

7th **Successful Run** in Asia!

# MAINTENANCE PLANNING & SCHEDULING

23 – 25 JANUARY 2017, KUALA LUMPUR, MALAYSIA

## TOPICS COVERED

*Work Identification*

*Maintenance  
Planning*

*Priority Setting*

*Maintenance  
Scheduling*

*Emergency  
Response*

*Data and CMMS*

## Expert Course Faculty Leader



### **V Narayan**

Former Head of Royal Dutch Shell Group's Centre of Excellence in Maintenance and Reliability Engineering, UK. Author of "Effective Maintenance Management – Risk and Reliability Strategies for Optimizing Performance", Industrial Press Inc., NY.

Lead Author, 100 Years of Maintenance: Practical Lessons from Three Lifetimes, Industrial Press., NY.



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## About the course

A key component of production cost is maintenance and the key role of maintenance is to guarantee the reliability of the production. The crucial element for ensuring that maintenance is cost effectively delivered is the planning and scheduling of maintenance tasks.

Given the huge impact maintenance management can have on production output, as well as the increasing tendency for maintenance departments to be asked to do “more with less”, it is essential that maintenance professionals strive toward the implementation of best practices in maintenance planning.

Ron Moore, author of Making Common Sense Common Practice, quotes benchmarking studies that show that reactive maintenance correlates strongly with poor plant or facility performance. Yet many companies are still operating in this fire-fighting mode.

A proactive approach means that we regain control of the work we do and it's timing. This leads to improved safety and availability. This course provides a methodology for: pre-planning routine maintenance tasks generated by predictive and preventive maintenance programs, planning tasks to recover from malfunction or breakdown and a strategy to allow us to cope with random failure. The course will cover the essential steps we need to take to plan and schedule our maintenance work properly. That will help maximize the proactive content and further our goal of achieving best-in-class performance.

## In summary, this 3-day intensive training course will help maintenance professionals to:

- Develop the ability to produce logical and comprehensive maintenance plans using a systematic and structured approach.
- Produce work schedules that optimize Plant Availability.
- Enable high productivity and effectiveness of the workforce by proper work preparation.
- Plan the 'unexpected'; managing trips, breakdowns and other unwanted incidents, smoothly and efficiently.

## Who Should Attend

Maintenance Managers, Engineers, Planners, Schedulers, Supervisors and Senior Technicians.

## Individual Attention and Post Training Support

- Delegates will get individual attention, working in teams of four.
- Additional skilled and experienced trainers will be brought to help, if the numbers are larger, so as to maintain the teams to trainer ratio at about 4:1.
- Participants will have email access to the trainer 3 months post training for any questions on implementation issues.

**This training course has a limited attendance for up to 20 participants only.**

Sessions commence at 9am on all days, with short intervals at 10.30am and 3.30pm respectively.

Refreshments will be provided in the short intervals.

Lunch will be provided at 12:30pm for 1 hour. Sessions will end at 5pm on all days.

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## 3 Day Course Outline

### Work Identification

- Justify why we do maintenance
- Investigate what work we need to do
- Examine the criteria for determining timing
- RCM principles

### Maintenance Planning

- What is Maintenance Planning?
- Objectives
- Planning Tools
- Process
- Communication
- Measurement

### Priority Setting

- Criticality
- Urgent vs Important
- Qualitative & Quantitative Risk
- Tools for Criticality

### Maintenance Scheduling

- Objectives
- Process
- Backlog & Priorities
- Capacity
- Software, CMMS

### Emergency response

- Trips, breakdowns
- Planning
- Damage limitation
- Rescue

### Data and CMMS

- Inputs, fixed formats
- Quality, Error management
- Milking the CMMS

### Review of training course

## Your Expert Course Faculty

### V. Narayan

V. Narayan retired from The Royal Dutch Shell Group of Companies in 2002, after a distinguished career in maintenance and project engineering.

