

## Southeastern Region

# Westinghouse Electric Corporation, London, KY Plant: Employee Involvement for Total Customer Satisfaction

*Teamwork and Total Quality make the difference.*

S.S. Cherukuri

Challenged by the perceived lack of competitive position in domestic and foreign markets, "only-satisfactory" employee morale, and long product development and manufacturing cycles, management at the Westinghouse London, KY plant realized that radical change was needed in the ways people, products, and processes were managed. Also prompted by the Westinghouse Total Quality mandate and the Electrical Components Division's commitment to TQC, JIT, and employee involvement (EI), they began a drive for better customer satisfaction and continuous cycle time improvement in 1988. Plant Manager Jim Kotala and fellow employees at London began to "unleash employee power" at the plant. Their motto: "Respect your people. Involve them. Listen to them. Give them credit. And let them enjoy themselves." This article describes selected improvement activities shared by London employees during a recent AME workshop.

## **EI and Continuous Improvement**

Adopting a Total Quality/JIT philosophy, Kotala and fellow managers launched a series of EI and continuous improvement activities that resulted in better cycle time, on-time delivery, inventory, and other performance measures (see Figure 1). They also sought a higher market share for the automatic transfer switch (ATS) product line.

Management solicited employees' suggestions for performance improvements through several means: formal and informal meetings, surveys, and continuous cycle time reviews (strengths, areas for improvement, and recommendations are noted by a team of five

## **London, KY Plant Key Results 1988-1991**

- Inventory decreased 45 percent
- Salaried employee reduction 26.5 percent
- Hourly employee reduction 11.8 percent
- Total employee reduction 16.7 percent
- Sales/employee increased 22.9 percent
- AER (average earned rate) increased 14.7 percent
- On-time delivery rose 29.3 percent to 97 percent
- Cycle time (order receipt to order shipment) decreased 83.3 percent to one week.

### **Figure 1.**

or six managers experienced in cycle time improvement and total quality). "WOW" awards (blue and white buttons given by supervisors for outstanding work) and other employee performance tributes became a way of life.

Multi-functional quality improvement teams strive to solve day-to-day problems by involving experts directly working with the process, making corrective action decisions at the lowest possible level. Each team has a "sponsor" who selects five to seven members from management, engineering, professional and non-exempt, or hourly ranks as needed. Among the quality improvement teams here: ISO 9002 (24 teams), scrap steel, performance evaluation, shop layouts, and telephone usage. Participation in at least one such team is a requirement to qualify for the premium portion of the variable compensation plan.

Additional initiatives designed to increase employee involvement included:

- Daily employee meetings; department managers reviewed daily activities, project status, and future events; employee

## **Training: A Strong Commitment**

All London employees receive training (on company time, informal and off-site/formal) each year as follows:

**Staff managers:** three weeks per person.

**Supervisors:** five weeks per person.

**Hourly:** two weeks per person (on-the-job and formal).

Operators also participated in the ISO 9002 certification process during 1992, learning the document preparation process, data analysis, and project implementation concepts. Any employee with relevant expertise teaches courses in basic electricity, Total Quality, problem-solving, product knowledge, etc. Video courses on JIT concepts, etc. are conducted regularly for new employees, and refresher courses are offered annually.

### **Figure 2.**

question-and-answer sessions were encouraged.

- Extensive employee training (see Figure 2)
- An employee newsletter, the *London Times*

- Cookouts and luncheons; organized by and for employees when they met or surpassed plant objectives
- Customer service and quality performance of the month; every London employee is encouraged to accept responsibility for total customer satisfaction.
- Rotational assignments for employee growth and flexibility, as recommended by supervisors
- Operator involvement in the drive for ISO 9002 certification
- Operator involvement with customers; employees visit customers plants and host customers for plant tours
- Product line management concept; three permanent teams, one for each of the plant's major product lines, include dedicated managers, professionals, and hourly workers; engineers moved from the office to plant work areas.

### **Total Quality Initiative**

Westinghouse's corporate Total Quality philosophy is a strategic initiative to improve value, reduce cost, and increase market share. It is a commitment that never ends, according to Kotala, noting the company's 12 "conditions of excellence for Total Quality" (see Figure 3).

### **Rules to Work By; Don't Forget to Have Fun**

A set of "rules" helps London employees translate overall quality objectives into day-to-day improvements:

1. Keep it simple.
2. Keep it visible (material, etc.).
3. Measure it.
4. If it needs to be done, do it now.
5. Share *all* information; communicate.
6. If it doesn't work, fix it.
7. Rule of halves (reduce the investment of time, money, etc. in a process and reduce it by half; when it is achieved, reset the objective again; for example, cutting product delivery time from one month to two weeks, then later working toward a shorter cycle)
8. Make "time" a part of objectives.

