

# National Institution for Quality & Reliability

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### From Chairman...

#### Hearty wishes,

We are living in an era where Mother India has made herself as an ascertaining nation in the League of Nations with United Nations endorsing our Prime Minister's request by declaring 21st June as International Yoga Day recognising the ancient Indian science's "holistic approach to health and well-being." It is a proud moment for every Indian, as the world recognises one of the very unique and ancient wisdoms of our great nation and Mother India responded well with sincerity by commemorating The First International Yoga day in a befitting manner. It is time,



we start innovating in every field and especially in the field of quality for the world to take note and follow in the future.

We are happy to announce that Mr. S. Kumar, Executive Committee Member has been elevated as Joint Secretary & Mr. A. Pradeep, AM-TQM, TAFE and Mr. R. Sethuraman, Supplier Quality, Ashok Leyland have been co-opted as Executive Committee Members.

I take this opportunity to congratulate the editorial team for coming out with one more wonderful edition of our newsletter, which every one of us eagerly awaits.

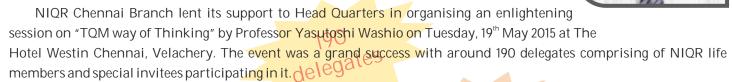
With warm regards,

S. Rajasekaran

# From Secretary...

#### Warm wishes.

Luckily, this summer has not been oppressive so far. Hope all of you would have enjoyed the vacations whatever possible with families and friends and returned to the normal activities. With all of your support, our confidence level has increased in bringing the newsletter regularly. We once again reiterate that wider spread of articles from all members of NIQR family will further enhance the value of the newsletter.



We organised a 3 day training program on Contemporary Shop Floor Management in association with MIQ & PCFCT at Hotel Pleasant Days. The participation was good as the training was conducted in Irungattukkottai Industrial belt. We are having plans to organise similar training program in Ambattur belt.

The evening lecture by Mr. Suniil Philiip on "Architecture and Sustainability - Impacting Quality of Life" was very lively. The lecture was delivered with lot of high-tech material and at the same time was easily understandable and enjoyable. For the benefit of those who missed the lecture, we are publishing the lecture material as a serial article.

There was not much activity in the educational front with the institutions having vacations. During the last week of June, we supported Meenakshi Sundararajan Engineering College with jury members from NIQR for the paper presentation by their students.

With kind regards, C V GOWRI SANKAR



#### NIQR welcomes the new members who joined during May-June 2015 Individual Life Members

Mr. V. Subramanian - Ashok Leyland Ltd, Chennai Mr. T. Sivarasu - Ashok Leyland Ltd, Chennai

Mr. N. Ganesh - Ashok Leyland Ltd, Chennai Mr. G. Vijayakumar - Ashok Leyland Ltd, Chennai

Mr. S. S. Sivakumar – Ashok Leyland Ltd, Chennai Dr. V. S

Dr. V. S. Surana - Surana Surana

Mr. V. Varatharajan - Sowbaghya

The total No. of members who have joined the NIQR family from April 2014 to June 2015 is 243

Individual Annual Members - 78
Individual Life Members - 62

Institution / Company Members - 3
Individual Student Members - 100

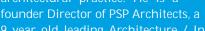
#### Chennai Branch Activities

# Lecture Meeting held on 28<sup>th</sup> Apr 2015 by - Mr. Suniil Philiip

The Evening Lecture for the month of April was organised on 28<sup>th</sup> April 2015 at NIQR Conference Hall, Nungambakkam. Mr. Suniil Philiip, Founder Director, PSP Architects, Chennai was the speaker and the topic was "Architecture and Sustainability - Impacting Quality of Life". Mr. S. Rajasekaran, NIQR Chennai Brach Chairman presided over the session and Mr. C V Gowri Sankar, NIQR Chennai Branch Secretary introduced the speaker

Mr. Suniil started off with a picture of how much the generations in the last 100 years have been inhibited compared to those of the previous 10,000 years by construction industry. He explained how modern architecture is spoiling the health of people living in high rise glass sheeted buildings without any contact with fresh air or sunlight.

