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Service Quality

Lal Bahadur Shastri National Academy of Administration, Mussoorie

Introduction (LBSNAA)

The Lal Bahadur Shastri National Academy of Administration, Mussoorie, India, is the apex training institution in the country for the members of the senior civil services. It imparts training to members of all the category I civil services in a common Foundation Course and professional training to regular recruits of the Indian Administrative Service (IAS). The Academy also conducts in-service training programmes for middle to senior level members of the IAS and induction level training to officers promoted to the IAS from the state civil services. In addition, it offers a range of specialized programmes for a diverse clientele, which includes individuals, non-government organizations, the corporate sector, and governments both within India and abroad.

Total Quality Management Cell

Created through a project sponsored by the Government of India, this Cell partners with some of the leading quality institutions like the Confederation of Indian Industry to enable administrators to introduce TQM in their organisations. It also facilitates implementation of TQM in the Academy.

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tqmcell@lbsnaa.ernet.in, shkhan@lbsnaa.ernet.in
Website : www.lbsnaa.ernet.in

Information for Contributors

About the Journal

Service Quality is a half yearly journal focusing on best practices and quality innovations in various government departments as well as the private sector. It receives articles from ministries, departments, public sector organizations, civil society organizations and the private sector. Contributors are requested to send quality related experiences to shkhan@lbsnaa.ernet.in or tqmcell@lbsnaa.ernet.in in the following format :

- ***The Context*** *: Brief details of the institution and its activities*
- ***Opportunity/problem*** *: Pre-initiative status of the area/domain in which quality initiative was undertaken; reason(s) for taking the decision to start a quality initiative; persons involved in the decision-making process etc.*
- ***Aim, Goal(s) and Objective(s)*** *: What was the initiative all about? What did it set out to achieve?*
- ***Setting the Scene*** *: Pre-initiative activities, e.g. engaging a consultant, training of personnel, constitution of quality teams/task forces, deciding quality/success measures and instruments etc.*
- ***The Experience*** *: How did the institution go about it? What did it actually do?*
- ***Outcome and Impact*** *: What was the result? How did it affect/improve the area of activity chosen for improvement?*
- ***Lessons Learnt*** *: Do's and don'ts. Conceptualisation of good practices and pitfalls to be avoided.*
- ***Future Plans*** *: How are the lessons learnt going to be taken care of in the future?*

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Implementation of `Total Quality Management` and `Quality Management System` at `Visakhapatnam Steel Plant`

K.U. Gupta and Syed Ali Hussain

BRIEF DETAILS OF THE COMPANY AND ITS ACTIVITIES

Some 26 km south of Visakhapatnam, Andhra Pradesh is Visakhapatnam Steel Plant (VSP), a public sector unit (PSU). The foundation stone was laid by the then prime minister on 20th January, 1971 and the plant was dedicated to the nation on 1st August 1992 by the then prime minister.

VSP is the first shore based integrated steel plant in the country. The plant produces steel through the CO-BF-BOF route.

The steel plant incorporates unique technological features: Adopting 100% continuous casting, production of TMT rebars by tempcore process, LD gas recovery system, extensive waste heat recovery systems & comprehensive pollution control measures.

VSP takes all necessary actions for the fulfillment of regulatory requirements. Energy conservation, environmental preservation, safety in workplace and occupational health gets highest priority in the company. It follows strict financial discipline.

The company has several captive mines such as at Jaggayapeta; Dolomite mine at Madharam and a Manganese mine at Cheepurupalli as well as a mining lease for sand in the Champavathi river.

The steel plant meets its iron ore requirements from Bailadilla mines of National Mineral Development Corporation, coking coal requirements through imports and coal washeries of Coal India Limited, SMS grade limestone through imports, quartzite requirements through purchase and boiler coal from the coal mines of Mahanadi Coal Limited.

The main facilities of the plant are as below.

S.No.	Department	Capacity (Mt-Million tones.)
1	Coke oven	2.261 Mt of blast furnace coke
2	Sinter Plant	5.256 Mt gross sinter
3	Blast Furnace	3.4 Mt hot metal
4	Steel melting shop	3.0 Mt liquid steel 2.82 Mt cast bloom
5	Light and medium merchant mill	1.857 Mt billets 0.710 Mt bar products
6	Wire rod mill	0.850 Mt wire rods
7	Medium merchant & structural mill	0.850 Mt medium structural products

VSP employs 16,401 people as on 31st March 2007.

The product profile of the plant comprises of wire rods, rounds, reinforcement bars (rebars), angles, channels, beams, squares, billets and blooms, as well as basic grade pig iron, granulated slag, coal chemicals, its products and other by-products. Power is exported to AP Transco from its power plant.

PRE-INITIATIVE STATUS

The commercial operation of the plant started in 1990-92. During 1992-94, major units were in the process of stabilization and the production levels were < 50% of the rated capacity. The company was incurring net losses due to:

- Design and maintenance related problems, specific to equipment stabilization.
- The work force was young and fresh from colleges with little job knowledge.
- Lack of effective systems in operation, maintenance, routine administration etc.
- As the accumulated losses exceeded the threshold of 50% of paid up capital, the matter was reported to Bureau of Industrial and Financial Restructuring (B.I.F.R).

AIMS, GOALS AND OBJECTIVES

Under these adverse circumstances, the top management set many goals and objectives, with the ultimate aim of achieving net profits through customer satisfaction. The following major objectives were communicated to all levels:

- Improving technological discipline
- Improving employee's competence and morale
- Improving the production and productivity
- Improving the techno economic parameters
- Enhancing quality and yield
- Improving customer satisfaction
- Reducing the specific consumption of utilities and raw materials
- Minimizing the waste by utilizing techniques like recycling, reclamation, resource conservation

To achieve these objectives and goals, strategic plans were formulated. Mechanisms for implementation, monitoring and review were developed. Top management decided to adopt the following strategic measures:

a) Develop and implement management systems in the areas of quality, environment, maintenance etc.
b) Exercise continuous monitoring and control on each activity and process
c) Enhance the skill and will of the employees by proper training
d) Bring positive behavioral change in the work force

ACTION PLANS/TOOLS

- Implementation of quality management system. In view of the vastness of the organization, top management had decided to implement QMS in a phased manner (Ref: Annexure-1)
- Introducing the TQM initiatives in the company
- Introducing employee involvement schemes like QCs, suggestion schemes

- Implementing reliability centered maintenance practices
- Adopting multi skill and multi trade concepts
- Implementation of 5S, Value engineering etc.

SETTING THE SCENE & EXPERIENCE

a) VSP used in-house executives only for developing systems like QMS, EMS & OHSMS and for formulating procedures.
b) All employees up to the level of technicians were imparted QMS awareness training.
c) Nearly 300 executives were selected & trained as Internal auditor / coordinator with external, expert faculty from M/s. Bureau Veritas Quality International.
d) All executives were trained in TQM concepts by organizational dynamics Inc. Singapore (consultant). Quality action teams concept, internal customer, supplier, MOUs systems were introduced. Selected executives were trained (200 nos) in these concepts by consultant.
e) Quality Improvement Projects were taken up to upgrade the processes, activities and methods.
f) Services of British Steel experts were utilized for training selected executives, who developed Standard Operating Practices, Standard Maintenance Practices.
g) Key executives were trained within India & abroad by the original process equipment manufacturers.

Quality management system as per ISO 9001 was developed and implemented. Some of the activities carried out in QMS are:

- Apex manual and procedures for all key processes, were documented, in line with ISO 9001. Formats for all the records were developed and standardized.
- For all the detected process / product non-conformities corrective actions were taken. For potential non-conformities preventive actions were taken.
- Customer satisfaction surveys, customer meets were introduced. Customer complaint settlement system was developed and implemented.
- All measuring and monitoring devices which directly affect process / product quality were identified. Mechanisms for calibrating these devices at predetermined intervals were developed and implemented.
- Criteria for selection and evaluation of suppliers were developed and followed.
- Suppliers / contractors performance evaluation system was developed and implemented.
- Use of statistical process control techniques was introduced.
- Internal audits, were conducted at predetermined intervals for monitoring the effectiveness of QMS.
- Top management reviewed the quality management system at planned intervals to ensure its continuing suitability, adequacy and effectiveness. These reviews included opportunities for improvement and need for changes.
- As part of mandatory requirements, the total QMS was subjected to half yearly audits by Certification agency viz BVQI.

OUTCOME & IMPACT

QMS certification for the 1st phase was obtained in 1994. From then onwards, there was continuous improvement in performance of all the functional areas. Some of the benefits derived are listed below :

a) Continuous improvement in production and productivity *- Annexure-2*
b) Continuous improvement in yield of products *- Annexure-3*
c) Improvement in customer satisfaction *- Annexure-4*
d) Reduction in specific consumption of utilities *- Annexure-5*
e) Continuous improvement in labour productivity *- Annexure-6*
f) Continuous improvement in financial performance *- Annexure-7*
g) Enhanced employee's morale and corporate image

LESSONS LEARNT

- The systems developed should be transparent and should be adequately understandable at all levels.
- In the organization, system based working should be developed with conceptualization of good practices and procedures.
- Organizations with individual based working falls prey to the whims and fancies of individuals.
- A knowledge hub should be developed to share and record the practical experiences faced by individuals for future references.
- A resource base of good practices should be developed which can be shared and introduced.
- Unsafe and unhealthy practices need to be identified and discontinued.
- All the pit falls and non-conformities need be viewed from the angle of improvement and development without hurting any individual or group.

FUTURE PLANS

VSP plans to implement the following strategic measures.

a) Knowledge management
b) Bench Marking
c) 'Six Sigma' concepts
d) Enterprise Resource Planning (ERP)
e) Aligning the systems, processes, activities of the organization as per the `European Foundation for Quality Management (EFQM) Business Excellence model`.

