HANDBOOK FOR

8th FICCI QUALITY SYSTEMS EXCELLENCE AWARDS FOR INDUSTRY 2020

&

CONFERENCE ON

QUALITY SYSTEMS EXCELLENCE FOR ATMANIRBHAR BHARAT



POWERED BY:

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1 About The Awards

FICCI Quality Systems Excellence Award is completing its eighth edition of journey with an expanded scope and in an era where new digital technologies are shaping the future of industry. Enhancing the scope from "Manufacturing Awards" to "Awards for Industry", the Award now covers sectors including Construction, Manufacturing, Mining and Power (including Generation, Transmission and Distribution).

The Awards, institutionalized for excellence in quality systems in industry, assess the robustness of 'Quality Systems' in organizations unlike most other awards that focus on product quality. Good quality systems lead to systematic improvement in organization's performance. The Award is an initiative of FICCI Manufacturing Committee which works with an agenda of improving Industry's competitiveness that would enable the domestic industry to stand up to the new and emerging challenges of the global market. Given the importance of these aspects, FICCI constituted Manufacturing Excellence Taskforce under the chairmanship of Mr Shyam Bang (Chairman, NABCB) and co-chairmanship of Mr Satendra Singh (Head of Strategy and Business development, Global Operations, Nokia), which is now leading this initiative.

The awards are presented to firms and companies for the recognition of their commitment to quality systems at workplace. The purpose of this award scheme is to recognize organizations that have high performance quality system leading to a systematic improvement in organizational performance thereby making them globally competitive. The Awards provide a benchmark for the Industry as the best practices of awardees are shared with other applicants and also with the wider industry. Hopefully, this motivates and acts as a catalyst to encourage the industry to adopt robust quality systems and thereby making them face global competition. Many experts from Nokia, Siemens, QCI and other organisations have volunteered to assist us in the process of awards.

The awards are given in three categories as follows:

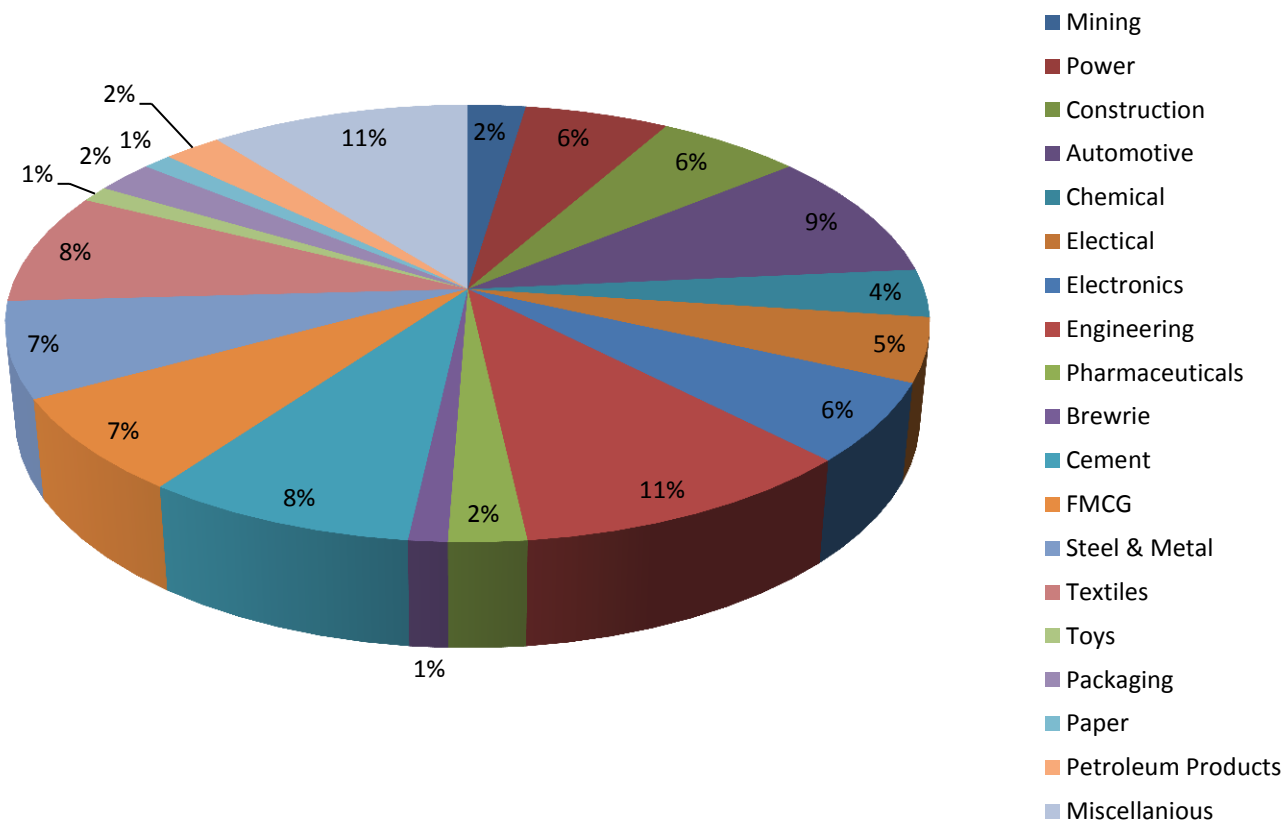
- Large size organization (organization having either turnover or investment excluding working capital of more than Rs 500 crore)
- Medium size organization (organization having either turnover or investment excluding working capital between Rs 100 crore to Rs 500 crore. If any one of the parameter crosses the limit of Rs 500 crore then the organization goes into large size organization)
- Small size organization (organization having turnover & investment excluding working capital both less than Rs 100 crore)

Comparative picture of eight editions of the Awards:

Parameters	2012	2013	2014	2015	2016	2017	2018	2019
Total Applications received	63	79	93	102	76	98	93	85
Total Applications in Large category	35	30	35	80	61	73	70	53
Total Applications in Medium category	18	38	38	11	10	11	16	23
Total Applications in Small category	10	11	20	11	5	14	7	9

In terms of sectoral composition, this year's Awards spanned across 19 sectors with automotive, electronic/electrical, FMCG, textile and cement dominating half of the total applicants. We would strive to continue our efforts so that more and more companies from varied sectors participate in this benchmarking exercise to incorporate good quality systems on shop-floors.

Sectoral Composition of Applicants: 8th Edition



2 Award Process

The award process started in October 2019. FICCI Quality Systems Excellence Award process has 3 qualifying stages:

- Document Assessment of all applicant units
- Virtual site Audit for short listed units based on document assessment
- Jury to finalize the Awardees

Details of this process are as follows:

- Design and finalisation of questionnaire and assessment matrix for the awards with the support of industry and QCI
- Circulation of Application amongst the industry
- Empanelment of auditors/assessors for the evaluation from the industry based on prescribed eligibility criteria formed by the Quality Working Group under FICCI Manufacturing Excellence Taskforce
- Applications evaluated by the assessors and marks allotted along with feedback for each application
- Presentation of document evaluation results to the FICCI Working Group on Quality
- Virtual site audit for shortlisted units
- Presentation of on-site/ virtual site audit results to FICCI Working Group on Quality
- Presentation of further shortlisted units to the Hon'ble Jury of the Awards
- Selection of Awardees by Hon'ble Jury
- Announcement of Awards in the Conference
- Feedback to be shared with the applicants

3 Last Two Edition's Awardees

7th FICCI Quality Systems Excellence Awards For Industry

Construction:
- L&T Construction (SK Mines, Dariba)

Manufacturing:

Large Size Category
- Platinum (First) Prize: Aditya Aluminium (Hindalco Industries, Odisha)
- Gold (Second) Prize: Gabriel India Limited (Dewas)
- Silver (Third) Prize: Reliance India Limited (Dahej)

Medium Size Category
- Platinum (First) Prize: Cyient DLM Private Limited (Mysuru)
- Gold (Second) Prize: SkipperSeil Limited

Small Size Category
- Platinum (First) Prize: TE Connectivity -ADM India (Bengaluru)
- Gold (Second) Prize: Stork Rubber Products Private Limited (Gurugram)

Mining:
- Platinum (First) Prize: NMDC Limited, BIOM Bacheli Complex (Bacheli)

Power Large:
- Platinum (First) Prize: Haldia Energy Limited (Haldia)

Power Medium:
- Platinum (First) Prize: Adani Electricity Mumbai Limited (Mumbai)

6th FICCI Quality Systems Excellence Awards For Industry

Construction:
- Larsen & Toubro Construction-Rourkela Plant

Manufacturing:

Large Size Category
- Platinum (First) Prize: Hindustan Unilever Limited - Dadra and Nagar Havelli
- Gold (Second) Prize: GE Multi Modal Manufacturing Facility -Pune
- Silver (Third) Prize: Ultratech Cement – Rajasthan

Medium Size Category
- Platinum (First) Prize: Shriram Rayons-Kota , Rajasthan
- Gold (Second) Prize: XPRO India Limited - West Bengal

Small Size Category
- Platinum (First) Prize: Sahajanand Technologies- Surat, Gujarat
- Gold (Second) Prize: Deutsch India Power - Bangalore, Karnataka
- Silver (Third) Prize: Aum Dacro Coatings - Gurgaon , Haryana

Mining:
- Platinum (First) Prize: Joda East Iron Mine- TATA Steel Limited- Odisha

Power:
- Platinum (First) Prize: Power Grid Corporation of India Limited, Gurgaon, Haryana

4 Jury Profile



Mr Ajay Shankar

Former Member Secretary
National Manufacturing Competitiveness Council

Ajay Shankar has had rich and varied experience in public service for over forty years.

He has served as Secretary, Department of Industrial Policy and Promotion in the Government of India where his key responsibilities included FDI policy, investment promotion and the IPR regime in the country. The plan for the ambitious Delhi- Mumbai Industrial Corridor Project was developed under his stewardship. He was the Chairman of the National Productivity Council and of the Quality Council of India. He initiated the setting up of Invest India to facilitate enhanced inflow of FDI.

After superannuation, he served as the Member Secretary of the National Manufacturing Competitiveness Council (NMCC), an advisory body comprising leading Captains of Industry, key Secretaries of Government and eminent Academics.

He has been a member of the Committees set up by Government of India on: (i) Reform of Public Sector Enterprises, (ii) Restructuring of HAL and (iii) Electricity Distribution Reforms. He has recently served as the Chairman of (a) PPP Review Committee of the Railways and (b) Expert Committee for Replacing Multiple Prior Permissions with a Regulatory Mechanism for improving Ease of Doing Business. He has served on the Boards of major public sector companies and is now non-executive Independent Director in a few companies. He has been a Public Policy Scholar at the Woodrow Wilson Center in Washington DC. He is a Distinguished Fellow at TERI, a Senior Fellow at the Delhi Policy Group (DPG) and a Senior Adviser at IRADe.



