



2KG Training



Harry Rosen



Pump Efficiency and Reliability Workshop

2 Days

R4 950 excl VAT

2 CPD points

AIM OF COURSE

Pumps are at the heart of industry and consume 15% of the world's electricity output, rising to 30% if we include their effect on the overall system. Due to neglect and inefficiencies, much of this electricity is wasted – turned into heat, vibration and noise rather than producing throughput. Well managed and maintained pumps can drastically reduce overall process energy consumption, but instead they continue to be overlooked, leading to continuous breakdowns and compromising overall system reliability.

2KG Training have designed a course to help engineers and technicians better understand how optimising both existing and new pumping systems will lead to reduced life cycle costs, major reductions in energy usage and improved reliability :

- Improve pump efficiency levels by 10-20%
- Optimise the entire pumping system and achieve overall efficiency savings of 30%-50%
- Reduce pump MPTBF and improve overall system reliability



This course is endorsed by Eskom DSM and the National Energy Efficiency Agency in the interests of saving electricity.



WHO CAN BENEFIT FROM THIS WORKSHOP?

Plant Engineers, Consulting Engineers, Maintenance Managers, Instrumentation Technicians, Pump Operators, Mechanical Foremen and Process Engineers.

ABOUT THE PRESENTER

Harry Rosen studied at Wits University and qualified with a Bsc Mech Eng in 1987, receiving his Pr Eng in 1992. His first job was for Atlas Aircraft in the systems department designing fuel systems for the mirage fixed wing aircraft and air venting systems for the Rooivalk helicopter. In 1991 he started his own company TAS (Technical Application Software), specialising in the development of mechanical engineering software. Over the years the company's expertise has shifted towards the pump industry, and 19 years later TAS are international market leaders in engineering software for the pump industry.

TAS and its subsidiaries currently employ 12 people in SA, with sales and marketing operations in the UK, Abu Dhabi and Chicago. Harry has built up a close relationship with senior management at most of the larger pump companies in SA. Through the development and roll out of their TAS PumpMonitor product, his company's products and expertise are well known and accepted by major pump users such as Anglo American, Gold Fields and Harmony Gold.

Harry is past chairman of the SA Institution of Mechanical Engineering, Central Branch. One of his key drives has been the promotion of an energy efficient approach within industry through training, workshops and the organization of pump conferences. Harry was instrumental in setting up the first International Pump User Conference (IPUC) which was held in June 2005. The topic of the conference was "Life Cycle Costs with a view to reducing the Total Cost of Ownership of pumping systems". Since then IPUC has been held successfully every two years, bringing together the world's experts in energy efficient pumping systems – it regularly attracts over 180 delegates and 20 world class speakers.



COURSE CONTENT

- A brief overview of centrifugal pump operation and the benefits of improved efficiency
- Pump and system interaction and the total cost of ownership
- Understanding NPSH and the effects of cavitation
- Scope and opportunities for pump system optimisation
- Improving the performance of existing pumping systems
- Designing more efficient pumping systems

PUMPING SYSTEM ENERGY AUDIT

- Step by step instructions on how to go about performing your own pump audit
- Based on material supplied under licence by the US Hydraulic Institute and Europump, including a comprehensive Pre-screening Guide and Pump Audit Sheets
- Highlight problem areas such as oversized pumps, cavitating or badly worn pumps, misapplied pumps, pumping systems with bypass flow, throttled control valves to provide fixed or variable flow rates, pumps with high maintenance requirements, noisy pumps or valves etc.

IDENTIFYING THE APPROPRIATE REMEDIAL ACTION

- Understand the pumping system requirements
- Pump selection considerations
- Pumping in series and parallel
- Mechanical throttling and flow control
- Variable speed drive applications
- Electric motor selection considerations
- Maintain pumping system efficiency

REDUCING PUMPING COSTS THROUGH PUMP SYSTEM AND MOTOR ANALYSIS

- Each user will receive a copy of the Pump Motor Optimisation Tool (PMOT) developed by Eskom DSM and provided free of charge to end users who wish to optimise their pumping systems
- Select the optimum pipe size, length and material, select types of fittings available, liquid type and optimize pump efficiency.
- Installing EFF1 energy efficient motors and the benefits of variable speed drives vs throttling

Session One – Background and LCC Guidelines

1. Overview of Centrifugal Pump Operation
2. Overview of Life Cycle Costing

Session Two – Pumping System Energy Audit

3. Pre screening guide and pump audit sheets
4. System imbalance calculations
5. Performance audits
 - Instrumentation
 - Condition monitoring
 - Pump Performance Monitoring

Session Three – Pump System Design

6. Pipeline Analysis and Design
 - Theoretical analysis
 - Pipeline analysis software

Session Three – Cont.

7. Understanding NPSH and Cavitation
8. Pump Selection Considerations
 - Selecting energy efficient pumps
 - Life cycle costing analysis
9. Electric Motor Selection Considerations

Session Four – Remedial Actions

10. Understanding Pump System Requirements
 - Match the pump to the system
 - Affinity laws and trimming impellers
11. Variable Flow Requirements
 - Parallel pumping
 - VSD applications
12. Mechanical seals
13. Maintain Pump System Efficiency

Registration Form

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How to register for the course:

- 1) Complete this registration form and fax it to Phindi Mbedzi: Tel: 011 325 0686 Fax: 011 325 0488 Email: Phindi@2kg.co.za
- 2) Acknowledgement will be emailed to you.
- 3) Final confirmation and details will be faxed or emailed to you approximately 7 days before the commencement of the seminar.

Conditions of entry:

- 1) Cancellations are accepted in writing and without penalty, up to 7 working days prior to commencement of the seminar.
- 2) Cancellations in writing less than 7 working days prior to the seminar will be liable to pay 20% cancellation fee.
- 3) If prior written notification of cancellation is not received, defaulter will be liable to pay 50% cancellation fee.
- 4) In case of insufficient applications for the workshop 2KG reserves the right to cancel the seminar. Applicants will be informed and all fees will be refunded immediately.

Delegate Information

Title: Surname: Name:

Full Company Name: Job Title:

Postal address (to which invoice must be sent): VAT number:

..... Code:

Tel: ()..... Fax: ().....

Cell: Email:

Contact / Accounts Information

Title: Surname: Name:

Tel: ()..... Fax: ().....

Cell: Email:

Dietary Requirements: Normal Vegetarian Halaal

Please tick the course that you would like to attend:

- 7-8 May 2012**
Sasolburg, Caesar’s Guest House
- 4-5 June 2012**
Joburg, Diaz on Surrey
- 18-19 September 2012**
Secunda, Graceland
- 22-23 October 2012**
Sasolburg, Caesar’s Guest House

I have read and agreed to all the conditions of registration as stipulated in this brochure.

Signature

Date

For more info and to register contact Phindi Mbedzi on Tel: 011 325 0686, or Cell: 071 125 6188 and email: phindi@2kg.co.za. Or visit www.2kg.co.za