Sri K.U. Gupta, M. Tech., M.B.A; Dy. General Manager (TQM) &
Sri Syed Ali Hussain, M. Tech.; Dy. Chief Manager (TQM)
Visakhapatnam Steel Plant, Visakhapatnam - 530 031

Annexures - 1

Phase-wise certification details

System certification nature	Date of certification approval	Scope	Remarks
ISO 9002 : 1994 Phase-l Units	Original Certification - 7th Oct 1994 Recertification - 5th Nov 1997	Production and marketing of carbon steel wire rods of dia 5.5mm to 13.0mm and reinforcement bars of dia 8.00mm to 12.00mm in coil form	Phase-I
ISO 9002 : 1994 Phase-Il Units	Original Certification - 21st Dec 1995 Recertification - 7th Jan 1999	Production of steel through basic oxygen process and continuous casting. Production and marketing of steel blooms, billets, reinforcement bars, rounds and sections.	Phase-II
ISO 9002 : 1994 Phase-llla Units	Original Certification- 30th Sep 1999	Production of sinter, hot metal, pig iron, flux, pitch bonded magnesite bricks, utility gases, spare parts along with service and supporting departments and generation of power and also marketing of pig iron, utility gases, power and by -products.	Phase-III
ISO 9002 : 1994 All phases combined & covering total plant	9th May, 2000	Production of comprehensive range of Iron and Steel products, Coke & coal chemicals, other saleable products and generation of power along with supporting & service departments; marketing of all the saleable products including power in domestic or export markets	All phases combined & covering total plant
ISO 9001 : 2000	4th Jan 2001 Recertification 23rd Dec '02	Production of comprehensive range of Iron and Steel products, Coke & coal chemicals, other saleable products and generation of power along with supporting & service departments; marketing of all the saleable products including power in domestic or export markets.	Existing certificate upgraded to QMS 2000 version
	Recertification 23rd Dec '05	1. Production of comprehensive range of iron and steel products, coke and coal chemicals, other saleable products like liquid nitrogen, liquid oxygen, liquid argon, ammonium sulphate and generation of power along with supporting and service departments. 2. Marketing of iron and steel products in export and domestic markets through a network of regional offices and branch offices. 3. Sale of power to state grid and sale of coke and coal chemicals, other saleable products like liquid nitrogen, liquid oxygen, liquid argon, ammonium sulphate in domestic markets.	Scope revised

Annexures - 2

Improvement in production and productivity

Parameters	Units	1994-95	2001-02	2002-03	2003-04	2004-05	2005-06
Production							
Hot Metal	Ton	2836085	3485473	3941694	4055321	3920339	4152621
Liquid steel	Ton	1940100	3082808	3356796	3508252	3559581	3602754
Saleable steel	Ton	1559814	2757313	3056481	3168593	3172633	3236556
Productivity							
Sinter productivity	t/sqm/hr	1.18	1.25	1.34	1.43	1.4	1.41
BF productivity	t/cum/ day/ useful volume	1.24	1.61	1.72	1.76	1.7	1.8
Coke rate	Kg/thm	544.2	524.1	517.4	521.8	529.3	533.1
Rolling Rate							
Billet mill	t/whr	294	307	323	323	322	326
Bar mill	t/whr	104	139	144	146	148	146
MMSM	t/whr	94	163	184	181	179	180

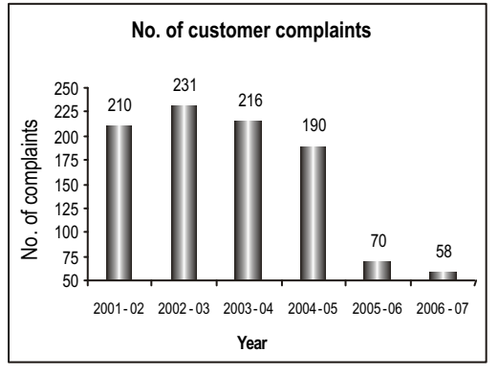
Annexures - 3

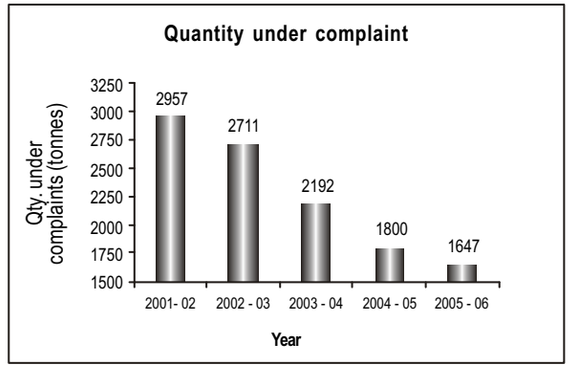
Improvement in Yield of Products

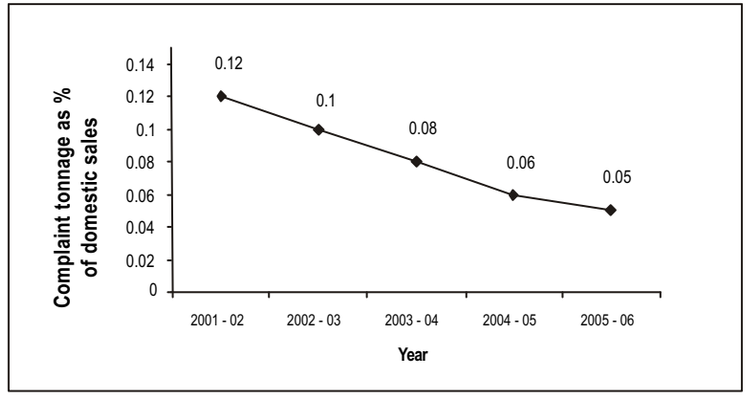
Parameters	Units	1994-95	2001-02	2002-03	2003-04	2004-05	2005-06
Dry coal charged to Gross coke	%	75.64	74.86	75.65	75.26	74.1	74.58
Total input to Sinter	%	67.76	67.96	69.28	70.33	70.47	69.04
Liquid steel to Blooms	%	90.47	93.8	93.98	94.1	94.2	94.2
Bloom to Billets	%	97.20	97.16	97.61	97.66	97.7	97.7
Billet to Bar	%	96.43	98.01	98.01	98.02	98.02	98.02
Billet to Wire rods	%	96.06	97.2	97.73	97.81	97.87	97.85
Bloom to MMSM products	%	90.57	95.23	95.73	95.73	95.84	95.83

Annexures - 4

Improvement in customer satisfaction

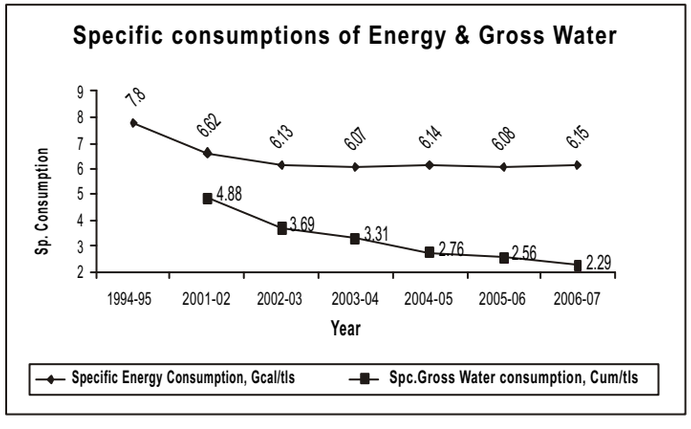


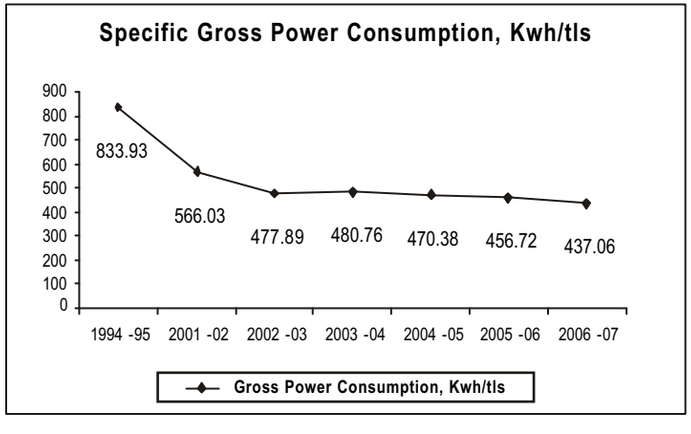




Annexures - 5

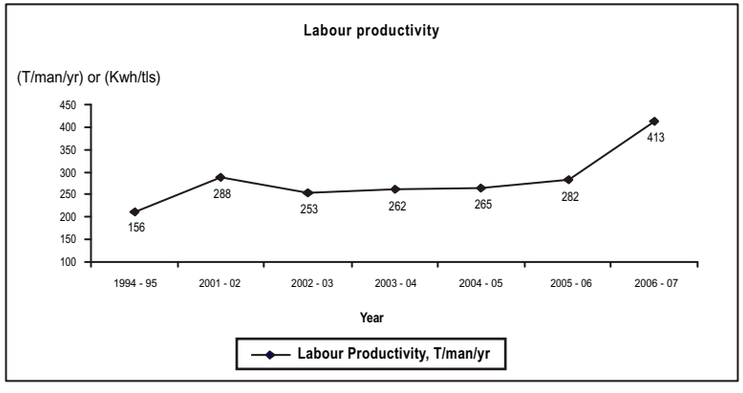
Reduction in Specific consumption of Utilities (power, energy, water)





Annexures - 6

Improvement in Labour Productivity



Annexures - 7

Improvement in Financial Performance

Year	Turn Over (Rupees-Crores)	Net Profit (Rupees - Crores)		Comments
		Before Tax	After Tax	
2006-07	9150.57	2222.34	1363.48	"Mini Ratna" status by Govt. of India
2005-06	8490.88	1889.51	1252.37	- Prime Minister's Trophy for excellent performance in steel industry.
				- Wiped out accumulated Net Losses
2004-05	8181.34	2253.77	2008.09	Max. Net Profits
2003-04	6169.09	1547.19	1547.19	- Prime Minister's Trophy for excellent performance in steel industry
				- Debt free company
2002-03	5058.25	520.69	520.69	Turn Around
1994-95	2208.57	-364.28	-364.28	--

BHEL's journey towards Excellence using TQM approach

Corporate Quality, Bharat Heavy Electricals Limited

ABOUT BHEL

Bharat Heavy Electricals Limited (BHEL) a leading Public Sector Enterprise caters to core sectors of the Indian Economy. More than 65% of Power Plants in the country are run by BHEL sets accounting for 74% of India's total power generation. Locomotives manufactured by BHEL haul prestigious trains like the Rajdhani and Shatabdi Express. Simultaneously, the company has registered multidimensional growth over the past four decades, and has come to be acknowledged by the Government of India as a 'Navaratna' Public Sector company. BHEL is today a name to reckon with in the industrial world offering around 180 products and providing systems and services to meet the needs of core sectors of Power generation, Power transmission, Industry, Transportation, Transmission, Oil and Gas, Non-conventional energy sources and Telecommunication. A widespread network comprising of 14 manufacturing divisions, eight service centres, four power sector regional centres, 15 regional offices, besides a large number of project sites spread all over India and abroad, enables BHEL to be close to its customer and cater to their specialized needs with total solutions efficiently and economically. The company has had a consistent track record of growth, performance and profitability.

