaMaster3 is ideal for installations with limited space.

AquaMaster3 offers real time data collection, gathering data on both flow and pressure every 15 minutes, with collected data stored in an integrated data logger.

The data can be automatically sent daily via SMS to a receiver of the customer's choice. "AquaMaster3's useful ability to communicate to ALIL's telemetry systems was straightforward", Jess Dargue highlighted.

"I am happy (enough) to recommend Aquamaster3 to anyone for its simplicity, reliability and ABB's investment to product support going forward", Dargue adds.

About Ashburton Lyndhurst Irrigation Limited (Alil)
www.alil.co.nz

Ashburton Lyndhurst Irrigation Limited is a water supply management company receiving its allocation of water from the Rangitata Diversion Race Management Limited and distributing its water through a network of races to its shareholder members who collectively farm close to 30,000 hectares.

We “Don’t look the other way”

ABB’s global safety week 2015

ABB held its annual safety week in mid-October with a range of activities and training designed to promote the “Don’t look the other way” safety culture.

In line with last year’s effort, Safety Week 2015 included training sessions on core safety themes, including working safely with contractors, as well as safety workshops and training tailored to particular safety concerns in different locations. Safety awards for Safety Leader, Project Safety Performance, Team Award and Service Safety were also awarded.

The week coincided with the NZ ShakeOut drill, which included the Drop, Cover and Hold activity, led by local floor wardens.

Sports personality Precious McKenzie visited the Auckland sites to demonstrate safe manual handling

Safety week donation

As part of Safety Week 2015, ABB in New Zealand donated $5,000 to a health and safety related charity to acknowledge our local community.

This year ABB has sponsored Surf Life Saving New Zealand. Surf Life Saving New Zealand Inc. (SLSNZ) is the national association representing 74 surf life saving clubs in New Zealand.

Surf Lifesaving is both a sport, and a community and educational service. There are around 15,000 volunteers with the purpose of protecting our community in the water.

For more information on SLSNZ visit: www.surflifesaving.org.nz. In previous years ABB has supported the Westpac Rescue Helicopter Trust and St John Ambulance.

Giving engineering the X factor

Championing engineering as a viable career path to Intermediate level school students is at the core of Project X, an initiative run by the IET, supported by IPENZ Futureintech.

Project X, which is supported by a range of organisations including ABB, aims to enlighten the minds of 400 intermediate-age children during 2016 within the Auckland region. The key objectives of the project are to demystify engineering and core subjects, as well as foster an interest and passion in a career in engineering.

The day-long project gives selected students, around 20 to 25 from each participating school, the opportunity to create an automated Christmas tree, with both lights and sound. The morning is dedicated to building the hardware, with the afternoon spent on the software component; writing and downloading the programme.

Simon Wilson, Operations Manager at ABB, is an active committee member of the Institute of Engineering and Technology (IET) and engineering mentor, and is a key organiser for Project X. He highlights how impressed he was with the recent rollout at Belmont Intermediate (pictured) in Auckland:

"The kids couldn't believe that they could build and programme something that initially looked very complicated. The excitement and confidence grew during the day as they came to realise what they could achieve, that they could do it. The look on their faces when at last they completed the Christmas tree; turned it on - and it worked! Absolute magic."

"But for me it's about 'giving back', inspiring kids to imagine themselves building an engineering career pathway. Letting the students have fun with engineering and what they're learning. It's fantastic that companies like ABB are getting behind this initiative at the grass roots."

As a follow on from the day, the students are offered ongoing support from the organisations supporting the project.

The Institution of Engineering and Technology (IET)

The IET is one of the world's largest engineering institutions with over 160,000 members in 127 countries. It is also the most multidisciplinary – to reflect the increasingly diverse nature of engineering in the 21st century.

The IET is working to engineer a better world by inspiring, informing and influencing its members, engineers and technicians, and all those who are touched by, or touch, the work of engineers.

Futureintech

Fostering young New Zealanders' interest in careers in engineering, technology and science is the aim of the IPENZ Futureintech programme. The NZ Trade and Enterprise-funded initiative involves young technology, engineering and science professionals working with local schools by giving presentations on their work, helping with projects and demonstrating practical applications on the curriculum.

