MECHANICAL SEALS

Presenter: Dr. Chris Carmody

ABOUT THE PRESENTER: CHRIS CARMODY

Chris started his career as a maintenance engineer in the chemical and process industry and joined AESSEAL as the companies first full time mechanical seal designer and development engineer. Chris went on to academia for a bachelor’s degree, a master of science in structural integrity and doctoral degree on the fluid structure interaction of bioprosthetic heart valves.

He re-joined industry as a Consulting engineer and worked on many prestigious projects such as the A380 Airbus, the award winning Falkirk wheel and the new Wembley stadium. Chris returned to AESSEAL and took up the position of special products manager where he is responsible for development of high integrity sealing projects including dry gas seals.

He now has 25 years of experience in the design of mechanical seals and maintenance products and is a named inventor on many of AESSEAL product designs. In addition to his responsibilities at AESSEAL he also sits on several different bodies including the API692 Compressor Dry Gas Seal Committee and has lectured all over the world on sealing, maintenance and reliability matters.

Number of days: 2  
Cost: $1500  
CPD Points: 2

WHO SHOULD ATTEND

This course is aimed at anyone who is responsible for or involved with the specification, handling or reliability of mechanical seals and systems. In particular Maintenance Engineers and Technicians, Service Engineers, Operations staff, Artisans, Managers and Reliability Engineers will benefit from the course content.

ABOUT THE COURSE

This course provides an introduction to sealing technology, more specifically mechanical seals and covers terminology, different types of seals, how they should be used and some typical applications. It provides an insight into design and features of different seal arrangements systems and how these can be combined to provide increased reliability of rotating equipment. There is also extensive dialogue on the causes of failure, failure analysis and failure avoidance.

AFTER THE COURSE

Attendees will significantly improve their knowledge on the correct application of mechanical seals and systems. At the end of the course attendees should be familiar with all aspects of mechanical seal and system selection and operation. Understanding of how seals work will lead to attendees obtaining improved seal reliability through trouble shooting mechanical seal failures thus leading to longer and safer operation of rotating equipment.
## MAIN TOPICS

### Introduction to Sealing Technology
- Basic sealing theory
- Static seals
- Dynamic seals
- Face seals
- Seal terminology
- Seal standards
- Seal types

### Seal Selection
- Materials of construction
- Seal design characteristics
- Seal face technology
- Environmental Controls
- Tandem seals
- Double seals
- Alarms and health monitoring
- Containment seals
- Mixer seal and other specialist seal types

### Mechanical Seal Systems
- Flush plans
- Quench considerations
- Closed circuit barrier/ buffer fluid systems
- Open circuit barrier/ buffer fluid systems
- Barrier and buffer fluids

### Dry Gas Seals
- Pump dry gas seal issues
- Pump double dry gas seals
- Pump containment dry gas seals
- Pump DGS systems
- Compressor dry gas seals
- Compressor DGS systems

### Mechanical Seal Reliability
- Simple calculations to check your seal or system
- Seal failure analysis
- Why do seals fail
- Seal failure modes
- Failure analysis
- Troubleshooting seal failures
- Getting the most from your seals