IMAGING TECHNIQUE FOR TROUBLESHOOTING OF INDUSTRIAL EQUIPMENT BY GAMMA-RAY ABSORPTION SCANS

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Gamma scanning is one of the most common nuclear techniques on troubleshooting industrial equipments like distillation columns and reactors. With a very simple concept, the technique is easy to implement. Searching for a competitive edge the industry has been long developing solutions to achieve better results. On the last decades, significant development has been done with the advent of new equipments, electronics, portable computers and software, to the point that nowadays the field work and reporting can be done in a question of hours. Continuous scanning and wireless detection systems are examples of successful field solutions, while new software aid on reporting and data presentation. However the type and quality of the results itself has not dramatically changed since its beginning. A scan profile is simple to understand, although the process to build it can be very complex as it requires a specific blend of knowledge and abilities. Process Engineering, Chemical Engineering, Internal Hydraulic Project, Nuclear Engineering and field abilities are pre requisites for of any scan specialist rookie. Correct data gathering, interpretation and reporting are abilities often difficult to match or requires a long time of training. Probably there are no more than a handful of scan specialists on the world. The industry faces a similar difficult on the customer side, as it is always necessary to train end users to understand a report and how to use its best. This paper describes our effort on developing a new approach on the gamma scan test using image reconstruction techniques that would result on a graphic image rather than a XY plot. Direct and easier to understand, a report with graphic images would be also accessible to a wider audience, not limited to the customers experienced with gamma scan interpretation.