

PUMPS: MAINTENANCE, DESIGN AND RELIABILITY FORUM

**AUCKLAND
NEW ZEALAND**

25th & 26th Nov 2009
**Crowne Plaza,
Auckland, New Zealand**

Featuring:
Keynote Speaker
ROBERT SNAITH
Director, RMK Consulting,
SOUTH AFRICA
International Pumps &
Mechanical Seals Expert

BENEFITS OF ATTENDING:

- Increase your knowledge of the latest PUMPS technology
- Hear real world PUMPS case studies from your industry
- Unashamedly non-commercial presentations - No Sales Pitches
- Practical and state of the art advice to maximise the value of your PUMP systems
- Excellent networking opportunities - learn from experts in the field

WHO SHOULD ATTEND:

- Chemical and Process Engineers
- Control and Instrumentation Engineers and Technicians
- Plant Engineers, Supervisors and Managers
- Plant Operations and Maintenance Personnel
- Process Control Engineers and Supervisors
- Mechanical Engineers
- Design Engineers
- Engineering Managers
- Production Engineers
- Maintenance Managers
- Consulting Engineers
- Process Technicians
- Pump Sales Engineers
- Pump Service Contractors
- Training Managers
- Tradespersons working with Pumps

FOR MORE INFORMATION:

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INTRODUCTION TO PUMPS: MAINTENANCE, DESIGN AND RELIABILITY

This forum is essential for anyone involved in pumps design, specification, installation, commissioning and maintenance.

Pumps account for 20% of the world's electric energy demand, and studies have shown that improved energy efficiencies and matching pumps to system curves can save up to 15% to 40%. The emphasis at the forum will be on best practice and lessons learnt from current installations and the future potential in applying new pump technologies.

Consideration will also be given to life-cycle costing of pumps (including maintenance, energy and disposal costs) as opposed to the more traditional capital cost. Figures presented in 1992 suggest that of the total pump cost, 5% accounts for capital cost, 10% to 15% for maintenance and 85% for energy consumption.

The objective of the forum is to provide you with the latest know-how and practice in pumps technology. You will have an opportunity to discuss pump construction, design

applications, operations, maintenance and management issues and be provided with the most up-to-date information and best practice in dealing with the subject. This will offer participants the opportunity to discuss practical aspects of applications of pumps and pumping systems. The focus throughout is on the practical experiences of users. The forum will be attended by those who are interested in technical solutions to their problems, industry trends and new techniques to solve old problems.



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FORUM DAY 1 - 25th November 2009

8.00am	Registration
8.15am	Opening Address
	HALF DAY WORKSHOP
	Morning Tea 10.30am
8.30am	Nuts and Bolts of Troubleshooting Mechanical Seals on Rotating Equipment (Pumps)
Session 1	Robert Snaith Director, RMK Consulting, South Africa
	Mechanical seals are a critical component in the operation and reliability of rotating equipment (including pumps). Factors such as seal design, materials of construction, and support systems help determine if a seal will perform successfully in a specific application. It is also critical to be able to troubleshoot systems in operations and failed components for clues to improve pump and seal reliability. Once you have attended this course, you will be able to; select and apply mechanical seals for varied applications, troubleshoot and fix seal problems and apply failure analysis techniques.
	Workshop outline:
	<ul style="list-style-type: none">• The Basics - How mechanical seals work• Seal design and classification• Mechanical seal materials• Environmental considerations and controls• Seal failure. Troubleshooting
	Lunch 12.30pm

HALF DAY WORKSHOP

Afternoon Tea 3.30pm

1.30pm **Troubleshooting Pumps - Optimising Performance**

Session 2
Robert Snaith

Director, RMK Consulting, South Africa

A highly practical short course, commencing with a brief introduction to centrifugal pumps, followed by a closer look at their construction. We will cover how pumps work in systems and how we can modify their performance including the issues that result. Where hydraulic forces originate in centrifugal pumps and how they influence component life will be examined as well as a brief look at some preventive maintenance techniques. This workshop is a great refresher and review of what is essential for anyone looking to improve their current pump systems.

Topics are:

- Introduction to Centrifugal Pumps
- A closer look at pump construction and some associated equipment
- Fluid Handling - Understanding how pumps work in systems
- Effects of Hydraulic Forces in Centrifugal Pumps
- Maintenance and Performance - Stopping the damage before it starts
- Top practical 7 tips for optimising your pump system

Closing 5.30pm

All forum papers are reviewed and selected for their high quality and technical value by our panel of specialists experienced in the theory and practice of Pumps Maintenance, Design and Reliability.