THE QUALITY FOCUS

BHEL has always been a customer focused organization and taken a lot of initiatives to ensure quality of its products and services

through continual improvement in all areas of its operations. The company had introduced the concept of Quality Improvement Plans (QIP) under which problems are identified and resolved through cross-functional teams with a time bound approach. Use of SQC techniques is an integral part of such problem solving. After establishing and sustaining product quality, the company focused on quality systems. BHEL was the first PSU to achieve ISO 9001 certification in 1993 and now all divisions of BHEL are certified to ISO 9001:2000 standards. Thus we sowed the seeds of TQM by reviewing and aligning our Quality Management Systems to ISO 9000 series of standards. During the process, BHEL had introduced several quality initiatives to standardize and align the key processes for business growth and customer satisfaction.

THE CHALLENGE

With globalization, competition has become fiercer and threatens the survival of the organization. So steps were taken to address various market dynamics and the organization introduced TQM principles through pilot implementation in 1995 in four major manufacturing units. The organization set its vision to become:

> **"A WORLD CLASS ENGINEERING ENTERPRISE COMMITTED TO ENHANCING STAKEHOLDER VALUE"**

In order to achieve its vision, BHEL adopted the CII EFQM model to set its direction towards total quality management and achieve business excellence through:

- High Customer Satisfaction rating
- Strong/growing market share
- Strong leadership
- Motivated employees
- Positive Business Results as compared to best-in-class

The challenge was to establish the alignment of the various initiatives through a structured integrated approach in order to achieve the targeted business growth and enhanced customer satisfaction.

ROAD MAP FOR EXCELLENCE

Based on the experience and success of the pilot implementation of TQM principles in the management of processes, TQM philosophy was extended to all the major product groups. Today TQM has become a way of life in the organization with focus on Business Excellence to make its vision come true.

All Divisions of BHEL embarked on 'Continuous Improvement' culture and adopted CII Model for Business Excellence. Spearheading this movement in a holistic manner, BHEL has become the first PSU Organisation to obtain the PRIZE FOR MANUFACTURING SECTOR under the CII EXIM Award scheme. This prize was given to the HEEP Unit of BHEL situated in Haridwar at the CII Summit 2006 held at Bangalore in November 2006. The other major units of BHEL, namely Trichy, Hyderabad and Bhopal have also received commendation certificates for "Significant Achievements in TQM" and Electronics Division of BHEL in Bangalore received commendation for "Strong Commitment to TQM".

Structured initiatives were taken up in the various divisions of BHEL which were adopted across the corporation based on success and experience. Highlights of few of the initiatives and their achievements are as under :

Policy Deployment through X-matrix

Balanced Score Card (BSC) is used to deploy policies of the organisation. This has four perspectives viz. Financial, Stakeholder, Internal Process and Strategic. The objectives of the organisation under these perspectives have defined weightage and target. The organisation level objectives are further cascaded to functional levels and individual levels for deployment. At BHEL, BSC concept is in use for the last five years in all its units, regions and Corporate Office. The BSC has 2 parts: Part-A and Part-B. Part-A is formulated based on corporation requirements whereas Part-B constitutes exclusively excellence initiatives of the unit. All the functions make functional BSC based on unit level score card.

In order to ensure effective cascading of higher level objectives, strategic issues, challenges and establishing proper linkage, the concept of X-Matrix has been used while formulating unit and functional level Balanced Score Cards.

X-Matrix technique ensures step by step filtering of higher-level objectives and assigning responsibilities - primary or secondary. All assigned targets are pursued through detailed action plans.

HEART model

One of the significant approaches in the quest of business excellence is the adoption of a new concept **"HEART" (Haridwar Excellence Award Rolling Trophy)** in 2004, as a barometer for achieving business excellence. This is a unique concept of **"company-wide involvement and information sharing"**. HEART is an annual competition among all functions held in the field of business excellence activities.

The HEART model, fashioned on the lines of EFQM Model, has been successfully deployed. All functions participate in the award scheme. Data and information on every business activity of each function are brought out in the form of application documents. The application documents are assessed by qualified TQ assessors for rating the functions.

Six Sigma improvement projects

Six Sigma or Zero Defect has become the buzzword today in organizations around the world. However, BHEL was the first PSU Organisation to use scientific tools of Process Improvement through use of SQC and SPC techniques in 1978. About 15 batches of 300 executives were trained through collaboration with Indian Statistical Institute and several Improvement Projects were completed by use of SQC Techniques for reducing variation and improving Processes in terms of Six Sigma. However, the measurement in terms of Six Sigma was not deployed at all the levels.

But by seeing these reviewed Initiatives in the name of Six Sigma (Zero Defects), BHEL further reinforced the emphasis of process improvement through this methodology. By this time, since BHEL had already adopted Total Quality Management for Excellence Initiatives, the concepts of Six Sigma have been blended for Process Improvements and Operational Excellence under the TQM umbrella. Around 100 Six Sigma Projects have already been completed by structured method of Training and Facilitation at BHEL Bhopal, Hyderabad and Trichy.

Similarly initiatives in the name of "Quality Through Measurement" have been fully absorbed at BHEL Haridwar. Further implementation with efforts of Black Belt, Green Belts Training and handholding for Breakthrough Improvement is being pursued through efforts at Unit and Corporate Level.

Design to Cost initiatives

With the objectives of Improvements for Business Excellence, the concept of Design to Cost has been successfully piloted at BHEL Bhopal. The main focus was on increasing Production Volume, reduction of lead time inventory levels, and material wastages. The three focus areas are Operating System, Management Infrastructure and Capabilities. Inventory of ideas are generated and selected ideas are implemented by the idea developers. Significant results have been achieved in BHEL for Transformers, SCR and Transportation Products.

Management of Outsourcing

With growing business the company faces challenges with changing needs such as reduced cycle time, low cost and faster response. With these in view, the company carried out a detailed exercise on identifying core and non-core products so as to develop suppliers and manage outsourcing of various non-core products and processes. This has led to development of a system and criteria for selection, development and performance monitoring of suppliers and service providers.

OUTCOME AND IMPACT

Other initiatives have helped BHEL to develop long term strategic plans for growth with profitability. Today, seven of the major divisions of BHEL have won various commendation certificates in TQM from CII. BHEL, HEEP, Haridwar is also the proud winner of the CII-EXIM prize in 'Manufacturing Sector' and BHEL, BAP, Ranipet is the winner of the IMC Ramakrishna Bajaj Award in 'Manufacturing Sector'.

The results through implementation of TQM include;

- 30% reduction in Project Cycle Time
- 25% reduction in Inventory Days of turnover
- Customer Satisfaction Ratings moved up from 52% to 65%
- High growth in Turnover and Gross Margin

LESSONS LEARNT

In the process of implementation, a lot was learnt which helped in fine tuning some of the strategies and approaches to drive company wide improvement initiatives.

- Communication and involving various levels of employees was the most vital factor. For wherever initiatives were pushed without proper communication and involvement, acceptability and sustenance suffered.
- Deming's PDCA approach helped in creating the necessary platforms for driving improvements.
- Training, Rewards and Recognition were made mandatory to motivate employees and align them towards the common goal.
- Documentation of the steps and institutionalization of the same into the company's quality management systems was also critical. In fact there were instances, where *the wheel* had to be reinvented, just because documentation and institutionalization were not done properly post the pilot project.

- Integration of all initiatives and introduction of metrics in all processes could bring the visibility for success.

FUTURE PLANS

BHEL aims to pursue its goals with increased vigor and sincerity. Having achieved effectiveness of quality management, the approaches are being refined for improving the efficiency of quality management. The organization is embarking on current trends of industry related to initiatives like Lean, Deming's process management and integration of management systems.

BHEL strives to achieve and sustain all-round excellence with an unswerving attention to succeed by working constantly for "Customers' satisfaction with its competitive strength of engineering and manufacturing and technological excellence.

Corporate Quality, BHEL
General Manager/Corporate Quality
2nd floor KRIBHCO BHAWAN
Sector 1, NOIDA (U.P.) 201301 INDIA
Phone 0120 2444646 ::: FAX 0120 2443493
Email id: avkn@bhel.in

Action Plans for bringing quality in YASHADA

YASHADA, Pune, India

THE CONTEXT

Maharashtra, foremost among the urbanized and industrialized states of India, is perhaps, also among the best governed. A leaning towards social reform, a love for learning coupled to a talent for modernity have kept the people of this State on the very edge of contemporaneity.

