

PROCUREMENT OF MAINTENANCE SERVICES AND HEALTH AND SAFETY AT WORK

1. Introduction

Outsourcing has been an increasing trend in modern work organisations throughout many years now. A report and a fact sheet published by EU-OSHA in 2002 [1, 2] highlighted this development and concluded that “many companies now only carry out core functions in-house while ancillary functions have been outsourced. This results in chains of suppliers and subcontractors [2].” including

- The client (or host company) = *the company that outsources* the task. The work is usually done at the client’s premises.
- The contractor (and workers) = the company that signs the *contract with the client* for providing services such as maintenance works;
- The subcontractor (and workers) = third company *contracted by the contractor*, for example for specialised or minor ancillary works.

Maintenance, corrective as well as preventive maintenance, is a typical ancillary activity that enterprises outsource frequently by contracting external service providers. Data indicates that this trend has remained unbroken until today. A survey conducted in France showed that maintenance is one of the most commonly outsourced functions in the industry in France. According to SESSI (French Industrial Research and Statistics Authority), only 2% of industrial companies with at least 20 employees carried out maintenance themselves, and 96% of these companies outsourced maintenance tasks at least partly in 2005 [3].

Many companies outsource their maintenance tasks to external service providers, preferring to focus on their ‘core business’. The reasons behind this move, plus its advantages and disadvantages, are considered in Table 1.

Table 1: The rationale for outsourcing and its advantages and disadvantages [4]

Assumptions	Advantages	Disadvantages
<ul style="list-style-type: none"> ▪ maintenance task is separated from the other work in the enterprise / plant, virtually independent and clearly defined ▪ there are competent service providers with their own adequate maintenance solutions, and a good safety management system ▪ there are clear criteria to select the appropriate maintenance contractor 	<ul style="list-style-type: none"> ▪ specialised maintenance service providers have more know-how than clients ▪ good service providers can help to improve the maintenance strategy ▪ specialised service providers might have better preventive solutions to minimise hazards associated with the maintenance tasks ▪ companies (clients) can concentrate on their core business activities 	<ul style="list-style-type: none"> ▪ dependence on the quality of the service provider ▪ contractor’s workers are not familiar with the enterprise / plant, might also have a different safety culture ▪ the first time at site contractors will need special and more extensive induction and greater supervision

2. Outsourcing maintenance: safety and health at work issues

Traditionally, maintenance tasks in companies were carried out by specialised internal maintenance personnel. However, during the last decades there have been significant changes in the organisation of maintenance activities. Nowadays, maintenance tasks might be shared by operators and maintenance personnel, or partially or totally outsourced [5]. Maintenance was the most subcontracted function in industry in France according to a French survey conducted in 2005 [6].

These developments in maintenance organisation have consequences on health and safety. (Sub) contracting maintenance services is often considered as an aggravating factor in terms of safety and health. An analysis of a French work accidents database shows that, in 2002, maintenance workers were the second most frequent victims of accidents related to subcontracting, following closely after construction workers [6].

Outsourcing of maintenance activities may affect external workers' health and safety:

- if the work environment is unfamiliar;
- if the operations are fragmented (for instance maintenance workers do not know what has been performed prior to their own operations);
- if external personnel is improperly received;
- if there is no adequate monitoring/supervision of contractors' operations;
- if there is no internal contact person with specialist knowledge [5].

Outsourcing may also affect internal staff due to:

- difficulties in maintaining specialist know-how, and thus in monitoring activities carried out by the contractor;
- incorrect assessment of the condition of equipment or installations because of the many outsourced maintenance operations;
- equipment being repaired in an offhand manner (so equipment is not in optimum condition) because external maintenance services are not immediately available
- lack of coordination between the client and the contractor and between different (sub)contractors, and lack of adequate communication on on-going works [5].

Client leadership and commitment to continuous improvement of health and safety is recognised as an important driver for improving health and safety performance throughout the supply chain. Therefore, when outsourcing maintenance, companies need to consider the health and safety implications of the job they want to be done and select a contractor who can demonstrate the necessary competencies for the work and who is also operating in accordance with appropriate health and safety systems. This requires integrating health and safety aspects into the procurement procedure and giving significant weighting to health and safety considerations in the selection and award criteria for the contract.