Mr. Shyam Bang

Chairman
National Accreditation Board for Certification Bodies

Mr Shyam Bang is a post graduate chemical engineer and has been associated with chemical and pharmaceutical industries in India and other countries for forty five years. He was executive director and member of board of Jubilant LifeSciences Ltd, a company recognized globally in the speciality chemicals and pharmaceuticals business segment.

After superannuation he continues to support manufacturing industry through various initiatives. Currently he is :

- Chairman of FICCI Task Force for Manufacturing Excellence
- Secretary of Lovraj Kumar Memorial Trust
- Past President of Indian Institute of Chemical Engineers
- Member of Governing Council of National Safety Council
- Member of Governing Council of Indian national Academy of Engineering



Mr. V Sridhar

Senior Director - Purchase
Honda Motorcycle & Scooter India (HMSI)

Mr V Sridhar is currently the **Senior Director – Purchase** in Honda Motorcycle & Scooter India Pvt Ltd (HMSI) . He heads the Purchasing function at HMSI from April 1, 2020. Prior to this he was leading the Manufacturing operations as Group Vice President & Director (Manufacturing) at HMSI.

A Mechanical Engineering Graduate from BITS Pilani and Masters in Business Administration, Mr Sridhar has a total of **35 years work experience** in Automobile & 2 wheeler Production and Operations area.

He started his work career in 1985 as a Graduate Engineer Trainee in Maruti Suzuki India Ltd the No.1 passenger car maker in India. He had a rich mix of Production Planning, Project & Shop floor operation experience for 15 years in Maruti Suzuki India Ltd. He had worked in different areas of Production Planning & Control, Engine Assembly & Vehicle Assembly. In 1999, he was the Leader of the team which set up and operated the Vehicle Assembly line in Maruti's 3rd plant in Gurgaon. He had undergone Technical & Management trainings through Associate Overseas Technical Scholarships(AOTS) in Suzuki s plants in Japan.

He joined Honda Motorcycle & Scooter India (HMSI) in year 2000 and has been associated with HMSI for nearly 20 years since its inception as Head of Manufacturing. At time of his joining, HMSI had just started preparations for setting up its first plant at Manesar.
In last 20 years, he has been completely involved and responsible from plant setup to operations of all 4 factories, Quality, Production Planning & Control, New Models & expansion projects. He has been in the Board of Directors of HMSI since 2013. Mr Sridhar was selected for the prestigious HEADS program in Honda worldwide in year 2014.

With his vast experience in Manufacturing & Management, Mr Sridhar has been a member of several committees. Notable among them are Society Of Indian Automobile Manufacturers (SIAM), Confederation of Indian Industry (CII) , FICCI Manufacturing Committee and FICCI Quality & Safety Work group and Society of Automobile Engineers. He has been an esteemed jury member for ACMA awards for past 6 years and FICCI Safety & Quality awards for last 3 years.
He has been conferred the Best Production Head award in 2 wheelers category by World Auto Forum (WAF) for years 2018 & 2019.



Mr. Satendra Singh

Head of Strategy and Business Development,
Supply Network & Engg, Global Operations, Nokia

Mr. Satendra Singh is responsible for global outsourced manufacturing of Nokia. In addition, he also leads strategy and quality for global supply network and engineering at Nokia.

In his current role, he is responsible for worldwide outsourced manufacturing, network strategy and architecture, performance management, and global supply network quality. Nokia supply network consists of 30+ manufacturing sites and multiple distribution hubs globally.

Prior to this role he led manufacturing operations for Nokia Networks in India. He has 30+ years of experience in general management, operations, supply chain management and quality management. He specializes in setting up new operations, building up efficient teams and delivering value to business. He has extremely rich general management experience as business head in multinational corporations.

He has started 2 world class technology manufacturing operations and has led introduction of new technology products into India. He has been instrumental in building India's largest telecom infrastructure manufacturing facility for Nokia Networks in Chennai.

He is co-chair of FICCI Manufacturing Excellence Task force and is member of national councils on smart manufacturing, Electronics and consumer durables. He is an electronics engineer with masters in management from BITS, Pilani and has completed advanced management from IIM, Bangalore.



Mr. M M Singh

Executive Advisor
Maruti Suzuki India Limited (MSIL)

Mr. M M Singh is currently in the role of Executive Advisor in Maruti Suzuki India Limited (MSIL). In the current role, he is heading the Maruti Centre for Excellence (MACE) as the Director, which is handling the upgradation of vendor ecosystem of Maruti Suzuki India Ltd. This involves hand holding select vendors for implementing manufacturing excellence programs in the areas of Productivity, Quality, Delivery, etc. Also, Mr. Singh is leading the International Automobile Centre of Excellence (i-ACE), a Section-08 company, with social objects will engage in increasing awareness in the automobile industry; provide necessary education & training for development of the automobile sector and bridge the gap for the Indian Automobile Industry in developing human capital for the industry. All OEMs, Component suppliers and academic institutes of Gujarat are going to be benefitted through this center.

Mr. Singh held the position of Executive Director of Production for over a decade. He has built Maruti's unique and sustainable edge in low-cost, high quality and high volume manufacturing. Singh has led a team of over 15,000 people which manufacture every second car running on Indian roads, leading operations comprising of 114 departments and 8 divisions across vehicle and engine manufacturing, production engineering, supplier quality, projects & infrastructure, power plants, and materials & logistics etc.

Mr. Singh is associated with Maruti since inception in 1983. He is a Pioneer of "Low cost, High quality, High volume & Flexible manufacturing way" in India, with a focus on people involvement and empowerment. He introduced innovative ways for enhancing capacity and productivity by introducing flexi-lines for assembly to take care of demand volatility. He gave high trust on low cost in-house automations resulting in large productivity improvement at low cost.

He is adept at mentoring and building large teams. In 2005, he conceptualized an innovative program named as "Production Management System" or PMS. PMS is a system based program evolved with the involvement of people at all levels. PMS focuses on involvement, empowerment and integration of the human capital of the organization with linkage to focus areas and challenges prevailing from time to time.

Mr. Singh has brought a paradigm shift in auto logistics in India with the development of railway logistics. He has spearheaded various infrastructure projects such as, development of a world-class export car terminal at Mundra Port; development of railway wagons; regional stockyards and warehouses.

He is also active in several forums related to Manufacturing of CII & FICCI. He is currently the Co-Chairman, Regional Committee of SMEs and also Chairman – Hi-tech Manufacturing & Robotics Committee in CII. In FICCI he also held the positions of Chairman Manufacturing Committee and Chairman – Industry 4.0 Committee in the past.

Educational Background:
He graduated in B.E. (Electronics) from BIT Mesra. He had an initial stint of 5 years in TELCO (now Tata Motors) and TISCO as Design and Maintenance Engineer



Smt. Surina Rajan

Director General

Haryana Institute of Public Administration, Gurugram

Smt. Surina Rajan is currently serving as Director General of Haryana Institute of Public Administration, Gurugram which is the Apex Training Institute of Haryana. She was the CEO of Bureau of Indian Standards (BIS) - the National Standards Body (NSB) in the rank of Secretary to Govt. of India. Before that for 5 years she served as Civil Servant in Ministry of Defence, Government of India. Between the year 2009-2014 she was the Chief Inspector of Factories, Labour Commissioner, Director of Employment, Director of Science & Technology and Education Departments in Haryana as HoD/Administrative Secretary.

She is a gold medallist in BA Hons (Economincs), distinctive holder in M.A/M.Phil (Economics) and All India Topper in Indian Economics Services and Indian Administrative Services.

Awards & Achievements

Recognition for excellent work in programs of Swachh Bharat Abhiyan, Solar Power Installations, National Apprenticeship Schemes, Skill-Training, Start-up Promotion work, e-introduction of e-governance, Literacy Mission, Blood Bank, Scout & Guide work, Self-Help Groups, Energy Conservation etc. Have coordinated nearly 30 publications relating to Public Policy and Project Management.

5 List of Auditors/Assessors for the Awards

1. Mr. Abhayraj S Kute, Quality Leader, General Electric (GE)
2. Mr. Anirban Ghosh, DGM (PSM & QA), Cairn Oil & Gas – Vedanta
3. Mr. Ankan Mitra, Head Regulatory Affairs, Mining & Steel, Joda East Iron Mine, OMQ, Tata Steel Ltd.
4. Mr. Atul Vij, Managing Partner, TExM2 Consulting
5. Mr. Avik Mitra, Advisor, AHPI
6. Mr. M Balasubramanian, Head Quality Retired, Larsen & Toubro Limited (Buildings & Factories IC)
7. Mr. D K Dewan, Assistant General Manager, Maruti Suzuki India Limited
8. Mr Javed Khan, Head – Performance Management & Analytics, Nokia Solutions & Networks India Pvt. Ltd.
9. Dr. K Mamallan, Senior Manager (Safety, Health, Environment & Quality), Chennai Petroleum Corporation Ltd
10. Mr. Manoj Belgaonkar, Head - Regulations, Standards and Quality Management, Siemens Ltd.
11. Mr. MP Jain, Former Executive Director , Engineers India Limited
12. Mr. Pardeep Parhar, Manager EHS, Signify Innovations India Limited
13. Mr. Ranjan Banerjee, Corporate Consultant & Industry Connect, R B Solutions

6 Awardees for the 8th Edition and their Best Practices

MANUFACTURING SECTOR

WINNER IN LARGE CATEGORY

PLATINUM (FIRST) PRIZE

Name of Organization: Unilever India Exports Limited
Location: Kandla, Gujarat

Organization Overview:

Hindustan Unilever Limited (HUL) is India's largest FMCG company with a heritage of over 80 years. With over 35 brands spanning 20 distinct categories such as soaps, detergents, shampoos, skin care, toothpastes, deodorants, cosmetics, tea, coffee, packaged foods and water purifiers, HUL is a part of the everyday life of millions of consumers across India. Its portfolio includes leading household brands such as Lux, Lifebuoy, Surf Excel, Rin, Wheel, Glow & Lovely, Pond's, Vaseline, Lakmé, Dove, Clinic Plus, Sunsilk , Pepsodent , Closeup, Brooke Bond, Kissan, Kwality Wall's and Pureit . The Company has ~21,000 employees and turnover of INR 38,273 crores (FY 2019-20).

Unilever India Exports Limited, Kandla factory is the only dedicated export unit for HUL in South Asia, handling 200+ products with multiple secondary and tertiary packaging configurations across personal wash & personal care liquids. Situated in KASEZ spread across luscious 20 acres of land, the factory has an annual capacity of 60 million Units or ~12,000 tons & turnover of ~200 Crs with an asset base of 87.2 Crs (GBV) & an annual operating budget of 32 Crs. Kandla Factory is known for embracing its complexity and its agility to land all innovations in record time. It serves as the Innovation hub for Unilever International business landing 30+ innovations annually, first time right. They serve to 70+ countries including demanding customers like Japan, South Korea, USA & several European & Southeast Asian countries. Kandla factory is well known in HUL for delivering exceptional product quality & is leading the Unilever SA sourcing unit league table wining both the Best Quality & the Overall Best Factory awards for 2019.