YOUR PRESENTER: Robert Snaith Director, RMK Consulting, South Africa

With over 30 years of experience in fluid transport systems, Rob has done the hard yards. Commencing work immediately in Fluid System Applications Engineering after graduating, he expanded his focus in later years to the plant management of the manufacture of fluid sealing and transport equipment. In the past decade as a private consultant, he has worked extensively in designing and troubleshooting complex fluid transport systems and equipment.

When not working long hours on the design, commissioning and troubleshooting of pumps and pipelines, Rob squeezes some time in for his Harley Davidson motorbike and scuba diving expeditions. He has done many presentations and workshops throughout the world and was placed third in the world in an international pumps, "Train the Trainer" workshop in Boston, Massachusetts in 1998.

One of his passions and sources of enjoyment is in instructing technical courses. No matter whether you have very little knowledge or are a veritable guru; you will be sure to take away useful knowledge from his workshops, which you can immediately apply to your business.

Sponsorship Opportunities



Representing your business at the **2009 Pumps Forum** will provide you the opportunity to reach key decision makers from a multitude of industries.

For more information on sponsorship and exhibition opportunities please contact Sarah Montgomery via email sarah.montgomery@idc-online.com

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FORUM DAY 2 - 26th November 2009

8.30am	Simplifying Pump Mechanical Seal Selection by the Classification of Chemicals
Session 3	Robert W Snaith Director, RMK Consulting - SOUTH AFRICA The process of mechanical seal selection invariably begins with the seal salesman asking the question "What are you pumping". If the end user can simplify, in a logical way, how chemicals are classified, then he can begin to understand the design features and requirements a mechanical seal should have for his application. In this way he can cut through the myriad of seal designs offered to him and arrive at a sensible selection. This presentation suggests a way of classifying chemicals, in a simple fashion, so that the end user can assess the ability of a given seal design to handle the application under consideration. It provides you with a toolbox of questions, you the end user, should be asking the seal vendor!
9.30am	Selection of Pumps for Overall Minimum Cost
Session 4	Richard Joel Senior Mechanical Engineer, MWH Global The cost of energy used by a pump is typically many times greater than the capital cost of the pump and motor. The selection of a pump and pipeline should be done together to obtain the most economical solution overall. Two case studies are presented, one in Hastings, New Zealand and the other in Ho Chi Minh City, Vietnam. The Hastings study shows how the optimum selection of pumps was made for a given pipeline installation, and the Ho Chi Minh City study shows how the optimum diameter of pipeline was determined.
10.15am	Morning Tea
10.45am	Revolutionary Pump Station Design
Session 5	Dennis Lewis Hidrostral Special Applications, Pump Engineers NZ Limited In the New Zealand waste water market the screw centrifugal impeller pump is well established as a highly efficient pump with excellent solids handling capabilities. This type of pump also incorporates the beneficial properties of gentle handling and low shear which can be exploited in many pumping applications. We discuss the situation when the pump is installed in a sump having a specific geometry, the output of the pump can be automatically adjusted to match the inflow to the pump station using a fixed speed motor. This eliminates the need for costly variable speed drives. In addition the system automatically removes all floating and settled solids making it applicable to sewage collection and treatment and a wide range of other industrial applications. Besides the benefit of flow matching, the automatic cleaning of the sump reduces site maintenance costs and in the case of sewage pump stations, reduces odours. This presentation will explore the benefits of this new pump technology plus Life Cycle Costing with the prospect of reducing energy consumption and the costs of unscheduled maintenance.
11.30am	Pulsation and Vibration of Positive Displacement Pumps
Session 6	Graham Gilkison Director, ITL Engineering The causes of pulsations in positive displacement pumps and evaluation by pump type will be discussed here. Excessive pulsations may cause piping vibration, pump vibration and pump cavitations with possible failure of piping and pumps. Also covered will be the treatment options for reducing pulsations to acceptable levels and vibration recommendations for purchasing of positive displacement pumps. Finally covered are the rules of thumb for operating and maintenance personnel. Case studies will be used to explore this topic.
12.15pm	Lunch
1.15pm	Improving Pump Efficiency and Design for the Dairy, Food and Beverage Industries
Session 7	Tony Messenger Managing Director, Nuphlo Pumps Ltd The wide range of products pumped in the dairy, food and beverage industries provide a special challenge to pump designers and manufacturers to produce pumps that can cope efficiently with this diversity. This paper will address the design of stainless steel hygienic

