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CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

TRIP REPORT

SUBJECT: Attendance at the Southern Methodist University Deming Approach Seminar

DATE and PLACE: August 9-10, 1990 Houston, Texas

AUTHOR: Bruce Mabrito

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TRIP REPORT

SUBJECT: Southern Methodist University
Deming Approach Seminar

DATE and PLACE: August 9-10, 1990
Houston, Texas

AUTHOR: Bruce Mabrito

PERSONS PRESENT: From CNWRA - B. Mabrito. A complete list of attendees and an agenda is attached.

BACKGROUND/PURPOSE OF TRIP:

"Developing Analytical and Technical Capabilities" is one of the Center Operations project phases and it allows professional staff to keep current on developments in their field or learn about new techniques or methods in their discipline. The purpose of this trip was to learn first-hand about the Deming Philosophy and approach to quality improvement and productivity.

SUMMARY OF PERTINENT POINTS:

- 1) This two-day course was sponsored by Southern Methodist Institute and presented by the Quality Alert Institute, Inc. who supplied the trainer, Dr. Alan J. Oppenheim. Dr. Oppenheim is a professor at a New Jersey university in the area of statistics and he is as much of a disciple as anyone of the Deming philosophy. He was taught by W. Edwards Deming (who is now 90 years of age and, according to Dr. Oppenheim, "has slowed down some but still has a vigorous daily schedule") and strongly believes in the Deming principles.
- 2) As a prelude to the Deming philosophy to quality and productivity, the various definitions of "quality" were presented: a) conformance to established requirements; b) fitness for use; c) never ending improvement of product and service; d) quality is surpassing customer expectations and constant performance. Although other definitions of quality can be presented, it would appear that definition "a" and "c" would best describe the Center's performance goals.

SUMMARY OF ACTIVITIES:

The two-day seminar covered the personal history and career of W. Edwards Deming, along with other "quality gurus," including J. M. Juran, Ishikawa, Phil Crosby, and Genichi Taguchi. The historical perspective on Deming included what "Deming's philosophy is not" and what his philosophy is, specifically, "an integrated, holistic approach for management." Throughout the seminar it was stressed that the Deming approach is much more of a philosophy than that of a program.

In addition to showing the Deming philosophy integrated with other quality steps in an organization, the "seven deadly diseases" were identified, as were the basic Deming 14 management principles. For the purposes of this report, key pages from the seminar manual will be reproduced and attached.

IMPRESSIONS/CONCLUSIONS:

There is in the United States today considerable verbiage regarding "quality." Often it appears that anyone who can write a good story line and relate it to a message of how to better achieve a stated quality level, will indeed write a book to sell. Deming, at 90 years of age and with international credentials, is beyond that and his true students are almost fanatical in their management teachings. To emphasize careful and steady introduction of the Deming methods, the instructor stated that to "change overnight" to Deming's methods would mean almost certain failure and bankruptcy. It was mentioned that adoption of the Deming philosophy might mean a decade of work to have the entire organization working toward the continuous improvement goal.

The value of this seminar was to ascertain exactly where the Deming philosophy "fits" in the overall approach to quality and quality products, and if it is possible to factor "total quality management" into the organization.

PROBLEMS ENCOUNTERED: None.

PENDING ACTIONS: None.

RECOMMENDATIONS:

The Center should move toward a Total Quality Management "approach" in its management policy.

REFERENCES: Attachments.

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HOW TO IMPLEMENT THE DEMING APPROACH

JW Marriott
Houston

August 9-10, 1990

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Who is W. Edward Deming?

- o Internationally renowned consultant.
- o Largely responsible for the revolution in Japanese quality and productivity.
- o Deming Prize
- o Second Order Medal of the Sacred Treasure

What Is Quality?

- o Conformance To Established Requirements
- o Fitness For Use
- o Never Ending Improvement Of Product And Service
- o Quality Is Surpassing Customer Expectations And Constant Performance.

J.M. Juran's

Quality Trilogy

- o Planning
- o Control
- o Improvement

Crosby's 14-Step Quality Improvement Program

- Management commitment. Help management recognize that it must be personally committed to participating in a quality improvement program.
- Quality improvement team. Bring together representatives of each department to form such a team.
- Quality measurement. Determine the status of quality throughout the company.
- Cost of quality evaluation. Establish the cost of quality to indicate where corrective action will be profitable for a company.
- Quality awareness. Share with employees the measurements of what nonquality is costing through training and communication material.
- Corrective action. Bring problems to light for all to see and resolve them on a regular basis.
- Establish an ad hoc committee for the zero defects program. After a year has gone by, a Zero Defects Day will reaffirm management's commitment to the words "zero defects" and the thought that everyone should do things right the first time.

