Continuous voltage regulation

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ABB has released the PCS100 AVC-20
An active voltage conditioner designed for voltage regulation

See the article on page 14 for more information.
Welcome back from the summer break to everyone in the Northern hemisphere. July and August have been very busy months for us in New Zealand, giving us reason to celebrate a huge milestone at the factory.

As of July, we’ve now received orders for over 1 GVA (1,000 MVA) of power protection equipment for our customers worldwide. The project which helped us achieve this landmark is an order for two active voltage conditioners (PCS100 AVC-40 units), each 1500 kVA, for a luxury hotel in Myanmar.

In the current issue you will learn about one of our installations at the automotive giant, Toyota. We also highlight an interesting application of the PCS100 product, this time into the textile industry in Vietnam, where a number of small PCS100 AVC-40s were installed to prevent PVTEX’s production from frequent voltage sags.

We also have some product news: finally the new PCS100 AVC-20 is out. Based on the well-known and established AVC platform, the PCS100 AVC-20 provides continuous voltage regulation in environments where the electrical infrastructure is unstable or unreliable. The product’s primary application will be to correct brownouts, which are long term deviations from the nominal supply voltage due to a weak power grid. As the name implies, it offers an indefinite voltage regulation range of about 20 percent either side of the nominal supply.

It was also certification time again. Our Switzerland factory (supplying the UPS product line) is now OHSAS 18001:2007 accredited, and both the New Zealand and the Switzerland factories passed their ISO9001 and ISO14001 audits.

All in all, the Power Protection team has had a busy and successful period since the last edition of power, and we hope you enjoy reading this issue.

Enjoy this issue of power.
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ABB’s modular UPS system ensures the reliability of the data center power supply and perfectly supports the customers need in terms of scalability and flexibility

Automotive Excellence

Voltage regulation for one of the world's largest vehicle manufacturers
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 local assembly sites. 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.

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 means it has a low cost of ownership. The team at ABB is 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 means 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.”

With Toyota’s ‘Global Vision’ strategy, which calls for dominance in emerging markets, at full steam a reliable supply of clean, uninterrupted power will be key to the automotive manufacturer’s success. The modular inverter construction and failsafe bypass mechanism of ABB’s PCS100 UPS-I delivers the highest system availability. Coupled with the small footprint and easy serviceability, this low maintenance, high efficiency industrial UPS is the solution for all power protection applications.

To find out more about ABB’s UPS solutions:
Web: [www.abb.com/ups](http://www.abb.com/ups)
ABB factory accredited with OHSAS

Marking an important step towards zero incidents and minimal environmental impact.

ABB’s UPS company (Newave SA), based in Quartino, Switzerland, is pleased to announce that the company has been accredited with OHSAS 18001:2007; an international standard for occupational health and safety management systems. It exists to help all kinds of organizations put in place demonstrably sound occupational health and safety performance. It is widely seen as the world’s most recognized occupational health and safety management systems standard.

“During preparations for the OHSAS 18001 audits, we did a comprehensive evaluation of our health and safety program across the entire organization including manufacturing, research and development, and service,” explained Michele Sargenti, Local Product Group Manager (Power Protection) in Quartino. “By achieving this certification, it validates the activities and energy our factory has put forward over the years in making our facility a safe place to work. Furthermore, OHSAS 18001:2007 certification demonstrates that we are committed to not only sustaining, but also continuously improving, the policies we implement to manage our health and safety systems in the interests of our employees, clients and the general public.”

Petra Ebner, Power Protection Occupational Health & Safety (OHS) Manager adds: “The Newave SA management team takes Health & Safety responsibilities very seriously. Regular workplace inspections, hazard checklists and frequent behavioral auditing are now part of the SAS routine. A full review of all activities takes place at the Monthly Management Meetings where Health & Safety is always the first item on the agenda.”

The OHSAS 18001 registration of the Quartino facility marks an important step towards zero incidents and minimal environmental impact, helping the organizations to meet their health and safety obligations in an efficient manner and supporting the achievement of a countrywide registration for ABB quality operations. The OHSAS 18001 certificate was issued in June 2015, together with the renewed certificates of ISO 9001 and ISO 14001, all valid until 2018.
Power protection sewn up

ABB’s PCS100 AVC-40 ensures continuous power for one of Vietnam’s leading polyester fiber manufacturing facilities.

Vietnam is regularly cited as the fastest-growing of the world’s emerging economies, growing at over 6 percent since January this year and expected to reach its impressive GDP growth target of 6.2 percent by the end of 2015. Fueled by foreign domestic investment and an easing of corporate regulations, Vietnam positions its manufacturing sector as a low-cost alternative to China [1].

