



DEPT. OF NUCLEAR TECHNOLOGY
CHULALONGKORN UNIVERSITY

Presentation - 1

“INTRODUCTION TO
QUALITY MANAGEMENT (QM) “

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Nov.. 1996



OBJECTIVES OF PRESENTATION

**This presentation will discuss
the following topics :**

- ◆ Historical backgroun of Quality**
- ◆ Role and contribution of the
“Pioneers”**
- ◆ Quality concepts**
- ◆ Quality Standards and Awards**



Modern Pioneers of
QUALITY MANAGEMENT

R. A. FISHER

W. A. SHEWHART

Y. ISHIDA

W. E. DEMING

J. M. JURAN

G. TAGUCHI

P. B. CROSBY

A. V. FEIGENBAUM



**QUALITY GURUS and
THEIR MESSAGE**

- DEMING**
- statistical process control
 - 14 point mngmt. program

- JURAN**
- Quality planning
 - Quality control
 - Quality improvement

- CROSBY**
- definition of Quality
 - prevention of defects
 - performance standard
 - measurement of Quality

FEIGENBAUM - T Q C

- Quality management
- customer satisfaction
- control of operations
- control of costs

DEMING'S 14 POINTS
FOR Q MANAGEMENT

- ◆ Create constancy of purpose
- ◆ Adopt the new philosophy
- ◆ Cease dependence on mass inspection
- ◆ Award business on quality and price
- ◆ Improve constantly, every process and service
- ◆ Institute training on the job
- ◆ Adopt and institute leadership
- ◆ Drive out fear
- ◆ Break down barriers between departments
- ◆ Eliminate slogans and targets for workers
- ◆ Eliminate numerical quotas for workers and management
- ◆ Eliminate the annual rating or merit system
- ◆ Institute education and self-improvement
- ◆ Put everybody to work to accomplish the transformation



BALDRIDGE AWARD CRITERIA

- ◆ **Leadership**
- ◆ **Information and analysis**
- ◆ **Strategic Quality planning**
- ◆ **Human resource development and management**
- ◆ **Management of process quality**
- ◆ **Quality and operational results**
- ◆ **Customer focus and satisfaction**



DEMING PRIZE CRITERIA

- ◆ **Company policy and planning**
- ◆ **Organization and its management**
- ◆ **QC education and its dissemination**
- ◆ **Collection, transmission and utilization of information on quality**
- ◆ **Analysis**
- ◆ **Standardization**
- ◆ **Control**
- ◆ **Quality Assurance**
- ◆ **Effects**
- ◆ **Future plans**



EUROPEAN QUALITY AWARD CRITERIA

- ◆ **Leadership**
- ◆ **Policy and strategy**
- ◆ **People management**
- ◆ **Resources**
- ◆ **Processes**
- ◆ **Customer satisfaction**
- ◆ **People satisfaction**
- ◆ **Impact on society**
- ◆ **Business results**



CRITERIA :

CANADA AWARD FOR EXCELLENCE

- ◆ **Leadership**
- ◆ **Customer focus**
- ◆ **Planning for improvement**
- ◆ **People focus**
- ◆ **Process optimization**
- ◆ **Supplier focus**



ISO QUALITY STANDARDS

(International Standards Organization)

ISO 9000 - selection and use of QM and QA s tds.

ISO 9001- QA system for Design and Development

ISO 9002 - QA system for Production and Installation

ISO 9003 - QA system for final Inspection and Testing

ISO 9004 - Quality Management and Quality System elements

Guidelines for application of Standards :

e.g. ISO 9000-2 generic Guidelines for Application

- **ISO 9000-3 Guidelines for Software**
- **ISO 9004-2 Guidelines for Services**
- **and many others**

IAEA NUCLEAR SAFETY STANDARDS
(NUSS PROGRAM)

- ◆ **Governmental organization** : - Code 50-C-G
- Safety guides 50- SG- G1 to G9
- ◆ **Siting** : - Code 50-C-S
- Safety Guides 50- SG- S1 to S11B
- ◆ **Design** : - Code 50-C-D
- Safety Guides 50-SG-D1 to D 15
- ◆ **Operation** : - Code 50-C-O
- Safety Guides 50-SG-O1 to O12
- ◆ **Quality Assurance** : - Code 50- C-QA
- Safety Guides 50-SG-QA1 to QA11

Safety Practices pertaining to each of the
above topics 50 -P - 1 to



KEY STRATEGIES for SUCCESS

- ◆ Customer focus
- ◆ Upper managers involved
- ◆ Strategic Quality planning
- ◆ The concept of “BIG Q”
- ◆ Quality improvement
- ◆ Business process management
- ◆ Training in managing for Quality
- ◆ Measurement of Quality
- ◆ Bench marking
- ◆ Human resources and empowerment
- ◆ Motivation - recognition and reward

CONCEPT of
" BIG Q " and " LITTLE Q "

◆ <u>PRODUCTS :</u>	all	manuf. only
◆ <u>PROCESSES :</u>	all	manuf. only
◆ <u>INDUSTRIES :</u>	all	manuf. only
◆ <u>QUALITY :</u>	business problem	technical problem
◆ <u>CUSTOMER :</u>	all, internal, external	external only
◆ <u>QUALITY GOALS :</u>	included in bus. plan	factory only
◆ <u>TRAINING IN QUALITY :</u>	company wide	QA Dept. only



TOOLS of QUALITY

◆ Systematic Collection of Information

◆ Analysis

Statistical Process Control

Root Cause Analysis

- **Fault Tree analysis**
- **Cause and Effect Diagram**
- **Change Analysis**
- **Human Performance Evaluation**

Pareto diagram

Histograms

Cost of non-Quality

GENERATING INFORMATION

INFORMATION

NEEDS



ANSWERS

QUESTIONS

DATA

COMMUNICATION

ANALYSIS

