Quality Management System

1. Benefits of ISO (International Organization for Standardization) Registration

There are various reasons for implementing a quality system that conforms to an ISO standard.

- The primary reason is that customers or marketing are suggesting or demanding compliance to a quality system.

- Other reasons are needed improvement in processes or systems and a desire for global deployment of products and services

- A study of manufacturing firms was undertaken to determine if there was any improvement in performance after registration. Significant improvement was noted in:

    - **Internal quality** as measured by the percent of scrap, rework, and nonconformities at final inspection.

    - **Production reliability** as measured by the number of breakdowns per month, percent of time dedicated to emergencies, and percent of downtime per shift.

    - **External quality** as measured by product accepted by customers without inspection, claims of nonconforming product, and returned product.

    - **Time performance** as measured by time to market, on-time delivery, and throughput time.

2. ISO 9000 Series of Standards

The ISO 9000 Series of Standards is generic in scope. By design, the series can be tailored to fit any organization's needs, whether it is large or small, a manufacturer or a service organization.

The three standards of the series are:

- *ISO 9000:2005—Quality Management Systems (QMS)—fundamentals and vocabulary:* discusses the fundamental concepts related to the QMS and provides the terminology used in the other two standards.

Notes Compiled By: Engr. Abdul Rahim Khan (Assistant Professor CET, UOS)

– **_ISO 9001:2008—Quality Management Systems (QMS)—requirements:_** specifies requirements for a quality management system where an organization. needs to demonstrate its ability to consistently provide product that meets customer and applicable statutory and regulatory requirements

– **_ISO 9004:2000—Quality Management Systems (QMS)—guidelines for performance improvement:_** provides guidelines that an organization can use to establish a QMS focused on improving performance.

It is applicable to the following:

a) Organizations seeking advantage through the implementation of a quality management system;

b) Organizations seeking confidence from their suppliers that their product requirements will be satisfied;

c) Users of the products;

d) Those internal or external to the organization who give advice or training on the quality management system appropriate to that organization;

e) Developers of related standards.

3. Sector-Specific Standards

The ISO 9000 system is designed as a simple system that could be used by any industry. Other systems have been developed that are specific to a particular industry. One of the problems with sector-specific standards is the need for suppliers with customers in different industries to set up quality systems to meet each sector's requirements.

- **AS9100:** This aerospace industry quality system was officially released by the Society of Automotive Engineers in May 1997. In March 2001, the International Aerospace Quality Group (IAQG) aligned AS9100 with ISO 9001:2000. Industry-specific interpretations and methodologies are identified in italics and bold type. These additions are accepted aerospace approaches to quality practices and general requirements.

- **ISO/TS 16949:** It harmonizes the supplier quality requirements of the U.S. big three as provided in QS 9000 Third Edition6 with the French, German and Italian automakers. The goal is the development of fundamental quality systems that provide for continuous

Notes Compiled By: Engr. Abdul Rahim Khan (Assistant Professor CET, UOS)

improvement, emphasizing defect prevention, and the reduction of variation and waste in the supply chain.

- **TL 9000:** It is a specific set of requirements based on ISO 9001 that defines the design, development, production, delivery, installation and maintenance of telecommunications products and services.

4. ISO 9001 Requirements

- **The standard has eight clauses:**

  1. Scope,
  2. Normative References,
  3. Definitions,
  4. Quality Management Systems,
  5. Management Responsibility,
  6. Resource Management,
  7. Product and/or Service Realization, and Measurement,
  8. Analysis, and Improvement

- The first three clauses are for information while the **last five are requirements that an organization must meet**.

ISO 9001 Requirements

- **Scope:** The requirements of the standard are intended to be applicable to all types and sizes of organizations. Requirements in Clause 7, Product Realization, that are not appropriate to the organization, can be excluded.

- **Quality Management System (QMS):** The organization shall establish, document, implement, and maintain a QMS and continually improve its effectiveness.

- **Management Responsibility:** There are several aspects of management responsibility

  – Management commitment

  – Customer Focus

- – Quality Policy

- – Planning

- – Responsibility, authority and commitment

- **Resource management:** The organization shall determine and provide the resources needed (a) to implement and maintain the QMS and continually improve its effectiveness, and (b) to enhance customer satisfaction by meeting customer requirements. Resources include human resource, infrastructure and work environment

- **Product Realization:**

    - – **Planning:** The organization shall plan and develop the processes needed for product realization.

    - – **Customer related processes:** Organization shall determine requirements specified by customer

    - – **Design and development:** It shall plan and control design and development of product

    - – **Purchasing:** The organization shall ensure that purchased product conforms to specified purchase requirements

    - – **Production and service provision:** It shall plan and carry out production and service provision under controlled conditions.

