

Hitachi, Ltd.

6, Kanda-Surugadai 4 chome, Chiyoda-ku,
Tokyo 101, Japan
Telephone : Tokyo(03)258-1111
Telex : J22395, J22432, J24491, J26375 (HITACHY)
Cable : HITACHY TOKYO

Your Ref.

Our Ref.

Ir. A.M. Hagelen
Managing Director
Kuwait Petroleum Research & Technology B.V.
Postbox 7045
3000 HA Rotterdam
The Netherlands

October 23, 1985
TPXG - 85101

Dear Sirs,

Gas Turbines Lubricant Recommendations

With reference to your letter dated September 17, 1985, under your reference WS 85-106, we would like to inform you that it is acceptable to use the following lube oil for the MS5001 gas turbines installed at the Doha East Power Station.

Make : Kuwait National Petroleum Company (KNPC)

Brandname : Kuwaitoil Turbine oil EL-3019 No.32

--- Typical Data ---

Abs. Density, 15°C,	D1298	: kg/dm ³	0.870
Kin. Visc., at 40°C,	D445	: mm ² /s	32
Kin. Visc., at 100°C,	D445	: mm ² /s	5.33
Viscosity Index,	D2270	:	98
Flash Point,	D92	: °C	208
Pour Point,	D97	: °C	-12
Color,	D1500	:	L 1.0
Copper Strip, 100°C, 3 h,	D130	:	1
Rust Test, 24 h,	D665	:	
Procedure A and B		:	pass
Total Acid Number,	D974	: mgKOH/g	0.12
Aniline Point,	D611	: °C	101
Emulsion,		:	
Distilled water at 54.4°C		:	40-40-0(5)
Air Release, 50°C,	DIN 51381	: min	3
Steam Emulsion,	DIN 51589	: s	70
Form,	D892	:	
5 min blowing, seq. 1/2/3		: ml	10/20/10
10 min setting, seq. 1/2/3		: ml	0
Oxidation,		:	
time to 2.0 TAN		: h	4000+



M. Wada, Manager
Gas Turbine Department
Thermal Power Engineering Div.,
Hitachi, Ltd.