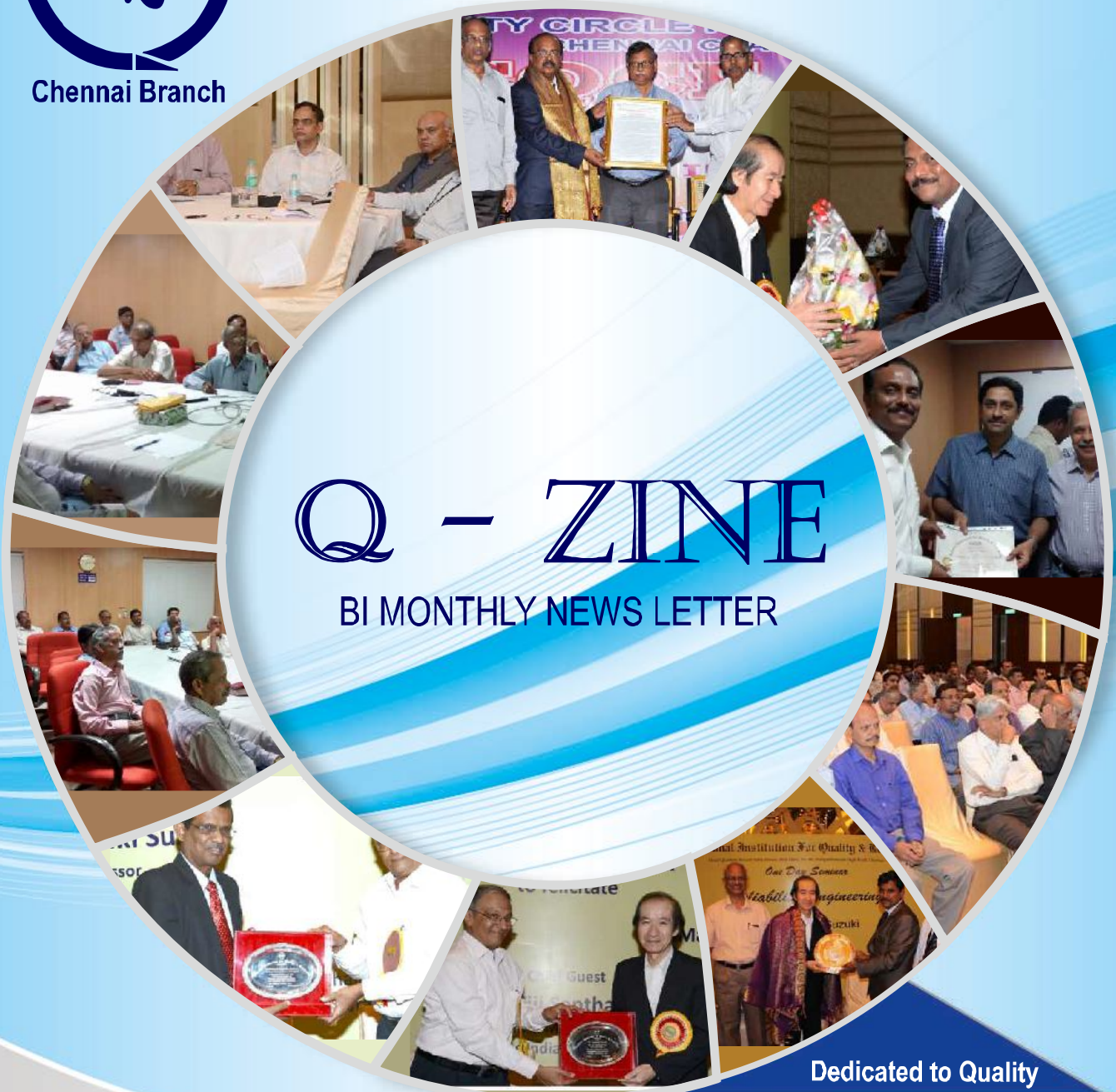




Chennai Branch

January - February 2015



**Q - ZINE**  
BI MONTHLY NEWS LETTER

Dedicated to Quality

**National Institution for Quality & Reliability**

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## *From Chairman...*

### **Hearty wishes,**

We are delighted to present you with the third issue of the newsletter. The earlier two issues were well received and appreciated by all the members of NIQR family. It gives me great pleasure to congratulate the editorial team for the excellent work and the members for providing quality material for publishing. I take this opportunity to urge the editorial team to keep raising the bar and request the members to provide us articles and case studies for future publishing.



