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ARCTEQ

## Stora Enso invests in Safety



Arcteq delivered the AQ 2000 medium voltage arc quenching system to Stora Enso's Anjala paper mill located in Inkeroinen, Finland. The 6kV switchgear retrofit project was implemented using the AQ 100 series arc protection system detecting the arc flash and triggering the arc quenching device. The Thompson coil based AQ 2000 system extinguishes the starting arcing fault by creating a controlled low impedance path for arc fault current to flow. The implemented system provides as fast as 5ms total arc elimination time.

"We were impressed by the reusability of Arcteq's quenching device", says Harri Mörsäri – Engineering Manager at Stora Enso.

The project was initiated as the short circuit capacity of the circuit breakers was exceeded after removal of short circuit limiter due to power quality issues. Goal of the investment was to prolong the lifetime of the switchgear originally installed in 1976. As an alternative investment model Stora Enso considered replacing the entire switchgear lineup by a new one.

"The cost of implemented circuit breaker retrofit, and arc quenching technology was significantly less than brand-new switchgear lineup. Also need for shut down was shorter.", says Harri Mörsäri.

Arcteq scope of supply in the project included also AQ-M215 motor and AQ-V211 voltage protection relays, commissioning services and training of Stora Enso specialists. The project was completed and commissioned in August 2017.

Stora Enso's very first acquaintance with Arcteq was installation of Arcteq's revolutionary Motor Commander, for protecting and controlling two of their 8 MVA synchronous motors.

"We were the first ones to buy and apply the Motor Commanders. The very first one was commissioned in December 2016", Mr. Mörsäri adds.

Since then Arcteq has also supplied 2 and 3-winding transformer protections to the facility. This retrofit project was completed and commissioned in May 2018. The third Motor Commander installation is due in August 2018.

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## Smart grid applications to Swiss utilities

Arcteq's AQ-S214 alarm and indication IEDs are used extensively for automating the secondary substations in Switzerland. More than 60 units are commissioned among the three distribution system operators: AIL SA in Lugano, AGE SA in Chiasso and AIM SA in Mendrisio. Another dozen units are waiting to be commissioned during the summer 2018. The AQ-S214 units are used for remote control of disconnecting switches, remote alarming and metering using the IEC 61850 communication.

Arcteq has also supplied the utilities with its AQ 250 series protection and control IEDs for feeder protection, load shedding and transformer protection applications.

## Arcteq protects Asian petrochemical facility

One of the largest Asian Petrochemical corporations, the Chang Chun Group (CCP) continued to install Arcteq feeder relays and arc protection systems in its Taiwanese facility located in Taoyuan, outside of Taipei City. The number of



installed AQ-F215 feeder protection IEDs in the facility reached to more than 130 units amid three substation refurbishment projects carried out in year 2017.

Arcteq feeder protection devices installed in 6.9kV and 12kV switchgears provide for overcurrent and short-circuit protection, very sensitive earth fault protection using special ZCT instrument transformers and arc flash protection. Accurate power and energy metering is implemented in the same feeder protection relay. Arcteq devices communicate to supervisory system using IEC 61850 communication standard.

*CCP new medium voltage switchgear equipped with Arcteq AQ-F215 feeder protection IEDs.*

## Large arc protection orders to South-East Asian utilities

Arcteq's strong presence and excellent track record with the largest South-East Asian utilities has led to significant continuation orders. The Thai utility, PEA ordered AQ 100 arc protection systems to 21 of its 115/11kV substations whereas the Malaysian government owned corporate, TNB placed orders for 32 numbers of 33/11kV substations. Arcteq has supplied both utilities since year 2012 with the total installed base extending to more than 3.000 relays and 25.000 arc sensors.

## South-American expansion continues

Arcteq's expansion in different market segments in South-America continues. Arcteq received continuation orders of arc protection system from the Bolivian utility, CRE, whereas CDEEE in Dominican Republic installed its first Arcteq systems. The AQ 200 series protection and control IEDs were supplied to various Brazilian alcohol and sugar mill plants. Arcteq AQ-G215 and AQ-F215 units are now protecting the co-generation turbine and generator systems in Agroval, Miriri, Japungu, Usivale, Central Olho de Água and São Jose facilities.

## First deliveries to CEZ Bulgaria

Arcteq received the first large order from the CEZ Bulgaria distribution company. The delivery consists of 55 pcs of AQ-F210 feeder terminals and 28 pcs AQ-V211 voltage protection relays. The first order was received in the end of 2017 and commissioning will take place during summer 2018.



www.arcteq.fi  
Wolffintie 36 F12  
65200 Vaasa, FINLAND