Maintenance Budgeting and Cost Control: Repair or Replace Decisions and Life-Cycle Cost

6 – 10 June 2027
Jeddah - Corniche four-star



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Introduction:

Maintenance budgets are often rolled forward from last year's spend, so managers cannot explain where labour, materials, contractor and downtime money goes, and ageing equipment keeps being repaired long after replacing it would have cost less. This Core Concept course trains maintenance teams in maintenance budgeting and cost management: building a budget from activities and cost drivers, forecasting shutdown and spare parts spend, tracking cost variance, and deciding repair, overhaul or replacement with life-cycle cost, net present value and equivalent annual cost. Participants produce a Maintenance Budget and Repair-or-Replace Business Case for a case plant.

Course Objectives:

- Break maintenance spend into labour, materials, contractor, overhead and downtime cost and build a coded spend baseline from work order and ledger data
- Prepare a zero-based and activity-based maintenance budget with costed preventive routes, corrective allowances and ranked decision packages
- Estimate shutdown, minor project and spare parts costs with a stated accuracy range and contingency
- Track monthly cost variance and report maintenance cost KPIs that explain overspend and underspend to finance
- Compare repair, overhaul and replacement options using life-cycle cost, net present value and equivalent annual cost, and set the economic replacement age of equipment
- Select cost reduction levers in maintenance strategy, contracting and spares inventory and present them in a budget and business case

Target Audience:

- Maintenance heads who own a department or site maintenance budget and answer for its variances
- Maintenance planners who estimate labour, materials and shutdown scope costs
- Plant and reliability engineers who recommend repair, overhaul or equipment replacement
- Maintenance cost controllers and plant accountants who track spend against budget
- Engineering staff who prepare capital requests for equipment renewal

Course Outline:

Day 1: Maintenance Cost Structure and Spend Baseline

- Maintenance Cost Elements: Direct Labour, Overtime, Materials, Contractor Services and Overheads
- Downtime Cost Estimation: Lost Production Margin, Idle Crews and Expediting Charges
- Spend Baseline from Work Order Cost History and General Ledger Accounts
- Cost Coding Structure by Equipment Class, Work Type and Cost Centre
- Operating Versus Capital Expenditure Boundary Rules for Repairs, Overhauls and Component Renewals

Day 2: Maintenance Budgeting Methods and Estimating Models

- Incremental Budgeting Weaknesses and the Rolled-Forward Spend Trap
- Zero-Based Maintenance Budget with Decision Packages at Minimum, Current and Enhanced Service Levels
- Activity-Based Maintenance Budget: Activities, Cost Drivers and Cost Pools
- Preventive Maintenance Route Costing from Task Frequency, Crew Hours and Consumables
- Corrective Work Allowance from Failure Frequency and Average Repair Cost

Day 3: Shutdown Estimates, Spares Forecasts and Cost Control

- Shutdown and Turnaround Cost Estimate: Scope Freeze, Unit Rates and Contingency
- Minor Maintenance Project Estimates: Estimate Classes and Accuracy Ranges
- Spare Parts Cost Forecast: Consumption History, Stock Value and Carrying Cost
- Monthly Cost Variance Report: Price, Usage and Scope Variances
- Maintenance Cost KPIs: Cost per Unit of Output, Reactive Cost Share and Budget Adherence

Day 4: Life-Cycle Economics and Equipment Replacement Decisions

- Life-Cycle Cost Model: Acquisition, Operation, Sustainment and Disposal Costs
- Time Value of Money for Engineers: Discount Rate, Present Value and Net Present Value
- Equivalent Annual Cost Comparison for Equipment with Unequal Service Lives
- Economic Replacement Age from Rising Operating Cost and Falling Salvage Value
- Repair, Overhaul or Replace Decision Matrix with Sensitivity and Break-Even Analysis

Day 5: Modelling Build: Maintenance Budget and Repair-or-Replace Business Case

- Case Plant Briefing Pack: Equipment List, Cost History and Production Targets
- Cost Reduction Opportunity Register for the Case Plant: Strategy Mix, Contracting Model and Spares Rationalisation
- Maintenance Budget Build: Activity Cost Pools, Shutdown Provision and Spares Forecast
- Repair-or-Replace Business Case Build for an Ageing Compressor Using Equivalent Annual Cost
- Budget and Business Case Defence Before a Mock Finance Review Panel

Skills You Will Gain:

- Maintenance Cost Breakdown
- Zero-Based Budgeting
- Activity-Based Costing
- Shutdown Cost Estimating
- Spare Parts Cost Forecasting
- Cost Variance Analysis
- Equivalent Annual Cost Analysis
- Replacement Decision Modelling

Why Attend This Course:

- Return with a Maintenance Budget and Repair-or-Replace Business Case built on a case plant and ready to adapt to your own site
- Defend budget requests to finance with cost drivers and activity volumes instead of last year's figure
- Stop paying for repeated repairs on equipment that has passed its economic replacement age
- Compare cost practice with maintenance peers from oil and gas, utilities, manufacturing, mining and facilities

Conclusion:

Maintenance spending earns trust when every figure traces to an activity, a cost driver or an economic comparison. The course moves from cost structure and the spend baseline, through zero-based and activity-based budgeting, to shutdown and spares estimates, variance reporting and cost KPIs, then to life-cycle cost, net present value, equivalent annual cost and economic replacement age. The final day applies these methods in a modelling build that produces a Maintenance Budget and Repair-or-Replace Business Case ready for a finance review.