Success story

ABB Harmony upgrade provides secure, reliable and powerful control for Duvha coal-fired power plant

Duvha power station is a six unit, coal-fired power plant operated by the South African electrical utility, Eskom, with a total installed capacity of 3,600 megawatts (MW). The plant is located in approximately 15 km east of Witbank in Mpumalanga province.

The Duvha plant’s control system consists of the ABB Harmony INFI 90 process control system, with 17 power conditioning units (PCUs), multi-function processors (MFP), bridge controllers (BRC100) and block I/Os. The original human machine interface (HMI) solution from the late 1990s is based on Process Portal B/Windows 2000.

After more than 15 years of good operation the system faced normal component aging, in addition to fast evolution of the plant operating system.

Site assessment and service solves plant water problem

The Duvha plant were encountering problems with system stability in its water treatment plant (WTP), where the Harmony INFI 90 control system has been operating since 1998. The WTP is a critical component of the site, and malfunctions can result in a total plant shutdown. Normal aging of the NTCF modules in this component created a critical situation for the customer, in some cases forcing the shutdown of all units, causing load shedding. GEC engineers identified the problem and provided Eskom with a solution to fix the instability. Their system site assessment also generated a life cycle report that presented a clear picture of system status, highlighting critical actions and defining a multi-step approach in order to update the system and make it more reliable.
Engineering station upgrades enable new redundancy bridge controller

The first step was an update of the Harmony engineering to the latest version of Composer for Harmony applications. All data and parameters was saved and imported into the new engineering server, after the proper project conversion. The work was done in parallel to the running system, without impacting normal plant operations.

The engineering tool upgrade enabled the customer to use the new BRC modules, and upgrade some of the existing MFP modules.

Benefits of the ABB solution

The ABB multi-step evolution approach enables the customer to better manage its maintenance budget. The system evolution guarantees a more powerful and reliable redundant system, eliminating plant outages. Between the first and the last step of the evolution, all the replaced devices can be “refreshed,” while also ensuring the spare parts needs of almost all the obsolete components still installed. The direct involvement of the ABB GEC Harmony and local ABB teams ensures a fast and proper response to any future customer needs.

For more information, please contact:

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