Mr. Suniil Philiip is a Chennai based Architect and a Graduate of the prestigious Architecture College, Centre for Environmental Planning and Technology University (CEPT), Ahmedabad. He has a personal experience of nearly 20 years in architectural practice. He is a



9 year old leading Architecture / Interior Design firm in Chennai handling projects ranging from Campus developments, Resorts, Corporate Interiors, high-end Residential Interiors and Housing projects, with specific focus on sustainability He also teaches design as a visiting faculty at the School of Architecture and Planning, Anna University, Guindy, Chennai.



Further he stated the difficulties faced in restoring old buildings due to dearth of skill sets required. He emphasised that the basic vision of any modern architecture should be "taking less from earth and giving more to earth". He broke the myth in the minds of audience that 'green buildings cost more than conventional buildings' –even the cost of maintenance is less in green buildings over time. Also, the green buildings make an impact on the people, the people productivity going up by 6% and absenteeism coming down by 40%.

He signed off with very interesting facts about a 1,00,000 sq.ft. building being constructed by him where a 50 member nuclear family is going to live. The lecture was delivered with lot of high-tech material and at the same time was easily understandable and enjoyable.

At the end of the session, new Life Members were presented Membership Certificates by Mr. S. Rajasekaran, Chairman NIQR Chennai Branch.





#### **CSFM Training**

NIQR Chennai Branch in association with Mahindra Institute of Quality (MIQ) & Premier Center for Competency Training (PCFCT) organised a 3 day training program on Contemporary Shop Floor Management at Hotel Pleasant Days, Sembarambakkam, Chennai. The course addressed the needs of Shop Floor supervisors in today's demanding customer dominant environment.

The course objectives included:

- To impart a strong conceptual framework for shop floor management
- To enhance practical skills on appropriate Tools & Techniques
- To sustain a culture of process and result oriented improvements

The topics covered were:

- Quality Perspective
- Customer Perspective
- Q Business Perspective
- **Q** Shop Floor Perspective
- Materials Perspective
- People Perspective.

The program was well attended - 72 executives from Tier I, Tier II and MSME companies participated, mostly from the Oragadam / Sriperumbudur industrial belt. The sessions







# O - ZINE

were handled by a host of Senior Industry professionals with rich experience; illustrations with live examples facilitated participants understanding. The faculty included Dr. N. Ravichandran, E.D. Lucas TVS, Mr. T. Sarangarajan, Vice President (Operations) Hyundai Motors India Ltd, Mr. N.C. Sridharan, Vaname Ellai and Dr. S. Rajkumar, Head (Operations) Nippon Seiki India besides Mr. Rajinder Singh, Dean MIQ. The participants were also taken for a factory visit to Hyundai factory in Sriperumbudur to witness best practices in manufacturing.



Feedback from the participants was quite good. They were happy that practicing professionals spoke to them and that they had a chance to discuss their shop floor issues with them. They were also happy that institutions like NIQR are providing cost effective training to small companies like theirs.





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#### "MEMBERS IN NEWS"



Mr. S. Rajasekaran, Managing Director, Infant Engineers Pvt. Ltd Irungattukkottai and Chairman of NIQR Chennai Branch, was the chief guest for the state level symposium conducted by ECE, CSE and IT departments of Sakthi Engineering College at Thiruninravoor on 21.02.2015. He inaugurated the symposium and through his wonderful speech he created awareness among the students and participants about the available opportunities in the industries and how to improve their employability skill. He further emphasized that students should have deep domain knowledge,

creativity, attitude and hard work to enter into a branded company and survive. He quoted that "Everyone should strive to be a quality leader who is aiming towards excellence." The symposium souvenir was released by the chief guest and the copies were received by members on the dais.

Shri P. K. Aggarwal, Vice President-Corporate Quality, TAFE and National Vice-President of NIQR was the Chief Guest at the 5th Graduation Day of Sakthi Engineering College on 22nd March 2015.

On the occasion, while delivering the graduation address, he congratulated the Graduates and appreciated the encouragement given by the management in providing a platform for holistic education and excellence in overall personality development. He motivated the graduates to develop insatiable desire for wealth and fame; and he stressed that it can be achieved by only



quality work and honest means. "You make a living from what you earn and you make a life from what you give" he concluded.



Mr. T. R. Narasimhan, Senior Manager-TQM & Six Sigma, WABCO India Ltd and EC Member of NIQR Chennai Branch was the Chief Guest for the 9th annual day and sports day functions of Sakthi Engineering College at Thiruninravoor on 01.04.2015.