Key Features of Quality Systems:

"**Quality is not an act, it's a habit**", and Unilever India Exports Limited ensure that Quality is imbibed in each and every part of thier Supply Chain right from procurement of raw materials till it reaches the hands of the consumer. Being the only dedicated export unit in Unilever SA, quality & customer service have been thier "Unique Selling Point". The unit has an exceptional quality mindset, handling significant complexity with utmost care, which has made them the top performer (Quality & Overall) across all 39 Unilever SA sites since last 12 months.

Unilever India Exports Limited have established stringent quality controls using latest cutting-edge technologies and are striving to make it foolproof across all facets of operation. While all thier quality systems are ISO:22716 & GMP-WHO (FDA, Govt. of India) certified and would like to highlight some key initiatives below:

Paperless Quality: Sustainability has always been core to their approach. They have left no stones unturned in digitalizing end to end quality control processes from raw & packaging material procurement, artwork management, testing of the materials & finished goods till the final leg of logistics. This has reduced Their quality turnaround time by almost 50% and helped cut down manual errors by up to 60%.

Electronic Batch Recording & Auto Loss Capturing: To have "First Time Right" batches & no touch operation whilst eliminating manual errors, they have automated the batch making process & product filling systems. Statistical Process Control though the data generated has helped make the automation more robust and in targeted elimination of losses. Being an innovation hub, this data has also significantly helped us to monitor the performance of new formulations.

Vision camera system & Digital PCRO: While they aim for Zero defect generation using WCM methodology, they also ensure that strong & foolproof detection system is in place to capture the defects generated (if any). This technology works on optical character recognition which ensures that only correct label & coding passes through to packing. Digital PCRO ensures strict controls on weights & measures ensuring consumers get the right quantity that they pay for.

Hygienic Core design & HACCP Study: They believe their biggest asset is our consumer's trust and with times of heightened sensitivity to environmental & health concerns, they have moved to ecofriendly, milder or preservative free products. Hence, to ensure consumer safety, our manufacturing & packing hardware design adheres to stringent hygienic engineering norms & they have strong HACCP in place for rigorous monitoring.

Supplier Collaboration-Small actions, Big Difference: They actively engage and do partnership programs with their +150 suppliers to share & replicate the best practices. Some actions like color coding in outer cartons with similar dimensions, label format harmonization of PM cartons to avoid mix up & better traceability, changing gasket color inside bottle pumps for easy detection of leakage etc. have made significant improvement in delivered product quality.

Digital Voice of Consumer (DVOC): DVOC gives holistic view of consumer feedback by integrating data from various social media platforms & E-com sites, rating & reviews, and consumer engagement centers. It uses Artificial Intelligence (NLP programming) to classify the facts & opinions mentioned by the consumer into consumable format to draw insights. They monitor the spikes in feedback and take immediate actions if any anomalies are identified. This has sped up the response speed significantly across all facets of the organization.

Cost of Poor Quality: They see quality as an investment for the future. Though the traditional view is that quality comes at an oncost, but they believe that the reality is quite contrary. Hence, they closely monitor the cost incurred at each level of quality rejection, rework, or business waste and report the savings back to the system upon elimination of issues.

Unilever Exports India Ltd consumers expect a great experience every time they use their products and trust them to deliver it. Great quality is at the core of this trust. Their business is built on the quality promise - it keeps their consumers safe, builds stronger brands and is key to their sustainable growth.

GOLD (SECOND) PRIZE

Name of Organization: L&T Transmission Line Tower Factory
Location: Kanchipuram, Tamil Nadu

Organization Overview:

Larsen & Toubro Limited, is a major Technology, Engineering, Construction, Manufacturing and Financial services conglomerate, with global operations. L&T addresses critical needs in key sectors - Hydrocarbon, Infrastructure, Power, Process Industries and Defense - for customers in over 30 countries around the world.
L&T is engaged in core, high impact sectors of the economy and our integrated capabilities span the entire spectrum of 'design to deliver'. With 8 decades of a strong, customer focused approach and a continuous quest for world-class quality, we have unmatched expertise across Technology, Engineering, Construction, Infrastructure Projects & Manufacturing, and maintain a leadership in all our major lines of business.
Every aspect of L&T's businesses is characterized by professionalism and high standards of Corporate Governance. Sustainability is embedded into our long-term strategy for Growth.
L&T Construction (LTC) is one of the business Division of Larsen & Toubro Groups with 8 major business verticals. "**Power Transmission & Distribution (PT&D)"** is one of the largest business vertical of LTC. PT&D is a powerful player that offers integrated solutions and end-to-end services ranging from Design, Manufacturing, Supply and Construction to Commissioning in the field of Overhead High Voltage Transmission Lines, Substations, Utility & Power Distribution and Renewable Energy Projects in the domestic and international markets.

TLT Manufacturing Factory & Testing Station:
L&T has State-of-the-art TLT Manufacturing Unit strategically located at Kanchipuram, Tamil Nadu. The Unit is certified with ISO 9001 for Quality, ISO:14001 for environment, ISO:45001 for Safety, ISO:50001 for Energy Management & NABL Accreditation as per ISO/IEC 17025 for our Testing Station and Laboratory. The Unit has incorporated with Design Verification, Design Validation and Manufacturing facilities under one roof, thereby supporting Customers with an end-to-end solution right from Design to Supply of EHV Towers and Structures. The unit is continuously focusing on optimizing usage of natural resources through R&D in design and process excellence.

Fabrication Plant: Equipped with robust CNC machineries with IoT monitoring, and various semi-automatic Machineries catering to all operations for Structural Tower Manufacturing.
Galvanizing Plant: Eco Friendly & equipped with highly sophisticated imported microprocessor controlled dual fuel furnace.
Testing Station: One of the world's largest Tower Testing Station and the 1st Private Testing Station to be accredited by National Accreditation Board Laboratories (NABL), catering to both Domestic and International Clients. The Testing Station can withstand the design loads specified for the test structure under stimulated conditions up to 1200 kV.

Key Features of Quality System:

L&T Transmission Line Tower Factory process is system driven and ensure that the system is independent and dynamic, creating new benchmarks in their Quality Standards. Periodic review of their Quality Management System in line with the latest advancement in technology ensures that the system remains relevant.

Quality Policy of the organization is developed by considering Customer requirements as the prime requisite. It is achieved by incorporating risk based thinking, continual improvement towards defect free product, cost competitiveness, ensuring legal & other requirements, trainings and adapting innovative technologies.

Quality Objectives are developed in line with their Quality Policy. Objectives and targets are precipitated to the bottom most level so as to ensure collective and collaborative effort of all stack holders. They have an integrated manual for QMS, EMS and OHSMS. This helps in effective collaboration of different stakeholders and arriving at "Cost and Time Effective" solutions.

Integration of traditional and modern solutions plays a vital role in ensuring that the objectives are met. Quality Tools and Lean manufacturing concepts coupled with TOC philosophies, implemented in the recent years, have resulted in a throughput improvement of 20 %. Digital advancements such as Production Decision Supporting System (PDSS V4.0), IoT, Quality Incident Reporting, RFIDs, Training Modules have played a significant role in obtaining insights that has resulted in disruptive solutions. "Virtual Inspection" module developed through in-house talents, viz. Smart Glass Technology, Industrial Tab, have played a crucial role in these uncertain times. It not only ensured that the business is carried out as usual, with minimum impact but also in the most cost and time effective mode. Our customers have appreciated the solution offered, as the difference between the physical and virtual inspection is minimal.

The unit is a "Kaizen factory". Several kaizens were implemented aimed primarily at sustainable business. Most of Kaizens are in the domain of improving quality, safety and environment with tangible and intangible cost benefits. Their initiatives have resulted in substantial improvements in Zinc, LPG and LDO conservation. Through GEMBA modifications they have achieved significant improvements in reducing the lead time which played a significant role in cycle time reduction from Raw Material to Tower (Finished product) deliveries. Technological solutions were integrated in optimizing Power utilization such as installation of VF & VVVF drives, maintaining power factor, upgrading to smart lighting systems, supplementing this is an all solar powered RO plant with solar tracking system thereby reducing carbon footprint.

With a team of highly competent professionals they ensure that their products are inspected with utmost care taking into consideration customer requirements and environmental impacts. Periodic review ensures that our objectives are achieved. With a leadership team highly proactive and supportive, they review their targets periodically ensuring that they stay relevant and competitive.
Customer satisfaction is of prime importance for any business. All customer satisfaction reports are now being collected digitally and thoroughly scrutinized at various levels and actions are initiated horizontally across various functional streams so as to ensure the delight of our customers.
With every sunshine, they see an opportunity in lighting the lives of millions of people across the globe. They take pride that we have played a significant role in Government of India's ambitious project of "Power to all" through electrifying entire INDIA. They believe that they can serve the remotest regions of the world with highest quality, safety and environmental standards.

SILVER (THIRD) PRIZE

Name of Organization: Raymond UCO Denim
Location: Yavatmal, Maharastra

About the Organization:

Raymond's denim story began in 1996; focusing on quality, innovation and the creation of exclusive products & designs that have always caught the eye of some of the world's leading jeans wear brands as well as making them amongst the top producers of specialty ring denim in India with a lion market share.

Raymond UCO is a (50:50) joint venture between M/S Raymond Limited & M/S UCO Sportswear Belgium with a capacity of 48 Million meters of Denim fabrics. Raymond UCO Pvt. Ltd. is a market leader so far as Quality and variety is concerned. Promoted as an essential accessory for "The Complete Man", its products have set a benchmark in that genre. The company is a leading exporter of its Denim fabrics and has bagged TEXPROCIL Gold & silver trophy of export for the last many years. Raymond UCO has laid great emphasis on developing strong in-house skills for research & development since its inception. This unwavering attention to innovation has enabled it to introduce path-breaking new products in the market. Hailed as a pioneer and innovator, Raymond UCO has raised the performance and product standards of the entire Indian textiles industry.

The denim mill was established in the year of 1996 with a production capacity of 10 Million Meter/Annum is presently transformed into a 48 Million meters/Annum conglomerate, but its mantra for continuous growth has remained the same: pursuit of excellence, to achieve enhanced customer satisfaction through ongoing innovation. And happily, the growth graph continues to rise higher and higher.

Sustainability has been the company's focus area since inception. Its effluent treatment plant was designed to treat, recover and reuse processed or utility waste water with an objective of zero liquid discharge. The complete effluent treatment process is 100 per cent biological, treatment is carried out without use of chemicals. Raymond UCO has also taken up many energy and power conservation projects to continuously mitigate carbon footprint. Its lush green campus boasts of 80,000 trees & makes it one of the greenest manufacturing plant.

They manufacture 42 million meters per annum denim fabric. Their product basket comprised of Denim fabrics made of 100% Cotton and its blend with Elastane, Polyester (both virgin and recycled), Hemp, Linen, Elasterell-p, Nylon, Viscose, Modal, Lyocell, Tencel, Wool, along with 100% Linen, 100% Tencel. They produce simple indigo or sulphur dyed as well as SBIT, IBST, Sandwich and pigment printed stylish denim fabrics. In addition to that they can do variety of finishes on denims like only softener finished, Coated, water / Oil repellent finished, anti-microbial finished.