So, it came as no surprise that an Administrative Staff College (ASC) imparting formal training to top administrators, began in Mumbai in 1963 and 20 years later it was shifted to the expansive environs of the Raj Bhavan at Pune, as the Maharashtra Institute of Development Administration. By 1990, the Institute had matured into an Academy, and was renamed after the State's founding Chief Minister, to be renamed the Yashwantrao Chavan Academy of Development Administration or YASHADA. We, at YASHADA, prefer to believe that the Academy contributes to the achievement of success for Development Administration in the State.

YASHADA's raison d'etre is to impart training to all stakeholders in development: administrators, managers of PSUs, officials and non-officials of local self government bodies, NGOs, etc. Training inputs are regularly updated through research and consultancy assignments, which bring the depth of experience into the classroom.

Its Perspective Plan covers the systematic management of foreseeable change, making YASHADA responsive and contemporary. The approach aims to be integrative rather than segmentary; holistic rather than isolatory with a trajectory going beyond quantity towards quality.

OBJECTIVES

- To impart training in development administration to public administrators, managers of public sector undertakings, officials and non-officials of local self-government bodies, and executives of non-government organizations, etc;
- To carry out public-oriented and operational research;
- To provide consultancy services in development and public administration;
- To serve as the apex institute for the collection and dissemination of information regarding development administration; and
- To function as the nodal state level training institute in the field of development administration.

Its Mission Statement is:

> "*Our Mission is to enable equitable and sustainable development by promoting people centered good governance. We achieve this by bringing together practical knowledge, applied research, appropriate technology and innovative training of public administrators, community-based organizations and people's representatives.*"

THE OPPORTUNITY/PROBLEM

YASHADA achieved the Certificate of Total Quality Management. The activities of the Academy were increased subsequently and in order to cope up with these activities, it was felt to go in for ISO 9001: 2000 Certification. The Academy felt that the ISO 9001: 2000 Certification could provide a clear understanding of the processes within all levels of Management and the discrepancies in various processes could be removed.

AIM, GOAL AND OBJECTIVE

The ISO Facilitation Cell, established in October 2004, has helped YASHADA achieve a strategic position in training and

applications intervention at the Academy. For the past three years, the Centre has been facilitating training, research and administrative interventions at the district, municipal and State level within the Government of India and in NGOs.

The objectives of the Centre affirm the need for the State and National governments to enable training processes on Environment Management and Quality Management. Importantly, the objectives of the cell are central to the goals of the Academy.

SETTING THE SCENE

The various meetings of the Board of Governors of YASHADA and Executive Committee of YASHADA were kept informed about the progress of activities within YASHADA with regard to facilitating the process of obtaining ISO 9001 certification for establishing and maintaining quality standards in delivery of activities in the Academy. *(Please see Annexure II and III)*

Various all-sections/departments meetings were held to establish parameters for standardization of internal procedures. Various rounds of internal audit were completed and non-compliance and innovation was recorded or appreciated. The Academy had identified 13 intra and inter-departmental process manuals. These process manuals were clubbed together and the following manuals were prepared and circulated. *(Please see Annexure I)*

- Apex Manual
- Client Oriented Process Manual (COP)
- Support Oriented Process Manual (SOP)
- Management Oriented Process Manual (MOP)

Apex Manual

It covers the policy issues pertaining to the ISO Standards. It addresses the clauses of ISO 9001:2000 Standards vis-à-vis the Academy. *(Please see Annexure IV, V and VII)*

Client Oriented Process Manual (COP)

It covers all processes pertaining to the planning activity, training activity, course file movement, allocation of classroom and performance of administrative activities pertaining to training.

Support Oriented Process manual (SOP)

It covers all the processes, which have to be implemented to ensure proper training. These processes are not directly related to conduct of training process but have a direct impact on the quality of training. These processes include facilities like Libraries, Hostel, Mess and Centre for Information & Technology.

Management Oriented Process Manual (MOP)

The processes covered in this manual are administrative in nature. These processes have to be performed to ensure proper training and good quality support activities. This manual includes administrative and accounts procedures.

The tri-letter system for identification of document flow within the Academy was finalized and implemented.

The Mission Statement for the Academy was finalized and approved at the 33rd meeting of the Board of Governors, YASHADA. This Statement is prominently displayed at the Reception Lounge. *(Please see Annexure VI)*

The Management Information System and Work Norms processes have been strengthened with the issuance of an approved (by the 33rd BoG) "Manual of Office Procedures" and a Policy Circular for the implementation of the "Comprehensive Management Information System (C-MIS)".

The Apex Manual was finalized and issued. New guidelines were established to minimize paper movement. Other manuals were also issued and External auditors were appointed to begin the process of comprehensive audit.

THE EXPERIENCE

From September, 2005 the foremost development has been the intense systems audit processes that have been internalized within

the Academy. 18 officers and faculty at YASHADA have undergone training in ISO 9001:2000 to be recognized as "*Certified Lead Auditors*". Quality Manuals have been finalized and distributed to serve as reference documents for internal audit as well as a systems audit by external auditors.

Bureau Veritas (BVQI) has, subsequent to an intensive external audit carried out on 20-22 September 2005 awarded certification under the Standard "ISO 9001:2000" to the Academy. It has certified that the Quality Management System of the Academy has been audited and found to be in accordance with the requirements of the Standard.

The ISO 9001:2000 Certificate, dated 22 September 2005, awarded to YASHADA has defined the scope of the Academy's quality audit: "To design and conduct training, research and documentation activities to support development administration".

Five non-compliance reports were provided by the External Auditors as common requirements to be positioned for subsequent audit. These compliances were accepted by the Director General, and explained through a faculty meeting. Policy Circulars, Officer Orders and internal guidelines were immediately issued.

The Certified Lead Auditors amongst the Officers and Faculty of YASHADA are now recognized as the YASHADA Council of Internal Auditors to monitor the implementation of the ISO 9001:2000 Standard and will report to the Director General every month.

Enabling programmes for ISO 9001:2000 and ISO 14001:2004 through the ISO Facilitation Cell

The ISO Cell has conducted 13 courses in the ATC for 2006-2007 and has proposed 27 courses in the ATC 2007-2008. The areas covered are:

- Basic ISO Awareness Course
- Documentation Requirement
- Internal Auditors Training Programme

Activities by the ISO Facilitation Cell

It was proposed to have panel of consultants on a need by need basis to enable YASHADA to undertake projects on a larger scale.

Senior Consultants have shown interest in associating with YASHADA in this regard.

For the first time, the ISO 9001:2000 clauses were translated into Marathi. A pilot run of the translated version was done for YASHADA faculty on 3rd February 2006.

Beyond the ISO 9001:2000 recognition for YASHADA, and the need for brining about a comprehensive training intervention, as indicated by the BoG and EC, the ISO Cell at YASHADA has undertaken nine projects with different government, non-government and private organizations.

The details are as follows :

S. No.	Department/Organization
1.	Pune Municipal Corporation, Property Tax Department
2.	Pimpri Chinchwad Municipal Corporation
3.	Deep Griha Society
4.	VANAMATI, Nagpur
5.	Valsang Village, Solapur District
6.	Agriculture Department
7.	Food and Civil Supplies Department
8.	Tasgoan Panchayat Samiti
9.	District Supply Office

The ISO Cell has undertaken consultancy and provides training inputs for the above organizations for ISO 9001:2000 with the help of Internal Auditors at YASHADA and consultants from BVQI and those identified from open market working with Government organizations.

The ISO Cell has scheduled the following courses along with other programs especially for the organizations that YASHADA provides consultancy to during 2007-08.

- Document Awareness
- Internal Auditing Procedures
- Environmental Management System 14001: 2004
- Quality Management System 9001:2000

ISO 9001:2000 Certification of villages in Maharashtra

This is in extension to the success that YASHADA has achieved in the conduct of capacity building programmes of officials, elected representatives, stakeholders, change agents and technical experts in rural sanitation programmes. The rural sanitation programmes have been conducted in collaboration and financial support from the Water Supply and Sanitation Department (WSSD), GoM, and UNICEF.

Shri Ajit Pawar, Hon. Minister, WSSD, GoM publicly felicitated YASHADA with regard to the success of the training programmes. More than 85 training programmes, workshops and extension activities have been conducted during 2004-2005, 2005-2006 and 2006-2007 by the Centre for Environment and Development (CED) at YASHADA.

A highlight was the publication of the '*Panchayat Panchaang'* that was released by the Hon'ble Minister in April 2005 and distributed to villages involved in the Total Sanitation Campaign. Along with the usefulness of the almanac, attendee-participants (mostly elected representatives from the village-level) expressed an interest to position their villages as '*Quality villages for development administration'* and wished to acquire ISO 9001: 2000 certification.

The ISO Cell and the Centre for environment and Development were able to merge the *Panchayat Panchaang* and the ISO Manual for 9001:2000 to develop an ISO Manual for village level quality systems management. 120 Villages were initially identified for this initiative based on the support received by CED for the Total Sanitation Campaign capacity building initiatives and training programmes. Eighty villages will be short listed for actual implementation of Village level Environmental Planning and Quality Systems management. It is broadly estimated that it would cost Rs. 50,000/- per village to conduct local workshops, discussion sessions, training, hand-holding, manuals development and trial runs and for payment to independent third party auditors to be recommended by BVQI. The initiative was appreciated by various agencies and enquiries for similar interventions were received from other States, including the Inter-State Council and Private Sector organizations.

The CED along with the ISO Facilitation Cell at YASHADA, has collaborated with the Academy's ISO facilitators, Bureau Veritas Quality International (BVQI), in development of this unique approach that would guarantee:

a) Village-level transparency in transactions
b) Ecology and equity in terms of village-level planning and implementation
c) Public display of Panchayat and Gram Sabha agenda, discussion and resolutions
d) Status of decisions undertaken and their collaboration with various departments.