He motivated the students through his enlightening speech on the occasion and distributed prizes and certificates of excellence to the students for their academic performances.

Mr. S. Kumar, Joint Secretary of NIQR was the Chief Guest for the 5<sup>th</sup> Annual Convocation of M/S. Srinivasan Polytechnic College on 26.04.2015 at Perambalur.

In his Convocation Address, he insisted that students should develop new skills and competencies to innovate new product and process. He also presented the Diploma certificates to 385 students of Mechanical, Electrical & Electronics and Civil Engineering departments.



#### Head Quarters Activities

#### TQM way of Thinking

NIQR Head Quarters along with Chennai Branch organised an enlightening session on "TQM way of Thinking" by Professor Yasutoshi Washio on Tuesday, 19<sup>th</sup> May 2015 at The Hotel Westin Chennai, Velachery. Mr. S N Eisenhower, Chairman, CII Tamil Nadu State council and Director-Operations, Saint Gobain Glass India Limited was the Chief Guest.

Mr. R. Sivanesan, National President – NIQR welcomed the members present and briefed about NIQR and its activities. Prof. Washio and Mr. S.N. Eisenhower were introduced by Mr. P.K. Aggarwal, National Vice President – NIQR and Mr. K.N. Krishnamurthy, Past National President respectively.

Prof Washio started his presentation with a broad outline of TQM in today's Japanese and Indian Industries; He touched the basic TQM concepts on why we need TQM and moved to higher level of benefits through TQM. He explained in detail the requirement of TQM in the following seven steps.



2.Quality First

3.Fact Control - Action / Decision based on FACT

4.PDCA Cycle

5. Recurrence Prevention

6.Respect for people

7. Focus more on "Process" than "Result"

His presentation was very much received and appreciated by the members present. The Q&A session was very lively. There were around 190 delegates comprising of NIQR life members and special invitees.

Mr. S.N. Eisenhower in his presidential address touched upon the coincidence of Shishya presiding over the lecture by Guru. He further focused on the two main needs of all industrial workers namely Skill and Will.

Mr. S. Rajasekaran, Chairman- NIQR Chennai Branch delivered the vote of thanks specially thanking the sponsors who made the function a success. Mr. S. Ramachandran, Past National Secretary was the master of ceremony for the program.











Ouestion: We know how to develop the SKILL for the people. Can you please tell me how to develop the WILL for the people?

Answer: For that you can use suggestion scheme and quality circle activities. These activities are not for doing improvements. It is to develop people and their creativity. Also it will create employee involvement. So that fire fighting culture will not be there

Question: You are helping Indian companies to implement TQM. What are the problems / resistance you faced during implementation and how do you overcome

Answer: I didn't face any problem so far



Question: If Japanese companies are more focusing on process and product quality, then why Toyota, Honda and Nissan are recalling all their cars for problems? Answer: That is due to the failure of new products, not their mistake.

Question: If they are focused on process, how come new products can fail?

Answer: It is due to new suppliers who don't have sufficient experience and knowledge. That air bag failure is not significant.

Question: If the process is good, how come new supplier can deliver poor quality products. Also

the two air bag suppliers are not new ones?
Answer: Yes, they are still not good in few things.





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# Six Sigma Black Belt Workshop in Sesa Sterlite Copper, Tuticorin

Last 2 issues, we have covered the Phase I & II of Six Sigma Black Belt workshop organized by NIQR, Head Quarters in M/S Sesa Sterlite, Tuticorin.

III Phase of training: The 3<sup>rd</sup> phase of training (17<sup>th</sup> & 18<sup>th</sup> April 2015) started with Project Presentation by 5 teams. Each team was asked to take enough time to go deep in to their projects and explain the approach methodology they have adopted, and their conclusions. Accordingly each team took almost 1 hour to present their case studies.

The teams took current process bottlenecks / critical problems like

- Stripping Time reduction
- Raw water consumption reduction at PAP
- Arsenic removal in purification
- Furnace oil consumption reduction
- PAP evaporator capacity increase

and presented their case studies with enthusiasm and involvement.

