WORLD ENERGY COUNCIL
CONSEIL MONDIAL DE L'ENERGIE

WEC Committee on the Performance of Generating Plant (PGP)
Workshop
"POWER SECTOR TRENDS & ISSUES: TECHNICAL AND COMMERCIAL BENCHMARKING OF POWER PLANTS"

to be held at Sheraton Centro Historico Hotel, Room Dona Adelita
Mexico City, Tuesday, 4 November 2008 at 15:00-17:00 hrs

P R O G R A M M E

INTRODUCTION

Dr. Karl Theis, PGP Committee Chair
Managing Director, VGB PowerTech (Germany)

BENCHMARK GLOBALLY – IMPROVE PLANT PERFORMANCE LOCALLY

Scott G. Stallard, Chair PGP Work Group 1
Vice-President, Black & Veatch (USA)

POWER PLANT BENCHMARKING DATABASES

GADS & WEC:
Mike G. Curley, Chair PGP Work Group 2
Manager GADS, NERC (USA)

KISSY (European Database)
Juergen Aydt, EnBW Kraftwerke AG (Germany)

SOLOMON ASSOCIATES DATABASES
Ed Platt, Solomon Associates (USA)

USING BENCHMARKING FOR COMPETITIVE ADVANTAGE

Bob Richwine, Reliability Expert (USA)

TECHNOLOGY TRANSFER: HOW TO MAKE IT HAPPEN

Dr. Terry Moss, Chair PGP Work Group 4
General Manager, Eskom Generation (South Africa)

The power industry around the world is undergoing major changes, increasingly opening up to the global energy imperatives and challenges of liberalisation, market, security of supply and environment. At the same time, a quarter of the world population lacks access to electricity; and the need for energy infrastructure investment is huge. In this context, improving the performance of the existing power generation facilities across the world could produce substantial benefits and - to a certain extent - alleviate the pressing need for new capacity. The most fundamental challenge facing the electric power industry is meeting the rapidly growing demand for energy services in a sustainable way, at an affordable cost and in an environmentally acceptable manner.

Plant design and technology are basic conditions which cannot be easily modified, while operational practices are the main variables which the plant management can control and which can make a significant difference to the overall performance of the plant. WEC has calculated that by improving the availability/performance of existing power generation park around the world to the performance levels currently attained by the top 25% of plant operators, the power industry worldwide could save approximately 80 billion US dollars per year and avoid about one billion tonnes of CO_2 emissions (around 4% of the total global CO_2 emissions). Moreover, this could be achieved at the cost/benefit ratio of 1 to 4, and would require only some equipment replacements. Main savings would come from the improvement of operational practices and managerial decision-making. Analytical studies and documented practical experience demonstrate that

- Technology/mode of operation account for 20-25 % of the overall improvement, while
- Human factors/management for 75-80 %.

In the face of the changing operating environment many companies seem to struggle with regular plant performance data collection and even the identification and definition of priority indicators. What are the key indicators? Technical? Commercial? Environmental? How can you measure political influence or public support? What about measuring sustainability? All these factors play a key role in the overall plant performance, and many of them are interdependent.

The analysis of plant's technical performance is one of the most important tasks at any power plant. Without its availability records, the plant staff cannot determine ways to improve performance of the equipment. The causes of unavailability should be thoroughly analysed to identify the areas for performance improvement. Key factors influencing plant performance should be identified and evaluated to allow a cost/benefit analysis of any activity/programme before its implementation and upon its completion. To analyse plant availability performance, the energy losses/outages should be scrutinised to identify the causes of unplanned or forced energy losses and to reduce the planned energy losses.

For many years, WEC Committee on the Performance of Generating Plant has been promoting international power plant availability data exchange and collecting availability statistics from countries around the world. Today the data is stored in an interactive internet-based database. The access to worldwide generating plant statistics provided by the database can help power plant operators benchmark their units using the availability records of their plants and comparing them with other similar units in the database. The ultimate objective of the database is to facilitate international exchange of information to improve the performance of power generating assets around the world.