This process had begun with the cooperation of Valsand Village, Dakshin Solapur Taluka, Solapur District. The Sarpanch and the villagers were very cooperative in enabling the conduct of several workshops and meetings with ISO Audit facilitators, resource persons and BVQI experts in understanding the scope of such an initiative. It was proposed that the scope and objectives remain simple, easily attainable and clearly detailed for social equity.

The initiative at Valsang aims at developing initial manual for documentation of procedures and processes at the village-level and corroboration through audit by certified lead auditors from YASHADA and BVQI. The manuals were finalized titled "*Krutirekha Margadarshika"* and *"Margadarshika"*.

Further, these manuals are to be utilized in five other villages from other revenue divisions, drawn from expert voluntary sarpanchas, from among the 80 villages who have repeatedly attended training programmes on Total Sanitation program at CED, YASHADA. The 5 village verification process will help finalize the manuals at a division-by-division level for subsequent capacity building of quality + environment + equity initiatives at the village. It was proposed to employ Certified Lead Auditors on the recommendation of BVQI as filed-level consultants based on the familiarity with rural sector situations in Maharashtra. The modalities were as follows:

- Should be a qualified Lead Auditor/equivalent qualification related to quality systems
- Should have experience in the filed of Consultancy, auditing and training for at least 5-6 years or should have domain knowledge and experience
- Should have provided Consultancy/training to at least 10-12 organizations
- Assignment of similar nature for public sector undertakings/Government organizations will be a preferable qualification

Audits conducted at YASHADA

a. Internal Audit :

The Internal Audit is conducted on quarterly basis by the Internal Auditors at YASHADA. The Audit in the academic year 2006-07 was conducted as follows:

- April 2006 to July 2006, the audit was conducted on 18 July 2006
- August 2006 to October 2006, the audit was conducted on 10 October 2006
- November 2006 to January 2007, the audit was conducted on 9-10 January 2007
- February 2006 to March 2007, the audit was conducted on 5-6 March 2007

Surveillance Audit :

The External Auditor conducts the Surveillance Audit every six months.

- The 1st Routine Surveillance Audit was conducted on 19-20 April 2006
- The 2nd Routine Surveillance Audit was conducted on 11 October 2006
- The 2nd Routine Surveillance Audit was conducted on 12 March 2007

OUTCOME AND IMPACT

The ISO 9001: 2000 standards have given the Academy an opportunity to increase value to our activities and to improve the performance continually, by focusing on major processes of the Academy. The standards placed great emphasis on making quality management systems closer to the processes of YASHADA and on continual improvement. As a result, they directed users to the achievement of business results, including the satisfaction of customers.

Implementing a Quality Management System motivated the staff by defining their key roles and responsibilities. From this, improvements are developed, resulting in avoiding waste, inappropriate or rejected work and fewer complaints. Disruptions to routine caused due to multiple assessments by various customers are reduced. The Academy is forced by itself to motivate improvement in the system through regular audits by BVQI and also leads to less rework, etc. through an increase in *quality know-how* and efficiency. The Academy has been able to put all operations on a scientific basis. YASHADA motivates all employees and ensures their involvement and provides a stepping-stone to TQM.

LESSONS LEARNT

YASHADA has been able to provide

a) Clear indication of its capabilities
b) Strong evidence of its commitment to quality
c) Assurance of consistency in quality of service and timely delivery

FUTURE PLANS

Preparation of Auditors Database

- The ISO Cell has taken up the activity of preparation of database for each of the Internal Auditors. The Auditors will fill a form, which will be certified by the Management Representative.

- The database shall contain the information of the Internal Auditor based on ISO 9001:2000 Quality management Systems.
- The database has the information of the Internal Audits conducted in the respective year by the Auditors.

Revision of Manuals

ISO Cell has prepared the Action Plan for Revision of Manuals for implementation of ISO procedures at YASHADA. The revision of manuals shall be done in phases. Initially the Apex Manual shall be taken up for revision. Revision of each Manual shall be completed. A note requesting comments and suggestions for revision in manuals is forwarded to the DDGs, OICs and Faculty members. On receipt of their suggestions and comments needful changes in the manuals will be made and forwarded to the External Auditors for approval.

YASHADA
Baner Road, Pune - 411007

Annexure-1

Parameter for each of the activities are detailed in Functional Manuals as given below. The processes have been defined in detail giving activity-wise break-up in the respective manuals.

Main Process	Sub Process	Manual in which it is covered	Clause No.	Section of Manual in which it is covered	Resp. Dept
Training	Training need Analysis	COP	7.2	Planning 03-17	TMC & all Depts
	Training Design		7.3		
	Monitoring Of training		7.5		
	ATC preparation		7.1		
	Resource Planning for Training	COP	6.2 6.3	Planning 18-24	Course Cell & TMC
			7.2		
	Evaluation Quality training		8.2		
Research	Research monitoring	COP	7.5	RD/00-03	RDC
	Project monitoring		7.5		
CRM	Grievance Redressal	COP	8.2 7.23	CRM/ 00-06	Administration
Policy & Planning	-	Apex Manual	5.0	QMS/ 10-19	Planning Division
Implementation Measurement, Analysis	-	Apex Manual	8.1-8.5	QMS/ 36-45	-
Computer Application & IT Support	-	SOP	6.3	CIT/ 00-19	CIT
Library Related Process	-	SOP	6.3	LIB/ 1/11	Library

Hostel & Mess Related Process	-	SOP	6.3	HOS/ 01-06	Hostel & Mess
Publication Process	-	SOP	6.3	YMRC/ PUB/ 01-06	YMRC
Audio-visual equipment provision process	-	SOP	6.3	YMRC/ AVC/ 01-04	YMRC
Administration Process	Establishment	MOP	6.2	Admin/01-15	Establishment
	Record keeping		4.2.4	Admin/24	
	Purchase Maintenance		7.4/6.1 6.3	Admin/16-18 Cont/01/ TRP/01, Admin/20	
	Inward/outward		7.5	Admin/21-23	
	FJS		7.5	Admin/22	
	Protocol		7.5	Admin/25	
Accounts	-	MOP	6.2 7.5 6.1 8.1	Accts/ 01-14	

Annexure - 2

IDENTIFICATION OF PROCESS

The following Sub-Processes have been identified in YASHADA for the Quality Management System :

COP

Training

a) Training Design
b) Conducting of Training & Evaluation
c) Training Monitoring
d) Course Cell activities of Planning for Training
e) Policy and Plan Implementation

Research

a) Research Monitoring Process
b) Project Monitoring Process
c) CRM Process

SOP

a) Computer Applications & IT Support
b) Library Process
c) Audio Visual Equipment Provision Process
d) Hostel & Mess

MOP

Administration

a) Resource Provision
b) Record Keeping

Accounts

The processes listed above are explained in detail in the respective manuals. In addition to the functional processes within the Academy, the following processes are identified as QMS for the Academy. They are:

NO.	Process	Standard	Reference in the Manual
1.	Document Control	4.2.3.	YASHADA/QMS/09
2.	Control of Records	4.2.4	YASHADA/QMS/10
3.	Monitoring Process	8.2.3	YASHADA/QMS/37

Annexure - 3

YASHADA has established and maintained Quality Systems for Training and other support activities through :

- Apex Quality Manual (AQM) - Consisting of policy and summary of the entire Quality Management System.

- Functional Manuals for various activities - explaining detailed procedures of the activities. Add from previous page. The functional manuals consist of :

  a) Apex Manual
  b) COP Manual
  c) SOP Manual
  d) MOP Manual

- Work-related Procedures
- Purpose, scope and details of activities
- Reference documents
- Records in the form of files
- Checklists
- Formats
- M.I.S. Parameters

Each document is numbered as follows:
Organization/process/dept./no
e.g.: Yashada/cop/trng/01

All documents will be circulated in paper-copy as well as soft copy through the intranet.

Annexure - 4

QUALITY MANUAL

Purpose : To establish a documented system as per ISO 9001:2000.

Scope : The scope of the QMS is :

Apex Document is the Quality manual. It specifies the goals, perspectives and concerns of the organization. All principles adopted to meet the desired objectives have been defined in this manual.

Procedure :

1) The Quality Manual includes all the clauses which are mandatory as per the requirements of ISO 9001: 2001 norms
2) The Vision & Mission Statement has been incorporated in this manual
3) The Apex Manual is prepared by DDG planning & approved by DG
4) Amendments to Apex Manual, if required will be incorporated on a half-yearly basis
5) Apex Manuals will be circulated only to the Top Management
6) The interaction of various processes are defined in sec. 4.1

The scope excludes the following :

Clause 7.5.4 : There is no customer property for which YASHADA is accountable.

Clause 7.6 : The department does not undertake any activity, which requires sophisticated equipment for monitoring and measurement.

Responsibility :

It will be the responsibility the top management to prepare/incorporate changes in the Quality Manual.

Records :

Nil

Cross Reference :

Vision - Mission Statement

Annexure - 5

CONTROL OF RECORDS

Purpose :

The purpose of this procedure is to ensure effective control of Quality Records.

Scope :

This applies to the entire organization.

Procedure :

a) It covers all records of the Quality Management System. "Record" denotes documents, which will be made available to the auditors, as well as documents, which are the output of certain activities. It also includes "record", which is the end product of a complete activity.

b) It covers record generated by ISO 9001:2000 Systems :
   - Files etc.
   - The custodian of this record in YASHADA will be at two levels :
     i) At OIC level
     ii) At the Section level

c) It covers records which are created by every Department/ Section/Cell

d) The respective faculty members will create the electronic records. The machines will have passwords. The faculty members will decide as to which data should be made shareable and access to which data should be denied.

It shall be the responsibility of these officers to ensure to keep the respective records legible, identifiable, retrievable and duly protected from damage and deteriorations. They shall ensure that the records are disposed off by shredding, after the retention period is over. Due mention of the destruction shall be recorded in writing. The concerned officer destroying the record to that effect shall retain a certificate.

Records Responsibility

It shall be the responsibility of MR/DDG (Planning)/Dept./ Institute Heads/OICs to maintain complete list of records pertaining to their respective Manuals which will include :

- Description
- Format Number
- Location at which stored and
- Retention period etc.

