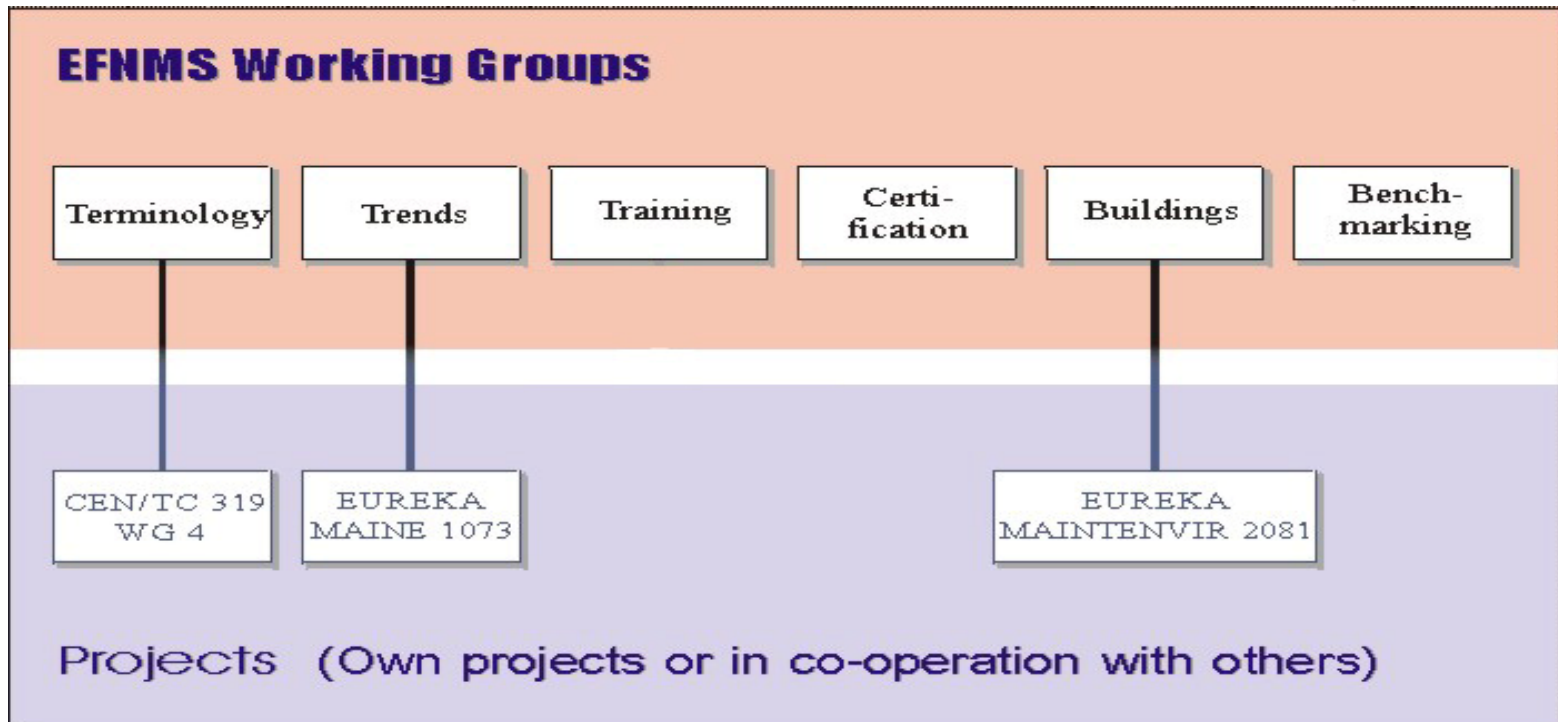


The Requirements and Rules to achieve a Certificate as a European Expert in Maintenance Management

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Aktiviteter



Background

To become competent to manage and develop the maintenance activities and to run a modern cost-effective maintenance organisation, there are several areas of knowledge that has to be assimilated.

The European Federation of National Maintenance Societies, EFNMS, has developed a specification for the minimum requirements of knowledge for an Expert in Maintenance Management.

The EFNMS will also certify those individuals in Europe that can prove to be enough competent (to have the required theoretical knowledge and practical experience) to become a Certified European Expert in Maintenance Management.

The aim has been to specify the theoretical knowledge and the practical experience to be hold by a maintenance manager, thereby assuring that the maintenance activities can be organised and performed in the best possible way in each company.

This document includes:

- **the EFNMS minimum Requirements of knowledge for an Expert in Maintenance Management**
- **the Rules to be able to achieve the EFNMS Certificate as an European Expert in Maintenance Management**

These requirements and rules, were accepted by the EFNMS Council on the 17th of April 1993 and amended by the EFNMS Council on the 37th of May 1998.

The EFNMS minimum Requirements of knowledge for an Expert in Maintenance Management.

The specification contains the minimum requirements of the theoretical knowledge for a maintenance manager in general. Special requirements for maintenance managers in electrical, mechanical, chemical industries or others, are not covered. However, this specification aims to fulfil the intention to be enough comprehensive and include the essential and fundamental knowledge, that any expert in maintenance management has to have, regardless in which company or country he is working.

