

Eskom Reactivates Power Plant and Reduces Alarms with Honeywell Solutions



“The combination of Honeywell’s solutions and its engineering and services teams has provided Eskom with the robust, consistent support needed to provide a reliable power source for the people of South Africa.”

Mr. Deon Smit, RMDC Manager, Eskom Grootvlei

Benefits

As the largest electricity producer in Africa, Eskom had to act quickly to increase production in order to meet growing demand. The company decided that the best course of actions was to return three old power plants to service, one of which was the Grootvlei power station.

The return to service of a decommissioned plant carried a plethora of challenges, including dated equipment, space constraints and a need for up-to-date technology and advanced engineering services. In 2005, Eskom hired Honeywell for the Grootvlei return to service project to provide its Experion® Process Knowledge System (PKS), field instrumentation, fire detection and training simulator, as well as basic design, engineering, installation, commissioning and optimisation. The project encompassed the complete replacement of the automation and control systems for six power units.

After commissioning unit one, the operators found it difficult to manage the alarms due to the high volume. Eskom decided to implement Honeywell’s platform independent Advanced Alarm Management R300 solution. By reducing the number of alarms that require operator intervention, Grootvlei power station operators are far more effective.

Since implementing Honeywell’s alarm management solution, Grootvlei power station has realized a decrease in alarms from 14,000 events per hour to just over 80 per hour.

Grootvlei power station also achieved the following benefits:

- Improved control and audit trail of changes
- Reduced need for manual intervention
- Increased limits of process capabilities
- Constraint-driven alarm configuration management to ensure alarms are consistent with plant fundamentals
- Auxiliary notification provides reminders to operators and other plant personnel without cluttering the alarm system
- An event analysis tool assists in quickly identifying cause and effect relationships



Honeywell’s advanced alarm management solution has helped the Grootvlei power station to manage alarms more effectively.

Background

Eskom, the largest producer of electricity in Africa, operates a number of notable power stations, including Kendal, Matimba and Majuba power stations, amongst the largest coal-fired power stations in the world, and Koeberg nuclear power station in the Cape Province, the only nuclear power plant in Africa. Eskom generates approximately 95 percent of electricity used in South Africa.

Eskom's Grootvlei station is located close to the town of Balfour in Mpumalanga. The station was built in the late 1960s and was generating electricity until 1990. In 2004, demand for power and favorable government policy encouraged Eskom to recommission the Grootvlei plant.

Challenge

Eskom was faced with the challenge of a country that was running drastically low on power supplies and needed to bring additional plants online quickly to avoid rolling blackouts and other power shortages.

The decision to recommission the Grootvlei plant was made because it was one of the quickest and most reliable ways to bring additional power to South Africa.

Solution

Eskom chose Honeywell to partner in the return to service of the Grootvlei power plant to meet the pressing demand for increased power generation. Honeywell implemented Experion PKS, Uniformance® PHD, Enterprise Buildings Integrator™, safety management system (Failsafe Controller), operator training simulator, actuators and field instrumentation. Honeywell also managed the refurbishment of the central control room. The upgrade completely replaced the automation and control systems for six power units, improving operational efficiency and maximizing production output. With the Honeywell control solutions, it is anticipated that the Grootvlei plant will deliver a supply of reliable peaking power of 1130 megawatts to the Eskom grid over the next few years.

Due to the high volume of alarms, Eskom decided to implement Honeywell's alarm management solution to increase uptime, safety and operator efficiency.

"The alarm management project received a high level of attention at Grootvlei. Due to its critical nature, it was a project that had to succeed and quickly. Honeywell's contribution from advice on the solution to implementation was extremely valuable. The implementation team was very professional and the service we got from the maintenance team was excellent," said Deon Smit, RMDC Manager, Eskom Grootvlei.

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More Information

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