

Preventive Action

1.0 Scope and Objectives

- 1.1 This procedure defines the activities required for the preventive action process.
- 1.2 The objective of the preventive action process shall be to ensure that a detailed process is utilized to identify and systematically resolve potential problems.
- 1.3 The results of the corrective action process shall be to reduce internal operating costs, eliminate potential problems, improve product quality and improve the overall effectiveness of the quality management system.

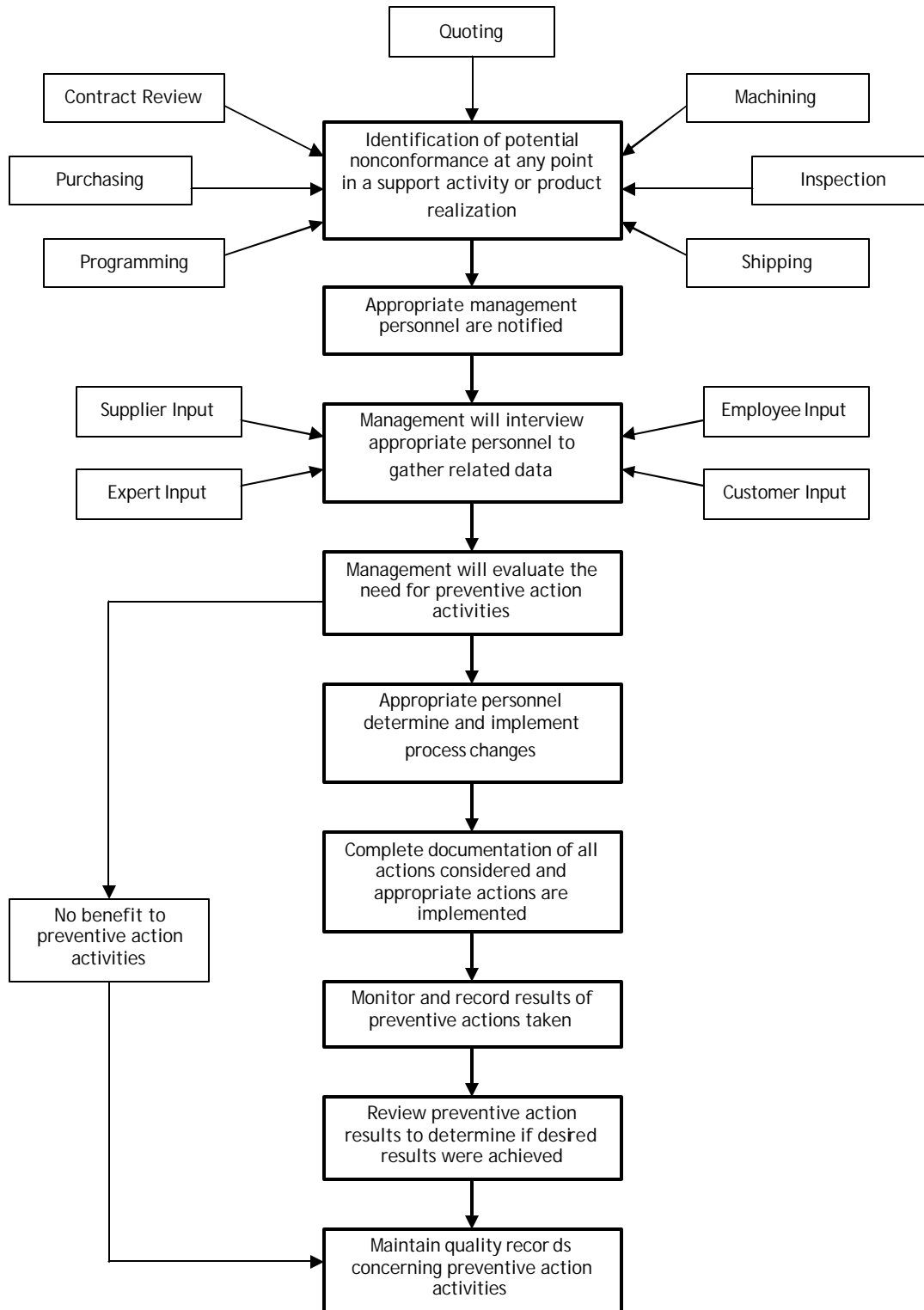
2.0 Applicability

- 2.1 This procedure applies to all processes and products.
- 2.2 This procedure applies to all personnel performing processes that have a direct impact on product quality and the ability of the company to provide our customers with product that meets all requirements.
 - 2.2.1 internal at St. Vrain Manufacturing
 - 2.2.2 external at special process suppliers
- 2.3 This procedure is applicable to quality assurance whose function shall be to ensure that the proper documentation is completed thoroughly and in a timely manner.