Key Features of Quality System:

Raymond UCO Denim implemented best practices and policies in line with industry standards to meet its customers' quality requirements. The company is committed to implement and maintain its quality policy, quality objectives and quality culture into its manufacturing facility. The organisation has developed both long term and short term strategy to excel in entire quality perspectives, rather quality excellence.

To build excellence in its product portfolio is the primary strategy of the Raymond UCO Denim Pvt Ltd. They have linked quality with profitability, customer needs and low cost, in the process of long term quality strategy. Like,

a) Discover customer needs
b) And plan to attain those
c) Forecast chances of failure
d) Identify gap and bridge them
e) Set frequency for quality testing and inspection

The management of Raymond UCO Denim Pvt Ltd has established the quality policy which is very much appropriate to the purpose in this context, and it absolutely supports its strategic direction.

Organizational Leaders Role In Quality Management,

1. To set the directions for effective Quality Management.
2. To set a Quality policy that is much more than a document & part of the organizations culture, values, performance standards and corporate citizenship.
3. To set the Vision, Mission & Value codes for shaping quality vision.

Raymond UCO Denim Pvt Ltd has formulated steps to identify quality road maps in its quality manual and implemented the systems in the manufacturing process with the help of different tools like, technology up gradation, application of six sigma, DMAIC methodology and other lean manufacturing tools,

1. 5S (Sort, Straight, Shine, Standardize, Sustain)
2. 5C (Curiosity, Customer First, Class, Cost Efficient, Collaborative.)
3. KAIZEN (Change for Good)
4. 3M (Muda, Mura, Muri)
5. Work Standardization
6. Value Stream Mapping
7. RCA (Root cause Analysis) e g. why-why analysis, Fish-Bone Diagram, Brainstorming & Affinity diagrams.

Their laboratory is accredited with ISO/IEC 17025:2017 and other buyers testing requirements. All the instruments are being calibrated and data recorded as per set guidelines described in ISO/IEC 17025:2017 guidelines

Sustainability Features

Raymond UCO is committed to maintain social and environmental sustainability and it is not only confined to comply on the prevailing laws and regulations but also to become a benchmark in the industry of its kind by taking various measures to reduce carbon footprint, GHG emissions as well. They are a zero discharge plant with 100% biological ETP and three stage RO to recover waste water and reuse in the process. The have chosen globally accepted and certified chemical suppliers, to avoid any restricted chemicals percolate in our system.

WINNER IN MEDIUM SIZE CATEGORY

PLATINUM (FIRST) PRIZE

Name of Organization: EOS Power India Pvt. Ltd
Location: Mumbai

About the Organization:

EOS Power India Pvt. Ltd., Mumbai is German owned Indian Electronic manufacturing company with core expertise in designing and manufacturing of Power solution devices namely SMPS and associated electronic assemblies used in Medical, Health care, Industrial, Telecom, Audio Video applications supplied to Global OEM`s. EOS Designs and manufactures niche design products which are high quality, reliable, used for harsh and mission critical applications. EOS competes with well-known global players and able to sustain its position with its designs focusing on newer technologies, products upgrade with latest regulatory global norms. EOS believes in building the quality of the product in design.

- 35 years + experience in power solutions design & Manufacturing and EMS
- Manufacturing Facility & Design Centre based in SEZ Export Processing Zone Mumbai-India.
- 60,0000 sq.ft Manufacturing Facility
- Highly skilled & experienced team of 400+ members
- Experience in Medical, Industrial, Lighting & Telecom application products
- Green channel clearance which facilities the same day import clearance
- Global Sales support
- ISO 9001:2015/14001:2015 and ISO 13485:2016 Certification by TUV Rheinland & LLC certifying bodies
- Quality first mentality and First time right approach applied in all business processes
- Kaizen methodology for continual improvement
- Statistical process control (SPC) tools for reducing process variation and improving product quality
- Support High volume low mix & Low volume high mix requirements
- 3 high speed automatic SMT (Surface Mount Technology) lines
- 3 high speed box build lines, wave solder lines
- In-house magnetic manufacturing facility
- Ultrasonic welding capability
- Conformal coat capabilities, varnishing capabilities
- PCBAs to sub-systems and turn-key box builds
- Value added services, Chassis, Back Panes, Sub-assemblies & Thermal Management Systems
- In house Design centre
- Customized product design capability from paper to product
- PCB, Mechanicals & Plastic Enclosure Design
- Proto lab and analytical test equipment's for product design and analysis
- ISO Documented ECO (engineering change order), PCN (process change notification) processes
- Product safety test lab accredited with UL and NEMKO
- Lab equipment's for product safety & regulatory compliance testing to include EMI/EMC, surge, ESD etc.
- UL Certification: Product compliance testing & safety lab accredited under CTDP
- Nemko Certification product compliance testing & safety Lab accredited under TBM
- Factory Inspection by VDE,Global product Approvals by UL,CSA, Nemko,CCC

- Product Safety Standards – IEC 60601,IEC 60950,CE mark (LVD Directive), EN55022, EN 61000, CISPR22
- 100% Automated functional testing, Burn-in, Hi-pot & other Test processes
- XRF for RoHS testing
- AOI,ICT & Solder paste inspection,40 X Magnification inspection
- DVD Test set up, Humidity test chamber
- SAP B1 ERP
- Intranet based document control
- All product related information like BOM,AVL, related drawings and schematics etc. are online for view to authorized personnel
- All documents with detail history are hosted in secure server with easy back up

Key Feature of Quality System

1. Product Development 4 Stage Design Process

EOS believes that Quality must be designed into the product, not inspected into it. Quality can be defined as meeting & satisfying customer needs and providing superior value. EOS has 4 Stage Product design and release process which is very unique, every product goes through these ISO documented steps before any product gets into production. This makes sure that Product Quality which is going to delight the customer is built in while designing itself. All 4 stages have its inputs and outputs which results into Cost, Quality, Form, Fit, Function criteria which are evaluated by each functional head of the Organization before moving to the next step.

The unique design and performance of the product provides significant cost savings and design flexibility compared to typical industry competitor products. And with this vision, EOS adopted 4 stage design process for Designing a product as follows:
In stage-1 design process, basically design review is conducted for customer requirements and documentation part is completed for building prototype sample
In stage-2 design process, prototype sample is build based on design concepts and analysis by design team
In stage-3 design process, design validation is being carried out on robust working sample as per standard design parameters
In stage-4 design process, pilot build is prepared based on input from stage-3 design process

2. Information Management and Traceability ,

EOS has developed an intranet to help employees and managers do their jobs more effectively. It is used to provide company information to employees and get real time data from employees on performance for monitoring and evaluation purpose.

EOS has deployed SAP ERP system for factory data management which is very accurate, reliable & cost effective. SAP ERP system includes order management (customer order) through Purchasing, Logistics, Manufacturing, Shipping to end customer (order fulfilment) & closer on financial aspects.

Product Traceability software from incoming material receipt through final assembly. In this software, they can trace back the product history up to component level and the data can support in field failures analysis. From EOS website customer can see whole product history upto warranty period and test results.

3. IQA

EOS has developed in-house software for receipt and inspection of incoming material. In this software data is being entered online, all component and supplier history is maintained properly. It is very easy to retrieve the data for analysis point of view for achieving better results.

4. Process Atomization

EOS feels that implementing process automation offers significant opportunities for gains in efficiency, compliance, and a host of other benefits.

Process automation enables them to build consistency into the products and services, facilitate continuous improvement, and get the product or service to their customer faster. Process automation makes the process easy to understand and enforces adherence to the process steps. This eliminates missed steps often found in manual processes, resulting in consistent, reliable measures that assist in making decisions and implementing process improvements.

This also helps their kind of organization, manufacturing High Mix Low Volume (HMLV) products because of its ability to Quickly Implement Change, reducing changeover time.

In facility they have deployed conveyor zed lines with atomized production equipment's which are cost effective, accurate and reliable in operation. Some of product test equipment are semi automatic, where multiple products are tested in one setup resulting into reduction in product cycle time.

Product data management, manufacturing data management is atomized through in house developed software's which reduces manual data entry, maintenance & worry of data retention issues as well as errors which could occur due to manual work.

Automatic surface mount PCBA Manufacturing lines which includes screen printing , Gluing , Pick & place , Reflow , Machines in one single line & controlled through conveyors & in built software. Automatic Winding machines for Magnetic Assemblies, Semi Automatic test equipment's where multiple products can be tested simultaneously.

5. Testing Data Saving Facility

EOS has developed in-house DCM software facility to save the testing data automatically on server for tests such as Component feeder loading in SMT, AOI, ATE, Burn-in, Final test

6. People Awareness

EOS has systems like LED TV display on shop-floor for monitoring operator efficiency and productivity, Speakers for announcing important information, Induction, recertification and other trainings as per requirements for people awareness. Health check up by medical consultant and awareness among the employees . Social media postings for new developments and events.

7. Kaizen, KRA

EOS has implemented continual improvement through Kaizen for people involvement. Below methodology is used to ensure people involvement

i. Through online data management system on intranet employee can register their Kaizans
ii. If kaizen found to be genuine and worth then individual department head will approve for its further process, then EOS Kaizen Head will review and validate if found appropriate and then Kaizen will be approved by him.

EOS has appraisal system in the form of performance barometer on intranet to evaluate the performance of all employees

8. Quality Processes

EOS has below standard best practices for enhancing product quality

i. 5 piece qualification process: In this process before every start of production build initial 5 samples are being qualified by cross functional team such as Quality, Process and Production
ii. 3-5-10 defect monitoring: In this method, monitoring for defects being carried out for consecutive 3 defects , 5 non-consecutive defects in 1 hour and 10 defects in a shift (8 hours)
iii. C-D-C method (Check-DO-Check): In C-D-C, every operator follows check-do-check method for input, process and output for ensuring defect free product goes to next operation
iv. IPQA (In-process Quality Audit): In IPQA, in-process quality audit being carried out to verify as per BOM and QA Checklist for improving product quality
v. OBA (Out-box Audit): In OBA, finished goods are being inspected on sampling basis (as per sampling plan 1.0 AQL) to ensure quality conformance and meeting customer requirements

EOS has always believed in excellence in its products and processes.

In adherence to this EOS has done technology up-gradation and process improvements for meeting objectives of product and process excellence as below:

Today's economic reality is that of increased competition, better informed and demanding customers, and relentless pressure to cut costs. Companies are being asked to do more with less. Improving products & processes have become a top priority for all types of businesses.

GOLD (SECOND) PRIZE

Name of Organization: Shriram Rayons
Location: Kota, Rajasthan

About the Organization:

Shriram Rayons, Kota is a unit of DCM Shriram Industries Ltd. The plant was commissioned in 1965 to manufacture Rayon Tire Yarn, Cord & Fabric with technology from Beaunit Fibers USA & detailed engineering from Chemtex Inc.

