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1 FOREWORD

This booklet, Process- and Product audit describes the procedures related to examination of function and adequacy of manufacturing processes and the evaluation of the finished Product.

A pre-requisite to fulfil Volvo's demands and expectations is that the supplier has a well working and maintained quality system. The quality system should incorporate routines and procedures for process and product audits.

Process audits, which are planned and performed in a systematic way, are an important contributing factor as well as product audits of finished components for the total quality assurance.

Consistent and systematic auditing procedures offer the supplier's management an efficient view of the quality development and tools for initiating corrective actions, thus securing quality and effectiveness.

Audit procedure is also treated in PQP 5, Quality System requirements.

2 GENERAL

Quality audit (or -auditing) is an activity to examine quality systems, manufacturing or administrative processes or finished products in accordance with a reference (standard, procedure, drawing) Audits should be planned in advance and performed independently and regularly.

The auditors shall be independent of the areas and activities, which are being audited and be authorised within the company.

System audit comprises the examination of the quality system and its various elements and procedures in order to secure its effectiveness and application. In the booklet PQP 5 Quality System requirements the extent and requirements as well as the audit process is being described in more detail.

process audit

system audit

product audit

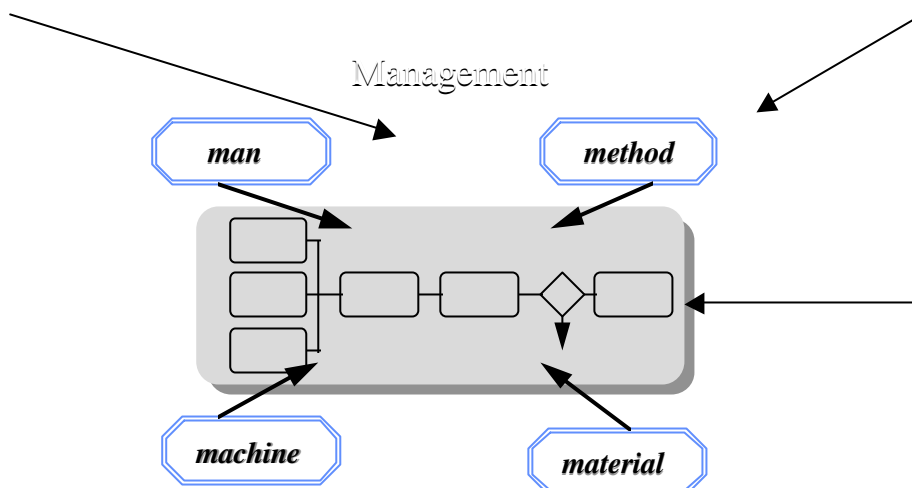


Fig. Extent of quality system

Process audit comprises the examination of established methods, instructions and work flow for processes and where also the application of maintenance programs for production equipment, material handling as well as housekeeping around the work area are incorporated. The focus is here mainly on production processes.

Product audit comprises the scrutiny of finished products to fulfil technical specifications and customer requirements.

3 PROCESS AUDIT

Process audit is a planned and systematic examination of the equipment, procedures and activities according to the documented operations with respect to capability, application and effectiveness. As a preparation an audit plan shall be drawn up incorporating the organisation of the audit, the participants, the extent and the basic information.

The extent of the audit can for example be identified by

- production area
- department
- workshop (floor) area
- production line

- special process

The basis for the audit can consist of

- product specifications
- process descriptions
- written procedures
- questionnaire/check lists

