



Together We Power The World

Report # 97928 RUSH

Laboratory Test Analysis Report for United Power Group, Inc.

June 30, 2010

To:

Mr. Alfred M Marrocco

Mail, Fax 508 588 2596, Email

amgmc@hotmail.com

Mr. Alfred M Marrocco
President

United Power Group, Inc.

71 Legion Pkwy

Brockton MA 02301

Dear Mr. Alfred M Marrocco,

In accordance with your request, we have performed testing on 6 samples received at the Doble Laboratory on June 28, 2010 under Purchase Order Number 1150/2000. If the sampling date is not provided, the sample receipt date (displayed in *italics*) is used to provide chronological information. We trust our enclosure provides the information you require. We sincerely value your business and look forward to providing you with additional services in the future. Should you have any comments, suggestions or questions please feel free to contact us.

Sincerely,

Cindy Lacke
Chemist



Together We Power The World

Report # 97928 Sample # 1

United Power Group, Inc.

Received 06/28/2010

Date June 30, 2010

Serial Number: H409169 Substation Name: 495 Design Type: Core Type Manufacturer: GE MFR. Year: 1969 Cooling System: OAF/AF/OA Fluid Type: Mineral	Equipment Number: Preservation System: Gas Blanketed Transformer Name: A Transformer Type: Transformer Maximum KV: 115 Maximum MVA: 95 XFRM Oil Capacity: 13310 Gallons	Container Id: 4237 Miscellaneous Id: Second Name: Morwood Light Sample Point: Main Tank Bottom Sequence #:	Ambient Temp °C: Humidity: Top Oil Temp °C: 65 Peak Temp °C: Fluid Level: Pressure PSI:
LTC MFR Model: GE TYPE LI-500 LTC Type: Vacuum LTC Tank Type: Sealed LTC Capacity: 1140 Gallons Filter LTC:		Sample Date/By: 6/28/2010 12:00 Appr Type: XFRM	

Disolved Gas Analysis The dissolved gas analysis is run in accordance with ASTM D 3612 and IEC 60567. Values are reported in ppm vol/vol at STP and calibrated with gas-in-oil standards. Values before August 15, 2002 are reported at NTP and calibrated with gas standards.

Report #	Sample Date	Top Oil Temp °C	Hydrogen (H2)	Oxygen (O2)	Nitrogen (N2)	Methane (CH4)	Carbon Monox. (CO)	Ethane (C2H6)	Carbon Dioxide (CO2)	Ethylene (C2H4)	Acetylene (C2H2)	Total Gas	COMB GAS	EST TCG %	C2H2/ C2H4	Comb Gas Rate
97928	06/28/2010	65	21	6120	80900	89	734	46	2860	13	0	90783	903	0.72	0.00	0.09
87149	01/13/2009	25	18	6680	65500	96	689	40	2890	12	0	75905	855	0.83	0.00	-0.23
78028	09/30/2007	30	24	1870	67900	96	788	43	3500	13	0	74234	984	0.95	0.00	0.01
62837	06/27/2005	38	19	1500	54600	85	786	52	3310	12	0	60364	954	1.15	0.00	1.01
60381	12/01/2004	35	17	7770	75800	71	635	42	2720	10	0	87085	775	0.86	0.00	0.04
44964	07/01/2001	50	21	3080	57100	60	626	17	1780	6.0	0	62690	730	0.88		0.06
43755	04/11/2001	37	13	1780	51800	59	620	24	1850	9.0	0	56135	725	0.95		-0.22
40592	06/05/2000	45	19	1680	58900	63	674	26	2130	12	0	63504	794	0.92		0.39
38825	12/22/1999	31	20	1570	51700	59	617	23	1880	10	0	55879	729	0.97		
36304	01/22/1999	32	15	1460	63300	73	783	28	1760	11	0	67430	910	0.98		-0.54

Overheating of cellulose, condition is of no immediate concern. Resample in 6 months for those units greater than 69 kV and 10 MVA.

Report # 97928 Sample # 1

United Power Group, Inc.