On the subject of quality, I feel, we at manufacturing Industry are in some way comparable with the scientists of the Astrophysics world. This is better understood from the fact that, they are chasing the elusive missing particle (God Particle) in the vast Universe, as we chase the elusive zero, which is nothing but zero defects. Many a times, we feel this target is so near and yet too far. It is time, we pull ourselves up and achieve this number consistently to keep the end customers interested.

To conclude, we at NIQR constantly endeavour to provide value to our members. Towards this objective, we are organising evening lectures on a regular basis, I request our members to participate and benefit.

With warm and kind regards,  
S.Rajasekaran

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## *From Secretary...*

### **Warm wishes,**

As the year rolled by, we are happy to share with you that we were able to fulfill lot of wishes and also carry a few concerns. We are now confident that we will be regular as a bi-monthly newsletter. With more articles from members, our plan is to make it a 16 page newsletter from next issue.



The evening lectures have become a monthly affair with 2 lectures conducted during December and January and we have plans for the next few months with lectures from people from different fields. Our Chennai Branch played a leading role in conducting one day seminar on 'Reliability Engineering' and 'Felicitation Function for Deming Prize winners' organised by Head Quarters.

We are very proud that one of our Executive Committee Members, Prof. C Uthayakumar was awarded the "QCFI Outstanding Contribution Award for promoting Quality Circle in Education Sector for the year 2015". We arranged 2 Guest

Lectures for student chapters in Engineering Colleges but we are little bit concerned that we are not able to serve all the student chapters as planned. We will address the issue suitably in due course.

We once again reiterate that wider spread of articles from all members of NIQR family are very much welcome for future newsletters.

With kind regards,  
C V GOWRI SANKAR



## NIQR welcomes the new members who joined during Jan-Feb 2015 Individual Life Members

Mr. P. Vinod - MRF Limited, Arakonam  
Dr. A. Jaffer Hussain - AMET University, Chennai  
Mr. Sairam Thiagarajan - Lucas TVS Ltd., Chennai

The total no. of members who have joined the NIQR family from April 2014 is 107.

Individual Annual Members	- 11
Individual Life Members	- 42
Institution / Company Members	- 2
Individual Student Members	- 52

## Honour for our NIQR EC Member Prof. C. Uthayakumar

The 17th Convention on Quality Circles in Education by the Quality Circle Forum of India, Chennai Chapter (CCQCE 2015) was held at Rajalakshmi Engineering College, Thandalam on 14-2-2015. Every year QCFI Chennai Chapter honours an eminent educationalist for his/her commendable work in nurturing educational institutions by promoting Quality Circle movement. This year our NIQR Chennai Branch EC member, Prof. C. Uthayakumar, Principal Sakthi Engineering College was selected by the QCFI Chennai Chapter for the Prestigious Award for the year 2015. On 14<sup>th</sup> Feb 2015 evening, during the valedictory function, Dr. A. K. Mittal, President



Quality Circle Forum of India presented the “QCFI Outstanding Contribution Award in Educational Sector for promoting Quality Circle in Education Sector” to Prof. C Uthayakumar. Mr. A. Mayuranathan, Chairman, QCFI Chennai Chapter, and Dr T R Jagadeesan, founder-chairman QCFICC felicitated him on this occasion. We at, NIQR feel proud and congratulate him for the accolades.

## Chennai Branch Activities

### Lecture Meeting held on 26th Dec 2014 by Prof. D. R. Kiran

The Evening Lecture for the month of December was organised on 26<sup>th</sup> Dec 2014 at Meenakshi Sundararajan Engineering College, Kodambakkam, Chennai.



Prof. D. R. Kiran, a Vivekananda College Graduate, has a total of 44 years experience, both industrial and academic, starting from 1968 with Larsen & Toubro, Bombay and retiring as the Principal of PMR Institute of Technology. He is a recipient of the Bharat Excellence Award and Gold Medal for excellence in engineering education at New Delhi in July 2006

Prof. D. R. Kiran, NIQR National Council member was the speaker and the topic was Quality Management in Maintenance Engineering. Dr. Babai, Principal of the college who presided over the session thanked NIQR for organizing such technical lecture sessions in the college as the students will be very much benefitted.