### **Westinghouse Electric Corporation's Conditions of Excellence for Total Quality**

#### **1. Customer Orientation**

Satisfying internal and external customers through meeting their requirements and value expectations is the primary task of every employee.

#### **2. Participation**

All employees participate in establishing and achieving Total Quality improvement goals.

#### **3. Development**

People are recognized as key strategic resources. Development opportunities are provided to assure that each employee understands, supports, and contributes to achieving Total Quality.

#### **4. Motivation**

Employees are motivated to achieve Total Quality through trust, respect, and recognition.

#### **5. Products and Services**

Products and services are appropriately innovative and are reviewed, verified, produced, and controlled to meet customer requirements.

#### **6. Processes and Procedures**

Processes and procedures used to create and deliver products and services are developed as an integrated, verified, and statistically controlled system using appropriate technology and tools.

#### **7. Information**

Required information is clear, complete, accurate, timely, useful, accessible, and integrated with products, services, processes, and procedures.

#### **8. Suppliers**

Suppliers are considered partners that are selected, measured, controlled, and recognized based on their potential and actual value contributions to meeting requirements for Total Quality.

#### **9. Culture**

Management has established a value system in which individual and group actions reflect a "Total Quality First" and appropriately innovative attitude and direction to meet established world-class requirements.

#### **10. Planning**

Strategic business and financial planning recognizes Total Quality as a primary business objective.

#### **11. Communications**

Verbal and non-verbal communications are two-way, clear, consistent, and forceful.

#### **12. Accountability**

### **Figure 3.**

9. Involve everyone.
10. Reward good performance.
11. If someone needs help, help.
12. Smile; have fun.

### **Storeroom, MRP System Are Goners**

Within the past four years, London employees radically changed their processes and ways they work together. What you won't see if you visit the plant, thanks to their improvement activities, are: a storeroom, an MRP system for material planning, material-only stock balances, material expeditors or

handlers, setup employees, many computer reports, forced-pace production, much WIP or material handling equipment, inspectors, hazardous waste, a materials or production control department, or a customer service department. Nowadays, according to Kotala, visitors will notice a clean work environment, pull manufacturing, employee teamwork, and a total quality culture.

### **ISO 9002**

London employees' focus on "do the right thing right the first time" complements

its ISO 9002 certification activities. ISO 9002 standards are designed to ensure that a system is in place for consistent quality. Companies must meet ISO 9000 requirements to compete in certain European markets. Twenty-four ISO quality and problem-solving teams were formed after certification objectives were developed in 1991. These teams tackled projects such as developing procedures for building sub-assemblies, vendor control procedures, etc. All plant employees were involved in the ISO teams at one time or another, according to Bob Berry, human resources manager. Operator involvement in certification standards review, the audit process, and related improvement activities contributed to the plant's successful certification drive (certification was achieved in March 1992).

Using a "web chart" to map their progress, each ISO team progressed through various corrective actions until they were ready for a pre-certification review, and later, final review. Monthly and semi-annual progress audits ensure that operations continue to meet certification requirements. Training on company time is provided as needed, upon supervisors' recommendations.

Lessons learned about ISO certification during the past two years include: Write procedures as simply as possible; train employees about what to expect during the audit process; define minimum job skills for all job descriptions; document all process revision history; follow written procedures; and adapt existing practices to match standards. The benefits of ISO certification activities, according to Kotala, are improved plant-wide operations, increased EI, and improved customer satisfaction (measured through external customer surveys and internal cycle time reviews).

