DEEPWATER

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CP SIMULATION TO PREDICT END OF LIFE OF PLATFORM: NORTH SEA CONDITIONS

CP modeling was used to provide a depolarization timeline and identify an efficient retrofit date.

Deepwater evaluated the remaining lifetime of the CP system of an older jacket platform in 130m seawater (North Sea simulated). The jacket was shown to have acceptable potentials and had outperformed its predicted life from a prior simulation. Of key interest is the necessity and timing of a CP retrofit to goals for the life of the field. A data-driven modeling approach was used to evaluate the remaining CP life and plan a future retrofit.

The model geometry was built in 3D CAD software based on data files and structural drawings already in existence. In addition to the jacket, geometry for all appurtenances submerged in seawater or buried in the seabed (J-tubes, caissons and foundation piles) are represented.

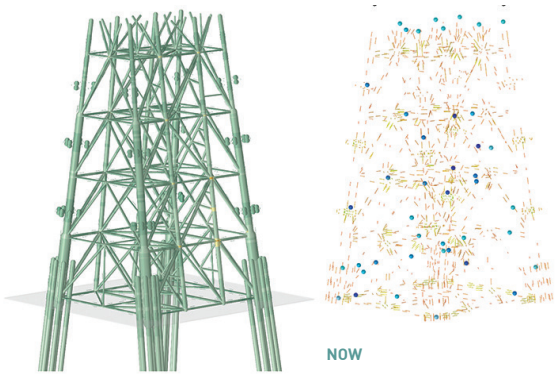
A third-party Multiphysics engine served as the host for Deepwater's custom electrochemical model. An internally consistent subset of past CP survey data was used to optimize model parameters, enabling forward-looking predictions not otherwise possible. The model was then time-resolved to predict local structure potentials, anode mass loss and current output simultaneously.

The model predicted that some regions of the jacket would no longer meet protection criteria within the next 5 years and a retrofit would be needed to extend the life of the corrosion protection system. A retrofit CP system was designed and qualified with the model to provide the desired life extension.

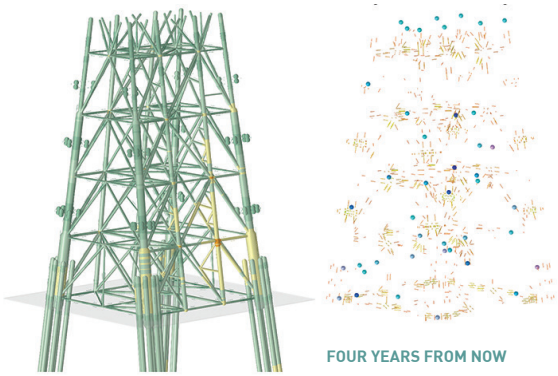
The model demonstrated the value of earlier installation of the retrofit system. A retrofit in advance of significant depolarization takes advantage of the remaining calcareous deposits and platform anodes to great effect. The model predicts retrofit costs to double after 5 years and triple after 7, so the advance warning can be a potential source of significant cost savings for operators..

More info at www.stoprust.com

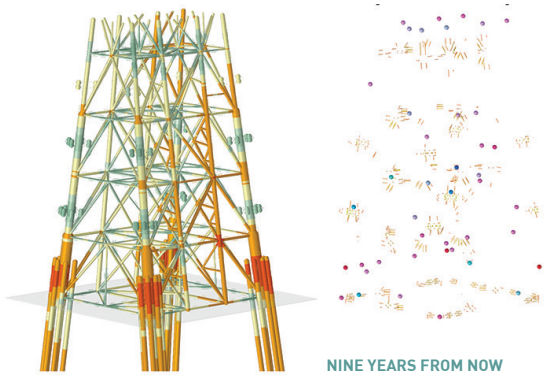
Projected potentials



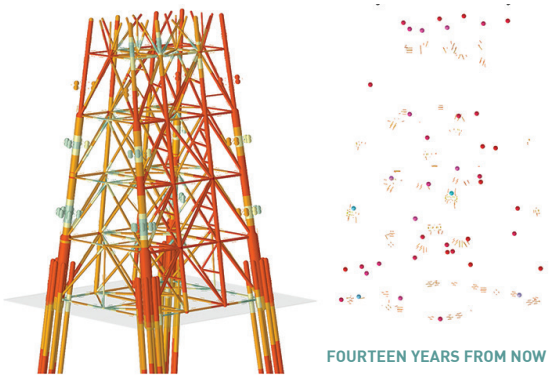
NOW



FOUR YEARS FROM NOW



NINE YEARS FROM NOW



FOURTEEN YEARS FROM NOW