**As the Head of Maintenance Strategy Group, Shell UK Exploration and Production, he was involved in the following assignments:**

- Created a new process and authored a standard to build in Reliability into new Projects. This process, called 'Operations in Projects' is now extensively used in all major Shell Projects. This clear Business Process enables Shell to maximise Life Cycle Net Present Value by designing lean Plants with high Reliability.
- Created a comprehensive Reliability Database, using failure records from 15 Offshore Platforms over a 17 year period and applying Weibull analysis. It includes a Relief Valve Database analysing some 14000 test bench records, as well as one for Gas, Heat and Smoke Detectors.
- Managed the Internal Consultancy Services and later extended it to other Shell Companies as Head of Shell's Centre of Excellence for the E&P sector. Provided Training and Consultancy Services to Shell Companies in Brunei, Philippines, Argentina, Australia, Gabon, Nigeria and Oman.
- Was the Custodian of Shell Standards relating to Maintenance Strategy.
- Was a regular lecturer in RCM at the Shell Training Centre in Holland, conducting 14 sessions over an 8 year period
- Carried out a Maintenance Review of Shell Gabon's Oil Production Facilities

**As Maintenance and Reliability Adviser, Shell International, The Hague, he was involved in the following:**

- Created Shell's process and Performance Indicators, for Bench-Marking Maintenance Performance of Refineries and Gas Plants. This methodology is still in use today.
- Carried out a Maintenance Audit of Woodside Petroleum's LNG Plant in Western Australia.
- Coordinated the Shell Group Refineries participating in the external Bench-Marking studies conducted by Solomon Associates Inc.
- Facilitated a major Root Cause Analysis at a Shell Chemical Plant in The Netherlands.
- Carried out a review of a major Shutdown execution at Pernis, the largest Shell Refinery, identifying significant improvement opportunities. Many of these are now embedded in their planning process.
- Carried out an audit of the Planning of the largest Shutdown at Shell's Stanlow Refinery.
- Was a founder member of the Shell MERIT team, which made major improvements to Refineries' maintenance performance. Shell now sells this process to third parties.
- Identified best practices and opportunities for business improvement in fields of reliability, maintenance, inspection and projects in Shell Refineries, and Gas Plants.
- Created and edited Shell's Reliability Newsletter promoting best maintenance and operating practices and techniques worldwide

He has published many articles and presented papers at International Conferences. He has worked in the upstream and downstream Oil and Gas Industry sectors, Engineering, Automobile and Pharmaceutical Industries. He has worked in several countries and cultures, including Saudi Arabia, India, Malaysia, the Netherlands, and the United Kingdom. He is currently on the faculty of Shell Open University and Robert Gordon University, Aberdeen, in their MSc programme in Asset Integrity Programme

