



2-Days Online Training Course (Presented from London)

ETD's Life Management Foundation (LMF) Courses

Dates: 6 – 7 June 2023

LMF1: Power Plant Operation, Damage & Life Assessment

LMF1
COURSE

Power Plant Operation, Damage & Life Assessment

This 2-days course will run for 3.5 hours each day with 30 minutes optional Discussion Session at the end of each day. During the Discussion Session attendees can put their videos and microphones on and speak to the Course Presenter or to each other to exchange their experience. This way the course can be as close to the in-person event as possible!

The Course would emphasise the current and latest understanding, supported by *notes* and *references* for further reading and will be accompanied by *Worked Examples*.

ABOUT THE ORGANISER

European Technology Development Ltd. (ETD), UK

ETD is a UK based engineering and consulting company specialising in life assessment/ extension, maintenance, materials and engineering issues in all types of power generating and process plant. In addition to its **main business of technical consulting, plant inspection and their condition and life assessment**, ETD regularly organises training courses in power, petrochemical, oil, gas and other industrial sectors as a part of its programme on **technology transfer to industry worldwide**. In the recent past ETD has organised various international workshops/ courses/ conferences in the UK, a number of other European countries (Germany, France, Portugal), Middle East, Far East, South-East Asia, Canada and the USA. The issues involved in these courses covered lifing and failure analysis; HRSG design, maintenance and inspection; plant life assessment/ extension; high temperature plant materials behaviour; plant component safety and durability; performance of in-service welds and weld repairs; power plant cycling - technical and cost issues; boiler and turbine maintenance; petrochemical and refining plant issues; and, power plant benchmarking for performance, and risk based maintenance and inspection (RBMI).

For further information,

Please visit: www.etd-consulting.com Or, write to: enquiries@etd-consulting.com



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ALL SHOWN TIMES ARE LONDON / UK TIMES

You will be sent the Zoom link a few days before the start of the course. Please join at 0745h to introduce yourself and to make sure that you don't miss the start in case of any last-minute connection problems. Please write to enquiries@etd-consulting.com in case of problems.

DAY 1 - Tuesday 6th June 2023 (08:00 – 12:00h)

Module 1: Understanding Power Plant Operation, Materials, Damage & Related Issues (08:00 – 09:30h)

Knowledge of the influence of operational factors on power plant is a prerequisite for accurate life assessment. This module will review the fundamentals of boiler and turbine development and operation, and materials and damage issues. It will cover a range of power systems and related problems.

Specific Topics

- Influence of operation on damage and component life
- Typical high-temperature corrosion mechanisms in boilers
- Selected waterside corrosion mechanisms
- Typical damage mechanisms in steam turbines
- Materials property requirements

Break = 09:30 – 1000h

Module 2: Materials and Damage Mechanisms (10:00 – 11:30h)

A key element for successful plant life management is to have a fundamental understanding of the type of damages occurring at high temperature that affect the performance of materials and thus influence the life of components. The factors that control material properties such as strength, toughness, creep and fatigue are examined and illustrated with common plant problems.

Specific Topics

- Effect of failures on plant availability and importance of failure analysis
- Materials performance and metallurgy
- Damage mechanisms
- Time-dependent (Creep, Fatigue, Corrosion) and Time-independent (Tensile, Brittle) failure modes
- Common plant failures, identification and characterisation.

Optional DISCUSSION SESSION 11:30 to 12:00h

DAY 2 - Wednesday 7 June 2023 (08:00-12:00h)

Please join at 0745h to make sure that you don't miss the start in case of any last-minute connection problems. Please write to enquiries@etd-consulting.com in case of problems.

Module 3: Plant Life Management

(08:00 – 09:30h)

This part of the course uses the information gained from the preceding modules to establish how to develop plant life management strategies and perform remaining life assessment. Participants will be able to understand the main factors influencing component life, thereby allowing selection of the most appropriate analysis techniques for specific situations.

Specific Topics

- Life assessment principles
- Staged approach to life assessment
- Cost effective management strategies
- Standard inspection techniques
- Creep damage detection and assessment

[Break = 09:30 – 10:00h](#)

Module 4: Life Assessment Workshop

(10:00 – 11:30h)

The course will conclude with a number of worked examples:

Specific Topics

- Replication and its use for assessment of creep damage
- Approach for assessing a tubular component
- Effect of tube wall thinning on life

[Optional DISCUSSION SESSION 11:30 to 12:00h](#)

REGISTRATION FORM (Please email)

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COURSE

Online Training Course

LMF1: Power Plant Operation, Damage and Life Assessment

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Registration Fee: Covers delivery of the course & provision of presentations in pdf format (all fees shown are in GB Pounds). Please put 'x' in the relevant box and show the total payment.

Reduced Fee (Until 1 May 2023)		Full Fee (From 2 May 2023)	
£400		£450	
Please show here (no. of attendees x £): Total Amount Payable = £			

How to Pay: When paying please quote reference 'LMF1 Course- June.2023' and the ETD invoice number (if this was issued):

1) **By bank to bank transfer** to: European Technology Development Ltd.
(ETD bank account details will be provided on registration)

2) **Credit Cards:** Payment information will be provided on registration.

When registering, please state here how you paid or intend to pay:

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All Registration & Payment enquiries to: enquiries@etd-consulting.com

Attendee(s) Details

Your **title** and **name:**

Company:

Job Title (optional):

Address:

Phone:

E-mail:

Address for Registration:

Please email the required information/completed form to:

enquiries@etd-consulting.com Telephone enquiries: +44 1372 363111