

The Study of Using Thermoscan for CUI Detection

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Corrosion under insulation(CUI) of insulated pipe and equipment is the one of most frequent failures which occurs in refinery plant and other process facilities. Normally, CUI detection is very difficult because it cannot be observed by the naked eyes. The highly effective CUI inspection at present is visual inspection by dismantling cladding and insulation at high risk location. However, this practice has yielded inaccurate results, and comes with high inspection cost. Therefore, the purpose of this study project is to find out new CUI inspection technology with higher detection accuracy and lower inspection cost.

The 5 techniques which studied in this project based on API583 standard and results of study found that “Thermoscan technique” is the most effective technique with lowest CUI inspection cost. The accuracy can be increased to 95.8% and inspection cost reduced by 60,000 USD per year. However, this technique also has some limitations which need to be concerned during inspection activity.

To conclude, the use of Thermoscan technique with awareness of its limitations can mitigate the probability of CUI failures as well as CUI inspection cost. The values of this study project are increase in integrity, reliability of refinery asset and safety of process operation of the plant.