

APROS Success Stories

Full Scale Training Simulator – case Singapore

The TUAS South Incineration Plant II in Singapore is the world's largest waste-to-energy power plant. To the plant, ABB has supplied not only the DCS, but also a high-fidelity training simulator capable of representing the entire plant and providing for all operator interactions through modelling of all relevant process components:

- boiler
- incinerator
- complete feedwater & condensate and common systems
- steam turbines with air-cooled condensers

In order to ensure the same look and feel for the operators to be trained, ABB uses an identical ADVANT DCS (Operating Station OS 520 and ADVANT 450 Controller). A high-performance LAN linking DCS and process simulator ensures that the process simulator simulates the DCS with more than 2,000 I/Os. More than 110 mimic displays and 1,000 alarms have been generated to resemble the real plant at the Operator Station of the TUAS II training simulator.

For improved comprehension of the entire process, 500 locally operated valves and dampers have been implemented in the training simulator, although they are not part of the DCS of the real plant.

The instructor can easily conduct the training sessions with the help of a dedicated trainer station in order to

- start several standard courses, save new training courses, or new initial conditions and snapshots
- change the simulation speed (slow, real-time, fast)
- activate/deactivate many standard and specific malfunctions

The quality of the operation during the training sessions is monitored by an automatic and individual scoring function designed for 30 operators. In addition to this feature, the instructor can check the process via an X terminal at any time.



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