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## OTHER AVAILABLE COURSES

- [4 Pillars of Transformer Condition](#)
- [Advanced Project Finance for Power](#)
- [Advanced Technical Report Writing & Presentation Skills](#)
- [Advanced Turnaround Shutdown & Outage Management](#)
- [Ancillary Services in Competitive Electricity](#)
- [Asset Management for the Power Industry](#)
- [Best Practice Renewable Energy Capital & Project Management](#)
- [Biomass Power Generation](#)
- [CFB Combustion for Boiler Operations](#)
- [Clean Development Mechanism and Carbon Markets](#)
- [Coal Contracts](#)
- [Combined Cycle Power Plants Operation](#)
- [Combined Heat & Power \(CHP\) and Co-Generation Plant Operations](#)
- [Competency Management System for the Power Industry](#)
- [Design & Operations of Circulating Fluidized Bed Boiler](#)
- [Developing & Structuring Public-Private Partnership \(PPP\) for Infrastructure](#)
- [Effective Tender Process Management for Power & Utilities](#)
- [Electrical Hazop \(eHazop\) Studies for the Power Industry](#)
- [Electricity Demand-Side Management](#)
- [Electricity Industry Design](#)
- [Electricity Network Planning](#)
- [Electricity Retail Contracts](#)
- [Electricity Theft](#)
- [Electricity Trading Essentials](#)
- [Energy Efficiency](#)
- [EPC Contract Management for Power & Utilities](#)
- [Essentials of Coal Markets and Trading](#)
- [Essentials of Power Trading](#)
- [Excitation Systems](#)
- [Feed-In Tariffs for PV Systems](#)
- [Finance for Non-Finance Professionals in Power & Utilities](#)
- [Financial Modelling for Project Finance in Power & Utilities](#)
- [Fitness-For-Service AP1 579 & High Energy Piping Life Management](#)
- [Fundamentals of Geothermal Energy](#)
- [Fundamentals of Power Generation](#)
- [Gas & LNG Contract Negotiation](#)
- [Gas Turbine Generator Selection, Operation & Maintenance](#)
- [Gas Turbine Hot Gas Paths, Rotors & Failure Analysis](#)
- [Gas Turbine Major Inspection & Overhaul](#)
- [GE Gas Turbine Operations Simulation Based](#)
- [HRSG Design, Operations & Understanding, Controlling of HRSG Damage Mechanisms](#)
- [HV Substation Design & Construction](#)
- [IEC for Utilities](#)
- [Integration of Distributed Generation](#)
- [Introduction to Carbon Capture & Storage](#)
- [Introduction to Clean Coal Technology](#)
- [Introduction to Power Systems](#)
- [Keeping Electrical Switchgear Safe](#)
- [Leadership & Team Dynamics for Power & Utilities](#)
- [LNG Fundamentals](#)
- [LNG Markets & SPOT Trading](#)
- [Maintenance Planning & Scheduling](#)
- [Making IPP & Renewable Energy Projects Contract Frameworks Bankable](#)
- [Managing Complex Projects for Power and Utilities Professionals](#)
- [Medium Voltage & High Voltage Switchgear Metallurgy for Engineers](#)
- [Mechanical Engineering for Non-Mechanical Engineers](#)
- [Mini Hydro Project Analysis](#)
- [MKV Speedtronic Control System](#)
- [MK VI Speedtronic Control System](#)
- [Nuclear Energy Project Planning & Economics](#)
- [Nuclear Power](#)
- [Offshore Platforms Electrical Systems Design & Illustrations](#)
- [Operations of Coal Fired Power Plants](#)
- [Power Generation Commissioning, Operations & Maintenance](#)
- [Power Generation Operation, Protection & Excitation Control](#)
- [Power Plant Chemistry for Chemist & Chemical Engineers](#)
- [Power Purchase Agreements](#)
- [Process Control Methods](#)
- [Programmatic CDM](#)
- [Project Management for Power and Utilities](#)
- [Relay Protection in Power Systems](#)
- [Reliability Centered Maintenance Masterclass](#)
- [Reliability Engineering](#)
- [Renewable Energy Development & Investment](#)
- [Renewable Energy Integration](#)
- [Risk Based Inspection](#)
- [Risk Management in Power Markets](#)
- [Root Cause Analysis](#)
- [Rotating Equipment Maintenance & Reliability Excellence](#)
- [SCADA & Power Systems](#)
- [Smart Grid](#)
- [Solar Energy & Photovoltaic Power](#)
- [Spare Parts Optimisation](#)
- [Supercritical and Ultra-Supercritical Coal-Fired Power Plant](#)
- [Technical Report Writing & Presentation Skills for Power & Utilities Professionals](#)
- [Ultra Low NOx Gas Turbine Combustion](#)
- [Uninterruptible Power Supply](#)
- [Vibration Analysis & Condition Monitoring](#)
- [Waste to Energy Plant Operations](#)
- [Water Treatment and Corrosion Control for Steam Generation and Power Production](#)
- [Writing Effective Standard Operating Procedures \(SOP\) for Power & Utilities Professionals & Engineers](#)

## Frequently Asked Questions (FAQs)

**1. Does PowerEdge have other programmes than those listed?**

We have more than 200 programmes that we are capable of running. All we need is for you to contact us and request for the preferred programme and we will be able to develop it.

**2. Where is PowerEdge based?**

PowerEDGE is headquartered in Singapore but we run our training programmes in different venues around Asia.

**3. What does PowerEdge do?**

We are a Power & Utilities Training Specialist.

**4. Can this course be done in our city?**

It absolutely can. Get in touch with us to request for a training programme to be carried out in your city.

**5. Can you reduce the price of our preferred course?**

While our price has been reduced before it is even launched, we are always happy to help you with further discounts.

**6. Can you change the dates of the course?**

If you have a special requested date, let us know and we will arrange another session for you.

**7. Who are the companies that will be participating?**

This varies from a diversity of Power Operators, Regulators, Financiers, to Vendors in the Power & Utilities industry.

**8. Where is the venue for the course?**

We usually engage a 4 to 5 star hotel meeting room to ensure the comfort of our participants.

**9. How many delegates should we expect for each course?**

This varies from 15 to 20 participants. Class sizes are kept small to allow trainers to focus better on each participant.

**10. What are the different payment modes?**

We accept Visa/MasterCard, cheques, bank transfers and cash on site.

