

CASE STUDY

COS TANK (78m) CLEANING AND INSPECTION - SONAR ONLINE

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INTRODUCTION

A 78 metre Diameter COS Tank was required to have a robotic Tank Floor Inspection conducted to extend the endorsement as the tank was due major overhaul but could not be removed from service due to operational ullage requirement. Just over 1 year later the tank was removed from service and internally inspected.

PROCESS

The In-Service Robotic Inspection of the 78m Crude Oil Tank with sludge up to 3m in some locations provided data that when projected forward to the time of the Out of Service Ultrasonic Readings was deemed to be incredibly accurate and comparable. The difference between the two methodologies of 0.59 mm thickness 8.5% of nominal were derived with basic EVA statistics rather than the upgraded statistics used today.

OUTCOME

Item	Out of Service	Robotic In-Service	DELTA
Tank Nominal	7 mm	7 mm	
Tmeasured Robotic		5.2 mm	
Statistical Prediction on Tmin		5.004 mm	
CR Conservative Case	0.192 mm/yr.	0.18 mm/yr.	0.012
Tminimum at OOS Date	4.20 mm	4.79 mm	0.59
% Loss from Nominal	40.00 %	31.5 %	8.5