The lecture was preceded by the launching of the text book on “Maintenance Engineering and Management: Precepts and Practices”, authored by Prof. D. R. Kiran. Copies of the book were presented to Mr. S. Rajasekaran, Chairman - Chennai Branch, Mr. C. V. Gowri Sankar, Secretary - Chennai Branch and Dr. K. S. Babai, Principal of the college.

The lecture focused on Logical Fault Location in maintenance. Prof. D. R. Kiran emphasized the need for locating the faults logically by the maintenance staff, rather than by trial and error. Several types of faults, their development and systematic procedures like the midway check method were discussed. The highlight of the lecture was a case study on the application of the above procedure for the repair of a fully automated electroplating plant. The audience comprising of 60 student members, staff and NIQR members made the session lively by high level of interaction. The evening was made memorable by the release of NIQR Newsletter by Mr. S. Rajasekaran, Chairman Chennai Branch.



## Lecture Meeting held on 31st Jan 2015 by **Dr. V. Swaminathan**

The Evening Lecture for the month of January was organised on 31<sup>st</sup> Jan 2015, at NIQR Conference Hall in Nungambakkam, Chennai.



Dr. V Swaminathan, VP NIQR HQ is a Post Graduate Engineer with a profound knowledge on Policy Deployment, having a Doctoral Degree in TQM. He has secured various Outstanding, Intellectual and Excellence Awards for his valuable contributions in the areas of Consulting, Writing, Quality, Production and Social Work. He has facilitated 7 Companies to earn the prestigious Deming Award and Guided Two Indian companies for obtaining coveted TPM Excellence award.

Dr. V. Swaminathan, National Vice President – NIQR delivered a lecture on “End- to- End Strategy for Enhancing Competitiveness by Implementing TQM”. The lecture was based on the paper presented by him at ICQ'14-Tokyo held in Japan on 20<sup>th</sup> October 2014.

Mr. S. Rajasekaran, Chairman NIQR Chennai Branch presided over the function well attended by NIQR members. Dr. V. Swaminathan, explained how Competitiveness Scalability is the catch word for survival for enlarging the market presence while, Strategy is the art and science of planning and routing the resources for their most efficient and effective use. Dr. VS dwelt at length the Comprehensive Strategy, stretched out in length and breadth with TQM tools & techniques, keeping Competitiveness as the key result area both within and beyond the organization. Dr. VS advocated the 7C approach Model for the implementation of the End-to-End Strategy for enhancing Competitiveness, consisting of following phases: Consolidate, Converge, Conceive, Convert, Communicate, Collaborate and Challenge which are woven through the fabrics of TQM

He also shared for 10 minutes useful information he observed during his visit to NISSAN Parent plant Japan for the benefit of our members. He rounded off explaining the details of the presentation he made in 'Global Quality Summit' (WAQ) organised by JUSE and ASQ about the success story of NIQR. Mr. G. Rangarajan, Secretary NIQR HQ, summed up the proceedings and shared his own thoughts about the revival of the NISSAN Plant. At the end of the session, new Life Members were presented Membership Certificates by Mr. S. Rajasekaran, Chairman NIQR Chennai Branch.



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## NIQR Student Chapter-Rajalakshmi Engineering College Lecture on Kaizen

Prof. D. R. Kiran delivered a lecture on Kaizen to the student members of Mechanical Engineering of NIQR Student Chapter at Rajalakshmi Engineering College on 30<sup>th</sup> January 2015. This lecture was attended by 30 students and 6 staff members. Dr. Varadarajan, Principal of the college inaugurated the lecture session and

said the institution was looking forward to NIQR for value additions to the students in the form of such lectures.

The lecture lasting 45 minutes was on Kaizen, the Japanese philosophy and practice that focuses on continuous improvement of processes in manufacturing, engineering, service or any business management. After explaining the basics, the similarity between Kaizen and the method improvement studies as practiced by the 19th century industrial engineers have been brought out. The importance and principles of creativity, the essential requirement of Kaizen and the significance of brainstorming for the success of Kaizen was explained in detail. The lecture ended with the presentation of case studies on the application of Kaizen principle in our day-to-day life. The students made the session very lively by their interactions and expressed their satisfaction for getting benefited richly from the lecture. The student chapter chairman in his vote of thanks hoped that there will be many more such lectures from NIQR.