**11. Is accommodation included when I sign up for a course?**

Accommodation is not included in the course fee but we are always happy to advise on available accommodations.

**12. Can I get a cheaper accommodation through PowerEdge?**

We will be pleased to help you negotiate a better rate with hotels.

**13. Is lunch provided during the course?**

We provide lunch and 2 tea breaks every day during our training programmes.

**14. Are the training materials included once I have signed up for a course?**

Yes, training and course materials are included in the course fee.

**15. Will there be a certificate for the course?**

Yes, there will be a certificate of participation upon completion of a course.

**16. Who are PowerEdge trainers?**

They are expert consultants and practitioners with many years of experience in the subject matter that they deliver on.

**17. Are PowerEdge trainers competent?**

We have received numerous favourable feedbacks on our trainers from past participants.

**18. Can PowerEdge assist with Visa travel applications?**

We can assist in advising you on the relevant procedure(s) and embassies/consulates that provide Visa for travel purposes.

**19. Can we purchase training materials without attending a course?**

Unfortunately this option is not available as training materials are specially developed for courses.

**20. Can course content be tweaked to cater to our needs?**

Of course! Just let us know your request and we will get the trainer to assist in carrying it out.

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	PER PARTICIPANT	2 PARTICIPANTS OR MORE	IN-HOUSE TRAINING
3 Day Programme	SGD 4,093.95 Per Participant	SGD 3,894 Per Participant	Guaranteed Minimum 40% Off Normal Price

### ATTENDEE DETAILS

Name ..... Job title .....

Tel ..... Department ..... Email .....

Name ..... Job title .....

Tel ..... Department ..... Email .....

Name ..... Job title .....

Tel ..... Department ..... Email .....

Name ..... Job title .....

Tel ..... Department ..... Email .....

Name ..... Job title .....

Tel ..... Department ..... Email .....

### COMPANY DETAILS

Organisation name ..... Industry.....

Address .....

Postcode..... Country.....

Tel ..... Fax.....

### PAYMENT METHODS

By Cheque/ Bank Draft: Make Payable to PowerEdge Pte Ltd.

By Telegraphic Transfer: Please quote AE1 with the remittance advise

Account Name: PowerEdge Pte. Ltd.

Bank Code: 7339 Branch code: 686 Account Number: 686-253386-001 Swift Code: OCBCSGSG

Bank Address: 65 Chulia Street OCBC Centre, Singapore 049513

All bank charges and payment in Singapore dollars (SGD) to be borne by payer. Please ensure that PowerEdge Pte Ltd receive the full invoiced amount.

### PAYMENT POLICY

Payment is due in full at the time of registration. Full payment is mandatory for event attendance. I agree to PowerEdge Pte Ltd. payment terms

\* GST- Exclusive price is only applicable for overseas corporate customers subject to qualifying conditions.

### CANCELLATIONS & SUBSTITUTIONS

You may substitute delegates at any time. POWEREDGE PTE LTD does not provide refunds for cancellations. For cancellations received in writing more than seven (7) days prior to the training course you will receive a 100% credit to be used at another POWEREDGE PTE LTD training course for up to one year from the date of issuance. For cancellations received seven (7) days or less prior to an event (including day 7), no credits will be issued. In the event that POWEREDGE PTE LTD cancels an event, delegate payments at the date of cancellation will be credited to a future POWEREDGE PTE LTD event. This credit will be available for up to one year from the date of issuance. In the event that POWEREDGE PTE LTD postpones an event, delegate payments at the postponement date will be credited towards the rescheduled date. If the delegate is unable to attend the rescheduled event, the delegate will receive a 100% credit

### REGISTER

[Online Web Registration](#)

✉ info@poweredgeasia.com

☎ (65) 6741 9927

☎ (65) 67478737

### RELATED TRAINING

✓ [Keeping Electrical Switchgear Safe](#)

✓ [Introduction to Power Systems](#)

✓ [Excitation Systems](#)

✓ [Fundamentals of Power Generation](#)

### ON SITE TRAINING

Can't make it for the Course?  
We'll make the course come to you!!

Simply let us know your preferred time and dates and we will meet you at your schedule and venue.

With a host of highly trained experts, we will be happy to customize your programme with your needs 100% fulfilled.

Contact us today at

✉ info@poweredgeasia.com

☎ (65) 6741 9927