Clothing is big business
Apparel production and its associated industries are a key contributor to Vietnam’s success and will account for 60 percent of the country’s export market by 2030, according to Nguyen Van Tuan, Chairman of the Vietnam Cotton and Spinning Association. Since January this year, garment exports have earned the country 12.2 billion USD, up 10.3 percent year-on-year[2].

Petrovietnam Petrochemical and Textile Fiber Joint Stock Company (PVTEX) was the first polyester fiber manufacturing plant to be built in Vietnam. The plant in Hai Phong City in Northern Vietnam produces polyester staple fiber (PSF) from raw materials at the rate of 500 tons each day, meeting 40 percent of the local demand.

The plant employs around 1000 people and represents a 324 million USD investment for the company.

The cost of poor power quality
Vietnam’s electricity supply is generally stable, but rising demand and recurrent drops in voltage in the form of short-term sags and longer-term brownouts put strain on industry[3] which can result in the loss of products and damage to manufacturing equipment. PVTEX experiences up to 35 power quality events each year. Each sag causes the booster and spinning pump lines to stop suddenly resulting in a loss of production worth up to $8,000. In one year alone, the factory lost more than $200,000 due to power quality events.

Mr. Pham Khac Toan, Manager of PVTEX’s Production department, says these power quality events cause major disruption to the plant, “With 30 – 35 events each year, the PVTEX factory needed a solution to protect the critical loads in the PSF production workshop. If these critical load fail in operation due to sag events, the whole of PVTEX’s production will shut down.”

An unconventional approach
PVTEX approached ABB through its local partner, and two competitors to tender proposals to protect the power supply to the booster and spinning pump lines. They were presented with two options based on different technologies to resolve the sag issue; conventional UPS (uninterruptible power supply) technology that relies on energy storage systems such as batteries or capacitors, and voltage conditioning systems which use power from the utility to supply continuous and
steady voltage to the load.

The UPS system was discounted due to the high operational expense of battery replacement and maintenance, despite the lower initial capital expense. ABB’s PCS100 AVC-40 Active Voltage Conditioner was chosen over the competitor model due to the over 30 percent lower total cost of ownership and benefits of the system

The PCS100 AVC-40, designed for sag correction in large commercial and industrial applications, is the first of its kind to be installed in a manufacturing facility in Vietnam. Voltage sags are the most common cause of equipment malfunction in automated industry the world over, and the PCS100 AVC-40, built on a proven and dependable converter platform, provides instant voltage sag and surge correction ensuring maximum productivity. As the system has a small footprint and a modular design, it can be easily fitted into equipment rooms or confined spaces, eliminating the need to design and build added floor space. The PCS100 AVC-40 has a faster return on investment due to low operation costs thanks to its leading efficiency of over 98 percent, and minimal heat rejection ensures minimal costs for electricity and cooling. The PCS100 AVC-40 requires no batteries, as it draws the additional energy required to make up the correction voltage from the utility supply. With no ongoing maintenance costs typically associated with batteries, the cost of ownership for a PCS100 AVC-40 system is very low.

The acid test
PVTEX’s new power protection equipment was able to prove its worth just one week after installation. Khac Toan explains, “In late July, a deep voltage sag occurred on our

"ABB’s active voltage conditioner is a very sound investment, commercially. The initial investment cost and total cost of ownership are much more reasonable than those associated with a UPS”

an expected return on investment in the shortest possible time.

Khac Toan continues, “We chose ABB’s active voltage conditioner solution as it suits the technical requirements of our factory and our need for a continuous, clean voltage supply. It’s also a very sound investment, commercially. The initial investment cost and total cost of ownership are much more reasonable than those associated with a UPS solution.”
PSF production lines. Our critical loads were all protected and production continued as normal. The utility voltage sagged to 61 percent of the nominal supply. The PCS100 AVC-40 was able to inject voltage to bring the input back up to 99 percent of the nominal supply, which is well within our equipment’s operational range. Without the PCS100 AVC-40’s protection, production would have shut down and we would have experienced significant losses.”

ABB supplied two 300 kVA and two 150 kVA PCS100 AVC-40 units, operating on a 50 Hz grid at a voltage of 400 VAC, to stabilize the input voltage on two booster pumps and a spinning pump filament. ABB’s partner in Vietnam supported the installation and commissioning of the units in a low voltage room at the PVTEX factory and ABB provided in-depth training for factory staff in the effective use of the equipment.