Guidance from the HSE [7] suggests that to determine a contractor's competence companies may ask for information on:

- the experience they have in the type of work to be done;
- their health and safety policies and practices;
- their recent health and safety performance (number of accidents etc.);
- the qualifications and skills they have;
- their selection procedure for sub-contractors;
- the health and safety training and supervision they provide;
- their arrangements for consulting their workforce;
- if they have any independent assessment of their competence;
- if they are members of a relevant trade or professional body;
- whether they or their employees hold a 'passport' in health and safety training (e.g. safety card in Finland, VCA Certificate in the Netherlands, etc.). This is a growing trend in some industries.

The client needs to ensure that the contractor has an effective procedure for monitoring and auditing the competence of subcontractors. He must also ensure there are systems in place for providing information, instruction and training to the sub-contractor. When selecting a suitable sub-contractor, a contractor may use some or all of the criteria that a client uses in selecting a suitable contractor.

3. European legislation

European occupational safety and health directives transposed into the national legislation of the Member States set minimum standards of protection for workers and they also apply when companies use maintenance service providers. The Member States may have additional national requirements. Thus, it is important to take into consideration the legislation applicable in the relevant Member State(s).

The Framework Directive (89/391/EEC) lays down the obligation of the employers to cooperate in implementing the safety and health provisions and coordinate their actions in matters of the protection of workers and prevention of occupational risks, where several undertakings share a work place. and shall inform one another and their respective workers and/ or workers' representatives of these risks [8].

The Framework Directive also stipulates that the employer ensures that contractors and their workers engaged in work in his undertaking and/ or establishment receive adequate information and appropriate instructions concerning the safety and health risks and protective and preventive measures during their activities in his premises.

Council Directive 92/57/EEC addresses the minimum safety and health requirements at temporary or mobile construction sites. Here the term 'temporary or mobile construction sites' refers to any construction site where building or civil engineering works are carried out, which may include repair and maintenance activities [9].

The Directive establishes that the client or the project supervisor must appoint one or more coordinators for safety and health matters for any construction site on which more than one contractor is present. For instance, during the project execution stage the coordinator must organise cooperation between employers, including successive employers and self-employed persons (or any person whose professional activity contributes to the completion of a project) on the same site, coordinating their activities with a view to protecting workers and preventing accidents and occupational health hazards.

The legal basis for public procurement in the European Union is provided by the **Procurement Directives**, such as Directives 2004/17/EC and 2004/18/EC, which offer scope for taking account of social considerations.

Both Directive 2004/17/EC on the "special sectors" of water, energy, transport and postal services [10] and Directive 2004/18/EC on the coordination of procedures for the award of public works contracts [11] stipulate that the laws, regulations and collective agreements, at both national and Community level, which are in force in the areas of employment conditions and safety at work apply during the performance of a contract, provided that such rules, and their application, comply with Community law.

Buying Social - A Guide to Taking Account of Social Considerations in Public Procurement Contract

The guide was drafted by the Commission to explain the opportunities offered by the existing EU legal framework for public authorities to take into account social considerations in their public procurement, thus paying attention not only to price but also to the best value for money. The Guide has been produced primarily for public authorities, but in the hope that it will inspire private-sector purchasers too. The Guide follows the procurement procedure step by step, explaining how social considerations, for example health and safety at work, can be taken into account at different stages of the procurement procedure.

For example, social considerations regarding labour conditions are generally more appropriate to be included in the contract performance clauses, as in general they do not qualify as technical specifications or selection criteria, within the meaning of the Procurement Directives.

However, it is permitted into the technical specifications, for example, in a contract for works, the requirement for measures to avoid accidents at work and specific conditions for storage of dangerous products in order to safeguard the health and safety of workers.

When selecting suppliers, service-providers and contractors, tenderers can also be excluded for failure to comply with national legislation regarding health and safety at work

Contracting authorities may also include in the contract performance clauses social considerations for subcontractors regarding, for example, health and safety requirements,

Exceptionally, social considerations can be included in the award criteria for the contract as an 'additional criterion' to make the difference between two equal tenders [12].

4. Maintenance related European standards

Standards are formal documents for the unification of material and non-material subjects (technical criteria, methods, processes or practices). Standards ensure specific characteristics of services / products such as management, safety, environmental, and / or quality aspects. They present the state of the art processes or practices. Due to new safety requirements, new methods and materials and technological evolution most standards require periodic revision.

