

CorPos-AD

A Pipeline Integrity Management Tool



CorPos-AD – Features and Advantages

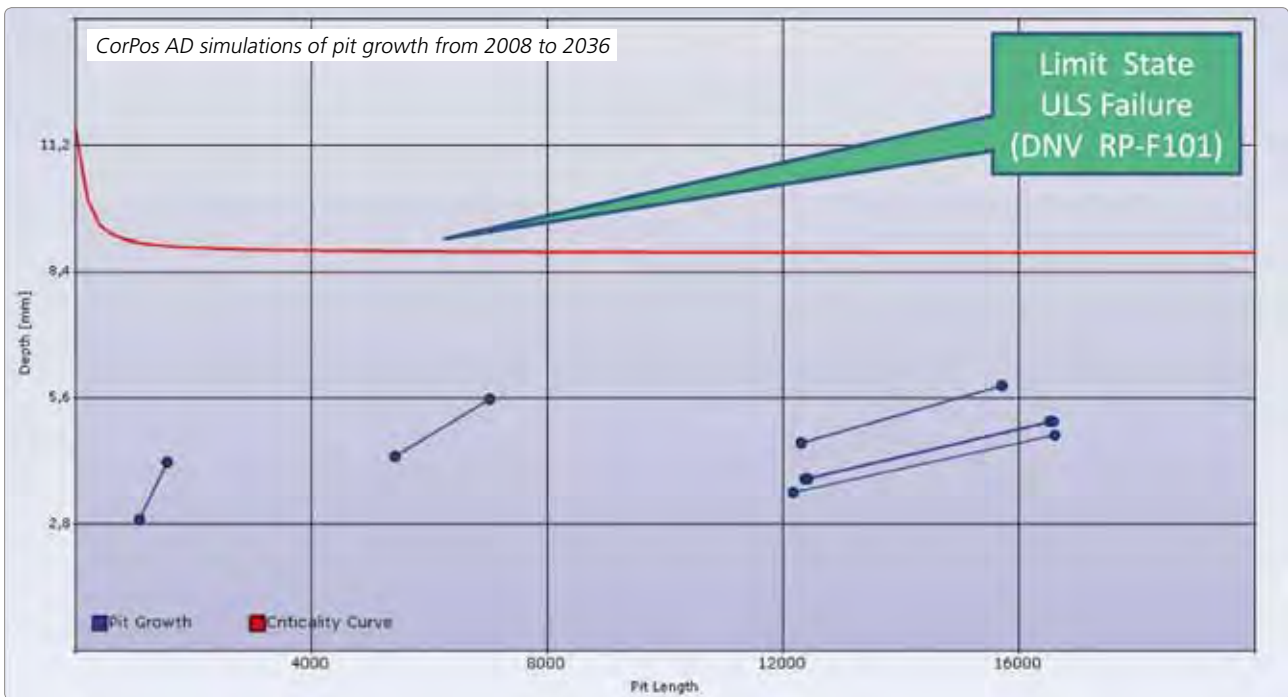
CorPos-AD is a software tool for pipeline integrity management and combines modeling with monitoring and inspection data in an integrated approach for increased safety control.

Application of the tool provides the following benefits to the pipeline operator:

- Corrosion rate modeling to map the internal corrosivity along the entire pipeline length
- Identify critical failure conditions and risks related to internal defects caused by corrosion as identified during inspections
- A look-ahead functionality which effectively combines inspection and monitoring in order to predict future conditions of the pipeline
- Allows for optimization of chemical injection, locations for corrosion monitoring and inspection frequency, i.e. to reduce OPEX whilst maintaining safety control
- Perform What-If analysis; evaluate future corrosion conditions and risk of failures, based on production forecasts
- CorPos-AD can be used for re-qualification/ life extension of the pipeline and will thus secure pipeline investments
- Using CorPos-AD regularly during operation provides information on actual degradation mechanisms, identifies critical locations and key parameters affecting the operational safety and economy. Thereby CorPos-AD provides means to control these parameters.

A CorPos-AD analysis is based on a full three phase steady state fluid flow analysis (OLGA®), combined with a systematic utilization of well established corrosion models for CO₂ corrosion, H₂S corrosion or a mixture of both.

The predicted corrosion or wall thickness reduction profile is combined with the ultimate limit state curve (ULS) in accordance with DNV RP-F101 in order to relate the predicted corrosivity to the allowable size of attack.

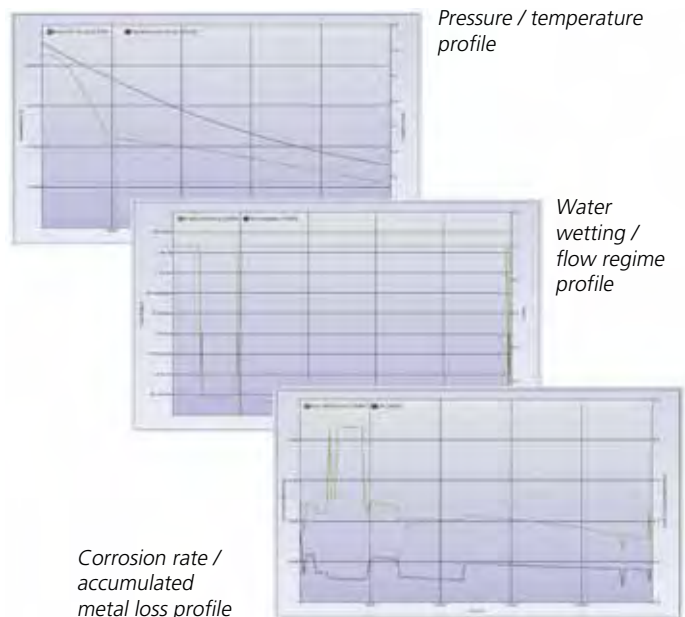


Explanation to figure above:

- The figure shows corrosion pits from Inline inspection (ILI) as the lower blue dots.
- The straight blue lines represent the growth prediction of these pits from inspection to end of design life (upper blue dots).
- The solid red line is the ultimate limit state curve (ULS), representing bursting failure due to a critical corrosion defect.
- The operational criterion is that the growth prediction should not intersect the ULS curve.

Output from CorPos-AD

- Integrated corrosion rate profile and accumulated metal loss
- Flow regime variations along pipeline
- Phase velocity and holdup profiles
- Water wetting probability profiles
- pH profile
- Pressure profile
- Temperature profile
- What-If analysis
- Risk analysis including:
 - Probability of pipeline failure at selected locations
 - Remaining pipeline lifetime
 - Estimated pit length / depth by end of design life
 - Recommended time to next inspection.



Further information

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