An Intensive 10 Day Training Course

Maintenance Strategy Development and Cost Effective Implementation

30 Jul - 10 Aug 2017, Dubai
10 - 21 Dec 2017, Dubai
07 - 18 Jan 2018, Dubai
08 - 19 Apr 2018, Dubai

PetroKnowledge is recognized by the Society for Maintenance & Reliability Professionals (SMRP) as an Approved Provider. The SMRP Approved Provider status allows PetroKnowledge to host a number of Maintenance & Reliability related continuing education trainings.

This training course is approved by SMRP to issue 50 Continuing Education Course Hours (CECHs) towards recertification of CMRP, CMRT or CAMA credentials.
WHY CHOOSE THIS TRAINING COURSE?

In the competitive environment of today, availability and reliability of assets is more than ever an important issue. Maintainers are faced with the challenge to deliver the same levels of equipment safety, reliability and availability with smaller budgets. Therefore, maintenance & reliability best practices are critical for every organization who would like to be best in class. Apart from maintenance & reliability engineering, outsourcing maintenance activities to contractors could contribute to this significantly. Because sometimes external parties are better suited to improve the performance than you or you simply do not want to do it yourself.

This highly-interactive training course emphasizes the most effective strategies, policies, tactics and practices that are needed to ensure the reliability, integrity and durability of the physical assets through their life-cycle. This PetroKnowledge training course will ensure that you understand how to decide rationally what maintenance activities to outsource and what not, how to select the best maintenance contractor and how to evaluate the delivered performance of all parties involved. Maintenance contracts used in several branches will be discussed.

You will have the opportunity to discuss the best practices used in your organization. Through a combination of formal lectures and group work, you will leave the course with the tools to improve your processes and way of working.

The first module of this workshop delivers many practical and new Maintenance and Reliability Best Practices concepts and tools. You will discuss these concepts and practice using practical tools in case studies and discussion groups. The second module then helps you decide in a rational way which activities are best done with internal resources and which are best outsourced. Tools and techniques are introduced which will help you ensure that outsourcing contracts are comprehensive and avoid the common pitfalls.

The costs associated with equipment downtime and reduced production can be significant. Learning how to effectively manage all aspects of your industrial facility is a must - so is this ten - day seminar.

The focuses of this training course are highlighted as follows:

- Financial concepts of costs, capital, profit and return on investment
- The model for asset healthcare
- Cost impact of equipment failure and degradation
- Proactive practices and tools to reduce maintenance costs
- Failure analysis to focus cost reduction efforts
- Work management to improve resource efficiency
- Understanding Outsourcing considerations
- Contracting types, incl. Service Level Agreements (SLA’s)
- Key Performance Indicators (KPI’s) to monitor performance
- Developing contracts – the contracting cycle
- Negotiating skills
- Continuous improvement and performance management: how to evaluate the performance with all parties involved

This PetroKnowledge course is split into two modules:

MODULE I - Maintenance & Reliability Best Practices

MODULE II - Maintenance Contracting & Outsourcing

Each module is structured and can be taken as a stand-alone course; however, delegates will maximise their benefits by taking Module 1 and 2 back-to-back as a two-week course.

WHAT ARE THE GOALS?

By the end of this training course, delegates will be able to:

- Understand the concepts of costs, capital, profit and ROI
- Understand the cost impact of unanticipated failure
- Apply proactive policies to reduce future maintenance costs
- Structure and analyse failure data to reduce repetitive failures
- Identify root causes of unanticipated failure costs
- Reduce resource costs through efficient work management practices
- Decide rationally what maintenance activities to outsource and what not
- Use the features, functions and benefits of lean maintenance contracts
- Use the most applicable type of maintenance contracts (incl. Service Level Agreements) and when/how to apply them
- Define service levels and monitor the contractor performance
- Develop and negotiate a maintenance contract
- Recognize the pitfalls
- Evaluate the delivered performance of all parties involved
- Implement maintenance contract management
WHO IS THIS TRAINING COURSE FOR?