Maintenance standards can contribute to the improvement of the service quality and the ability to demonstrate this to clients. Standards also provide benefits in terms of enhancing understanding and communication through common terminology and improved contractual relationship. They also help service providers to meet legislative and regulatory requirements related to health and safety [12].

The following standards relate to maintenance.

Table 2: Maintenance related standards [13]

Maintenance	CEN/TS 15331:2005 Criteria for design, management and control of maintenance services for buildings (note: standard has recently been revised and published as EN 15331:2011)
	EN 13269:2006 Maintenance - Guideline on preparation of maintenance contracts (note: previously ENV (pre-standard) 13269 published in 2001)
	EN 15341:2007 Maintenance - Maintenance Key Performance Indicators
	CEN/TR 15628:2007 Maintenance - Qualification of Maintenance personnel (note: under revision to become a EN)
	EN 13460:2009 Maintenance - Documentation for maintenance (note: first version published in 2002)
	EN 13306:2010 Maintenance - Maintenance terminology (note: first version published in 2001)

EN 13306:2001 Maintenance terminology

This European standard specifies generic terms and definitions for the technical, administrative and managerial areas of maintenance [4]. Some EN 13306 standards implemented on national level are multilingual. These definitions are useful for effective communication and to prevent misunderstandings between the client and the contractor(s).

EN 13460:2009 Maintenance – documentation for maintenance

This standard specifies general guidelines for the technical documentation to be supplied with an item (at the latest before it is ready to be put into service) in order to support its maintenance, and is mainly aimed at designers, manufacturers, technical writers and suppliers of documentation.

EN 13269:2006 Maintenance - Guideline on preparation of maintenance contracts

This standard provides guidance on the preparation of maintenance service contracts and can be used by companies in preparing their agreement. It covers the whole range of maintenance services (maintenance operations, plus planning, management and control), every type of item, and both domestic and cross-border agreements.

EN 15341:2007 Maintenance: key performance indicators

This standard provides maintenance-related Key Performance Indicators (KPIs) and a system for managing KPIs to measure maintenance performance. The standard covers maintenance in general, not in relation to a specific machine or industry, and the majority of the indicators within the standard apply to all industrial and supporting facilities (buildings, infrastructure, transport, distribution, networks, etc.).

CEN/TS 15331:2005 Criteria for design, management and control of maintenance services for buildings

This Technical Specification specifies the criteria and the general methods involved in the planning, management and control of maintenance in buildings and their surrounding areas, according to the objectives of the owners and users and the required quality of maintenance. It is intended to help with the budgeting for maintenance and the scheduling of maintenance activities in order to improve the profitability of buildings.

