

Rapid lube oil degradation after recent oil change -
Problem solved for a major offshore Oil & Gas operator, in Qatar, by
using **DECON** Solvancer® and Vita **ESP III** technologies.





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Challenge

- Critical level of soft contamination
- High level of Particle count.
- Fast decrease of antioxidant additives.
- Steady increases of bearing temperature.
- Extend the lube oil life.

Solution

ESP (Electrophysical Separation Process) filtration unit combined with DECON flushing treatment.



Result

- Clean oil and no failure related with oil degradation during more than 8 months.

OVERVIEW:

The customer wished to control the lube oil degradation and solve the issues related with high bearing temperatures in one of their Solar Turbines. After a recent oil change, the oil condition had a quick degradation. In 6 months, the lube oil analytical results revealed high Varnish potential, high Particle count and quick decrease of antioxidant additives. To clean the system and lube oil, stop the oil degradation and extend its life the customer used DECON Solvancer® combined with Fluitemc Vita ESP III.

CHALLENGE:

Lube oil degradation after recent oil change.

Customer requested the support from Ocean Team Qatar to stop the lube oil degradation and extend its life in one of their Solar Turbine GT, 2300L. As per historical information an oil change was performed two years before and suddenly its degradation was occurring fast. The Varnish potential (ASTM D7843) analysed in the lube oil sample on a tri-monthly basis, was stable however critical (MPC >55). Particle count (ISO 4406) was within serious level. Antioxidant additives (RULER - ASTM D6971) had a decrease of 10 to 20% and Acid Number (TAN - ASTM D974) was increasing fast.

SOLUTION:

DECON Solvancer® was added to the lube oil reservoir to dissolve the existent Varnish, control the deposits and prevent future varnish formation. In addition, the Vita ESP III unit was hooked up to the reservoir to remove the existent soluble and insoluble oil degradation products.

RESULT:

Soft contamination (Varnish) and deposits were reduced and kept within acceptable levels after DECON Solvancer® addition. Oil degradation was stopped after being cleaned with Vita ESP III: Acid Number decreased and the level of antioxidant additives became stable. For more than 8 months the bearing temperatures were maintained below their warning limits allowing the system to operate without any possibility of failure related with oil degradation.

Sampling date	Days	MPC	ISO code	TAN	RULER I (%)	RULER II (%)
BEFORE DECON SOLVANCER® Technology and Vita ESP III						
16 Jan 2020	-	57.9	22/16/10	0.25	90	89
13 Apr 2020		59.7	22/15/9	0.31	85	78
16 July 2020		60.8	23/17/10	0.34	79	67
DECON SOLVANCER® Technology addition 09-Sep-2020						
23 Sep 2020	14days	5.3				
11 Oct 2020	32days	6.4	12/10/7	0.35	78	67.5
Vita ESP III unit connected 21-Oct-2020						
01 Nov 2020	77days	3.6				
03 Dec 2020	109days	4.0				
08 Dec 2020	114days	4.2				
19 Dec 2020	125days	4.6				
02 Jan 2021	139days	4.4				
Vita ESP III unit disconnected 15-Jan-2021						
23 Jan 2021	8days	5.9	14/13/10	0.26	74	64.5
14 Feb 2021	30days	11.6				
17 Apr 2021	92days	5.6	13/12/10	0.25	75	65