(Format No. ISO-Apex/Form No. 5)

Bringing Quality through training in Directorate General of Quality Assurance

Brigadier PK Hoogan

INTRODUCTION

Directorate General of Quality Assurance Organisation (DGQA) provides quality assurance cover for weapons, equipment and stores issued to defence forces and other establishments. It is a multi-disciplinary, multi-locational organisation with a multi-technology orientation. According to Deming quality circle of Plan-Do-Check-Act, the first phase 'planning for quality' product is performed by Defence Research and Development Organisation (DRDO), second phase 'manufacture of quality' product by Directorate General of Ordnance Factories (DGOF), third phase 'checking/assuring the quality' of product by the DGQA and fourth step 'action/exploitation' of the product by our defence forces. These four organisations come under Ministry of Defence.

The quality of arms, ammunitions and equipment is a battle-winning factor which adds to the onerous responsibility of the DGQA organisation. To carry out this task effectively and efficiently, technical knowledge, skills and attitude of the human resources of the organisation provide the cutting edge.

NEED FOR FORMAL TRAINING

The DGQA is the largest quality assurance establishment in the country. It has need specific, well-planned regular training combined with development programmes for the DGQA which helps improve the quality of employees. Necessity for regular training is further enhanced in view of the frequent induction of new weapons and equipment into the defence forces and the current

focus of the Government on down sizing/right sizing of organisations. It did not have a formal and a centralised training institute till 1992, therefore a need was felt to impart knowledge, skill and right attitude to officers of the establishment with the view to achieve total user's satisfaction.

TRAINING STRATEGY

A team from the top management of the DGQA organization was constituted to evolve a training strategy :

a) All training and development initiatives will be aligned to achieve total users satisfaction.
b) Periodically training needs will be analyzed and forecast so that acquisition of competence in frontier areas of technology and management can be achieved.
c) It develops a culture of "Line Management" through training and learning to achieve a multiplying effect.
d) Foster a learning process by leverage of latest tools and techniques.
e) Through interdisciplinary initiatives and interventions integrate organizational processes
f) Diagnostic studies to help evaluate deployment of training strategies.
g) Build a pool of internal faculty resources by identifying developing and harnessing expertise.

TRAINING OBJECTIVE

A training objective was formulated to enhance the skills and knowledge to bring about improvement in the managerial and operational effectiveness. Training would help bring about attitudinal changes, develop qualities of leadership and an ethos of customer orientation externally, while initiating a process of sensitivity to Human Resources.

DEFENCE INSTITUTE OF QUALITY ASSURANCE

Defense Institute of Quality Assurance (DIQA), Bangalore was established in 1992 to meet the long felt need for institutionalized

in-house facility for training DGQA officers in the field of Quality Management and Assurance.

ROLE OF DIQA

Ministry of Defense prescribed the following role for DIQA:-

a) Plan and conduct foundation/orientation training for newly inducted officers. To conduct refresher-training courses periodically to update the knowledge of officers of DGQA organisation.
b) Guide training schools run by Authorities Holding Sealed Particulars of DGQA.
c) With organisations associated with training and quality assurance activities they maintain active liaison in India and abroad.
d) Undertake studies and consultation assignments for design, development and installation of quality system in units manufacturing defence equipment.

DIQA INFRASTRUCTURE

DIQA has the following facilities :-

a) A well furnished class room to accommodate 20 course participants, fitted with modern audio/video aids with PowerPoint presentation system etc.
b) A well equipped technical information centre with over 1200 books on "Quality" like Quality Management, Quality Assurance, TQM, ISO 9000, ISO 14000, Neuro Linguistic Programming and Six Sigma are available. We subscribe to periodicals and magazines on Quality related subjects.
c) Buildings housing the Director's office, Faculty Officers' rooms, Administrative Office, Technical Coordination Room and Computer centre.
d) We have our own Officers' Mess as well as Single Officers' Accommodation for participants coming from outstation.

COURSES PLANNED

We have conducted courses on Quality Management, Quality Assurance, Reliability Engineering, Lead Assessor Course, Environmental Management System, ISO 9000, Test Laboratory Management System, Human Resource Management, Defence Vendor Assessment etc. The following courses are planned for the training year 2007-08 :

Sl No	Course Title	No of courses
(a)	Foundation course	4
(b)	Advanced Quality management course	2
(c)	Lead Assessor Course	2
(d)	Six Sigma Course	2
(e)	Process Audit	3
(f)	Improving Personal & Organisational Effectiveness through Neuro Linguistic Programming	2
(g)	Strategic Organisational Human Resource Management	1
(h)	Quality Management & Assurance Course	1
(j)	Basic Reliability Course	2
(k)	Quality Audit & Surveillance	2
(l)	Integrated Management System	1
(m)	Effective Presentation	1
(n)	Orientation course for Gp 'B' officers	1

Achievement of DIQA

Since its inception, we have conducted about 300 courses and trained about 5000 officers from DGQA, Directorate General of Aircraft Quality Assurance (DGAQA). Defence Public Sector Undertakings, Directorate of Standardisation, Defence Research & Development Organisation, Ordnance Factory Board, Army, Air Force and Navy.

FACULTY FOR TRAINING

The faculty consists of officers selected within the DGQA organisation based on their qualification, experience and expertise. Apart from in-house faculty, we also invite guest faculty from the following institutes :

a) Bharat Electronics Quality Institute, Bangalore
b) Hindustan Aeronautics Limited Management Academy, Bangalore
c) Indian Statistical Institute, Bangalore
d) Air Force Technical College, Bangalore
e) Centre for Electronics and Testing Equipments, Bangalore
f) Electronics and Mechanical Engineering School, Vadodara
g) Indian Institute of Quality Management, Jaipur
h) College of Material Management, Jabalpur
i) College of Defence Management, Secunderabad.

OUTCOME AND IMPACT

Feedback is taken from the course participants immediately after the course and also six months after finishing of the course so as to evaluate the effectiveness of the training programme as per ISO-10015:1999. Generally participants are appreciative of the training received. Usually it brings about significant improvement in their knowledge level and change in their aptitude. However, sometimes we have received suggestions for further improvement, and on occasions participants have expressed their dissatisfaction on certain issues. Efforts are being made to solve the difficulties faced by them.

It is a matter of satisfaction and encouragement for DIQA that many organisations like Army, Indian Navy, Bharat Dynamics Ltd and DGQA have specifically requested DIQA to allot vacancies for their officers.

LESSONS LEARNT

DIQA aspires for continuous improvement in training by seeking feedback from the course participants. The comments given by course participants are discussed in the Academic Council Meeting held after the course and points for improvement are implemented to the extent possible.

The feedback on training is also received from various Technical Directorates and action is taken accordingly.

FUTURE PLAN

DIQA is the apex center of learning in DGQA organisation. It strives to become a center of excellence in training in quality management. Having the unique distinction of being the only Institute solely devoted for training in quality management, DIQA aims to have leadership in the country. DIQA plans to make leaders who will not only build, improve and assure quality of weapon, equipment and store but also produce 'thought leaders'. The leaders who will not only manage change but also change the way we change, by leading the change through appropriate mind set, managerial actions and style. Thus, our endeavour is to start a renaissance movement for creating a leading and winning organisation.

Brigadier PK Hoogan
Additional Director,
DIQA, Bangalore

TQM Initiatives at HIPA Gurgaon during 2006-07

HIPA, Gurgaon

HIPA Gurgaon was part of the TQM Project sponsored by DFID and British Council. Under the project the Institute organized various activities and prepared a Road Map for implementing TQM, which was one of the major components of the project. A TQM Cell was set up to monitor the progress of the TQM project. However, due to many reasons the progress of implementing TQM Road Map was not entirely satisfactory.

In 2006, Dr. G. Prasanna Kumar, IAS took over as Director General and the process of implementing TQM in the institute gained momentum. Realizing the important role of the employees in achieving organizational excellence the need was felt to sensitize the employees about the need and importance of TQM in a training institution.

CAPACITY BUILDING AND AWARENESS

Keeping in view the above objective a number of orientation programmes have been organized for Group C and D employees of HIPA during 2006-07. On 10th February an "Orientation Programme on TQM" was organized for all categories of employees of HIPA. It was one of those rare programmes where from the Director General to the group D, all employees spent the whole day together, discussing various strategies to implement TQM. It was a unique experience in sharing and learning. Various TQM tools and techniques were discussed. The result was the realization that 5S technique could be used to improve the

efficiency of the office and also ensure that everything is organized in a systematic manner. Through role-play and syndicate exercises a number of problems were highlighted and alternative solutions were worked out.

This apart, two in-service training programmes were organized for the senior and middle level officers of the various departments of the state. The objective being to sensitize the officers and acquaint them with modern management and TQM tools and techniques to enhance their performance.

DEFINING PROCESSES AND PROCEDURES

Steps have also been taken to map various critical processes so as to understand the problems and identify areas for improvement. Efforts are being made to document various processes. In order to reduce channels and cut down needless delays, the procedures are being simplified. Optimum utilization of manpower is being done by outsourcing some of the services. This is proving to be cost effective.

PARTICIPATORY DECISION MAKING: Involvement of All

A Suggestion Box has also been provided at the entrance of the main building in which the employees can put their suggestions to bring about improvements. This box is opened by a Committee of senior officers on the 1st of every month. The suggestions are compiled and put up before the Director-General for considerations. Employees whose suggestions are found to be useful are rewarded. During March 2007, the suggestions of Mr. Naveer Kumar, Senior Steno typist and Mr. Ramesh Kumar, were found to be useful. As reward they are being sent to YASHDA, Pune to understand some of the good practices of that Institute. This ensures that employees are not only involved but also encouraged to think of good ideas that can bring about qualitative change.

