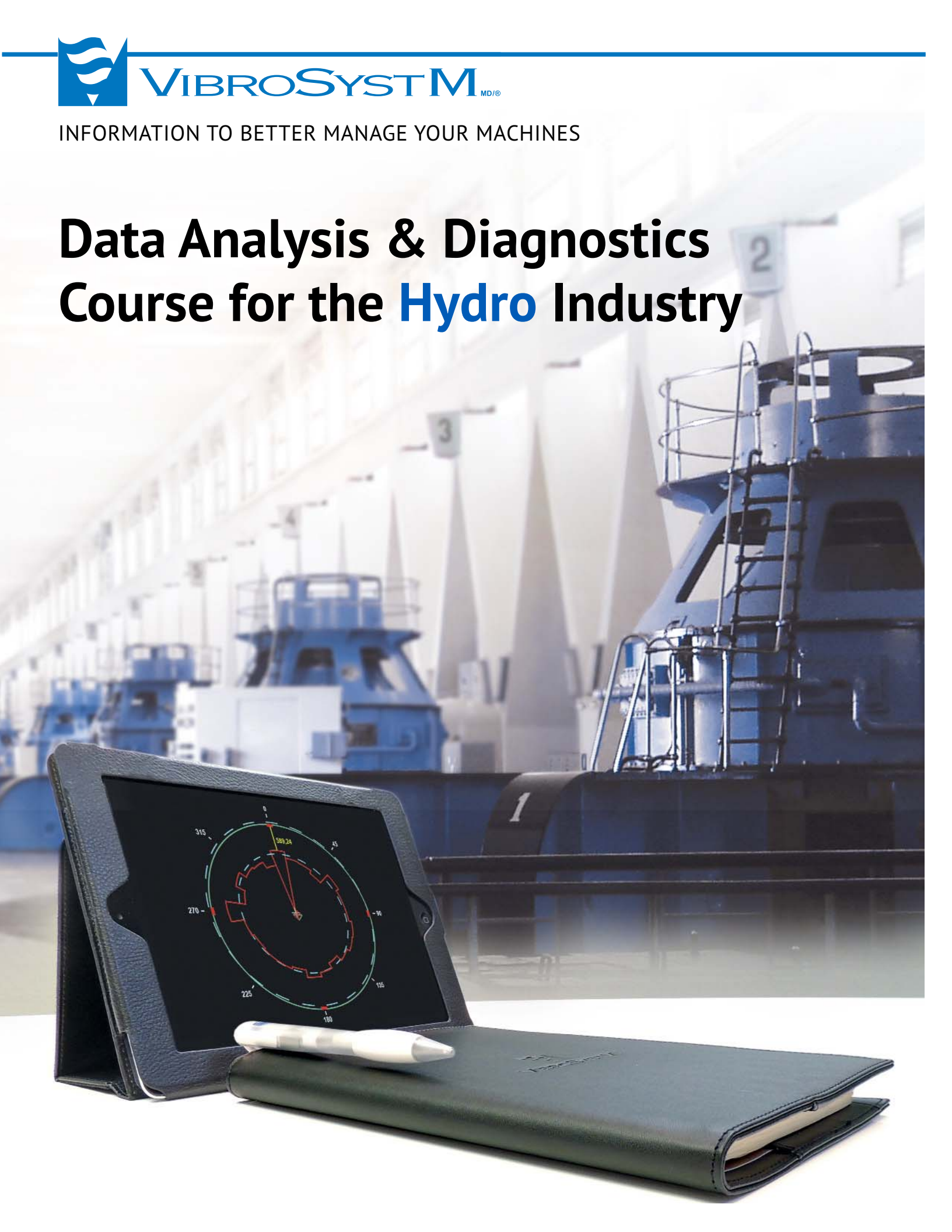
VIBROSYSTM MD/®

INFORMATION TO BETTER MANAGE YOUR MACHINES

Data Analysis & Diagnostics Course for the Hydro Industry

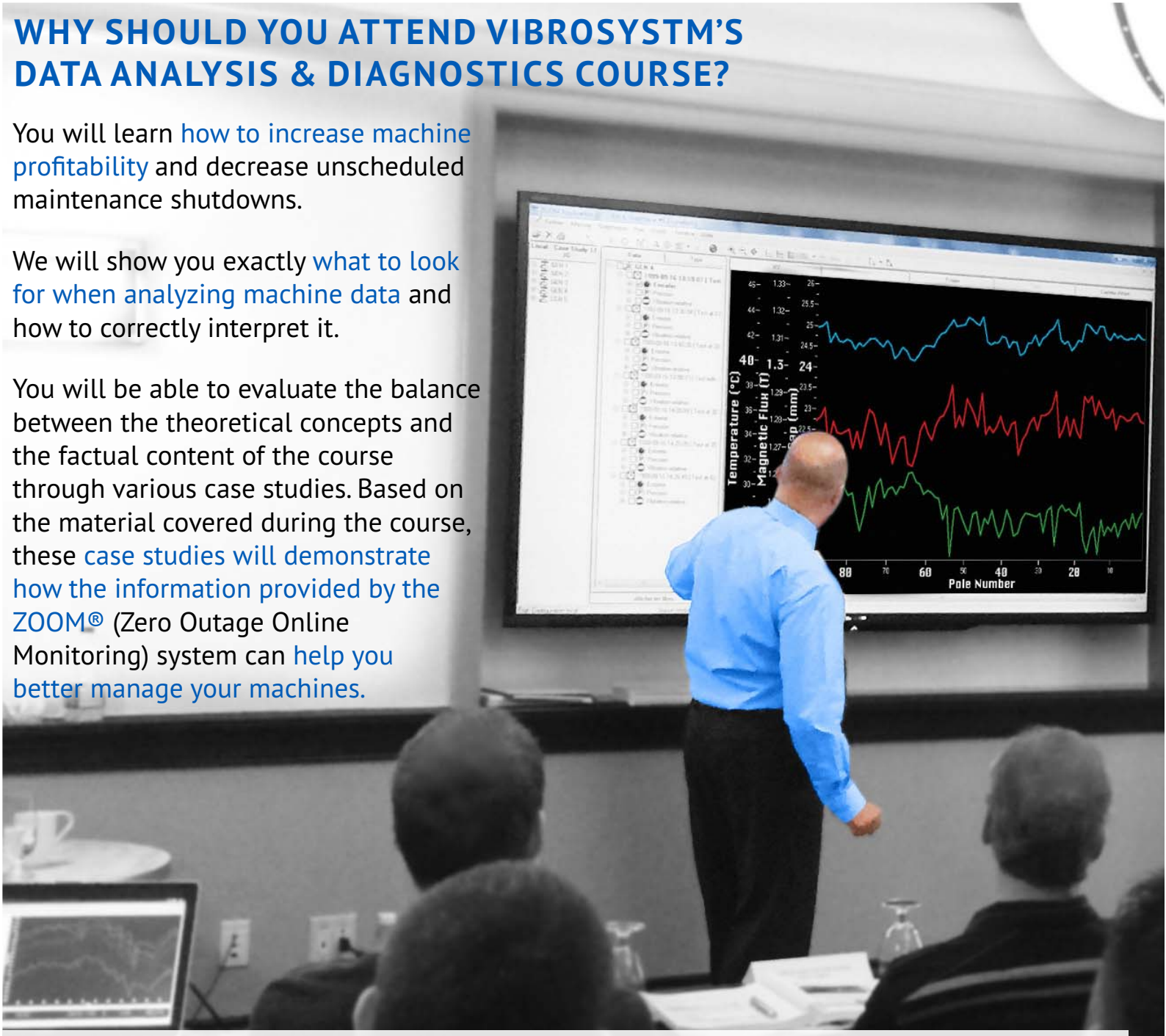


WHY SHOULD YOU ATTEND VIBROSYSTM'S DATA ANALYSIS & DIAGNOSTICS COURSE?

You will learn how to increase machine profitability and decrease unscheduled maintenance shutdowns.

We will show you exactly what to look for when analyzing machine data and how to correctly interpret it.

You will be able to evaluate the balance between the theoretical concepts and the factual content of the course through various case studies. Based on the material covered during the course, these case studies will demonstrate how the information provided by the ZOOM® (Zero Outage Online Monitoring) system can help you better manage your machines.