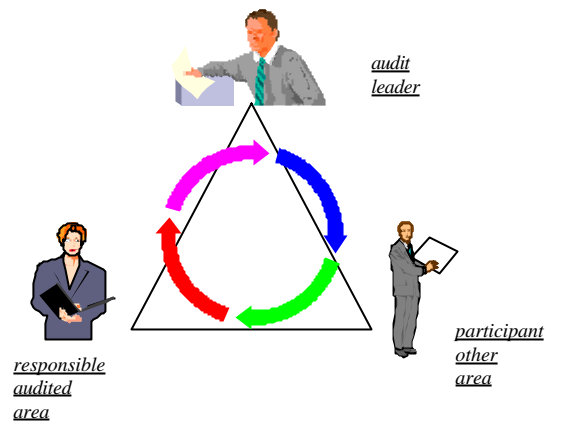


Fig. Example of auditing team

Example of auditing topics in a process audit

- supervision and maintenance of process equipment to secure a well kept process capability
- operating instructions available, in correct status and implemented
- personnel have had right instructions and training
- documented and maintained procedures for the identification of training need
- material flow and material identification
- condition and storage of tooling and equipment
- identification and observance of process parameters
- process output
- non-conformance reports and defects analysis
- information boards and log-books

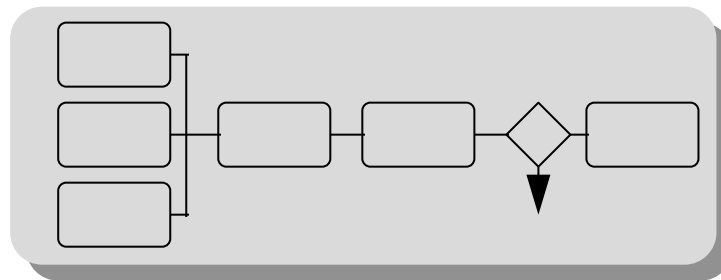


Fig. process flow

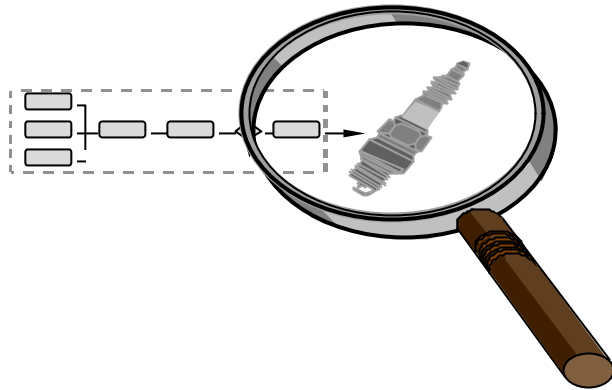
In order to perform a process audit there must be a description available of the structure and involved activities. Organisation charts, function descriptions, process descriptions, instructions, document control, flow charts as well as plans for the on-going improvement are examples of such information.

A process audit is a one of the most preventive quality tools.

4. PRODUCT AUDIT

Product audit is a planned and systematic study of finished products prior to delivery, which must be regarded as a normal part of the quality assurance activities. In some cases Volvo might initiate such a product audit to be carried out jointly by Volvo representative and supplier, e.g. at the start up of just-in-time deliveries.

The audit is to be performed with the help of written instructions and check lists, which has been drawn up by the supplier. Instructions etc. shall be based upon the technical specification and other valid specified requirements. A product audit has to be performed with the “eyes from the customer”.



Measures must be duly taken whenever deviations have been discovered or when a negative trend is observed. Alarm- and action limits must be set.

- ‘the eye of the customer’
- fixed principle for sampling
- fixed list of fault codes
- calculation of audit result through index
- report frequency
- report format
- report routing

5. CORRECTIVE ACTIONS

As a result of remarks stated at internal or alternatively external audit as well as at remarks against shipped out products, corrective actions must be taken immediately. Actions taken must be reported.

The analysis to clarify the causes of problems and the prevention of recurrence must be executed in a systematic way. , e.g. 8D report or other similar type of reporting.

6. FOLLOW-UP

The management at the supplier should carefully follow the quality progress of products delivered to Volvo. Quality development and quality output can be shown by e.g. trend charts of quality reports from Volvo and from final inspection and product audits by the supplier, process capability index or process control charts where statistical process control is applied. It is important that the correlation between supplier audit results is being tested with the actual output reported by Volvo.