Total estimated annual savings out of these 5 projects: Rs.4.3 crores wetted by their finance department. As a matter of cross learning, Sterlite Management has invited Management team from M/s. Sri. Jayajothi & Co Ltd., Rajapalayam, for witnessing their case study presentations. Accordingly 9 people from various positions including GM Operations attended the case study presentations. In the concluding session on 18th April 2015, NIQR Panel of Jury announced that all the 10 participants have met the minimum qualifying criteria set by NIQR and hence all were declared qualified as Six Sigma Black Belt.

The Six Sigma Black Belt certificates were presented to Mr. Rajasekar and Mr. Ramkumar on behalf of all the Sesa Sterlite participants by Prof Washio during the lecture meeting on 19th May 2015 at the Hotel Westin Chennai.



# Sustainability and Architecture A return to sensible building

Sustainable architecture uses a conscious approach to energy and ecological conservation in the design of the built environment. The idea of sustainability, or ecological design, is to ensure that our actions and decisions today do not inhibit the opportunities of future generations.

- Wikipedia

The world is not what it is today as it was 100 years ago... We have done far more damage than good to the earth and the environment in the past 100 years than during the hundreds of thousands of years man has been on earth. We have cut our forests, burnt our fuels, hunted / fished and laid to waste our resources. In short we have lived badly in the past 100 years. We always knew how to build and live with our limited resources & the environment, until technology caught up with us.

Lewis Mumford (eminent sociologist of the 1970s) noted that "...the modern architect has produced the most uneconomic and uncomfortable buildings...which can be inhabited only with the aid of the most expensive devices of heating and air-conditioning. The irrationality of this system of construction is visible today in every city from New York to San Francisco to New Delhi: glass- sheathed buildings without any contact with fresh air, sunlight, or view."



Although today's buildings are more resource-efficient than those of thirty years ago, the average house, office, school, apartment building or factory still places undue demands on the earth, wasting tremendous amounts of energy and water. Sited and designed with little regard for local climate, new buildings are far more expensive to heat or cool than necessary.

Meanwhile, large indiscriminate development (like what we are seeing on the outskirts of Chennai & the large Industrial parks) erodes existing communities, converts prime farmlands to housing, requires expensive new highways for commuters, and exacts a heavy toll on the environment.

Today's buildings are not only designed without the planet in mind, they also neglect their occupants. The news and the internet is sprinkled with stories about "sick" office and factory buildings whose air quality makes workers ill. Office workers often toil in bleak spaces with windows that won't open and lighting that is poor.



Although unsustainable buildings' harm may appear to be localized, it actually ripples outwards, sometimes for thousands of kilometers. Assam forests are clear-cut for plywood used to build offices in Chennai and Bangalore, where sheets used to form concrete are typically thrown away after few uses. Hi-rise Buildings in Mumbai are framed with steel that require power for its manufacture that comes from burning coal strip mined from traditional adivasi lands in Bihar &

Orissa displacing large communities. Very often expensive building materials are transported across very large distances even as far as North America making these buildings unviable. Ultimately, the costs of poor design are borne not solely by a building's owner and those who work and live there, but by everyone and society in general.

Another kind of erosion or loss of resource that has happened across the world especially in India and most of the third world countries undergoing rapid modernization is the loss of cultural identity & vernacular traditions.

In India, this loss is very deep, with many traditional practices, crafts and knowledge disappearing that even acts of restoration of older buildings are becoming difficult as there is a lack of skills to carry out these tasks.

As growing numbers of clients, architects, builders, and developers realize the need for change, an exciting new field has emerged. It is called "sustainable design" or "green development." Although this new architecture is difficult to describe in a sentence or two, its overall goal is to produce buildings that take less from the earth and give more to people. Note that sustainable design is not a new building style. Instead, it represents a revolution in how we think about, design, construct, and operate buildings.

The primary goal of sustainable design is to lessen the harm poorly designed buildings cause by using the best of ancient building approaches in logical combination with the best of new technological advances. Its ultimate goal is to make possible factories, offices, homes & even entire towns and cities that are net producers of energy, food, clean water and air, beauty, and healthy human and biological communities.

Although the building industry is by nature a conservative one, the principles of sustainable design are simple and the advantages of green buildings

compelling. This healing type of architecture seems destined to be the wave of the future.