## NIQR Student Chapter-SRM University

### Lecture on Total Quality Management(TQM)

NIQR Student Chapter of SRM University organised a guest lecture for the final year students of mechanical engineering department. Dr. A. Sanjeeva Rao, Past National President, NIQR delivered a lecture on “TQM - a strategy for world class organizations” on 3<sup>rd</sup> February at SRM University, Vadapalani Campus. About 150 students of Final year Mechanical Engineering and faculty attended the program. Dr. S. Karthikeyan, Professor and HOD of Mechanical Engineering introduced the speaker to the audience. Dr. AS Rao gave an overview of TQM covering the following topics, emphasizing its usefulness in educational institutions



- Tasks of Management
- Globalization Impact on business
- Why TQM?
- What is TQM?
- TQM view of quality
- Quality imperatives for survival
- TQM framework
- TQM principles and methods
- Benefits to TQM organizations
- Deming award organizations in India

The session was very interactive and all the participants appreciated the lecture and found that it was quite interesting and useful. They expressed their satisfaction for getting benefited richly from the lecture. Dr. K. Duraivelu, Dean, Faculty of Engineering and Technology expressed his desire to have long association with NIQR and to have similar lectures on various topics periodically for the benefit of students and faculty.



## Head Quarters Activities

### One Day Seminar on “Reliability Engineering” by Dr. Kazuyuki Suzuki

NIQR Head Quarters organised a one day seminar on “Reliability Engineering” on 3rd Jan 2015 at Hotel Westin Chennai, Velachery, Chennai 600 042 conducted by Dr. Kazuyuki Suzuki. 62 delegates from all over India attended the seminar. Mr. R. Sivanesan, National President – NIQR and Sr. Vice President - CQ, Ashok Leyland Ltd inaugurated the seminar and delivered the inaugural address.



Dr. Kazuyuki Suzuki is a Professor at the Dept. of Informatics at the University of Electro-Communications, Tokyo. He has been working on Reliability Engineering and Quality Management for over three decades. He has served as both the president of the Japanese Society for Quality Control (JSQC) in 2010/11 and the president of Reliability Engineering Association of Japan (REAJ) in 2012/13, besides a member of the Deming Prize committee. He has won the Deming Prize for individuals in 2014.

The overall objective of the programme was to introduce the participant to a revolutionary reliability technique that can dramatically improve reliability right at the design stage, in hours, instead of waiting months and years to confirm unreliability in the field. Dr. Suzuki covered the following topics enabling all the participants understand the nuances of each topic. Invitation to Reliability Engineering Scheme of Reliability and Measure of Reliability Prevention of Reliability and Safety Problems Methods of Reliability focusing on Prevention

1. Reliability Data Analysis The session was very interactive and the enthusiasm of the participants was at its peak during the problem solving in Reliability Data Analysis.

Dr. N. Ravichandran, Executive Director – Lucas TVS Ltd delivered the valedictory address. The seminar was coordinated by Dr. V. Swaminathan, National Vice President - NIQR.



### Felicitation Function for Deming Prize Winners

NIQR takes pleasure in felicitating eminent personalities and organisations which have contributed much for the promotion of quality and TQM. On 3rd January 2015, it organised a Felicitation Function for Deming Prize Winners for the year 2014 at



Hotel The Westin Chennai Velachery, Chennai 600 042. Dr. Kazuyuki Suzuki has won the Deming Prize for individuals and Mahindra Powerol Business (India) has won the Deming Prize. Mr. Viji Santhanam, Managing Director-Brakes India Ltd., Chennai was the Chief Guest for the felicitation function. Mr. R. Sivanesan, National President - NIQR welcomed the members present and made a brief about the Deming Prize and the Winners present. Chief Guest Mr. Viji Santhanam, felicitated Dr. Kazuyuki Suzuki and Mr. P. Palaniappan, Senior Vice President representing Mahindra Powerol Business (India) and handed over Mementos to them. Past National Presidents and Office Bearers of NIQR and captains of leading industries in Chennai graced the occasion which was well attended.

