

CASE STUDY

NORTH SEA OIL FIELD

RECOVERING A FAILING
SYSTEM WITH V-LIFE



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RECOVERING A FAILING SYSTEM WITH V-LIFE / NORTH SEA FIELD

V-LIFE can make a dramatic impact on systems with failing electrical insulation resistance. It has been used to recover systems where production has stopped and has been extensively used to avoid subsea interventions and the need to replace umbilicals. The case study looks at one North Sea field that had major umbilical problems.

Problem

When the client contacted Viper Innovations they had already written a procurement specification for a new umbilical and umbilical termination assembly.

The original umbilical, 15km in length, was installed in 1992 and both electrical power channels were deteriorating with one of them at such a low level that it was unserviceable. This meant that the entire subsea system of 8 wells was operating on a single power channel with no prediction as to how long it would last. The lead time for a new umbilical was anticipated to be 2 years.

Production was at risk and so Viper Innovations was asked to install **V-LIFE** on the failed electrical channel – there was only upside to the Operator if **V-LIFE** could recover this channel.

Solution

Viper Innovations undertook the upfront interface engineering to fully define the changes that would be necessary to prepare the existing topsides equipment. Detailed installation procedures were prepared together with destruct and construct

drawings. A portable **V-LIFE** unit was delivered and a Viper Innovations Engineer was mobilised offshore to undertake the installation and the commissioning.

The power was removed from the subsea system for a total of two hours and the **V-LIFE** was commissioned within a single offshore shift. Within two weeks the insulation resistance had increased from less than 50kOhms to in excess of 20MOhms. This was in December 2013. Since then the IR has risen to, and plateaued at, 80Mohm. The client has installed a second **V-LIFE** on the same umbilical and is now operating with good margins on both power channels.

The umbilical procurement activity has been deferred indefinitely with the current plan being to utilise **V-LIFE** up until the field is decommissioned. The client has avoided the risk of lost production resulting from an umbilical failure and also saved significant CAPEX in the procurement and installation of a replacement umbilical.

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