

How to prepare best maintenance contracts



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How many different maintenance contracts?

- Outsourcing
 - a simple contract in which the client requires a maintenance service to an external provider
 - because the facility is still under warranty or it is more advantageous in terms of time, costs and service level;
- Multi-service,
 - when various maintenance activities are carried out by the same supplier;
- Global Maintenance Service
 - a contract based on the results (the parties shall establish not only the object of maintenance activities but also the results that the system will be able to get, by means of some key performance indicators);
- Facility management
 - contract includes all the activities that a company decides that are not strategic and for this reason outsources.

A maintenance contract shall summarize all aspects of maintenance tasks, policies, skills, indicators, etc., because many or even all activities could be based on a contract between a client and a provider.

What do we need from a standard?

EN 13269 (Maintenance – Guideline on preparation of maintenance contracts) objectives:

- promoting cross-border company/maintenance contractor relationships and producing a clear interface between the company and the maintenance contractor for maintenance services;
- improving the quality of maintenance contracts so that disputes and adjustments are minimized;
- drawing attention to the scope of maintenance services and to identify options for their provision;
- giving assistance in, and advice on, the drafting and negotiation of maintenance contracts and in specifying arrangements in the case of dispute;
- identifying types of maintenance contracts and to make recommendations for the attribution of rights and obligations between the parties of the contract including risks;
- simplifying comparison between maintenance contracts.

EN 13269 has been useful to control “the procedure” but not enough to govern the different processes required for an effective maintenance service.

Needs and motives to modify the old standard

Aspects to be considered:

- how to measure the performances of the received services, in terms of expected deliverables, time and costs;
- how to qualify all the involved competences,
 - personnel, to whom it is required to increase knowledge, experiences and soft skills,
 - organizations, including all that have to be required, offered or controlled during the outsourcing maintenance activities.

Needs and motives to modify the old standard

- All activities shall be characterized by a continuous improvement of effectiveness of all operation processes.
- I am personally convinced that, in a continuous improvement system, the purpose is not to settle for a standard to aspire to, but a “dynamic” guideline that move organizations towards excellence in services.

Needs and motives to modify the old standard

If I was the ***client***, I would like to know if:

- all the received services are held under control during all phases;
- all the involved personnel are qualified to do what they have to do and by whom;
- all the used equipment and tools are certified;
- during the evolution, all the developments and the related costs shall be under control;
- at the end of the service, if I will have capacities and permissions to start up again the facilities, through
 - updating of technical documents (drawings, procedures, spare parts etc.);
 - preparing of documents for controlling bodies (due to safety, health and environmental reasons);
 - changing in maintenance policies (preventive, predictive and based on inspections programs).

Needs and motives to modify the old standard

If I was a ***provider***, I shall be able to:

- define “Strength, Weakness, Opportunities and Threats” (SWOT) analysis of my services, including skills, equipment, organization and authorizations (for instance, in order to operate in high regulated sectors or with high level of risk), that is my position as for the “Offer to Market”;
- understand what are the expected deliverables;
- measure and demonstrate the performances got after the supplied services;
- be paid without demur, and contradictory appeals of the contract;
- acquire reputation as an excellent service provider, that is not only as for maintenance tasks but only for all connected services.

Needs and motives to modify the old standard

If I should play the role of a **judge** in a dispute (because representative of a public administration, an Accredited Certification Body, an insurance agency or others),

- I shall understand the reasons for and the limits of both parties.

Summarizing, all the different processes involved in a contract shall be described, understood and approved by all the different parties involved in the contract.

An example of the change needs

Some notes about the criteria to evaluate maintenance performances

There are many KPI's to be used to keep under control a maintenance service and evaluate the effectiveness and compliance of a contract, but I personally suggest a few vital of them.

OEE

TEEP

OCE

Some notes about the criteria to evaluate maintenance performances

OEE

- As for the performances of the equipment, ***Overall Equipment Effectiveness*** (OEE) is the most used today.

OEE = % Availability x % Performance x % Quality

TEEP

- I will prefer to focus on ***Total Effective Equipment Productivity*** (TEEP)
- In fact, if OEE involves only the time planned to produce, TEEP includes also the possibility that the system is always able to produce.
- Moreover, having a not-producing time, it permits to program preventive maintenance without affecting the production time.

TEEP = %Loading (Scheduled Time / Calendar Time) x OEE

A maintenance service has important influences on:

- ***Availability*** of the system, through the time to failure and the time to restoration,
- ***Performance*** level, due to possible reductions of speed,
- ***Quality*** level, caused by the increasing of non-compliant products.

Some notes about the criteria to evaluate maintenance performances

OCE

- As for the performances of the personnel, ***Overall Craft Effectiveness*** (OCE) may constitute an important tool.

OCE = % Craft Utilization x % Craft Performance x % Craft Service Quality

- Similarly to OEE, OCE is composed by three factors
- ***Craft Utilization or Pure Wrench Time*** (CU) relates to measuring how effective we are in planning and scheduling craft resources so that these assets are doing value-added, productive work (wrench time). Effective planning/scheduling within a proactive maintenance process is key to increased wrench time and craft utilization.
- ***Craft Performance*** (CP) relates to how efficient we are in actually doing hands-on craft work when compared to an established planned time or performance standard.
- ***Craft Service Quality*** (CSQ) relates to the relative quality of the repair. This element includes quality of the actual work, where certain jobs possibly require a call back to the initial repair thus requiring another trip to fix it right the second time.

Some notes about the criteria to evaluate maintenance performances

Assessment and enhancement of the status of assets

- Before starting a maintenance contract and after receiving the service, it is important for both parties to assess how much the system has been able to provide the original performance, or even improve them.
- A quick indicator may be the global machine cost for time unit or product/service unit, for instance, cost/piece, cost / (kms x tons), etc.

An important standard was issued in Italy:

UNI 10652: Maintenance - Assessment and enhancement of the status of assets.
A particular application was further developed as for transportation fleets, above all buses and trams.

Conclusions

- The new EN standard on the preparation of the contracts for maintenance activities will be more structured than the actual and will include many other specifications regarding personnel competences, organization, processes and tools to control quality and performances of the offered and provided services.

References

- EN 13269: Maintenance – Guideline on preparation of maintenance contracts
- Handbook of Industrial Engineering, Edited by Salvendy
- Manuale di Manutenzione Industriale (Handbook of Industrial Maintenance), Edited by Tecniche Nuove
- The Maintenance Excellence Institute - Measuring Overall Craft Effectiveness
- UNI 10652: Manutenzione - Valutazione e valorizzazione dello stato dei beni (Maintenance - Assessment and enhancement of the status of assets)