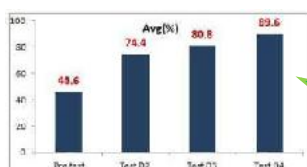
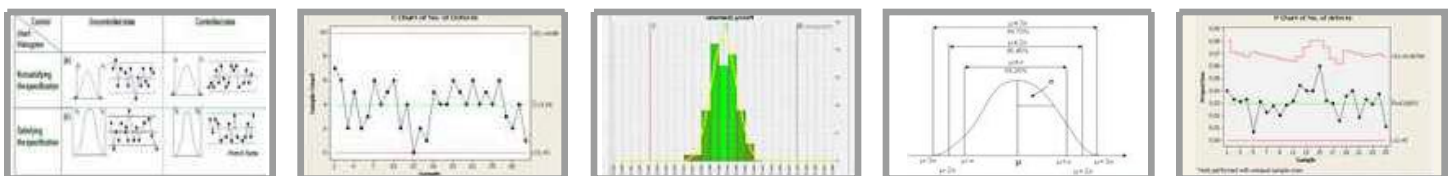


## Six Sigma Black Belt Workshop in Sesa Sterlite Copper, Tuticorin

Sesa Sterlite management has organized a Six Sigma Black Belt workshop through NIQR-Head Quarters, Chennai with a view to enhance the problem solving skill and to enrich their knowledge on six sigma methodology.

NIQR team headed by Dr. A. Sanjeeva Rao (Past National President) and Mr. R. Mohanakrishnan (Past National Treasurer) went to their Training Centre in Tuticorin to execute the Phase 1 stage of the 10-day Six Sigma Black Belt Workshop during 20 – 23, January 2015.

The workshop proceedings were planned by NIQR in such a way that review tests were conducted daily along with theory sessions, as a part of continuous evaluation. There were 10 participants and 5 groups of 2 members each were assigned specific projects related to the plant operation and they will work on their projects based on the guidelines provided. Phase 2 of the workshop is scheduled from 23rd to 26th Mar'2015



The knowledge level of the participants has shown a significant improvement in 4 days training

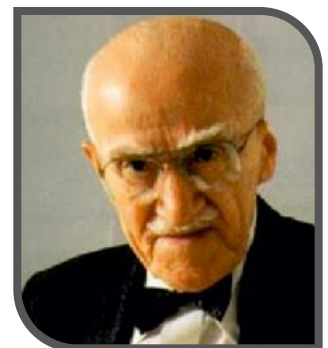
The definition of insanity is doing the same thing over and over again and expecting different outcomes ~ Einstein



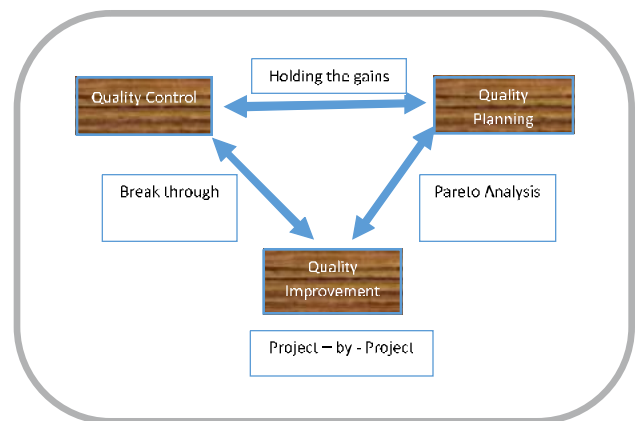


## Know the Quality Gurus **Dr. Joseph M. Juran (1904 - 2008)**

Dr. **Joseph Juran** is considered to have had the greatest impact on quality management. He originally worked in the quality program at Western Electric and became better known in 1951, after the publication of his book *Quality Control Handbook*. In 1954 he went to Japan to work with manufacturers and teach quality to their industrial sector. One of Juran's significant contributions is his focus on the **definition of quality** and the **cost of quality**. Juran is credited with defining **quality** as 'fitness for use' rather than simply conformance to specifications



He is known for his theory of **quality trilogy** - **Quality Planning, Quality Control and Quality Improvement**. The first part of the trilogy, Quality Planning, is necessary so that companies identify their customers, product requirements, and overriding business goals. Processes should be set up to ensure that the quality standards can be met. The second part of the trilogy, Quality Control, stresses the regular use of statistical control methods to ensure that quality standards are met and to identify variations from the standards. The third part of the quality trilogy is Quality Improvement.