This training course is suitable to a wide range of professionals, but will greatly benefit:

- Planners
- Supervisors
- Engineers
- Reliability engineers
- Maintenance team leaders and managers
- Operations team leaders and managers
- All professionals involved in procurement and supply chain management
- All professionals negotiating, managing and verifying maintenance contracts
- Teams who have been assigned the responsibility of establishing a maintenance contract will find it extremely useful to attend this course as a unit
- Anyone who wishes to update themselves on Maintenance Contracts & Outsourcing

HOW WILL THIS TRAINING COURSE BE PRESENTED?

This PetroKnowledge training course is a combination of instructor lead topic areas and class discussions. The course will be conducted along interactive workshop principles. Experiences from different areas will be discussed. There will be many opportunities for discussion and sharing experiences.

DAILY AGENDA

Module I · Maintenance & Reliability Best Practices: Lowering Life Cycle Cost of Equipment

Day One: Equipment Life-cycle Cost Introduction

Competency Description: Establishes a knowledge base of some of the fundamental concepts of reliability, costs and general maintenance best practice to enable delegates to relate to the rest of the course

Key behaviours

- Understand the main reliability functions
- Understand the basic financial
- Understand the asset healthcare model
- Understand the key areas of physical asset management

Topics covered

- Definitions of reliability, maintenance & asset management
- The concept of costs, capital, profits and return on investment
- The ‘Asset Healthcare Model’
- Key areas of asset management
- Open discussion sessions

Day Two: Cost Factors and Causes

Competency Description: Recognise the factors and causes of maintenance costs so that actions can be focused to the cause of failures instead of the symptoms

Key behaviours

- Understand the direct and indirect cost of equipment failure
- Identify the functions and required performance standards of systems
- Analyse likely failure modes, causes and effects
- Quantify the risk of equipment failure

Topics covered

- The real cost of unanticipated failure
- Asset performance standards
- The forms of asset failure and degradation
- The causes and nature of asset failure and degradation
- The effects, cost and risks of asset degradation
- Practical application and discussion of case study
Day Three: Breaking the Cycle of Degradation and Costs

Competency Description: Develop strategies, policies, and tactics to reduce the frequency of failure and optimise current policies to lower costs over the equipment lifecycle.

Key behaviours

- Select PM tasks on the basis of costs and risks
- Determine PM task intervals
- Determine condition-based task intervals
- Create job plans and work orders for PM work
- Identify spare parts requirements and propose stocking policies

Topics covered

- Programmed maintenance
- Programmed maintenance intervals
- Condition-based maintenance intervals
- Implement optimised PM programs
- Optimising spares to support the maintenance program
- Practical application and discussion of case study

Day Four: Cost Reduction through Defect Elimination

Competency Description: Learn from the past and change the future. Use statistical tools to identify recurring events and apply rigorous failure analysis to identify physical, human, and latent causes. Apply improvement actions to prevent reoccurrence.

Key behaviours

- Structure and code data collection to support reliability analysis
- Quantify chronic failures and their losses
- Apply rigorous root cause analysis to eliminate root causes
- Propose recommendations to eliminate root causes

Topics covered

- Failure data collection and analysis
- The impact of chronic failures versus intermittent failures
- Focus improvement through Pareto analysis
- Quantify losses in life cycle terms
- Rigorous root cause analysis techniques
- Root cause analysis case study
- Discussion of software and templates to support analysis

Day Five: Work Management converts Strategy to Practice

Competency Description: A maintenance function is only as good as it is capable of turning strategy, policy, and tactics to action. The advanced planning of work, the mobilisation of material and logistics, and scheduling tasks in a coordinated manner to ensure that work is done efficiently and to the required standard of quality.

Key behaviours

- Understand the importance of defect reporting and recognise shortcomings
- Appreciate the importance of backlog
- Understand the importance of planning for work quality
- Calculate manpower capacity
- Understand basic principles of efficient scheduling

Topics to be covered

- Work identification and defect reporting
- The importance of backlog
- Planning for quality and reliability
- Capacity planning
- Scheduling for efficiency
- Work logistics and preparation
- Checklists and practical aspects work quality control
- Final discussion and evaluation
Module II - Maintenance Contracting & Outsourcing

Day Six: Outsourcing Considerations

Competency Description: The objective is to establish a strong understanding of maintenance contracting & outsourcing as a process to make objective (out)sourcing decisions and to realize better performance together with the contractor.

