

## Symphony Plus Melody upgrade integrates control and reduces costs at Brista CHPP in Sweden



The Swedish energy company, AB Fortum Värme, has selected ABB Symphony Plus Melody automation to upgrade the control system at its Brista CHPP (combined heat and power plant) in Märsta/Arlanda, about 40 km west of Stockholm.

### The task

Since Brista unit 1 was commissioned 18 years ago, the 44 MWe, 120 MWth CHPP has been operating reliably with ABB Contronic E and Freelance control systems.

The plant consists of two generating units producing both electricity and district heating for the city of Stockholm. Unit 1 is a fluidized bed boiler system using biomass (wood chips) as fuel; unit 2 was constructed as a waste-to-energy (WtE) plant. Unit 1 originally used a Contronic E system for boiler and

balance-of-plant (BoP) automation. The Freelance control system operated the flue gas condensing process.

System 800xA Operations has run as the human machine interface (HMI) since 2007. The customer requirements were the unification at operation and control system for the reduction at operation and maintenance cost as well as the modernization at DCS for the use of actual technologies in conjunction with further extension at the life cycle of the plant.

### The solution

ABB executed the retrofit project during the planned summer outage in 2014, at which time the existing Contronic E and Freelance control systems were migrated to the ABB Symphony Plus Melody control system family.

Utilizing the Symphony Plus migration technique for Melody I/O-cards enabled the reuse of existing control cabinets, including field wiring, which created significant savings in time, testing and material.

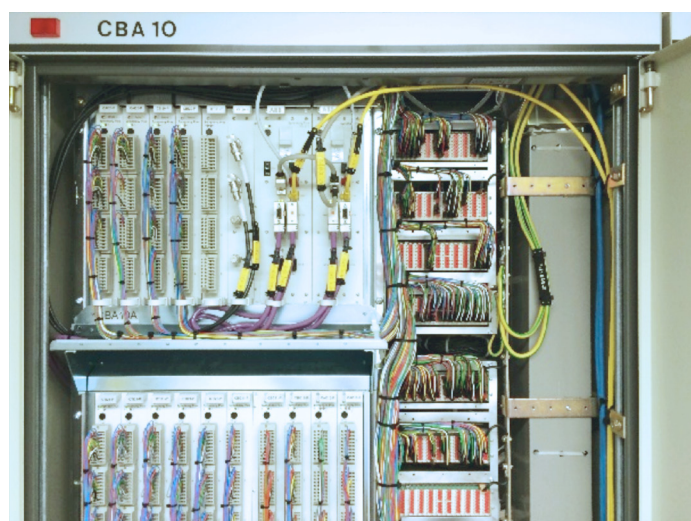
The resulting widespread reuse potential reduced shutdown time to the normal summer revision process, which meant the plant was restarted as scheduled with a new Symphony Plus control system in operation.

The DCS retrofit was also an opportunity to replace several programmable logic controller (PLC) systems, and integrate these into the Symphony Plus Melody automation. This now enables the plant to operate under one common control and engineering system for all plant automation tasks.

In addition to Symphony Plus Melody, the ABB automation package includes state-of-the-art DCS features like the IEC 61850 substation automation standard and Profibus communication standard, which were supplied and integrated into the engineering, control and operation systems of the plant.

As a result of upgrading unit 1 to Symphony Plus Melody both generating units can now be operated from a common central control room, using the same DCS technology.

This reduces overall operational and maintenance costs and provides the Brista power plant with a fast, safe, flexible and economical control system solution.



## Advantages

- Symphony Plus state-of-the-art control system solution replaces the existing legacy control system
- System 800xA operation system upgraded to the latest version
- Replacement of various PLC systems and integration into Symphony Plus

## Scope of supply and services

### Key figures

Site	Märsta, Stockholm
Type of power plant	CHPP
Unit 1	44 MWeI/120 MWth
Unit 2	20 MWeI/80 MWth
Completion Phase Unit 1	October 2014

### Supply automation system

- Common operator platform and common control and engineering system for both units at Bristaverket including auxiliary plant control systems
- Symphony Plus Melody
- Upgrade System 800xA
- Replacement of various PLC systems and integration to Symphony Plus
- Data management

### Services

- Project management
- Engineering
- FAT/SAT
- Erection
- Commissioning
- Optimization

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