Dr Juran believed quality is associated with customer satisfaction and dissatisfaction with the product, and emphasized the necessity for ongoing quality improvement through a succession of small improvement projects carried out throughout the organization. These activities eventually achieve breakthrough to an improved level, which is again controlled, to prevent any deterioration.

Dr. Juran's ten steps to quality improvement are:

1. Build awareness of the need and opportunity for improvement
2. Set goals for improvement
3. Organize to reach the goals
4. Provide training
5. Carry out projects to solve problems
6. Report progress
7. Give recognition
8. Communicate results
9. Keep score of improvements achieved
10. Maintain momentum



He concentrated not just on the end customer, but on other external and internal customers. Each person along the chain, from product designer to final user, is a supplier and a customer. In addition, the person will be a process, carrying out some transformation or activity.

Compiled by Mr. S. Kumar, ECM & Head, Operations, Rane Madras Ltd., Chennai

## Strategic Quality Framework

### How to measure the Quality of Product / 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. SQF emphasize high Quality means pleasing customers, not just protecting them from annoyance. Product designers should shift their attention from prices at the time of purchase to life cycle costs that include expenditures on service and maintenance –the customer's total costs.

Dr. Garvin developed this framework of 8 dimensions to measure the quality of product / services.

- |                |                      |
|----------------|----------------------|
| 1. Performance | 5. Durability        |
| 2. Features    | 6. Serviceability    |
| 3. Reliability | 7. Aesthetics        |
| 4. Conformance | 8. Perceived Quality |

In this issue, let us understand the **Performance** dimension

- Performance refers to a product's primary operating characteristics. For example in Automobile, acceleration, mileage, cruising speed and comfort are performance characteristics. Performance for a Television will be picture clarity, color, clear sound, the ability to receive distant stations. In service industry say Airlines and fast food – performance often means timing, friendliness, courtesy and promptness.

- Because this dimension of quality involves measurable attributes, brand value can usually be ranked objectively on individual aspects of performance. Overall ranking are difficult to develop as they involve benefits that not every customer need.
- The superior performer depends entirely on the task being performed.

So the successful organizations should identify and build the performance characteristics in all stages of product life cycle from product design to servicing in the field.

Compiled by Mr. S. Kumar, ECM & Head, Operations, Rane Madras Ltd., Chennai

## What it is?

### RPN

The expansion is Risk Priority Number. This terminology is used in Failure Mode Effect Analysis (FMEA) to address potential failures with respect to Product, Process and Systems.

RPN for each failure mode is the product of likelihood Severity, Occurrence and Detection in 1 to 10 scales.

#### Example:

Potential failure mode	: Two wheeler hitting the road median
Severity	: 7 (scale is 1-10, no effect to most severe)
Occurrence	: 5 (scale is 1-10, most unlikely to most likely to happen)
Detection	: 2 (Scale is 1-10, easy to detect to very difficult to detect)

RPN for this failure mode is  $7 \times 5 \times 2 = 70$ .

A Pareto analysis of all RPNs is done and action taken for failure modes with maximum RPNs In the 4<sup>th</sup> Edition of FMEA manual, the RPN calculation methodology is changed. The use of RPN threshold is not a recommended practice for determining the need for actions.

RPN is considered as SOD in non-arithmetic combination of Severity, Occurrence and Detection rankings. Then in our example, RPN for this failure mode is 752.

#### In this case there are two possible actions we should consider

1. To reduce the severity, the rider should wear the helmet
2. To reduce the occurrence following safety rules and disciplined driving are the actions.

Nevertheless, an action should be taken if the severity  $\neq > 7$  and an ideal RPN could be 111.

Compiled by Mr. S. Kumar, ECM & Head, Operations, Rane Madras Ltd., Chennai

# Forthcoming events

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

*NIQR Chennai Branch  
3 day Intensive training Program on  
“Contemporary Shop Floor Management” jointly with  
Mahindra Institute of Quality, Pune  
and  
Premier Center for Competency Training Pvt. Ltd., Chennai  
in Oragadam industrial belt in April 2015*

*Evening Guest Lectures  
on  
Six Sigma and TQM interface  
Quality Management in Entertainment Field  
Quality Management in Construction Industry  
Quality Management in Dental care*

*Be passionate about solving the problem, not proving your solution ~ Nathan Furr*

**National Institution for Quality & Reliability**

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