The process of decision-making has been democratized to a large extent. Decisions are being taken after due process of consultation. Every Friday from 3-5 p.m. a meeting of the senior

officers and the faculty is held and various problems are discussed and strategies worked out. At times the concerned employees too take part in these deliberations.

With these new initiatives, within a short span of one year, visible Changes have taken place. Small and continuous improvement is the strategy being adopted. In any change management strategy the process has to be slow so that there is acceptability for change. The environment for change has been

HIPA 76, HIPA Complex, Sector 18,
Gurgaon - 122001

Total Productive Maintenance at CPCL

P. Jeevankumar

BUSINESS ENVIRONMENT

The world is witnessing a business environment that is so competitive, that it has made almost every organization scurrying to find ways to meet the challenge. The response to the competitive environment is found in the answer to the basic questions: "How effectively we can handle the resources?" and "How best we can satisfy the needs of the customer?". The answer came in the form of tools.

Some of these are currently in practice in the industry: Just-In-Time, Lean Manufacturing, Six Sigma, Total Quality Management, 5S and Total Productive Maintenance.

Each tool has its own advantages and depending on the type of industry, organizations have chosen tools that would give them performance and quality improvements.

INITIATIVES TAKEN BY CPCL

Chennai Petroleum Corporation Limited (CPCL). CPCL is a public sector undertaking. Four years back the 51% Government of India shares in CPCL were purchased by Indian Oil Corporation, a public sector undertaking. Today, CPCL is a group company of Indian Oil.

A decade ago, an important change took place in the Indian Oil industry. All crude oil refining and distribution was in the hands of the Public sector, until the Government of India decided to open it to the private sector. Because of this, the Administered Pricing

Mechanism (APM) that was in vogue till then, was changed to Market Driven Pricing Mechanism (MDPM). In simple terms, the APM ensures every company receives 12% profit on its expenditure. In MDPM the assured 12% is no longer valid and profits are subject to market forces. CPCL responded to this major change in the Oil sector environment by deciding to review and reorganize the way the various refinery functions are managed.

CPCL went in for a Benchmarking study. M/s Solomon Associate of USA who are experts in benchmarking of refinery operations across the world, were appointed for benchmarking and a gap analysis. The gap analysis revealed opportunities for improvement.

From then on, the CPCL has been working towards implementing performance improvement programs in all functions of refinery management. We put in place a "Refinery Business Optimisation" system, which uses Linear Programming (LP) for decision-making. This has helped a lot, in fine-tuning our production planning.

Presently, we are implementing the 5S and Total Productive Maintenance (TPM) programs, practices that have evolved in Japan.

THE 5 S PRACTICES

The 5S is about improving workplace effectiveness. 5S practices are usually taken up before the start of TPM activities.

What is 5S about:

- Keeping the workplace neat and clean;
- Keeping required things at the proper places, so that time is not lost in searching or carrying out visual management in the workplace; and
- Improving work practices.

If a work study is done on any person's activity either at home or in the workplace, it would reveal that a lot of time is wasted in 'searching'. By just keeping things in the right place, a lot amount of time could be saved.

So, 5S practices improve work environment, introduce efficiency at the workplace and save time while boosting the employee's morale.

PRACTICE OF 5'S' THE 5 STEP ACTIVITY

1 S activity is called Sort (Seiri is the Japanese term)

- A clear policy determines what can be discarded.
- Clutter is removed from the work place.

2 S activity is called Set in Order (Seiton is the Japanese term)

- What needs to be kept in the plant, is kept always at a designated place.
- Anything picked up from a place is returned to its original place.

3 S activity is called Shine (Seiso is the Japanese term)

- Everyone from the bottom up, clean their own work area.
- Everyone takes personal responsibility for cleanliness.
- A specific time is allotted for cleaning as part of the daily work schedule.

4 S activity is called Standardise (Seikatsu is the Japanese term)

- Standard conditions in the work place are first developed and then maintained.
- When? By Whom? And How? all activities will be specified.
- Visual methods shall be used to indicate 'what' is stored 'where'.

5 S activity is called Sustain (Shitsuke is the Japanese term)

- Self discipline among all is developed.
- Good work place practices are taught and instituted.
- 5 S becomes a part of the daily routine.

TOTAL PRODUCTIVE MAINTENANCE (TPM)

Towards driving the organization in achieving excellence in quality and performance, CPCL recognized Total Productive Maintenance (TPM) as an effective tool. CPCL decided to implement TPM practices, company wide.

TPM involves everybody from top to the bottom, in order to make the organization efficient and effective. This, in turn will lead to:

- Zero Accidents
- Zero Break Down
- Excellent Quality
- Lowest Cost
- Zero Wastage

HOW THE PRACTICE OF TPM FIRST EVOLVED

The Maintenance function in organizations are usually bogged down by breakdowns. The effects of this on production and profits, are known to everyone. The goal of maintenance has been to attain the target of zero breakdown. Therefore, we came up with more and more, carefully designed "preventive maintenance" programs. While this helped in reducing breakdowns, it alone was not enough to achieve zero breakdown. What else was needed? The realization dawned that the person who operates the machine, should also be involved along with the person who maintains it. This "I break it" and "You fix it" concept had to be eliminated to approach zero breakdown. Soon, this became the bedrock of the Productive Maintenance concept. In Productive Maintenance, the person who operates, has the twin responsibility of ensuring that the basic equipment conditions are maintained. Later Productive Maintenance became Total Productive Maintenance. The Total signifies, total effectiveness, the involvement of all functions and involvement of all employees.

The TPM concept was developed and made into a practice by the Japan Institute of Plant Maintenance (JIPM). The Confederation of Indian Industry (CII) are JIPM's representatives for TPM in India.

TPM is practiced by 8 pillars and the various functions of management are assigned to the 8 pillars.

In CPCL, the 8 pillars are headed by persons in the rank of General Managers and Deputy General Managers. The 8 pillars will carry out systematic activities towards achieving their objectives. A brief on the 8 pillars activities are:

- **Autonomous Maintenance** is the basic maintenance and inspection activity performed by Manufacturing operators with the support of Maintenance.
- **Focused Improvement** is an activity by a multi-functional group, focusing on specific problems/issues/losses. They implement "Kaizens", the Japanese word for "change for good".
- **Planned Maintenance** is the effective organization of the Maintenance function. It deals with the implementation of a good preventive maintenance/reliability centered maintenance program to meet the objectives of the Maintenance function.
- **Quality Maintenance** in process industry ensures quality of product by maintaining correct process conditions. In order to achieve this, equipment must function at optimum efficiency. Periodical checks prevent quality defects and involve calibrating equipment condition.
- **Development Management** ensures that quality and performance aspects are taken care of in the design stage itself. The feedback on past experiences are systematically gathered and incorporated into the design. The objectives of Development Management are to ensure a smooth and trouble free project commissioning, both with equipment as well as with processes. This also helps in the development of newer products.
- **Office TPM** brings improvements in the office area. The services offered to production are honed lazer fine. Meanwhile, the Non-Value Adding activities and wastages, in the work process, are identified and eliminated. This also covered all the Materials and Marketing functions.
- **Education & Training** establishes clear cut training systems to cater to the increasing growth of technology and skill requirements in order to maximize the potential of each employee. Equipment competent and process competent employees are developed. The skills that are required in each position are identified. The employees are rated on the skill requirement. The gap analysis is done and based on the gaps, training programs are organized.
- **Safety, Health and Environment** focuses on elimination of hazardous conditions and unsafe actions as well as on issues of health and environment. The objectives are Zero accidents and Zero pollution.

In CPCL, all the eight pillars have formed their own teams with activities in progress. All employees shall be members of one or more pillars.

"Zero Leak" campaign was conducted in the plant areas and all steam leaks have been plugged.

After the success of the zero leak campaign a "Zero condensate wastage" campaign has been started to ensure recovery of condensate.

The Kaizens (Continual improvements) are being implemented across the organization yielding good benefits.

Quality aspects are given focus under Quality Maintenance pillar. The pillar team has started identifying all possible conditions that could possibly cause quality defects. Such conditions are closely monitored to eliminate all possibilities of defects.

The CPCL TPM program is being guided by a Counsellor from the Confederation of Indian Industry (CII).

MEASURING THE TPM EFFECTIVENESS

The TPM performance is measured based on 6 parameters; Productivity, Quality, Cost, Delivery, Safety, Morale - "PQCDSM" in short. All improvements that are to be implemented are studied for their contribution towards improvement in one or more of the 6 parameters - PQCDSM.

TPM AND TQM

There are a lot of similarities between the two performance improvement tools TPM and TQM. TPM focuses on elimination of losses and wastes, TQM focuses on Quality. TPM starts its analysis from the inputs (ie the equipment) and the causes for abnormalities. TQM starts from the output (ie Quality) and its effects. TPM depend's more on “Employee participation” and TQM on “System improvements”. So while their approaches may be different but their goals remain the same - Performance and Quality Improvement.

P. Jeevankumar B.E., M.B.A.
Chief Manager (TPM), CPCL
Manali, Chennai - 600 068

Hindustan Latex Limited (HLL)

Darly Francis

BACKGROUND

The National Family Welfare Planning Programme was introduced in the country in 1951 with the objective of reducing the birth rate and to stabilize the population at a level consistent with the requirements of the National economy. In the IV Five Year Plan (1969-74) high priority was given to the programme. It was proposed to reduce the birth rate from 35 per thousand to 32 per thousand by the end of the plan.

In order to provide quality condoms to the National Family Welfare Planning Programme, Hindustan Latex Limited was set up in 1969. HLL is a company functioning under the administrative control of the Ministry of Health and Family welfare, Government of India.

HLL as a company has diversified over the years and turned many stones on its journey to the present. HLL, from being a Condom manufacturer diversified into Contraceptives manufacturing and later into hospital product manufacturing including surgical sutures, surgical gloves, hydrocephalus shunts and blood bags.