PVTEX expects the PCS100 AVC-40 to feed a stable power source to the critical load that could help them recoup their investment within the first year of ownership. Khac Toan agrees, “PVTEX expects to see an increase in production by improving the yield rate by 0.15 percent per year. Based on the performance of the equipment, we shall certainly consider investing in further PCS100 AVC-40 systems for other critical loads in the PVTEX factory in future.”

To find out more about ABB’s PCS100 AVC-40 solutions:
Web: [www.abb.com/ups](http://www.abb.com/ups)
Email: [powerconditioning@abb.com](mailto:powerconditioning@abb.com)

References
Voltage regulation solution

ABB releases new product to combat voltage fluctuations.
ABB has released the innovative PCS100 AVC-20, an active voltage conditioner for voltage regulation, designed for use by industrial and large commercial operations in environments where an unstable network or utility voltage affects productivity.

The system's technology ensures a continual supply of utility power where the electronic infrastructure is stressed, unstable or unreliable.

A fluctuating voltage supply affects productivity and the consistency of operations, leading to a reduction in the quality of products and services. Fluctuating voltage also leads 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 inconsistent voltage on equipment and production.

Brownouts, over-voltages and an unbalanced voltage supply cause motors in equipment and machinery to function inefficiently and can result in poor use of resource, in terms of employees, 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 users to streamline their operations and optimize resource to reduce wasted capacity and improve the return on operational investment. At the same time, the PCS100 AVC-20 enables the use of utility power, resulting in a cost saving on power generation from captive power plants.

Built on a proven and dependable converter platform with sophisticated control software, the PCS100 AVC-20 corrects voltage fluctuations in less than 20 milliseconds ensuring continuous operation to commercial and industrial processes. Its rugged overload capability and modular design deliver high reliability, scalability and a low mean time to repair limiting down-time and ensuring consistent levels of production.

The PCS100 AVC-20 ensures clean, regulated voltage for industrial and commercial applications.

The system's internal bypass mechanism ensures fail-safe operation and the unit's small footprint offers industry-leading power density (power per unit volume) meaning that it can be installed into even the smallest of spaces without the requirement for additional cooling mechanisms. The PCS100 AVC-20's superior efficiency of over 98 percent ensures a low cost of ownership, enhanced by the small number of moving parts that require ongoing maintenance.

ABB's PCS100 AVC-20 is the leading-edge solution to insecure and unreliable energy grids found all over the globe. Installing or retro-fitting the PCS100 AVC-20 will ensure industrial processes remain productive, efficient and consistent.

To find out more about ABB's PCS100 AVC solutions visit www.abb.com/ups/pcs100 or contact ABB at powerconditioning@abb.com.
PCS100 AVC-20

For 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 electronic infrastructure is stressed, unstable or unreliable.

Benefits to your business

+ Increase your operational reliability

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

A fluctuating voltage supply affects your productivity and the consistency of your operations, leading to a reduction in the quality of your products and services. Fluctuating voltage also leads to increased wear on machinery components, resulting in a greater number of malfunctions and a reduced life expectancy of your equipment. The PCS100 AVC-20’s fast, accurate voltage regulation secures your productivity by improving consistency in your operations and reducing the impact of fluctuating voltage on your equipment and production.

+ Reduce your costs

  - Optimize 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 your equipment and machinery to function inefficiently and can 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 you to streamline your operations and optimize your resource to reduce wasted capacity and improve the return on your operational investment. At the same time, the PCS100 AVC-20 allows you to use utility power, resulting in a cost saving on power generation from captive power plants.

Key product features

- Proven and dependable converter platform with sophisticated control software
- Full range voltage correction completed in 20 milliseconds
- Rugged electrical overload capability
- Modular design providing high reliability and scalability
- Low mean time to repair
- Internal bypass mechanism providing fail-safe operation
- Small footprint with industry leading power density (power per unit volume)
- Touch screen control panel supporting over 15 languages
- Industry-leading efficiency of over 98 percent
- Low cost of ownership due to few moving parts

Power protection – power conditioning
A continual, regulated supply of utility voltage?

Absolutely.

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 electronic infrastructure is stressed, unstable or unreliable and has been implemented at Myanmar’s leading luxury resort, Chatrium Hotel Royal Lake in Yangon. Visit www.abb.com/ups/pcs100
Power protection – power conditioning

Powering aerospace development in China

Protecting China’s large passenger aircraft program.

The face of the global aerospace industry is changing. While recent cuts in defense funding in the West have slowed the overall rate of growth in the sector to three percent, the commercial aviation segment is set to enjoy an eight percent growth rate due to rising passenger demand and the production of next generation fuel-efficient aircrafts. Increased number of aircraft will be built to meet the rising demand, with the Asia-Pacific region leading the world in soaring passenger numbers in line with its burgeoning economy.