MANAGEMENT AND ORGANISATION

- Goal, strategies, results
- Organisation, competence
- Procurement, selling of service
- Guiding, control, analysis
- Economical control, LCC, LCP
- Material handling, logistics

RELIABILITY PERFORMANCE OF PRODUCTION PLANTS

- Definitions
- Measurements, mathematical formulas
- Requirements, control, analysis
- Design, procurement, operation
- Laws, regulations

MAINTENANCE INFORMATION SYSTEMS

- Planning, ordering, analysis
- Documentation
- Information systems
- Technical/economical analysis

MAINTENANCE METHODS AND TECHNIQUES

- Remote control, condition monitoring
- Preventive activities
- Repair techniques and methods

MAINTENANCE TERMS IN THE ENGLISH LANGUAGE

Three levels of knowledge

In the detailed specification the requirements of knowledge has been described in three levels:

Level 1. Very good knowledge

For these subjects the requirements are to have a very good knowledge to be able to handle the special tasks that belong to a maintenance manager.

Level 2. Good knowledge

For these subjects the requirements are to have enough knowledge to be able to manage and develop these activities.

Level 3. Understanding

For these subjects the requirements are to have enough understanding to be able to make the right decisions and to have an insight of the total implications of the maintenance activities inside and outside a company.

Management and Organisation

Within this area it is essential to have a very good knowledge about the importance of maintenance for the economy in the company, for the achievements of the production goals and for the quality of the product, and so on.

It is important to have good knowledge of the organisation of the maintenance activities.

Therefore the following knowledge has to be obtained:

Very good knowledge in:

- How to set up a company management policy in order to be able to participate in its definition as far as maintenance is concerned.
- How to formulate the maintenance policy within a company.
- How to formulate the maintenance goals.
- Different maintenance strategies and how to choose the right strategy.
- How to specify the requirements for the maintenance activities.
- How to organize the maintenance activities, how to choose a suitable organisation and assure the right competence within the organisation.
- How to determine the human and material resources in order to implement the organisation.
- How to assure (by maintenance activities) the health and safety and the right environment conditions (inside and outside the company).
- How to guide, control and analyse the maintenance activities.

- LCC/LCP techniques/methods.
- Logistics support, material and store handling, methods for spare part calculations.
- How to measure and analyse the results of the maintenance activities, e.g., efficiency and economy.
- The maintenance activities in the development and procurement of new production equipment.
- How to define the future maintenance needs of a company.

Good knowledge in:

- How to define and implement human resources development policy.

Understanding in:

- Actual European standards within maintenance.
- Laws and regulations regarding labour, liability, guarantee, environment, energy, etc.
- The essential contribution from the maintenance to achieve good product quality and good production performance.

Availability Performance of Production Plants

Within this area it is essential to have knowledge about how to guide, control and develop the availability performance activities, in order to assure the performance of the production, the quality of the products, the safety regulations and the environment conditions.

It is important to have good knowledge of all availability performance activities that shall be taken care of during the entire life cycle of a production system, e.g., during development, procurement, operation and displacement of a production equipment.

Very good knowledge in:

- Reliability
- Maintainability
- Supportability
- Availability
- Improvements of the availability performance

Good knowledge in:

- The mathematical and statistical formulas to be used in the specifications and for verifications.
- Human reliability
- Production safety
- Risk analysis

Understanding in:

- Quality assurance
- Laws and regulations (technical aspects)

Maintenance Information Systems

Within this area it is essential to have knowledge about the different methods and systems that can be used in the decision making process, to be able to assure that the maintenance activities are cost-effective and are supporting the company profit.

It is important to have good knowledge of how to specify the system requirements and how to develop and use the information systems for planning, control, feedback analysis and improvements.

Therefore the following knowledge has to be obtained:

Very good knowledge in:

- Maintenance Management Information Systems (key-figures, guidance tables and so on).

Good knowledge in:

- Maintenance Information Systems (for planning, work order, technical/economical analysis, and so on).
- Technical documentation/information systems.
- Technical process control systems.

Understanding in:

- Expert systems.
- Basics concerning the computer support for the topics above.

Maintenance Methods and Techniques

Within this area it is essential to have knowledge about the theories and methods that are used to optimise the mix between corrective maintenance, preventive maintenance (predetermined or conditions based) and modifications.

It is important to have knowledge about how to choose the right methods for the best cost effectiveness.

Good knowledge in:

- The theory of the failure patterns
- Types of wear and tear
- Improvement techniques (aiming at reducing failure rates and down times)
- Preventive techniques
- Inspection techniques
- Condition monitoring techniques
- Methods of life extensions
- Measurement methods
- Control systems

Understanding in:

- Performance improvement techniques.
- Repair techniques.

Maintenance terms in the English language

Within the language area it is essential to have good knowledge about the maintenance terms in the English language, in order to be able to handle international maintenance management matters within Europe. (This requirement only applies to those that like to have an EFNMS European Certificate, and does not apply for a National Certificate.)

Therefore the following knowledge has to be obtained:

Good knowledge in:

- The understanding of maintenance terms in the English language.

The Rules to be able to achieve the EFNMS Certificate as a “European Expert in Maintenance Management”

1. General

An applicant has to fulfil the requirements regarding the theoretical knowledge and the practical experiences (as specified below) within one year to be able to get the EFNMS Certificate. The date of the certification will be the date when the last of the requirements is fulfilled.

2. The requirements of theoretical knowledge

2.1 An examination

2.2 A questionnaire preparation group for the examination

2.3 The questionnaire

2.4 The National Examiner and the EFNMS observer

2.5 The evaluation of the examination

3.The requirements of practical experience

The applicant shall fulfil the following practical experiences:

At last 5 years experience in the field of maintenance, inclusive at least 2 years experience in a managing position in the field of maintenance. (At least one of these years should have occurred during the last 18 months.