Rayon Tire Cord Fabric is used as reinforcing material in High Speed Tires e.g. Formula-1 & high-end passenger cars (OEM sector), & therefore mandates stringent quality compliance. SR is adjudged 2nd among 4 major Rayon Tire cord Fabric suppliers in the world.

Very High Purity dissolving grade imported wood pulp reacts with sodium hydroxide & Carbon disulfide to form Sodium Cellulose Xanthate, which when dissolved in cold dilute alkali yields Viscose. Viscose is extruded & spun in Spinbath solution to form regenerated cellulose called Rayon. Rayon Yarn is twisted to form cords on twisting machines. These cords are woven on air-jet weaving machine to produce Grey Rayon Fabric. The Grey Rayon Fabric is dipped in Resorcinol-Formaldehyde-Latex (RFL) Solution to produce Dipped Rayon Fabric.

SR is also producing Dipped Nylon Chafer both for domestic & export market.

Besides above SR produces chemicals e.g. Anhydrous sodium Sulfate (for float Glass industry), Glauber Salt, Sodium Sulfide (for tanneries & Dye manufacturing units) & Carbon Disulfide for captive use in the same complex.

SR has 7MW captive power generation unit, steam from turbine is used in production process. We have reduced our coal consumption by about 90% & modified boilers to use Agrowaste as fuel. Agrowaste procurement from nearby villages is helping not only the environment but also facilitating extra earning to farmers. SR Carbon Emissions have reduced from 10000tCO2e/TJ energy in 2007-08 to 1300tCO2e/TJ energy in 2019-20 by switching over from Coal to Agrowaste as fuel in Boilers.

Currently the organization has Quality, Environment & Occupational Health Safety Management systems namely ISO-9001:2015, ISO-14001:2015 & ISO 45001:2018 in place duly certified by TUV-Nord.

Through Quality management systems we have improved business processes, key product property improved by 10% in last 15 years, reduced Rayon Spinning waste from 2.1% to 0.7% in last 10 years. Spinning productivity has been improved from 593Kg/Day/Machine in 2005 to 779Kg/Day/Machine in 2020. SR has increased Exports by 35% since 2005 & customer base has increased from 5 in 2005 to 14 in 2020).

Value Added Dipped Rayon Fabric sale has increased from 1600MT/Year in 2010 to 5632MT (214% Increased) in 2019, currently 80% of Rayon export is in the form of Dipped Rayon Fabric.

Our prestigious clientele includes world giants in Tire industry Bridgestone (Poland, Japan & USA), Pirelli (Romania, China & Mexico), Goodyear (Luxembourg, China & Indonesia & Thailand) & Continental (Slovakia, Germany, China & SA) which account for 88% world tire production. SR is adjudged A-Rated supplier by all our customers.

Shriram complies to REACH regulations (196 SVHC substances) & following are key points:

- SR has been participating in Disclosure of Carbon Emission (Carbon Disclosure Project, CDP) since 2015.
- Our Product is 100% Biobased and certified through DIN Certco
- Participates in EcoVadis for monitoring platform to assess social and environmental performance score

SR adopted the Renewable Energy Solutions – Solar heaters & PV power (10kW, 1MW & 1.1MW PV Panel)

Key features of Quality System:

Quality Manual and System:

- Well documented Quality Manual, called Daily Work Management Manual (DWM). Two Layer Quality Manual, Apex Quality Manual is DWM/QM that covers management functions & common procedures.
- Quality Policy developed and implement through discussion & periodically reviewed in Management Review Meeting
- Each department maintains a DWM in line with Apex DWM. Each departmental DWM has 17 Sections covering all requirements.
- All business processes evaluated for risks involved including COVID Pandemic & mitigation measures are implemented to reduce impact of identified risks.
- Advance Product Quality Plan (APQP) methodology in new product development
- Process Failure Mode Effect Analysis (FMEAs) in all production processes. For each production step RPN is computed & periodically reviewed/updated.
- Yearly SWOT analysis is conducted by senior management & top management jointly. For resource fulfilment, Cash Availability plan (CA Plan) & Major Repair Job Plans are made annually.

- Shriram Rayons has established a healthy Quality management System to ensures Quality better than customer's expectations, In this methodology the customer's Specifications are translated in Quality Plan followed by a manufacturing plan, covering product characteristics as well as packing & transportation precautions.
- Well-designed MIS system, facilitating precise management reviews.
- Clearly defined "Warning Limits for Corrective Actions" (WLCA) & Segregation limits for non-conforming material in the in-process stage
- For Change management, 3M Change methodology is used, also, Vendors are sought to comply to 3M (Machine, Material & Method) Change requirement.
- Calibration Status is displayed on respective equipment stating date of calibration & next Due date. Calibration is supported by Drift Analysis.
- Identification & Traceability from Raw Materials to finished product. Batch card/ Doff Card/Manufacturing Card system is followed in Viscose/Spinning/Textile/Dipping.
- Skill Matrix Evaluation of all employees, this helps in identifying training needs, evaluation of effectiveness of trainings.

Quality Objectives:

- Section DWM/XX/08 in each departmental Daily Work Management manual, covers departmental Quality Objectives. (Total : 134 Nos Objectives)

Document Control:

- Method control is exercised through document control procedure (SOP/QM/01).
- Document Numbering system adopted to identifies all the Quality Documents and unique codification system adopted to provide documents numbers

Organizational Structure and Responsibilities:

- Organizational Structure, Responsibilities and Authorities are defined at two level through DWM methodology. In the Quality Manual, Top Management Organizational Structure, Responsibilities and Authorities are defined. Similarly all departmental Daily Work Management (DWM) manuals have clearly defined Responsibilities and Authorities

Processes:

- Strong & Transparent Communication system, Process Performance & Trends are displayed at pertinent locations in the plant by respective departments.
- Organisation follows TQM practices e.g. 5S & Red Tagging. 5S audits are conducted periodically, evaluation is shared for necessary improvement. There are 32 TQM Teams which have worker's participation, meetings are held at shopfloor, minutes are recorded & displayed at pertinent locations.
- CLIT (Clean, Lubricate, Inspect & Tighten) Standards are implemented.
- Inspection Standards are maintained & displayed at pertinent locations.
- Real time chart recorders, SCADA system & electronic alarms at various stages of manufacturing ensures robust process control.

Supply Chain:

- Vendors are evaluated for Quality, Quantity, Price, Delivery, Service & ISO Certifications under vendor evaluation system
- Monitoring of Process Capability (CpK) of RMs & sharing with vendors for improvement scopes and Vendor Process Audits
- Main focus on green & sustainable procurement strategies.

- Extensive Export Container examination before stuffing, Self-sealing using RFID seal.
- Incoming material inspection is done based on Statistical Sampling (IS-2500)
- FIFO in Stores & Dispatch

Data Management & Process Control:

- Measurement System Analysis (MSA) in QA testing.
- Customer & Product Specific Manufacturing Plans
- Use of Statistical process control (SPC) , Run Charts, Control Charts & Process Capability (CpK) evaluation of Key Process Parameters

Customer Satisfaction with Product Quality:

- Strong Customer Feedback System that includes proactive customer surveys & computation of Customer Satisfaction Index. Customers themselves also furnish Periodic Ratings.
- Robust Customer Complaint handling system, each complaint is handled using standard tools e.g. 8D report, Why – Why Analysis & Fish Bone Diagram. The Corrective actions are implemented & incorporated in respective DWMs.

Continuous Improvement

- Department selects Two to Three key Quality Objectives. From objectives comes Performance Index, from this Index, weighted average Continuous Improvement Index (CII) is evaluated & monitored.
- To ensure continuous improvement, each department is assigned performance objective from Quality Objective, from these performance objective performance index is calculated. From these Performance Index a continuous improvement index (CII) is monitored every month (SOP/QM/10). Deviation if any are analysed for suitable actions.
- Process & product Improvements through in-house R&D facilities. Knowledge capture & sharing through Intranet & technical Library.
- To explore the possibilities of Rayon Waste utilization; New Product development are underway as below:
    - Biodegradable Geotextile (Geo-net) for soil erosion control application in collaboration with BTRA (The Bombay Textile Research Association)
    - Developed Rayon Hand Gloves in collaboration with IIT Delhi. Currently work is in progress to improve cut resistance; to develop safety gloves from Rayon.

SILVER (THIRD) PRIZE

Name of Organization: TE Connectivity – AD&M India
Location: Bangalore

About the Organization:

TE Connectivity Ltd (TE) is the world leader in connectivity and sensor solutions with sales over $13.4 billion in 2019. TE is a technology leader in the world's fastest growing markets, helping to connect power, data and signal in everything from automotive and aerospace to broadband communications, consumer, energy and industrial applications. TE's Aerospace, Defense & Marine business is a fully integrated development and production operation with over $1.3 billion in sales in 2019. Value-add products (cable assembly, harnessing, integrated box builds) is an integral part of our Aerospace, Defense and Marine business and we support our products through their life cycle.

By helping their customers design and produce value-add products since the early 1980's, TE has gained extensive experience in setting up program management practices and procedures and will apply this expertise to this program. TE's Aerospace, Defense, and Marine (AD&M) Integrated Systems (IS) organization builds harnesses to thrive in the toughest, harshest environments created by humans and nature. TE's engineering and manufacturing capabilities are world class and will be an excellent match for the effort.

TE's production facility in Bangalore, India manufactures wire harnesses, rugged fiber optic assemblies and connectors. The Bangalore facility has been in series production since the early 2004 as a manufacturer of copper cable assemblies and harnesses. A newer integrated production facility was commissioned in December 2017. TE has a full-fledged and co-located product design and development team supporting production.

The site employs about 400 employees and is spread over 70 thousand square feet. The site has adequate space for expansion to meet customers' requirements. Key certifications in the site are AS9100 Rev D, Mil Standard 790 and IPC/WHMA-A-620 for wire harnesses.

Key capabilities on wire harness manufacturing include hand & pneumatic crimping, potting (non-conductive), cutting, bending, assembly, soldering, wire lacing, laying, scaling and electrical testing. Key customers on wire harnesses for TE globally include SAAB, Boeing, Lockheed, Ontic, Safran & Intertechnique, and on the domestic front players like HAL, BEL & Tata Power SED, etc. Key Customers on connectors for TE globally Including Airbus, Safran, Thales and on the domestic front players like HAL, BEL & Tata Power.

Key Features of Quality System

TE is Committed in delivering the Extraordinary Customer experience by implementing the Best in Class industry standards and always drive towards the continual improvement. Some of the Best practices which is practiced across the organization are as follows:

1. SMT Concept
2. Digital Factory (e-QCPC, digital SPC, DQIP, e-DOJO etc.,)
3. Six Sigma/QC Circle
4. Low cost Automation
5. Kaizen Events
6. TEOA
7. Visual Management

SMT Implementation

The ulterior motive behind the SMT concept is to create teams in shop floor, which can understand the constantly changing business needs, identify the skill requirements, align themselves towards the goal and manage their day to day operations including prioritizing work orders, foreseeing demand and supply gap of raw materials, adhering to the predefined quality standards, managing human capital within the team and resource sharing between teams, in order to achieve their key performance indicators, without depending on their supervisors to receive instructions from. To perform their roles without any intervention, every role holder is entitled with certain set of empowerments that shall be closely monitored by the SMT Champion, Subject Matter Experts and Coaches.