Ewan Morris, ABB's Managing Director (left), with Simon Mackenzie, Vector's Chief Executive

ABB to extend its rapid charging technology across Auckland

Vector will be adding another 19 ABB rapid chargers to their planned 35 charging stations around Auckland City.

The 19 chargers will join the existing two chargers for Vector, which were launched in November at their Hobson Street substation in the central city.

Earlier this year Vector announced their intention to introduce 35 charging stations around Auckland City – a mixture of rapid-charge plug-ins and standard chargers.

"We are proud that our technology can help Vector offer easy access to chargers and help increase the use of electric vehicles (EV) in Auckland City," said Ewan Morris, Managing Director of ABB in New Zealand.

ABB's system can charge a multitude of electric vehicle types in 20 minutes. Typical vehicles include the Nissan Leaf, Mitsubishi Outlander and Audi A3 e-tron.

The Terra53 CJ is the world's fastest selling direct current (DC) charger. The 50 kW DC charger supports global EV charging standards, such as CHAdeMO and Combined Charging Standard (CCS).

The charger also features a Connected Services system that provides a web-based platform for remote management and charging statistics. This information is also made available to third party back-end systems, such as SAP, allowing providers to link to their own billing systems.

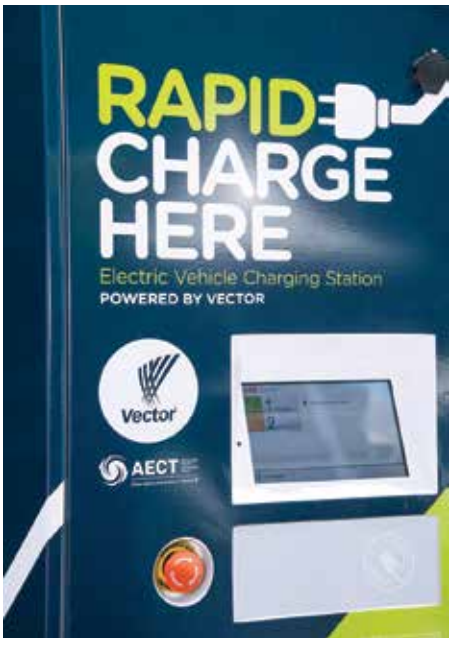
New Microsoft partnership

In October, ABB and Microsoft announced that they had joined forces to launch a next-generation electric vehicle charging services platform. Combining ABB's leading EV charging stations with Microsoft's Azure cloud-based services will ensure stability, global scalability and advanced management features for ABB customers. The collaboration will also take advantage of machine learning and predictive analytic capabilities to drive future innovations.

ABB is the world's number one DC fast charger supplier and has sold over 3,500 units for passenger vehicles globally, rolling out charging networks for automotive, utility, government and retail customers including nationwide networks in the Netherlands, Estonia and Denmark.

ABB's engineers commissioning the chargers prior to launch

For more information on ABB's EV charging infrastructure product portfolio and product images please click on www.abb.com/evcharging



Paul Blue (GM Asset Management for WEL Networks), Minister Simon Bridges, Margaret Devlin (WEL Networks Chairman) and Ewan Morris (ABB's Managing Director)

EV fast charging now in Hamilton

WEL Networks is introducing EV fast charging to the mid North Island, with the launch of their first electric vehicle ABB fast charger situated at their Hamilton North site.

The charger was launched on 4th December and the launch was attended by Minister of Energy and Resources, Simon Bridges.

The fast charger is available initially free for public use, and will be used for WEL Networks' electric vehicles.

Paul Blue, GM Asset Management for WEL Networks, comments that the charger extends the reach of the EV charging network for users.

"This charger will not only help EV users, including our own company electric vehicles, but will also help us better understand what impact this technology will have on our network".

ABB's system can charge a multitude of electric vehicle types in 20 minutes. Typical vehicles include the Nissan Leaf, Mitsubishi Outlander, BMW i3 and Audi A3 e-tron.