Contrary to the situation in Europe and the USA, investment in defense in Asia is rising, creating additional demand for a modern air fleet and aerospace technology. Coupled with the fact that the Chinese air travel market represents the second-largest market globally the aerospace industry in the country is booming, offering significant growth opportunities for those supplying goods and services to aviation carriers.

Chinese-built aircraft

One such organisation is COMAC, the Commercial Aircraft Corporation of China, which is a state-sanctioned body responsible for implementing large passenger aircraft programs in China. COMAC is engaged in the research, manufacture and flight testing of civil aircraft and related products, as well as the marketing, servicing, leasing and operations of civil aircraft. A key element of COMAC’s business is the design and development of large modern Chinese-built aircraft show-casing the talent and ambition of Chinese industry.

COMAC’s operations in Shanghai are primarily focused on
the testing of its products, which requires a continuous, clean supply of voltage to the instrumentation to ensure the validity of test results. China’s electrical infrastructure is the largest in the world, and the country has the greatest capacity for energy generation, globally. However, demand outstrips supply and the utility grid is frequently overstretched and voltage sags and total outages are common.

Ms Ye Wen Mei, construction project director at COMAC’s Pudong base command, explains that the organisation needed a solution that would guarantee a consistent voltage supply. “Our testing instruments are very sensitive to fluctuations in the power supply. Power quality events, such as voltage sags, can damage our equipment and cause the results of our tests to be unreliable.”

**The first of its kind**
COMAC needed an efficient and effective way of protecting its operations, and chose ABB’s PCS100 AVC-40 Active Voltage Conditioner platform to secure the supply of power from the utility. The PCS100 AVC-40, designed for sag correction in large commercial and industrial applications, is the first of its kind to be installed in the aerospace industry.

The PCS100 AVC-40 is frequently implemented in businesses using sensitive or high-precision equipment where the loss of voltage for even a few milliseconds results in the failure of the machinery and damage to its yield. The PCS100 AVC-40 corrects under- or over-voltage events in just 200 milliseconds, allowing sensitive equipment to remain operational throughout the disturbance. In over 90 percent of cases, the PCS100 AVC-40 protects the load by bringing the voltage supply back
“The PCS100 AVC-40 is the ideal solution for us as it doesn’t rely on energy storage to operate. This means the system has low maintenance costs and a small footprint so it can be installed in confined spaces, allowing us to make the best use of our existing floor space.”

in line with tolerances, ensuring minimum downtime in all but the most severe of power failures where the supply sags to below 50 percent of the nominal voltage.

One of the key benefits of the PCS100 AVC-40 is the way in which it differs from conventional uninterruptible power supplies (UPS), as Ms Ye Wen Mei explains, “The PCS100 AVC-40 is the ideal solution for us as it doesn’t rely on energy storage or batteries to operate, drawing the additional energy from the utility supply to correct the voltage. This means the system has low maintenance costs and a small footprint so it can be installed in confined spaces, allowing us to make the best use of our existing floor space. The cost of ownership for a PCS100 AVC-40 system is very low.”

ABB and its partner, the Shanghai Henergi Energy Efficiency System Company, supported COMAC throughout the project, helping the aerospace firm to define the correct product sizing and fully installing and commissioning the system to ensure maximum efficiency. The ongoing technical support and training are key elements of the project, helping COMAC to take full advantage of the PCS100 AVC-40’s power protection features.

Looking to the future
COMAC has big plans for its future. Looking to capitalize on the growing demand for their products and services, the company is resolute in its ambition to put the first Chinese-made large aircraft in the sky. Its vision is to deliver safer, cost-effective, comfortable and environment-friendly civil airplanes, and to develop COMAC into a world-class aviation enterprise. With the protection to the voltage supply the PCS100 AVC-40 delivers, COMAC is in the perfect position to take full advantage of the opportunities on its door step.

For more information on ABB’s PCS100 AVC-40:

Web: www.abb.com/ups/pcs100
Email: powerconditioning@abb.com

References


Superior voltage conditioning for commercial and industrial applications?

Certainly.

The PCS100 AVC 40 designed for sag correction in large commercial and industrial applications. Available in ratings from 150 kVA to 3600 kVA, the PCS100 AVC-40 offers continuous protection from the most common utility voltage problems found in modern power networks. Failsafe worry free operation even in harsh electrical environments and a faster return on investment due to low operation costs will ensure your business is protected from power quality events. Visit [www.abb.com/ups](http://www.abb.com/ups)
Regulating utility load

A new application for frequency converters in cogeneration systems
Using the by-product of one energy generation method as the fuel for another enables property developers to deliver home comforts at a fraction of the cost.