Operator Training Program

Operators working on wire harnesses undergo an E -Dojo digital training and classroom on the job training program and are certified prior to being assigned to the production line. TE has an in-house training department for all operators. Training team consists one IPC 620 certified and one well experienced Trainer for harness assembly. Harness operators are trained as Certified IPC Specialist (CIS) and have been trained by Certified IPC Trainers (CIT). All the operator's skills are reviewed, validated and skill matrix updated with grades based on operator knowledge.

Continuous Improvement Opportunities

TE will strive to continuously identify improvement opportunities that will result in cost reduction. Initial areas, where there could be potential are high value sole source components, cost effective TE equivalents for QPL parts, localization opportunities in India, etc.

WINNER IN SMALL SIZE CATEGORY

PLATINUM (FIRST) PRIZE

Name of Organization: Oerlikon Balzers Coating India Pvt Ltd
Location: Bangalore

About the Organization:

Oerlikon Balzers is the leading global supplier of PVD coatings which decisively improve the performance and service lives of precision components as well as of metal-working and plastics processing tools.

The proprietary coatings developed by Oerlikon Balzers and marketed under the BALINIT® and BALIQ® brand are extremely thin and very hard. They significantly reduce wear and friction.

Oerlikon Balzers has started its operations in India in the year 1994 from Pune. Now having coating plants strategically located in Pune, Bangalore, Chennai, Ahmadabad, Jamshedpur, Gurgaon , Chandigarh and Aurangabad with a strength of 515 employees.

Advantages of PVD coatings are as given below:

i. improve product quality
ii. improve productivity
iii. reduce production costs
iv. increase process reliability
v. shorten delivery times
vi. reduce the environmental impact save resources

In short, BALINIT® and BALIQ® coated tools gives the performance needed to meet the increasing demands of modern manufacturing technologies. Customer's make use of these advantages for cutting, punching, forming, metal die casting and plastics processing industries.

Bengaluru coating center is 3rd coating center in India and having strength of 95 employees. This center is certified for ISO 9001 and ISO 14001 standards valid till July-2021.

Key Features of Quality System:

1. **Certified quality system:** ISO 9001 since 2005 and ISO 14001 since 2012

2. **Salient features of ISO certification**
   - **Online SharePoint portal** for QMS – **GATE** for uniform globally system implementation
   - **Process Maps** are well defined in GATE
   - **Stakeholder and Risk & Opportunities** analysis and actions
   - **Process Metrics** are defined on GATE for uniform monitoring across all centers
   - **Management reviews -** senior management from HO participates in center review - shows management commitment, Use of standardized templates

3. **Quality Strategy : Strategic Actions Elements**
   - QMS, Improvement and Standardization
   - Failure Prevention
   - Robust Correction
   - Quality Mindset
   - Lessons learnt and cost reduction

4. **Quality Structure :**
   - Effective strategy execution is facilitated through effective structure .
   - Bottom up approach is proposed to involve front-line team members .
   - We believe that everyone can contribute for improvements and all ideas can be good ideas
   - Quality Manager directly reports to Regional Quality Head who directly reports to Managing Director and President , this structure ensure autonomy to Quality function .
   - Competent people are appointed across organization as per the structure .
   - Regular programs are taken to improve competency of people.

5. **Quality System Evaluation**
   - Internal System Audits
   - Operations Audits by local and global auditors
   - Audit from Global customers

6. **Improvement initiatives**

   - **People Involvement in continual improvements**
     - 1-1-1 program focused on small improvements
     - 3 in1 program focused on bigger & strategic improvements
     - Horizontal deployment using the outcome of both programs

   - **Reward & Recognition for contribution to improve quality**
     - Structured and well design R & R program is implemented
     - Monthly recognition of team members by top management

   - **Q Communication : focus on sharing – learning – caring better for our customers**
     - Q moment : weekly sharing of Q points ,Q lessons learned , Q alerts
     - Q Learning : monthly India level Q sharing to Q team at India level
     - Q sharing platform : regional sharing of Q improvements – monthly for Asia SE
     - Q circles : cross functional team works on problem solving – weekly
     - Q information board on operational excellence review board – daily
     - Q quiz & awareness campaigns

   - **Leadership involvement & support**
     - Plant Manager conducts Q observations : monthly
     - PQM : plant Q meeting – monthly : review – support
     - Management meeting : Q update to top management on monthly basis

   - **Customer experience management :**
     - CRM for opportunity management
     - Complaint management portal (CRM) and problem solving team for the same
     - Customer visits on regular intervals , seminars
     - Customer satisfaction surveys and actions
     - GPS enabled logistics service

   - **Information sharing platforms :**
     - SharePoint Site for Quality
     - QlikView – advanced tool for data analysis
     - GATE – online tool for process maps and documentation
     - SAP for data analysis alongwith Navigen as ERP
     - Online coating machines

- Quality monitoring : Early detection approach
    - Proactive Q monitoring process designed :
    - Q monitoring by QM and plant managers
    - Call for action process to address high risk issues and initiate improvements
- Quality monitoring : Reactive approach
    - Monthly CONQ analysis and initiate problem solving
    - Problem solving through Q circles

7. Cost of Non Quality Reduction

- Q circles to for problem solving
- Reduce CONQ by 7.5% YOY as per global policy

8. Process validation and control

- Use of globally validated coating machines, recipes and processes.
- Globally standardized Process Control Charts to control processes

9. Inspection and calibration

- Use of advanced inspection process and equipments

10. Preventive Maintenance

- Implementation of world-class maintenance Program

11. Competence and training –

- Skill matrix
- U-matter for performance management & development plans

12. Change Management:

- System to identify and execute changes which affects products & Processes

13. Employee Engagement

- Employee Engagement survey to identify improvements and actions to improve
- HSE - Cultural change by SHIELD program.
- YOGA - To keep Healthy body & Mind
- Project Manthan for leadership development

14. High standard implementation of HSE and 5S.

- Use of monthly 5S audits and Kaizen tools
- One of the 5S objective is to reach ‘0” defect in the organization.

GOLD (SECOND) PRIZE

Name of Organization: Insmart Systems
Location: Hyderabad

About the Organization:

Insmart Systems is 27 years old organization dedicated to manufacturing of Automatic sample collection, sample preparation equipment and analysis equipment. It develops and produces equipment for all kinds of mined materials.

Insmart equipment are widely used for research, development and quality control in nationwide and abroad locations. The company operates from one of the first industrial hubs of Hyderabad and its market leadership lies in following product segments:

- Lumpy material sampling with Automatic clinker samplers, Automatic cross belt samplers, Belt end samplers, Auger samplers etc.
- Process material sampling systems with Screw samplers, Powdered coal samplers, Air Slide samplers.
- Multi layered automatic sample transportation systems.
- Robotic sample preparation laboratories for manufacturing plants (indigenous).
- Software integration solutions for the entire sampling cycle from auto collection till analysed sample data analysis.
- Sample crushing & its division, Sample Grinding & its Compaction systems.
- Sample size fractioning with single – multi deck screens & fines sieving systems.
- Turnkey Lab setups for physical, wet chemical & automatic sample preparation labs.

Insmart's other areas of speciality are: Sample Preparation for powder metallurgy applications involving powder blending (pulverization), die compaction and sample preparation for surface characterization.

The focus of Insmart is high precision machine manufacturing and interdependence with quality control and scientific community for offering quality in Insmart equipment. Continuous investments in R & D ensures that Insmart products stand by their excellent reputation.

Key Features of Quality System

As, is the case with Insmart Systems, the company's main line of products is targeted towards assessing the input material quality and supporting process control improvisation for the manufacturers of Cement, Iron and steel, Aluminum, glass, copper etc. Thus, their focus on quality systems in governing day to day operations is quite high.

They aim for achieving, maintaining and improving accuracy in the equipment that they produce. Therefore, they allocate 20% of their turnover for product development.

After rigorous trials, customer interactions and market validations, they move towards equipment productization stage. They follow only CNC Fabrication and Machining for product manufacturing.

The organization operates under the aegis of its Managing Director who also happens to be a machine design specialist, is Insmart system's most effective asset in designing and developing the state of the art technologies.

Insmart Systems quality management model is fully compatible with ISO standard 9000. Today they can also boast about having a NABL certified cement and coal quality assessment laboratory and CE marking –a hallmark of product quality and safety, on certain equipment. Also, 80 % of the purchase orders received by them are repeat orders which speaks about quality of their products n' services and level of customer satisfaction.

Today, in the covid era when their customers are facing an acute manpower crunch and looking forward for reliable automated sampling solutions, Insmart Systems with its robotic sample preparation systems is poised for a phenomenal growth.

By following standard operating procedures, standards and work instructions during machine manufacturing play an important role in their process control and their shop floor teams are very familiar with the stage-wise inspection of components and continues to play a vital role in ensuring testing accuracy.

Apart from customer satisfaction survey reports they also follow a policy of user follow up where, in rotation, every customer is contacted on quarterly basis to check the supplied equipment health and a root cause analysis is conducted for the received complaints so as to provide a long-term solution to the occurrence. The complains are further categorized into assignable-cause and chance-cause.

Regular customer and vendor satisfaction assessment is performed by not only collecting feedback forms but personally contacting them as well. The feedbacks undergo a fortnightly assessment and the issues are resolved to the satisfaction of the customer.

In case of repeat complains skill-matrix training is provided to improve upon the shortcomings.

Insmart follows a concept of Quality control by design. Stage wise assessment is conducted at two levels; internally it is performed by using calibrated quality control equipment and tools and externally it is conducted by agencies. Especially, in case of peak performance equipment. The external tests usually include the material fatigue tests and endurance tests.

CONSTRUCTION SECTOR

WINNER IN LARGE CATEGORY

PLATINUM (FIRST) PRIZE

Name of Organization: Larsen & Toubro Limited – Power IC
Location: Vadodara, Gujarat

About the Organization:

L&T Power (LTP) is an Independent Company of Larsen & Toubro Limited, with mandate to integrate L&T's varied offerings in the power sector. LTP is uniquely positioned to combine rich and diverse strands of experience in engineering, manufacturing, construction and project execution with strong management focus on providing turnkey solutions. Headquartered in Vadodara, Gujarat with global presence, proud to be associated with over 125 power projects, executed capacity of more than 70,000 MW and several others under execution.

Robust, plural leadership have always committed for continual improvement of Systems, Products & Services. Robust Strategic Planning process ensures growth and business sustainability. Perspective Plan (10 years strategy), LAKSHYA Plan (5 Year Strategy) and DHISHA (1 Year Strategy) provide organization a seamless quality strategy.