Already, the western world has made rapid progress and technological advances in these fields, and even in our country the presence of the green building council, and various other specialized material suppliers/ and technology experts give us hope. In India also there is definite move towards sustainability and green building even at a government policy level, with renewable energy generation such as solar / wind becoming mandatory and introduction of reversible electrical meters. There are numerous codes set by the National Building Code (NBC), which are currently advisory, which will soon become mandatory.

"Taking less from the Earth and giving more to people."

Mr. Suniil Philiip,
Director of PSP Architects
...will be continued

### Know the Quality Gurus - 3

#### Dr. William Edwards Deming (1900 - 1993)

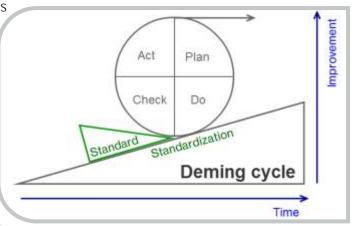
#### The Father of Total Quality Management

Dr. W. Edwards Deming is often referred to as the "father of quality control." He was a statistics professor at New York University in the 1940s. Dr. Deming developed his complete philosophy of management, which he encapsulated into his "fourteen points" and the "seven deadly diseases of management". He advanced the state of quality, originally based on work done by Dr. Walter Shewhart with his explanations of variation, use of control charts, and his theories on knowledge, psychology and variation. Deming greatly helped to



focus the responsibility of quality on management and popularized the PDCA cycle, which led to it being referred to as the "Deming Cycle".

His strong philosophies depart from traditional notions of quality. The first is the role management should play in a company's quality improvement effort. Historically, poor quality was blamed on workers—on their lack of productivity, laziness, or carelessness. However, Dr. Deming pointed out that only 15% of quality problems are actually due to worker error. The remaining 85% are caused by processes and systems, including poor management.



He believed that managers should drive out any fear

employees have of identifying quality problems, and that numerical quota should be eliminated. Proper methods should be taught, and detecting and eliminating poor quality should be everyone's responsibility. Deming outlined his philosophy on quality in his famous "14 Points." These points are principles that help guide companies in achieving quality improvement. The principles are founded on the idea that upper management must develop a commitment to quality and provide a system to support this commitment that involves all employees and suppliers. Deming stressed that quality improvements cannot happen without organizational change that comes from upper management.

The Japanese regarded him so highly that in 1951 they established the Deming Prize and Deming Grand Prize annual awards given to firms that demonstrate outstanding quality.

Compiled by Mr. S. Kumar, Joint Secretary, NIQR Chennai Branch

#### Strategic Quality framework - 3

How to measure the Quality of Product and Services?

All the companies have tried to upgrade the product quality and services through various programs like cost of quality, reliability engineering, First time right etc, using 7 QC tools and Design of Experiments. But some of the organizations have failed because of lack of seriousness and perceived these programs as defensive measures to remove defects. So the concept called Strategic Quality Framework (SQF) emerged. Dr. Garvin developed this framework of 8 dimensions to measure the quality of product / services.

- Performance
- Features
- Reliability
  - Conformance
- Durability
- Serviceability
- Aesthetics
- Perceived Quality

In the previous newsletters, we have studied the importance of the Performance and Features dimension. In this issue, let us understand Reliability dimension. Reliability means "the probability that a product, piece of equipment or system performs its intended function without failure, under stated operating conditions over a specified period of time".

Reliability cannot be tested into a product

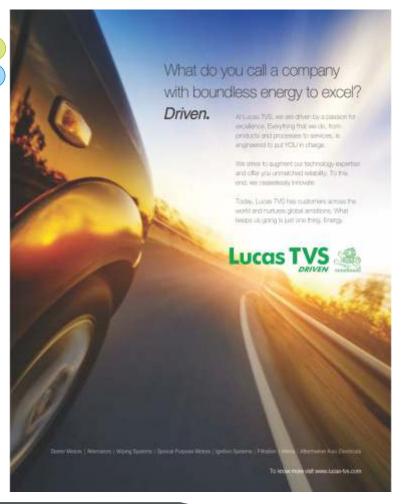
It must be designed and manufactured into it

Testing only indicates how much reliability is in the product

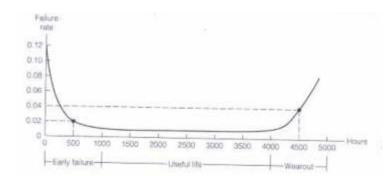
One of the method to measure / understand the reliability using graphical representation is called Bathtub Curve.