CEN/TR 15628:2007 Maintenance - Qualification of Maintenance personnel

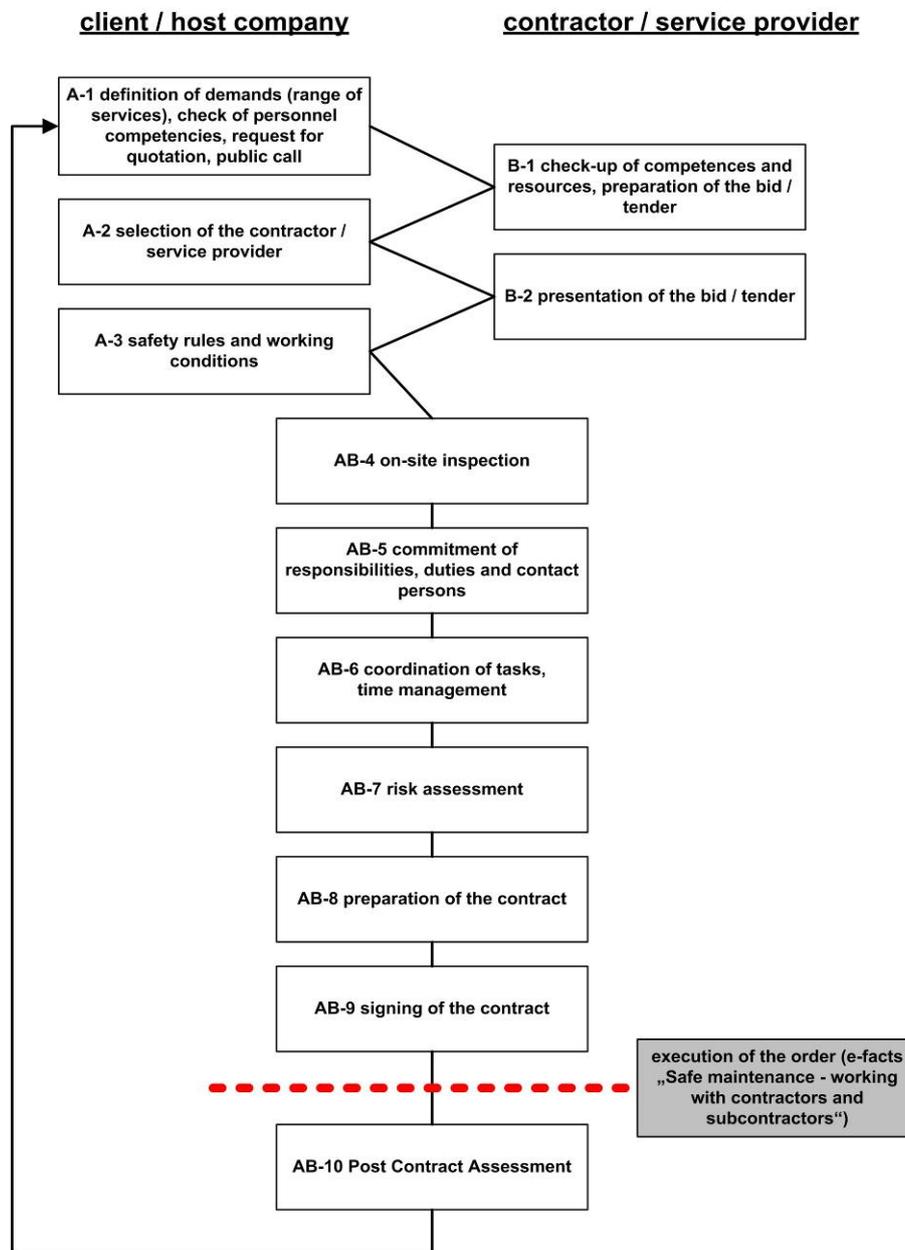
This Technical Report provides information on the current situation with regard to defining the competence levels for personnel operating in maintenance, as well as the knowledge levels required to carry out those competencies.

The document categorises maintenance personnel into three levels – European Maintenance Technician, Supervisor and Manager – and for each provides details of the level of knowledge required in different competency areas, and therefore the requirements to be incorporated within maintenance training, including safety and environment.

5. Health and safety aspects in maintenance procurement

The following figure provides an overview of procurement process including the different steps for clients (left side) and contractors (external service providers, right side), (A = client's task, B = , contractor's task. Tasks marked AB are the responsibility of both parties). The description of the steps follows.

Figure 1: Overview of steps for contracting maintenance services



A-1 Definition of demands (range of services) and requirements

Simultaneously to the definition of the works and range of tasks, procedures should be established to ensure that national laws and regulations and the workplace's own health and safety and health requirements are identified and incorporated into the procurement procedure of maintenance services. The procurement strategy should include tender evaluation strategies and models that test the capability of bidders to meet health and safety specifications. Preparations for contractor selection should include setting criteria for the evaluation of their health and safety standards.

B-1 Assessment of competences and resources, preparation of the bid / tender

When an open request for quotation / tender is published, the (possible) bidder / tenderer (maintenance service provider) checks the demands and requirements (see A-1) and considers them with against its own capabilities and resources.

Numerous companies publish codes of conduct listing general rules of supplier behaviour, [14]. Corporate social responsibilities (CSR) reports [15] also provide information on companies' guiding principles in the social and environmental areas which they apply in their business operations and in their interactions with stakeholders [16]. Additionally, there are different information platforms for business and procurement, which provide information on procurement and safety measures [17].

A-2 Selection of the contractor / service provider

An overview of general and health and safety related criteria for the selection of (sub)contractors, as well as indicators and sources of information, is given in Table 3.