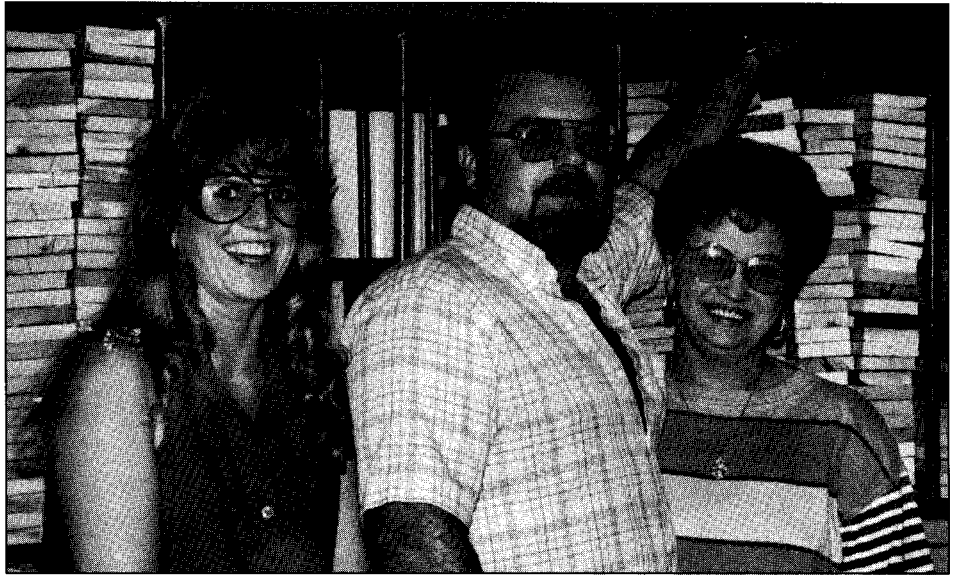
### **Variable Compensation Plan**

Recognition for employees' efforts is offered through a variable compensation plan unique to this plant. Employees' pay includes a fixed portion and a variable portion. If plant performance meets its targets, then all London employees receive a "premium;" a higher premium is given when performance exceeds targets. With this variable portion, employees can double their annual pay increases. Product quality measures include customer returns,

### **About the London, KY plant of the Electrical Components Division (ECD) of Westinghouse Electric Corporation**

Westinghouse Electric Corporation's London, KY operation, part of the Electrical Components Division (ECD), supplies a wide range of automatic transfer switches and molded case circuit breaker enclosures for industrial applications. Approximately 85 people work in this non-unionized plant.

The London plant received ISO 9002 accreditation in 1992. The plant was instrumental in helping the division receive the George Westinghouse Total Quality Award (GWTQA) in 1989. This award is given to those applicants who clearly demonstrate Total Quality performance. The Electrical Components Division was the winner of the "Most Improved" category of GWTQA. In addition, this division was a finalist in the 1991 GWTQA "Best" category.



**Figure 4.** London facility Wood Team members (left to right) Sandy Lawson, shipping department, Eddie Wyatt, SPB tester, and Mary Baker, shipping department, negotiated with suppliers to stock wood in pre-cut lengths at the same price as the previously-used uncut wood. As a result of the reduction in time spent cutting wood, a two-person activity became a one-person job, and Sandy Lawson later moved from shipping to a job in customer service.

premium freight costs, warranty costs, first-time yield within production, scrap, etc. Employees received premiums one year because they exceeded operating cost reduction goals by cutting utility costs and other means.

### **Kanban System Continues**

The London plant implemented its Kanban system in 1988, later hitching suppliers to this material control approach. The plant uses about 8000 Kanban cards. Before Kanban was used, the plant had a store room with about 5000 ledger items requiring computer transactions. Under the "old way," there were seven storeroom attendants, two production planners, and two material controllers. Inventory investment totaled nearly \$3 million; few blanket orders were issued, and on-time performance

approached 71 percent.

Using the new Kanban setup, London employees maintain inventory at the point of use. Computerized ledger and reorder reports disappeared, along with the need for storeroom attendants, production planners, and material handlers. There are three material controllers, one for each product line. A one-month inventory supply is maintained; this level continues to decrease. Blanket orders and vendor replenishment programs reduced expediting requirements.

Kanban (JIT) measures tracked regularly include fill rate to kanban signals, on-time delivery, cycle times, first-time yield, fill rate for stock products, output (shipments/month), daily and monthly load, etc. Plant employees

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also track performance against housekeeping standards (tables cleared except for work in progress, work station tote pans adequately filled with necessary hardware items and labeled, etc.).

### **Additional Improvement Activities**

Among the added improvement initiatives at the London plant:

- Concurrent engineering: Teamwork between design and production employees resulted in faster development of improved automatic switches, wiring, packaging, etc.
- Book review program: Salaried employees read books they have selected (purchased by

the company), then meet once a week for an hour or more discussion of good ideas. Examples of selected books for various employees include *Thriving On Chaos* and *The Machine That Changed the World* for staff, *Quality By Design*, *Feel The Fear and Do It Anyway* for professionals and non-exempt, and *Greatest Management Principle* and *Why This Horse Won't Drink* for supervisors. The program is voluntary for hourly employees only.

- Measurements: Believing in measurements as a key to change, management emphasizes the need for clearly-understood

performance yardsticks. Whether it's cycle time reduction, cross-training, or layout improvement etc., they contend that "what gets measured gets done."

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