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Acoustic Emission Monitoring of high risk installation in industrial environment

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Abstract : Acoustic Emission (AE) technology is widely used to control in service pressure vessel in a wide range of industry. Acoustic emission monitoring and its benefits have long been known and utilized by many industries to optimize the use of structures, increase operational safety, and to save money through effective condition assessment and maintenance. The application and acceptance of AE monitoring within the civil engineering industry has greatly expandedin the past few years [1]. Among the technological progress of AE it is possible to apply the technology in Atex environment with industrial process giving some genuine information on propagating defects even in refining and petrochemical plants.The monitoring of critical equipment allows an early detection of significant defects and the ability of following their severity in serviceto give an alarm to improve the safety of equipments and particularly piping systems. Some industrial examples are given in this paper to shed into thelight the return of experience on AE long term monitoring. AE technology is used: to give an in situ diagnostic, to prevent catastrophic ruptures, to help to reduce maintenance costs, and to avoid shutdown with assessing risk based inspection.

Keywords : Accoustic Emission, Monitoring