

Copy To:

VICTOR MANUFACTURING & GASKET COMPANY
INTEROFFICE CORRESPONDENCE

To: W. Sheehan

Date: October 6, 1967

From: H. Jensen

Department: Systems Services

Customer:

Reference: Engineering Changes Project.

During these trying times of upheaval I feel that any further work on the above subject will have to be based upon your decision to continue.

If you do consider this project worthwhile, then you will have to assign to some responsible person. Attached is a rough draft of a presentation we were going to make to the Finance Committee. It has value only if accepted or some configuration of it.

We did not have the opportunity, nor time to review with Warren Rasmussen; or any other persons, so rather than have anyone say nothing happened, something did, but no action. In the short period of time left to me, if you wish to review further I will be pleased to assist.

B&H
Please review & let me have comments -
Bill - comments are in margin - may I ask you about this?
B&H

VPD-91-0001368

DANA-088

Subject: Engineering Changes

As an assignment by the Finance Committee an investigation into engineering changes was made. While the assignment is far from complete, this interim report and its acceptance will provide the base from which an effective engineering change system can be developed.

I. Current Conditions

The processing of engineering changes is covered by S.O.P. 22, Change or Assignment Notice, and has the following shortcomings:

- A) The S.O.P. does not specifically assign the responsibilities required for an engineering change system.
- B) Contains no provisions for engineering changes originating within our own engineering departments.
- C) Provides no means for surveying the change for cost and feasibility.
- D) Lacks a reviewing authority that would consider all the facts concerning a change before incorporation.
- E) The Form used is inadequate, some of the items lacking are:
 - 1. The reason for the change
 - 2. The classification of the change
 - 3. The effective point of the change
 - 4. Tooling disposition.
 - 5. *Disposition of WIP on mandatory changes.*

II. Engineering Change System Requirements and Provisions

To effectively process and control engineering changes an organization must be established and assigned this responsibility. This organization has two segments:

- A) An engineering Change Control Individual - probably - an engineering representative(s). The Individual's function will be to determine if a request for change is worthy of further action; to evaluate the effect of the change in all areas of responsibility; and to approve or reject changes from both a cost and improved product disposition.
- B) An engineering change control investigator (by product/plant lines), whom will process engineering change paperwork; insure the correctness and promptness of survey replies to engineering changes; furnish the proper authority with information and act as its communication media and follow-up to insure the timely incorporation of approved engineering changes.

The manpower estimate for this area is difficult since an accurate annual count of engineering changes cannot be obtained, plus the functions not now performed. It is considered possible that one person from each, the Oil Seal and Gasket sections, could be assigned this function as an additional duty, at least until such time as the work load can be measured.

III Engineering Change Processing

An engineering change should pass thru four phases of processing and briefly the following accomplished at each phase.

A) Phase I - Request for Change

1. Requestor - In addition to information as to what change is desired, part affected, etc., the "Reason for Change" should be detailed. One or more recommended reasons should be used and amplified, if clarity is necessary. Also special emphasis should be placed on the possible consequences if the change is not made.
2. Change Control Individual Determine if change has merit. When affirmative refer to investigator, if necessary for survey action. Otherwise return to requestor stating reason for rejection.
3. Investigator. Cause all departments affected by the change to be surveyed, assign survey due dates and follow up.

B) Phase II - Survey

The survey should provide, but not be restricted to, the following kinds of information to assist the authority in making its final decision:

1. Estimate of material cost, if material affected.
2. Cost of all new standard and special tools
3. Cost of reworking tools.
4. Total time in calendar days when complete process will be available to production.
5. Production down time, in calendar days, that parts to either the old or new configuration cannot be produced due to rework or tryout of tooling.
6. The effect of the change on part price.
7. Information regarding present inventory and work in process.

C. Phase III - Approval (or rejection)

The Engineering change control Authority will analyze the survey replies and if change is approved will classify and make a stock disposition.

1. Change Classification

- a. Class A Mandatory - Part will not operate or function without it. All work in process, raw material, and finished goods affected. All production stops until change is made. No inventory shipped until change is effected.
- b. Class B Mandatory - With the next order. Orders in process and/or finished goods in inventory not affected. Components or raw material not needed for current production must be changed. Effective date of change is at end of current production run or prior to start of next production run.
- c. Class C - Work in process and parts in stock not affected. The change is to be incorporated at the exhaustion of present inventory.

2. Stock Disposition

- a. Use - Parts and material on hand and in process may be used.
- b. Rework - Rework all parts on hand and in process.
- c. Scrap - Use parts on hand and in process until new parts are available at which time scrap old parts.

D) Phase IV - Incorporation

The Investigator will issue the Approved Engineering Change, forwarding a copy to all affected Departments. Also will follow up to see that effective point for incorporation is met.

Changes imposed by the Customer will go thru the same procedure with some variation. By doing this we can accurately inform the Customer as to the cost of the change and when he might expect parts to the new configuration based on tooling and material availability.

- In conclusion, the establishment of the Control Individual and Investigator are essential to this system. Further work, Forms, Procedure Policy, etc., would be worked out in council with them.

May we have your comments.

Warner: - Engineering Changes: -

9/26

Revisions have been made per our conversation.

Mark is not in agreement with them, however

I agree with your statements.

Do you think it advisable to review with
Warner Rasmussen prior to his leaving the end
of this week? - Reason: - He's the leader, Sheehy
followed and agreed - T. Denpack was on the fence.

Harvey -

Points: - How one word changes concept!

Individual vs. Board

Investigator vs. Group

Two different avenues, - but current circumstances.