3.0 Related Documents

- 3.1 QM-001, Quality Manual, Section 8.5.3, Preventive Action
- 3.2 SAE AS9100, Quality Management System - Aerospace - Requirements, Section 8.5.3
- 3.3 Preventive Action Report, SVM-016
- 3.4 Nonconforming Material Report (NCRM), SVM-014

4.0 Process Flow Chart



5.0 Procedure

- 5.1 In accordance with SAE AS9100, Section 8.5.3, St. Vrain Manufacturing recognizes the importance of the preventive action process.
- 5.2 The identification of a potential nonconformance may come from any number of sources. By way of example, but not all inclusive:
 - 5.2.1 quoting
 - 5.2.2 contract review
 - 5.2.3 purchasing
 - 5.2.4 programming
 - 5.2.5 machining
 - 5.2.6 inspection
 - 5.2.7 assembly
 - 5.2.8 shipping
 - 5.2.9 customer
 - 5.2.10 supplier
- 5.3 Appropriate management personnel are notified of the potential nonconformance which, by way of example might include:
 - 5.3.1 inadequate machine capacity
 - 5.3.2 inadequate manpower
 - 5.3.3 inefficient documentation systems
- 5.4 Management and assigned personnel gather data and interview appropriate personnel in order to gather pertinent information that will lead to a complete understanding of the potential nonconformance. Records of interviews will be documented on the preventive action form. Interviews may include:
 - 5.4.1 production personnel
 - 5.4.2 customers
 - 5.4.3 suppliers
 - 5.4.4 industry experts

- 5.5 All nonconformance documentation is collated and reviewed by management personnel in order to:
 - 5.5.1 define the nature of the potential nonconformance
 - 5.5.2 identify the potential source and/or potential root cause of the potential nonconformance
- 5.6 Following review of the pertinent documentation, management personnel will determine if there is a need for process modifications based on:
 - 5.6.1 potential for the actual nonconformance to occur
 - 5.6.2 potential losses should the nonconformance occur
 - 5.6.3 difference between potential cost of the nonconformance and the cost of implementing a process modification to prevent the nonconformance
 - 5.6.4 potential impact on future deliveries
- 5.7 Management personnel will evaluate the need for preventive action when potential root cause is determined. If no process modification is required, the preventive action process proceeds to Section 5.11.
- 5.8 A preventive action plan is developed to test the root cause assumption to verify or eliminate the existence of the root cause.
- 5.9 If the root cause assumption is incorrect, investigators will go back to Section 5.4 and attempt to identify another potential root cause. If the original root cause assumption appears to be correct, the process continues with Section 5.10.
- 5.10 Appropriate management personnel shall implement the preventive action plan.
 - 5.10.1 process will be monitored to determine if preventive action plan has eliminated the potential source of the anticipated nonconformance
 - 5.10.2 nonconforming process activities are documented in the form of NCMR in the event a nonconformance occurs.
- 5.11 All preventive action documentation is completed and stored on the server.
- 5.12 Preventive actions shall be reviewed at the management review meeting.

6.0 Responsibilities

- 6.1 Responsible personnel, suppliers and customers
 - 6.1.1 identify potential nonconformance and bring it to the attention of the quality assurance and production managers
 - 6.1.2 assist with documentation of the potential nonconformance
 - 6.1.3 assist with investigation to determine possible root cause of potential nonconformance
 - 6.1.4 assist with developing preventive action plans
 - 6.1.5 document the results of the preventive action plan after implementation
- 6.2 St. Vrain Manufacturing Management Personnel
 - 6.2.1 document the details of the potential nonconformance shared by the employees, suppliers and customers
 - 6.2.2 provide time frame for response
 - 6.2.3 investigate potential nonconformance
 - 6.2.4 provide feedback on results of investigation
 - 6.2.5 provide preventive action plan
 - 6.2.6 implement preventive action plan
- 6.3 Quality Manager
 - 6.3.1 review preventive action activities at management review meeting
 - 6.3.2 review quality records
 - 6.3.3 issue and control documents, as appropriate
 - 6.3.4 ensure documents are regularly reviewed and updated
 - 6.3.5 ensure that regular internal audits, that address the continued applicability of this document, are scheduled and completed

7.0 Record Retention

- 7.1 All preventive action and associated quality documentation and quality records will be maintained on the server.
- 7.2 Management review minutes will be maintained on the server indefinitely.
- 7.3 This controlled QMS procedure shall be maintained on the server indefinitely.

- 7.4 Any hardcopy of this controlled document shall be valid for one day after printing.
 - 7.4.1 after one day has elapsed the document shall be used only as a reference document
 - 7.4.2 reference documents must be verified for revision level prior to use
- 7.5 Obsolete documents shall be removed from area of use and disposed of as appropriate.
- 7.6 All quality records associated with this document will be retained for a minimum of one year or the interval specified by customer contract whichever is longer.
- 7.7 As appropriate, all quality records associated with this document are available for customer or regulatory agency review.

8.0 Document Control

- 8.1 Custodian: Quality Manager
- 8.2 Review Activity: Quality Manager
President
Operations Manager
- 8.3 Approval Authority: Quality Manager
President
Operations Manager