In this Bathtub Curve, we could be able to understand that the Failure rate is high during early stage (infant mortality) because of weak components in the system due to poor manufacturing or quality control procedure.

Once the products get stabilized over a period of time, failure rate gets reduced and produce consistent performance which is called as product's normal life. This will lead to gaining confidence about the product and expect the



consistent performance. However over a period of time, the failure rate may shoot-up due to wear-out. Using this, we can identify and implement actions to improve product reliability in all stages.



Bathtub Curve/ Failure Rate Curve/ Product Life Characteristic Curve

#### Most common measures of reliability:

Mean Time to First Failure / Mean Time To Failure (MTTF)

Mean Time Between Failure (MTBF)

Mean Time To Repair (MTTR)

Availability= MTBF/(MTBF+MTTR)

Failure Rate per Unit Time

Because these measures require a product to be in use for some period, they are more relevant to durable goods than they are to products and services that are consumed instantly. Japanese manufacturers typically pay great attention to this dimension of quality, and have used it to gain a competitive edge in the automotive, consumer electronics, semiconductor, and copying machine industries.

Reliability becomes more important to customers for whom downtime and maintenance become more expensive.

 $There \, are \, techniques \, predominately \, used \, to \, reduce \, the \, failure \, rates, \,$ 

- Failure Mode and Effect Analysis (FMEA): Is a systematic method of identifying and preventing product and process problems before they occur.
- Individual component analysis: computed the failure probability of key components and aimed to eliminate or strengthen the weakest link
- Derating: required that parts be used below their specified stress levels.
- Redundancy: called for parallel systems to back up an important component or subsystem in case it failed.

Compiled by Mr. S. Kumar, Joint Secretary, NIQR Chennai Branch

### What it is?-3

#### **Trademarks**

A trademark is any word, name, symbol, or device used to identify the source or origin of products or services and to distinguish those products or services from others.

Examples: TVS, Dell, Nokia, CarePages, Netflix, Dogster, Rane, Ford, etc.,

There is also a range of non-conventional trademarks comprising marks which do not fall into these standard categories, such as those based on color, smell, or sound (like lion's roar).

Trademark is one of Key forms of Intellectual Property. There are different types of trademarks.

Service marks: are used to identify the services or intangible activities of a business, rather than a business's physical products.

Examples:

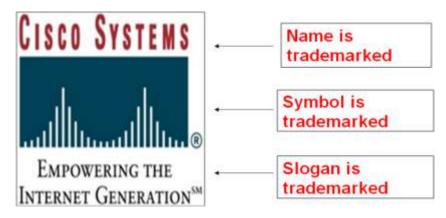
Amazon.com, Orbitz, eBay, Overstock.com

Collective marks: Trademarks or service markets used by the members of a cooperative, association, or other collective group.

Examples: Rotary International, International Franchise Association

Certification marks: Marks, words, names, symbols, or devices used by a person other than the owner to certify a particular quality about a good or service.

Examples: Florida Oranges, ISO 9000, BIS, Underwriters Laboratories



According to intellectual property rights, these trademarks can be protected and renewed every 10 years as long as the mark remains in use.

Compiled by

Mr. S. Kumar, Joint Secretary, NIQR Chennai Branch

NIQR BREAKING NEWS

Prof C Y Krishna Murti Memorial Lecture
By Mr. S. Mohana Krishnan Vice President – Mfg. (Retd.)
Sundaram Clayton Ltd
on 4th July 2015
at Hotel Radha Regent

Evening Guest Lectures
Cyclone Forecasting
Programme on Yoga
Quality Management in Entertainment Field
Corporate Social Responsibility
Project management
Quality in Training based on ISO 10015

Shri L S N Guptha Memorial Lecture Meeting in August 2015

NIQR Chennai Branch is planning for a series of training Programmes for shop floor associates and first line executives in Irungattukkottai industrial belt.

### National Institution for Quality & Reliability

Chennai Branch Newsletter May - Jun 2015 Editorial Committee:

Prof. C. Uthayakumar, EC Member - NIQR Chennai Branch Mr. C. V. Gowri Sankar, Secretary - NIQR Chennai Branch Mr. I. Daniel Jeyaraj - Administrative Officer