

QUALITY CONTROL IN A PLACE
OF REFRESHMENT INDUSTRY

by

Kyriakos Kokkinos

Project Report

Submitted to

the Department of Mechanical Engineering

of the Higher Technical Institute

Nicosia Cyprus

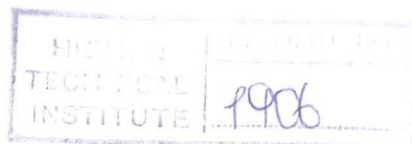
in partial fulfilment of the requirements
for the diploma of

TECHNICIAN ENGINEER

in

MECHANICAL ENGINEERING

June 1991



ACKNOWLEDGMENTS

I would like to thank my supervisor, Mr. D. Roushas, lecturer in Mechanical Engineering at H.T.I., for his assistance and guidance offered to me in writing this project.

I wish also to thank Mr. I.I. Angeli, laboratory assistant of 1st grade in H.T.I, for his helpful offered to me by providing me useful books and informations in quality control.

Quality Control in a place of refreshment industry

SUMMARY

The main purpose of this work was to select specific products and suggest methods of improvement of the existing quality control practices.

This could be achieved:

- (a) By carrying out sampling measurements in order to test the effectiveness of the suggested techniques with the aid of various chart.
- (b) by measuring the process capability of the process and
- (c) by carrying out an economic comparison between the existing and proposed quality control procedures and techniques.

The study is divided into four chapters:

Chapter 1: Here, relevant background theory on quality control is involved i.e (basic concepts, basic statistics, statistical tools, acceptance sampling theory and economics of quality).

Chapter 2: This chapter describes the production lines of the industry and the tests carried out. Thus, the existing quality control procedures and methods are investigated.

Chapter 3: This is the main body of the report because the selected specific products are analyzed.

Chapter 4: In this chapter an economic comparison between the existing and proposed quality control procedures and techniques is carried out.

CONTENTS

	<u>Pages</u>
Acknowledgements	3
Summary	4
Introduction	5
CHAPTER 1: THEORY ON QUALITY CONTROL	6
1.1 Basic concepts of quality control.	7-10
1.2 Basic statistics.	11-13
1.3 Statistical tools in quality control.	14-18
1.4 Acceptance sampling theory.	18-21
1.5 Economics of quality.	21-26
CHAPTER 2: INVESTIGATION OF THE QUALITY CONTROL PROCEDURES AND METHODS IN THE FACTORY OF " PEPSI-COLA"	27
2.1 Description of the line diagram for the glass bottles.	28-33
2.2 Description of the line diagram for the cans.	34-43
2.3 Description of the line diagram for the PET (plastic bottles).	44-47
2.4 Tests.	48-50
CHAPTER 3: SELECTION OF SPECIFIC PRODUCTS AND SUGGESTED METHODS OF IMPROVEMENT OF THE EXISTING QUALITY CONTROL PRACTICES.	51
3.1 Working principle of the mag-blastic.	52-54
3.2 Suggested quality control method.	55-61
3.3 Incoming inspection of new glass bottles.	62
3.4 Suggested quality method.	63-65
3.5 Definition of the double seam.	65-67
3.6 Double seamers or can closing machines.	68
3.7 Existing quality control practices.	68-71
3.8 Suggested technique.	71-81
CHAPTER 4: ECONOMIC COMPARISON BETWEEN THE EXISTING AND PROPOSED QUALITY CONTROL PROCEDURES.	82
References	85
Appendices	86