Key behaviours

- Understand the maintenance contracting & outsourcing framework
- Understand how maintenance contracting & outsourcing relate to the broader perspective of asset management
- Identify different (out)sourcing strategies
- Identify risk and apply it within contracting and outsourcing
- Identifying and learning from best practice

Topics to be covered

- Introduction
- Asset management - The business impact of maintenance
- Considerations in outsourcing maintenance – what to outsource and what not?
- Activity on asset matrix
- Risks involved
- Outsourcing maintenance activities – case study

Day Seven: Maintenance Contracts

Competency Description: The objective is to understand the different types of contract which are available, how to apply them where and when and how to monitor the performance of the contractor.

Key behaviours

- Identify the basis & complex contract types
- Understand the procurement aspects
- Understand how to select the best contractor
- Understand and apply the basic concepts to monitor and manage contractor performance
- Identifying and learning from best practice

Topics to be covered

- Maintenance contract types
- Parties involved
- The tendering process – modern ways of tendering
- Choosing the right contractor
- Costing the service
- Defining Key Performance Indicators to monitor the performance of all parties involved
- Use of Balanced Scorecard with performance contracts
- Interactive exercise and examples
**Day Eight: Developing the Maintenance Contract**

**Competency Description:** The objective is to establish a strong understanding of the maintenance contract development cycle.

**Key behaviours**

- Understand vendor management & partnership aspects
- Understand the contracting cycle steps.
- Identify a winning contracting team
- Understand the key elements for defining the required service levels
- Apply the basic elements of writing the contract
- Identifying and learning from best practice

**Topics to be covered**

- Vendor management
- The contracting cycle
- Assemble a team
- Assess, determine and specify the required service levels
- Writing the contract – contents of a maintenance contract
- Interactive exercise: review some existing contracts
- Implementing contract management – how to make it work (performance management)
- Periodic evaluation & improvement

**Day Nine: Grounding and Negotiating the Contract**

**Competency Description:** The objective is to understand that Risk Based Maintenance is a proper means to ground a maintenance contract and that the goal of negotiating the contract should be win-win instead of win-lose.

**Key behaviours**

- Understand the principle of Risk Based Maintenance
- Identify possible opportunities in using RBM to ground your maintenance contracts and keep the knowledge in-house
- Understand the basic elements of negotiating
- Identify negotiating ploys and tactics
- Identifying and learning from best practice

**Topics to be covered**

- Expectations about availability, reliability and costs
- The extensive preventive maintenance schedule – “tricks” of maintenance contractors
- The seven steps to develop a risk based maintenance concept
- Using the maintenance concept to negotiate more effectively lean maintenance contracts
- Negotiating the contract – negotiation ploys
- Negotiating the contract – negotiation tactics
- Negotiating tips
- Interactive exercise and role play regarding negotiating

**Day Ten: Final Workshop**

**Competency Description:** The objective is to establish that all learning points will be ensured and that you are able to apply it in your own working environment.

**Key behaviours**

- Identifying service requirements
- Understanding the tendering stages
- Develop and negotiate the offer & contract
- Apply contractor selection
- Identifying and learning from best practice

**Topics to be covered**

- Development of a maintenance contract in groups
- Defining the requirements and service levels
- Develop the offer
- Selection criteria
- Presenting the bid
- Closing the contract
- Evaluation of results
- Wrap-up

---

**QUALITY CERTIFICATION**

ISO 29990: 2010 Certified
ISO 9001: 2015 Certified

The PMI® Registered Education Provider logo is a registered mark of the Project Management Institute, Inc.
Maintenance Strategy Development and Cost Effective Implementation

<table>
<thead>
<tr>
<th>COURSE DATES, VENUES AND FEES</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 Jul - 10 Aug 2017</td>
</tr>
<tr>
<td>10 - 21 Dec 2017</td>
</tr>
<tr>
<td>07 - 18 Jan 2018</td>
</tr>
<tr>
<td>08 - 19 Apr 2018</td>
</tr>
</tbody>
</table>

This fee is inclusive of Documentation, Lunch and Refreshments

Please use BLOCK CAPITALS to fill in this form. It is important that you read carefully through all information before starting to complete the form.