- Supervisor training. A formal orientation of the zero defects program with all levels of management should be conducted prior to its implementation.
- Zero Defects Day. Zero defects as the performance standard of the company is established in one day to provide emphasis and long lasting impression.
- Goal setting. Regular meetings between supervisors and employees help people learn to think in terms of meeting goals and accomplishing specific tasks as a team.
- Removal of error causes. Individuals are asked to describe any problems that keep them from performing error free work. The appropriate functional group will develop an answer to those problems.
- Recognition. Award programs are established to recognize those who meet their goals or perform outstanding acts. Awards should not be financial; recognition is what is important.
- Quality councils. Quality professionals and team chairpersons should meet regularly to communicate and determine actions to upgrade and improve the quality improvement program.
- Do it again. Set up a new team of representatives and begin again to overcome the turnover and changing situations that can occur in the year to 18 months to implement the typical quality improvement program.

From **Quality is Free** by Philip B. Crosby (1979, McGraw-Hill Book Company, New York, N.Y.).

ISHIKAWA

* PROCESS ANALYSIS

* CLASSICAL ANALYSIS

* STATISTICAL APPLICATIONS

Genichi Taguchi

- An important dimension of the quality of a manufactured product is the total loss generated by that producer to society.
- In a competitive environment, continuous quality improvement and cost reduction are necessary for staying in business.
- A continuous quality improvement includes continuous reduction in the variation of product performance characteristics about their target values.
- The customer's loss due to a product's performance variation is often approximately proportional to the square of the deviation of the performance characteristics from its target value.
- The final quality and cost of a manufactured product are determined to a large extent by the engineering designs of the product and its manufacturing process.
- Performance variation can be reduced by exploiting the nonlinear effects of the product or process parameters on the performance characteristics.
- Statistically planned experiments can be used to identify the settings of product and process parameters that reduce performance variation.

W. EDWARDS DEMING

HISTORICAL PERSPECTIVE

- * Helped Develop Statistical Control Methods At Bell Laboratories

- * Invited To Japan To Help With Post World War II Industrial Recovery

- * NBC White Paper - "If Japan Can... Why Can't We?"

- * Consultant & Lecturer To American Industry

DR. DEMING'S PHILOSOPHY IS NOT

- * Productivity Assessment
- * Analytical Problem-Solving
- * Management By Objectives (MBO)
- * Employee Suggestion Program
- * Statistical Applications
- * Zero Defect Program
- * Quality Circles
- * Cost Of Quality Program

THE DEMING PHILOSOPHY

An Integrated - Holistic Approach For Management

- * Forces A "Gestalt" Approach To The Management Of The Corporation

- * Provides Direction For Consistent Planning And Decision-Making

- * Encourages Quality To Be The Driving Force Of The Corporation

THE DEMING PHILOSOPHY

"Leads to Competitive Advantage"