Integrated world-class, state-of-the-art manufacturing facility under single roof in Hazira shows L&Ts effort in Prime Minister's "Make-In-India" initiative. Best-in-class-technology provided by having joint-venture/partnership with world's leading technology providers. LTP has acquired capability to contribute to ~92% of Power-Generation-Value-Chain for Coal and ~55% for Gas Power Project from in-house capabilities.

LTP is certified to ISO-9001:2015, ISO-14001:2014, ISO 45001: 2018, ISMS-27001:2013 and ISO-50001:2011. IMS manual at the apex; DACP form Level II document for critical processes. With digital transformation focused systems including IoTization, AI, Data Analytics, Video Analytics, 3D scanning etc with more than 55 e-enabled systems developed provide edge over competition; Flagship Systems like VCMS, eALPs, Project-Monitoring-Center, t-Bits, eGyanshakti. Six-Sigma in concrete, three Sigma welding shows process maturity.

LTP has benchmark its processes with in LTP, with in group companies, With business partner (MHPS) and with external benchmarking. Over the years LTP has benchmarked with respect to shortest PG test, COD Power Project (NTPC Khargone), Most efficient Plant in India (NTPC Khargone), Shortest and most cost competitive project in India (Malwa II) shows L&T's unique position and benchmarked its Turnkey Solution. L&T's project execution has helped even Customer (NTPC - Khargone) benchmarking to win Swarna Shakti Award, demonstrating L&T commitment to customer delight.

As part of excellence drive, structure process for stakeholder needs and expectation established (including customer, employees, business associates, society etc). Customers rated L&T Best-In-Class with 6.78 /7.00 (Fully Satisfied level) in overall satisfaction over its competitors. Sustained efforts for continual improvement, strive for excellence in practices and performance, LTP is recognized with prestigious awards by the industry.

Key features of Quality Systems

- LTP is in Business Excellence journey over last 5 years to improve its process by benchmarking to move upper orbit of excellence
- LTP has institutionalized IMS & certified to QMS, EMS, OHSAS, ISMS, EnMS and processes adhere to ISO 31000 (Risk Management).
- Quality strategy in LTP is under the aegis of the plural Leadership. Perspective Plan (10-Year Strategy) and LAKSHYA (5-year strategy) is identified based on SWOT by CEO&MD along with Senior Leaders, to develop Annual-Performance-Plan (DISHA) and is cascaded to functional levels.
- Vision, Mission, Policies (incl. Quality, EHS, CSR) are established by Leadership, committed to continual improvement. In-line with BIC (Best-in-Class) philosophy, Head-Quality reports to the Head – L&T Power IC in all aspects.
- Common & Core processes critical to internal & external customers are identified in IMS & DACP having Process Notes, SIPOC, RASCI, KPIs, R&R and ROAM. Stakeholder needs and expectation including Customers, BAs, Employees, society at large for CSR activities etc. are gathered in structured process, analysed for effective actioning.
- Structured systems are in place for benchmarking processes within LTP, with parent company, with business partners and external benchmarks (including competitors)
- Risks related stakeholders are managed by dedicated Contracts & Risk Mgmt. team using @RISK software.
- Aligning with Industry4.0, Processes are benchmarked, and structured systems implemented as part of Digitalization strategy.
- More than 55 digital systems including flagship systems eALPS,Audit Mgmt, Site NCR,VCMS, IDEATE Portals, Learning-Missions & Quality-Talk-Series enhances our operational efficiency as well bring out areas of improvements.
- Customer connect thru' out life cycle of projects is followed for 2-way communiqué, with Project Director being Single-Point-of-Contact.
- Adopted Supplier-Relationship-Management (SRM) with strategies of BA Data Base Rationalization, Segmentation, Capability mapping, Performance assessment. Annual-Vendor-Meet (Power-Ensemble) performed to gather BAs Needs & Expectation and Providing feedback. Unified Codification of Material/Services through ConstZon for benchmarking prices for effective procurement PAN L&T.
- End-to-end Training process: Job Description>Competency Matrix>Gap Analysis>Trg. Need Identification>Training>Effectiveness deployed for technical, behavioural, managerial skills. 5R Approach (Recruitment-Remuneration-Recognition-Retention-Recreation) address 360° Talent Management. A specialised P4 (Power Project Professional Program) conducted to develop home-grown-leadership for future PDs.
- 'RISE' -Recognizing-Inspirational-Success & Excellence awards institutionalized for employee rewards & recognition.
- Project-Learning-Session, Community-of-Practitioner, eGyan Shakti – KM System established. Best practices-lesson-learnt shared though these forums.
- Robust communication platform (top-down, bottom-up) aligns employees with overall strategy, vision, values and operational business plans. Head of Power conducts Town-Hall-Meetings: SAMIP. Communication effectiveness is measured in LEAP Survey & benchmarked with BIC in global-infrastructure-companies and action plans are deployed.

- SQC used for target-setting to evaluation for process identified and are benchmarked. Project review starts with statistical analysis on EHS and Quality parameters.
- Quality requirements incl. Inspection-Testing-Calibration are defined-agreed with customer in QA Programme, drives systematically during entire life cycle thru' VCMS & Asset Mgmt. Portal.
- Statutory and Regulatory requirements are agreed with customer at contract finalization and monitored. Employees are trained by institutes like PTI, IPM, EHS-STCAF and Safety-Innovation-Center. Each material supplied-constructed are identified & traceable from start-to-end which referred in recall cases.
- Structured mechanism followed from design to validation by PLADES, distributed with QR Code through DMS.
- Organization-wide change are executed through CFT with involvement of Quality under the guidance-monitoring of Leadership. Project-process changes are effectively monitored-authorized through FTR/Change Notes/SDRs.
- Technology-improvement-programs are exercised continually to lead-benchmark with international competitors. LTSL-E&T-R&D-Digitization Group drives technology up-gradation. P&M Group drives improvement in OEE-MTTR-MTBF for optimum assets utilization with IoT-ization.
- Successfully received Phased-Manufacturing-Program-Certificate, showcasing L&T's commitment to bring Advanced Technology in Power to India
- Being heart of L&T's value system, CSR activities are done for inclusive growth considering the interests of stakeholders. Demonstrated positive trends and sustained growth, performance in most of the key financial & business parameters having a direct bearing on its shareholders.

WINNER IN MEDIUM SECTOR CATEGORY

PLATINUM (FIRST) PRIZE

Name of Organization: EDAC Engineering Limited
Location: Chennai

About the Organization:

EDAC Engineering Limited was incorporated in the year 1987**.** They deal with Balance of Plants in power plants on turkey execution, i.e., called BoP which contains around 40 - 50 systems which need to be integrated to the main Turbine & Boiler which is the heart of the Power Plant. They also do the Construction of Electro / Mechanical / Instrumentation of Coal Based Boiler and Turbine and Electrostatic Precipitators (ESP) and their sub-systems "Construction of 500 MW, i.e., Boilers (sub-critical Boilers) and of large capacities, i.e., 600MW to 800 MW is being undertaken. They have executed around 32,000 MW of Power Plant in the last 30 years in India and overseas.

EDAC Engineering Limited do Gas based Power Plants and Nuclear Plants and diesel Plants of various capacities. In Oil & Gas and Petrochemicals they specialize in executing large Refineries and as well as in Petrochemical involving complete Mechanical, Electrical, Instrumentation and Erection works. They are also into Solar Power and are presently doing 24 MW Floating Solar Project in Tuticorin in Tamil Nadu. They have also orders close to about 200 MW of floating Solar Plant to be executed for NTPC floaters supply in two locations one at Ramagundam and another at Kayamkulam.

EDAC Engineering Ltd have done and executed several Refinery Petrochemical maintenance on a long term basis, i.e , 5 year maintenance contracts In Kuwait and Saudi and have their offices in these two countries. Recently they were awarded a 10 year long term maintenance contract in Malaysia for the State owned Company Petronas. They are entering into a 3 yr long term maintenance contract with Reliance Refinery for such long term maintenance.

EPC and O&M Team: They have close to about 320 Engineers & Supervisors working spread across around 10 to 12 Project Sites. They have large Tower Cranes of 80 T cap. and Mobile Cranes of 260 T, 225 T, 150 T etc. and in addition to this construction equipment like welding machines etc. They have an asset base of about Rs.65 - 70 Crs.

Key Features of Quality Systems

As an ISO certified Company one of the key features that is worth mentioning is that their Quality Systems are well established and they practice the Quality Systems not only at the Project Management level or at the Head office but also incorporated at all levels and in all the activities at Sites in India and Overseas. During the Virtual Audit the Site Team at 525 MW Power Plant at Tuticorin were able to show the various systems requirements that are documented as part of fulfilling the requirement as per the mandate of the Quality Systems that need to be practiced. Though it is very challenging to plan and execute the activities in a Construction Project Site. The Team at the Project Sites take the pain to ensure zero incidents of Safety and ensure Quality and also ensure to prevent rework which adds to the cost.

Typically to keep the above in line, Organization insist that each Project Site should be well equipped and to meet that motto, they are practicing some unique features like "LEAN" concept which is very popular in manufacturing and rarely practiced in Construction Industry. They practice this "LEAN" concept in their Power Plant Project Sites.

In each Project Site they have qualified QMS & EHS Staffs who are well trained and also have qualified QMS & EHS Internal Auditors who conduct regular Internal Audits of all their Project Sites and also have External auditors who also conduct routine External Audits. In remote project sites spread on PAN India basis, the team of people including locally employed are trained and motivated to follow and implement the QMS. They also work with reputed Indian customer like NTPC and Foreign customers like GE Alstom, Siemens, Dow Chemicals etc. and this helps in effectively implementing and improving their QMS.

EDAC Engineering Ltd also conduct Training programmes at regular intervals on relevant topics of the Quality Management Systems highlighting the importance of the obligations to the Stakeholders right from the Customers and to Suppliers and employees at each level in implementing the QMS and also maintaining the Quality to the best possible levels meeting the Customer requirement and also complying to the needs of the regulations of meeting statutory requirements like the Boiler Act and also ensuring highest Safety norms. At the end of the day it is not only complying with the documentation but look at continually to improve over a period of time. ISO System also says that how the Quality Management Systems and Objectives are mapped into the business performance. They focus on mapping it effectively.

POWER SECTOR

PLATINUM (FIRST) PRIZE

Name of Organization: CESC Ltd. Budge Budge Generating Station
Location: Kolkata

About the Organization:

CESC Limited, the flagship company of RP-Sanjiv Goenka group of companies, is in the business of Generation and Distribution of electricity in the City of Kolkata over a century. It has a licensee area of 567 sq. km. and a consumer base of over 3.2 million. It has 3 generating Stations of which Budge Budge Generating Station (BBGS) is the prime one.