    - – **Control of Monitoring and measuring equipment:** It shall determine the monitoring and measurement to be undertaken and the monitoring and measuring equipment needed to provide evidence of conformity of product to determined requirements

- **Measurement, Analysis, and Improvement:** The organization shall plan and implement the monitoring, measurement, analysis, and improvement processes needed for its business. Some important aspects are:

    - – Monitoring and measurement

- – Control of non-conforming product

- – Analysis of data

- – Improvement

- **Implementation:** There are a number of steps that are necessary to implement a quality management system:

  - – Top Management Commitment

  - – Appoint the Management Representative

  - – Awareness

  - – Appoint an Implementation Team

  - – Training

  - – Time Schedule

  - – Select Element Owners

  - – Review the Present System

  - – Write the Documents

  - – Install the New System

  - – Internal Audit

  - – Management Review

  - – Pre-assessment

  - – Registration

5. Registration

Quality system registration is the assessment and audit of a quality system by a third party, known as a registrar. There are two parts:

- **Selecting a registrar:** In the United States, Registrar Accreditation Board (RAB) maintains a list of approved registrars. In India, Quality Council of India (QCI), carries out assessment of certification bodies. This is done under the National Accreditation Board for Certification Bodies (NABCB) scheme. In Pakistan ISOQAR is a uniquely independent third party certification body operating from a global network of offices in many countries providing registration and training services across a diverse range of industrial and commercial sectors.

- ISOQAR provides service to a variety of industrial and commercial sectors including food, pharmaceutical, chemical, textile, automotive, tourism, construction, industrial, medical and so on…

-

- **Registration process:** It has six basic steps: application for registration, document review, pre-assessment, assessment, registration, and follow-up surveillance.

Registrars require a completed application to begin the registration process

For Construction Industry

Certification to ISO 9001

This certificate is provided for companies who carry out design activities as the major business operation. These companies carry out the design, development, production, installation and the final servicing.

Certification to ISO 9002

These are provided for the companies that does not carry out design activities. This includes production and installation.

There are twenty different areas a company have to focus and pass in order to get certified as a ISO 9001 certified company.

Notes Compiled By: Engr. Abdul Rahim Khan (Assistant Professor CET, UOS)

Need for Certification to ISO for Construction Industry

To get a construction industry ISO certified, the following 20 requirements determined by the standard must satisfied:

1. Management Responsibility

2. Quality System

3. Review of Contracts

4. Control of Design

5. Control of Documents

6. Purchasing

7. Purchaser Supplied Product

8. Identification of Product and the traceability

9. Process Control

10. Inspection and the testing

11. Inspection, measurement and equipment testing

12. Status of Inspection and the test

13. Control of products that are non-conforming

14. Corrective action

15. Handling, storing, packaging and the delivery

16. Quality records

17. Internal quality system auditing

18. Training

19. Servicing

20. Statistical Techniques

Notes Compiled By: Engr. Abdul Rahim Khan (Assistant Professor CET, UOS)

Lloyd's Register
LRQA

CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

**D.G Khan Cement Company Limited
Khairpur, District Chakwal,
Pakistan**

has been approved by Lloyd's Register Quality Assurance
to the following Quality Management System Standard:

ISO 9001:2008

The Quality Management System is applicable to:

**Manufacturing of clinker, cement and cementatious products
including the activities of mining of basic cement raw materials,
sales and marketing, power generation from thermal and waste
heat, fuel system comprising coal, gas, oil and alternative fuels
(refused derived fuels), maintenance, store, purchasing,
laboratories, administration, civil and pumping of water from
tube wells.**

Approval
Certificate No: MEA4109115

Original Approval: 30th March 2009

Current Certificate: 09th March 2015

Certificate Expiry: 27th March 2018

Issued by: Lloyd's Register EMEA - Karachi for and on
behalf on Lloyd's Register Quality Assurance Limited.

UKAS
MANAGEMENT
SYSTEMS
001

3rd Floor, State Life Building No. 11, Abdullah Haroon Road, Karachi, 74400, Pakistan.
This approval is carried out in accordance with the LRQA assessment and certification procedures and monitored by LRQA.
The use of the UKAS Accreditation Mark indicates Accreditation in respect of those activities covered by the Accreditation Certificate Number 001
Macro Revision 13

Notes Compiled By: Engr. Abdul Rahim Khan (Assistant Professor CET, UOS)

Lloyd's Register
LRQA

CERTIFICATE OF APPROVAL

This is to certify that the Environmental Management System of:

D.G Khan Cement Company Limited
Khairpur, District Chakwal,
Pakistan

has been approved by Lloyd's Register Quality Assurance
to the following Environmental Management System Standard:

ISO 14001:2004

The Environmental Management System is applicable to:

Manufacturing of clinker, cement and cementatious products including the activities of mining of basic cement raw materials, sales and marketing, power generation from thermal and waste heat, fuel system comprising coal, gas, oil and alternative fuels (refused derived fuels), maintenance, store, purchasing, laboratories, administration, civil and pumping of water from tube wells.

Approval
Certificate No: MEA4209115

Original Approval: 30th March 2009

Current Certificate: 09th March 2015

Certificate Expiry: 27th March 2018

Issued by: Lloyd's Register EMEA - Karachi for and on
behalf on Lloyd's Register Quality Assurance Limited.

UKAS
MANAGEMENT
SYSTEMS
001

3rd Floor, State Life Building No. 11, Abdullah Haroon Road, Karachi, 74400, Pakistan.
This approval is carried out in accordance with the LRQA assessment and certification procedures and monitored by LRQA.
The use of the UKAS Accreditation Mark indicates Accreditation in respect of those activities covered by the Accreditation Certificate Number 001
Macro Revision 13

Notes Compiled By: Engr. Abdul Rahim Khan (Assistant Professor CET, UOS)