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MM-MH-77-67-0007

QUALITY PROGRAM PLAN

D. P. Kelly
D. P. Kelly

July 15, 1977

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Miamisburg, Ohio
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MONSANTO RESEARCH CORPORATION
a subsidiary of Monsanto Company
for the
**UNITED STATES ENERGY RESEARCH
AND DEVELOPMENT ADMINISTRATION**
U.S. Government Contract No. EY-76-CO-7-0053

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Quality Program Plan Theme

The keystone of quality at Mound Laboratory is a cost effective, quality and process, and product design program. The laboratory is equally committed to quality, safety and productivity in a manner which is not only cost effective, but which utilizes the skills of all of our employes as a vital ongoing resource for ERDA.

John R. McClain / JRM
J. R. McClain

Quality Program Plan

VARIATION ENGINEERING

D. E. Wendeln

July 1, 1977

QUALITY PROGRAM PLAN
VARIATION ENGINEERING

A. Objective

The use of variation engineering concepts to insure quality of design.

B. Related Quality Task Force Recommendations

1. Restate quality policy in framework of Variation Engineering
2. Require Variation Engineering on development and production programs - management approved required for exceptions
3. Instruct management on the implementation and use of Variation Engineering techniques.

C. Actions Taken to Date

1. D. E. Wendeln, a Monsanto ~~Science~~ Fellow, has been assigned to the position of Manager, Manufacturing Development, reporting to the Product and Process Development Manager in the Advanced Devices Department.
2. A Process Engineering group has been formed under the direction of J. R. Wysong reporting to D. E. Wendeln.
3. A Methods and Production Development organization has been formed under the direction of W. J. Murphy reporting to D. E. Wendeln.

D. Recommendation #1 (above)

A quality philosophy statement is being prepared for dissemination throughout the laboratory. It will be distributed over the Laboratory Director's (J. R. McClain) signature. This statement will express management's endorsement of and commitment to these concepts.

E. Purpose of Variation Engineering

The Variation Engineering concepts and techniques are an integral part of the quality of design and the quality of conformance dedicated to the preventing of defects and the achievement of high level manufacturing efficiencies. They will be implemented at the beginning of a product life cycle and will ensure a cost effective product design that is manufacturable along with processes that are reproducible and efficient. These techniques are the primary instrument to ensure meeting our commitment to quality, reliability and schedule.

F. Method of Implementation

A representative from Manufacturing Development will be assigned each project-program in Advanced Development with the following responsibilities:

1. transfer development technology to manufacturing
2. review cost and effectiveness and manufacturability of design
3. implement variation techniques as appropriate.

The Manager of Product-Process Development will hold a quarterly status-action plan meeting with representatives of Component Development and Manufacturing Development to select applications and review progress. Minutes of the meeting will be compiled and submitted to the Director of the Advanced Devices with copies to other appropriate management personnel.

For programs and projects beyond development and not yet in WR production, the Manufacturing Development Section will be responsible for the application and implementation of Variation Engineering concepts and techniques.

Programs now in WR production, where rejects or manufacturing costs are high, shall be reviewed for the application of these concepts in an effort to reduce rejects and improve manufacturing efficiencies.

G. Recommendation #3

After each quarterly status-action planning meeting (see F above) the Manufacturing Development Manager will meet with the Director of Advanced Devices to review progress and make recommendations on training.

Selected short courses and technical society seminars will be used as appropriate.

All Product, Manufacturing, Quality Control Engineers, and other support groups will attend training sessions on the use and implementation of Variation Engineering techniques.

QUALITY PROGRAM PLAN

Subject: Variation Engineering

Principle Responsibility - D. E. Wendeln

<u>Item</u>	<u>What</u>	<u>Who</u>	<u>When</u>	<u>Remarks</u>
1	Director's Position Paper	D. E. Wendeln/D. P. Kelly		
2	Quarterly Implementation Meetings	H. L. Turner/D. E. Wendeln	Ongoing	
3	Management Training Program	D. E. Wendeln		
4	Quarterly Progress Reports	D. E. Wendeln	Ongoing	

Quality Program Plan

TECHNICAL MANUAL PROCESS CONTROL SYSTEMS

N. U. Breene

July 1, 1977

QUALITY PROGRAM PLAN
TECHNICAL MANUAL PROCESS CONTROL SYSTEMS

A. Objective

Streamline technical manual process control systems to facilitate changes while maintaining accuracy.

B. Other Related Task Force Recommendations

Examine applicability of operation sheets as process control tools.

C. Progress to Date

The task force recommendation is identical with the main objective of the technical manuals area for the last three years and significant progress has been made to date.