ABB has now sold 24 rapid chargers in New Zealand; this is the first outside of Auckland. The 50 kW DC charger also has the capability to charge two cars (DC/AC) simultaneously and supports global EV charging standards, such as CHAdeMO, Combined Charging Standard (CCS) and Type 2 AC (alternating current).

"We are delighted to partner with WEL Networks to help broaden the network of fast charging electric vehicle options to those in, or travelling through Hamilton," said Ewan Morris, Managing Director of ABB in New Zealand.

The charger also features a Connected Services system that provides a web-based platform for remote management and charging statistics. This information is also made available to 3rd party back-end systems, such as SAP, allowing providers to link to their own billing systems.

ABB and Microsoft join forces to launch next-generation electric vehicle charging services platform

The cloud based e-mobility charging platform will combine ABB's leading fast-charging technologies with Microsoft's state-of-the-art cloud services.

ABB and Microsoft Corp. announced in October the worldwide availability of a new electric vehicle (EV) fast-charging services platform. Combining ABB's leading EV charging stations with Microsoft's Azure cloud-based services will ensure stability, global scalability and advanced management features for ABB customers. The collaboration will also take advantage of machine learning and predictive analytic capabilities to drive future innovations.

"Today we live in a mobile-first, cloud-first world, and this is ever-apparent in the global electric vehicle market," said Peggy Johnson, executive vice president of business development, Microsoft.

"Our partnership with ABB aligns to one of our company ambitions to build the intelligent cloud platform, and we look forward to our technology and services becoming a differentiator for ABB's solutions."

Under the new collaboration, all ABB chargers will be connected to the Microsoft Azure cloud and surrounded by value-adding services, allowing operators, manufacturers and partners to take advantage of a world-class platform.

Successful service of critical equipment for Transpower

When Transpower needed to refurbish two synchronous condensers that are critical to the HVDC link between the country's North and South Islands, they turned to ABB to complete the project within an accelerated time schedule and within budget.

Background

The Haywards substation in the Hutt Valley near Wellington, is one of Transpower's largest substations, a key part of New Zealand's national electricity network. Two of the four 65 MVA outdoor synchronous condensers at Haywards (C9 and C10), and their auxiliary components, were due for a 20-year mechanical and electrical overhaul. The units had been installed and commissioned by ABB (previously ASEA) in 1964 and had undergone a previous overhaul by ABB in the 1990s. Continuing with this legacy, Transpower awarded the contract for the new service project to ABB.

Implementation

ABB commenced the 14-month project in May 2014. This work included: a full disassembly of each of the two 65 MVA synchronous condensers; mechanical refurbishment of the machines; mechanical refurbishment of the starting generator Ward Leonard control sets; mechanical refurbishment of auxiliary oil lubrication and cooling water systems; re-metalling of white metal bearings; rotor refurbishment; stator re-wedge and refurbishment; and electrical testing and commissioning.

"ABB provided a great team of people with diverse disciplines to complete the work package as outlined above. These people came from different groups within ABB and jelled well as a team this delivered a high quality refurbishment, safely. This proved that ABB have the ability to work on these complex refurbishment projects remotely."

The ABB team work well under the NEC3 Contractual Terms & Conditions and acted 'in the spirit of mutual trust and cooperation' says Ben Bulling Transpower Site Supervisor & Commissioning Engineer.

During the refurbishment, multiple contractors commissioned by Transpower were operating on site. "As a whole, the project required a very high degree of coordination with all parties, and a knowledge of the multi-disciplinary facets of the project was vital. ABB was able to draw on both product and service expertise and work within the overall project schedule to make sure everything was carried out as smoothly as possible," says Peter Wortley, ABB's Service Centre Manager in Christchurch.

The synchronous condensers were situated outside, without an overhead crane system. "This posed multiple challenges," says Wortley. "Working within the constraints of weather conditions, a large portable crane had to be brought on site, and was used to lift 17 ton end-shields over an acoustic wall."

The refurbishment project was executed within Transpower's accelerated time schedule and within required budget expectations, with commissioning and hand-over completed in July 2015. ABB were able to make several expert recommendations for the longevity and operation of the condensers which were adopted by the customer, and reported on other improvements that can be made to the maintenance specifications.