Directed at

- Power generation personnel
- Utility decision makers
- Owners of generating assets
- Plant managers
- Operations and maintenance personnel
- Engineers
- Technicians

What will you get out of it?

- Content developed by experts in data analysis and diagnostics
- Content continually updated and adapted in order to meet the needs of the industry
- A teaching method focused on practical cases that reflect the reality of the participants
- A chance to chat and exchange ideas with the trainer and other participants

Topics covered

- Air gap (rotor/stator dynamics)
- Vibration (relative & absolute)
- Partial discharge (optional)

Contact your local representative to learn more about our wide range of machine condition monitoring courses.

Goal	Topics
Day 1 will provide an overview of the importance of implementing a monitoring system appropriate to the machine. You will be introduced to VibroSystM's ZOOM monitoring software, an open architecture software that allows for quick & easy trends and in-depth diagnostics of air gap, vibration, PDA, flux, temperature and other parameters that have a direct impact on the availability of large rotating machines. You will also be introduced to air gap results interpretation and to basic air gap monitoring terminologies and standards, allowing you to correctly analyze rotor-stator dynamics.	• Monitoring equipment justification • Introduction to ZOOM Software Suite • Introduction to air gap results • Air gap monitoring - Basic air gap monitoring terminologies and standards
Day 2 will cover air gap monitoring more extensively, specifically how it allows for a detailed analysis of rotor and stator dynamics. You will be introduced to a series of techniques on how to correctly evaluate the condition of your machine's rotor and stator. Through our ZOOM monitoring software we will show you examples and actual results of measurements taken during transient conditions and what to look for when monitoring your machine's behavior. The second day will also include an introduction to vibration monitoring.	• Air gap monitoring - Rotor evaluation - Stator evaluation - Transient conditions • Vibration monitoring - Basic vibration monitoring strategies
Day 3 will focus on basic vibration measurement principles and terminologies. It will also cover the importance of proper sensor installation and calibration. You will also be introduced to data collection and interpretation, as well as acceleration and velocity data & graph interpretation. During this 3 day course, various case studies will be presented exemplifying what has been covered and showing you exactly how the information provided by the ZOOM software can help you better manage your machines.	• Vibration monitoring - Basic measurement principles - Installation and calibration - Data collection and interpretation - Acceleration and velocity interpretation • Results Interpretation Service (RIS)
Optional Partial Discharge Course	• Partial discharge monitoring – theory • Partial discharge monitoring – hardware • Partial discharge monitoring – software

Please note that if translation services are required, the course will be extended over 5 days.

Included

- An attestation certificate will be issued at the end of the course (21 hours).
- A PDF version of the course will be provided on a USB device.

VibroSystM also offers the possibility of purchasing the printed version of the course manuals.

COURSE AUTHOR: Mr. André Tétreault

Mr. Tétreault is a member of the International Council on Large Electric Systems (CIGRÉ) and the Institute of Electrical and Electronics Engineers (IEEE®). He also actively contributes to the Electric Power Research Institute (EPRI®). He has published a variety of papers on generator behavior at various conferences.

Mr. Tétreault's experience in the installation and commissioning of monitoring systems, as well as 15 years of analyzing results, has given him a wealth of knowledge in regards to large rotating machines, including hydro generators, turbo generators, as well as SAG mills and ball mills. He has travelled worldwide conducting various machine behavior training sessions.

RESULTS INTERPRETATION SERVICE (RIS)

In combination with our powerful ZOOM software, VibroSystM's results interpretation service puts decades of experience to work, allowing our clients to extract the most out of their monitoring systems. The service helps users identify patterns and anomalies that are both meaningful and informative.

Our RIS is among the many tools we put directly into the hands of our customers around the world empowering them to make informed business decisions that will have a direct impact on the bottom line of plant management.

VibroSystM has always worked with and for machine owners by delivering unbiased information on the condition of their machines which will allow them to better manage their assets. The accuracy of its systems has been proven many times over as even major machine manufacturers trust in VibroSystM's systems to assist them in the design of new machines.

Visit our website and see what nearly 30 years of monitoring experience can do for you.
www.vibrosystm.com

VibroSystM Inc. Information to better manage your machines