In 1974 a new ("page change") procedure was introduced to replace the ECN (Engineering Change Notice) method. As a result of this innovative change the current (6-30-77) ECN backlog is 14, whereas in 1974 there were consistently 300-500 on record.

D. Implementation Plan

The approach to implementing this recommendation is threefold.

- continue effort on the already successful "page-change" system mentioned above.
- Improve effectiveness of the present page-change system (short term).
- Identify areas for basic improvements in manual systems, including those which will facilitate revisions (long-term).

E. Product Index

In addition to the efforts on the technical manuals system we are currently evaluating the applicability of the "Operations Sheets" concept to the Advanced Devices Department requirements.

In order to carry out this evaluation it is planned that the use of operations sheets will be implemented for the MC-3095 bridgewire welding operations during the PPI phase of this program. The operation sheets will consist of the "fixed position-specific instruction" type which will contain the detailed weld schedule that is to be posted at the welding station and the "traveler type" which contains process instructions and has designated areas for operation and inspectors to initial and date when certain key operations are performed.

The major foreseeable problem relates to adapting the operation sheet concept to large lot sizes. This adaptation may require some experimentation.

Subject: Technical Manuals

Principle Responsibility - N. U. Breene

<u>What</u>	<u>Who</u>	<u>When</u>	<u>Remarks</u>
1. Complete current status report on operation of page-change system, with analysis of time required for each step.	N. U. Breene	7/22/77	Evaluate how present system is really working? How were we doing at the time of the Task Force recommendations? ("Current" will be 04/01/77.)
2. Institute priority printing/xeroxing of revised pages.	N. U. Breene/H. E. Sergent	7/01/77	Printing time is not a big part of the change sequence, but duplication can be accelerated.
3. Complete review of present page-change system (MD-10108) with responsible Advanced Devices personnel.	N. U. Breene/AD Managers	8/01/77	Insure that everyone knows how the system is supposed to work.

What	Who	When	Remarks
4. Revise MD-10108 to reflect evident changes in procedure and organization.	N. U. Breene	8/26/77	Some changes will be required because of the new organization. Distribution of revised manual to all who now need it is the ultimate objective.
5. Complete review of previously prepared action plan with appropriate Advanced Devices personnel.	N. U. Breene/C. W. Huntington/AD Managers	8/15/77	In August 1975 an MA action plan was developed to: <ul style="list-style-type: none"> 1. reduce related audit findings. 2. reduce change processing delay. 3. reduce related engineers time.
6. Complete report of progress in the period April through August.	N. U. Breene	9/01/77	Determine if average time required to publish changes has been reduced.

<u>What</u>	<u>Who</u>	<u>When</u>	<u>Remarks</u>
7. Complete new Managerial Analytics study, if need is indicated.	MA Specialists/N. U. Breene AD Personnel	11/1/77	A contingency step which may not be necessary. A complete redo of the first analysis probably would not be required.
8. Complete improvements/changes to the page-change system as required to support current production operations.	N. U. Breen/AD Personnel	1/01/78	This will involve changes in practice in operations area rather than in the manuals area.
9. Identify areas for basic improvements in manual system(s).	N. U. Breene/AD Personnel	3/01/78	This is a basic part of our long-range planning. Can formats be simplified/standardized? Can we simplify the language? What design elements can be changed to enhance usefulness?

Quality Program Plan

PROCESS PERFORMANCE DATA

R. D. Schaefer

July 1, 1977

QUALITY PROGRAM PLAN
PROCESS PERFORMANCE DATA

A. Objective

Provide the meaningful process performance data required to manage the complex multifaceted program.

B. Related Task Force Recommendations

1. Performance measures are required based on variables data and product standards (quality/cost/time).
2. Visible quality measurement system - on work group basis.
3. Review industrial engineering data to make a tie to process flow sheets.

C. Present System

A review of the current situation indicates that there are a variety of methods in use in the Advanced Devices Department for collecting process data on a daily, weekly and monthly basis to satisfy a variety of cost, quality, scheduling and ordering needs. Some satisfy operating needs and others ERDA requirements. It is necessary, therefore, to develop a system that will minimize and simplify the collection points and produce timely and meaningful operating data for operation feedback, management control and report preparation.

QUALITY PROGRAM PLAN

Subject: Process Performance Data

Principle Responsibility: R. D. Schaefer

<u>Item</u>	<u>Action</u>	<u>Who</u>	<u>When</u>	<u>Remarks</u>
1	Conduct Managerial Analytics Analysis to determine system musts and wants and develop recommended course of action.	H. Anderson/MA Specialist	starting 6/20/77- ongoing as required.	
2	Complete proposal and detailed action plan for implementation.	R. D. Schaefer	8/15/77	Visibility in work area is required for effectivity.