ABB joins Sustainable Business Network

ABB has joined 500 other like-minded organisations to become a member of New Zealand's Sustainable Business Network (SBN).

Established in 2002, SBN is the largest and longest-standing organisation dedicated to sustainable business in New Zealand. It is made up of businesses, governmental agencies and organisations aspiring to make NZ more sustainable.

SBN carries out activities and projects with businesses in four transformation areas, including renewables, community, mega-efficiency and natural capital.

Together with Auckland Transport and Qrious, SBN organised the Smart Transport Forum held in August, where various organisations discussed the use of renewables, among various sustainable transport options.

ABB's Kumail Rashid attended the event and presented ABB's technologies including Solar Impulse and electric vehicle (EV) charging offer.

ABB wins Frost & Sullivan's Excellence Award

ABB proudly accepted Frost & Sullivan's New Zealand Excellence Award for "2015 Fractional Horsepower Motors Company of the Year" at the GIL 2015 Forum luncheon last week.

Andre Clarke, Frost & Sullivan's country manager for New Zealand said that the New Zealand awards, in its second year running now, have identified and honoured best-in-class companies that have demonstrated excellence.

"Frost & Sullivan endeavours to identify and spotlight companies that have delivered excellence in their respective industries.

We believe it is important to highlight industry best practices and honour those who have accomplished noteworthy achievements. We hope that the recognitions will spur companies to share best practices and strive for greater heights as well as help them continue to do their best in growing their business."

Winners in other categories included ISS Facility Services, Orion Health and Microsoft.

To see full list of winners and award categories: ww2.frost.com/news/press-releases/frost-sullivans-2015-new-zealand-excellence-awards-recognises/

ABB steams ahead with plant upgrade

Contact Energy's fifth and final power station in their geothermal group is now future-proof following the upgrade to ABB's 800xA automation control system for their monitoring, control and safety systems at their Poihipi Geothermal Power Station.

Background

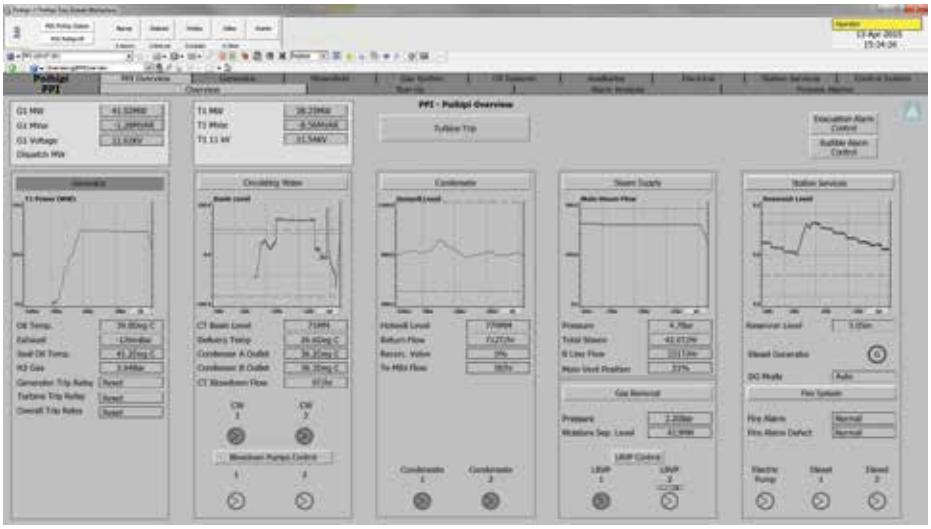
The Poihipi power station is located near Taupo, utilising steam from the Wairakei geothermal field to generate around 350 GWh of energy per year from a 55 MW single shaft hydrogen cooled machine. Poihipi is one of the largest and most complex stations in a group of five plants that are centrally controlled from the Wairakei Power Station. Wairakei was the first geothermal power station in the world to generate electricity through the use of steam and hot water.

