

## Article

# PCS100 AVC - AVCs safeguard plant against effects of Typhoon Conson



**There is no stopping mother nature - you can only be proactive in securing your assets in the best way possible. When Typhoon Conson (Basyang) hit the Philippines in 2011 ABB's AVC, which was installed in a plant situated in the Philippines, recorded over 300 PQ events. This was an extremely high level storm and an intense test for the AVC to perform and maintain power protection to the plant without the interruption of voltage sags and swells.**

**D**eveloping out of a tropical disturbance east of the Philippines and favorable environmental conditions, such as low wind shear and warm sea surface temperatures, allowed the weather system to intensify into a severe tropical storm. Around the same time, the Joint Typhoon Warning Centre (JTWC) assessed the storm to have been equivalent to a category 1 hurricane. The plant, therefore, was reliant on the AVC in what could have resulted in major power outages.

Typhoon Conson produced widespread, torrential rains which triggered significant flooding in mid July 2011. Preliminary damage estimates were placed at US \$4.1 million. This caused extensive damage to the community and put to the test the two AVC's (PCS100 and PCS80) in the Philippines against the harsh effects of the storm.

The company in which the AVCs were installed started its operation in the Philippines in May 2006. Employing 82 engineers and operators, the plant is one of the company's testing facilities for its analog solutions and products. They were having problems with failure of their test equipment, more precisely the power supplies. They also had the usual stoppages due to voltage fluctuations, sags and swells.

The Philippines was hit with up to 120km winds for which was equivalent to a category 1 hurricane. During this time the AVCs recorded over 300 PQ events which at some stages, were greater than

the +/- 10% threshold of the voltage supply. Both of the AVCs were able to correct the supply back to a stable output for the end load, in order for plant operations to run smoothly and efficiently.

The plant had limited space and in order for the two AVCs to be installed the team had to overcome potential obstacles. One would be to build a new building, which would increase costs and potentially blow the budget. Another would be moving the equipment around in the external switch room to make room for the AVCs. In the end the decision was made to make some changes to the equipment in the switch room. Since ABB's AVCs are compact in size, this was easily solved and also saved them considerable costs.

Another challenge faced with the installation was that there was no air conditioning in the room. The temperature would reach 40 degrees due to the tropical climate. However, both AVCs were not fully loaded so could therefore cope with temperatures of up to 50 degrees.

After outweighing the main obstacles, no other competitor could meet the customer's requirements and the company have made enquiries for the order of more ABB's AVCs for an expansion they are planning. Delivering reliable products to customers is important to ABB. In this case, the plant to operate effectively from such things as environmental forces, to protect their power supplies. This was an opportunity for ABB to introduce the AVCs to effectively improve the plant's power performance while at the same time lowering environmental impact.

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