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## **Reliability and Maintenance of Industrial Equipment**

*It's necessary a definition and understanding of the reliability and maintenance notion, a case of the dialectical relation, in time, as a necessity to reach of a higher share of profitableness.*

### **1. Introduction.**

Today, the most important part of industrial equipment beneficiaries is asking a question of equipment function or of the next ones that will be bought as a nominal limits, every day, but as well as the industrial equipment maintenance cost. For the first problem the responsibility is the quality product, by its specific feature is the *RELIABILITY*; and with the second problem is a deal of the *MAINTENANCE*. The reliability is strongly in order to the product quality. So, we can say, the satisfaction of any conditions in one moment, in point of static view is characterized by the quality, then the reliability characterized the same product in point of dynamic view is in a same time, a quality. So the reliability appears as a part of quality in time.

So the Reliability, in point of quantity view, is the specific feature of a product, realized by the probability of achieving the function proposed in a standing, in a typical function conditions.

From the definition just mentioned, result the 5 notions of reliability:

- The specific feature notion (the reliability is an equipment specific feature being established , as the other technique features ,by a special value);
- The function notion (the reliability ask an achievement of the function of missions, of a request. So the well definite function appear as that the product must achieved , and in case by the exactly definite of a good working );
- the length working draft (the reliability means a good length working due , so it's expressed in the same way as a product , hours days , and so one , or at the cycles number , double rounds , and so one...);

- The working condition notion (this concept means all the using conditions that the product was planned and done. The well meaning of a reliability is essential , most of all at the set project tests determined of the reliability);

Any industrial equipment working is limited by the appearance of a bad work to a simple feature, because of the flaws.

So when you say: "reliability" you say a science of flaws. That means reliability is the characteristic of any industrial product to work without to spoil.

The SPOIL is to stop the achievements of the doing functional equipment , and the FLAW is the effect of this process , so the FLAW means the important event in the reliability theory.

There are several kinds of flaws. The most important are :

- the flaws caused by the accidents
- the flaws caused by the too much using
- the flaws caused by the weather.

## **2. Maintenance of industrial equipments**

The industrial equipments are , also , that they can be repaired and that they can not be repaired.

In the first case , there is a problem of the natures of the flaws and the possibility of repairing it. In the second case (with they cannot be repaired) it's about the replace of them.

All the technical and organized actions that were done to keep up or to do specific function is the *MAINTENANCE* (well keeping). The quality of an equipment to be able to keep well a product or easier repaired is the maintainability (well keeping) and is done as a probability too. That is the RESERVE.

The RESERVE is the probability to achieve the function after a time, thinking about the probability to make in function after any flaws.

As we saw in the up chapter, the knowledge and the using information about the size of an industrial equipment, by using the flaws appeared by working, the fine working (periodically) of the flaw , go to a better administration of the decision making up , about the equipment supplier , the employment of the equipment , the maintenance costs and sometimes the decisions about the making up equipment.

These pieces of information usually were picked up by the operators and introduced in administration programs of specialized information. The data picking up is not able to realize every moment, and the result of the result of the specialized programs depends mainly on the kind of information, to be use.

Probably the abnormality of a limit not to be cached when the operator reads the equipment limits and the list pieces of information not influence the making up decisions.

Last decade ago, the industrial acquisition and control equipment have appeared.

These ones are monitoring the industrial equipment limits, and if necessary, they operate with the control block, on the supervised equipment. These pieces of information picked up the acquisition equipment are lost after any time (when the supply unit information is complete) to take place of others set of information.

The last part of information can include anyway an important piece of information both for users, the maintenance equipment and for the equipment suppliers.

In the last years, both achievement and control equipments, and some industrial equipment were made with interfaces of data transmission. These interfaces are, especially designated to the link with a P.C., server, because the users of these industrial equipments wanted to oversee and to use these pieces of information to be used, depending on the branch activity area of the user information.

To catch information from the equipment to a P.C. and to use it, there are at least two conditions necessary to complete:

- the communication interface of the equipment to be compatible with one of the P.C. interface;
- to know the communication way between the equipment and the P.C.;

#### **4. Conclusion**

The communication way is given by the equipment supply, by the beneficiary, to transform the raw information, came of to the P.C, in the "files" or in the "data base". That `s why information came are enough at a time, and the use of this kind of a data based unorganized with the pieces of information, came requires time and performing P.C. That `s why an important part in using information is the structure of the data base.

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