Safe & Reliable Manufacturing – MIQA Perspective & Challenges

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Abstract

Reliance is operating the world’s largest refining and Petrochemicals complex at a single location at Jamnagar, India. Visioning, Design, Engineering, Procurement, Fabrication, Construction, Commissioning, Operations and Maintenance of such a large manufacturing complex and volume of assets is a major challenge. The dynamic changes in energy trends, volatile geo-political situations, demanding regulations and fluctuating market scenarios pose a continuous challenge to sustain the manufacturing. The foremost requirement under such a challenging environment is to ensure the Safety, Integrity and Reliability of the assets in all the process units of the complex. It is also imperative that the culture of Safe and Reliable operations is sustained day after day by motivated and knowledgeable individuals.

The journey towards a safe, sustainable and reliable manufacturing begins on the drawing board as a part of design and ends with operating the process units within the design windows. Construction and commissioning of the assets in the shortest possible time is also a primary requirement of the whole project.

A focused approach emphasizing “MIQA – Mechanical Integrity and Quality Assurance“ throughout the various stages of the project and construction and then as a part of the operations has been the only way out, to meet the challenges. A structured approach has been adopted to ensure mechanical integrity of the units. After commissioning of the process units, a different set of MIQA elements are being focused upon to ensure safe and reliable operations.

The paper dwells upon the various systems, processes, tools that are being followed and engaged to ensure that the vision of safe and reliable manufacturing is achieved uninterruptedly.