- o INCREASED QUALITY
- o SCRAP REDUCTION
- o LESS REWORK
- o GREATER PRODUCTIVITY
- o LOWER COST
- o PRICE FLEXIBILITY

DEMING IMPLEMENTATION

PHILOSOPHY,

NOT A

PROGRAM

THE DEMING PHILOSOPHY IMPLEMENTATION SYSTEM

Step 1: Activate Organizational Awareness

Step 2: Environmental Transformation

Step 3: Macro/Micro Process Definition

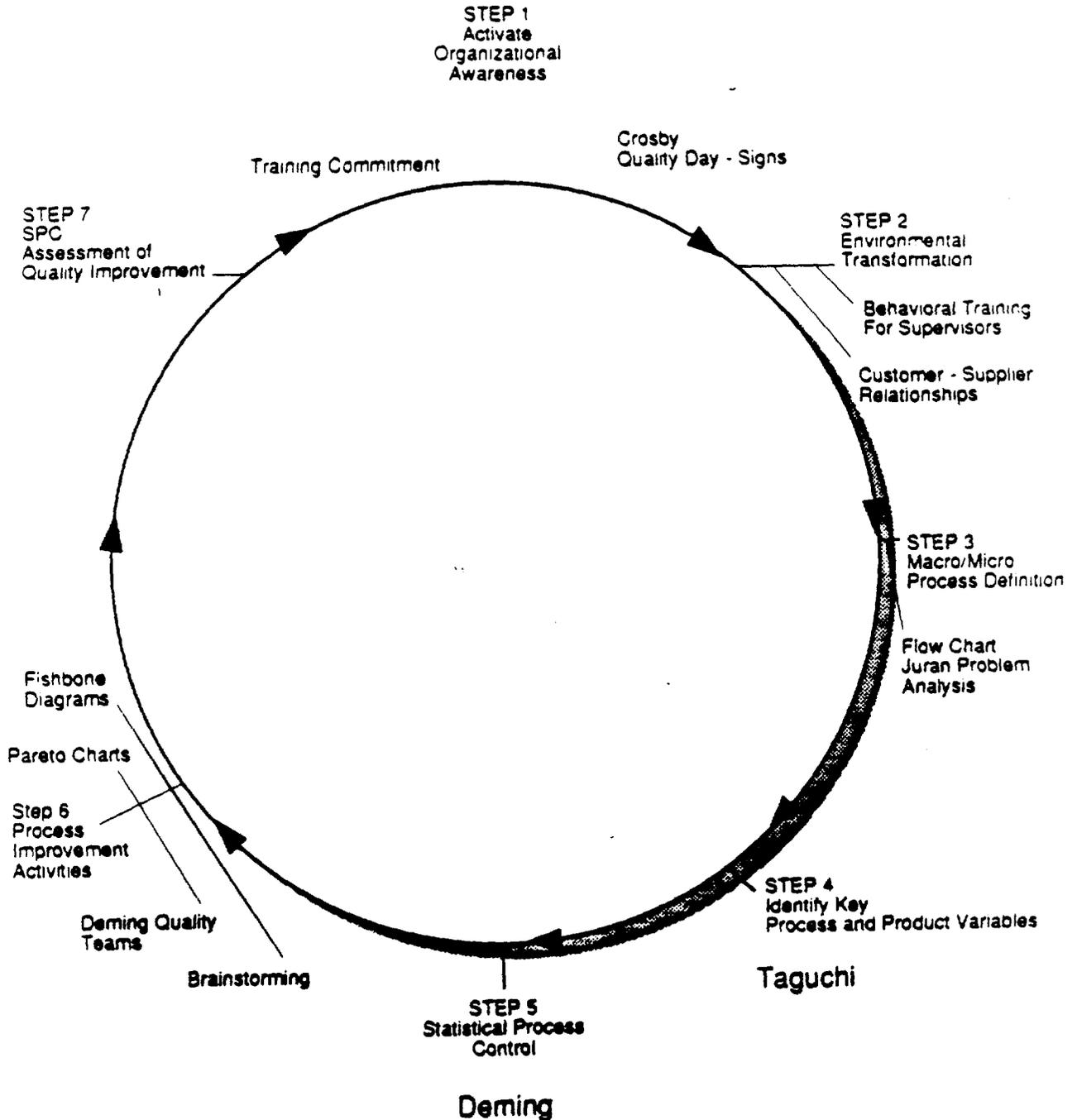
Step 4: Identify Key Process And Product Variables

Step 5: Statistical Process Control

Step 6: Process Improvement Activities

Step 7: SPC Assessment Of Quality Improvement

THE DEMING PHILOSOPHY A FRAMEWORK FOR INTERGRATING THE TOOLS, TECHNIQUES AND PRINCIPLES OF TQM



PROVEN BENEFITS OF THE DEMING PHILOSOPHY

- o **Realistic specifications**
- o **Proper standards**
- o **Accurate predictions for forecasts and estimates**
- o **Reliable measure of operator and machine capability**
- o **Production of quality products consistently**
- o **Elimination of design problems**
- o **Solutions to complex process problems**
- o **Reductions of scrap and/or rework**
- o **Time saving**
- o **Lower manufacturing costs**
- o **Accurate planning**
- o **Less inspection**
- o **Increased productivity**
- o **Increased profits**

W. EDWARDS DEMING

SEVEN DEADLY DISEASES

- OBSTACLES INHIBITING HIGH QUALITY AND PRODUCTIVITY

- ANY DISEASE WITHIN AN ORGANIZATION CAN BE CRIPPLING

1. LACK OF CONSTANCY OF PURPOSE

- o NO CLEAR SENSE OF DIRECTION, NO UNIFORM APPROACH TO GETTING THERE

- o BREEDS PAROCHIALISM

- o CREATES CONFUSION IN PRIORITIZING WORK

2. EMPHASIS ON SHORT-TERM PROFITS (GOALS)

o SHORT-TERM DECISIONS ARE HARMFUL TO THE LONG-TERM HEALTH OF AN ORGANIZATION:

- STRIVING FOR ANNUAL GOALS

- POSTPONING TRAINING TO PUT OUT FIRES

- CORRECTING ERRORS INSTEAD OF IMPROVING THE PROCESS

3. EVALUATION OF PERFORMANCE, MERIT RATING,
OR ANNUAL REVIEW
 - o NOURISHES SHORT-TERM PERFORMANCE
 - o DEMOLISHES TEAMWORK
 - o DEMOTIVATES EMPLOYEES
 - o EVALUATES WRONG FACTORS, REWARDS
WRONG BEHAVIORS

4. MOBILITY OF MANAGEMENT

- CHANGES OF MANAGEMENT PHILOSOPHY
EVOKES INSTABILITY

- INCONSISTENT MANAGEMENT

- MORE TIME IS SPENT LEARNING A JOB THAN
PERFORMING IT

5. RUNNING A COMPANY ON VISIBLE FIGURES ALONE (COUNTING THE MONEY)

o DECISIONS MADE NOT KNOWING THE UNKNOWN OR UNKNOWABLE:

- DISSATISFIED CUSTOMERS

- FRUSTRATED WORKERS

- INTERDEPARTMENTAL RIVALRIES

6. EXCESSIVE MEDICAL COSTS

7. EXCESSIVE COST OF LIABILITY

o WARRANTY COST

o LEGAL FEES