2.00pm	Keeping it Simple - Alternative Uses for Progressive Cavity Pumps
Session 8	Mark Hely Area Engineer, Mono Pumps [NZ] Ltd While dry mounted progressive cavity pumps have been used for dairy effluent in the past, they have gained notoriety for being high maintenance. Investigation shows the primary causes were damage as a result of dry running and the presence of hard particulate matter in the effluent stream. An alternative version was constructed with the hydraulic part of the pump beneath the effluent surface, using a slotted intake above the rotor and stator to give a true glandless design, while allowing room for settlement of any stones. Subsequent adaptations have shown that this concept may also be suitable for transferring the more viscous wintering shed effluent to separators or storage ponds. This paper will explore other uses of progressive cavity pumps, and particularly their place in the reticulation of wastewater over long distances and/or higher heads.
2.45pm	Afternoon Tea
3.15pm	Optimising Pump Performance through Control Valve Selection
Session 9	Jim Neville Managing Director, Custom Controls Ltd Typical pump applications in process plants involve not just the pump, but a distribution system containing control valves, piping and vessels. To achieve the optimum balance of stability, operating rangeability, energy loss and reliability, the control valve selection process is critical. This presentation will provide guidelines on the valve selection, and address problems such as cavitation and erosion. Case studies of problem installations such as boiler feedwater flow control will be discussed, and possible improvements using new valve internal trim designs and materials of construction.
4.00pm	Re-optimisation of "NPSH" and Branch Loadings to Improve Reliability of HRSG Circulation Pumps
Session 10	Gil Clark Generation Mechanical Engineer, Bay of Plenty Energy High temperature centrifugal pumps supplying two 23T/h Heat Recovery Boilers in a dairy plant were failing frequently, and their performance often compromised steam production at critical periods in the dairy season. Unfortunately the initial approach dealt mainly with the symptoms, and not the root cause. This paper discusses a multi-facetted approach that seems to have resolved the reliability problem, although a full season must be run through to confirm this statement and be fully convinced of the result. The paper discusses the improvements made in NPSH available to the pumps, and also the solution to a problem of excessive pipe loading on the pumps, both necessitating a revised design for the piping layout and support. For the more pump performance-orientated engineers this paper will leave some interesting points to ponder over and seeks answers to some unexpected characteristics associated with circulating flows to boilers which could lead to extended research in that field.
4.45pm	Closing



NETWORKING SESSION

Cocktail Hour - 5.00pm to 6.00pm

An hour dedicated for all attendees to meet and socialise with experts and industry peers at the Pumps: Maintenance, Design and Reliability Forum Cocktail Hour.

Registration Form:
PUMPS: Maintenance, Design and Reliability Forum

25th & 26th November 2009
 Crowne Plaza, Auckland, NZ

All Delegates receive a CD featuring over 30 detailed technical papers and 50 PowerPoint's from past IDC Pumps Forums in Australian and South Africa. VALUED AT OVER \$500!

Simply complete this registration form online or return by fax, email or mail.

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20% off the forum fee for registrations received before October 30th 2009

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Discounts for larger groups available, please contact us for more information.

PAYMENT DETAILS

PLEASE NOTE: Full payment is required prior to the commencement of the forum. Prices exclude GST.

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GENERAL INFORMATION

Confirmation Details

A confirmation & information letter will be sent to all delegates approximately 10 days prior to the forum. Please ensure that you provide both your mailing address and email address on the booking form.

Cancellation Policy

Full reimbursement will be accepted if written notification of cancellation is received by IDC Technologies on or before 6th November 2009. A fee of 20% will apply to any cancellations received between 9th Nov and 20th Nov 2009. No cancellation requests can be accepted after 20th November 2009 however from this date substitute delegates are welcome.

Venue

Crowne Plaza Auckland
 128 Albert Street, Auckland
 New Zealand, 1141
 Phone: +64 9 302 1111

Accommodation

Accommodation is available at the conference venue. Contact directly on +64 9 302 1111 to make a booking.

For alternative local accommodation, contact IDC on +64 9 263 4759.

Food and Beverages

All lunches, morning and afternoon refreshments are included.

Unable to Attend

If you are unable to attend the full forum program, contact us for details to attend individual sessions or to purchase the Forum Resource Kit.

Enquiries

+64 9 263 4759

REGISTRATIONS

We encourage you to register early, as spaces are limited. Your payment must accompany the registration form in order for it to be processed and confirmed.

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