QUALITY PROGRAM PLAN

PRODUCT INDEX SYSTEM

R. A. Fischbein

July 1, 1977

QUALITY PROGRAM PLAN
PRODUCT INDEX SYSTEM

A. Objective

Increase the effectiveness of the product index system.

B. Related Task Force Finding

1. Simplify existing product index system.
2. Designate single point responsibility for product index.

C. Actions Taken to Date

1. H. F. Daniels has been assigned the responsibility for handling the mechanical aspects of the existing product index system.
2. The MRC Q.C. Audit group has been concentrating their efforts in this area in the recent past.

D. Comments

Recent audit findings, the Quality Task Force and interviews with operating personnel have reinforced the need for the product index system while at the same time expressing some concerns over the effectiveness of the system.

QUALITY PROGRAM PLAN

Subject: Product Index System

Principle Responsibility - R. A. Fischbein

<u>Item</u>	<u>Action</u>	<u>Who</u>	<u>When</u>	<u>Remarks</u>
1	Identification of areas of concern			
	● Review finding with quality task force members	R. A. Fischbein	6/17/77	
	● Solicit areas of concern from users.	R. A. Fischbein	7/15/77	
2	Develop alternatives for changes and training.	R. A. Fischbein	7/22/77	
3	Recommend courses of action to Advanced Devices Management	R. A. Fischbein	7/29/77	
4	Develop implementation plan.	R. A. Fischbein	8/26/77	

Quality Program Plan

PROMOTIONAL/MARKETING PROGRAM

H. I. Charbeneau

July 1, 1977

QUALITY PROGRAM PLAN
PROMOTIONAL/MARKETING PROGRAM

A. Objective

A visible quality approach to reinforce management and employe commitment to quality.

B. Related Task Force Findings

1. A visible promotional/marketing program for quality should be maintained on a continuing basis.
2. Top management recognition for quality performance.
3. Provide employe incentive and recognition program.

C. Comment

Budget constraints may delay implementation of this program.

QUALITY PROGRAM PLAN

Subject: Incentive and Communications

Principle Responsibility: H. I. Charbeneau

<u>Action</u>	<u>When</u>
Develop and implement poster campaign "Quality Just Doesn't Happen"	7/25/77
Produce Videotape for use in employe meetings.	7/31/77
Quality-Incentive/Recognition Program	
Structured	7/31/77
Approved and communicated to employes	8/31/77
Operational	9/30/77

QUALITY PROGRAM PLAN

QUALITY ENGINEERING STAFF

R. F. Ivory

July 1, 1977

QUALITY PROGRAM PLAN
QUALITY ENGINEERING STAFF

A. Objective

Evaluate the adequacy and/or competence of Quality Control engineering.

B. Related Task Force Findings

1. Assess requirements and reconstruct Quality Control staff composition.
2. Evaluate requirements of quality control staff.
3. Evaluate ASQC certification of Quality Control staff.
4. New Quality Control engineers be assigned to work under an apprentice system.
5. Upgrading staff skills.

QUALITY PROGRAM PLAN

Subject: Quality Engineering Staff

Principle Responsibility: R. F. Ivory

<u>Action</u>	<u>When</u>	<u>Comments</u>
1. Review and define role of Q.C. Engineering organization.	8/1/77	Relinquish and reassign duties not appropriate to Q.C. engineering.
2. Determine type and number of personnel needed to adequately staff function	8/15/77	Additional personnel dependent on budget constraints.
3. Prepare job descriptions and requirements for personnel needs.	11/15/77	
4. Evaluate capabilities of present Q.C. engineering staff and make appropriate recommendations.	11/15/77	Recommendations to be considered are: <ul style="list-style-type: none">● on-the-job training● formal courses● certification● revised work assignments● trial period● reassignment● job rotation

QUALITY PROGRAM PLAN

ULTIMATE USE EDUCATION

J. L. O'Connell

July 1, 1977

QUALITY PROGRAM PLAN
ULTIMATE USE EDUCATION

A. Objective

To provide to the employes information relative to the ultimate use of the products they are building and the importance of the quality of these products with regard to the end use.

B. Action Plan

This is an ongoing activity that will be carried out based on the availability of suitable material and classification restrictions.

QUALITY PROGRAM PLAN

MANAGEMENT REPORTING

A. Objective

To provide MRC management with a meaningful summary of the status of our quality program.

B. Action Plan

A quarterly report will be issued to level of management that will delineate MRC quality posture as well as problem and potential problem area requiring attention. Data from the ALO Quarterly quality appraisal report as well as the DAO monthly quality report will be issued as part of this communication as well as any other pertinent correspondence and/or information.