Hindustan Latex manufactures and offers a wide range of contraceptives consisting of condoms, Intra Uterine Devices and Oral Contraceptive Pills. The health care range of products consists of blood collection bags, surgical sutures, hydrocephalus shunt, tissue expanders, needle destroyers, blood bank equipment, Iron and Folic Acid tablets, medicated plasters and Oral dehydration salts. HLL recognizes and acknowledges the importance of both,

its internal stakeholders and customers in achieving aspirations and fulfilling its vision. The Company's vision is to achieve and sustain a high growth path, aspiring to attain global levels of scale and financial strength in order to compete and deliver to domestic and international markets.

HLL clearly acknowledges its responsibility towards the social sector, not only in changing behavioural patterns with respect to reproductive health but also towards providing healthcare solutions towards the weaker sections of society, viz., the rural sector and women.

As a commitment to social cause HLL has set up a non-profit organization, Hindustan Latex Family Planning Promotion Trust (HLFPPT). HLFPPT's current activities include implementing sexual and reproductive health projects, HIV/AIDS targeted interventions, and IEC projects funded by national and international development agencies like DFID, USAID, SIFPSA, European commission and Government of India. These interventions create a planned sustained behavioral change to have small and healthy families, healthy and safe sexual and reproductive health.

The vision statement of HLL is "Innovating for Health Generations"

HLL's EXPERIENCE IN BUILDING QUALITY CULTURE

Total Quality Management is the management of total quality. Management consists of planning, organizing, directing, control, and assurance. We believe that total quality is called total because it consists of 3 qualities: Quality of return to satisfy the needs of the shareholders, Quality of products and services to satisfy specific needs of the consumer and Quality of life at work and outside work to satisfy the needs of the people in the organization. This is achieved with the help of upstream and downstream partners of the enterprise. Total quality management goes well beyond satisfying the customer, or just offering quality products.

Truly understanding the spirit of TQM we have created a Quality Model to deliver 100% quality products to customers, have

better working environment and to satisfy the needs of our share holders. At HLL we follow Willa A. Foster's quote:

> **"Quality is never an accident. It is always the result of high intentions, sincere effort, intelligent direction and skillful execution. It represents the wise choice of many alternatives."**

The key elements of HLL Quality Model are:

Planning

Hindustan Latex believes not in managing the future from the present, but in managing the present from the future. Hence, strategic planning has been given sterling importance in HLL. Our vision and strategy is the result of the collective planning by senior executives representing all functions. HLL's top management is committed to development and implementation of quality management system and thereby continually improving their effectiveness.

Communication

We believe that communication is one of the best tools to reinforce confidence, belief, and motivation among employees. The top management communicates the vision and mission of the company to the executive and staff at all review and trade union meetings, as also through circulars to employees. This in turn raises the motivation levels of employees. The leaders also instill a sense of ownership among employees. There exists a good rapport between the employees and management, which is proved by the fact that though the company has its manufacturing base located in the labour sensitive state of Kerala, ***it has not lost a single working day on account of labour disputes***. This is a tribute to the excellent communication channels set up between employees and the management. We have through newsletters established a system of communicating to employees about the achievements of the company.

To give correct information to employees, we conduct union meetings and section meetings. This information is disseminated through the official channels of information. As a result of effective communication, we are able to convey all this information to all employees effectively, which provides transparency to the information process and is a hallmark of our effective information system.

Family magazines, news letters, HLL website, notice boards etc are used as different modes of communication.

Process approach

As an ISO 9001:2000 company, our activities are planned and executed in a process-based approach using the PDCA cycle. The top management emphasizes the setting of quality objectives that focus on meeting present and future customer expectations, cost of quality and continuous improvement. At the beginning of the year, the management sets corporate quality objectives. This in turn is broken down into separate unit wise objectives. From unit-wise objectives, departmental objectives are framed. Review of the status of implementation is conducted every quarter at unit level and once a year at C&MD's level.

Each process is analysed at a periodic frequency by the process owners. For collection and analysis of data various QC tools like Pareto chart, Fish bone diagram, Histograms, Control charts etc are used.

Progress and achievement of goals are monitored through periodic review meetings.

Continual Improvement

Measurement of performance of the system is carried out at regular intervals to quantify continual improvements. Parameters used are:

- Measurement and evaluation of products
- Capability of processes
- Achievement of department objectives
- Satisfaction of customer & allied parties

- Ability to add value to the customer
- Customer delight

Human Approach

Human Resource (HR) plans are based on business objectives after detailed discussion and deliberation with the departmental heads and in line with agreements with the unions. Systems are in place to incorporate the resource needs like competency, training and motivation based on the strategic direction of the company. In addition, human resource planning includes the requirements drawn out of the Quality policy, objective and the implementation plans. During the departmental review, each controlling officer reviews the adequacy of the resource initiatives plus other additional human resource requirements. Additionally, human resources requirements are reviewed at the unit level review as well as at the top management level. Afterwards, review plans are drawn to meet intended objectives and targets. All human resource initiatives are linked with quality-both in policy and objectives, as well as the learning direction of the company.

The company gives emphasis to the total learning process, whereby performance monitoring, with the need gap analysis, is conducted for each employee. The data relating to every employee's learning, strengths and gaps are analyzed through well-defined systems. This analysis is used to plan the future requirements of training and development and to equip the employees to meet future needs. The resultant appraisal data is used to suitably deploy employees in the areas where they will perform so well that the same will be beneficial for the employees and the company.

To address human resource development, needs are identified through a well-structure HR strategy plan. This is in line with the company's strategic plan. We have established four training modules:

- Technical training
- Participative management training

- Attitudinal training
- Safety and Environment training

Employee Involvement & Motivation

We have framed certain systems to improve the employee involvement and to reward and recognise employees. A suggestion Scheme is in operation, whereby suggestion drop boxes are provided at various locations in the factory and employees are free to make suggestions. The management keeps on open mind to new and innovative ideas thereby promoting freedom in decision-making. All proposals that are made, must be supported by facts and figures. An employee making a suggestion, is required to explain the rationale behind the suggestion and also supply adequate data that supports the implementation of the suggestion. A detailed plan consisting of the investment required and the benefit thereof along with a plan of action is mandatory. All suggestions are evaluated for their efficacy by a suggestion committee. Based on the recommendation of the suggestion committee, feasible suggestions are implemented and proposer is duly awarded under the suggestion scheme during Republic Day/Independence Day celebrations. Additionally, we have a scheme of awarding best employee every year. We have Work Improvement Teams and SAFE Forum functioning in the Factory. Best performing SAFE Forums and Work Improvement Teams are awarded every year while the best employee of each section, is chosen and is awarded at a public function. Department level achievements are awarded with trophies and appreciation letters.

We have schemes for recognizing and rewarding team based achievements. The best work improvement teams are selected depending upon the presentation of data and they are given recognition as well as sent outside for presentation.

The performance relating to individual departments are displayed near the section. This instils a sense of healthy competition among the employees. This is encouraged, while in addition to time bound promotions, for recognition and appreciation of the efforts carried out by individuals we have a

scheme for performance based promotions where exemplary candidates are considered.

In order to have closer contact with the employees and their families we have a recreation club which provides membership to the employees and their family members. Cultural programs are conducted by the recreation club.

Safety

We maintain low accident rates in our manufacturing units, as a result of the Safety Policy. For the last 10 years, our employees never had any major or fatal accidents. There have been only some very minor accidents and we have taken corrective measures immediately. A safe and healthy environment exists in the work places of our manufacturing units. In accident prone areas, we meticulously implement Safety Measures and the root cause analysis is done if any accident takes place and instantly corrective measures are taken for preventing such things being repeated in the future.

Supplier relationship

Suppliers' meets are organized yearly, where top management also participates.These are arranged to facilitate and convey expectations, objectives and vision of HLL and to get proper feedback so as to understand the entire process in order to achieve good quality and prompt service.

Frequent visits to suppliers' premises are conducted for audits and also to help them to evolve a better quality system, so that both benefit from the interaction.

Customer focus

Our long-term relationship with our customers and direct contact with customers at all levels, helps us to develop better understanding of our customers requirements than that of our competitors. While the formal mechanism of determining customer requirements through the customer survey is well established, our approach extends beyond this. We have

established a systematic, scientific and structured mechanism to transform customer's latent requirements to product technical specifications. We map them to process attributes and control parameters.

Customer requirements are assessed through continuous interaction. Future needs of the customer are assessed. This translates into product improvement and additional features are added to our existing product. There are periodic visits by the production team, to understand the needs of the customer along with the current and future demands of the market. Feedbacks relating to product quality, service delivery are collected by the visiting officer.

Customers' visits are organized to demonstrate the high standards of operation and the strong quality management system. This has built up a tremendous confidence in our system and product, while helping us implement the improvements and ideas given by the customer.

Corporate Social Responsibility

HLL have been a leader assisting in many activities to help the community at large. We involve ourselves in all walks of life to benefit youth and society. Some of the services rendered by HLL are:

a) All support to Voluntary Service Organisation.
b) A voluntary group formed by the employees of the company provides food to the inpatients of the Mental Hospital every month.
c) The company gives certain work on contract basis to the visually handicapped, through the federation of the visually challenged.

We have provided support to the corporation of Trivandrum, in their Clean City Green City Campaign by engaging the employees of the company to participate in the programme voluntarily. We have also provided financial assistance and waste bins.

CONCLUSION

If we look at the thrust of the HLL Quality Model it is obvious that

the model is people centric. Customers, employees and society at large - all form the focus.

All plants of HLL are ISO 9001, ISO 13485, ISO 14001 & OHSAS 18001 certified and we have various product certifications like CE mark, Kite Mark, SABS mark etc. Our efforts point towards quality improvement and through maintaining a good quality environment, health and safety management system. We have been making a profit for the past several years irrespective of the change in government policies with respect to purchase and price preferences, increased raw material and labour cost and stiff competition in the market.

Darly Francis
Senior Executive Director (CQA)
Hindustan Latex Limited
Latex Bhawan,
Poojappura,
Thiruvananthapuram - 695 012