Table 3: Aspects / criteria, indicators and sources of information for the selection of (sub) contractors [4; 18; 19; 20; 21]

Aspects / criteria	Indicators	Sources
Technical capability to perform the contract	<ul style="list-style-type: none"> ▪ core activities of the company ▪ experience in similar work ▪ technical equipment ▪ quality control system ▪ skills and qualifications ▪ special qualifications (e.g. welding according to ISO 9606) [35] 	<ul style="list-style-type: none"> ▪ website of the company ▪ portfolio of the bidder / tenderer ▪ certificates ▪ documentation on quality control system ▪ references from other clients
Health and safety management	<ul style="list-style-type: none"> ▪ health and safety policies ▪ safe systems of work ▪ health and safety training ▪ health and safety performance ▪ technical equipment and personal protective equipment 	<ul style="list-style-type: none"> ▪ general safety rules ▪ safe work method statements ▪ certifications for <ul style="list-style-type: none"> ▪ safety management (e.g. BeSaCC Belgian Safety Criteria for Contractors [19] / MASE Manuel d' Amélioration Sécurité des Entreprises [20] / SCC Safety Checklist Contractors [21]) ▪ quality management (e.g. ISO 9000) ▪ health and safety management (e.g. OHSAS 18001) ▪ environmental management (e.g. ISO 14001) ▪ audits, accreditations ▪ accidents and health statistics of the service provider
Selection and supervision of subcontractors	<ul style="list-style-type: none"> ▪ procurement management of the tenderer ▪ supervision system 	<ul style="list-style-type: none"> ▪ documentation on the selection of sub-contractors ▪ audits ▪ other communication
Abnormally low tenders / tenders with the risk of low health and safety standards	<ul style="list-style-type: none"> ▪ calculations of costs ▪ time schedules 	<ul style="list-style-type: none"> ▪ content of the tender / bid ▪ workshops ▪ communication with bidder / tenderer

The public procurement directives permit contracting authorities in Member States that have provided for this possibility in their national legislation to exclude from a public procurement procedure any

candidate or tenderer who has not respected the provisions of such legislation. These exclusion clauses can include, for example, non-compliance with provisions on health and safety. [12].

B-2 Presentation of the bid / tender

If there is a need for comprehensive, long-term cooperation between client and service provider(s) (e.g. in process industries), presenting the bid / tender during a moderated workshop can be helpful, and even essential in some cases. Safety concepts and standards should be discussed in detail during the presentation.

A-3 Site specific safety rules and working conditions

After the selection of a bidder / tenderer, the client provides information on the site specific safety rules and working conditions.

AB-4 On-site inspection

On-site inspections help to minimise misunderstandings between the client and the contractor. Safety rules should be discussed and cleared at the work site before the actual work starts. Potential additional risks on the site have to be regarded and additional measures should be agreed on if necessary.

AB-5 Agreement on responsibilities, duties and contact persons

The agreement on roles and responsibilities and duties is another essential step in procurement. It includes appointing of a coordinator, nominating supervisors and contact persons, and defining communication structures.

AB-6 Coordination of tasks and time management

If maintenance is not carried out during plant shutdowns good coordination between production and maintenance staff is needed.. When there are multiple contractors and multiple activities on site at the same time, a solid project plan and work scheduling are needed in order to prevent interference. Within the planning process time-critical risks and buffer time should be considered, too. While the primary concern is health and safety, adequate coordination of the contractors' work and how they fit into an overall project plan or on-going process as well as thorough communication will also increase efficiency.

AB-7 Risk assessment

The risk assessment for maintenance activities requires particularly good cooperation between the contractor and the client: the participation of both parties is necessary for adequate risk assessment(s).

The risk assessment should be carried out and signed off by the client and the contractor before maintenance starts. Further details about this are given in the e-fact 'Safe maintenance – working with contractors and subcontractors' [22].

AB-8 / AB-9 Preparation and signing of the contract

Once the previous steps have been completed the service contract can be drawn up. In addition to clauses on technical, financial and legal issues, it is good practice for requirements related health and safety to be included into the contract. This is a good way of making the contractor aware of the client's requirements for health and safety, and where their responsibilities lie.

According to the European standard EN 13269, safety and health aspects are also elements of the contract (see section 4).

The signing of the contract is a formal act and once it has been done the service provider(s) can start work. The safety and health aspects of working with maintenance contractors are the subject of the e-facts 'Safe maintenance – working with contractors and subcontractors' [22].

AB-10 Post-contract assessment

The contract and its annexes will contain detailed information on the services to be carried out. However, changes might occur while the work is taking place. A post-contract assessment should be done to enable future improvements to be made on issues like the maintenance strategy, the work process and the interaction between the client and the contractor. Ideally, both parties should collect data, and record experiences and knowledge throughout the entire maintenance process. This input can be used as feedback for the client and / or contractor in order to improve their technical, organisational and health and safety performance as well as for future reference.

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