As a result of an end of life control system replacement programme, Contact required replacements for the existing obsolete third-party programmable logic controller (PLC) units and supervisory control and data acquisition (SCADA) systems at the Poihipi site. These replacements would need to be standardised with a common distributed control system (DCS) and meet Contact's newly revised safety instrumented system (SIS) requirements for efficient and safe operation.

Solution / Implementation

Poihipi was the fifth and final power station in Contact's geothermal group to be converted to ABB's 800xA control system, including the supply of five AC 800M redundant controllers. Two of these units service the steamfield itself, controlling the common services of the plant. A second pair of AC 800M units controls the steam turbines within the station according to demand from the electricity grid. A further single AC 800M controller is implemented for gateway communication.

The software logic of the 800xA system controls and monitors all the electrical requirements of the processes involved in generating electricity from steam including steam supply to turbines, heating, ventilation and air conditioning systems (HVAC) monitoring and cooling tower bypass valves.



The 800xA system runs on Microsoft server 2008 software, using a virtualised network environment that enables many CPUs to run on one hardware box, reducing space and energy requirements, and providing easier maintenance. "This was one of the largest virtualised network upgrades utilising the 800xA system to be undertaken in New Zealand to date," says Chris Brown, ABB's lead sales and marketing engineer for the project.

ABB also supplied logic and human machine interface (HMI) programming and commissioning services, built and supplied control panels, and undertook operator training.

The upgrade and replacement project had to be completed in conjunction with a plant-wide mechanical overhaul within a short four-week outage window. Full station and steamfield commissioning was required during that time. This meant that ABB had to operate within strict timeframes and integrate with Contact's precise project schedule.

ABB was also required to comply with internal and external standards, such as Contact Energy's internal standards for alarm management (based on ISA 18.2) and graphic displays (based on ISA 100); and external standards IEC 61511 and IEC 61508.

A further challenge was adhering to the government's strict pressure equipment, cranes and passenger ropeways (PECPR) safety regulations. "There is no margin for error, any errors incur delay and with such a tight schedule we could not afford this," says Mathew Staddon, Contact's project manager. "ABB completed their work, which was essentially error free, helping to keep the project on track."

Outcome

ABB's project was successfully commissioned and handed over on schedule, as planned, during the February 2015 outage.

"ABB provided a sound control and safety system solution to meet the remote operation requirements of the Poihipi power station within the Contact Energy geothermal portfolio," says Mathew Staddon. "The end result was a credit to ABB and highlighted the capability of their product and people."

Power protection for Royal Danish Navy warships

From left, Dennis Singh, electrical officer of the Naval Base Korsoer, and Bent Jorgensen, electrician of the Naval Base Korsoer

ABB's Napier-designed technology is ensuring a steady voltage to the shore power station at the Naval Base Korsoer in Denmark, where the inrush current from three large frigates previously caused the network to drop out.

From the time a new warship leaves the yard, right up until it is taken out of service, the power is, in principle, never switched off. The components of the large radars and other high-tech equipment require constant power supply and cooling. Therefore, all electrical shutdowns of the equipment are only conducted according to prescribed procedures.

The Danish Navy has made use of a shore power station for many years, but three new frigates, with their huge cooling compressors, caused power failures to the shore power station at the naval base.

"When a frigate like *Iver Huitfeldt* is restarted it can take two men two-to-three hours to get it up and running and after a number of interruptions to the power supply, components can become damaged," says Dennis Singh, Electrical officer of the frigate *Iver Huitfeldt*.

Power protection solution

The naval station has now installed ABB's PCS100 reactive power conditioner (RPC), which is able to respond instantly to power quality events, while providing continuous reactive power correction. As a result, the dropout problem has now been solved. "We have a constant voltage of 450 volts, and it does not change, regardless of consumption," emphasises Singh.

Keeping peace with the neighbours

In addition to maintaining quality power, the RPC is also helping keep the peace with neighbours to the port. The frigates have an average of 120 to 150 sailing days, with the rest of the time being spent in port. If they were to operate their own generator, the fuel cost would be expensive and require far more maintenance. In addition, such large diesel engines are exceedingly noisy.

