



## Case History

### EM&I's ANALYSE™ System

### BP Thunder Horse

#### The Challenge

RBI is a well-established and valuable strategy for managing pressure system integrity and prioritising piping systems for inspection for internal wall loss.

However, adequate inspection coverage of prioritised systems to meet industry best practice, often results in a perceived 'over inspection' by ultrasonic thickness measurements (UTM).

BP Gulf of Mexico (GOM) recognised this trend in their own inspection strategy and through discussions with EM&I was informed of our experience and research into UTM data, which showed that for every 100 conventional UTM readings, typically less than 2 readings were deemed to be a genuine integrity threat.

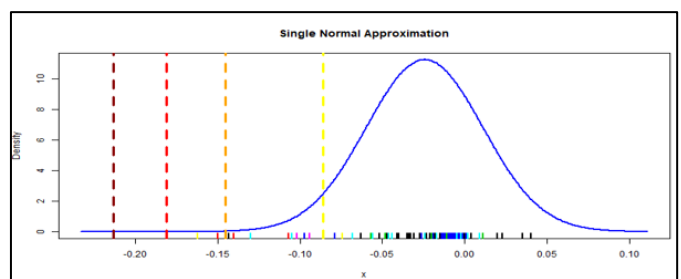
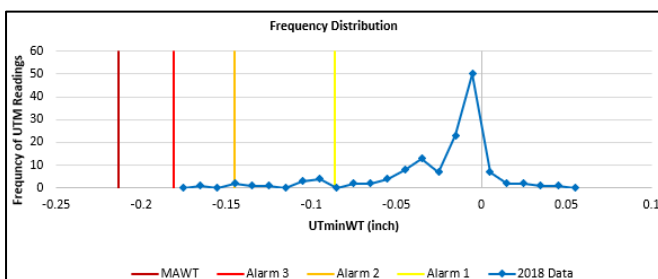
EM&I offered to demonstrate to BP our innovative solution for reducing the required number of UTM readings, whilst maintaining or improving their integrity assurance levels.

#### The Solution

The ANALYSE System uses statistical analysis of UTM data sets to calculate the probable minimum thickness of a corrosion circuit and checks if it breaks any alarm levels... but with far fewer readings and cost.

A pilot programme was agreed between BP and EM&I to demonstrate EM&I's ANALYSE System on historical UTM data from BP's Thunder Horse PDQ platform.

Over 42,000 UTM readings from annual piping inspection campaigns from 2006 to 2020 for Thunder Horse were retrospectively run through the ANALYSE System. The exercise showed that, had ANALYSE been used for each campaign, an overall reduction in UTMs of 51% could have been achieved.



In addition to the reduction in UTMs, ANALYSE also introduced a quantified confidence level of the minimum readings relative to the perceived alarm levels, which was not achieved by BP's conventional method. Thus, integrity assurance levels were also improved through the use of ANALYSE.

#### Way Forward

On the back of the success with Thunder Horse trial, EM&I is developing proposals for BP's 2021 inspection scopes to be run as ANALYSE campaigns, substantially reducing inspection time, cost and POB. EM&I is also developing an ANALYSE App, to be used on handheld tablet devices on site. This will give live feedback and instruction to site inspectors as to when sufficient UTM data has been gathered to deliver accurate, representative information.

