Leak-proofing Flange Joints

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In Fertilizer industry or specifically a Sulfuric acid or Phosphoric Acid plants, it is so easy to point a finger towards a gasket when a bolted joint leaks. This paper specifically addresses this situation of joint leaks in plants in simple to understand concepts. The paper highlights with many specific case studies how simple maintenance procedure set up at a plant would avoid many unforeseen situation and many costly shutdowns.

The author takes an approach that many a times the if one studies the situation on hand and applies some common sense based methodology, nine times out of ten one solved most problems. There are special situations like tough to reach places and tough chemistry, one needs to resort to best sealing technology available up front. Invariably trial and error approach prevails and indirectly it costs more money to the producers.

The author uses fundamental approach and explains the different components involved in the joints and how taking some maintenance steps , one can avoid mistakes and seal the joint for long period of time without any unscheduled and costly down times. The topics the author touches are lubrication of the bolts and nuts, thumb rules for reusing the nuts. proper matching of bolts and nuts to the type of flanges and gaskets. Importance of proper installation procedure can not be overemphasized. While explaining the importance of selecting proper gasket, the author shows the difference between soft and hard gaskets and how one can use both depending on the application at hand. Last but not least the author shows with the help of some case studies solutions to some common sealing problems in this industry.

This paper would be meaningful to maintenance and reliability engineers as well as process engineers in the plant.