The RPC is already proving its worth according to Bent Jørgensen, who is the electrician at the Naval Base Korsoer: "The other day there was a power failure throughout the town of Korsoer, but we were able to start up again without problems."

Power protection for one of the world's largest vehicle manufacturers

ABB's Napier technology helps Toyota combat weather-related power disruptions and production losses at their Samrong plant in Thailand

Samrong plant

Toyota is the second largest automotive manufacturer in the world, with over 330,000 employees manufacturing 10 million vehicles each year. Its operations in Thailand were established in 1979 and the automotive giant now has three assembly sites in the country. The Samrong plant manufactures around 1,000 units each day and the 5,000 employees produce 230,000 units annually, with a primary focus on the brand's Hilux utility model. Such a large production yield requires significant reliable power resources.

Thailand's power disruptions

The country's tropical weather systems have a considerable effect upon the electrical grid infrastructure and, during the rainy season, which lasts from June to October each year, sags, swells and complete power outages are common occurrences. During the last five monsoon cycles, the Samrong plant has experienced 29 power quality events from the grid, which has resulted in a loss of 76 car bodies from the painting process area of the site. These power disruptions cause sensitive equipment such as programmable logic controllers (PLCs), motors and conveyors to stop completely, which can take up to 30 minutes to reset and get up and running again. This can result in the loss of up to 16 units each time the plant experiences a power quality event.

Toyota needed a high performance, high efficiency uninterruptible power supply to protect the plant from utility events and enable continuous power supply to their industrial processes. Mr. Narudom Jaroenpanich of Toyota's Samrong plant explains, "We approached U-Industrial Tech Co Ltd, ABB's partner in Thailand, to supply an industrial-grade UPS together with a full installation, commissioning and service package. On 19 April 2015, ABB's PCS100 UPS-I was installed on the plant's rustproofing and coating process line, protecting the 1500 kVA load for up to 30 seconds in the event of a power outage."

An uninterruptible power supply

To supply continuous power during utility events, the PCS100 UPS-I incorporates a modular energy storage and inverter system that can deliver autonomy up to several minutes. The PCS100 UPS-I uses a robust high-speed power electronic disconnect switch to interface from the utility to the load. When the utility voltage is within an acceptable range, the load is supplied directly by the utility. If a sag, surge or outage occurs, the PCS100 UPS-I immediately transfers the load onto its inverter and energy storage. Once the utility voltage returns to within acceptable limits, the PCS100 UPS-I will seamlessly transfer the load from the inverter back to the utility. Jaroenpanich continues, "We chose ABB's PCS100 UPS-I because the product is designed specifically for industrial applications. Its high efficiency rating means it will deliver the best return on investment for us, and its small size and the fact that it doesn't require any additional temperature control mean it has a low cost of ownership. The team at ABB are highly professional and we are very confident that the training, installation and commissioning delivered by the factory service technician will enable us to get the best out of the system. We estimate that we'll see a return on our investment in five to six years' time, based on production figures and opportunity loss calculations."

Inspiring change

ABB's PCS100 UPS-I is the first of its kind to be installed in Thailand, and the first such model to be installed in a Japanese automotive plant in South East Asia. Jaroenpanich expects other industries to follow suit. "With the protection ABB's PCS100 UPS-I delivers, we expect to see a reduction in the number of car body losses from the painting process saving us around 1 million Thai Baht each year (approximately $29,000 USD). We also expect to reduce the average outage time to 5.8 minutes, saving around 3.3 million Thai Baht ($95,600 USD) per year. The low maintenance cost and the ready availability of replacement parts mean limited downtime for the process line, ensuring we can run at maximum efficiency for a greater amount of time. Our increased productivity is sure to serve as inspiration for other businesses operating in Thailand."

ABB's first UniPack installation in New Zealand for Wellington Electricity

Wellington Electricity has set the benchmark for contractor protection against arc flash exposure with the installation of ABB's UniPack compact substation.