BBGS, a coal fired thermal power plant of 3 x 250 MW installed capacity, is situated on the bank of river Hoogli. Coal is brought to the Station by wagons, crushed in crushers, pulverized in mills and is burnt in Boiler to produce steam. Water is taken from river, de-mineralized in DM Plant and fed to Boiler as makeup. Superheated Steam from the Boiler rotates the Turbine, condenses in Condenser and is fed back to Boiler. Turbine acts as prime mover for Generator. As the Generator rotates Electricity is produced which reaches the consumers via transmission & distribution networks.

Accessibility of affordable, uninterrupted and quality power is one of the main determinants of today's quality of life. BBGS, a zero effluent discharge station, boasts of having most of the performance figures placed among the top notches in the country. High PLF (Plant Load Factor), low Specific Energy Consumption, high PAF (Plant Availability Factor), low stack emission, low specific water consumption, 100% ash utilization are some of its traits. They implement energy saving initiatives to make their processes sustainable and environment friendly.

Key Features of Quality Systems

BBGS is aligned with the Vision, Mission and Core Values of CESC. It is certified with ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018. The Quality Strategic Plan is inclusive of the internal and external factors and the directions to deal with them. Top management ensures the achievement of the Objectives by translating them further to functional objectives and monitoring the achievement of the targets assigned to these objectives. Key Performance Indicators are reviewed and necessary corrective and preventive actions are taken to achieve the goals. Improvements are carried out through implementation of various initiatives, innovations, Kaizen, and benchmarking activities.

Identification of Quality risks is done based on risk based thinking approach which includes both risks & opportunities depending on the organization context. It considers external & internal issues and needs and expectation of interested parties relevant to the organization & its various Departments.

To maintain a consistent good quality service BBGS pays attention to both the technological amelioration and the modernization of operation & maintenance practices. BBGS is equipped with the state-of-the-art technologies like remote monitoring system handling numerous live and historical data, PADO (Performance Analysis Diagnostics and Optimization) -an artificial intelligence based tool for identifying and controlling the parameters which cause efficiency deviations, in-house built Decision Support System for instant process related decision making, upgraded version of DCS (Distributed Control System), Energy Monitoring server for collecting, comparing and analysing the trend of power consumption, Cloud based online checking of field parameters, Application based Safety Observation, Online SMS application for Management Information System, Visitors' Safety Management System and an in-house portal containing almost every data and reports of the plant. Lock Out Tag Out (LOTO) is an integral part of their online Defect Management System.

BBGS takes prime concern in protecting environment. They adopt best possible practices to reduce Carbon foot print and achieve sustainable development. BBGS is the globally first thermal power plant to register two of its projects with UNFCCC as CDM (Clean Development Mechanism) projects.

CESC is a 'Great Place To Work'. Communication meetings with top management and surveys are conducted throughout the organization to have the holistic reflection of the employees' overall satisfaction level towards the organization, towards their workplace, their discontent, views etc. In BBGS apart from these, there are EHS meetings with contractor proprietors and with workmen in every quarter to discuss and solve the safety related issues.

Corporate Social Responsibility is an integral part of CESC's mission and vision. BBGS endeavors different projects including the infrastructure development of schools and health centers, amelioration of library, distribution of wheelchair, tricycles and hearing aids to differently abled people, awareness building programs to uplift the society.

MINING SECTOR

PLATINUM (FIRST) PRIZE

Name of Organization: NMDC Ltd, BIOM - Bacheli Complex
Location: Chhattisgarh

About the Organization:

BIOM Bacheli Complex is single largest Iron Ore Production Complex of NMDC Ltd. , A Navratna Company under Ministry of Steel. Bacheli Complex comprises of two mechanized pits located on Bailadila hill range village Bacheli, Dantewada District of Chhattisgarh state and it is about 425 Km from Raipur. The deposits are very rich in iron ore content and are rated as one of the best in the world. These Iron Ore deposits constituted predominantly by Haematite, occur along the tops of the ridges and are closely associated and underlain by Banded Haematite-Quartzite (BHQ) and tuffacious ferruginous shale. Bacheli Complex has annual production capacity of 15 MTPA. Bacheli Complex Mines are having 5 Star Rated Mines of Indian Bureau of Mines (IBM) and certified

1. QMS ISO 9001:2015 (valid upto Jul'2022)
2. OHSAS 18001:2007 (valid upto Mar'2021)
3. EMS ISO14001:2015 (valid upto Jul'2022)
4. SA 8000:2014 (valid upto Mar'2022)

Bailadila Iron Ore Mine, Bacheli Complex has full fledged mining operation in both the Pits (Pit No.-5 and Pit No.-10&11A). The mining scheme for both the Pits i.e Pit No.-5 and Pit No.-10&11A consist of deep hole drilling, blasting , dozing and loading with electric/hydraulic shovels of 8 cu.m./8.8 cu.m. bucket capacity and hauling by heavy duty rear dumper of 85T/100T capacity. For deep hole blasting, SMS/SME Explosives are used. The crushed ore is transported through a system of conveyors of a total length of 4.5 KM, to the Screening Plant where the ROM is screened to produce commercial products of different sizes such as Lump, Calibrated Lump and Fine. The gradation is based on the sizes of the final product. The size from + 10 mm to -150 mm is termed as Lump ore, + 10 mm to – 40 mm is termed as Calibrated Lump Ore, +10 mm to -20 mm as Sized ore and –10 mm material as Fines. These products from Screening Plant are conveyed at Loading Plant through a system of Conveyors. The material is stacked, reclaimed when needed and loaded in to the Railway Wagons by mechanized loading systems. The Loading Plant equipments, like mechanical stackers, Bucket Re-claimers and Wagon loader are used for stacking, reclaiming and loading the ore. The Loading Plant is designed to load 52000 Tonnes per day.

Key Features of Quality Systems

- Mine Planning in BIOM Bacheli Complex is being done using highly advanced Mine Planning software, which are
    - Geovia Surpac Mineplan
    - Geovia Whittle and
    - Minesched
- Mineral conservation and exploration is being continuously done to explore the availability of mineral for maximizing the reserves.

- The sub grade ore generated during the course of excavation is being blended with high grade ore at bench level to get desired grade.
- Mining machines i.e. shovels, dumpers are being maintained by OEM under MARC (Maintenance and Repair Contract) to ensure the availability and reliability of machines.
- In blasting process, SME (Site Mix Emulsion) and NONAL System are being used to control the generation of fines and avoid boulder generation.
- Higher capacity mining machines especially shovel (8 cum. bucket) and dumpers (100 T) are being used at different blocks for maximizing output per hour and better utilization of sub-grade ore.
- Pressurized water sprinklers are being deployed on haul road for dust suppression.
- Crushing point and transfer points of conveying systems are being provided with mist type dust suppression.
- In plant locations, operators are being provided with dust and noise free AC cabins for monitoring. CCTV surveillance is in operation in plant and its operation is being controlled with PLC / SCADA system.
- Chemical analysis is being done by Chemical Laboratory having NABL accreditation.
- Lab Information Management System (LIMS) is being followed for coding and de-coding of production and despatch samples for transparency. Buyers are also being invited at loading point to oversee the loading process for transparent business operation.
- Loading equipment (Wagon Loaders) are interlocked with PLC based loading operation and weightometers are being calibrated by OEMs in the presence of buyers.
- Real-time Online Inventory Management System (IMS), Human Resource Management System (HRMS), Financial Accounting System (FAS), Hospital Management System (HMS), Performance Management System (PMS), License to Operate (LTO), File Track System (FTS), Safety Management System (SFS), etc. are being used.
- Implementation of ERP System is under implementation.
- Dumper/Shovel Operators are being trained on "Simulator". Training is being imparted to HEM operators using e-moduling software.
- Employees at shop floor are actively involved in Quality Circle activities. In FY: 18 -19, 13 QCs have bagged prizes in CCQC.
- To encourage and promote executives, Talent Pool, CMD Trophy for Young Managers, You Thrive, Sandhan, Bhavishya Nirman (Succession Planning) etc. are in place.
- To encourage creativity and talent among workmen, Best Worker Award, Safe Worker Award, Nehru Shram Award etc. are being awarded every year on 15th August.
- Project Hospital is equipped with e-ICU and Telemedicine to provide special care to critical patients in this remote location.
- D2D Garbage Collection and Solid Waste Management is being followed.
- RO Water ATMs (3 nos.) are being operated in township for providing safe drinking water.
- Online Food Coupons distribution to contract Labour: Reward Point Management System.
- NMDC, Bacheli Complex is working towards zero waste mining by maximizing utilization of various grades of iron ore viz., slimes, sub-grade ore etc.
- CSR -
    - At Jawanga Education City, "SAKSHAM" dedicated residential school for differently abled children is being run by Bacheli Complex.
    - Mocho Badi project for local farmers is being run.
    - Solar Water Pumping System - is being provided to nearby villages.
    - Solar Lights - are installed and maintained in nearby villages.
    - Free Medical Treatment (OPD and IPD) - to all Adivasi patients in project hospital.
    - Skill Development Programme - 500 unemployed youths are being imparted training.
    - Chulo Aasaman - preparation for UG programme is being run.

- Lakshya - a platform for preparation for competitive exam is being run.
- Balika Shiksha Yojana - ST girls are being selected and sent for nursing course at Apollo Hospital, Hyderabad. The total expenses are borne by project.
- Aakar Asha - 100 persons have been indentified and being sent to Aakar Asha Hospital Hyderabad for corrective surgeries

7 Certificate of Appreciation Recipients

- JSW Energy (Barmer) Limited
- UPL Limited, Unit-3, Ankleshwar
- SkipperSeil Limited
- Larsen & Toubro Limited-TLT Manufacturing Pithampur
- JK Lakshmi Cement Ltd. Durg (CG)
- HSIL Limited – Bahadurgarh, Haryana
- Sahajanand Technologies Private Limited
- Euro Safety Footwear (India) Private Limited
- DIOM NMDC Limited
- ERCON Composites, Jodhpur
- J K Paper Mills, Rayagada, Odisha
- International Tobacco Company Ltd
- Takasago International India Pvt Ltd
- JSW Hydro Energy Limited
- Maithon Power Ltd.
- Xpro India Limited Biax Division – Barjora Unit II
- Micro Plastics Pvt Ltd.
- IRCON INTERNATIONAL LTD.
- ESL Steel Limited
- Adler Mediequip Pvt. Ltd.
- Stork Rubber Products Pvt.Ltd.
- Shree Cement Limited



About FICCI

Established in 1927, FICCI is the largest and oldest apex business organisation in India. Its history is closely interwoven with India's struggle for independence, its industrialization, and its emergence as one of the most rapidly growing global
economies.

A non-government, not-for-pro t organisation, FICCI is the voice of India's business and industry. From influencing policy to encouraging debate, engaging with policy makers and civil society, FICCI articulates the views and concerns of industry. It serves its members from the Indian private and public corporate sectors and multinational companies, drawing its strength from diverse regional chambers of commerce and industry across states, reaching out to over 2,50,000 companies.

FICCI provides a platform for networking and consensus building within and across sectors and is the first port of call for Indian industry, policy makers and the international business community.