REGISTRATION DETAILS

Family Name: ____________________________________________ First Name (Mr./Ms.): _________________________________________
Position: ________________________________________________ Company: ____________________________________________________
Mailing Address: ______________________________________________________________________________________________________
Telephone:____________________ Mobile: _____________________ Fax: ________________________ Email: ________________________

AUTHORISATION

Authorisation By: ______________________________________________________________________________________________________
Position: ________________________________________________ Company: ____________________________________________________
Mailing Address: ______________________________________________________________________________________________________
Telephone:____________________ Mobile: _____________________ Fax: ________________________ Email: ________________________

IN-HOUSE TRAINING

Maximize your training budget and have several members of your staff, who require specific training, to attend with the advantage of not incurring additional travel costs when attending a ‘public’ training courses & seminars.

Would you like a PetroKnowledge training course delivered at a time or location to suit you? Would you like PetroKnowledge to tailor a course from our comprehensive library of programmes? Or would you like us to create an entirely new, bespoke course to suit the exact needs of your organisation?

Working in partnership with our clients, PetroKnowledge provides an enjoyable, creative learning experience that enables participants to develop their skills and knowledge. We can deliver not only generic, off-the-shelf courses from our extensive learning portfolio, but we can provide tailored as well as bespoke learning on any aspect of skill development or knowledge. Our in-house courses are conducted by the same expert trainers who conduct PetroKnowledge public courses so you can be assured they will fulfill the learning objective of any organisation.
BOOKING TERMS & CONDITIONS

Booking
- Bookings for courses can be made via our website (petroknowledge.com) or by contacting our Registration Desk on +971 2 5577389 or at reg@petroknowledge.com
- For on-line bookings, please select the course that you require and click on the “Register Now” button, following the instructions step by step
- Upon receipt of booking in order, enrollment on the respective training course will be confirmed by Registration Team with all necessary documentation

Invoicing and Payment
- Our fees include course presentation, relevant materials, physical & digital documentation, lunch and refreshments served during entire training. Accommodation charges are not included in the course fees
- Course fees are payable upon booking unless a valid, authorized Purchase Order is provided and accepted
- Invoices will be sent via email/courier to the ID/name and address provided
- We prefer to have the fees payment in our account before the start of training course. However, if your company has a different payment policy, the same should inform us in advance
- The currency of fees is in US Dollars (USD). Payments can be made in USD or UAE local currency AED (Arab Emirates Dirhams) either by Bank Transfer or by Credit Card. Our Bank Account details will be provided on the Invoice
- Please note that we do accept payment by cash, in USD or AED, only for the last minute bookings

Cancellation of Courses
- It may be necessary for PetroKnowledge to amend or cancel any course, course times, instructors, dates or published fees due to unforeseen circumstances and we reserve the right for such changes
- Any amendments will be advised before the course start date and any bookings already paid in full will not be subject to increased fees

Cancellation by Client
- Once you have completed your booking, received your confirmation of enrollment and a dated payment Invoice, you are deemed to have a contract with PetroKnowledge. You reserve the right to cancel this contract given the below terms
- All cancellations must be received in writing at reg@petroknowledge.com and info@petroknowledge.com at least 14 days prior to the training
- After the cancellation period has expired, consideration may be given, on a case to case basis, if a registered delegate nominates a substitute on the same course, shifts to next session of the course or moves to a new course
- For a cancellation request made on or before the statutory 14 day cancellation period, a refund may be given or a credit note issued which can be used against future course fees
- A 25% administration fee (of the total course fee at the time of booking) will be charged for any cancellations made outside of the statutory cancellation period

Attendance Certificate
- The daily course schedule should be accurately followed to ensure undeterred implementation of our training
- All delegates, who participated in their course throughout, will receive the Certificate of Completion on the last day
- Please report any foreseeable absences to a PetroKnowledge representative or to your sponsors directly
- An absence of three (3) or more sessions of the course will invalidate your eligibility for the Certificate of Completion