The installation at Frederick street in Wainuiomata marks the first for the UniPack, which was showcased at this year's EEA conference held in Wellington. The first UniPack is a 300 kVA unit, which included a CFC SafeLink in the HV compartment, 300 kVA transformer and an LV compartment fitted out with ABB's inline low voltage fused or linked disconnectors – all factory installed and connected. The unit was installed to replace an old berm substation built in 1970 that had been leaking transformer oil and had HV switchgear that was unsafe to be worked on when the substation was live.

Designed for safety

Many New Zealand utilities use the 11 kV SafeLink ring main switch to connect urban distribution transformers, and these have been in use as the standard Wellington Electricity ring main switch unit for several years. As a separate switching unit, the SafeLink has IEC Std 62271 compliance to protect those on all sides of the outdoor enclosure. However when not in its custom enclosure, the arc flash protection applies only for operators at the front of the unit. This meant that when the SafeLink switch was installed in a compact or berm substation, the outcome of an arc flash event had not been evaluated. The UniPack has undergone testing at the Lane Cove HV Laboratory in Sydney to ensure that any arc flash/arc blast event from the rear of the SafeLink is contained within the UniPack enclosure. The enclosure manages this arc blast by diverting it into the transformer compartment, where the energy is safely dissipated. This was achieved with a safety rating for authorised personnel wearing HRC 2 PPE with the HV switch compartment doors open, as well as for the general public on all sides of a closed UniPack enclosure.

Wellington Electricity's Project Manager Paul Parreno says ABB's UniPack was the safest and most practical replacement for the site.

"ABB's innovation introduced by this unit has brought the quality of our asset to another positive level, " Parreno says.

The Frederick St UniPack has been installed with an "automation ready" SafeLink RMU. This means Wellington Electricity can motorise and remote connect the 11 kV switch to SCADA through a Remote Terminal Units (RTU), within only two or three hours work on-site.

Parreno was impressed with the ABB working team, particularly with their involvement in the initial installation process. "ABB has dealt with most of the network utility requirements with their advancement to their UniPack design. They were responsive to the feedback that we have provided to further develop the unit."

New products

Power protection

PCS100 AVC-20

Active Voltage Conditioner for continual voltage regulation – 250 kVA to 3,000 kVA

The PCS100 AVC-20 is a power protection system designed for use in industrial and large commercial operations in environments where an unstable network or utility voltage affects productivity. The system ensures a continual, regulated supply of utility voltage where the electric infrastructure is stressed, unstable or unreliable.

Benefits to your business

- Achieve consistent processes
- Increase the lifetime of your equipment
- Experience fewer equipment malfunctions
- Improve the quality of products and services
- Reduce usage of expensive critical back-up systems

A fluctuating voltage supply affects productivity and the consistency of operations, leading to a reduction in the quality of products and services. It can also lead to increased wear on machinery components, resulting in a greater number of malfunctions and a reduced life expectancy of equipment.

The PCS100 AVC-20's fast, accurate voltage regulation secures productivity by improving consistency in operations and reducing the impact of fluctuating voltage on equipment and production.

Reduce costs

- Optimise your energy usage
- Improves motor efficiency
- Better use of your resources
- Increase your usage of cheaper utility power

Brownouts, over-voltages and an unbalanced voltage supply could cause motors in equipment and machinery to function inefficiently and result in poor use of resource, in terms of staff, materials and energy consumption. It can also cause reliance on costly back-up systems, such as diesel generators.

The PCS100 AVC-20 ensures a regulated supply of voltage, helping streamline operations and optimise resource to reduce wasted capacity and improve the return on operational investment.

Further info: Email Dario Rozman, Power Conditioning Product Manager at dario.rozman@nz.abb.com

Seamless control system integration?

Certainly.

It's a great feeling – the feeling of complete control. Enterprise Connectivity Solution (ECS) offers you seamless integration of manufacturing and business, including ERP, MES, SCM, DCS/PLC control systems, production equipment and applications, with single point interface suitable for enterprises of all levels of complexity. Out of the box connectivity with SAP, ERP LN, Baan, IBM Maximo and other ERP systems. ABB's solution reduces the Total Cost of Ownership for integration of ERP and plant systems by using a standard product for all vertical integrations, rather than custom developed point to point solutions. **www.abb.co.nz**

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