

Eskom Holdings Limited

www.eskom.co.za



“SimSci-Esscor delivered the Simulator on time and to budget. We are completing our training program on the Simulator and have been amazed at how easy the system is to learn and work with.”

Abrie Venter,
Training Manager,
Eskom Lethabo Power Station

Generic Drum Unit Simulator Boosts Productivity at South African Power Plant

by Invensys Operations Management

Goals

- Install simulation system to help boost safety, efficiency and profitability at the plant.

Challenges

- Improve productivity and plant operations, while increasing operator plant understanding, safety and reducing operating costs.

Solutions and Products

- SimSci-Esscor SIM4ME AND DYNISIM.

Results

- The simulation system has reduced operating costs, while plant understanding and personnel safety have improved;
- Assists in providing continuous electricity to 95% of South Africa (around 60% of the total electricity consumed on the African continent).

Vereeniging, South Africa – Located between Vereeniging and Sasolburg, the Lethabo Power Station, owned by Eskom Holdings, is responsible for over half of the electricity generated on the African continent and provides affordable electrical power to an increasing percentage of the African population.

Eskom Holdings generates, transports and distributes approximately 95% of South Africa's electricity – making up 60% of the total electricity consumed on the African continent. Eskom is the world's eleventh-largest power utility in terms of generating capacity, ranks ninth in terms of sales, and boasts the world's largest dry-cooling power station.

Improving Safety and Plant Profitability

SimSci-Esscor® supplied an Operator Training System (OTS) at Eskom's Lethabo Power Plant in South Africa that is helping to boost safety, efficiency and profitability at the plant.

According to Abrie Venter, Eskom Training Manager, *"SimSci-Esscor delivered the Simulator on time and to budget. We are completing our training program on the Simulator and have been amazed at how easy the system is to learn and work with."*

Operator Training System Solution

Eskom realized that improved productivity depends on improved plant operation, which depends on the quality of its operators. As a result, in March 2004, Eskom took delivery of SimSci-Esscor's Generic Drum Unit Simulator utilizing SIM4ME® and DYNOSIM® - Invensys Operations Management's proprietary simulator software.

The Generic Drum Unit OTS is based on a sidewall-fired unit boiler coupled with a train of high, intermediate and low-pressure steam turbines. The simulator components include physical, first principles based dynamic simulation models, the SIM4ME instructor station, DCS-type controls, and training for up to four operators.

The flexibility of SIM4ME allows the emulation of the DCS interface through a single application, including alarming and trending, execution of the process model, and support of the instructor's interface. This integrated solution allows the displays to be visible at every operator station for maximum training flexibility. This interface also requires minimal training for an instructor, allowing the focus to be on process training rather than navigating the simulator system.

Dan Wilbers, Managing Consultant of Operator Training Systems & Services, Invensys Operations Management, said *"The generic drum simulator purchased by Lethabo is the result of Invensys' extensive experience delivering training systems to power generators around the world. We are excited that it has been chosen as the platform to build a solid performance improvement strategy at this facility."*

Benefits Realized

The training program has already produced a lot of benefits. Operating costs have been reduced, while plant understanding and personnel safety have improved. Lethabo operators are able to maintain plant equipment in the normal operating range and prepare for off-normal operations such as valve breakage and tube leaks.

*This document was realized thanks to the support of:
Eskom Holdings Limited.*