With the drive for ever-greener energy in full force, cogeneration, or combined heating and power (CHP), systems are gaining in popularity in building design due to the reduced environmental impact when compared with conventional, stand-alone methods for heating and powering buildings. Designers of residential apartment blocks around the world are implementing CHP systems to minimize energy loss through escaping heat and reduce their expenditure on utility power for additional heating systems.

In many developed economies, burning natural gas to generate electricity is more cost-effective than energy supplied by the utility grid. Many properties use gas-powered generators in the basement of the block to provide heating and hot water, which is sent upwards through a network of pipes to a heat exchange on the roof, heating the living areas and water as it moves through the structure. However, captive power plants generate electricity as well as heat and this can be harnessed to power the building for lighting, telecommunications systems and appliances, amongst other items.

A new application

IntelliGen, a supplier of computer-aided process design technology based in New York City, provides its property developer customers with cogeneration systems that utilize a combination of both utility power and power generated on site by the organisation itself. IntelliGen’s cogeneration system uses natural gas powered generators to offset (real) power demand from utility.

In this application, at a residential apartment block in New York, incoming utility is monitored and regulated such that, regardless of building load, the incoming supply is maintained at a constant 30 kW, the minimum level required by the utility. Any additional load is offset or absorbed by the cogeneration installation. For example if there is 150 kW of building load, generators will supply 120 kW on top of the utility-supplied 30 kW.

The application utilizes two of ABB’s PCS100 Static Frequency Converters (SFC) as a means of regulating the building load, as seen by the grid, to a constant 30 kW with additional power factor correction. As building load varies, the PCS100 SFCs operate in constant power mode at a level set by the cogeneration system’s Programmable Logic Computer (PLC). The PLC measures the incoming utility supply and regulates this to 30kW by sending (real and reactive) power references to the PCS100 SFC systems. The PCS100 SFCs then inject kW and kVAR power back into the grid to offset building load accor-
The electrical energy is fed back onto the utility grid in constant power mode such that regardless of building load, only 30kW of load is sourced from utility.

The installation
The installation consists of generators capable of sourcing up to 150 kW each, and two PCS100 SFC systems rated at 250kVA each. Other installations are now in the planning stage which consist of up to five PCS100 SFC systems and the associated generators for a single application. The ability to accurately share total load (across multiple SFC systems) in a stable manner is another PCS100 feature that enables system integration of this complexity.

ABB’s PCS100 SFC product was chosen as the ideal solution to meet IntelliGen’s requirements due to the comprehensive technical features of the unit, along with high efficiency rating and a reputation of high reliability. ABB’s installation technical experts continue to work with IntelliGen to optimize the operation of the overall installation and take advantage of the functionality provided by the PCS100 SFC platform.

The concept of cogeneration itself is not new, however this application provides some valuable additional features that are only possible due to the technology and capability of the PCS100 platform. High efficiency and the ability to tightly regulate both real and reactive power as seen by the utility are key differentiators of ABB’s PCS100 SFC product.

Uninterruptible power
A feature not yet activated in this installation (but designed for) is the ability to operate in island mode whereby the cogeneration system will continue to fully support building load in the event of loss of utility power. Ultimately the system will also be able to export power out of the building too, should such a function appeal to the utility company.

Eventually a 30 kW minimum utility supply limit will be introduced wherever a cogeneration system is in use. IntelliGen’s overall goal is to provide a scalable turnkey solution to suit different end user requirements, and the PCS100 platform is well suited to achieving this.

To find out more about ABB’s PCS100 SFC platform:

Web: www.abb.com/ups/pcs100
Email: powerconditioning@abb.com

The unit’s small foot print enables it to be easily installed into even the most confined spaces.
Addressing voltage issues

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The PCS100 Active Voltage Conditioner 40 delivers rock-solid voltage
PCS100 portfolio. Designed for commercial and industrial applications.

By choosing from ABB’s PCS100 power conditioning solutions, you are selecting from a portfolio of advanced technologies and expertise. This power conditioning product range includes the Active Voltage Conditioner, Reactive Power Conditioner, Static Frequency Converter and low and medium voltage UPSs. A unique line up giving superior value to operations in the industrial, utility and commercial sectors. Providing energy efficiency, high reliability and increased productivity. Visit www.abb.com/ups/pcs100