Received 06/28/2010

Date June 30, 2010

Oil Quality Tests

Report #	Sample Date	Top Oil Temp °C	Water Content ppm	Relative Saturation %	Interfacial Tension dynes/cm	Neut. No. mgKOH/g	Inhibitor Content %
97928	06/28/2010	65	17	6	ISO 6295	D 974	D 2668
					D 1533	D 971	
					IEC 60814		
87149	01/13/2009	25	13	19			
78028	09/30/2007	30	12	15	34	0.01	ND
62837	05/27/2005	38	15	13			
60381	12/01/2004	35	4	4			
44864	07/01/2001	50	11	6			
43755	04/11/2001	37	9	8			
40592	06/05/2000	45	6	4			
38825	12/22/1999	31	6	7			
36304	01/22/1999	32	3	3			

The water content as reported in relative saturation is good to okay for in service fluid.

Miscellaneous Tests PCB Analysis is conducted under the provisions listed in Double's certification with the Department of Environmental Protection for the Commonwealth of Massachusetts. Our Lab ID is M-MA131.

Report #	Sample Date	Top Oil Temp °C	PCB Content ppm	Aroclor Detected
97928	06/28/2010	65	< 2	
			D 4059	
			IEC 61619	

This sample is considered to be 'Non-PCB' (<50 ppm) per EPA regulations listed in 40 CFR part 761.



Report # 97928 Sample # 2 United Power Group, Inc. Received 06/28/2010 Date June 30, 2010

Serial Number: HA09170 Substation Name: 495 Design Type: Core Type Manufacturer: GE MFR. Year: 1969 Cooling System: OAF/AFCA Fluid Type: Mineral	Equipment Number: Preservation System: Sealed Conservator Transformer Name: B Transformer Type: Transformer Maximum kV: 115 Maximum MVA: 93 XFMR Oil Capacity: 13310 Gallons	Container Id: 4333 Miscellaneous Id: Second Name: Nanwood Light Sample Point: Main Tank Bottom Sequence #:	Phase: Ambient Temp °C: 35 Humidity: 60 Top Oil Temp °C: 65 Peak Temp °C: Fluid Level: Pressure PSI: Filter LTC:
LTC MFR/Model: GE TYPE LR-500	LTC Type: Vacuum	LTC Tank Type: Sealed	LTC Capacity: 1140 Gallons

Disolved Gas Analysis The dissolved gas analysis is run in accordance with ASTM D 3612 and IEC 60567. Values are reported in ppm vol/vol at STP and calibrated with gas-in-oil standards. Values before August 15, 2002 are reported at WTP and calibrated with gas standards.

Report #	Sample Date	Top Oil Temp °C	Hydrogen (H2)	Oxygen (O2)	Nitrogen (N2)	Methane (CH4)	Carbon Monox. (CO)	Ethane (C2H6)	Carbon Dioxide (CO2)	Ethylene (C2H4)	Acetylene (C2H2)	Total Gas	COMB GAS	EST TCG %	C2H4/ C2H2	Comb Gas Rate
97928	06/28/2010	65	16	18700	96400	45	1050	25	3970	37	0	118244	1174	0.79	0.00	-0.83
87149	01/13/2009	22	30	3830	63100	58	1460	25	4520	40	0	73163	1613	1.76	0.00	0.38
79958	01/24/2008	35	25	3900	66300	53	1340	24	4750	37	0	76429	1479	1.54	0.00	0.01
62837	05/27/2005	35	22	8460	68200	50	1340	24	5070	36	0	83202	1472	1.44	0.00	1.62
60361	12/01/2004	32	20	7420	66200	41	1070	21	4090	33	0	78895	1185	1.20	0.00	-0.29
47524	02/13/2002	28	27	3600	66000	47	1370	16	3260	22	0	74342	1482	1.58		0.26
43755	04/11/2001	35	17	5820	61200	44	1300	17	3200	23	0	71421	1401	1.57		0.43
40592	06/19/2000	42	21	4700	59500	42	1170	17	3100	25	0	68575	1275	1.48		0.23
38825	12/22/1999	29	22	5050	58200	42	1130	15	2970	25	0	67454	1234	1.46		-0.17
36304	01/22/1999	30	25	5700	61100	43	1180	15	3180	19	0	71272	1292	1.46		

Overheating of cellulose, condition is of no immediate concern. Resample in 6 months for those units greater than 69 kV and 10 MVA.